

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

RoHS

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.

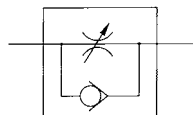


Elbow type



Universal type

JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
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 x 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 ⁽²⁾	Nylon, Soft nylon, 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 tubing is used.

(Refer to pages 371 and 372 for details.)

Flow Rate and Effective Area

Model		AS12□1FG AS13□1FG	AS22□1FG-□01 AS23□1FG-□01	AS22□1FG-□02 AS23□1FG-□02			AS32□1FG AS33□1FG			AS42□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 (mm²)	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.



Made to Order
(Refer to page 473 for details.)

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

Control type

0	Meter-out
1	Meter-in

Type

2	Elbow
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

Option

Nil	None
S	With seal*

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

Lock nut option

Nil	Hexagon lock nut
J	Round lock nut

Made to Order
(Refer to the below for details.)

Applicable tubing O.D. (Note)

Metric size

23	ø3.2 *
04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Inch size

01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"
13	ø1/2"

Note) For applicable tubing O.D. selection, refer to the Model on page 472.

Made to Order

* Use ø1/8" tube.



1 Lubricant: Vaseline X12

Ex.) AS1201FG-M5-23-X12

3 Throttle Valve (Without Check Valve) X214

Ex.) AS1201FG-M5-23-X214

Note) Throttle valve is only compatible with the part no. of the meter-out type.

2 Grease-free (Seal: Fluorine Coating) + Throttle Valve (Without Check Valve) X21

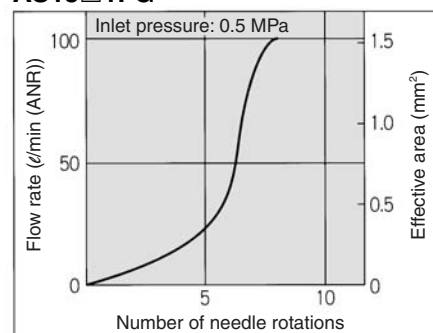
Ex.) AS1201FG-M5-23-X21

Note 1) Not particle-free

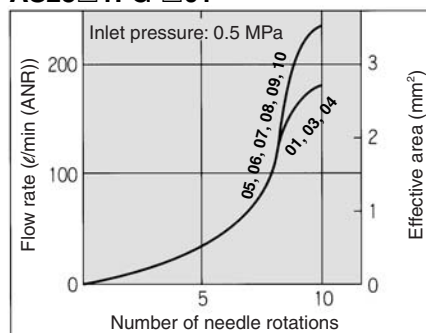
Note 2) Throttle valve is only compatible with the part no. of the meter-out type.

Needle Valve/Flow Characteristics

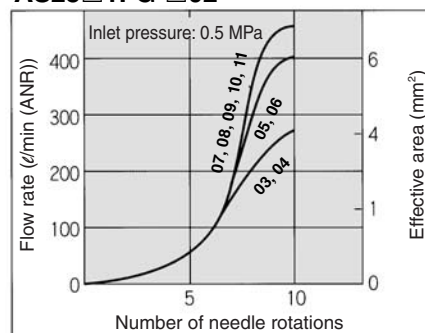
AS12□1FG
AS13□1FG



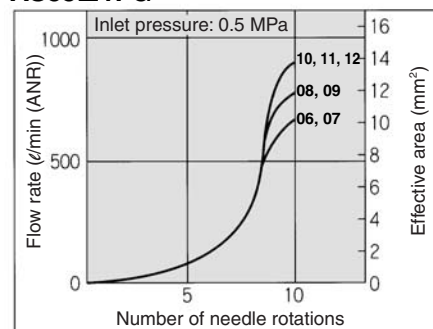
AS22□1FG-□01
AS23□1FG-□01



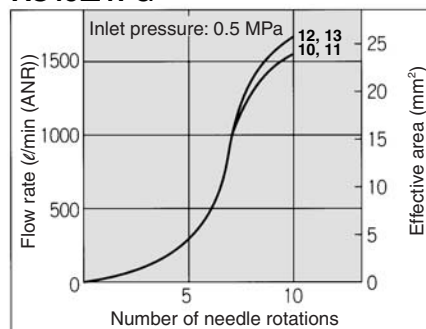
AS22□1FG-□02
AS23□1FG-□02



AS32□1FG
AS33□1FG



AS42□1FG
AS43□1FG



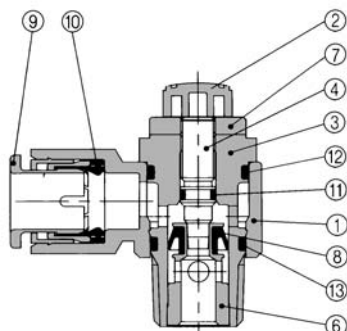
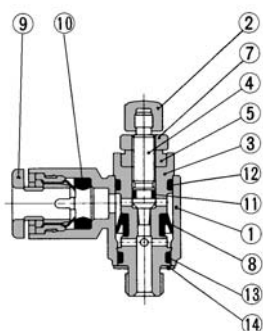
Series AS-FG

