Dual Speed Controller with One-touch Fitting

Series ASD

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

Model

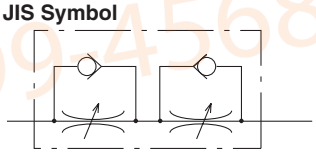
Part no.	Port size	Applicable tubing O.D.										
		Metric size					Inch size					
		ø4	ø6	ø8	ø10	ø12	ø1/8"	ø5/32"	ø3/16"	ø1/4"	ø5/16"	ø3/8"
ASD230F-M5	M5 x 0.8	●	●									
ASD330F-01	R 1/8		●	●								
ASD430F-02	R 1/4		●	●	●							
ASD530F-02	R 1/4		●	●	●	●						
ASD530F-03	R 3/8		●	●	●	●						
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

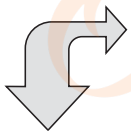
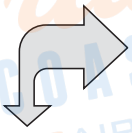
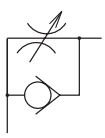
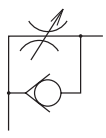
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	–5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns (1))
Applicable tubing material (2)	Nylon, Soft nylon, Polyurethane
Option	Hexagonal lock nut

Note 1) In the case of ASD230F type
Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Flow Rate and Effective Area

Model		ASD230F	ASD330F	ASD430F		ASD530F			ASD630F	
Tubing O.D.	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12
	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 (Free flow)	Flow rate ℓ/min (ANR) {N R/min}	75	175	295	350	500	600	700	1200	1300
	Effective area (mm^2)	1.1	2.7	4.5	5.3	7.6	9.1	10.7	18.3	19.8

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

How to Order

ASD 3 3 0F – [ ] 01 – 06 S K

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Type

3	Universal

With One-touch fitting

Thread type

Nil	Metric thread (M5)
	Unified thread (10-32 UNF)
	R
N	NPT

Bore size

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

With seal

Applicable tubing O.D.

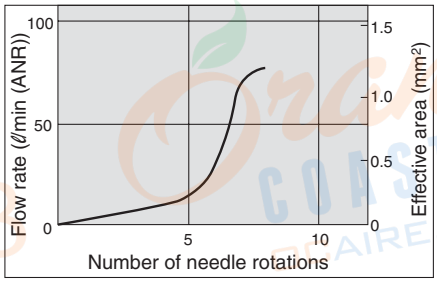
Metric size		Inch size	
04	ø4	01	ø1/8"
06	ø6	03	ø5/32"
08	ø8	05	ø3/16"
10	ø10	07	ø1/4"
12	ø12	09	ø5/16"
		11	ø3/8"

Option

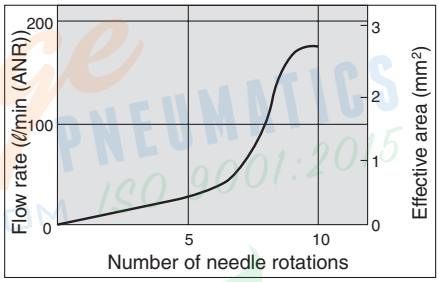
Nil	None
K	Hexagonal lock nut

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

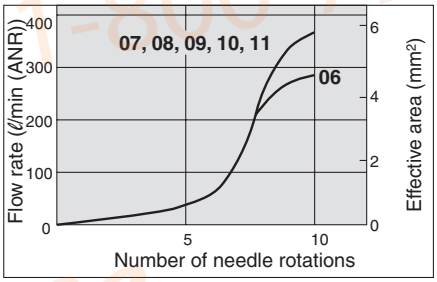
ASD230F



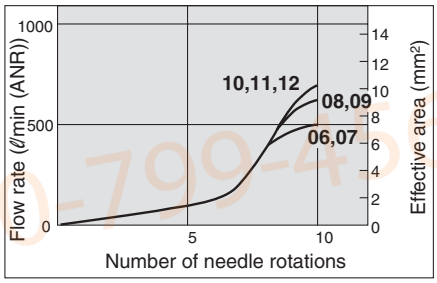
ASD330F



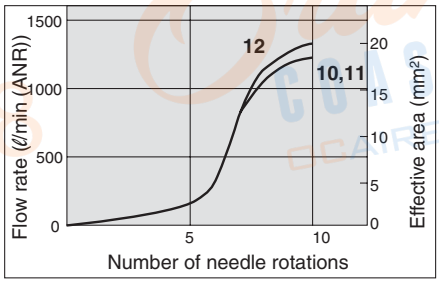
ASD430F



ASD530F

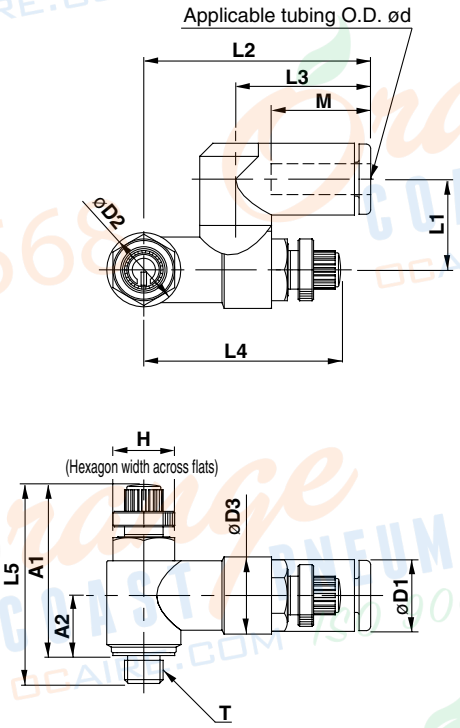


ASD630F

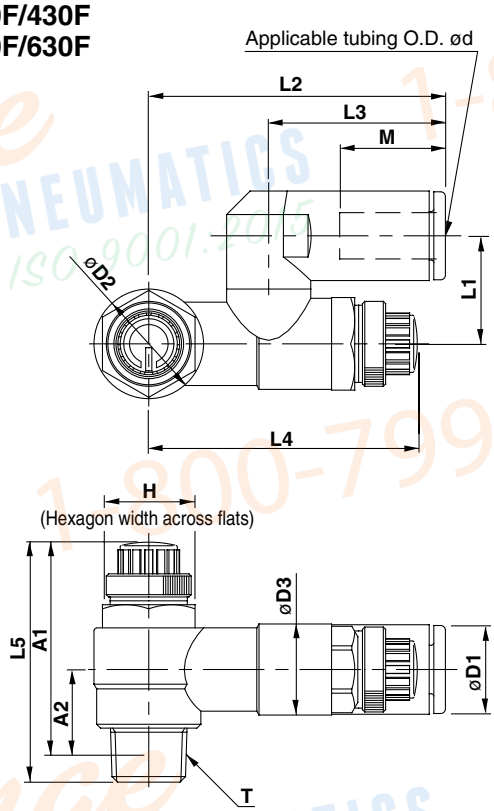


Dimensions: Metric Size

ASD230F



ASD330F/430F
ASD530F/630F



Metric Size

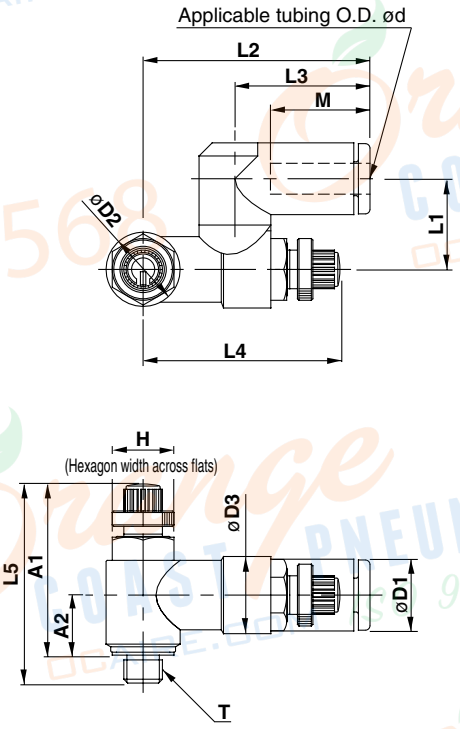
Model	d	T	H	D1	D2	D3	L1	L2	L3	L4		L5		A1*		A2*	M	Weight (g)
										Max.	Min.	Max.	Min.	Max.	Min.			
ASD230F-M5-04	4	M5 x 0.8	8	9.3	9.6	10	11.7	29.4	17.5	28.3	25.5	28.6	25.8	25	22.2	7.8	12.9	12
ASD230F-M5-06	6			11.6				32.5	20.6								13.7	13
ASD330F-01-06S	6	R 1/8	12	11.6	14.2	11.8	14	38.5	22.9	39.6	34.6	36.1	31.1	32.1	27.1	10.6	13.7	29
ASD330F-01-08S	8			15.2			15.8	44.8	28.2	38.9	33.9						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	40.4	35.4	34.4	29.4	11	17	53
ASD430F-02-08S	8			15.2				46.5	28.2								18.5	55
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	48.8	43.8	42.8	37.8	15.4	17	74
ASD530F-02-08S	8			15.2				51.3	28.2								18.5	76
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	46.5	41.5	40	35	14	17	74
ASD530F-03-08S	8			15.2				51.3	28.2								18.5	93
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	57.6	50.1	49.6	42.1	18.6	21	177
ASD630F-04-12S	12			20.9				66.1	34.4								22	179

