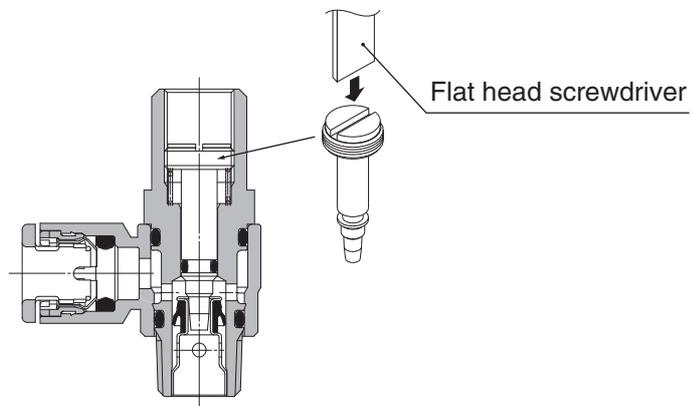


# Speed Controller Adjustable by Flat Head Screwdriver with One-touch Fitting

RoHS

- Flow adjustable by flat head screwdriver
- Prevention of an unnecessary manual operation



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

**AS□□□1F-D**

Elbow type



Universal type



In-line Type



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

**ASD□□□F-D**



## Speed Controller Adjustable by Flat Head Screwdriver: Standard Type

**AS□2□0-D**

Elbow Type (Metal Body)



**AS□□□1F-D Series**



EMC-AS1F-D-01A-UK

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

# AS□□□1F-D Series

RoHS

## Elbow type



## Universal type



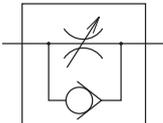
## Model

Elbow type	Universal type	Port size	Applicable tubing O.D.															
			Metric size						Inch size									
			3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"			
AS12□1F-M5	AS13□1F-M5	M5 x 0.8	●	●	●													
AS22□1F-01	AS23□1F-01	R1/8	●	●	●	●	●*											
AS22□1F-02	AS23□1F-02	R1/4		●	●	●	●											
AS32□1F-02	AS33□1F-02	R1/4			●	●	●	●										
AS32□1F-03	AS33□1F-03	R3/8			●	●	●	●										
AS42□1F-04	AS43□1F-04	R1/2						●	●									
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF								●	●	●	●					
AS22□1F-N01	AS23□1F-N01	NPT1/8								●	●	●	●	●				
AS22□1F-N02	AS23□1F-N02	NPT1/4									●	●	●	●	●			
AS32□1F-N02	AS33□1F-N02	NPT1/4											●	●	●			
AS32□1F-N03	AS33□1F-N03	NPT3/8												●	●	●		
AS42□1F-N04	AS43□1F-N04	NPT1/2															●	●

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.

## Symbol



## Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

**Made to Order**  
(Refer to page 3 for details.)

## 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 <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

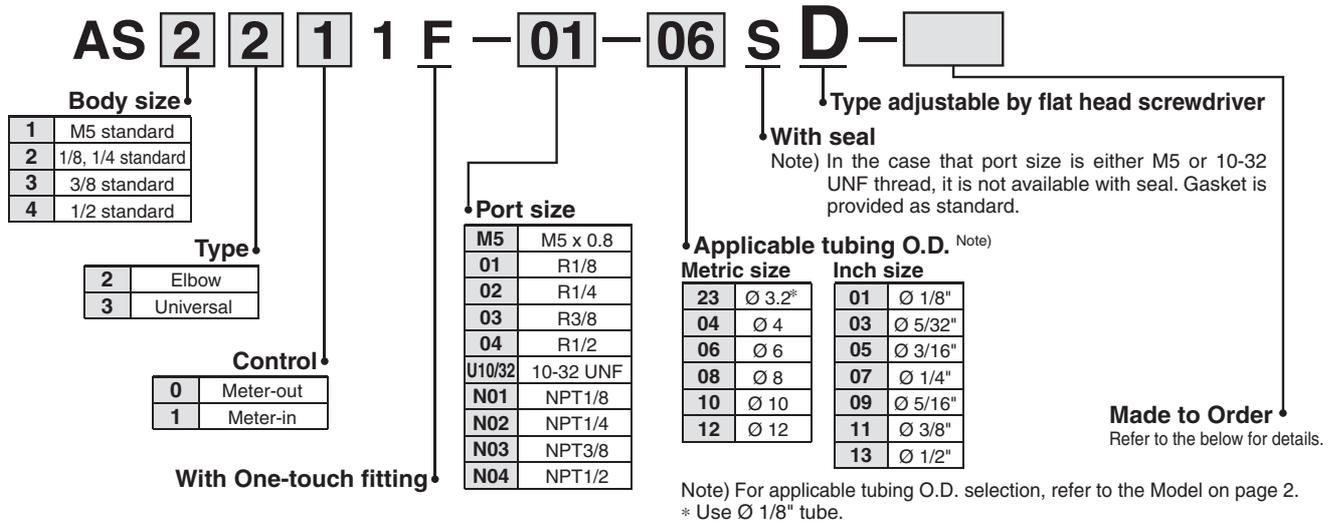
Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.  
Note 2) Brass parts are all electroless nickel plated, provided as standard.

## 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	∅ 3.2, ∅ 4, ∅ 6	∅ 3.2, ∅ 4, ∅ 6, ∅ 8, ∅ 10	∅ 4, ∅ 6, ∅ 8, ∅ 10	∅ 6, ∅ 8, ∅ 10, ∅ 12	∅ 10, ∅ 12					
	Inch size	∅ 1/8", ∅ 5/32" ∅ 3/16", ∅ 1/4"	∅ 1/8", ∅ 3/16", ∅ 1/4", ∅ 5/16"	∅ 5/32", ∅ 3/16", ∅ 1/4", ∅ 5/16", ∅ 3/8"	∅ 1/4", ∅ 5/16", ∅ 3/8"	∅ 3/8", ∅ 1/2"					
Controlled flow Free flow	Flow rate (l/min (ANR))	100	180	230	260 390	460	660 790	920	1580	1710	
	Sonic Conductance dm <sup>3</sup> /(s.bar)	0.3	0.54	0.7	0.8	1.2	1.4	2	2.4	2.8	4.8
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.

**How to Order**



**Made to Order**



**Lubricant: Vaseline X12**

**Grease-free (Seal: Fluorine Coated) + Throttle Valve (Without Check Valve) X21**

Ex.) AS1201F-M5-23D-X12

Ex.) AS1201F-M5-23D-X21

**Throttle Valve (Without Check Valve) X214**

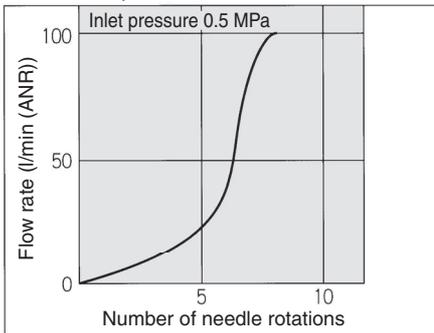
Ex.) AS1201F-M5-23D-X214

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.

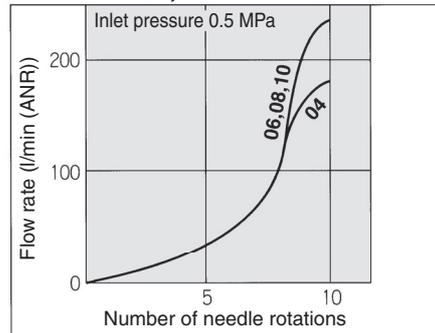
**Needle Valve/Flow Rate Characteristics**

Note) The flow rate characteristics are representative values.

