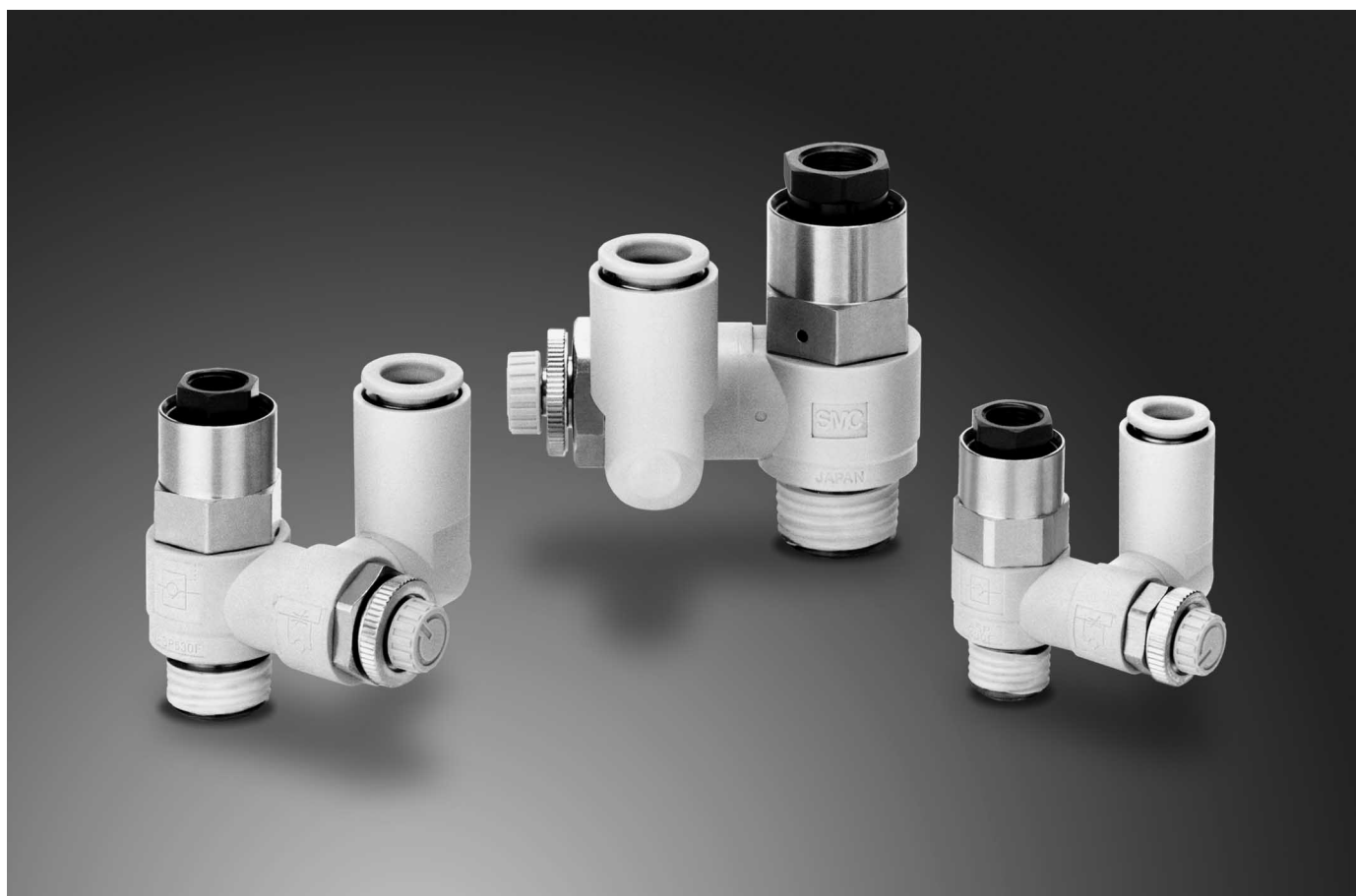
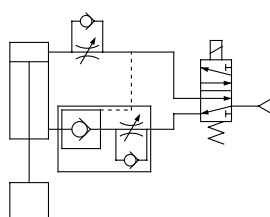


