

# Dual Speed Controller with One-touch Fitting

# ASD Series



Enables bi-directional flow control. Unrestricted 360° tube mounting direction.



## Model

Part no.	Port size	Applicable tubing O.D.													
		Metric size					Inch size								
		ø4	ø6	ø8	ø10	ø12	ø1/8"	ø5/32"	ø3/16"	ø1/4"	ø5/16"	ø3/8"			
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

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
Option	Round lock nut

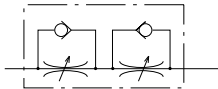
Note 1) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.

(Refer to pages 464 and 465 for details.)

Note 2) Brass parts are all electroless nickel plated.

The lock nut on the meter-out type is zinc chromated (the round lock nut is electroless nickel plated), while the meter-in type is black zinc chromate plated.

### Symbol



### 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	ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12	
Tubing O.D.	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	75	175	295	350	500	600	700	1200	1300	
Free flow	Flow rate L/min (ANR)	0.21	0.49	0.82	0.97	1.4	1.7	1.9	3.3	3.6	
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.

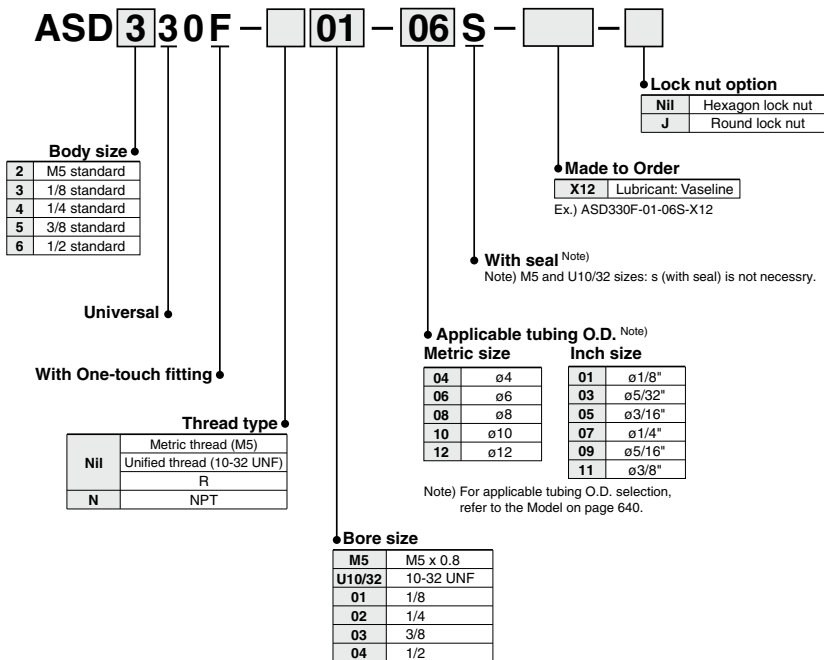
Made to Order



Lubricant: Vaseline

X12

## How to Order

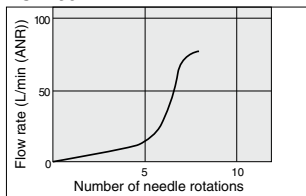


- AS-F
- TMH
- ASD**
- AS
- AS-FE
- KE
- AS-FG
- AS-FP
- AS-FM
- AS-D
- AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASR
- ASQ

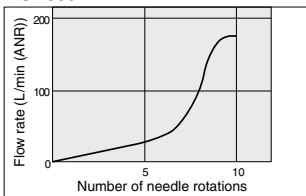
### Needle Valve/Flow Rate Characteristics (Inlet Pressure: 0.5 MPa)

Note) The flow rate characteristics are representative values.