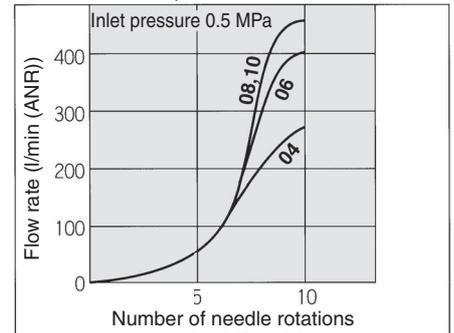
**AS1201F, AS1211F**



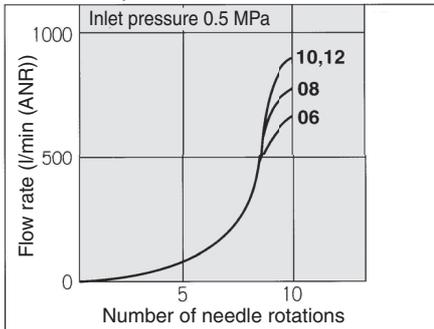
**AS2201F-01, AS2211F-01**



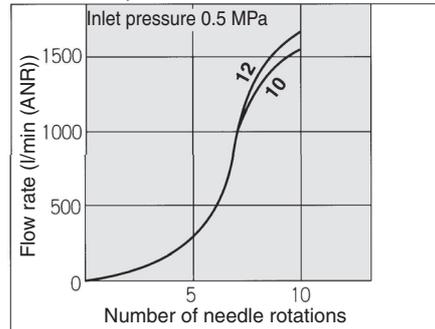
**AS2201F-02, AS2211F-02**



**AS3201F, AS3211F**



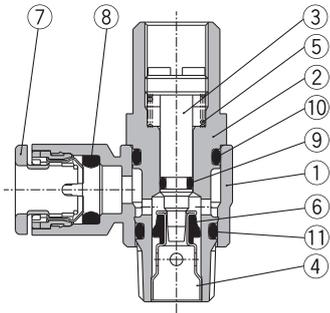
**AS4201F, AS4211F**



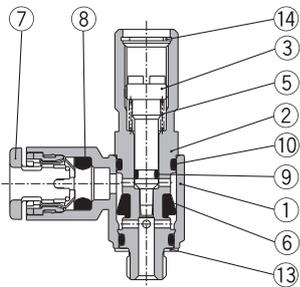
# AS□□□1F-D Series

## Construction

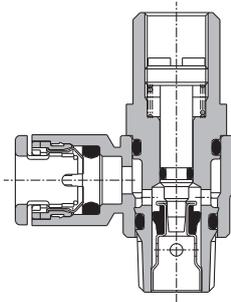
### Elbow type Meter-out type



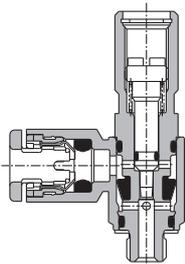
### M5 type U10/32 type



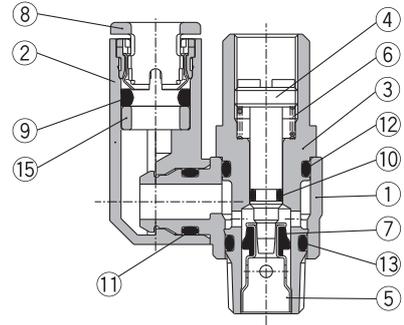
### Meter-in type



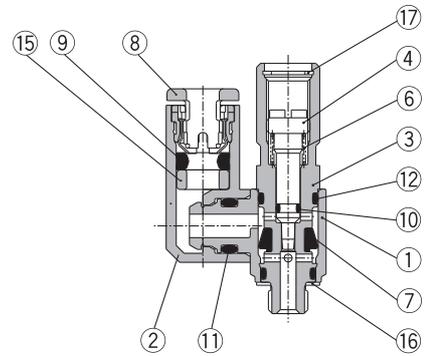
### M5 type U10/32 type



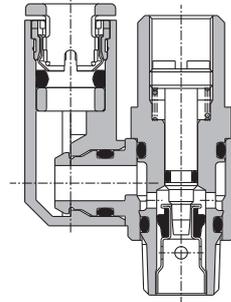
### Universal type Meter-out type



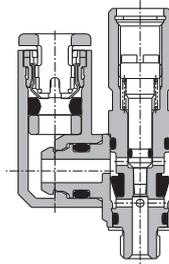
### M5 type U10/32 type



### Meter-in type



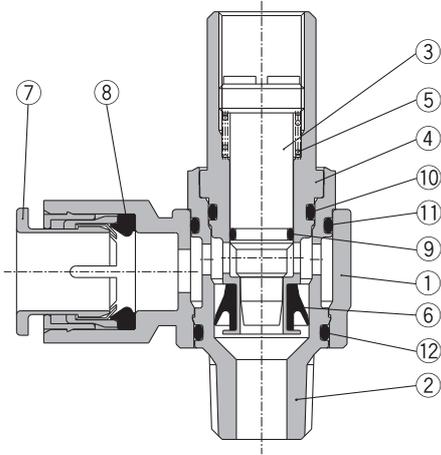
### M5 type U10/32 type



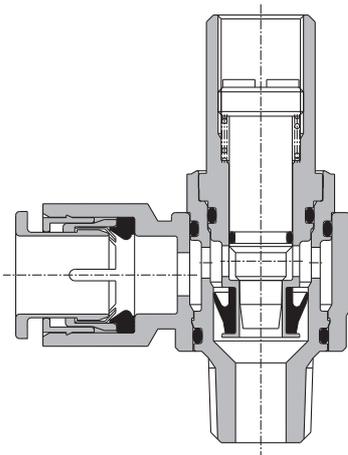
## Construction

### Elbow type

Meter-out AS3201F-02



Meter-in AS3211F-02



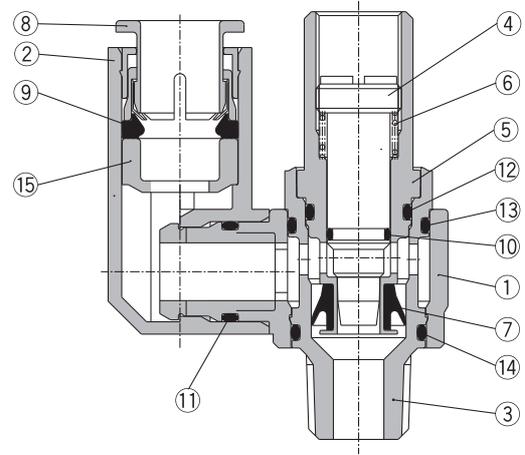
### Component Parts

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 <sup>(1)</sup>	
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	

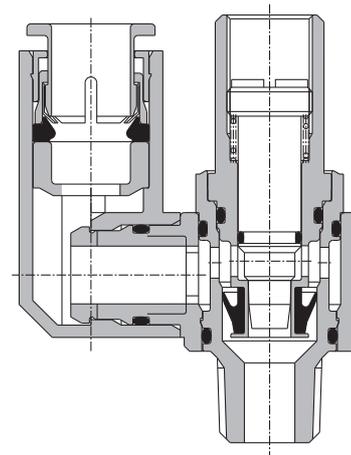
Note 1) M5 and U10/32 type: Stainless steel