**Speed Controller
with Pilot Check Valve**

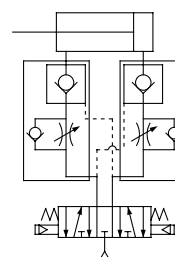
Series ASP



**Integrated pilot check valve and speed controller
Temporary intermediate stop and speed
control of cylinders is possible**



Prevention of cylinder drop



Emergency stop of cylinder

Speed Controller with Pilot Check Valve

Series ASP

360° freedom for tube
mounting direction
Standard electroless nickel
plating specification



Model

Part No.	Port size	Pilot port	Applicable tube outside diameter									
			Millimeter size				Inch size					
			ø6	ø8	ø10	ø12	ø1/4"	ø5/16"	ø3/8"	ø1/2"		
ASP330F-01	R(PT)1/8	M5 X 0.8	●	●								
ASP430F-02	R(PT)1/4	Rc(PT)1/8	●	●								
ASP530F-03	R(PT)3/8	Rc(PT)1/8		●	●							
ASP630F-04	R(PT)1/2	Rc(PT)1/4			●	●						
ASP430F-F02	R(PT)1/4	G(PF)1/8	●	●								
ASP530F-F03	R(PT)3/8	G(PF)1/8		●	●							
ASP630F-F04	R(PT)1/2	G(PF)1/4			●	●						
ASP330F-N01	NPT1/8	10-32UNF						●	●			
ASP430F-N02	NPT1/4	NPT1/8						●	●			
ASP530F-N03	NPT3/8	NPT1/8							●	●		
ASP630F-N04	NPT1/2	NPT1/4								●	●	

Note) All brass parts are electroless nickel plated.

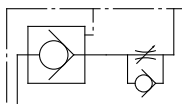
Specifications

Proof pressure	1.5MPa{15.3kgf/cm ² }
Maximum operating pressure	1MPa{10.2kgf/cm ² }
Minimum operating pressure	0.1MPa{1kgf/cm ² }
Pilot check valve actuation pressure	50% or more of operating pressure
Ambient & fluid temperature	-5 to 60°C (Without freezing)
Number of needle revolutions	10 revolutions
Applicable tube material	Nylon, Soft nylon, Polyurethane

Note) Use caution with soft nylon or polyurethane at maximum operating pressures.

For details, refer to the catalog on "Air Fittings & Tubing" for pneumatic piping CAT. E 501-B.

JIS Symbol



Flow Rate and Effective Sectional Area

Model		ASP330F	ASP430F		ASP530F		ASP630F	
Tube outside diameter	Millimeter 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){N ℓ/min}	180	330	350	600	750	1100	1190
	Effective sectional area mm ²	2.9	5.2	5.4	9.3	11.6	17	18.4

Note) The indicated flow rate values are at a pressure of 0.5MPa and a temperature of 20°C.

How to Order

ASP 3 30 F-01-06 S

Pilot check valve ●

Body size ●

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

Type ●

3	Universal
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With One-touch fittings ●

With seals ●

Applicable tube outside diameter

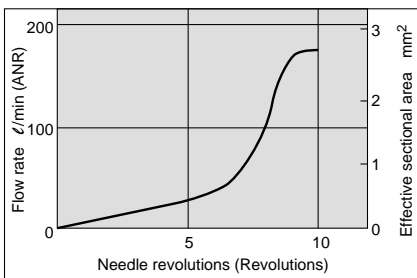
Millimeter size	Inch size
06	ø6
08	ø8
10	ø10
12	ø12
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

Port size

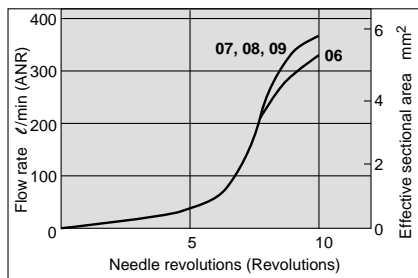
Symbol	Cylinder side	Pilot port
01	R(PT)1/8	M5 X 0.8
02	R(PT)1/4	Rc(PT)1/8
03	R(PT)3/8	Rc(PT)1/8
04	R(PT)1/2	Rc(PT)1/4
F02	R(PT)1/4	G(PF)1/8
F03	R(PT)3/8	G(PF)1/8
F04	R(PT)1/2	G(PF)1/4
N01	NPT1/8	10-32UNF
N02	NPT1/4	NPT1/8
N03	NPT3/8	NPT1/8
N04	NPT1/2	NPT1/4

