

# Speed Exhaust Controller

# Series ASV

Size: M3, M5, 1/8, 1/4, 3/8

## How to Order

**ASV 3 1 0 F - 01 - 06 S K -**

**Speed exhaust controller**

**Body size**

1	M3 standard
2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard

**Type**

1	Tee
2	Elbow (1)

Note 1) "Elbow": M3, M5 only

**Port size**

M3	M3 x 0.5
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2

**Thread type**

Nil	M3, M5, U10/32
	R
N	NPT

**Option**

Nil	None
C	With spatter cover
K	Hexagonal lock nut

\* Option should be indicated in order of C and K.  
Available only for ASV310F, 410F and 510F.

**Seal**

Symbol	Seal	Applicable model
Nil	None	ASV120F/220F
S	With seal	ASV310F/410F/510F

**Applicable tubing O.D.**

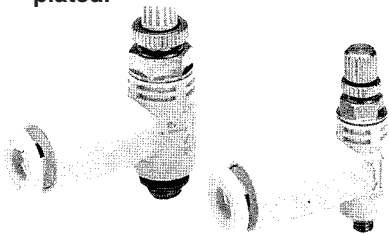
Metric size		Inch size	
04	ø4	03	ø5/32"
06	ø6	07	ø1/4"
08	ø8	09	ø5/16"
10	ø10	11	ø3/8"
12	ø12	13	ø1/2"

**Made to Order** X12 Lubricant: Vaseline

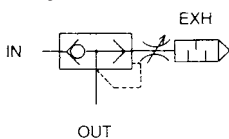
With One-touch fitting

Integration of a quick exhaust valve and an exhaust restrictor permits high-speed cylinder operation.

- The effective area is two times larger. (In comparison with control by speed controller)  
Applicable model: ASV310F, ASV410F, ASV510F
- Silencer and One-touch fittings are installed.
- Flame resistant resin body as standard. (UL standard V-0)  
Applicable model: ASV310F, ASV410F, ASV510F
- Brass parts are all electroless nickel plated.



JIS Symbol



**Made to Order**



**Lubricant: Vaseline**

**X12**

Ex.) ASV120F-M3-04-X12

Note) Only for ASV120F and ASV220F

## Model

Model	Port size	Applicable tubing O.D. (mm)										Effective area (mm <sup>2</sup> )	
		4	6	8	10	12	5/32"	1/4"	5/16"	3/8"	1/2"	IN → OUT	OUT → EXH.
ASV120F-M3	M3 x 0.5	●										0.3	0.3
ASV220F-M5	M5 x 0.8	●	●									1.3	1.3
ASV310F-01	R 1/8		●	●								7	8
ASV310F-02	R 1/4		●	●								7	8
ASV410F-01	R 1/8			●	●							13.5	14
ASV410F-02	R 1/4			●	●							13.5	14
ASV410F-03	R 3/8			●	●							13.5	14
ASV510F-02	R 1/4				●	●						23	27
ASV510F-03	R 3/8				●	●						27	29
ASV510F-04	R 1/2				●	●						27	29
ASV220F-U10/32	10-32 UNF						●	●				1.3	1.3
ASV310F-N01	NPT 1/8							●	●			7	8
ASV310F-N02	NPT 1/4							●	●			7	8
ASV410F-N01	NPT 1/8								●	●		13.5	14
ASV410F-N02	NPT 1/4								●	●		13.5	14
ASV410F-N03	NPT 3/8								●	●		13.5	14
ASV510F-N02	NPT 1/4									●	●	23	27
ASV510F-N03	NPT 3/8									●	●	27	29
ASV510F-N04	NPT 1/2									●	●	27	29

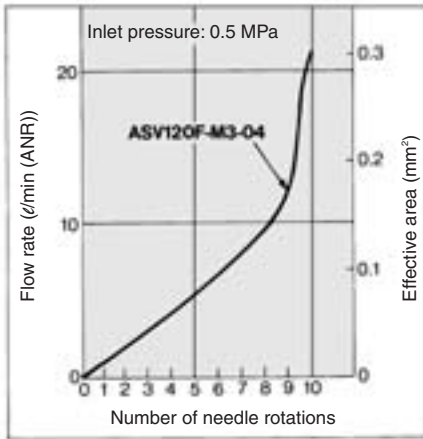
## Specifications

Series	ASV120F	ASV220F	ASV310F/410F	ASV510F
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	12 turns	15 turns
Applicable tubing material <sup>Note)</sup>	Nylon, Soft nylon, Polyurethane			
Option	Hexagonal lock nut		With spatter cover, Hexagonal lock nut	