### Universal type

Meter-out AS3301F-02



Meter-in AS3311F-02



### Component Parts

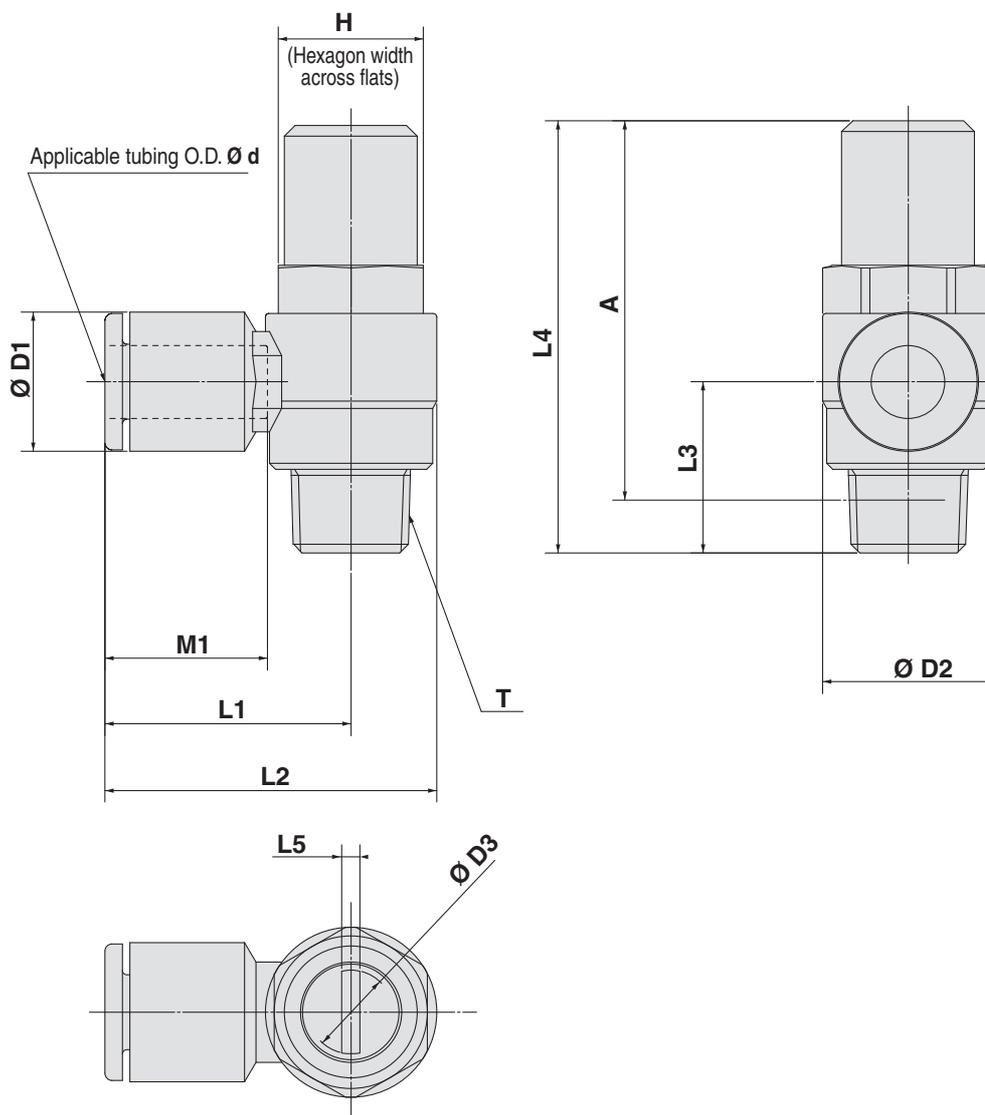
No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Body B	Brass	Electroless nickel plated
4	Needle	Brass	Electroless nickel plated
5	Seat ring	Brass	Electroless nickel plated
6	Spring	Steel wire <sup>(1)</sup>	
7	U seal	HNBR	
8	Cassette	—	
9	Seal	NBR	
10	O-ring	NBR	
11	O-ring	NBR	
12	O-ring	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	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			18.1	22.9	11.7				13.5							
AS22□1F-01-23SD	3.2	R1/8	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					18.5		23					
AS22□1F-01-06SD	6			11.6			25.3	32.4					18.5		23					
AS22□1F-01-08SD	8			15.2			35.3	44.5	15.3				21	25						
AS22□1F-01-10SD	10			18.5			35.3	44.5	15.3				21	25						
AS22□1F-02-04SD	4			10.4			R1/4	17	7.2				25.2	34.4	17.7	40.2	1.2	34.7	16	40
AS22□1F-02-06SD	6			12.8									27.8	39.3					17	
AS22□1F-02-08SD	8	15.2	27.8	39.3	17															
AS22□1F-02-10SD	10	18.5	35.3	44.5	18.3	21				44										
AS32□1F-02-06SD	6	12.8	R1/4	19	9.8	27.8				39.3	21.3	54.8	1.2	49.3	17				73	
AS32□1F-02-08SD	8	15.2				29.5				41					18.5					76
AS32□1F-02-10SD	10	18.5				29.5				41					18.5					76
AS32□1F-02-12SD	12	20.9				31.8	43.3	21	80											
AS32□1F-03-06SD	6	12.8				R3/8	19	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								18.5		79
AS32□1F-03-10SD	10	18.5							29.5	41								18.5		79
AS32□1F-03-12SD	12	20.9	31.8	43.3	21				81											
AS42□1F-04-10SD	10	18.5	R1/2	24	12.4				33.6	47.9	24.5	62.9	1.2	55.8				21	141	
AS42□1F-04-12SD	12	20.9							35.2	49.5								22		142

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

### Inch Size

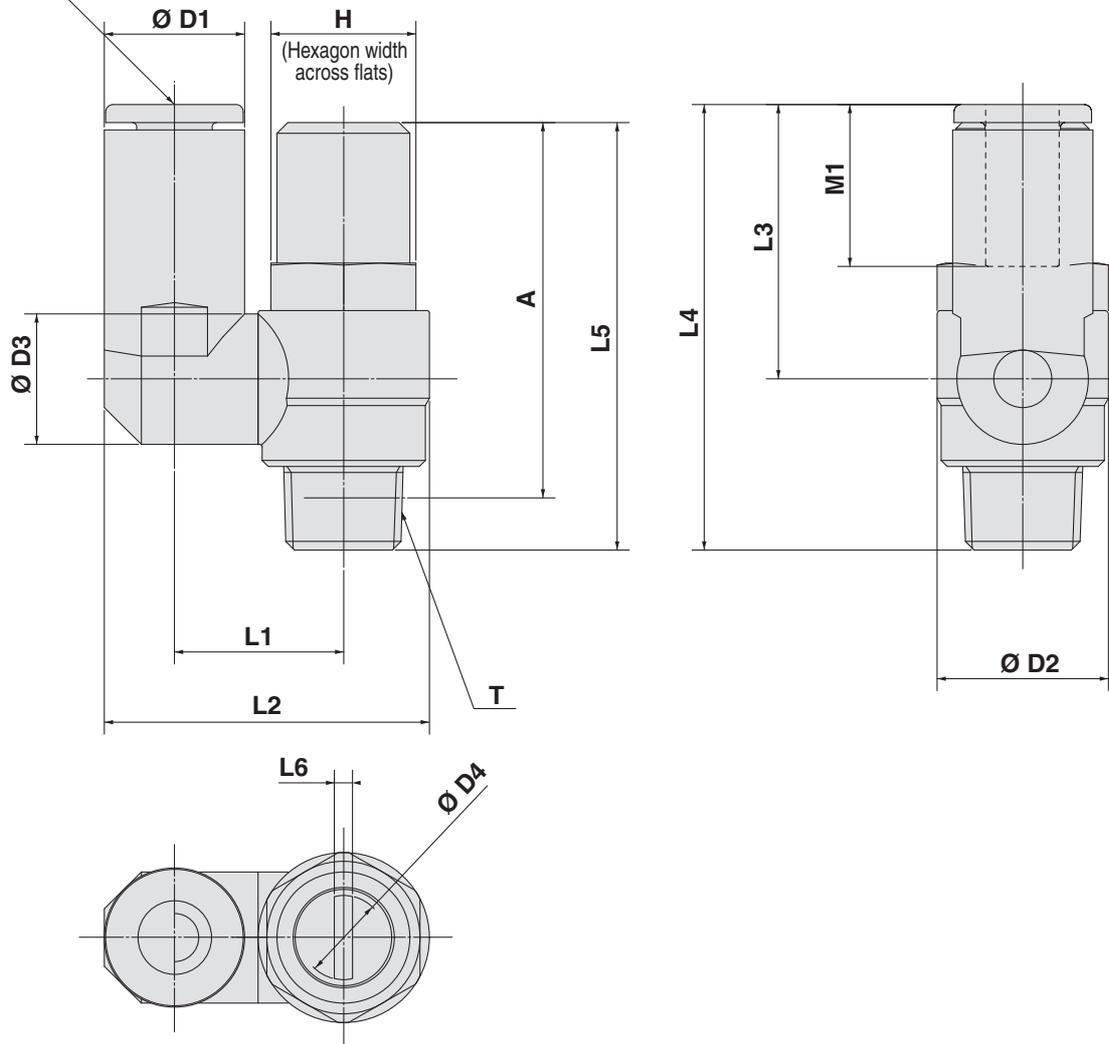
Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5	A*	M1	Weight (g)								
AS12□1F-U10/32-01D	1/8"	10-32 UNF	8	8.4	9.6	4.7	17.3	22.1	12.3	31	0.7	27.4	12.7	10								
AS12□1F-U10/32-03D	5/32"			9.3			21.3	26.1	11.4				16.5									
AS12□1F-U10/32-05D	3/16"			11.4			21.3	26.1	11.4				16.5									
AS12□1F-U10/32-07D	1/4"	12	18.3	23.1	11.7	13.5																
AS22□1F-N01-01SD	1/8"	NPT1/8	12.7	8.4	14.2	7.2	20.4	27.5	13.4	34.7	1.2	31.6	12.7	20								
AS22□1F-N01-03SD	5/32"			9.3			24	31.1					13.4		16.5							
AS22□1F-N01-05SD	3/16"			11.4			24	31.1					13.4		16.5							
AS22□1F-N01-07SD	1/4"			13.2			23.9	31	13.4				17	23								
AS22□1F-N01-09SD	5/16"			15.2			25.3	32.4	13.4				18.5	25								
AS22□1F-N02-03SD	5/32"			NPT1/4			17.5	10.4	18.5				7.2	25.2	34.4	17.7	40.2	1.2	34.7	16	40	
AS22□1F-N02-05SD	3/16"							12.8						25.2	34.5					16		
AS22□1F-N02-07SD	1/4"	15.2	25.2		34.5	16.5																
AS22□1F-N02-09SD	5/16"	17.9	27.2		36.4	17.7		17		42												
AS22□1F-N02-11SD	3/8"	18.3	35.3		44.5	18.3		21		44												
AS32□1F-N02-07SD	1/4"	NPT1/4	19		13.2	23		9.8		27.8	39.3	21.3		54.8	1.2	49.3				17	73	
AS32□1F-N02-09SD	5/16"				15.2					29.5	41									18.5		76
AS32□1F-N02-11SD	3/8"			17.9	29.5		41		18.5	76												
AS32□1F-N03-07SD	1/4"			NPT3/8	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								18.5		79
AS32□1F-N03-11SD	3/8"						17.9				29.5	41								18.5		79
AS42□1F-N04-11SD	3/8"						NPT1/2				23.8	17.9	28.6							12.4	33.6	47.9
AS42□1F-N04-13SD	1/2"	21.7	35.2			49.5		22				142										