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

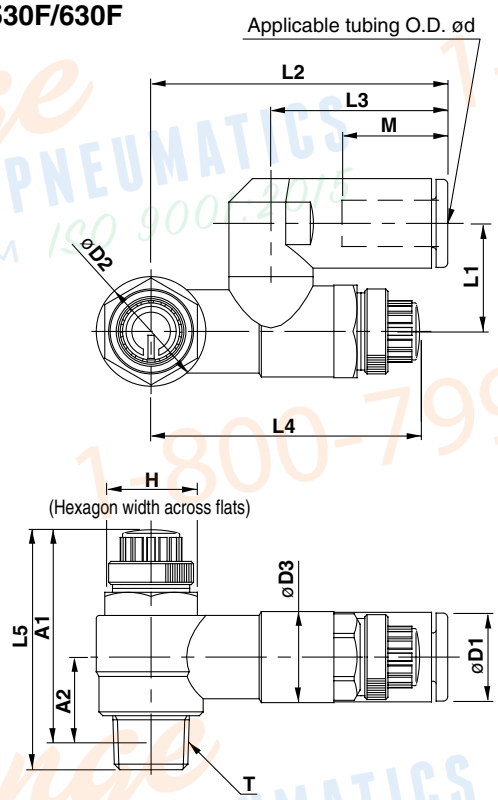
SMC

Dimensions: Inch Size

ASD230F



ASD330F/430F
ASD530F/630F



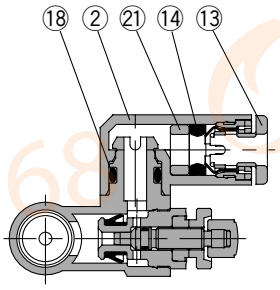
Inch Size

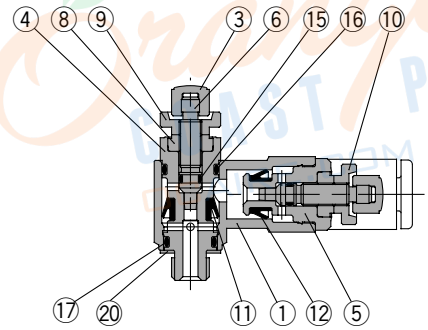
Model	d	T	H	D1	D2	D3	L1	L2	L3	L4		L5		A1*		A2*	M	Weight (g)
										Max.	Min.	Max.	Min.	Max.	Min.			
ASD230F-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	10	11.7	29.4	17.5	28.3	25.5	28.6	25.8	25	22.2	7.8	12.9	12
ASD230F-U10/32-03	5/32"			9.3														13
ASD230F-U10/32-05	3/16"	10-32 UNF	8	11.4	9.6	10	11.7	35.2	23.3	28.3	25.5	28.6	25.8	25	22.2	7.8	16.5	15
ASD230F-U10/32-07	1/4"			12				32.6	20.7								13.5	13
ASD330F-N01-05S	3/16"	NPT 1/8	12.7	11.6	14.2	11.8	14	39.5	23.9	39.6	34.6	36.1	31.1	32	27	10.6	16.5	30
ASD330F-N01-07S	1/4"			13.2			15.8	42.2	25.6	38.9	33.9						17	31
ASD330F-N01-09S	5/16"			15.2				44.8	28.2								18.5	
ASD430F-N02-07S	1/4"	NPT 1/4	17.5	13.2	18.5	15	18	43.9	25.6	41.7	36.7	40.4	35.4	34.6	29.6	11	17	55
ASD430F-N02-09S	5/16"			15.2				46.5	28.2								18.5	
ASD430F-N02-11S	3/8"			18.5			19.7	49.3	31								21	62
ASD530F-N02-07S	1/4"	NPT 1/4	19	13.2	23	19.8	20.3	48.7	25.6	46.9	41.9	48.8	43.8	43	38	15.4	17	76
ASD530F-N02-09S	5/16"			15.2				51.3	28.2								18.5	
ASD530F-N02-11S	3/8"			18.5			23.1	54.1	32.6								21	84
ASD530F-N03-07S	1/4"	NPT 3/8	19	13.2	23	19.8	20.3	48.7	25.6	46.9	41.9	46.5	41.5	40.3	35.3	14	17	93
ASD530F-N03-09S	5/16"			15.2				51.3	28.2								18.5	
ASD530F-N03-11S	3/8"			18.5			23.1	54.1	32.6								21	102
ASD630F-N04-11S	3/8"	NPT 1/2	23.8		28.6	26.5	25.9	64.3		64.8	57.3	57.6	50.1	49.6	42.1	18.6		180

∗ Reference dimensions of U10/32 and NPT threads after installation.

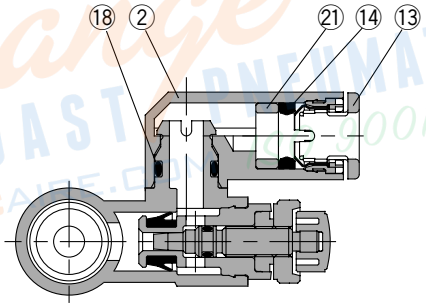
Construction

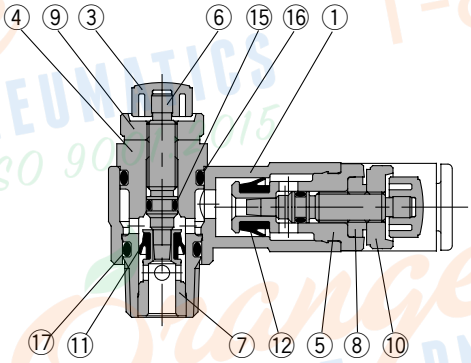
ASD230F



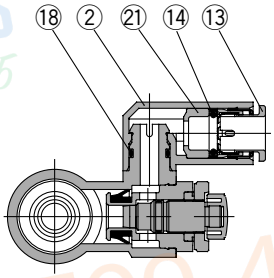


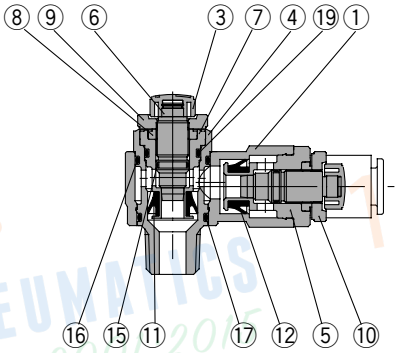
ASD330F/430F
ASD530F/630F





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	Brass(3)	Electroless nickel plated
⑩	Lock nut	Brass(3)	Black zinc chromate plated

No.	Description	Material	Note
⑪	U seal	HNBR	
⑫	U seal	HNBR	
⑬	Cassette	POM, Stainless steel (1)	
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	PBT, Brass (2)	

Note 1) ø10, ø12, ø3/16", ø3/8" are made of POM, stainless steel and brass (Electroless nickel plated).
Note 2) ø3/16", ø1/4", ø3/8" are made of brass (Electroless nickel plated).
ASD230F (ø4, ø6, ø1/8", ø5/32", ø1/4"), ASD330F (ø6) are POM.
Note 3) ASD330F and 430F types are made of steel.

Dual Speed Controller for Low Speed Operation with One-touch Fitting

Series ASD-FM

Two flow control valves and check valves integrated.

Prevention of a stick-slip phenomenon, and speed control of a single acting cylinder.

Stable speed control is achievable even with load fluctuations.

Low speed control for small bore cylinders.

Model

Model	Applicable tubing									
	Metric size				Inch size					
	4	6	8	10	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"
ASD230FM-M5	●	●								
ASD330FM-01		●	●							
ASD430FM-02		●	●	●						
ASD230FM-U10/32					●	●	●	●		
ASD330FM-N01							●	●	●	
ASD430FM-N02								●	●	●

Specifications

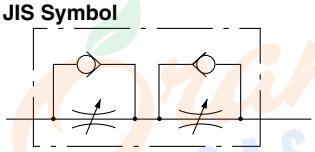
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	−5 to 60°C (No freezing)
Number of needle rotations	10 turns (20 turns(1))
Applicable tubing material(2)	Nylon, Soft nylon, Polyurethane, Soft polyurethane

Note 1) In the case of ASD230FM type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or soft polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

Note 3) Brass parts are all electroless nickel plated. The meter-in side lock nut and the M5 type handle are black zinc chromate plated.

JIS Symbol

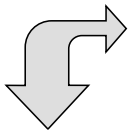
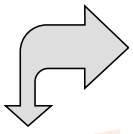
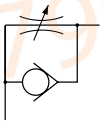
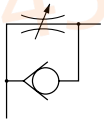


Flow Rate and Effective Area

Model		ASD230FM	ASD330FM	ASD430FM	
Tubing O.D.	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10
	Inch size	ø1/8", ø5/32" ø3/16", ø1/4"	ø3/16", ø1/4"	—	ø1/4", ø5/16" ø3/8"
Controlled flow (Free flow)	Flow rate (ℓ/min(ANR))	7	12	38	
	Effective area (mm²)	0.1	0.2	0.6	

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

Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

How to Order

ASD 3 3 0 F M – ☐ 01 – 06 S

Body size

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

Type

3	Universal

With one-touch fitting

For low speed control

Thread type

Nil	Metric thread (M5)
	Unified thread (10-32 UNF)
	R
N	NPT

Port size

M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4

Applicable tubing O.D.

Metric size

04	ø4
06	ø6
08	ø8
10	ø10

Inch size

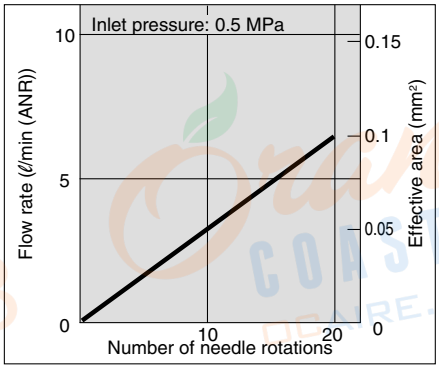
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"

With seal

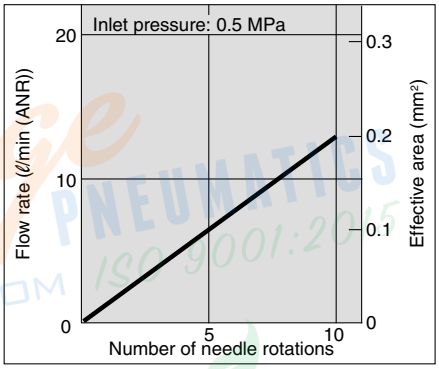
* M5 and U10/32 types, as they are not available with seal.