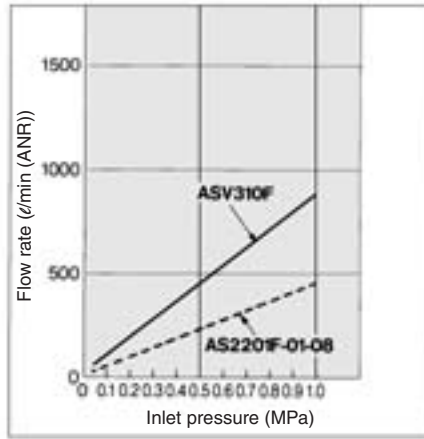
Note) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 371 and 372 for details.)

## Needle Valve/Flow Characteristics

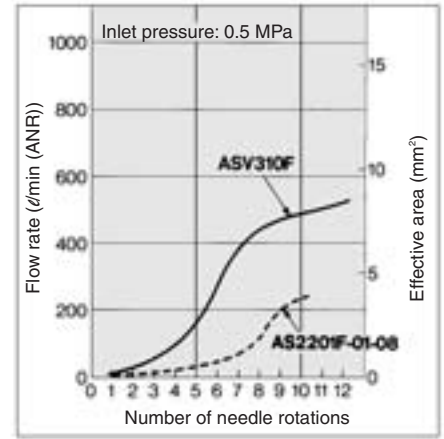
**ASV120F**  
OUT-Exhaust Flow



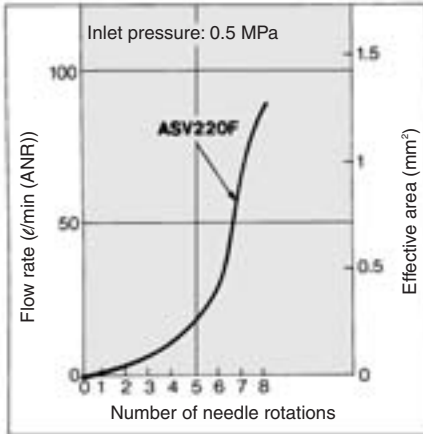
**ASV310F**  
IN-OUT Flow



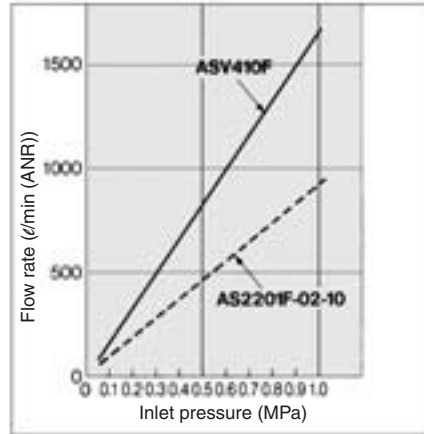
**OUT-Exhaust Flow**



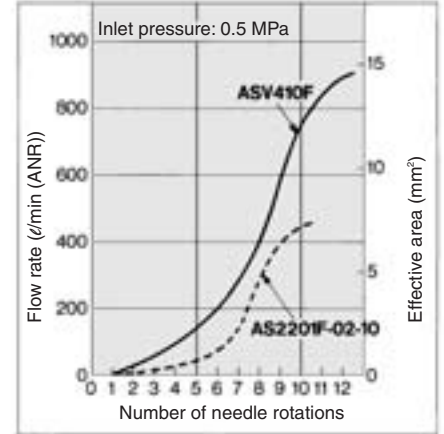
**ASV220F**  
OUT-Exhaust Flow



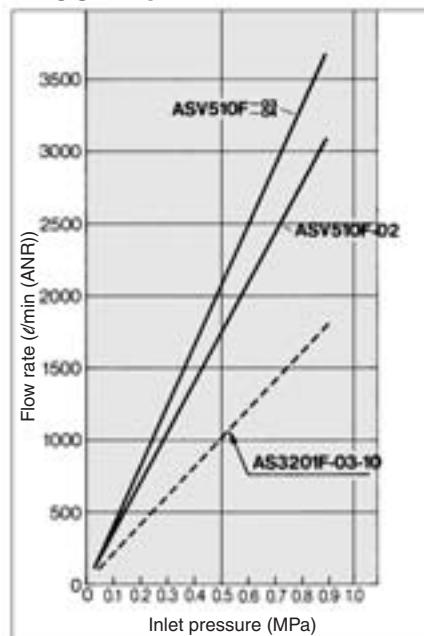
**ASV410F**  
IN-OUT Flow



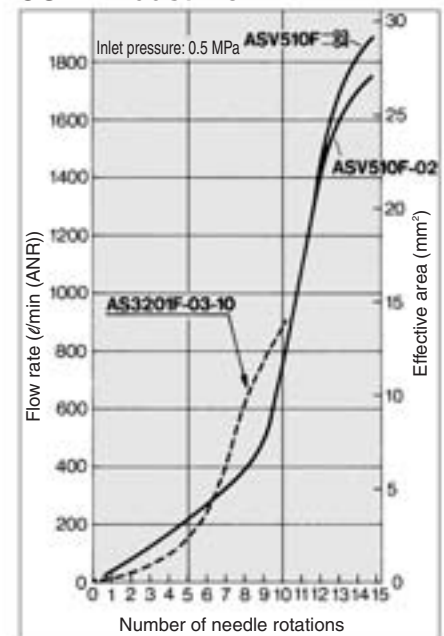
**OUT-Exhaust Flow**



**ASV510F**  
IN-OUT Flow



**OUT-Exhaust Flow**

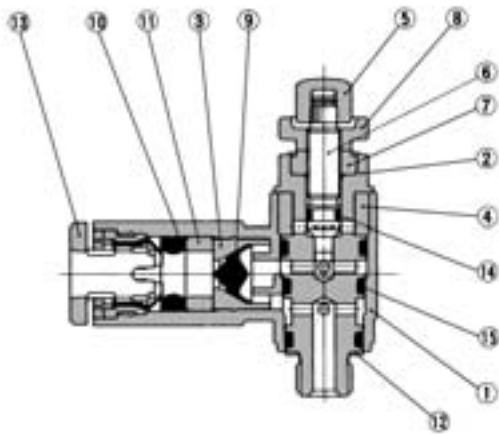


- AS
- ASP
- ASN
- AQ
- ASV**
- AK
- VCHC
- ASS
- ASR
- ASQ
- KE
- TMH

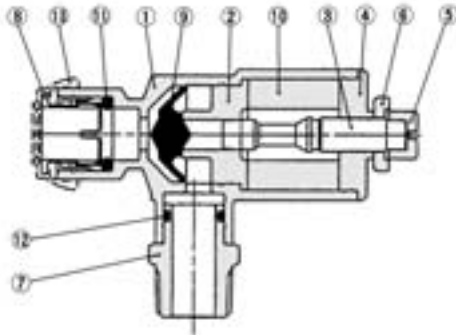
# Series ASV

## Construction

### ASV120F/220F



### ASV310F/410F/510F



### Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Body B	Brass <sup>(1)</sup>	Electroless nickel plated
3	Seat ring	Brass	Electroless nickel plated
