

Speed Controller with One-touch Fitting Stainless Series

Series AS-FG

Elbow Type/Universal Type

Stainless specifications for use in corrosive environments. Stainless steel 303 used for metal parts.

Suitable for use on CRT lines where copper ions can cause damage, for washing food processing equipment where there is exposure to water and salt water, etc., and in clean rooms where dust from discoloration and rusting of copper materials is unacceptable.

Light colors to match equipment

White resin parts are used for bodies and release buttons.

Threads with and without seal are available as standard.

Applicable tubing: Inch sizes standardized

Inch sizes are now available for all models.

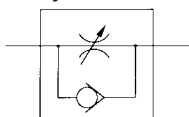


Elbow type



Universal type

JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.														Applicable cylinder bore size (mm)	
			Metric size							Inch size								
			3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"			
AS12□1FG-M5	AS13□1FG-M5	M5×0.8	●	●	●													6, 10, 16, 20
AS22□1FG-01	AS23□1FG-01	R 1/8	●	●	●	●	●*											20, 25, 32
AS22□1FG-02	AS23□1FG-02	R 1/4		●	●	●	●											20, 25, 32, 40
AS32□1FG-02	AS33□1FG-02	R 1/4			●	●	●	●										40, 50, 63
AS32□1FG-03	AS33□1FG-03	R 3/8			●	●	●	●										40, 50, 63
AS42□1FG-04	AS43□1FG-04	R 1/2					●	●										63, 80, 100
AS12□1FG-U10/32	AS13□1FG-U10/32	10-32 UNF							●	●	●	●						6, 10, 16, 20
AS22□1FG-N01	AS23□1FG-N01	NPT 1/8							●	●	●	●	●					20, 25, 32
AS22□1FG-N02	AS23□1FG-N02	NPT 1/4								●	●	●	●	●				20, 25, 32, 40
AS32□1FG-N02	AS33□1FG-N02	NPT 1/4									●	●	●					40, 50, 63
AS32□1FG-N03	AS33□1FG-N03	NPT 3/8									●	●	●					40, 50, 63
AS42□1FG-N04	AS43□1FG-N04	NPT 1/2												●	●			63, 80, 100

Note 1) Meter-out and meter-in types can be visually differentiated by the flow direction symbol on the resin body.

Note 2) * Elbow type only

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	Nylon, Soft nylon, Polyurethane, Soft polyurethane

Note 1) In the case of AS12□1FG and AS13□1FG

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or polyurethane tubing is used.

(Refer to pages 15-6-3 to 15-6-5 for details.)

Flow Rate and Effective Area

Model	AS12□1FG	AS22□1FG-□01	AS22□1FG-□02	AS32□1FG	AS42□1FG							
	AS13□1FG	AS23□1FG-□01	AS23□1FG-□02	AS33□1FG	AS43□1FG							
Tubing O.D.	Metric size	ø3.2 ø4 ø6	ø3.2 ø4 ø8 ø10	ø4 ø6 ø8 ø10	ø6 ø8 ø10 ø12	ø10 ø12						
	Inch size	ø1/8" ø5/32" ø3/16" ø1/4"	ø1/8" ø5/32" ø1/4" ø5/16"	ø5/32" ø3/16" ø1/4" ø5/16" ø3/8"	ø1/4" ø5/16" ø3/8"	ø3/8" ø1/2"						
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	100	180	230	260	390	460	660	790	920	1580	1710
	Effective area (mm ²)	1.5	2.7	3.5	4	6	7	10	12	14	12	26

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

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF

Series AS-FG

How to Order

AS 2 3 0 1 F G - 01 - 06

Body size

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

Type

2	Elbow
3	Universal

Control type

0	Meter-out
1	Meter-in

With One-touch fitting

Stainless steel specifications (SUS303)

Thread type

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

Option

Nil	None
S	With seal*

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

Applicable tubing O.D.

Metric size		Inch size	
23	ø3.2*	01	ø1/8"
04	ø4	03	ø5/32"
06	ø6	05	ø3/16"
08	ø8	07	ø1/4"
10	ø10	09	ø5/16"
12	ø12	11	ø3/8"
		13	ø1/2"

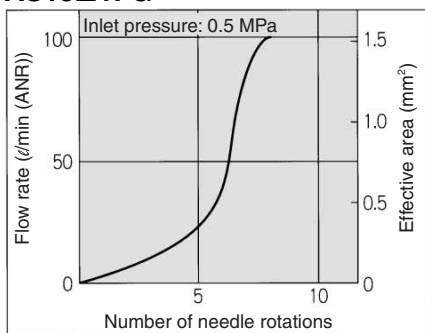
* Use ø1/8" tube.

Port size

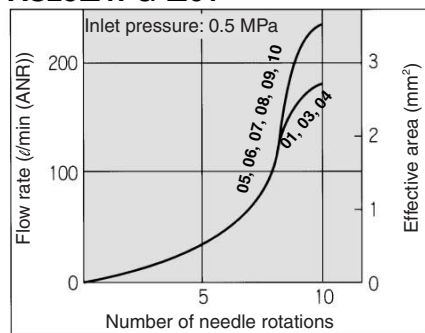
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2