Construction: Elbow Type

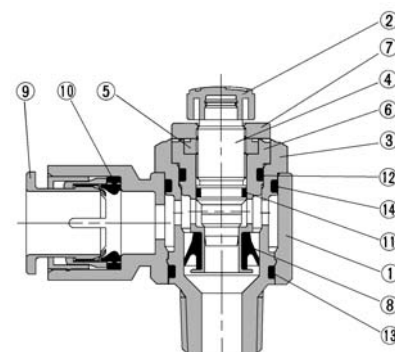
Meter-out type

M5 type

U10/32 type



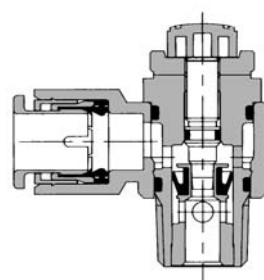
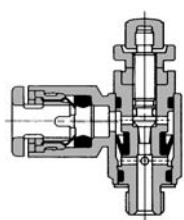
AS3201FG-02



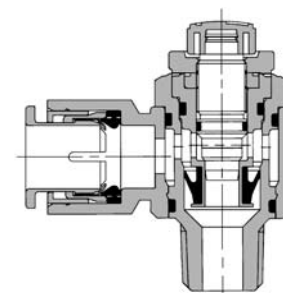
Meter-in type

M5 type

U10/32 type



AS3211FG-02



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	—	
10	Seal	NBR	
11	O-ring	NBR	
12	O-ring	NBR	
13	O-ring	NBR	
14	O-ring	NBR	
15	Gasket	NBR, Stainless steel	M5 type only

⚠ Caution

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 412 to 414 for Flow Control Equipment Precautions.