Needle Valve/Flow Characteristics

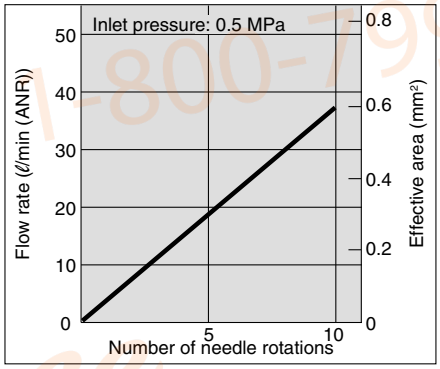
ASD230FM



ASD330FM



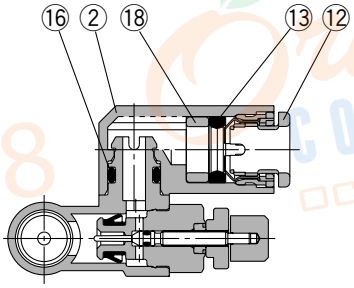
ASD430FM

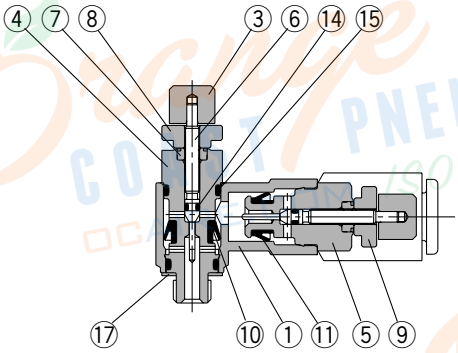


SMC

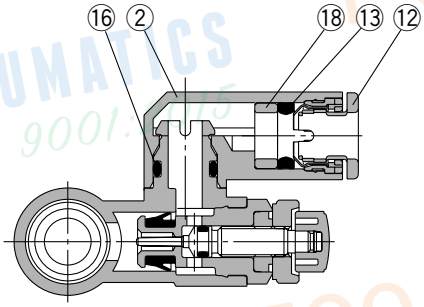
Construction

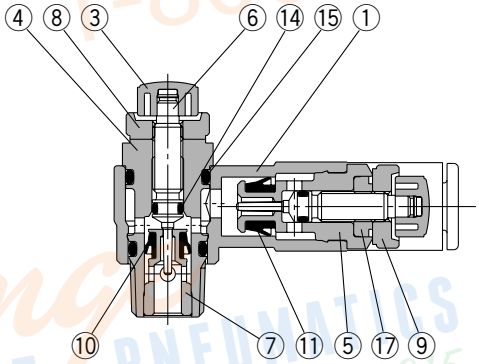
ASD230FM





ASD330FM/430FM





Component Parts

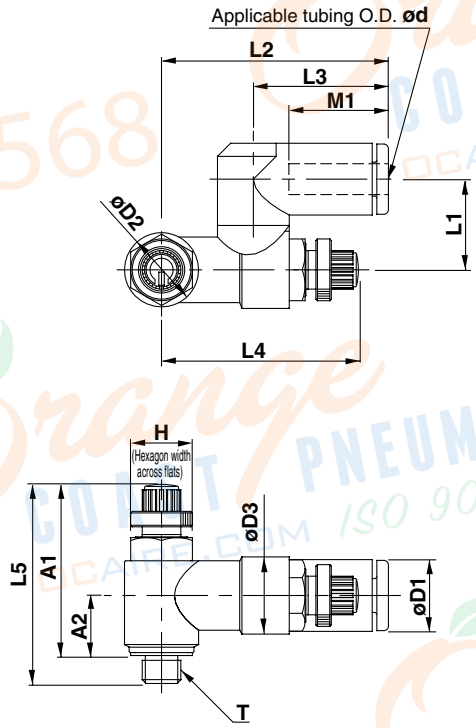
No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Handle	PBT (1)	Black
④	Body B	Brass	Electroless nickel plated
⑤	Body B	Brass	Electroless nickel plated
⑥	Needle	Brass	Electroless nickel plated
⑦	Seat ring	Brass	Electroless nickel plated
⑧	Needle guide	Brass	Electroless nickel plated
⑨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

No.	Description	Material	Note
⑪	U seal	NBR	
⑫	U seal	NBR	
⑬	Cassette	POM, Stainless steel (3)	
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	NBR, Stainless steel	M5 type only
㉑	Spacer	PBT (4)	

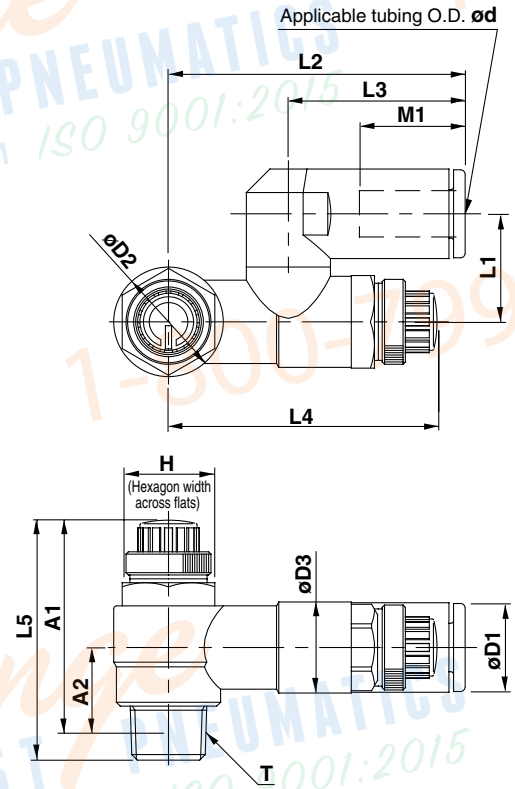
Note 1) AS1001FM type is made of brass (black zinc chromate plated).
Note 2) AS20□1FM type is made of steel.
Note 3) ø3/16" and ø3/8 are made of POM, stainless steel, and brass (electroless nickel plated).
Note 4) ø3/16" and ø3/8 are are made of brass (electroless nickel plated). ASD230FM (ø4, ø6, ø1/8", ø5/32", ø1/4"), ASD330FM (ø6) are POM.

Dimensions: Metric Size

ASD230FM



ASD330FM/430FM



Metric Size

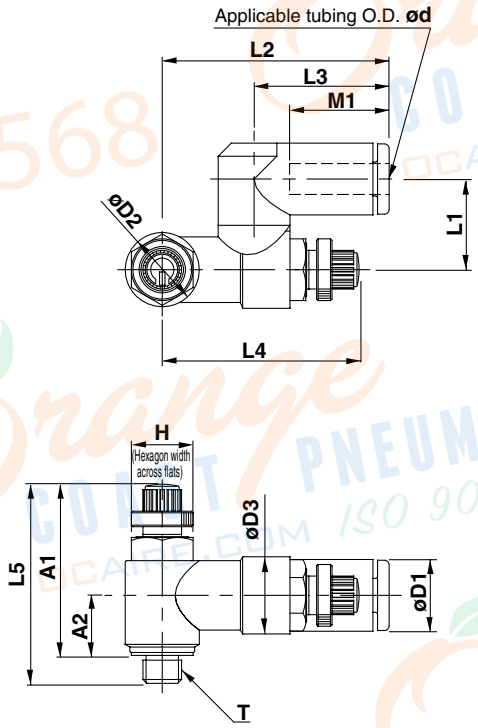
Model	d	T	H	D1	D2	D3	L1	L2	L3	L4		L5		A1*		A2*	M1	Weight (g)
										Max.	Min.	Max.	Min.	Max.	Min.			
ASD230FM-M5-04	4	M5 x 0.8	8	9.3	9.6	10	11.7	29.4	17.5	34.6	29.6	33.8	28.8	30.1	25.1	7.8	12.9	12
ASD230FM-M5-06	6			11.6				32.5	20.6								13.7	13
ASD330FM-01-06S	6	R 1/8	12	11.6	14.2	11.8	14	38.5	22.9	39.6	34.6	36.1	31.1	32.1	27.1	10.6	13.7	29
ASD330FM-01-08S	8			15.2			15.8	44.8	28.2	38.9	33.9						18.5	31
ASD430FM-02-06S	6	R 1/4	17	12.8	18.5	15	18	43.5	25.2	41.8	36.8	40.4	35.4	34.4	29.4	11	17	53
ASD430FM-02-08S	8			15.2				46.5	28.2								18.5	55
ASD430FM-02-10S	10			18.5			19.7	49.3	31								21	58

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

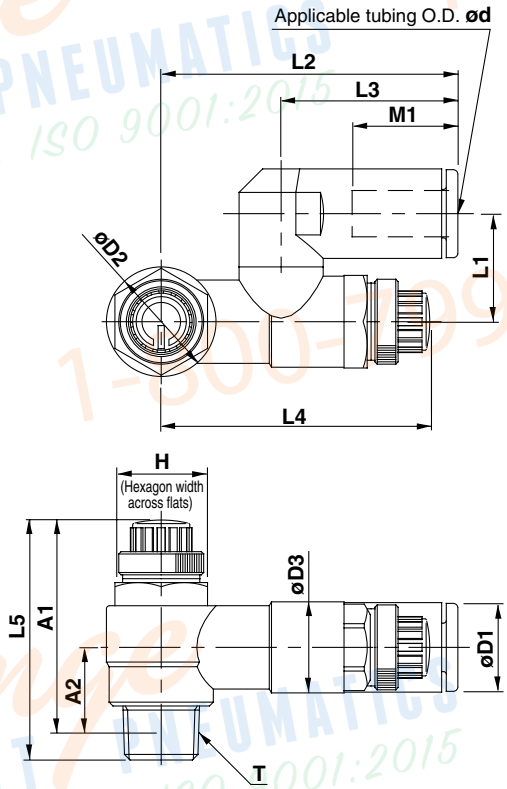
SMC

Dimensions: Inch Size

ASD230FM



ASD330FM/430FM



Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4		L5		A1*		A2*	M1	Weight (g)
										Max.	Min.	Max.	Min.	Max.	Min.			
ASD230FM-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	10	11.7	29.4	17.5	34.6	29.6	33.8	28.8	30.1	25.1	7.8	12.9	12
ASD230FM-U10/32-03	5/32"			9.3														13
ASD230FM-U10/32-05	3/16"			11.4				35.2	23.3								16.5	14
ASD330FM-U10/32-07	1/4"			12				32.6	20.7								13.5	15
ASD330FM-N01-05S	3/16"	NPT 1/8	12.7	11.4	14.2	11.8	14	39.5	23.9	39.6	34.6	36.1	31.1	32	27	10.6	16.5	30
ASD330FM-N01-07S	1/4"			13.2			15.8	42.2	25.6	38.9	33.9						17	31
ASD330FM-N01-09S	5/16"			15.2				44.8	28.2								18.5	
ASD430FM-N02-07S	1/4"	NPT 1/4	17.5	13.2	18.5	15	18	43.9	25.6	41.7	36.7	40.4	35.4	34.6	29.6	11	17	55
ASD430FM-N02-09S	5/16"			15.2				46.5	28.2								18.5	
ASD430FM-N02-11S	3/8"			18.5			19.7	49.3	32.6								21	62

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

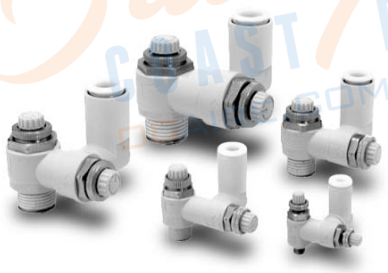
Dual Speed Controller with One-touch Fitting Stainless Series

Series ASD-FG

Two flow control valves and check valves have been integrated.

Prevention of stick-slip phenomenon, and speed control of a single acting cylinder.

Stable speed control is achievable even with load fluctuations.



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"
ASD230FG-M5	M5 x 0.8	●	●									
ASD330FG-01	R 1/8		●	●								
ASD430FG-02	R 1/4		●	●	●							
ASD530FG-02	R 1/4		●	●	●	●						
ASD530FG-03	R 3/8		●	●	●	●						
ASD630FG-04	R 1/2				●	●						
ASD230FG-U10/32	10-32 UNF						●	●	●	●		
ASD330FG-N01	NPT 1/8								●	●	●	
ASD430FG-N02	NPT 1/4									●	●	●
ASD530FG-N02	NPT 1/4									●	●	●
ASD530FG-N03	NPT 3/8									●	●	●
ASD630FG-N04	NPT 1/2											●

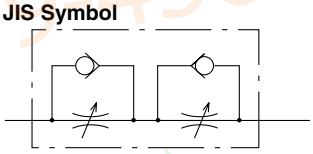
Specifications

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)
Number of needle rotations	10 turns (8 turns(1))
Applicable tubing material(2)	Nylon, Soft nylon, Polyurethane, Soft polyurethane

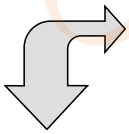
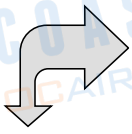
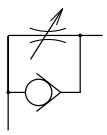
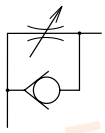
Note 1) In the case of ASD230FG type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or soft polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)

JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Flow Rate and Effective Area

Model		ASD230FG	ASD330FG	ASD430FG		ASD530FG			ASD630FG	
Tubing O.D.	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12
	Inch size	ø3/16" ø1/4" ø1/8" ø5/32"	ø3/16" ø1/4"	—	ø1/4" ø5/16" ø3/8"	ø1/4"	ø5/16"	ø3/8"	—	ø3/8"
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	75	175	295	350	500	600	700	1200	1300
	Effective area (mm²)	1.1	2.7	4.5	5.3	7.6	9.1	10.7	18.3	19.8

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

How to Order

ASD 3 3 0 FG – [ ] 01 – 06 S

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Type

3	Universal

With One-touch fitting

Stainless steel specifications (SUS303)

Thread type

Nil	Metric thread (M5)
	Unified thread (10-32 UNF)
	R
N	NPT

Port size

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

Applicable tubing O.D.