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

**Dimensions**

**Universal type**

Applicable tubing O.D.  $\phi d$



**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	M5 x 0.8	8	8.4	9.6	9.3	4.7	10.8	19.8	17.5	28.7	31	0.7	27.4	12.7	10
AS13□1F-M5-04D	4			20.3					20.6	31.8						
AS13□1F-M5-06D	6			21.4					20.6	31.8						
AS23□1F-01-23SD	3.2	R1/8	12	8.4	14.2	9.3	7.2	13.1	24.4	17.5	30.9	34.7	1.2	31.6	12.7	21
AS23□1F-01-04SD	4			24.9					17.5	30.9						
AS23□1F-01-06SD	6			24.9					17.5	30.9						
AS23□1F-01-08SD	8	15.2	12.9	15.2	12.9	16.2	30.9	28.2	40.8	40.2	1.2	34.7	18.5	25		
AS23□1F-02-04SD	4	10.4	10.9	16.2	30.6	21.9	39.6									
AS23□1F-02-06SD	6	10.4	10.9	16.2	30.6	21.9	39.6									
AS23□1F-02-08SD	8	15.2	12.9	18.5	12.9	7.2	18.3	35.2	28.2	45.1	54.8	1.2	49.3	18.5	44	
AS23□1F-02-10SD	10	18.5	20.2	38.7	31	47.9										
AS33□1F-02-06SD	6	12.8	12.9	20.6	38.5	25.2	46.5									
AS33□1F-02-08SD	8	15.2	12.9	23	39.7	28.2	49.5	54.8	1.2	49.3	17	73	18.5	76		
AS33□1F-02-10SD	10	18.5	23	43.7	32.6	53.9										
AS33□1F-02-12SD	12	20.9	23	44.9	34.4	55.7										
AS33□1F-03-06SD	6	R3/8	19	12.8	12.9	20.6	9.8	20.6	38.5	25.2	45	52.6	1.2	47.4	17	78
AS33□1F-03-08SD	8			15.2					39.7	28.2	48					
AS33□1F-03-10SD	10			18.5					39.7	28.2	48					
AS33□1F-03-12SD	12	20.9	23	43.7	32.6	52.4	21	85	22	87	18.5	81	21	85		
AS43□1F-04-10SD	10	18.5	23	44.9	34.4	54.2										
AS43□1F-04-12SD	12	20.9	23	44.9	34.4	54.2										
AS43□1F-04-10SD	10	R1/2	24	18.5	16.2	25.8	49.4	32.6	57.1	62.9	1.2	55.8	21	145		
AS43□1F-04-12SD	12			20.9	19.4	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	Weight (g)
AS13□1F-U10/32-01D	1/8"	10-32 UNF	8	8.4	9.6	9.3	4.7	10.8	19.8	17.5	28.7	31	0.7	37.4	12.7	10
AS13□1F-U10/32-03D	5/32"			20.3					20.6	31.8						
AS13□1F-U10/32-05D	3/16"			11.4					21.3	23.3	34.5					
AS13□1F-U10/32-07D	1/4"	12	21.6	20.7	31.9	34.7	1.2	31.6	18.5	25	17	23	18.5	25		
AS23□1F-N01-01SD	1/8"	8.4	9.3	13.1	24.4										17.5	30.9
AS23□1F-N01-03SD	5/32"	9.3	24.9	17.5	30.9											
AS23□1F-N01-05SD	3/16"	NPT1/8	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-N01-07SD	1/4"			13.2	29.9	25.6	38.2									
AS23□1F-N01-09SD	5/16"			15.2	30.9	28.2	40.8									
AS23□1F-N02-03SD	5/32"	NPT1/4	17.5	10.4	10.9	16.2	30.6	21.9	39.6	54.8	1.2	49.3	17	73		
AS23□1F-N02-05SD	3/16"			11.4	31.1	23.9	41.6									
AS23□1F-N02-07SD	1/4"			13.2	32.6	25.6	42.5	40.2	1.2						34.7	
AS23□1F-N02-09SD	5/16"	15.2	35.2	28.2	45.1	21	80	21	85	22	87	18.5	76			
AS23□1F-N02-11SD	3/8"	17.9	38.7	31	47.9											
AS33□1F-N02-07SD	1/4"	13.2	38.7	25.6	46.9											
AS33□1F-N02-09SD	5/16"	NPT1/4	19	15.2	23	9.8	39.7	28.2	49.5	54.8	1.2	49.3	18.5	76		
AS33□1F-N02-11SD	3/8"			17.9	43.7	32.6	53.9									
AS33□1F-N03-07SD	1/4"			13.2	38.7	25.6	45.4									
AS33□1F-N03-09SD	5/16"	NPT3/8	19	15.2	23	9.8	39.7	28.2	48	52.6	1.2	47.4	18.5	81		
AS33□1F-N03-11SD	3/8"			17.9	43.7	32.6	52.4									
AS43□1F-N04-11SD	3/8"			17.9	43.7	32.6	52.4									
AS43□1F-N04-13SD	1/2"	NPT1/2	23.8	17.9	16.2	25.8	49.4	32.6	57.1	62.9	1.2	55.8	21	145		
AS43□1F-N04-13SD	1/2"			21.7	29	19.4	26.8	52	36.3						60.8	22

\* 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

RoHS



### Model

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

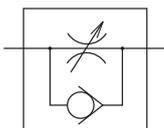
### Specifications

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

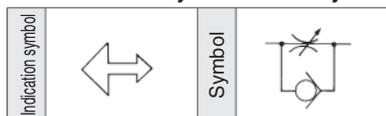
Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.  
Note 2) Brass parts are all electroless nickel plated.