Needle Valve/Flow Rate Characteristics

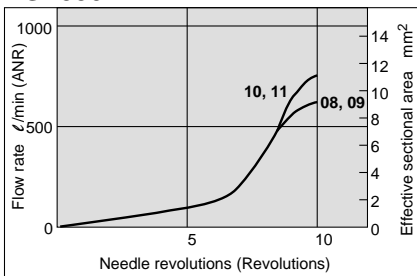
ASP330F



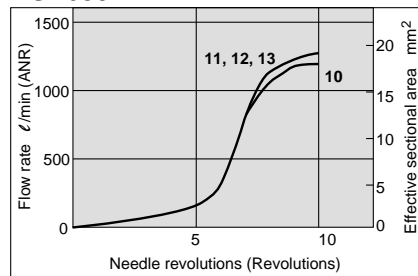
ASP430F



ASP530F



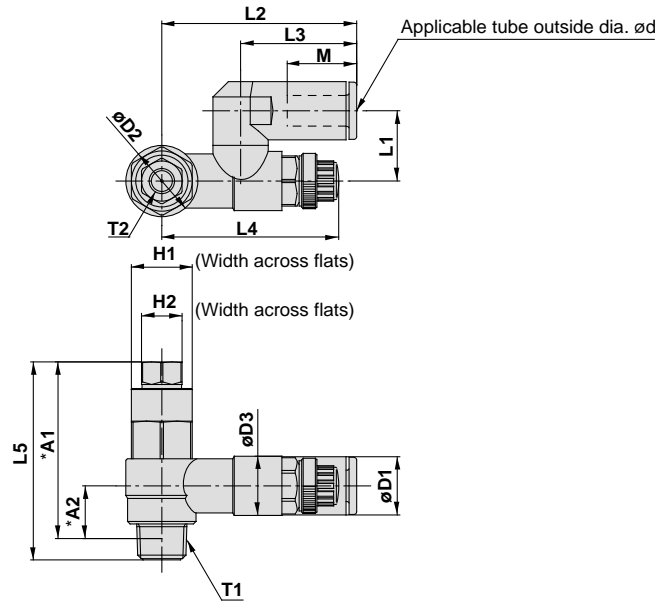
ASP630F



Series ASP

Dimensions

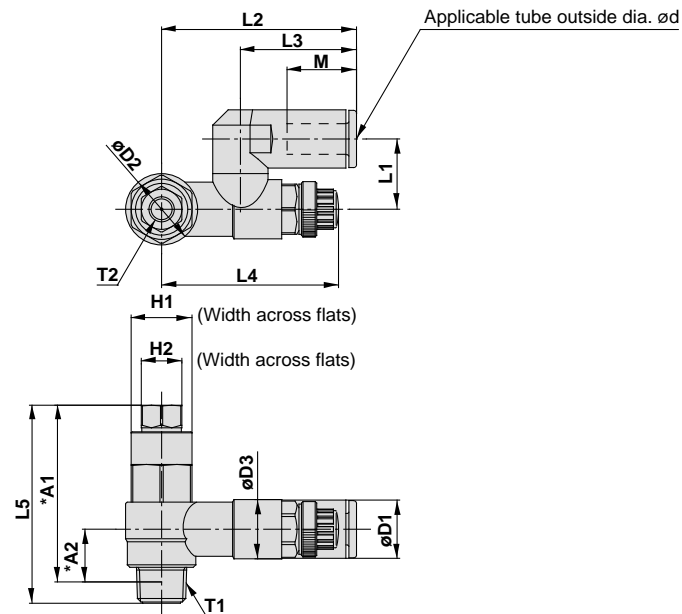
Millimeter size



Model	d	T1	T2	H1	H2	D1	D2	D3	L1	L2	L3	L4		L5	*A1	*A2	M	Weight g
												MAX.	MIN.					
ASP330F-01-06S	6	R(PT)1/8	M5 x 0.8	12	8	11.6	14.2	11.8	14	38.4	22.9	39.6	34.6	39.5	35.2	10.5	13.7	32
ASP330F-01-08S	8					15.2			15.8	44.7	28.2	38.9	33.9					
ASP430F-02-06S	6	R(PT)1/4	Rc(PT)1/8	17	12	12.8	18.5	15	18	43.4	25.2	41.7	36.7	48.7	42.4	10.9	16.8	65
ASP430F-02-08S	8					15.2			19.7	46.4	28.2	41.7	36.7					
ASP530F-03-08S	8	R(PT)3/8	Rc(PT)1/8	19	12	15.2	23	19.8	20.3	51.3	28.2	46.9	41.9	56.2	50	14.4	18.7	107
ASP530F-03-10S	10					18.5			23.1	54.1	32.6	46.9	41.9					
ASP630F-04-10S	10	R(PT)1/2	Rc(PT)1/4	24	17	18.5	28.6	26.5	25.9	64.2	32.6	64.8	57.3	70.3	61.8	18.3	20.8	212
ASP630F-04-12S	12					20.9			25.9	66	34.4	64.8	57.3					

* Reference dimensions for R(PT) threads after installation.

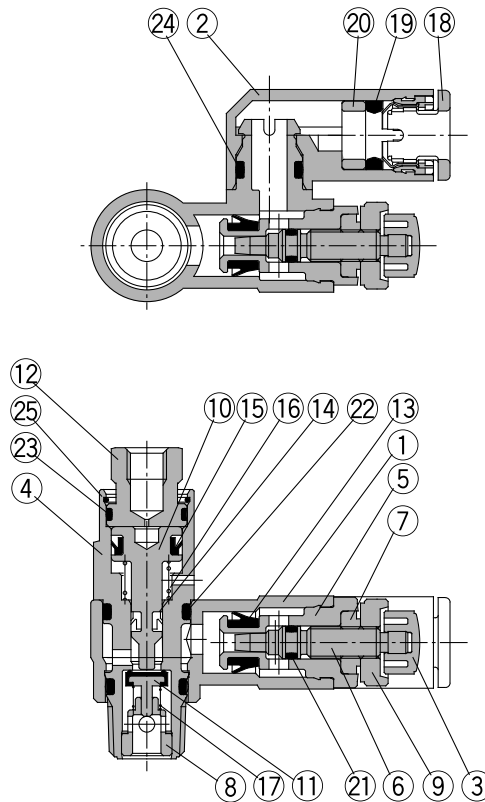
Inch size



Model	d	T1	T2	H1	H2	D1	D2	D3	L1	L2	L3	L4		L5	*A1	*A2	M	Weight g
												MAX.	MIN.					
ASP330F-N01-07S	1/4"	NPT1/8	10-32UNF	1/2"	8	13.2	14.2	11.8	15.8	42.2	25.6	38.9	33.9	39.5	35.1	10.5	17	35
ASP330F-N01-09S	5/16"					15.2			15.8	44.7	28.2	38.9	33.9					
