

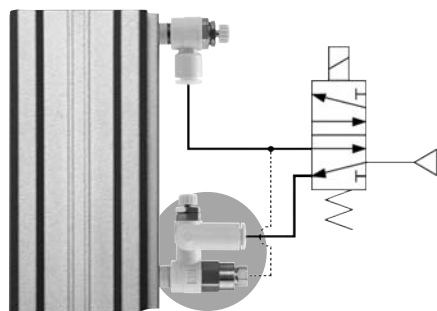
Speed Controller with Pilot Check Valve with One-touch Fitting

Series ASP

RoHS

Pilot check valve and speed controller are combined.

Realizes momentary intermediate stoppage of a cylinder and able to adjust speed control of it.



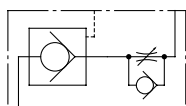
Work piece

Example of drop prevention circuit

Tubing mount direction is 360° free.
Electroless nickel plated is provided as standard.



JIS Symbol



Model

Model	Port size	Pilot port	Applicable tubing O.D.							
			Metric size				Inch size			
			ø6	ø8	ø10	ø12	ø1/4"	ø5/16"	ø3/8"	ø1/2"
ASP330F-01	R 1/8	M5 x 0.8	●	●						
ASP430F-02	R 1/4	Rc 1/8	●	●						
ASP530F-03	R 3/8	Rc 1/8		●	●					
ASP630F-04	R 1/2	Rc 1/4			●	●				
ASP430F-F02	R 1/4	G 1/8	●	●						
ASP530F-F03	R 3/8	G 1/8		●	●					
ASP630F-F04	R 1/2	G 1/4			●	●				
ASP330F-N01	NPT 1/8	10-32 UNF					●	●		
ASP430F-N02	NPT 1/4	NPT 1/8					●	●		
ASP530F-N03	NPT 3/8	NPT 1/8						●	●	
ASP630F-N04	NPT 1/2	NPT 1/4							●	●

Note) Brass parts are all electroless nickel plated.

Specifications

Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Pilot check valve operating pressure	More than 50% the operating pressure (Over 0.1 MPa)
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns
Applicable tubing material	Nylon, Soft nylon, Polyurethane

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

Flow Rate and Effective Area

Model		ASP330F	ASP430F		ASP530F		ASP630F	
Tubing O.D.	Metric size	ø6, ø8	ø6	ø8	ø8	ø10	ø10	ø12
	Inch size	ø1/4" ø5/16"	—	ø1/4" ø5/16"	ø5/16"	ø3/8"	—	ø3/8" ø1/2"
Controlled flow (Free flow)	Flow rate (ℓ/min(ANR))	180	330	350	600	750	1100	1190
	Effective area (mm ²)	2.9	5.2	5.4	9.3	11.6	17	18.4

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

Made to Order

Made to Order

Lubricant: Vaseline

X12

How to Order

ASP

3

30F

01

06

S

Pilot check valve

Body size

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

Universal

With One-touch fitting

Lock nut option

Nil	Hexagon lock nut
J	Round lock nut

Made to Order

X12	Lubricant: Vaseline
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Ex.) ASP330F-01-06S-X12

With seal

Applicable tubing O.D. Note)

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

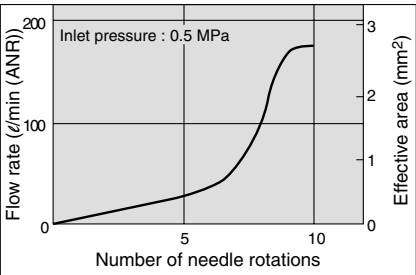
Note) For applicable tubing O.D. selection, refer to the Model on page 547.

Port size

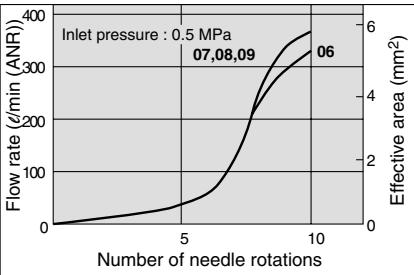
Symbol	Cylinder side	Pilot port
01	R 1/8	M5 x 0.8
02	R 1/4	Rc 1/8
03	R 3/8	Rc 1/8
04	R 1/2	Rc 1/4
F02	R 1/4	G 1/8
F03	R 3/8	G 1/8
F04	R 1/2	G 1/4
N01	NPT 1/8	10-32 UNF
N02	NPT 1/4	NPT 1/8
N03	NPT 3/8	NPT 1/8
N04	NPT 1/2	NPT 1/4