### Flow Rate and Sonic Conductance

#### Symbol



#### Flow Direction Symbols on Body



Model	AS1001F	AS2001F	AS2051F	AS3001F	AS4001F						
Tubing O.D.	Metric size	Ø 3.2, Ø 4, Ø 6	Ø 4	Ø 6	Ø 6	Ø 8	Ø 6	Ø 8	Ø 10, Ø 12	Ø 10	Ø 12
	Inch size	Ø 1/8", Ø 5/32", Ø 3/16", Ø 1/4"	Ø 5/32"	Ø 3/16", Ø 1/4"	Ø 3/16"	Ø 1/4", Ø 5/16"	Ø 1/4"	Ø 5/16"	Ø 3/8"	Ø 3/8"	Ø 1/2"
Controlled flow	Flow rate (l/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
	Sonic Conductance (dm³/(s·bar))	0.3	0.4	0.7	0.9	1.4	1.3	2	2.8	3.2	4.2
Critical pressure ratio	Controlled flow	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Free flow	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25

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

### How to Order



Made to Order  
(For details, refer to page 11.)

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

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

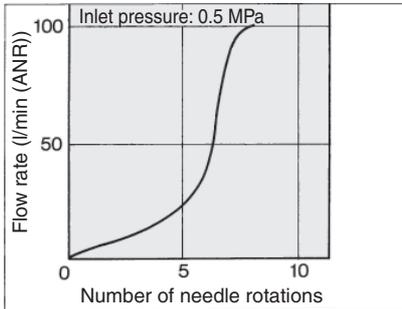
Made to Order  
Refer to page 11 for details.

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

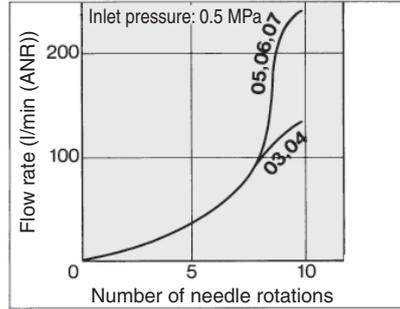
## Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

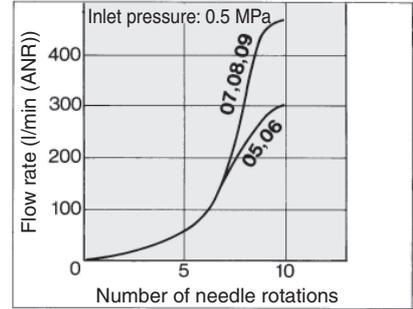
**AS1001F**



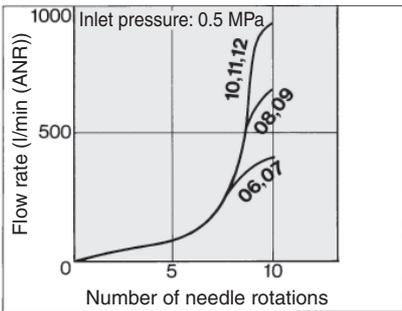
**AS2001F**



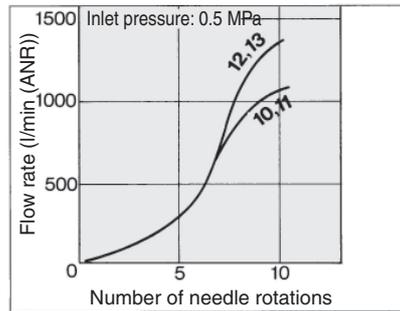
**AS2051F**



**AS3001F**

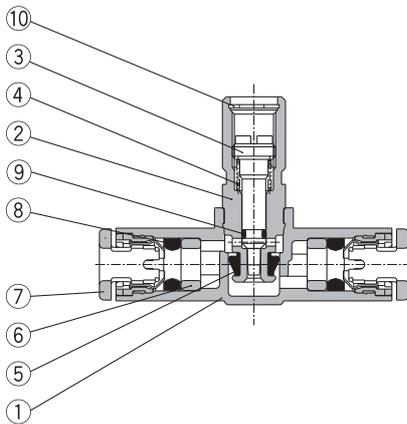


**AS4001F**

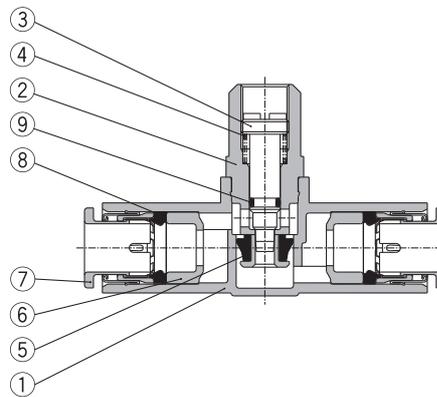


## Construction

**AS1001F**



**AS2001F to AS4001F**



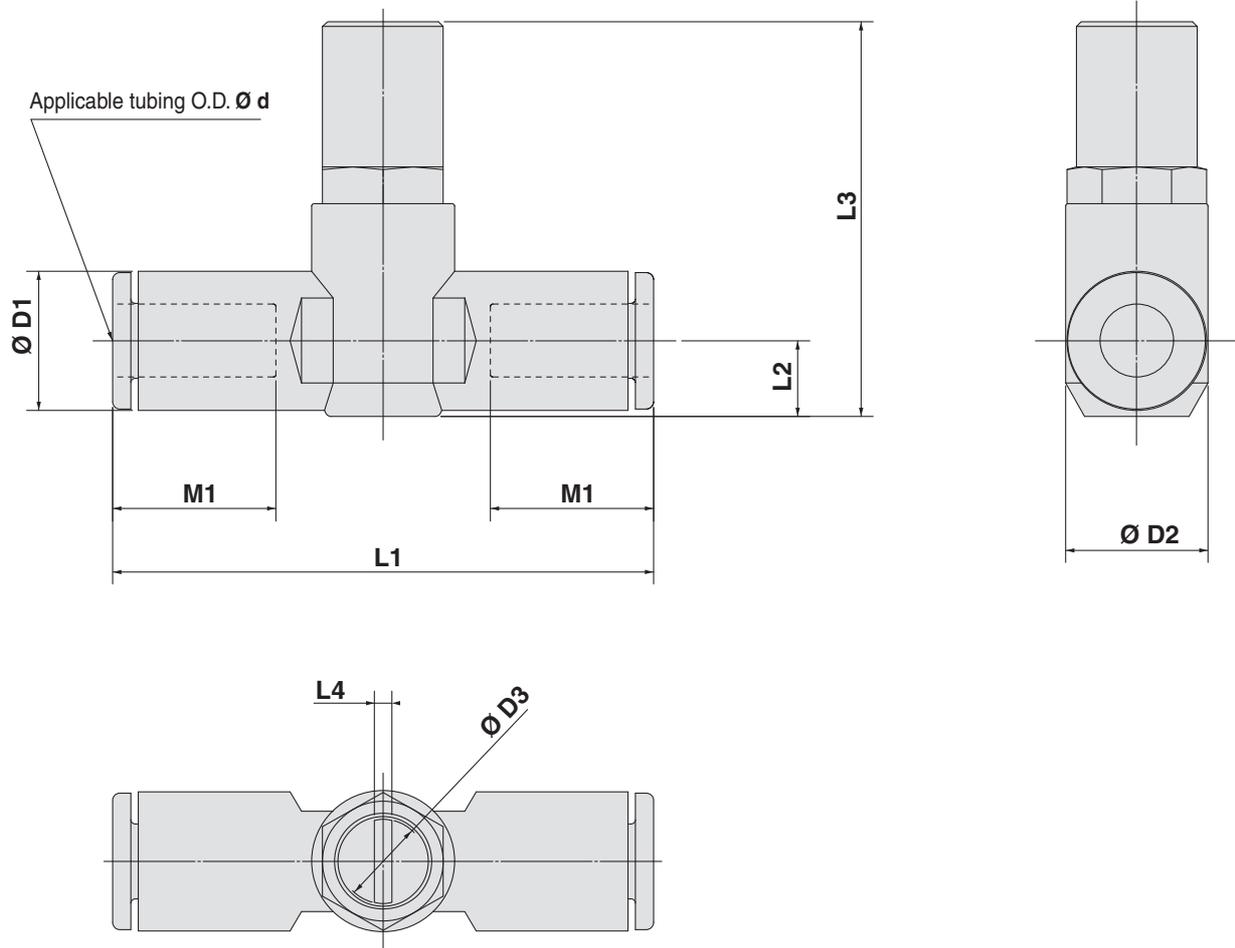
### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass	Electroless nickel plated
3	Needle	Brass	Electroless nickel plated
4	Spring	Steel wire <sup>(1)</sup>	
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	10.5	4.7	38	4.5	26	0.7	12.7	8
AS1001F-04D	4	9.3			39.2	5.2	26.6			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			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
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
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
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
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	Weight (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			9
AS1001F-05D	3/16"	11.4	12.3	7.2	48.7	6.2	27.7	1.2	13.5	14
AS1001F-07D	1/4"	12			40.7	5.2	31.9			11
AS2001F-03D	5/32"	9.3	12.3	7.2	40.7	5.2	31.9	1.2	13.5	15
AS2001F-05D	3/16"	11.4			50	6.2	32.8			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
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
AS3001F-07D	1/4"	13.2	27.6	12.4	59	7.4	45.2	1.2	21	56
AS3001F-09D	5/16"	15.2			64.4	8.2	46			18
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
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