Needle Valve/Flow Characteristics

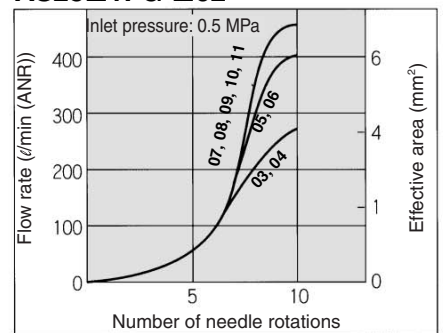
**AS12□1FG
AS13□1FG**



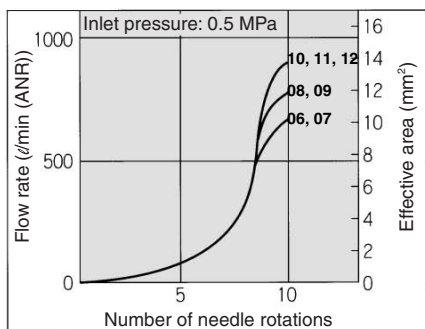
**AS22□1FG-□01
AS23□1FG-□01**



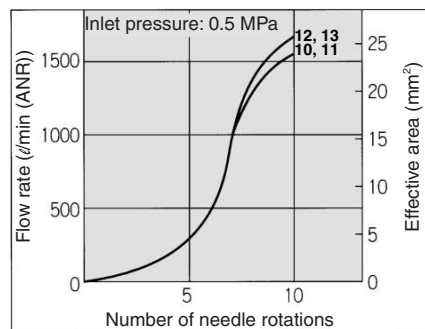
**AS22□1FG-□02
AS23□1FG-□02**



**AS32□1FG
AS33□1FG**



**AS42□1FG
AS43□1FG**



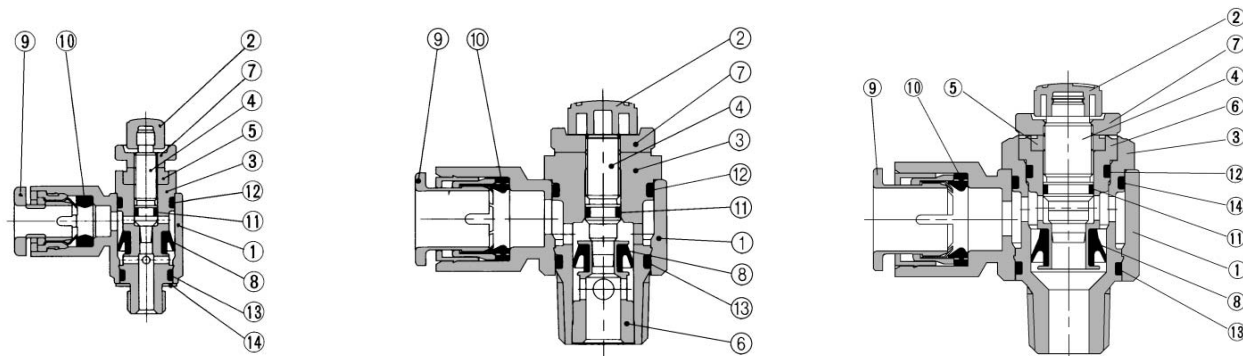
Construction: Elbow Type

Meter-out type

M5 type

U10/32 type

AS3201FG-02

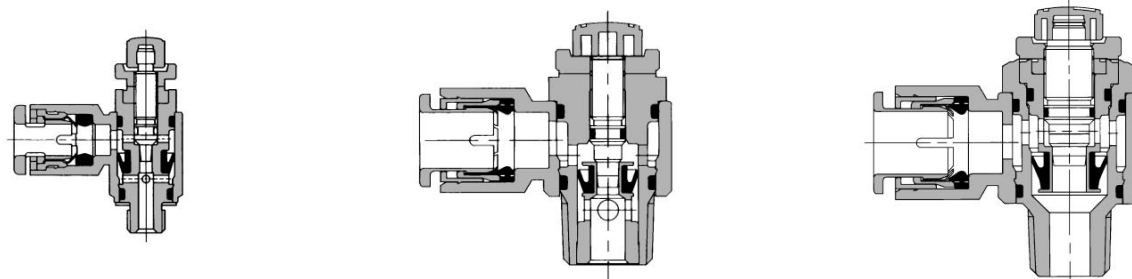


Meter-in type

M5 type

U10/32 type

AS3211FG-02



- AS
- ASP
- ASN
- AQ
- ASV
- AK
- ASS
- ASR
- ASF

Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Stainless steel 303	
④	Needle	Stainless steel 303	
⑤	Needle guide	Stainless steel 303	
⑥	Seat ring	Stainless steel 303	
⑦	Lock nut	Stainless steel 303	
⑧	U seal	HNBR	
⑨	Cassette	POM, Stainless steel	
⑩	Seal	NBR	
⑪	O-ring	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	Gasket	NBR/stainless steel 304	M5 type only

⚠ Caution

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 pages 15-8-6 to 15-8-8 for Precautions on every series.

Series AS-FG

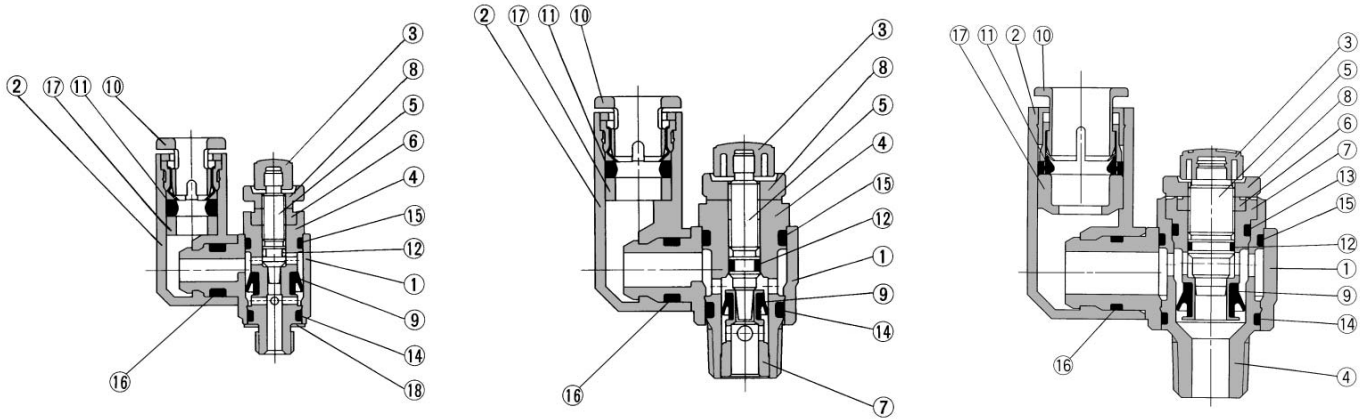
Construction: Universal Type

Meter-out type

M5 type

U10/32 type

AS3301FG-02

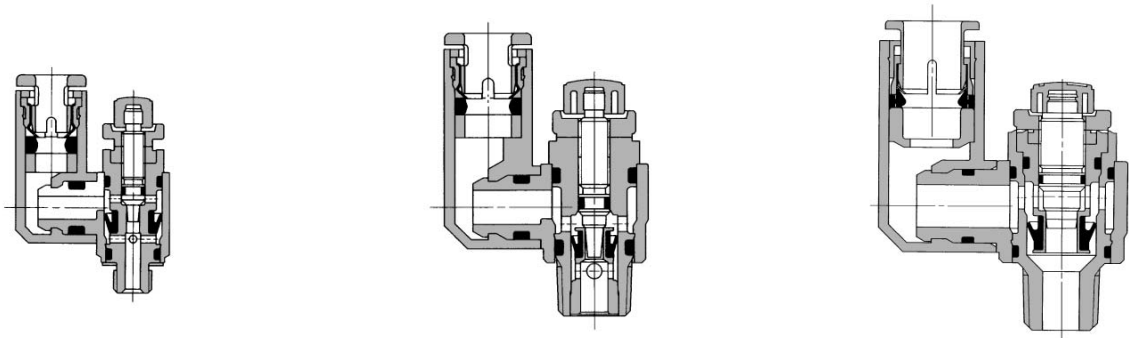


Meter-in type

M5 type

U10/32 type

AS3311FG-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	Needle	Stainless steel 303	
⑥	Needle guide	Stainless steel 303	
⑦	Seat ring	Stainless steel 303	
⑧	Lock nut	Stainless steel 303	
⑨	U seal	HNBR	
⑩	Cassette	POM, Stainless steel	
⑪	Seal	NBR	
⑫	O-ring	NBR	
⑬	O-ring	NBR	
⑭	O-ring	NBR	
⑮	O-ring	NBR	
⑯	O-ring	NBR	
⑰	Spacer	PBT (Note)	
⑱	Gasket	NBR, Stainless steel	