Needle Valve/Flow Characteristics

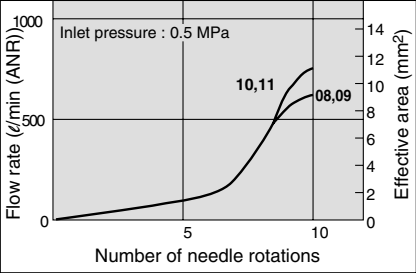
ASP330F



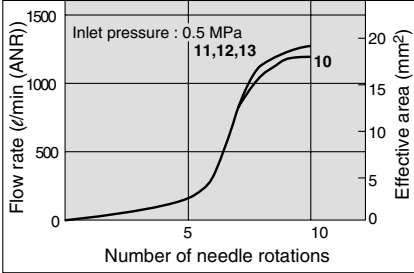
ASP430F



ASP530F

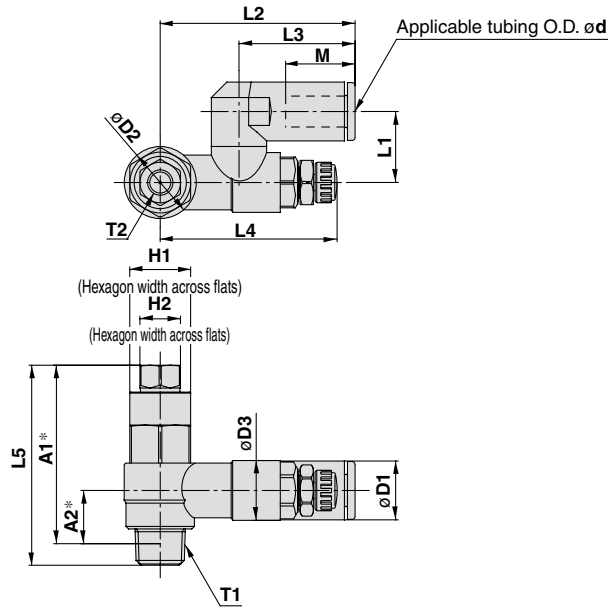


ASP630F



Speed Controller with Pilot Check Valve with One-touch Fitting **Series ASP**

Dimensions

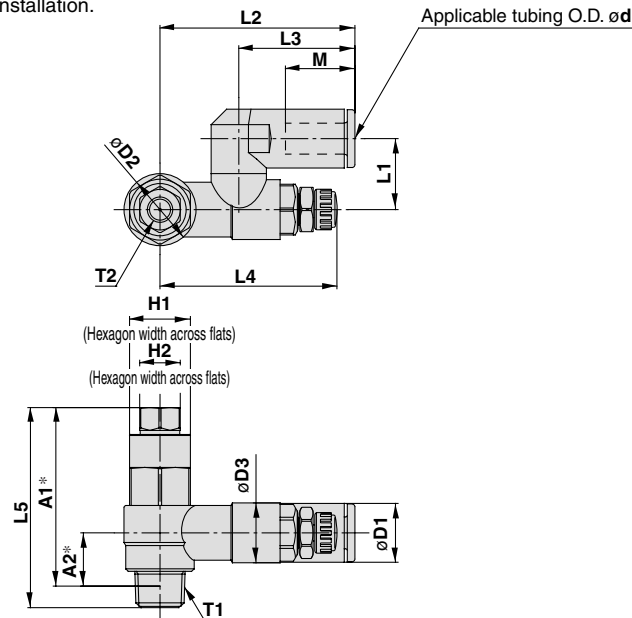


Metric Size

Model	d	T1	T2	H1	H2	D1	D2	D3	L1	L2	L3	L4 ⁽¹⁾		L5	A1 ⁽²⁾	A2 ⁽²⁾	M	Mass (g)
												Max.	Min.					
ASP330F-01-06S	6	R 1/8	M5 x 0.8	12	8	11.6	14.2	11.8	14	38.4	22.9	39.6	34.6	38.6	35.2	10.5	13.7	32
ASP330F-01-08S	8					15.2			15.8			38.9	33.9				18.7	35
ASP430F-02-06S	6	R 1/4	1/8	17	12	12.8	18.5	15	18	43.4	25.2	41.7	36.7	48.2	42.4	10.9	16.8	65
ASP430F-02-08S	8					15.2			19.7			46.4	28.2				18.7	68
ASP530F-03-08S	8	R 3/8	1/8	19	12	15.2	23	19.8	20.3	51.3	28.2	46.9	41.9	55.1	50	14.4	18.7	107
ASP530F-03-10S	10					18.5			23.1			54.1	32.6				20.8	110
ASP630F-04-10S	10	R 1/2	1/4	24	17	18.5	28.6	26.5	64.2	32.6	32.6	64.8	57.3	69.4	61.8	18.3	20.8	212
ASP630F-04-12S	12					20.9			66			34.4					21.8	215

Note 1) Reference dimensions

Note 2) Reference dimensions of R thread after installation.