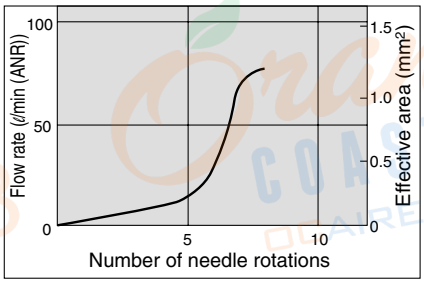
Metric size		Inch size	
04	ø4	01	ø1/8"
06	ø6	03	ø5/32"
08	ø8	05	ø3/16"
10	ø10	07	ø1/4"
12	ø12	09	ø5/16"
		11	ø3/8"

With seal

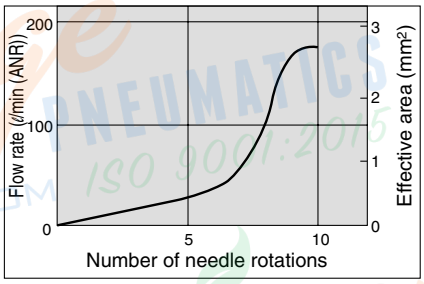
∗ M5 and U10/32 are not available with seal.

Needle Valve/Flow Characteristics

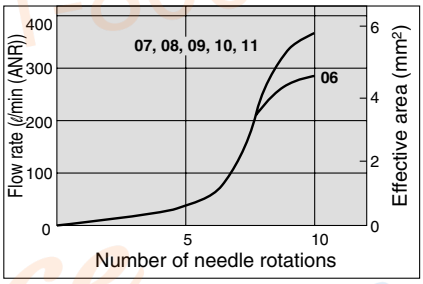
ASD230FG



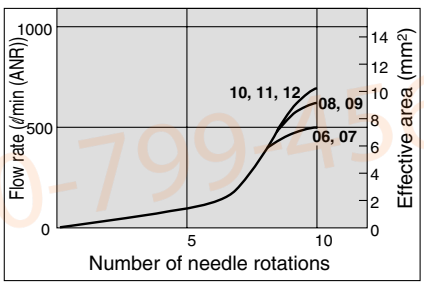
ASD330FG



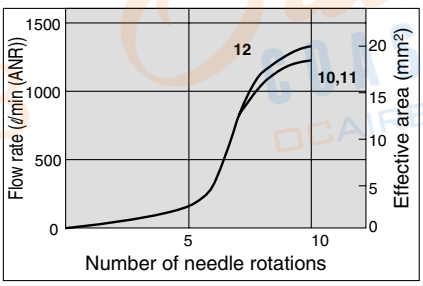
ASD430FG



ASD530FG

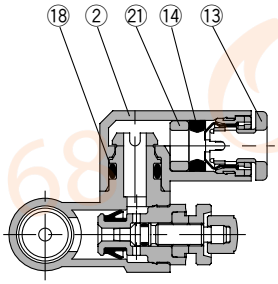


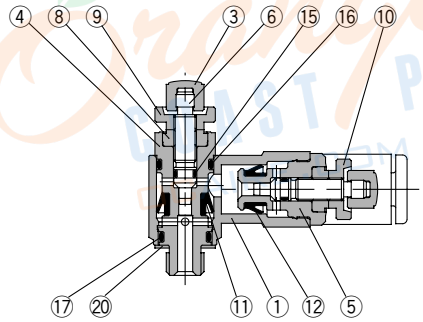
ASD630FG



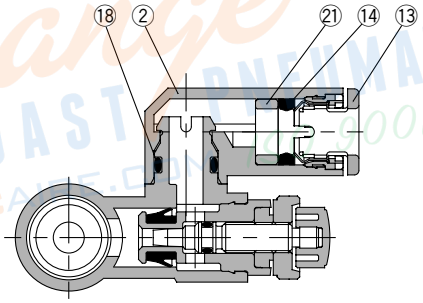
Construction

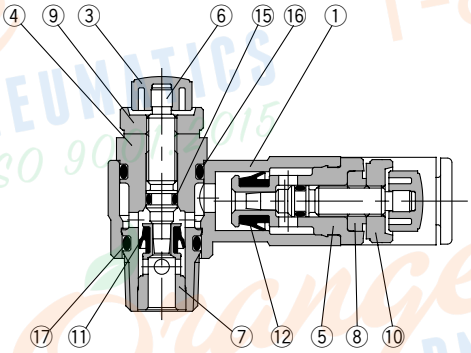
ASD230FG



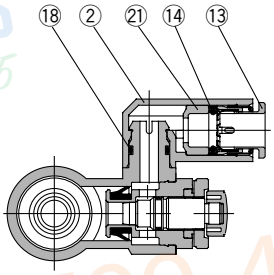


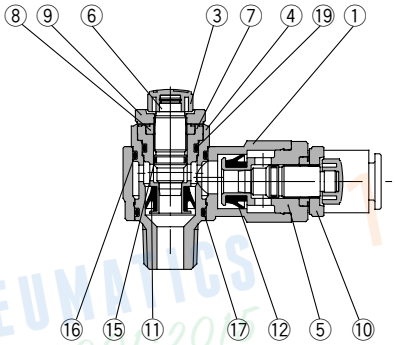
ASD330FG/430FG
ASD530FG/630FG





ASD530FG-02





Component Parts

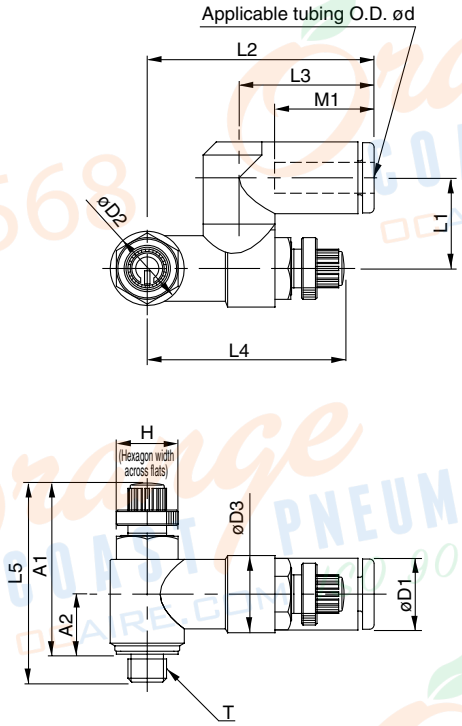
No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Handle	PBT	
④	Body B	Stainless steel 303	
⑤	Body B	Stainless steel 303	
⑥	Needle	Stainless steel 303	
⑦	Seat ring	Stainless steel 303	
⑧	Needle guide	Stainless steel 303	
⑨	Lock nut	Stainless steel 303	
⑩	Lock nut	Stainless steel 303	
⑪	U seal	HNBR	

No.	Description	Material	Note
⑫	U seal	NBR	
⑬	Cassette	POM, Stainless steel	
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	NBR, Steel	M5 type only
㉑	Spacer	PBT Note)	

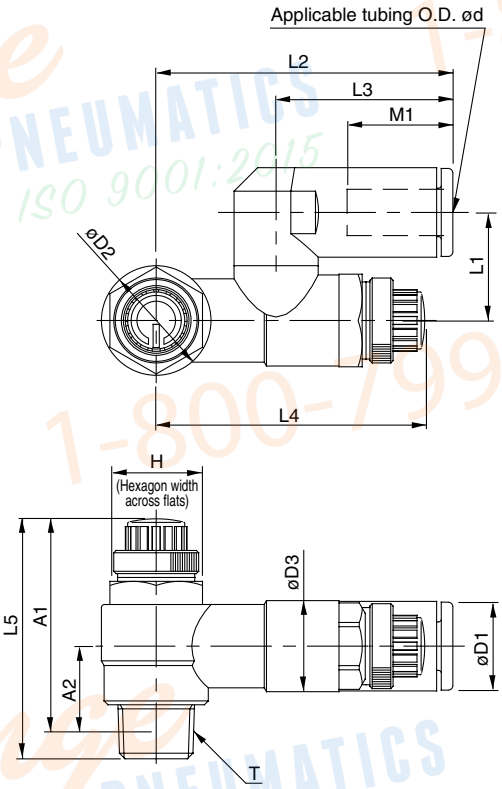
Note) ø3/16", ø3/8" and ø1/2" are stainless steel 303.
ASD230FG (ø4, ø6, ø1/8", ø5/32", ø1/4"),
ASD330FG (ø6) are made of POM.

Dimensions: Metric Size

ASD230FG



ASD330FG/430FG
ASD530FG/630FG



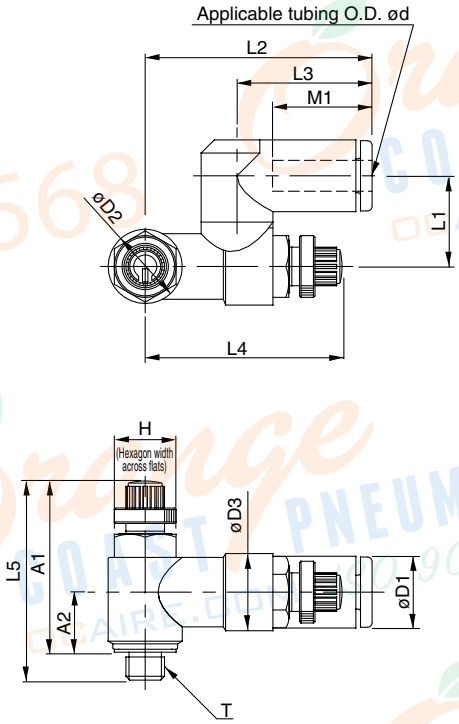
Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4		L5		A1*		A2*	M1
										Max.	Min.	Max.	Min.	Max.	Min.		
ASD230FG-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
ASD230FG-M5-06	6			11.6				32.5	20.6								13.7
ASD330FG-01-06S	6	R 1/8	12	11.6	14.2	11.8	14	38.5	22.9	39.6	34.6	36.1	31.1	32.1	27.1	10.6	13.7
ASD330FG-01-08S	8			15.2			15.8	44.8	28.2	38.9	33.9						18.5
ASD430FG-02-06S	6	R 1/4	17	12.8	18.5	15	18	43.5	25.2	41.7	36.7	40.4	35.4	34.4	29.4	11	17
ASD430FG-02-08S	8			15.2				46.5	28.2								18.5
ASD430FG-02-10S	10			18.5			19.7	49.3	31								21
ASD530FG-02-06S	6	R 1/4	19	12.8	23	19.8	20.3	48.3	25.2	46.9	41.9	48.8	43.8	42.8	37.8	15.4	17
ASD530FG-02-08S	8			15.2				51.3	28.2								18.5
ASD530FG-02-10S	10			18.5			23.1	54.1	32.6								21
ASD530FG-02-12S	12			20.9				55.9	34.4								22
ASD530FG-03-06S	6	R 3/8	19	12.8	23	19.8	20.3	48.3	25.2	46.9	41.9	48.8	43.8	40	35	14	17
ASD530FG-03-08S	8			15.2				51.3	28.2								18.5
ASD530FG-03-10S	10			18.5			23.1	54.1	32.6								21
ASD530FG-03-12S	12			20.9				55.9	34.4								22
ASD630FG-04-10S	10	R 1/2	24	18.5	28.6	26.5	25.9	64.3	32.6	64.8	57.3	57.6	50.1	49.6	42.1	18.6	21
ASD630FG-04-12S	12			20.9				66.1	34.4								22