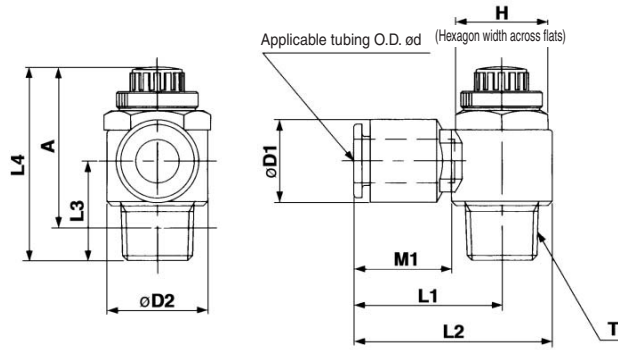
Note) $\phi 3/16"$, $\phi 3/8"$ and $\phi 1/2"$ are made of stainless steel 303.

AS13□1FG($\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 1/8"$, $\phi 5/32"$, $\phi 1/4"$),

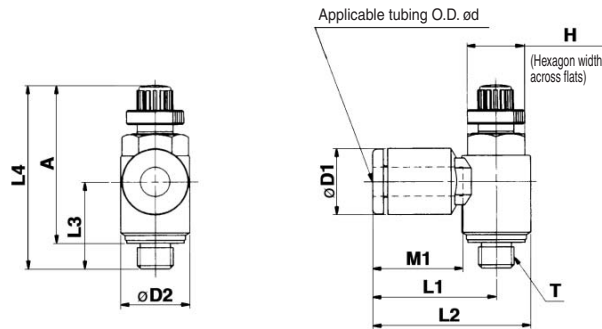
AS23□1FG-□01($\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 1/8"$, $\phi 5/32"$) are made of POM.

Speed Controller with One-touch Fitting Stainless Series, Elbow Type/Universal Type **Series AS-FG**

Dimensions: Elbow Type



M5 type U10/32 type



Metric Size

Model	d	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Weight (g)
									Max.	Min.	Max.	Min.		
AS12□1FG-M5-23	3.2	M5 x 0.8	8	8.4	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7
AS22□1FG-01-23	3.2	R 1/8	12	9.3	14.2	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	16
AS12□1FG-M5-04	4	M5 x 0.8	8	9.3	17.3	22.1	12.3	11.7	28.6	25.8	25	22.2	12.7	7
AS12□1FG-M5-06	6			11.6	18.1	22.9								
AS22□1FG-01-04	4	R 1/8	12	9.3	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	17	
AS22□1FG-01-06	6			11.6	20.4	27.5								
AS22□1FG-01-08	8			15.2	25.3	32.4								
AS22□1FG-01-10	10	18.5	33.1	40.2	15	21	21							
AS22□1FG-02-04	4	R 1/4	17	10.4	25.2	34.4	18.2	40.4	35.4	34.4	29.4	16	32	
AS22□1FG-02-06	6			12.8	25.2	34.4								
AS22□1FG-02-08	8			15.2	27.2	36.4								
AS22□1FG-02-10	10			18.5	33.9	43.2								20
AS32□1FG-02-06	6	R 1/4	19	12.8	27.8	39.3	21.8	48.8	43.8	42.8	37.8	17	60	
AS32□1FG-02-08	8			15.2	29.5	41								
AS32□1FG-02-10	10			18.5	31.8	43.3								
AS32□1FG-02-12	12			20.9	32.8	44.3								22
AS32□1FG-03-06	6	R 3/8	19	12.8	27.8	39.3	20.9	46.5	41.5	40.2	35.2	17.5	55	
AS32□1FG-03-08	8			15.2	29.5	41								
AS32□1FG-03-10	10			18.5	31.8	43.3								
AS32□1FG-03-12	12			20.9	32.8	44.3								21
AS42□1FG-04-10	10	R 1/2	24	18.5	33.6	47.9	25.4	57.6	50.1	49.6	42.1	21	100	
AS42□1FG-04-12	12			20.9	34.6	48.9								

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

Inch Size

Model	d	T	H	D1	D2	L1	L2	L3	L4		A*		M1	Weight (g)		
									Max.	Min.	Max.	Min.				
AS12□1FG-U10/32-01	1/8"	10-32 UNF	8	8.4	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7		
AS12□1FG-U10/32-03	5/32"			9.3												
AS12□1FG-U10/32-05	3/16"			11.4											21.3	26.1
AS12□1FG-U10/32-07	1/4"			12											18.3	23.1
AS22□1FG-N01-01	1/8"	NPT 1/8	12.7	9.3	20.4	27.5	14.3	36.1	31.1	32.1	27.1	12.7	16			
AS22□1FG-N01-03	5/32"			11.4	14.2	23.1								30.2		
AS22□1FG-N01-05	3/16"			13.2	23.9	31										
AS22□1FG-N01-07	1/4"			15.2	25.3	32.4								15		
AS22□1FG-N02-03	5/32"	NPT 1/4	17.5	10.4	25.2	34.4	18.2	40.4	35.4	34.4	29.4	16	32			
AS22□1FG-N02-05	3/16"			11.4	24.9	34.2										
AS22□1FG-N02-07	1/4"			13.2	27.8	39.3										
AS22□1FG-N02-09	5/16"			15.2	27.2	36.4								20		
AS22□1FG-N02-11	3/8"	17.9	33.9	43.2	21	36										
AS32□1FG-N02-07	1/4"	NPT 1/4	19	13.2	27.8	39.3	21.8	48.8	43.8	42.8	37.8	17	60			
AS32□1FG-N02-09	5/16"			15.2	29.5	41										
AS32□1FG-N02-11	3/8"			17.9	31.8	43.3										
AS32□1FG-N03-07	1/4"			13.2	27.8	39.3								21	67	
AS32□1FG-N03-09	5/16"	NPT 3/8	19	15.2	23	29.5	41	20.9	46.5	41.5	40.2	35.2	17.5	55		
AS32□1FG-N03-11	3/8"			17.9	31.8	43.3										
AS42□1FG-N04-11	3/8"			17.9	33.6	47.9	21	59								
AS42□1FG-N04-13	1/2"			23.8	21.7	28.6	25.4	57.6	50.1	49.6	42.1	22	101			