4	Silencer	PVA sponge	
5	Handle	PBT	M3 type: Electroless nickel plated brass
6	Needle	Brass	Electroless nickel plated
7	Needle guide	Brass	Electroless nickel plated
8	Lock nut	Brass	Electroless nickel plated
9	Valve	HNBR	
10	Seal	NBR	
11	Spacer	POM	
12	Gasket	Stainless steel/NBR	M3 port : PVC
13	Cassette	—	
14	O-ring	NBR	
15	O-ring	NBR	

Note 1) M3 type is made of stainless steel.

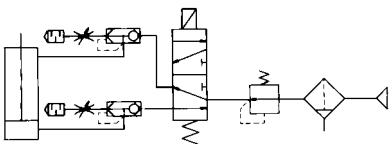
### Component Parts

No.	Description	Material	Note
1	Body A	PBT	UL94V-0
2	Seat ring	Aluminum alloy	Chromate plated
3	Needle	Aluminum alloy	Electroless nickel plated
4	Needle guide	Aluminum alloy	Electroless nickel plated
5	Handle	Brass	Electroless nickel plated
6	Lock nut	Brass <sup>(1)</sup>	Electroless nickel plated
7	Needle guide	Brass	Electroless nickel plated
8	Cassette	—	
9	Valve	Urethane rubber	
10	Silencer	PVA sponge	
11	Seal	NBR	
12	O-ring	NBR	
13	Cover	Flame proof CR	UL94V-0

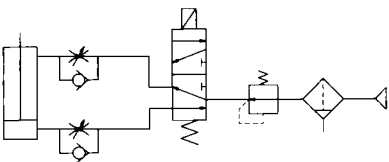
Note 1) ASV310F, ASV410F types are made of steel.