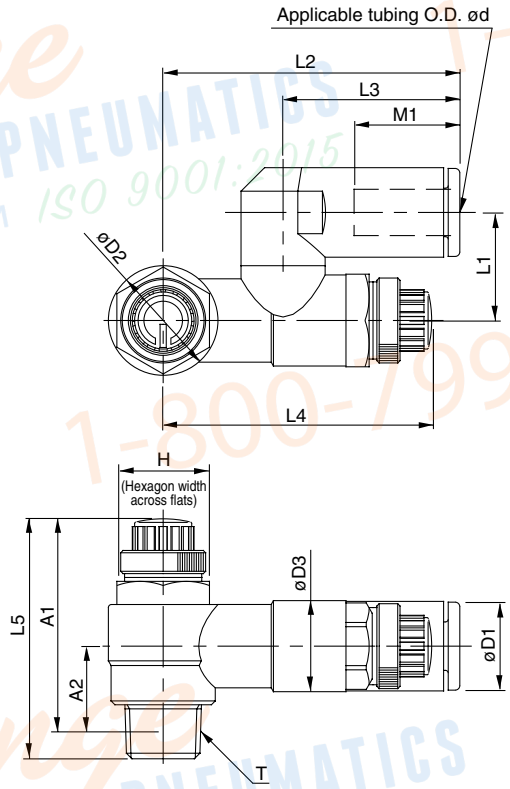
* Reference dimensions of M5 x 0.8, R threads after installation.

Dimensions: Inch Size

ASD230FG



ASD330FG/430FG
ASD530FG/630FG



Inch Size

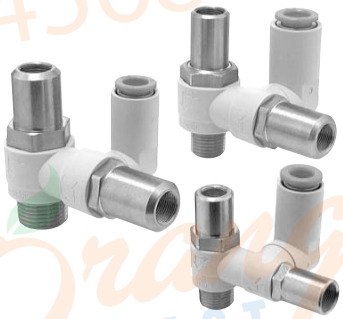
Model	d	T	H	D1	D2	D3	L1	L2	L3	L4		L5		A1*		A2*	M1
										Max.	Min.	Max.	Min.	Max.	Min.		
ASD230FG-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	10	11.7	29.4	17.5	28.3	25.5	28.6	25.8	25	22.2	7.8	12.9
ASD230FG-U10/32-03	5/32"			9.3													
ASD230FG-U10/32-05	3/16"			11.4				35.2	23.3								16.5
ASD230FG-U10/32-07	1/4"			12				32.6	20.7								13.5
ASD330FG-N01-05S	3/16"	NPT1/8	12.7	11.6	14.2	11.8	14	38.5	23.9	39.6	34.6	36.1	31.1	32	27	10.6	16.5
ASD330FG-N01-07S	1/4"			13.2			15.8	42.2	25.6	38.9	33.9						17
ASD330FG-N01-09S	5/16"			15.2				44.8	28.2								18.5
ASD430FG-N02-07S	1/4"	NPT 1/4	17.5	13.2	18.5	15	18	43.9	25.6	41.7	36.7	40.4	35.4	34.6	29.6	11	17
ASD430FG-N02-09S	5/16"			15.2				46.5	28.2								18.5
ASD430FG-N02-11S	3/8"			18.5			19.7	49.3	31								21
ASD530FG-N02-07S	1/4"	NPT 1/4	19	13.2	23	19.8	20.3	48.7	25.6	46.9	41.9	48.8	43.8	43	38	15.4	17
ASD530FG-N02-09S	5/16"			15.2				51.3	28.2								18.5
ASD530FG-N02-11S	3/8"			18.5			23.1	54.1	32.6								21
ASD530FG-N03-07S	1/4"	NPT 3/8	19	13.2	23	19.8	20.3	48.7	25.6	46.9	41.9	46.5	41.5	40.3	35.3	14	17
ASD530FG-N03-09S	5/16"			15.2				51.3	28.2								18.5
ASD530FG-N03-11S	3/8"			18.5			23.1	54.1	32.6								21
ASD630FG-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	57.6	50.1	46.9	42.1	18.6	21

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

SMC

Tamper Proof Dual Speed Controller with One-touch Fitting

Series ASD□□□F-T



Specifications

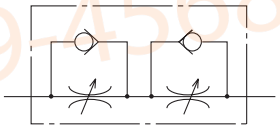
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	–5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns (1))
Applicable tubing material (2)	Nylon, Soft nylon, Polyurethane

Note 1) In the case of ASD230F type
Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 15-6-3 to 15-6-5 for details.)
Note 3) Brass parts are all electroless nickel plated, provided as standard.

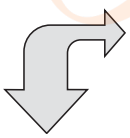
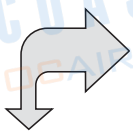
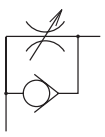
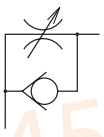
Model

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											●

JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Flow Rate and Effective Area

Model		ASD230F	ASD330F	ASD430F		ASD530F			ASD630F	
Tubing O.D.	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12
	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 (Free flow)	Flow rate (ℓ/min (ANR))	75	175	295	350	500	600	700	1200	1300
	Effective area (mm^2)	1.1	2.7	4.5	5.3	7.6	9.1	10.7	18.3	19.8

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

SMC

How to Order

ASD 3 3 0 F — 01 — 06 S T

Body size

2	M5 standard
3	1/8 standard
4	1/4 standard
5	3/8 standard
6	1/2 standard

Type

3	Universal

With One-touch fitting

Port size

M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2
U10/32	10-32 UNF
N01	NPT 1/8
N02	NPT 1/4
N03	NPT 3/8
N04	NPT 1/2

Applicable tubing O.D.

Metric size		Inch size	
04	ø4	01	ø1/8"
06	ø6	03	ø5/32"
08	ø8	05	ø3/16"
10	ø10	07	ø1/4"
12	ø12	09	ø5/16"
		11	ø3/8"

With seal

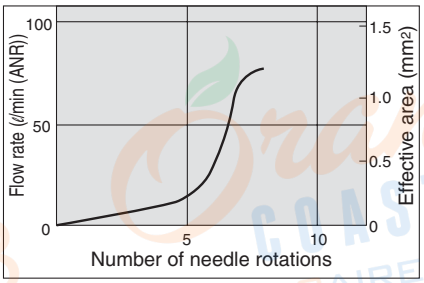
Note) In case that connecting port is either M5 or 10-32 UNF thread, it is not available with seal. With gasket is provided as standard.

Tamper proof

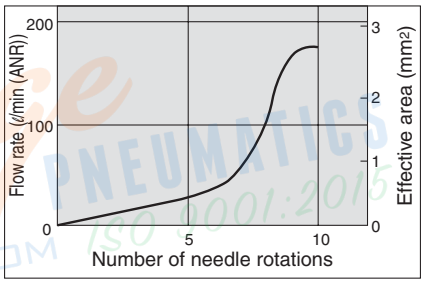
Note) Speed controller requires a special tool for flow adjustment. Order separately with part number, AS-T-1.