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

AS

ASP

ASN

AQ

ASV

AK

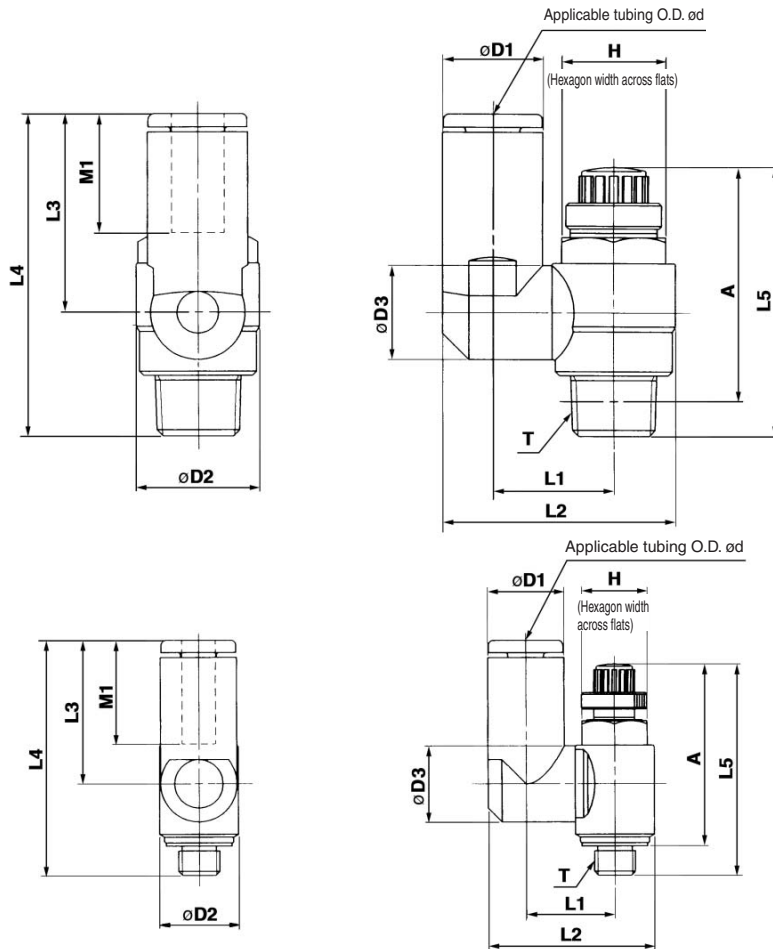
ASS

ASR

ASF

Series AS-FG

Dimensions: Universal Type



M5 type U10/32 type

Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M1	Weight (g)	
											Max.	Min.	Max.	Min.			
AS13□1FG-M5-23	3.2			8.4			19.8		17.5	28.7		28.6	25.8	25	22.2	12.7	7
AS13□1FG-M5-04	4	M5 x 0.8	8	9.3	9.6	9.3	10.8	20.3				28.6	25.8	25	22.2	13.5	
AS13□1FG-M5-06	6			11.6			21.4	20.6	31.8								
AS23□1FG-01-23	3.2			8.4			24.4		17.5	31.8						17	
AS23□1FG-01-04	4			9.3			13.1		17.5	31.8						12.7	
AS23□1FG-01-06	6	R 1/8	12	9.3	14.2		9.3	13.1		17.5	31.8	36.1	31.1	32.1	27.1	13.5	18
AS23□1FG-01-08	8			11.6			10.9	14	26.9	22.9	37.2	36.1	31.1	32.1	27.1	18.5	21
AS23□1FG-02-04	4			10.4			10.9	16.2	30.6	21.9	40.1					16	32
AS23□1FG-02-06	6	R 1/4	17	12.8			18.4	34	25.2	42.6		40.4	35.4	34.4	29.4	17	33
AS23□1FG-02-08	8			15.2			12.9	18.3	35.2	28.2	45.6					18.5	36
AS23□1FG-02-10	10			18.5				20.2	38.7	31	48.4					21	40
AS33□1FG-02-06	6			12.8			12.9	20.6	38.5	25.2	47					17	60
AS33□1FG-02-08	8	R 1/4	19	15.2				39.7	28.2	50		48.8	43.8	42.8	37.8	18.5	63
AS33□1FG-02-10	10			18.5				43.7	32.6	54.4						21	67
AS33□1FG-02-12	12			20.9			16.2	23	44.9	34.4	56.2					22	69
AS33□1FG-03-06	6			12.8			12.9	20.6	38.5	25.2	46.1					17	56
AS33□1FG-03-08	8	R 3/8	19	15.2				39.7	28.2	49.1		46.5	41.5	40	35	18.5	59
AS33□1FG-03-10	10			18.5				43.7	32.6	53.5						21	63
AS33□1FG-03-12	12			20.9			16.2	23	44.9	34.4	55.3					22	65
AS43□1FG-04-10	10	R 1/2	24	18.5			16.2	25.8	49.4	32.6	58	57.6	50.1	49.6	42.1	21	104
AS43□1FG-04-12	12			20.9	28.6		19.4	26.8	52	36.3	61.7					22	105

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

Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A*		M1	Weight (g)	
											Max.	Min.	Max.	Min.			
AS13□1FG-U10/32-01	1/8"			8.4			19.8		17.5	28.7						12.7	7
AS13□1FG-U10/32-03	5/32"			9.3			20.3		17.5	28.7		28.6	25.8	25	22.2	13.5	
AS13□1FG-U10/32-05	3/16"	10-32 UNF	8	11.4	9.6	9.3	10.8	21.3	23.3	34.5						16.5	
AS13□1FG-U10/32-07	1/4"			12				21.6	20.7	31.9						13.7	
AS23□1FG-N01-01	1/8"			8.4			13.1		17.5	31.8						12.7	17
AS23□1FG-N01-03	5/32"			9.3			10.9	14	26.8	23.9						16.5	
AS23□1FG-N01-05	3/16"	NPT 1/8	12.7	11.4	14							36.1	31.1	32.1	27.1	18.5	
AS23□1FG-N01-07	1/4"			13.2			12.9	16.2	29.9	25.6	37.2					21	21
AS23□1FG-N01-09	5/16"			15.2					30.9	28.2	41.7					21	21
AS23□1FG-N02-03	5/32"			10.4			10.9	16.2	30.6	21.9	40.1					16	32
AS23□1FG-N02-05	3/16"			11.4					31.1	23.9	42.6					17	33
AS23□1FG-N02-07	1/4"	NPT 1/4	17.5	13.2	19				34.2	25.6	45.6	40.4	35	34.4	29.4	18.5	36
AS23□1FG-N02-09	5/16"			15.2			12.9	18.3	35.2	28.2	48.4					21	39
AS23□1FG-N02-11	3/8"			17.9					20.2	38.7	31					21	40
AS33□1FG-N02-07	1/4"			13.2			12.9	20.6	38.7	25.6	50					17	60
AS33□1FG-N02-09	5/16"	NPT 1/4	19	15.2	23				39.7	28.2	54.4	48.8	43.8	42.8	37.8	18.5	63
AS33□1FG-N02-11	3/8"			17.9			16.2	23	43.7	32.6	56.2					21	69
AS33□1FG-N03-07	1/4"			13.2			12.9	20.6	38.7	25.6	46.1					17	56
AS33□1FG-N03-09	5/16"	NPT 3/8	19	15.2	23				39.7	28.2	49.1	46.5	41.5	40.2	35.2	18.5	59
AS33□1FG-N03-11	3/8"			17.9			16.2	23	43.7	32.6	53.5					21	65
AS43□1FG-N04-11	3/8"	NPT 3/8	23.8	17.9	29				16.2	25.8	49.4	57.6	50.1	49.6	42.1	21	104
AS43□1FG-N04-13	1/2"	NPT 1/2	28.6	21.7	29				19.4	26.8	52					22	106