## Circuit

### Circuit of speed exhaust controller



### Controlled by speed controller



## Specific Product Precautions

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.

### Design/Selection

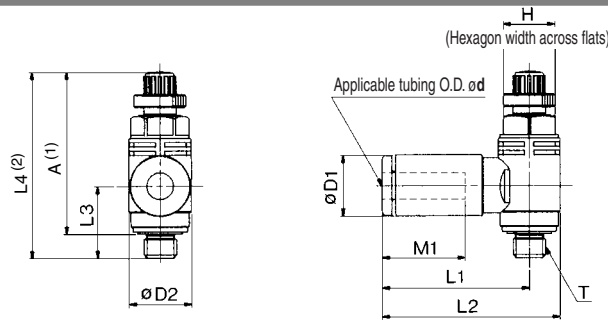
## Caution

1. In the following cases, insufficient exhaust or vibration may cause noise.

- With residual pressure or back pressure on the IN side.
- When the differential pressure between the IN and OUT sides is smaller than the minimum operating pressure.
- When the effective area of the IN side piping of ASV, or the solenoid valve, is smaller than ASV.

## Dimensions

### ASV120F/220F



#### Metric Size

Model	Applicable tubing O.D. ød	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Mass (g)
									Max.	Min.	Max.	Min.		
ASV120F-M3-04	4	M3 x 0.5	5.5	9.3	7.2	21.4	25	9.8	28.6	26.1	25.8	23.3	12.7	5
ASV220F-M5-04	4	M5 x 0.8	8	9.3	9.6	22.8	27.6	11.1	31.4	28.6	27.7	24.9	12.7	8
ASV220F-M5-06	6	M5 x 0.8	8	11.6	9.6	23.6	28.4	11.1	31.4	28.6	27.7	24.9	13.5	9

Note 1) Reference dimensions of M thread after installation. Note 2) L4: Reference dimensions

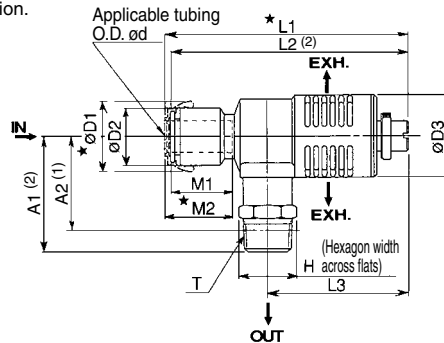
#### Inch Size

Model	Applicable tubing O.D. ød	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Mass (g)
									Max.	Min.	Max.	Min.		
ASV220F-U10/32-03	5/32"	10-32UNF	8	9.3	9.6	22.8	27.6	11.1	31.4	28.6	27.7	24.9	12.7	8
ASV220F-U10/32-07	1/4"	10-32UNF	8	12	9.6	23.6	28.4	11.1	31.4	28.6	27.7	24.9	13.7	9

Note 1) Reference "U10/32" thread dimensions after installation.