Needle Valve/Flow Characteristics

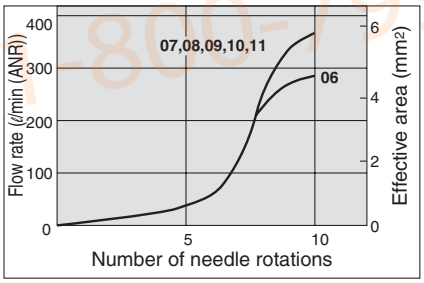
ASD230F



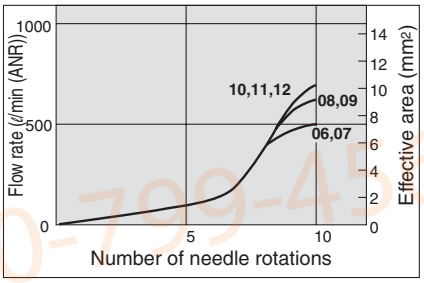
ASD330F



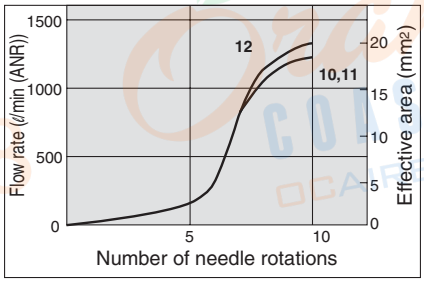
ASD430F



ASD530F

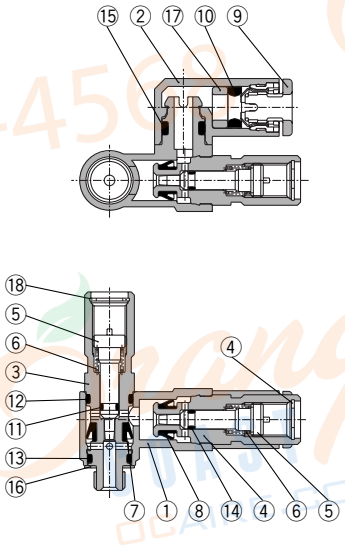


ASD630F

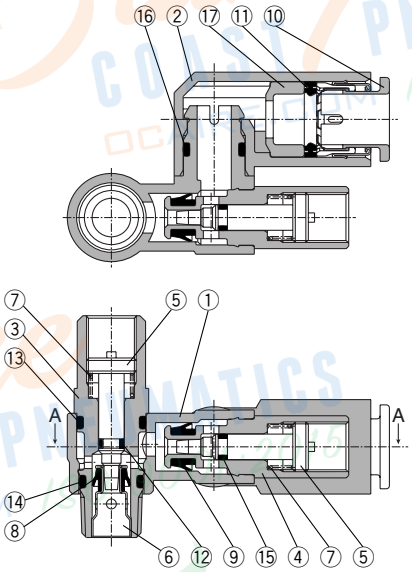


Construction

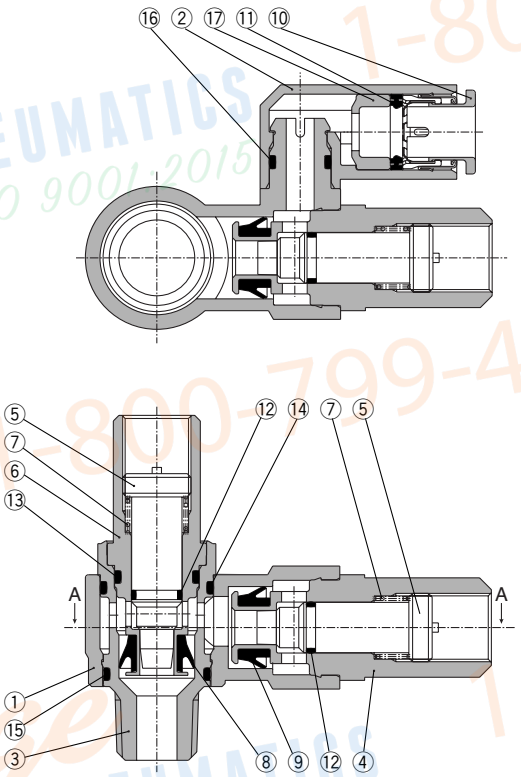
ASD230F



ASD330F/430F
ASD530F/630F



ASD530F-02



Component Parts

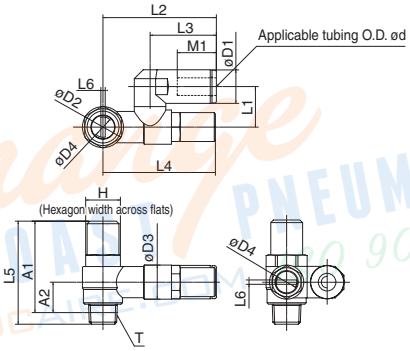
No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Body B	Brass	Electroless nickel plated
④	Body B	Brass	Electroless nickel plated
⑤	Needle	Brass	Electroless nickel plated
⑥	Seat ring	Brass	Electroless nickel plated
⑦	Spring	Steel wire	
⑧	U seal	HNBR	
⑨	U seal	HNBR	
⑩	Cassette	POM, Stainless steel (1)	
⑪	Seal	NBR	
⑫	O-ring	NBR	

No.	Description	Material	Note
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	O-ring	NBR	
⑯	O-ring	NBR	
⑰	Spacer	POM (2)	
⑱	Gasket	NBR, Stainless steel	
⑲	Retaining ring for hole type C	Tool steel	

Note 1) ø3/16", ø5/16", ø3/8", ø1/2" are made of POM, stainless steel, brass (Electroless nickel plated).
Note 2) ø3/16", ø3/8", ø1/2" are made of brass (Electroless nickel plated).

Dimensions

Metric size

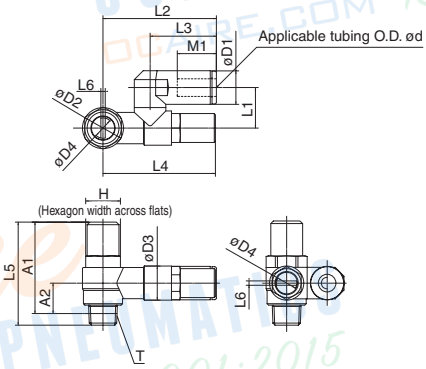


Metric Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1 *	A2 *	M1
ASD230F-M5-04T	4	M5 x 0.8	8	9.3	9.6	10	4.5	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9
ASD230F-M5-06T	6			11.6					32.5	20.6						13.7
ASD330F-01-06ST	6	R 1/8	12	11.6	14.2	11.8	7	14	38.5	22.9	38.9	35.6	1.5	31.6	10.6	13.7
ASD330F-01-08ST	8			15.2				15.8	44.8	28.2	38.2					18.5
ASD430F-02-06ST	6	R 1/4	17	12.8	18.5	15	7	18	43.5	25.2	41.7	40.7	1.5	34.7	11	17
ASD430F-02-08ST	8			15.2					46.5	28.2						18.5
ASD430F-02-10ST	10			18.5				19.7	49.3	31						21
ASD530F-02-06ST	6	R 1/4	19	12.8	23	19.8	9.5	20.3	48.3	25.2	53.7	55.3	1.5	49.3	15.4	17
ASD530F-02-08ST	8			15.2					51.3	28.2						18.5
ASD530F-02-10ST	10			18.5				23.1	54.1	32.6						21
ASD530F-02-12ST	12			20.9					55.9	34.4						22
ASD530F-03-06ST	6	R 3/8	19	12.8	23	19.8	9.5	20.3	48.3	25.2	53.7	53.7	1.5	47.4	14	17
ASD530F-03-08ST	8			15.2					51.3	28.2						18.5
ASD530F-03-10ST	10			18.5				23.1	54.1	32.6						21
ASD530F-03-12ST	12			20.9					55.9	34.4						22
ASD630F-04-10ST	10	R 1/2	24	18.5	28.6	26.5	12	25.9	64.3	32.6	69.1	63.8	1.5	55.8	18.6	21
ASD630F-04-12ST	12			20.9					66.1	34.4						22

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

Inch size



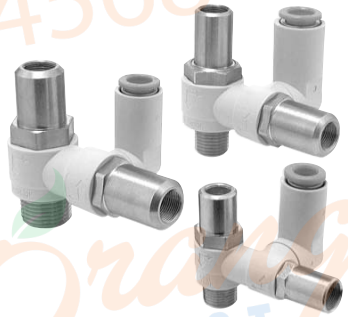
Inch Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1 *	A2 *	M1
ASD230F-U10/32-01T	1/8"	10-32 UNF	8	8.4	9.6	10	4.5	11.7	29.4	17.5	30.7	31	0.7	27.4	7.8	12.9
ASD230F-U10/32-03T	5/32"			9.3												
ASD230F-U10/32-05T	3/16"			11.4					35.2	23.3						16.5
ASD230F-U10/32-07T	1/4"			12					32.6	20.7						13.5
ASD330F-N01-05ST	3/16"	NPT 1/8	12.7	11.6	14.2	11.8	7	14	38.5	23.9	38.9	35.6	1.5	31.6	10.6	16.5
ASD330F-N01-07ST	1/4"			13.2				15.8	42.2	25.6	38.2					17
ASD330F-N01-09ST	5/16"			15.2					44.8	28.2						18.5
ASD430F-N02-07ST	1/4"	NPT 1/4	17.5	13.2	18.5	15	7	18	43.9	25.6	41.7	40.7	1.5	34.7	11	17
ASD430F-N02-09ST	5/16"			15.2					46.5	28.2						18.5
ASD430F-N02-11ST	3/8"			18.5				19.7	49.3	31						21
ASD530F-N02-07ST	1/4"	NPT 1/4	19	13.2	23	19.8	9.5	20.3	48.7	25.6	53.7	55.3	1.5	49.3	15.4	17
ASD530F-N02-09ST	5/16"			15.2					51.3	28.2						18.5
ASD530F-N02-11ST	3/8"			18.5				23.1	54.1	32.6						21
ASD530F-N03-07ST	1/4"	NPT 3/8	19	13.2	23	19.8	9.5	20.3	48.7	25.6	53.7	53.7	1.5	47.4	14	17
ASD530F-N03-09ST	5/16"			15.2					51.3	28.2						18.5
ASD530F-N03-11ST	3/8"			18.5				23.1	54.1	32.6						21
ASD630F-N04-11ST	3/8"	NPT 1/2	23.8	18.5	28.6	26.5	12	25.9	64.3	32.6	69.1	63.8	1.5	55.8	18.6	21

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

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

Series ASD□□□F-D



Model

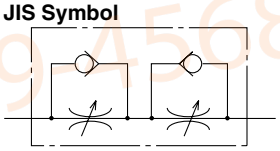
Model	Port size	Applicable tubing O.D.										
		Metric size					Inch size					
		4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"
ASD230F-M5	M5 x 0.8	●	●									
ASD330F-01	R 1/8		●	●								
ASD430F-02	R 1/4		●	●	●							
ASD530F-02	R 1/4		●	●	●	●						
ASD530F-03	R 3/8		●	●	●	●						
ASD630F-04	R 1/2				●	●						
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

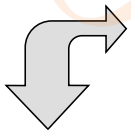
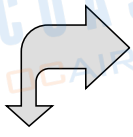
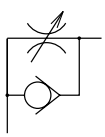
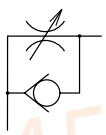
Fluid	Air
Proof pressure	1.5 MPa
Max. operating pressure	1 MPa
Min. operating pressure	0.1 MPa
Ambient and fluid temperature	–5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns (1))
Applicable tubing material (2)	Nylon, Soft nylon, Polyurethane

Note 1) In the case of ASD230F type
Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 15-6-3 to 15-6-5 for details.)
Note 3) Brass parts are all electroless nickel plated, provided as standard.

JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Flow Rate and Effective Area

Model		ASD230F	ASD330F	ASD430F		ASD530F			ASD630F	
Tubing O.D.	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12
	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 (Free flow)	Flow rate (ℓ/min (ANR))	75	175	295	350	500	600	700	1200	1300
	Effective area (mm^2)	1.1	2.7	4.5	5.3	7.6	9.1	10.7	18.3	19.8

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

SMC

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

Type

3	Universal

With One-touch fitting

Port size

M5	M5 x 0.8
01	R 1/8
02	R 1/4
03	R 3/8
04	R 1/2
U10/32	10-32 UNF
N01	NPT 1/8
N02	NPT 1/4
N03	NPT 3/8
N04	NPT 1/2

Applicable tubing O.D.

Metric size		Inch size	
04	ø4	01	ø1/8"
06	ø6	03	ø5/32"
08	ø8	05	ø3/16"
10	ø10	07	ø1/4"
12	ø12	09	ø5/16"
		11	ø3/8"

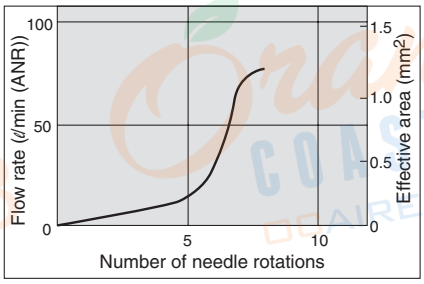
With seal

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.