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

Speed Controller with One-touch Fittings Stainless Series

Series AS-FG

In-line Type



Model

Model	Applicable tubing O.D.											Applicable cylinder bore size (mm)		
	Metric size						Inch size							
	3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"		3/8"	1/2"
AS1001FG	●	●	●				●	●	●	●				6, 10, 16, 20
AS2001FG		●	●					●	●	●				20, 25, 32
AS2051FG			●	●					●	●	●			20, 25, 32, 40
AS3001FG			●	●	●	●				●	●	●		40, 50, 63
AS4001FG					●	●						●	●	63, 80, 100

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 AS1001FG type

Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane, or soft polyurethane tubing is used.

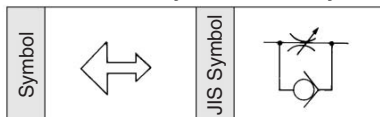
(Refer to pages 15-6-3 to 15-6-5 for details.)

Flow Rate and Effective Area

Model		AS1001FG	AS2001FG	AS2051FG	AS3001FG			AS4001FG			
Tubing O.D.	Metric size	ø3.2 ø4 ø6	ø4 ø6	ø6 ø8	ø6 ø8	ø6 ø8 ø10 ø12	ø6 ø8	ø10 ø12	ø10 ø12		
	Inch size	ø1/8" ø5/32" ø3/16"	ø5/32" ø3/16" ø1/4"	ø3/16" ø1/4"	ø3/16" ø5/16"	ø1/4" ø5/16"	ø3/8"	ø3/8"	ø1/2"		
Controlled flow (Free flow)	Flow rate (ℓ/min (ANR))	100	130	230	290	460	420	660	920	1050	1390
	Effective area (mm ²)	1.5	2	3.5	4.5	7	6.5	10	14	16	21

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

Flow Direction Symbols on Body



AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF

Series AS-FG

How to Order

AS 200 1 F G -06

Body size

100	M5 standard
200	1/8 standard
205	1/4 standard
300	3/8 standard
400	1/2 standard

With One-touch fittings

Stainless steel specifications (SUS303)

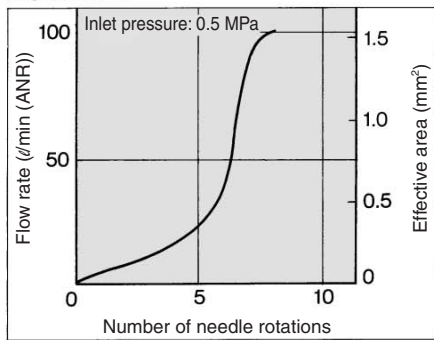
Applicable tubing O.D.

Metric size		Inch size	
23	ø3.2 *	01	ø1/8"
04	ø4	03	ø5/32"
06	ø6	05	ø3/16"
08	ø8	07	ø1/4"
10	ø10	09	ø5/16"
12	ø12	11	ø3/8"
		13	ø1/2"

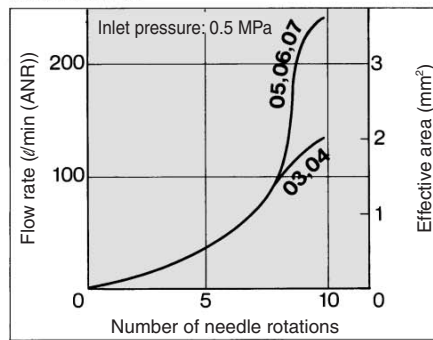
* Use ø1/8" tube.

Needle Valve/Flow Characteristics

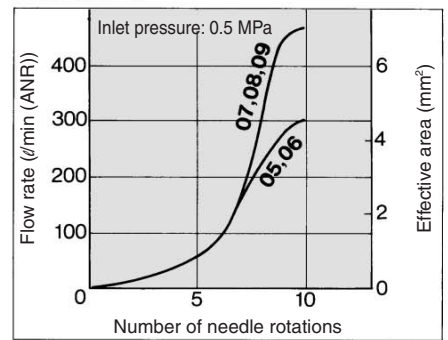
AS1001FG



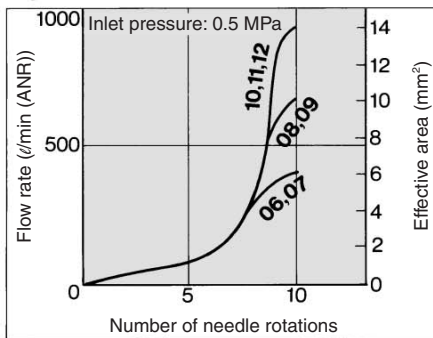
AS2001FG



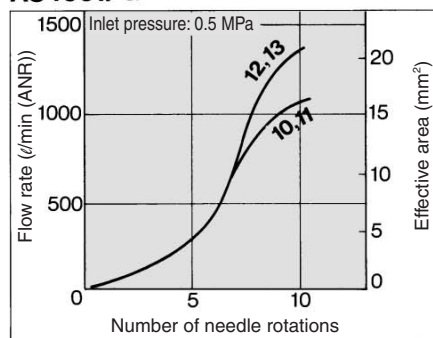
AS2051FG



AS3001FG

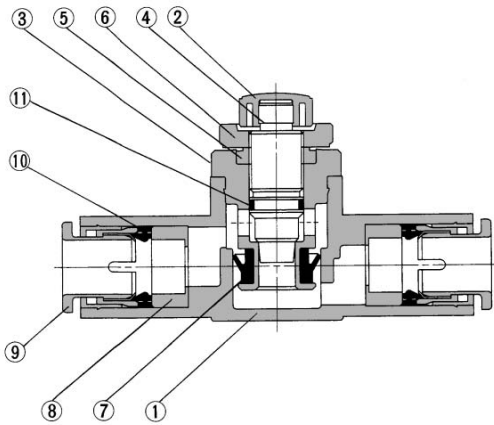


AS4001FG



Speed Controller with One-touch Fittings Stainless Series, In-line Type **Series AS-FG**