Note 2) L2: Reference dimensions

### ASV310F/410F/510F



#### Metric Size

Model	Applicable tubing O.D. ød	T	H	D1	D2	D3	L1*		L2		L3		A1(2)	A2	M1	M2*	Mass (g)
							Max.	Min.	Max.	Min.	Max.	Min.					
ASV310F-01-06S	6	R1/8	10	16.8	12.8	17.6	71.9	65.9	69.9	63.9	45.8	39.8	26.5	23.4	17	19	22
ASV310F-01-08S	8			19.3	15.2		73.8	67.8	71.8	65.8					19	21	23
ASV310F-02-06S	6	R1/4	14	16.8	12.8	17.6	71.9	65.9	69.9	63.9	45.8	39.8	30.9	25.4	17	19	30
ASV310F-02-08S	8			19.3	15.2		73.8	67.8	71.8	65.8					19	21	31
ASV410F-01-08S	8	R1/8	12	19.3	15.2	24	83.1	75.6	81.1	73.6	52.8	45.3	29.8	26.7	19	21	39
ASV410F-01-10S	10			23.3	18.5		85.2	77.7	83.2	75.7					21	23	41
ASV410F-02-08S	8	R1/4	14	19.3	15.2	24	83.1	75.6	81.1	73.6	52.8	45.3	34.2	28.7	19	21	47
ASV410F-02-10S	10			23.3	18.5		85.2	77.7	83.2	75.7					21	23	49
ASV410F-03-08S	8	R3/8	17	19.3	15.2	24	83.1	75.6	81.1	73.6	52.8	45.3	35.6	30.4	19	21	61
ASV410F-03-10S	10			23.3	18.5		85.2	77.7	83.2	75.7					21	23	63
ASV510F-02-10S	10	R1/4	17	23.3	18.5	30	90.2	84.2	88.2	82.2	55.6	49.6	39.3	33.8	21	23	69
ASV510F-02-12S	12			25.7	20.9		91.8	85.8	89.8	83.8					22	24	74
ASV510F-03-10S	10	R3/8	17	23.3	18.5	30	90.2	84.2	88.2	82.2	55.6	49.6	40.7	35.5	21	23	73
ASV510F-03-12S	12			25.7	20.9		91.8	85.8	89.8	83.8					22	24	78
ASV510F-04-10S	10	R1/2	22	23.3	18.5	30	90.2	84.2	88.2	82.2	55.6	49.6	44.9	37.6	21	23	95
ASV510F-04-12S	12			25.7	20.9		91.8	85.8	89.8	83.8					22	24	100

\* Dimension with cover Note 1) Reference dimension of "R" thread after installation. Note 2) A1: Reference dimensions

#### Inch Size

Model	Applicable tubing O.D. ød	T	H	D1*	D2	D3	L1*		L2		L3		A1(2)	A1(1)	M1	M2*	Mass (g)
							Max.	Min.	Max.	Min.	Max.	Min.					
ASV310F-N01-07	1/4"	NPT1/8	12.7	17.2	13.2	17.6	73	67	71	65	45.8	39.8	26.5	23.4	16.8	18.8	22
ASV310F-N01-09	5/16"			19.3	15.2		73.8	67.8	71.8	65.8					19	21	23
ASV310F-N02-07	1/4"	NPT1/4	14.3	17.2	13.2	17.6	73	67	71	65	45.8	39.8	30.9	25.4	16.8	18.8	30
ASV310F-N02-09	5/16"			19.3	15.2		73.8	67.8	71.8	65.8					19	21	31
ASV410F-N01-09	5/16"	NPT1/8	12.7	19.3	15.2	24.4	83.1	75.6	81.1	73.6	52.8	45.3	29.8	26.7	19	21	39
ASV410F-N01-11	3/16"			23.3	18.5		85.2	77.7	83.2	75.7					21	23	41
ASV410F-N02-09	5/16"	NPT1/4	14.3	19.3	15.2	24.4	83.1	75.6	81.1	73.6	52.8	45.3	34.2	28.7	19	21	47
ASV410F-N02-11	3/16"			23.3	18.5		85.2	77.7	83.2	75.7					21	23	49
ASV410F-N03-09	5/16"	NPT3/8	17.5	19.3	15.2	24.4	83.1	75.6	81.1	73.6	52.8	45.3	35.6	30.4	19	21	61
ASV410F-N03-11	3/16"			23.3	18.5		85.2	77.7	83.2	75.7					21	23	63
ASV510F-N02-11	3/16"	NPT1/4	17.5	23.3	18.5	30	90.2	84.2	88.2	82.2	55.6	49.6	39.3	33.8	21	23	69
ASV510F-N02-13	1/2"			26.5	21.7		91.9	85.8	89.9	83.8					21.8	23.8	74
ASV510F-N03-11	3/16"	NPT3/8	17.5	23.3	18.5	30	90.2	84.2	88.2	82.2	55.6	49.6	40.7	35.5	21	23	73
ASV510F-N03-13	1/2"			26.5	21.7		91.9	85.8	89.9	83.8					21.8	23.8	78
ASV510F-N04-11	3/16"	NPT1/2	22.2	23.3	18.5	30	90.2	84.2	88.2	82.2	55.6	49.6	44.9	37.6	21	23	95
ASV510F-N04-13	1/2"			26.5	21.7		91.9	85.8	89.9	83.8					21.8	23.8	100

\* Dimension with cover Note 1) Reference dimension of "NPT" thread after installation. Note 2) A1: Reference dimensions