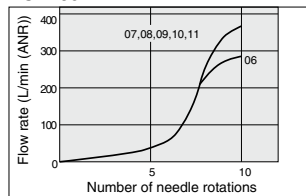
**ASD230F**



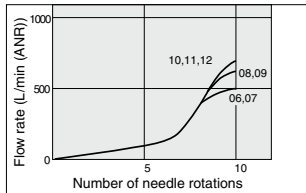
**ASD330F**



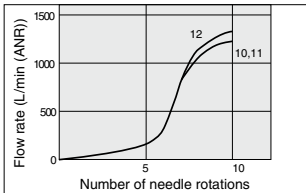
**ASD430F**



**ASD530F**



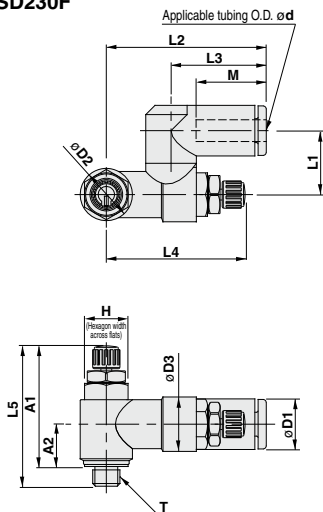
**ASD630F**



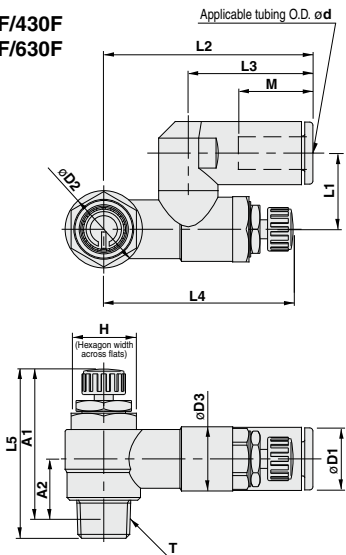
# ASD Series

## Dimensions: Metric Size

**ASD230F**



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



### Metric Size

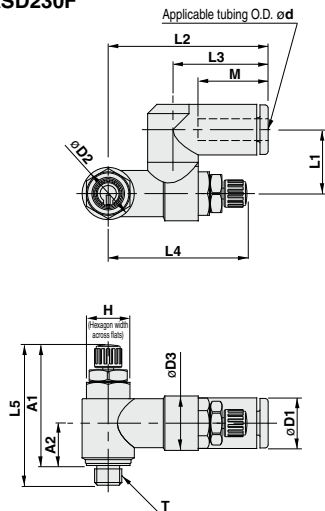
Model	d	T	H	D1	D2	D3	L1	L2	L3	L4 <sup>(1)</sup>		L5 <sup>(1)</sup>		A1 <sup>(2)</sup>		A2 <sup>(2)</sup>	M	Weight (g)
										Max.	Min.	Max.	Min.	Max.	Min.			
ASD230F-M5-04	4	M5 x 0.8	8	9.3	9.6	10	11.7	29.4	17.5	28.3	25.5	28.6	25.8	25	22.2	7.8	12.9	12
ASD230F-M5-06	6			11.6				20.6	13.7								13	
ASD330F-01-06S	6	R 1/8	12	11.6	14.2	11.8	14	38.5	22.9	39.6	34.6	35.2	30.2	32.1	27.1	10.6	13.7	29
ASD330F-01-08S	8			15.2				28.2	18.5								31	
ASD430F-02-06S	6	R 1/4	17	12.8	18.5	15	18	43.5	25.2	41.7	36.7	39.9	34.9	34.4	29.4	11	17	53
ASD430F-02-08S	8			15.2				28.2	18.5								31	
ASD430F-02-10S	10			18.5			19.7	49.3	31								21	58
ASD530F-02-06S	6	R 1/4	19	12.8	23	19.8	20.3	48.3	25.2	46.9	41.9	48.3	43.3	42.8	37.8	15.4	17	74
ASD530F-02-08S	8			15.2				28.2	18.5								31	
ASD530F-02-10S	10			18.5			23.1	54.1	32.6								21	80
ASD530F-02-12S	12			20.9				55.9	34.4								22	83
ASD530F-03-06S	6	R 3/8	19	12.8	23	19.8	20.3	48.3	25.2	46.9	41.9	45.4	40.4	40	35	14	17	74
ASD530F-03-08S	8			15.2				28.2	18.5								31	
ASD530F-03-10S	10			18.5			23.1	54.1	32.6								21	98
ASD530F-03-12S	12			20.9				55.9	34.4								22	101
ASD630F-04-10S	10	R 1/2	24	18.5	28.6	26.5	25.9	64.3	32.6	64.8	57.3	56.7	49.2	49.6	42.1	18.6	21	177
ASD630F-04-12S	12			20.9				34.4	66.1								34.4	22