Construction

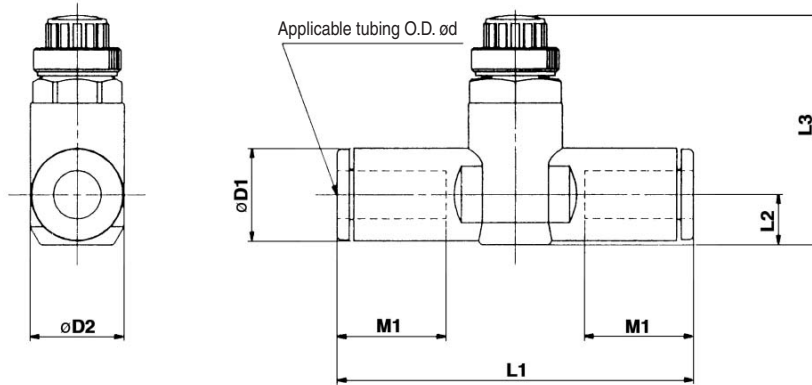


Component Parts

No.	Description	Material	Note
①	Body A	PBT	
②	Handle	PBT	
③	Body B	Stainless steel 303	
④	Needle	Stainless steel 303	
⑤	Needle guide	Stainless steel 303	
⑥	Lock nut	Stainless steel 303	
⑦	U seal	HNBR	
⑧	Spacer	PBT ^{Note)}	
⑨	Cassette	POM, Stainless steel	
⑩	Seal	NBR	
⑪	O-ring	NBR	

Note) $\phi 3/16"$, $\phi 3/8"$ and $\phi 1/2"$ are made of stainless steel 303.
AS1001FG($\phi 3.2$, $\phi 4$, $\phi 6$, $\phi 1/8"$, $\phi 5/32"$, $\phi 1/4"$),
AS2001FG($\phi 4$, $\phi 6$, $\phi 5/32"$) are POM.

Dimensions



Metric Size

Model	d	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001FG-23	3.2	8.4	10	38	4.5	23.5	20.7	12.7	6
AS1001FG-04	4	9.3		39.2	5.2	24.2	21.4	7	
AS1001FG-06	6	11.6		40.7	6.2	25.2	22.4	13.5	8
AS2001FG-04	4	9.3	11.8	40.7	5.2	32.6	27.6	12.7	12
AS2001FG-06	6	11.6		44.8	6.3	33.7	28.7	13.5	13
AS2051FG-06	6	12.8		53.2	6.7	35.2	30.2	17	26
AS2051FG-08	8	15.2	14.8	59.8	8.1	32.6	27.6	18	31
AS3001FG-06	6	12.8		59	7.4	38.3	33.3	17	18
AS3001FG-08	8	15.2		64.4	8.2	39.1	34.1	18	21
AS3001FG-10	10	18.5	19.8	71.6	9.8	40.6	35.6	21	32
AS3001FG-12	12	20.9		76	11	41.8	36.8	22	33
AS4001FG-10	10	18.5		51.1	43.6	21	36		
AS4001FG-12	12	20.9	26.5	82	11.3	52.1	44.6	22	40

Inch Size

Model	d	D1	D2	L1	L2	L3		M1	Weight (g)
						Max.	Min.		
AS1001FG-01	1/8"	8.4	10	38	4.5	23.5	20.7	12.7	6
AS1001FG-03	5/32"	9.3		39.2	5.2	24.2	21.4	7	
AS1001FG-05	3/16"	11.4		48.7	6.2	25.2	22.4	16.5	8
AS1001FG-07	1/4"	12	11.8	40.7	5.2	32.6	27.6	12.7	12
AS2001FG-03	5/32"	9.3		40.7	5.2	32.6	27.6	12.7	12
AS2001FG-05	3/16"	11.4		50	6.2	33.6	28.6	16.5	18
AS2001FG-07	1/4"	13.2	14.8	52.2	7.1	34.5	29.5	17	21
AS2051FG-05	3/16"	11.4		52.2	6.2	34.6	29.6	16.5	24
AS2051FG-07	1/4"	13.2		54.4	7.1	35.5	30.5	17	26
AS2051FG-09	5/16"	15.2	19.8	59.8	8.1	32.6	27.6	18	31
AS3001FG-07	1/4"	13.2		59	7.4	38.3	33.3	17	42
AS3001FG-09	5/16"	15.2		64.4	8.2	39.1	34.1	18	46
AS3001FG-11	3/8"	17.9	26.5	70.8	9.5	40.3	35.3	21	53
AS4001FG-11	3/8"	17.9		76.9	10.3	51	43.5	21	97
AS4001FG-13	1/2"	21.7		83.1	11.6	52.4	44.9	22	106

AS

ASP

ASN

AQ

ASV

AK

ASS

ASR

ASF

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

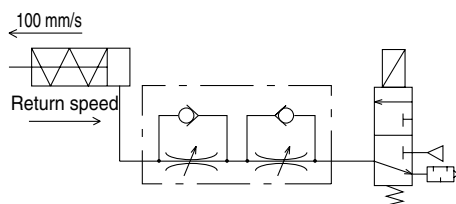
1. Single acting cylinder

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	Cylinder size		
					ø6		
					ø10		
ASD330F	CM2	VZ500	TU0604 1 m	AN110-01	Cylinder size		
					ø16		
					ø20		
					ø25		
					ø32		

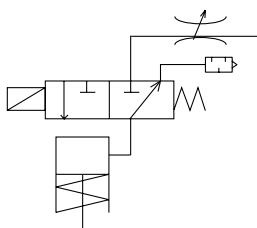
- <Operating conditions>
- Cylinder extension speed: 100 mm/s
 - Meter-out needle fully open

* 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.

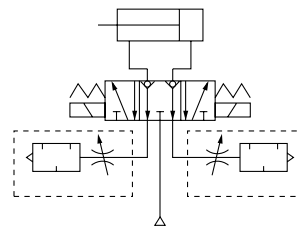
Series ASN2

Selection

⚠ Warning

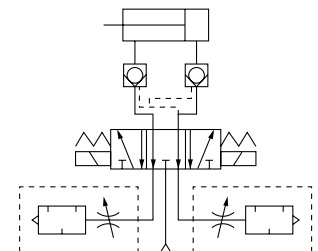
1. Inappropriate Circuits

(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.