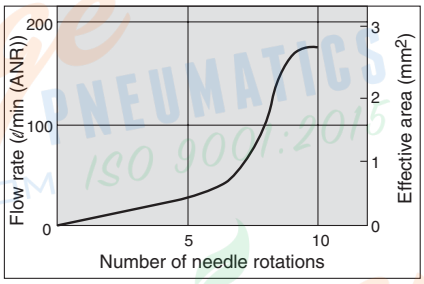
Type adjustable by a flat head screwdriver

Needle Valve/Flow Characteristics

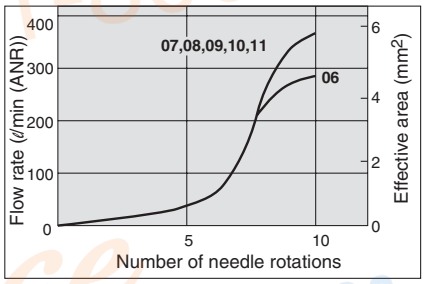
ASD230F



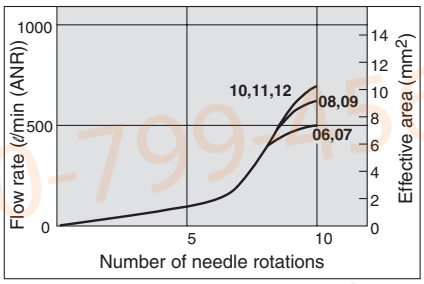
ASD330F



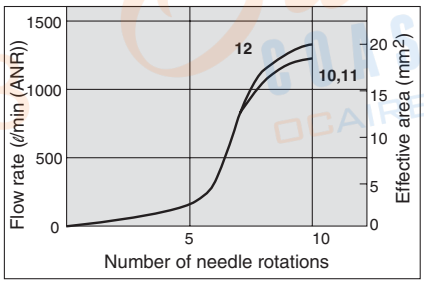
ASD430F



ASD530F

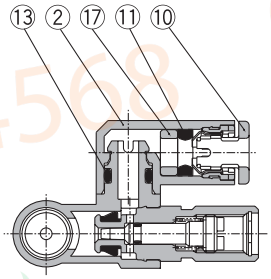


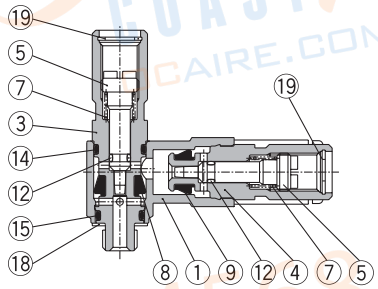
ASD630F



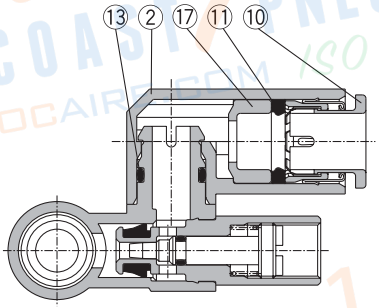
Construction

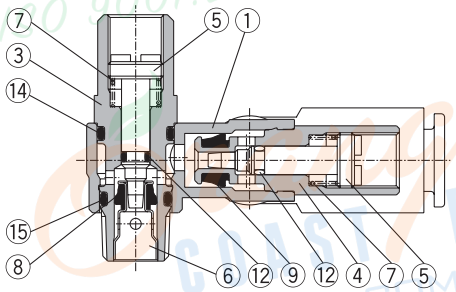
ASD230F



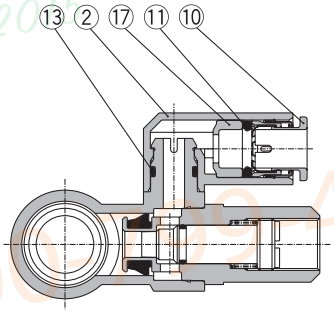


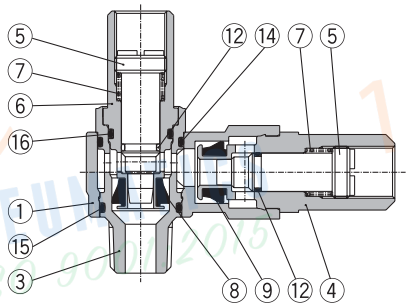
ASD330F/430F
ASD530F/630F





ASD530F–02





Component Parts

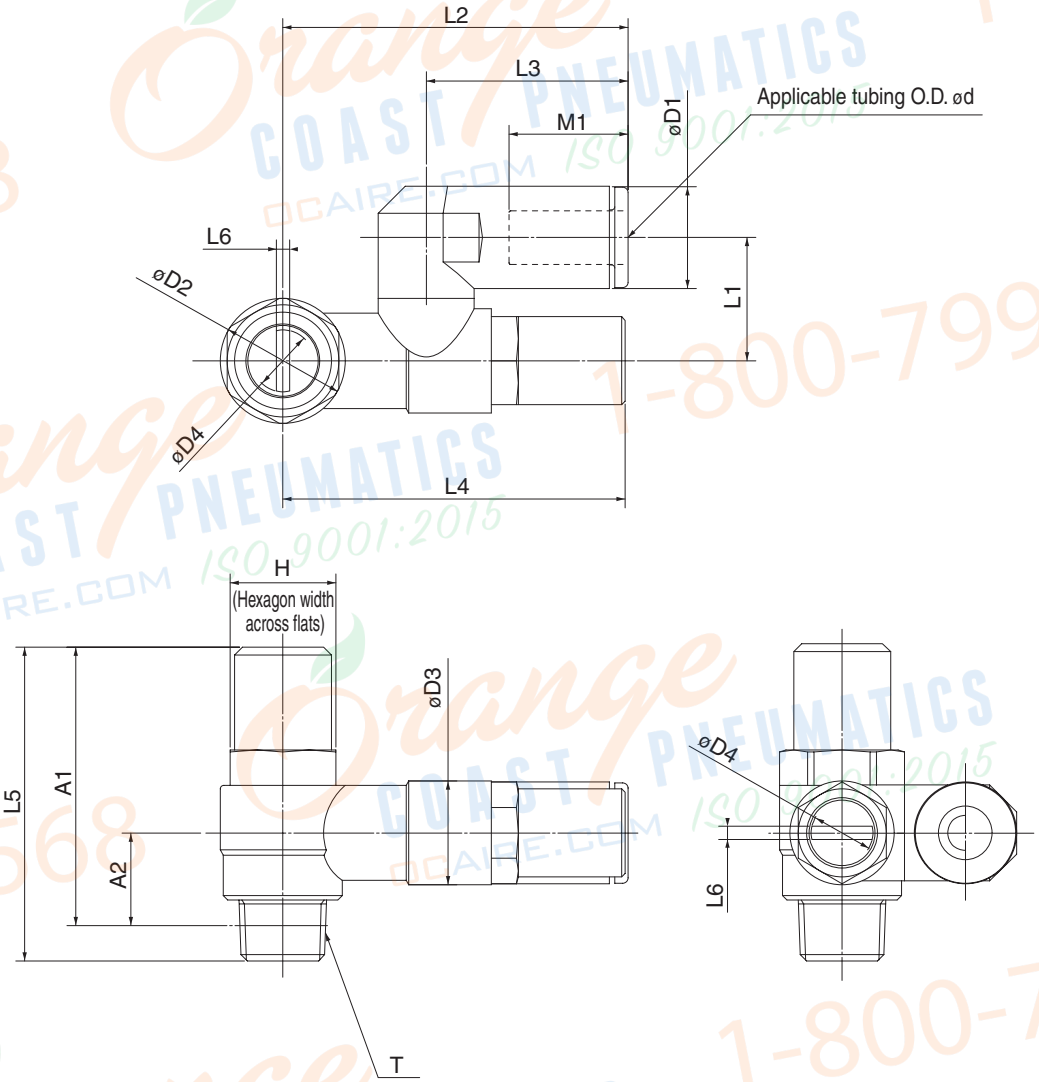
No.	Description	Material	Note
①	Body A	PBT	
②	Elbow body	PBT	
③	Body B	Brass	Electroless nickel plated
④	Body B	Brass	Electroless nickel plated
⑤	Needle	Brass	Electroless nickel plated
⑥	Seat ring	Brass	Electroless nickel plated
⑦	Spring	Steel wire	
⑧	U seal	HNBR	
⑨	U seal	HNBR	
⑩	Cassette	POM, Stainless steel [1]	
⑪	Seal	NBR	
⑫	O-ring	NBR	

No.	Description	Material	Note
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	O-ring	NBR	
⑯	O-ring	NBR	
⑰	Spacer	POM [2]	
⑱	Gasket	NBR, Stainless steel	
⑲	Retaining ring for hole type C	Tool steel	

Note 1) ø3/16", ø5/16", ø3/8", ø1/2" are made of POM, stainless steel, brass (Electroless nickel plated).
Note 2) ø3/16", ø3/8", ø1/2" are made of brass (Electroless nickel plated).

Dimensions

Metric size



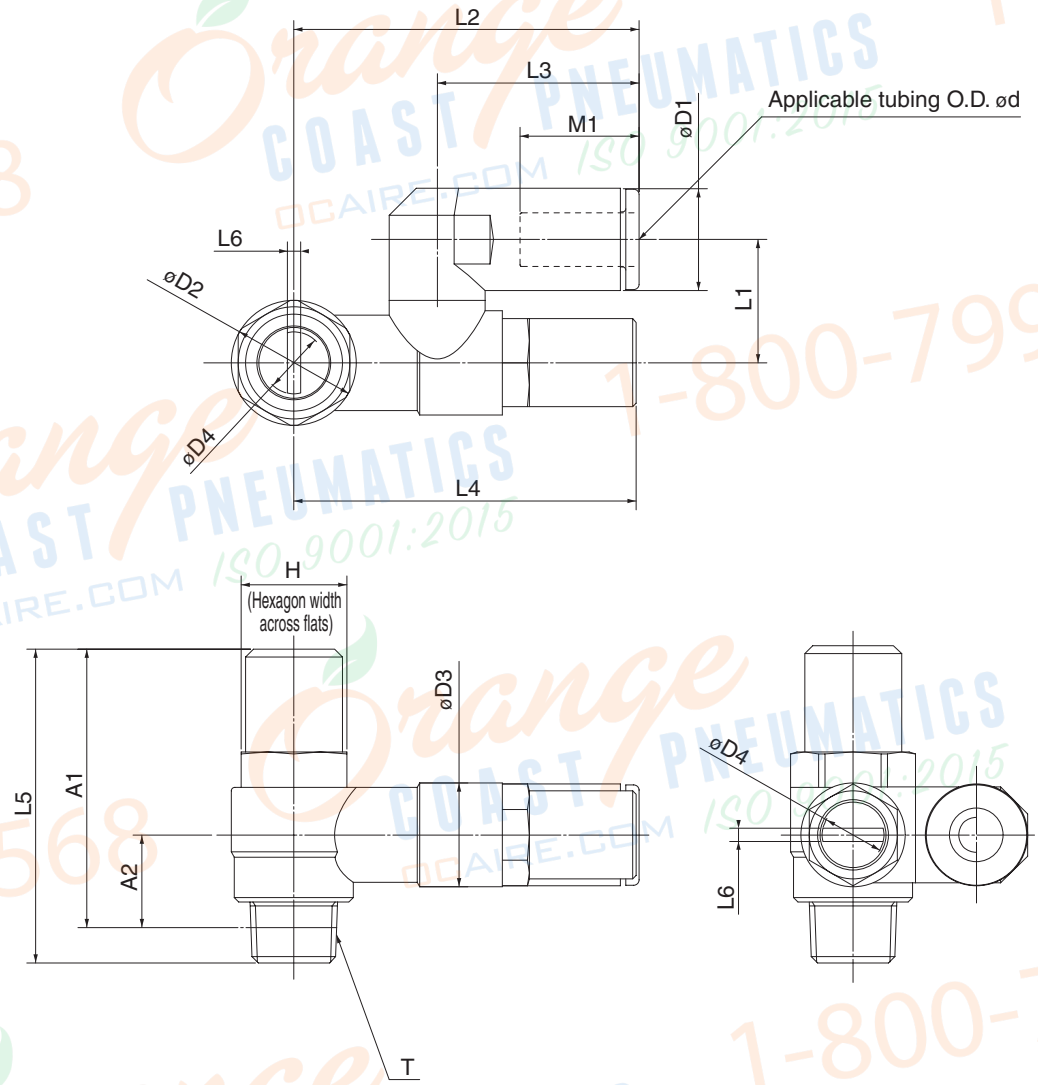
Metric Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1
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
ASD230F-M5-06D	6			11.6					32.5	20.6						13.7
ASD330F-01-06SD	6	R 1/8	12	11.6	14.2	11.8	7.2	14	38.5	22.9	38.9	35.6	1.2	31.6	10.6	13.7
ASD330F-01-08SD	8			15.2				15.8	44.8	28.2	38.2					18.5
ASD430F-02-06SD	6	R 1/4	17	12.8	18.5	15	7.2	18	43.5	25.2	41.7	40.7	1.2	34.7	11	17
ASD430F-02-08SD	8			15.2					46.5	28.2						18.5
ASD430F-02-10SD	10			18.5				19.7	49.3	31						21
ASD530F-02-06SD	6	R 1/4	19	12.8	23	19.8	9.8	20.3	48.3	25.2	53.7	55.3	1.2	49.3	15.4	17
ASD530F-02-08SD	8			15.2					51.3	28.2						18.5
ASD530F-02-10SD	10			18.5				23.1	54.1	32.6						21
ASD530F-02-12SD	12			20.9					55.9	34.4						22
ASD530F-03-06SD	6	R 3/8	19	12.8	23	19.8	9.8	20.3	48.3	25.2	53.7	53.7	1.2	47.4	14	17
ASD530F-03-08SD	8			15.2					51.3	28.2						18.5
ASD530F-03-10SD	10			18.5				23.1	54.1	32.6						21
ASD530F-03-12SD	12			20.9					55.9	34.4						22
ASD630F-04-10SD	10	R 1/2	24	18.5	28.6	26.5	12.4	25.9	64.3	32.6	69.1	63.8	1.2	55.8	18.6	21
ASD630F-04-12SD	12			20.9					66.1	34.4						22