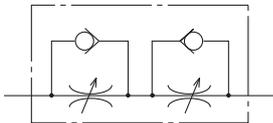


## Model

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 <sup>(1)</sup>	Nylon, Soft nylon, Polyurethane

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

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

### 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	
		Metric size	Ø 4, Ø 6	Ø 6, Ø 8	Ø 6	Ø 8, Ø 10	Ø 6	Ø 8	Ø 10, Ø 12	Ø 10	Ø 12	
Tubing O.D.	Metric size	Ø 1/8"	Ø 5/32"	Ø 3/16"	Ø 1/4"	—	Ø 1/4"	Ø 5/16"	Ø 3/8"	—	Ø 3/8"	
	Inch size	Ø 3/16"	Ø 1/4"	—	Ø 5/16"	Ø 3/8"	—	—	—	—	—	
Controlled flow	Flow rate (l/min (ANR))	75	175	295	350	500	600	700	1200	1300		
	Sonic conductance dm <sup>3</sup> /(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** **3** **3** **0** **F** - **01** - **06** **S** **D** - □

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

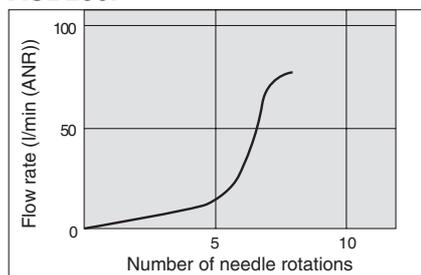
**Port size**

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

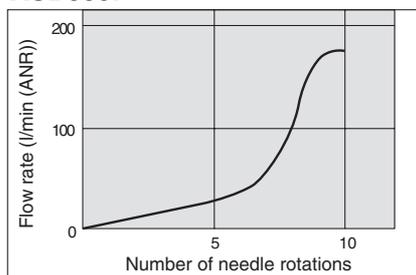
**Needle Valve/Flow Rate Characteristics**

Note) The flow rate characteristics are representative values.

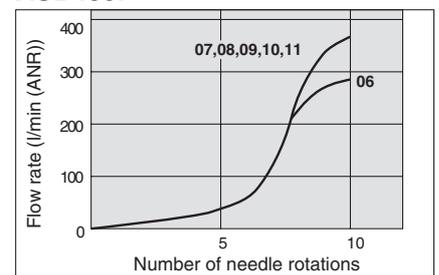
**ASD230F**



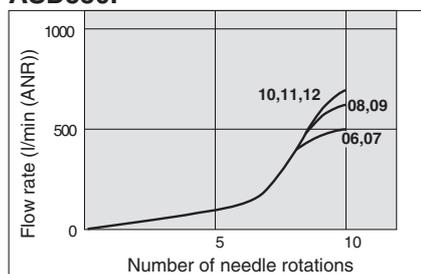
**ASD330F**



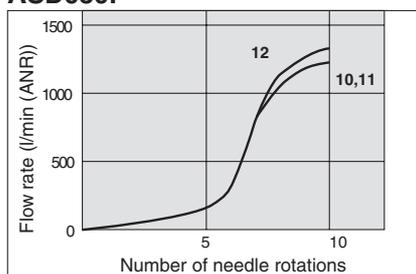
**ASD430F**



**ASD530F**



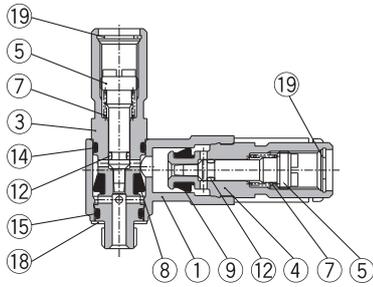
**ASD630F**



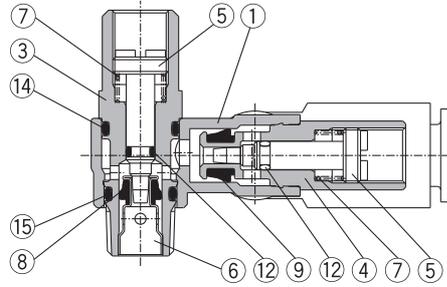
# ASD□□□F-D Series

## Construction

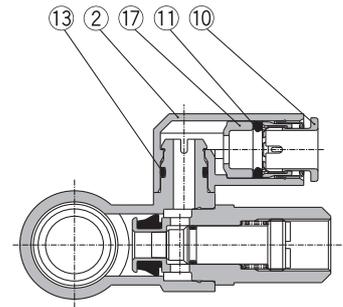
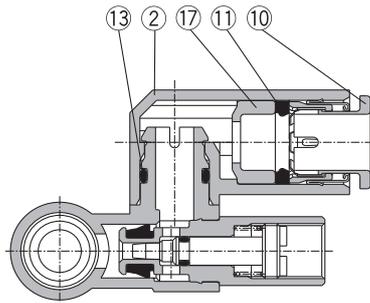
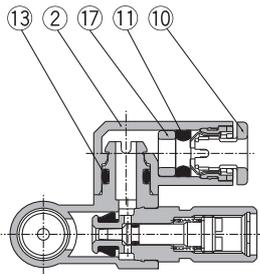
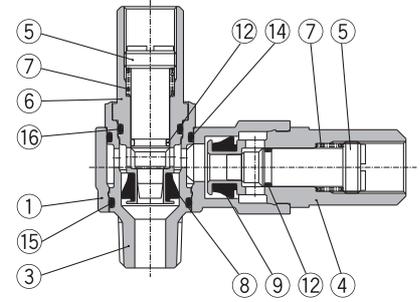
ASD230F



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 <sup>(1)</sup>	
8	U seal	HNBR	
9	U seal	HNBR	
10	Cassette	—	
11	Seal	NBR	
12	O-ring	NBR	