Note 1) Reference dimensions

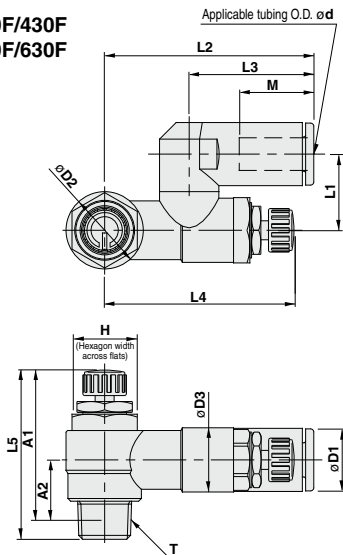
Note 2) Reference dimensions of M5 x 0.8, R threads after installation.

## Dimensions: Inch Size

### ASD230F



### ASD330F/430F ASD530F/630F



## Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4 <sup>(1)</sup>		L5 <sup>(1)</sup>		A1 <sup>(2)</sup>		A2 <sup>(2)</sup>	M	Weight (g)
										Max.	Min.	Max.	Min.	Max.	Min.			
ASD230F-U10/32-01	1/8"			8.4				29.4	17.5								12.9	12
ASD230F-U10/32-03	5/32"	10-32	8	9.3	9.6	10	11.7			28.3	25.5	28.6	25.8	25	22.2	7.8		13
ASD230F-U10/32-05	3/16"	UNF		11.4				35.2	23.3								16.5	15
ASD230F-U10/32-07	1/4"			12				32.6	20.7								13.5	13
ASD330F-N01-05S	3/16"			11.6			14	39.5	23.9	39.6	34.6						16.5	30
ASD330F-N01-07S	1/4"	NPT 1/8	12.7	13.2	14.2	11.8	15.8	42.2	25.6	38.9	33.9	35.2	30.2	32	27	10.6	17	31
ASD330F-N01-09S	5/16"			15.2				44.8	28.2								18.5	
ASD430F-N02-07S	1/4"			13.2			18	43.9	25.6	41.7	36.7	39.9	34.9	34.6	29.6	11	17	55
ASD430F-N02-09S	5/16"	NPT 1/4	17.5	15.2	18.5	15	19.7	46.5	28.2								18.5	
ASD430F-N02-11S	3/8"			18.5				49.3	31								21	62
ASD530F-N02-07S	1/4"			13.2			20.3	48.7	25.6	46.9	41.9	48.3	43.3	43	38	15.4	17	76
ASD530F-N02-09S	5/16"	NPT 1/4	19	15.2	23	19.8	23.1	51.3	28.2								18.5	
ASD530F-N02-11S	3/8"			18.5				54.1	32.6								21	84
ASD530F-N03-07S	1/4"			13.2			20.3	48.7	25.6	46.9	41.9	45.4	40.4	40.3	35.3	14	17	93
ASD530F-N03-09S	5/16"	NPT 3/8	19	15.2	23	19.8	23.1	51.3	28.2								18.5	
ASD530F-N03-11S	3/8"			18.5				54.1	32.6								21	102
ASD630F-N04-11S	3/8"	NPT 1/2	23.8	18.5	28.6	26.5	25.9	64.3	32.6	64.8	57.3	56.7	49.2	49.6	42.1	18.6	21	180

Note 1) Reference dimensions

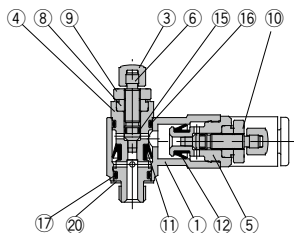
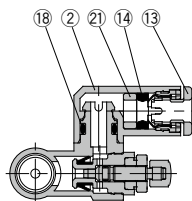
Note 2) Reference dimensions of U10/32 and NPT threads after installation.