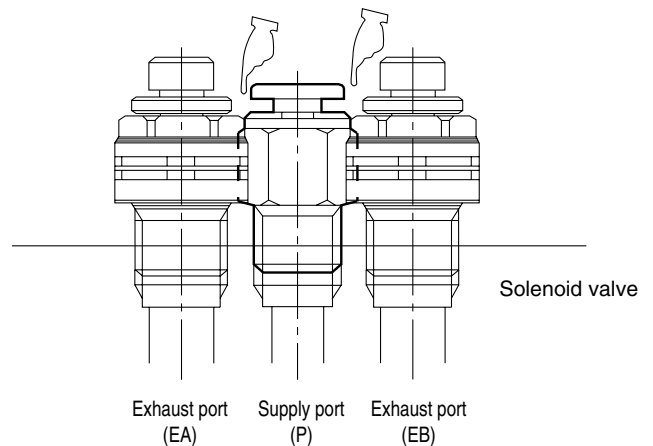


Fig. Example of the interference with fittings

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.**



Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of "Caution", "Warning" or "Danger". To ensure safety, be sure to observe ISO 4414 ^{Note 1)}, JIS B 8370 ^{Note 2)} and other safety practices.

⚠ Caution : Operator error could result in injury or equipment damage.

⚠ Warning : Operator error could result in serious injury or loss of life.

⚠ Danger : In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power--General rules relating to systems.

Note 2) JIS B 8370: General Rules for Pneumatic Equipment

⚠ Warning

1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalog information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.

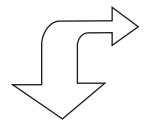
1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driver objects have been confirmed.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc.

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Предназначен для регулировки расхода воздуха на выходе из пневматических устройств.

- Удобен для монтажа непосредственно на пневмоцилиндре.
- Возможность поворота корпуса относительно основания на 360°.
- Изготовлен из нержавеющей стали.



Технические характеристики

Тип	ASG22□F-M5	ASG32□F-01	ASG42□F-02	ASG52□F-03	ASG62□F-04
Среда	Очищенный сжатый воздух с содержанием масла и без него				
Наружный диаметр трубки (мм)	4, 6	4, 6, 8	6, 8, 10	8, 10, 12	12
Расход (норм. л/мин)	100	180, 230	390, 460	790, 920	1580
Эквивалентное сечение (мм ²)	1.5	2.7, 3.5	6, 7	12, 14	24
Испытательное давление (МПа)	1,5				
Макс. рабочее давление (МПа)	1,0				
Мин. рабочее давление (МПа)	0,1				
t° рабочей и окружающей среды (°C)	- 5 ~ + 60				
Диапазон регулирования	8 оборотов		10 оборотов		
Материал присоединяемой трубки	FEP, PFA, нейлон, мягкий нейлон, полиуретан, полиолефин				

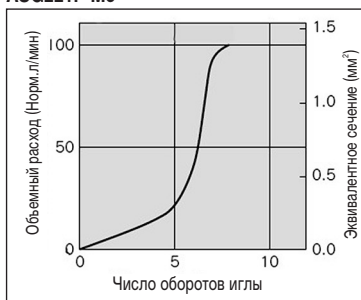
Таблица выбора

Тип	Резьба	Наружный диаметр трубки (мм)					Диаметр цилиндра (мм)
		4	6	8	10	12	
ASG22□F-M5	M5x0.8						6, 10, 16, 20
ASG32□F-01	R 1/8						20, 25, 32
ASG42□F-02	R 1/4						20, 25, 32, 40
ASG52□F-03	R 3/8						40, 50, 63
ASG62□F-04	R 1/2						63, 80, 100

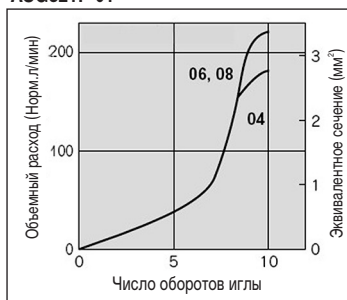
Характеристики расхода

Давление на входе 0.5 МПа

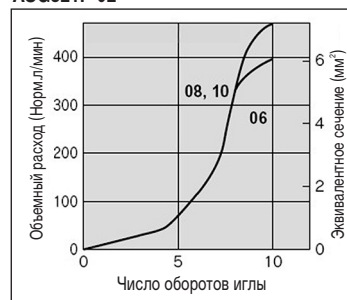
ASG220F-M5
ASG221F-M5



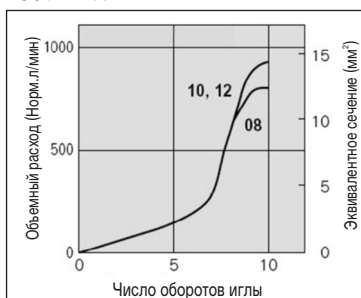
ASG320F-01
ASG321F-01



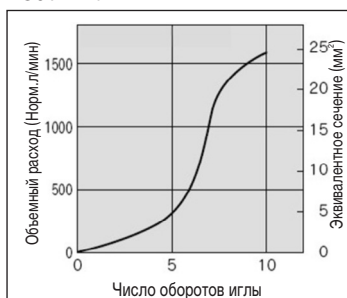
ASG320F-02
ASG321F-02



ASG520F-03
ASG521F-03



ASG620F-04
ASG621F-04



Пневмодроссель с обратным клапаном ASG

Номер для заказа

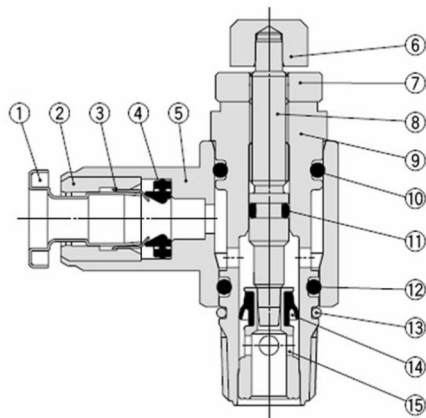
ASG **3** **2** **0** F - **01** - **06** S

Типоразмер		Присоединения		Ø трубки	
2	M5	M5	M5x0.8	04	4
3	8	01	R1/8	06	6
4	10	02	R1/4	08	8
5	12	03	R3/8	10	10
6	12	04	R1/2	12	12

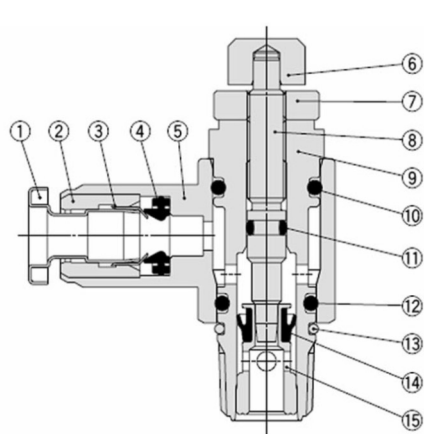
Тип регулировки	
0	Регулируемый выход
1	Регулируемый вход