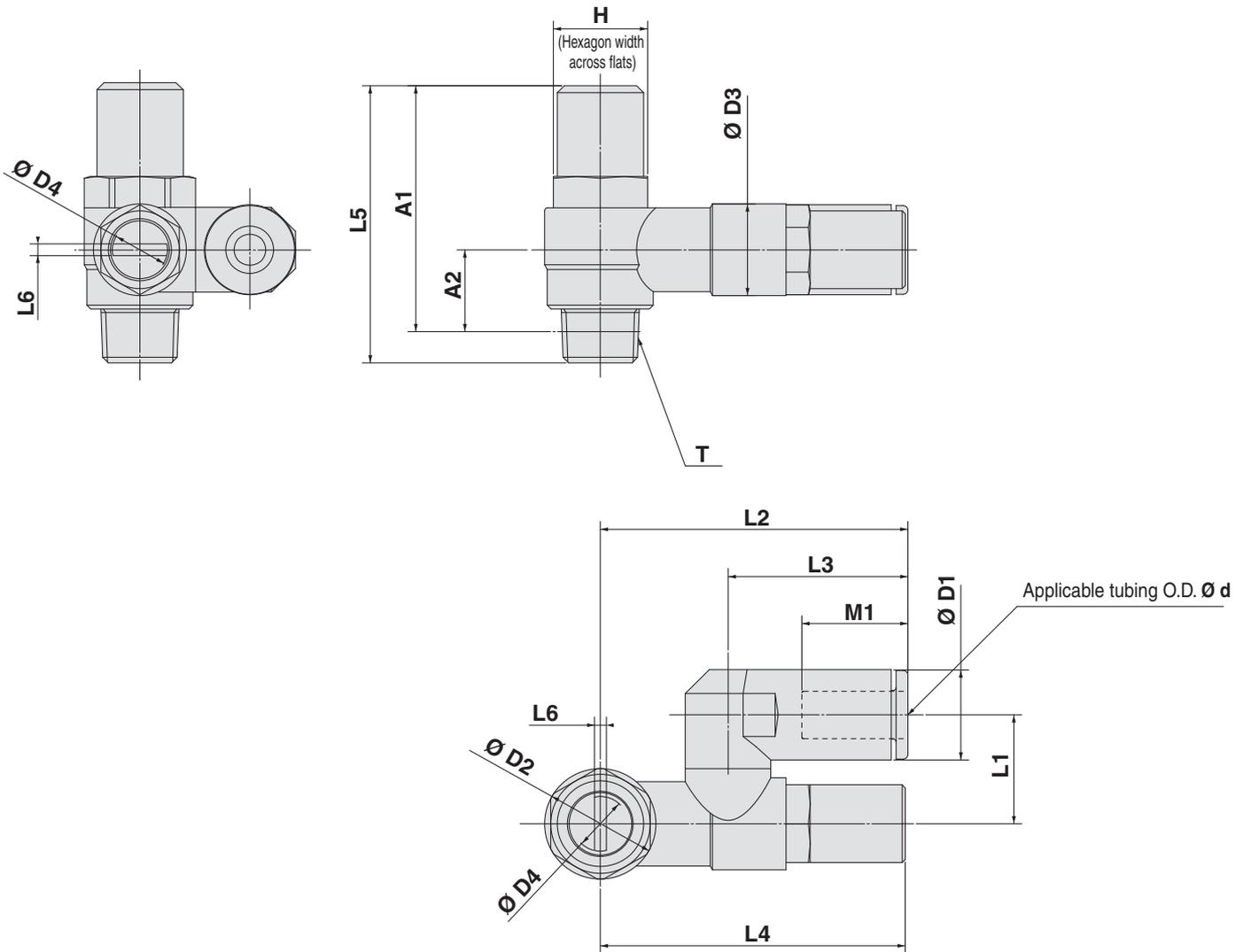
### Component Parts

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



### Metric Size

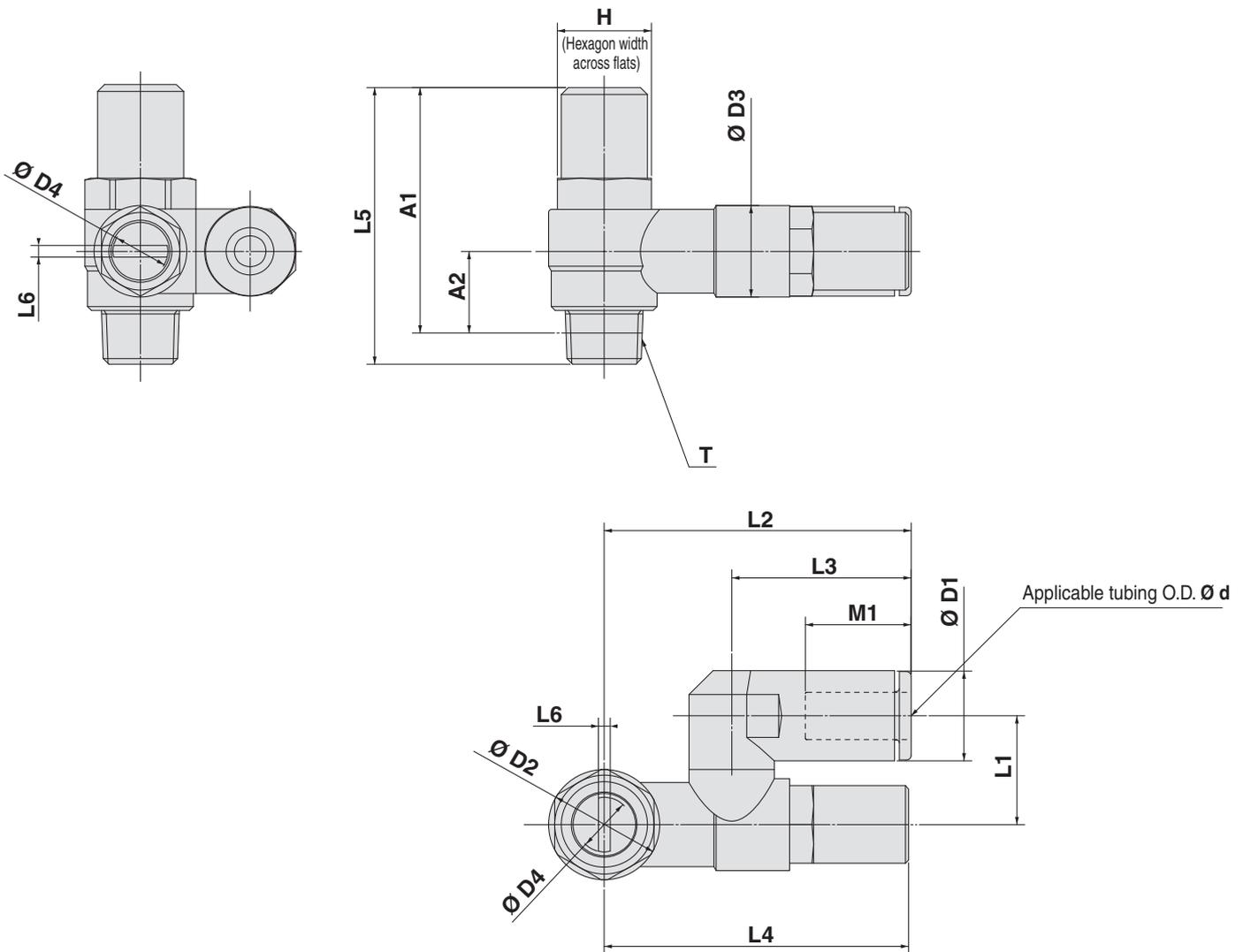
Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1	Weight (g)	
ASD230F-M5-04D	4	M5 x 0.8	8	9.3	9.6	10	4.7	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9	17	
ASD230F-M5-06D	6			11.6					20.6	18								
ASD330F-01-06SD	6	R1/8	12	11.6	14.2	11.8	7.2	14	38.5	22.9	38.9	34.7	1.2	31.6	10.6	13.7	36	
ASD330F-01-08SD	8			15.2					28.2	38.2							18.5	38
ASD430F-02-06SD	6	R1/4	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			18.5					31	41.7							21	77
ASD530F-02-06SD	6	R1/4	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					28.2	53.7							18.5	109
ASD530F-02-10SD	10			18.5					32.6	53.7							21	113
ASD530F-02-12SD	12			20.9					34.4	53.7							22	116
ASD530F-03-06SD	6	R3/8	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					28.2	53.7							18.5	135
ASD530F-03-10SD	10			18.5					32.6	53.7							21	140
ASD530F-03-12SD	12			20.9					34.4	53.7							22	143
ASD630F-04-10SD	10	R1/2	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					34.4	69.1							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"	NPT1/8	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"	NPT1/4	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												18.5	
ASD430F-N02-11SD	3/8"			18.5												21	
ASD530F-N02-07SD	1/4"	NPT1/4	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												33	
ASD530F-N02-11SD	3/8"			18.5												21	
ASD530F-N03-07SD	1/4"	NPT3/8	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												18.5	
ASD530F-N03-11SD	3/8"			18.5												21	
ASD630F-N04-11SD	3/8"			NPT1/2												23.8	

\* 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	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.

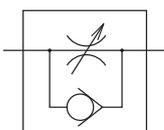
Note 2) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the metal body.