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

Dimensions

Inch size



Inch Size

Model	d	T	H	D1	D2	D3	D4	L1	L2	L3	L4	L5	L6	A1*	A2*	M1
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
ASD230F-U10/32-03D	5/32"			9.3												
ASD230F-U10/32-05D	3/16"			11.4					35.2	23.3						16.5
ASD230F-U10/32-07D	1/4"			12					32.6	20.7						13.5
ASD330F-N01-05SD	3/16"	NPT 1/8	12.7	11.6	14.2	11.8	7.2	14	38.5	23.9	38.2	35.6	1.2	31.6	10.6	16.5
ASD330F-N01-07SD	1/4"			13.2				15.8	42.2	25.6						17
ASD330F-N01-09SD	5/16"			15.2					44.8	28.2						18.5
ASD430F-N02-07SD	1/4"	NPT 1/4	17.5	13.2	18.5	15	7.2	18	43.9	25.6	41.7	40.7	1.2	34.7	11	17
ASD430F-N02-09SD	5/16"			15.2					46.5	28.2						18.5
ASD430F-N02-11SD	3/8"			18.5				19.7	49.3	31						21
ASD530F-N02-07SD	1/4"	NPT 1/4	19	13.2	23	19.8	9.8	20.3	48.7	25.6	53.7	55.3	1.2	49.3	15.4	17
ASD530F-N02-09SD	5/16"			15.2					51.3	28.2						18.5
ASD530F-N02-11SD	3/8"			18.5				23.1	54.1	32.6						21
ASD530F-N03-07SD	1/4"	NPT 3/8	19	13.2	23	19.8	9.8	20.3	48.7	25.6	53.7	53.7	1.2	47.4	14	17
ASD530F-N03-09SD	5/16"			15.2					51.3	28.2						18.5
ASD530F-N03-11SD	3/8"			18.5				23.1	54.1	32.6						21
ASD630F-N04-11SD	3/8"	NPT 1/2	23.8	18.5	28.6	26.5	12.4	25.9	64.3	32.6	69.1	63.8	1.2	55.8	18.6	21

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

SMC

Flow Control Equipment
Precautions

Be sure to read before handling. Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to main text for more detailed precautions on every series.

⚠ Precautions

Selection

⚠ Warning

1. Products mentioned in this catalog are not designed for the use as stop valve with zero air leakage.

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

Mounting

⚠ Warning

1. Check that the lock nut is tightened.

A loose lock nut may cause actuator speed changes.

2. Confirm the degree of rotation of the needle valve.

Products mentioned in this catalog are retainer type so that the needle is not removed completely. Over rotation will cause damage.

3. Do not use tools such as pliers to rotate the handle.

It can cause idle rotation of the handle or damage.

4. Confirm air flow direction.

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

5. Adjust needle by opening the needle slowly after having closed it completely.

Loose needle valves may cause unexpected sudden actuator extension. When needle valve is turned clockwise, it is closed and cylinder speed decreases. When needle valve is turned counter clockwise, it is open and cylinder speed increases.

6. Do not apply excessive force or shock to the body or fittings with an impact tool.

It can cause damage or air leakage.

Series AS-F/FE/FG/FM

Selection

⚠ Warning

1. Confirm that PTFE can be used in application.

PTFE powder (Polytetrafluoroethylene resin) is included in the seal material. Confirm if the use of it may cause any adverse effect in the system.

Mounting

⚠ Warning

1. To install/remove the Flow Control Equipment, tighten/loosen at wrench flat B as close to the thread as possible using the appropriate wrench.

Do not apply torque at other points as the product may be damaged. Rotate Body A manually for positioning after installation.

2. Do not use universal type fittings for applications involving continuous rotation.

The fitting section may be damaged.

Tightening Torque

⚠ Caution

1. The tightening 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	Suitable screw torque (N·m)	Hexagon width across flats (mm)	Adjustable spanner nominal (mm)
M3	1/4	4.5	—
M5 10/32-UNF	1/6 turn after hand tightening	8	100
1/8	7 to 9	14	150
1/4	12 to 14	17	200
3/8	22 to 24	21	200
1/2	28 to 30	24	200

Lock Nut Tightening Torque

⚠ Caution

1. Suitable screw torque for a hexagon lock nut is shown in the table below. For standard installation, turn 15 to 30° using tool, after fastening by hand. Pay attention not to over torque the product.

Body size	Suitable screw torque (N·m)
M3	0.07
M5	0.3
1/8	1
1/4	1.5
3/8	4
1/2	10

⚠ Precautions

Handling of One-touch Fittings

⚠ Caution

1. Refer to page 15-1-11 for One-touch Fitting.

Series ASD

Operation

⚠ Caution

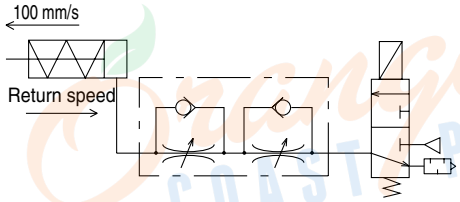
1. Single acting cylinder

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

Speed Controller	Cylinder	Solenoid valve	Tubing	Silencer	Maximum return speed (mm/s) 100 200 300
ASD230F	CJ2	VJ500	TU0604 1 m	AN110-01	ø6 / ø10 / ø16 — Cylinder size
ASD330F	CM2	VZ500	TU0604 1 m	AN110-01	ø20 / ø25 / ø32 — Cylinder size

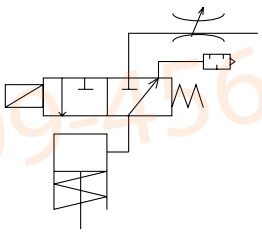
<Operating conditions>
• Cylinder extension speed: 100 mm/s
• Meter-out needle fully open

∗ Values at 0.5 MPa and 20°C.



(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 Series AS-F with -X214 for the throttle valve.

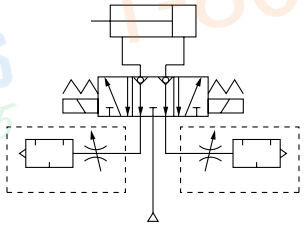
Series ASN2

Selection

⚠ Warning

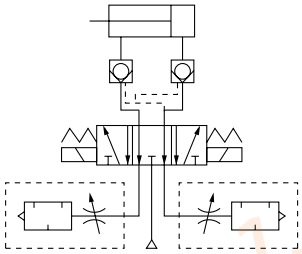
1. Inappropriate Circuits

(a) "Perfect Valve" (VF66□□, VS7-6-FPG, VS7-8-FPG)



Residual pressure behind the exhaust needle may cause check valve malfunction in the "Perfect Valve".

(b) Pilot check valve between Actuator and Valve



Residual pressure behind the exhaust needle may cause check valve to malfunction.

Mounting

⚠ Caution

1. If installing flow controls to valve ports, interference may occur with the fittings. Please consult the catalog before installing.

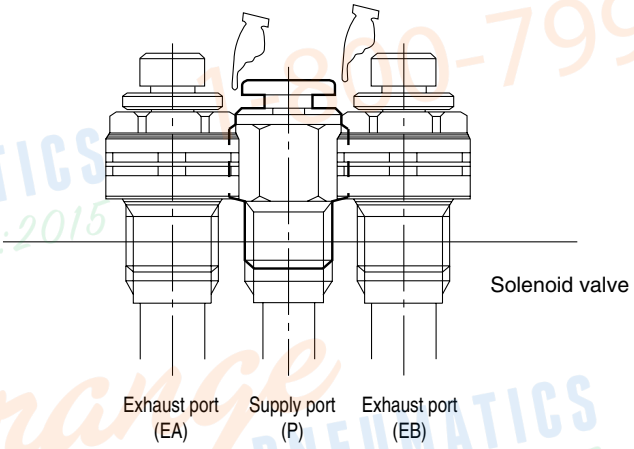


Fig. Example of the interference with fittings

Series AK

⚠ Caution

1. Vibrations may generate due to operating conditions, etc., even if the specifications are in the range mentioned in the catalog. Please consult with SMC.

2. Cracking pressure is a pressure at which the valve starts opening and not a pressure at which the valve is fully open.

⚠Precautions

Series ASS

Selection

⚠Warning

1. Use meter-out controlling type after confirming the initial speed to prevent sudden actuator extension.

Due to its specifications, the extension preventing function does not have speed control capability so that adjustments are limited. Use the meter-in controlling type if desired speed is less than set speed.

2. Circuit pressure remaining in cylinder is not usable.

Extension prevention works when pressure has been exhausted in cylinder. Therefore, prevent the extension by meter-in control using a speed controller in such a case.

Mounting

⚠Warning

1. Install Actuator and SSC valve as close as possible.

Extensions prevention in the initial operation and standard speed control may not function.

2. Do not use for relatively small capacity actuators. i.e. short stroke cylinders (less than 100 mm), rotary actuators, etc.

SSC valve may not properly operate.

3. Use in load factor less than 50%.

Speed control under normal operations may not function.

Series AQ

Operation

⚠Caution

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

a) With residual pressure or back pressure on the IN side

b) When the differential pressure between the IN and OUT sides is smaller than the min. operating pressure.

Series ASP

Caution 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. 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.

2. 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.