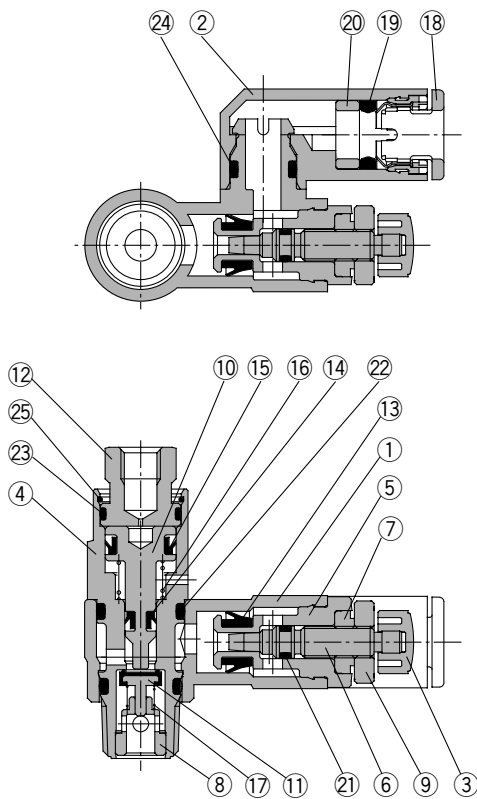
Inch Size

Model	d	T1	T2	H1	H2	D1	D2	D3	L1	L2	L3	L4 ⁽¹⁾		L5	A1 ⁽²⁾	A2 ⁽²⁾	M	Mass (g)
												Max.	Min.					
ASP330F-N01-07S	1/4"	NPT 1/8	10-32 UNF	1/2"	8	13.2	14.2	11.8	15.8	42.2	25.6	38.9	33.9	38.6	35.1	10.5	17	35
ASP330F-N01-09S	5/16"					15.2						44.7	28.2				18.7	
ASP430F-N02-07S	1/4"	NPT 1/4	NPT 1/8	11/16"	1/2"	13.2	18.5	15	18	43.9	25.6	41.7	36.7	48.2	42.6	10.9	17	68
ASP430F-N02-09S	5/16"					15.2						46.4	28.2				18.7	
ASP530F-N03-09S	5/16"	NPT 3/8	NPT 1/8	19	1/2"	15.2	23	19.8	20.3	51.3	28.2	46.9	41.9	55.1	50.3	14.4	18.7	107
ASP530F-N03-11S	3/8"					18.5			23.1			54.1	32.6				20.8	116
ASP630F-N04-11S	3/8"	NPT 1/2	NPT 1/4	15/16"	11/16"	18.5	28.6	26.5	25.9	64.2	32.6	64.8	57.3	69.4	61.8	18.3	20.8	220
ASP630F-N04-13S	1/2"					21.7			26.5			66.3	34.7				21.8	230

Note 1) Reference dimensions

Note 2) Reference dimensions of NPT thread after installation.

Construction



Component Parts

No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Handle	PBT	
4	Pilot body	Brass	Electroless nickel plated
5	Body B	Brass	Electroless nickel plated
6	Needle	Brass	Electroless nickel plated
7	Needle guide	Brass	Electroless nickel plated
8	Guide	Brass	Electroless nickel plated
9	Lock nut	Steel	Zinc chromated
10	Piston	Brass	Electroless nickel plated
11	Valve	Stainless steel, NBR	
12	Cover	Brass	Electroless nickel plated
13	U seal	HNBR	

Component Parts

No.	Description	Material	Note
14	DY seal	NBR	
15	DY seal	NBR	
16	Spring	Stainless steel	
17	Spring	Stainless steel	
18	Cassette	—	
19	Seal	NBR	
20	Spacer	—	
21	O-ring	NBR	
22	O-ring	NBR	
23	O-ring	NBR	
24	O-ring	NBR	
25	Ring	Stainless steel	



Series ASP

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

Warning

1. This product cannot be used for accurate and precise intermediate stops of the actuator.

Due to the compressibility of air as a fluid, the actuator will continue to move until it reaches a position of pressure balance, even though the pilot check valve closes with an intermediate stop signal.

2. This product cannot be used to hold a stop position for an extended period of time.

Pilot check valves and actuators are not guaranteed for zero air leakage. Therefore, it is sometimes not possible to hold a stop position for an extended period of time. In the event that holding for an extended time is necessary, a mechanical means for holding should be devised.

3. Consider the release of residual pressure.

Actuators may move suddenly due to residual pressure, which can be dangerous during maintenance procedures.

4. When used in a balance control circuit, there are instances in which the check valve cannot release, even though the pilot pressure is 50% of the operating pressure. In these cases, the pilot pressure should be the same as the operating pressure.

5. For reference, SMC has conducted endurance tests in which ON, OFF operation of the check valve was performed at the maximum operating pressure, with a confirmed endurance of 10 million operations.

Since the tests were performed under limited conditions, use caution in evaluating the results.

Installation

Warning

1. When mounting, please firmly align the tool with the hexagon width across flats of the pilot body. If the hexagon width across flats is damaged as a result of failure to properly align the tool, the pilot body will be deformed, and poor pilot operation may result.

Air source

Warning

1. If moisture enters the inside of the connecting piping, the cover may corrode, and it may lead to a pilot operation malfunction.

AS

ASP

ASN

AQ

ASV

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VCHC

ASS

ASR
ASQ

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TMH