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

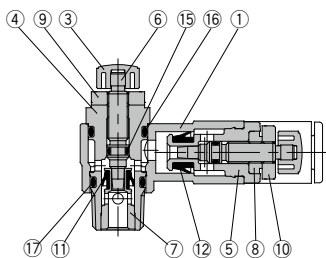
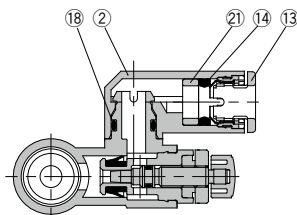
# ASD Series

## Construction

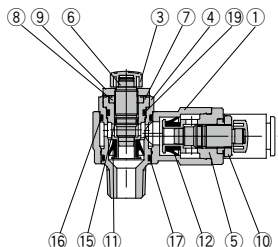
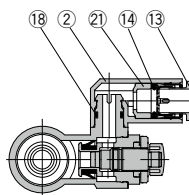
### ASD230F



### ASD330F/430F ASD530F/630F



### ASD530F-02



### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Handle	PBT	
4	Body B	Brass	Electroless nickel plated
5	Body B	Brass	Electroless nickel plated
6	Needle	Brass	Electroless nickel plated
7	Seat ring	Brass	Electroless nickel plated
8	Needle guide	Brass	Electroless nickel plated
9	Lock nut	Steel <sup>(1)</sup>	Zinc chromate plated <sup>(2)</sup>
10	Lock nut	Steel <sup>(1)</sup>	Black zinc chromate plated

Note 1) The material of the lock nut option-J (round type) is brass.  
However, note that only the ASD330 and ASD430F use steel.  
Note 2) The surface treatment of the lock nut option-J (round type) is electroless nickel plated.

### Component Parts

No.	Description	Material	Note
11	U seal	HNBR	
12	U seal	HNBR	
13	Cassette	—	
14	Seal	NBR	
15	O-ring	NBR	
16	O-ring	NBR	
17	O-ring	NBR	
18	O-ring	NBR	
19	O-ring	NBR	
20	Gasket	Stainless steel, NBR	ASD230F only
21	Spacer	—	



# ASD Series/Specific Product Precautions

Be sure to read this before handling the products.  
Refer to back page 50 for Safety Instructions and pages 543 to 546 for Flow Control Equipment Precautions.

## Design/Selection

### ⚠ Caution

#### 1. Single acting cylinder

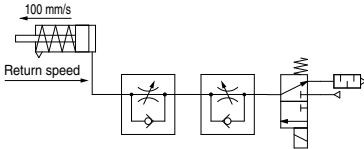
When controlling a single acting cylinder, the cylinder's return speed will differ depending on the operating conditions. Operate referring to the maximum return speed shown in the table below.

Speed Controller	Cylinder	Solenoid valve	Tubing	Silencer	Maximum return speed (mm/s)		
					100	200	300
ASD230F	CJ2	SYJ500	TU0604 1m	AN110-01	ø6		
					ø10		
					ø16		
ASD330F	CM2	SYJ700	TU0604 1m	AN110-01	ø20		
					ø25		
					ø32		

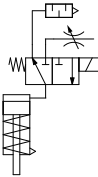
\* Values at 0.5 MPa and 20°C.

<Operating conditions>

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



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



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

AS-F
TMH
<b>ASD</b>
AS
AS-FE
KE
AS-FG
AS-FP
AS-FM
AS-D
AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASR
ASQ