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	R1/8	Rc1/8
02	R1/4	Rc1/4 <small>Note 1)</small>
		Rc3/8 <small>Note 2)</small>
03	R3/8	Rc3/8
04	R1/2	Rc1/2
F01	R1/8	G1/8
F02	R1/4	G1/4 <small>Note 1)</small>
		G3/8 <small>Note 2)</small>
F03	R3/8	G3/8
F04	R1/2	G1/2
U10/32	10-32 UNF	10-32 UNF
N01	NPT1/8	NPT1/8
N02	NPT1/4	NPT1/4 <small>Note 1)</small>
		NPT3/8 <small>Note 2)</small>
N03	NPT3/8	NPT3/8
N04	NPT1/2	NPT1/2

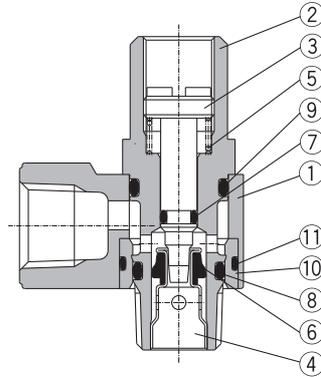
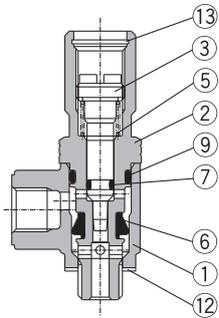
Note 1) AS22□0-□02

Note 2) AS32□0-□02

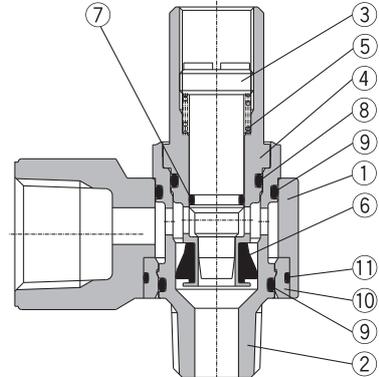
# AS□2□0-D Series

## Construction

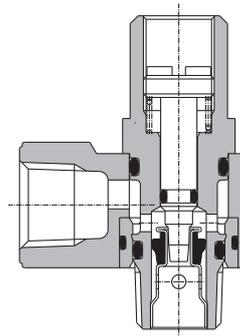
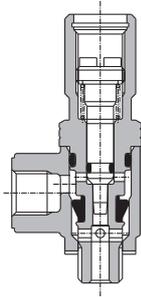
Meter-out  
M5 type  
U10/32 type



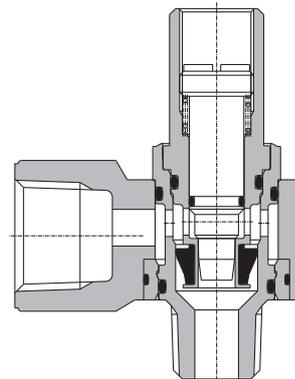
AS3200-02-D



Meter-in  
M5 type  
U10/32 type



AS3210-02-D



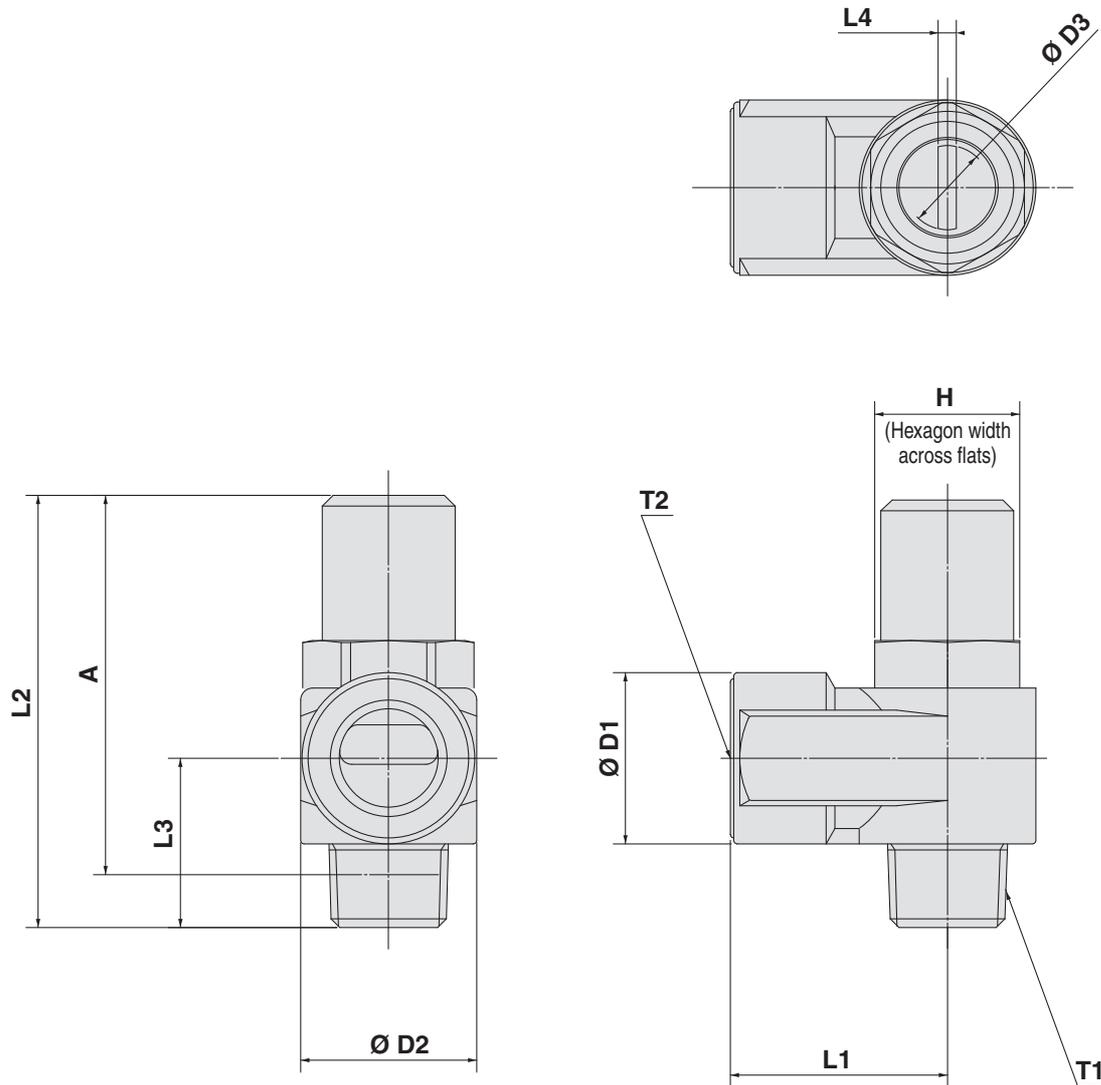
### Component Parts

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 <sup>(1)</sup>	
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	R1/8	Rc1/8	12	14.3	14.6	7.2	18	34.7	13.2	1.2	31.6	33
AS22□0-F01-SD		G1/8										
AS22□0-N01-SD	NPT1/8	NPT1/8	12.7	18	19.5	7.2	27.2	40.2	17.5	1.2	36.7	72
AS22□0-02-SD	R1/4	Rc1/4										
AS22□0-F02-SD		G1/4	17	19	22.5	24.3	9.8	30	54.8	21.9	1.2	49.3
AS22□0-N02-SD	NPT1/4	NPT1/4										
AS32□0-02-SD	R1/4	Rc3/8	19	22.5	24.3	9.8	30	52.6	19.7	1.2	47.4	128
AS32□0-F02-SD		G3/8										
AS32□0-N02-SD	NPT1/4	NPT3/8	19	22.5	24.3	9.8	30	52.6	19.7	1.2	47.4	128
AS32□0-03-SD	R3/8	Rc3/8										
AS32□0-F03-SD		G3/8	19	27.5	28.5	12.4	38.5	62.9	25.8	1.2	55.8	222
AS32□0-N03-SD	NPT3/8	NPT3/8										
AS42□0-04-SD	R1/2	Rc1/2	24	27.5	28.5	12.4	38.5	62.9	25.8	1.2	55.8	222
AS42□0-F04-SD		G1/2										
AS42□0-N04-SD	NPT1/2	NPT1/2	23.8	27.5	28.5	12.4	38.5	62.9	25.8	1.2	55.8	222

\* Reference thread dimensions after installation.

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