Конструкция

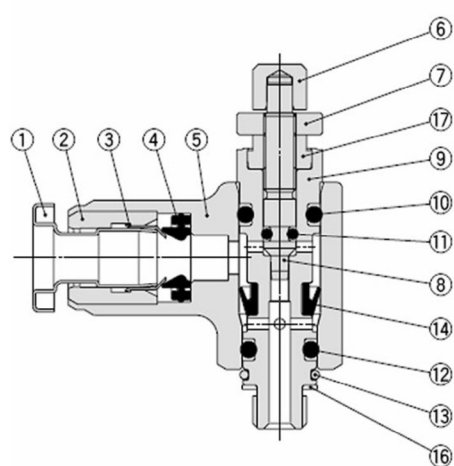
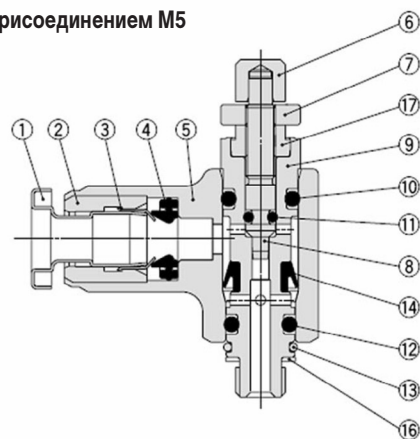
Регулировка на выходе



Регулировка на входе



С присоединением M5

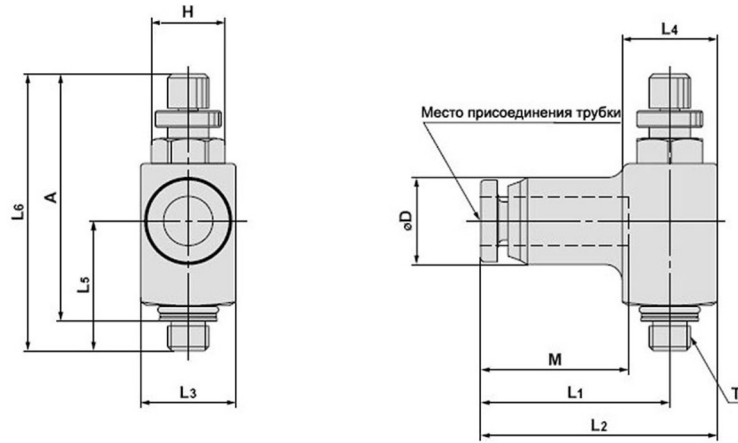


Спецификация

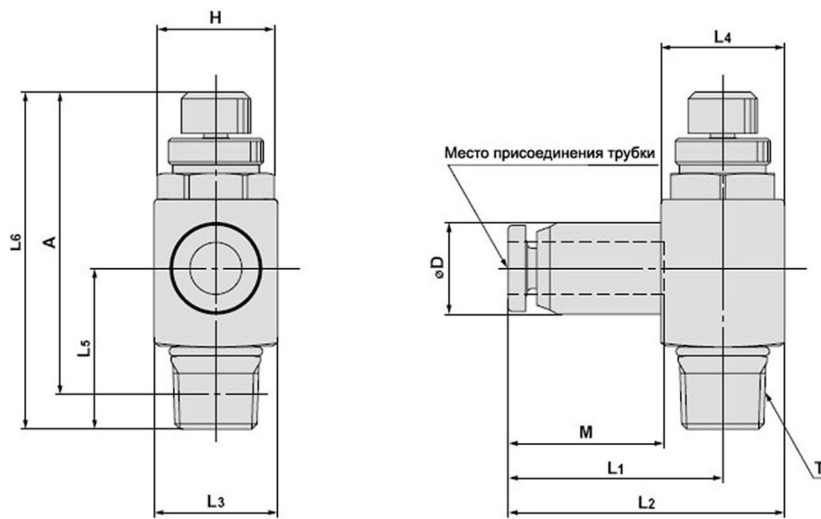
Поз.	Обозначение	Материал	Поз.	Обозначение	Материал
1	Нажимная втулка	Нерж. сталь	10	Кольцевая прокладка	FKM
2	Направляющая втулка	Нерж. сталь	11	Кольцевая прокладка	FKM
3	Цанга	Нерж. сталь	12	Кольцевая прокладка	FKM
4	Уплотнение	FKM	13	Кольцо	Нерж. сталь
5	Корпус	Нерж. сталь	14	Уплотнение	FKM
6	Регулировочный винт	Нерж. сталь	15	Втулка	Нерж. сталь
7	Контргайка	Нерж. сталь	16	Прокладка	Нерж. сталь, FKM
8	Игла	Нерж. сталь	17	Направляющая	Нерж. сталь
9	Корпус	Нерж. сталь			

Размеры и данные по заказу

ASG22□F-M5



ASG32□F-01
ASG42□F-02
ASG52□F-03
ASG62□F-04



Номер для заказа	ø трубки	T	H	D	L1	L2	L3 / L4	L5	L6		A		M	Вес (r)
									Мин.	Макс.	Мин.	Макс.		
ASG22□F-M5-04	4	M5x0.8	8	10.6	23	28.8	11.6	15.8	33.7	37.2	30.2	33.7	18.2	25.2
ASG22□F-M5-06	6			13	23.6	30.6	14						18.8	34.4
ASG32□F-01-04S	4	1/8	12	10.6	24.8	32	14.3	18.6	39	44	35	40	18.2	39.4
ASG32□F-01-06S	6			13	25.4	32.6	14.3						18.8	42.4
ASG32□F-01-08S	8			15	27.5	35.5	16						20.9	52.4
ASG42□F-02-06S	6	1/4	17	13	27.3	36.2	17.9	24.2	48.5	53.5	42.5	47.5	18.8	76.8
ASG42□F-02-08S	8			15	29.4	38.3	17.9						20.9	80.3
ASG42□F-02-10S	10			18	31.9	41.4	19						23	93.6
ASG52□F-03-08S	8	3/8	19	15	31.1	41.7	21.2	26.5	53.7	58.7	47.7	52.7	20.9	117
ASG52□F-03-10S	10			18	33.6	44.2	21.2						23	124.9
ASG52□F-03-12S	12			20.8	35.4	46.3	21.8						24.8	137.8
ASG62□F-04-12S	12	1/2	24	20.8	37.6	50.5	25.8	30	58.4	65.9	46.8	54.3	24.8	186.8