ASP430F-N02-07S	1/4"	NPT1/4	NPT1/8	11/16"	1/2"	13.2	18.5	15	18	43.9	25.6	41.7	36.7	48.7	42.6	10.9	17	68
ASP430F-N02-09S	5/16"					15.2			18	46.4	28.2	41.7	36.7					
ASP530F-N03-09S	5/16"	NPT3/8	NPT1/8	19	1/2"	15.2	23	19.8	20.3	51.3	28.2	46.9	41.9	56.2	50.3	14.4	18.7	107
ASP530F-N03-11S	3/8"					18.5			23.1	54.1	32.6	46.9	41.9					
ASP630F-N04-11S	3/8"	NPT1/2	NPT1/4	15/16"	11/16"	18.5	28.6	26.5	25.9	64.2	32.6	64.8	57.3	70.3	61.8	18.3	20.8	220
ASP630F-N04-13S	1/2"					21.7			25.9	66.3	34.7	64.8	57.3					

* Reference dimensions for NPT threads after installation.

Construction



Parts list

No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Knob	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	Brass	Electroless nickel plated
⑩	Piston	Brass	Electroless nickel plated
⑪	Valve	Stainless steel, NBR	
⑫	Cover	Brass	Black zinc chromated
⑬	U seal	NBR	

Parts list

No.	Description	Material	Note
⑭	DY seal	PBT	
⑮	DY seal	PBT	
⑯	Spring	Stainless steel	
⑰	Spring	Stainless steel	
⑱	Cassette	POM, Stainless steel	Note 1)
⑲	Seal	NBR	
⑳	Spacer	POM	Note 2)
㉑	O-ring	NBR	
㉒	O-ring	NBR	
㉓	O-ring	NBR	
㉔	O-ring	NBR	
㉕	Ring	Stainless steel	

Note 1) $\phi 10$, $\phi 12$, $\phi 3/8"$, $\phi 1/2"$ are POM, stainless steel and brass (electroless nickel plated).
Note 2) $\phi 1/4"$, $\phi 3/8"$, $\phi 1/2"$ are brass (electroless nickel plated).



Series ASP Specific Product Precautions

Be sure to read before handling.

Refer to pages 5, 6 and 7 for safety precautions and drive control equipment precautions.

Precautions on Design

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.

Selection

Warning

1. This product cannot be used as a stop valve requiring zero air leakage.

A certain amount of air leakage is allowed for in the product's specifications.

2. Confirm whether PTFE can be used.

PTFE (tetrafluoroethylene resin) powder is contained in the sealing agent. Confirm that there will be no operational problem.

3. 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.

4. 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.

Installing and Adjustment

Warning

1. Confirm that the lock nut is not loose.

If the lock nut is loose, there are sometimes changes in actuator speed which may become dangerous.

2. The number of opening and closing revolutions of the needle valve should be adjusted within the range of the specifications.

Since it has a pull-out stop mechanism, it will not revolve past the limit. Confirm the number of revolutions for the product to be used, as excessive turning of the needle will cause damage.

3. Mount after confirming the direction of flow.

Mounting backwards is dangerous, because the speed adjustment needle will not work and the actuator may pop out suddenly.

4. To adjust the speed, start with the needle in the completely closed position, and then adjust by opening gradually.

When the needle valve is opening, the actuator may pop out suddenly creating a dangerous situation.

Moreover, the needle valve is closed by turning to the right, and opened by turning to the left; and therefore, the actuator speed is reduced by turning to the right and increased by turning to the left.

5. Installing and removing should be performed by tightening or loosening the hexagon wrench flat on Body B with a suitable wrench.

Damage may occur if any other part is used. Positioning adjustment after mounting should be performed by turning Body A by hand.

6. Do not use a universal type fitting in cases of continuous rotation.

The fitting section may be damaged.



Series ASP Specific Product Precautions

Be sure to read before handling.

Refer to pages 5, 6 and 7 for safety precautions and drive control equipment precautions.

Fastening Torque

⚠ Caution

1. The proper screw-in torque for pipe fittings is as shown in the table. As a rule, they should be tightened 2 to 3 turns with a tool after first tightening by hand.

Be careful not to cause damage by over-tightening.

Male thread	Proper fastening torque N·m	Width across flats mm ^{Note)}	Nominal size of adjustable angle wrench mm
1/8	7 to 9	2(12.7)	150
1/4	12 to 14	17(17.5)	200
3/8	22 to 24	19	200
1/2	28 to 30	24(23.8)	200

Note) Numbers inside () are NPT thread dimensions.

1N·m=10.2kgf·cm

Lock Nut Fastening Torque

⚠ Caution

1. The proper fastening torque for the hexagon lock nut is as shown in the table. As a rule, it should be tightened an additional 15 to 30° with a tool after first tightening by hand.

Be careful not to cause damage by over-tightening.

Body size	Proper fastening torque N·m
1/8	1
1/4	1.5
3/8	4
1/2	10

1N·m=10.2kgf·cm

Handling of One-touch Fittings

⚠ Caution

1. Tube attachment and removal of One-touch fittings.

1) Installation of tube.

1. Take a tube having no flaws on its periphery, and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers, scissors, etc. If the tube is not straight, is flattened or is damaged in any other way, connections may be impossible or other problems such as the tube pulling out after connection or air leakage may occur. Allow some leeway in the length of the tube.

2. Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.

3. After fully inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed fully and securely, this may cause problems such as air leakage or the tube pulling out.

2) Removal of tube.

1. Push the release bushing in sufficiently. When doing this, apply pressure evenly around the collar so that it goes straight down.

2. Pull out the tube while holding down the release bushing so that it does not come out. If the release bushing is not pressed down sufficiently, there will be increased bite in the opposite direction, and it will become more difficult to extract the tube.

3. When the removed tube is to be reused, cut off the portion which has been chewed up before using it again. If the chewed up portion of the tube is used again, this can cause problems such as air leaks or difficulty in removing the tube again.