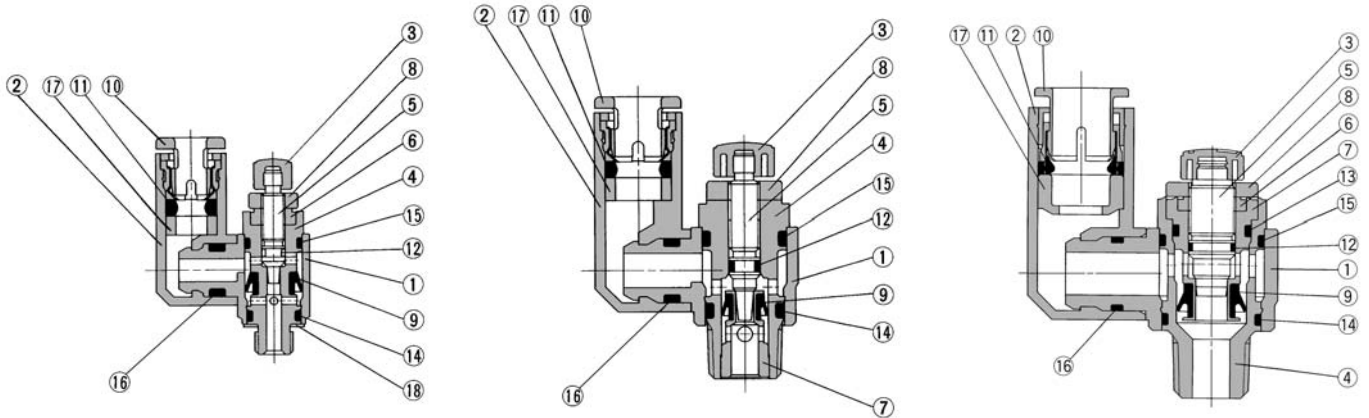
Construction: Universal Type

Meter-out type

M5 type

U10/32 type

AS3301FG-02

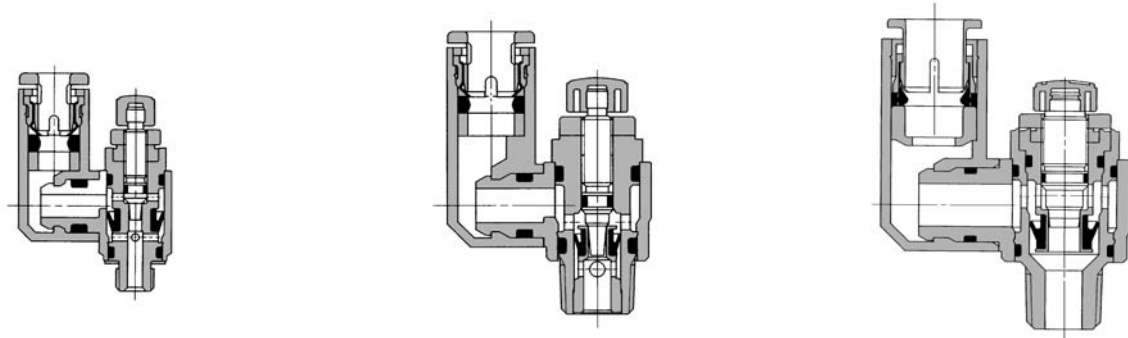


Meter-in type

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	—	
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	—	
18	Gasket	NBR, Stainless steel	M5 type only

AS

ASP

ASN

AQ

ASV

AK

VCHC

ASS

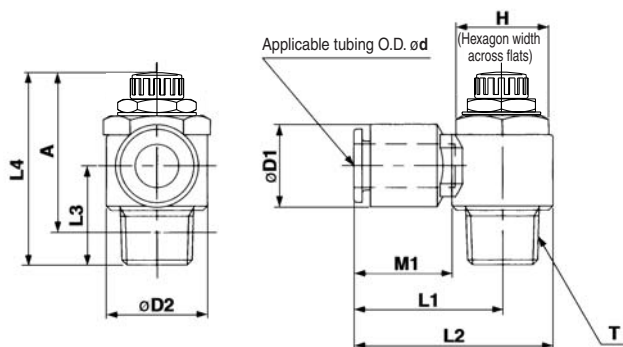
ASR
ASQ

KE

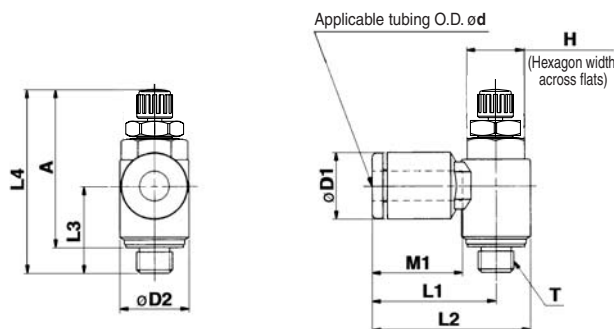
TMH

Series AS-FG

Dimensions: Elbow Type



M5 type U10/32 type



Metric Size

Model	d	T	H	D1	D2	L1	L2	L3	L4 ⁽¹⁾		A*		M1	Mass (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
AS12□1FG-M5-04	4	M5 x 0.8	8	9.3	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7
AS12□1FG-M5-06	6	M5 x 0.8	8	11.6	11.6	18.1	22.9	11.7	28.6	25.8	25	22.2	13.5	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
AS22□1FG-01-04	4	R 1/8	12	9.3	14.2	20.4	27.5	13.4	35.2	30.2	32.1	27.1	12.7	17
AS22□1FG-01-06	6	R 1/8	12	11.6	14.2	20.4	27.5	13.4	35.2	30.2	32.1	27.1	13.5	17
AS22□1FG-01-08	8	R 1/8	12	15.2	15.2	25.3	32.4	14.1	35.2	30.2	32.1	27.1	18.5	19
AS22□1FG-01-10	10	R 1/8	12	18.5	15.2	32.1	39.2	14.1	35.2	30.2	32.1	27.1	21	21
AS22□1FG-02-04	4	R 1/4	17	10.4	18.5	25.2	34.4	17.7	39.9	34.9	34.4	29.4	16	32
AS22□1FG-02-06	6	R 1/4	17	12.8	18.5	25.2	34.4	17.7	39.9	34.9	34.4	29.4	17	32
AS22□1FG-02-08	8	R 1/4	17	15.2	18.5	27.2	36.4	17.7	39.9	34.9	34.4	29.4	18.5	34
AS22□1FG-02-10	10	R 1/4	17	18.5	18.5	35.3	44.5	19.5	39.9	34.9	34.4	29.4	21	36
AS32□1FG-02-06	6	R 1/4	19	12.8	23	27.8	39.3	21.3	48.3	43.3	42.8	37.8	17	60
AS32□1FG-02-08	8	R 1/4	19	15.2	23	29.5	41	21.3	48.3	43.3	42.8	37.8	18.5	63
AS32□1FG-02-10	10	R 1/4	19	18.5	23	31.8	43.3	21.3	48.3	43.3	42.8	37.8	21	67
AS32□1FG-02-12	12	R 1/4	19	20.9	23	32.8	44.3	21.3	48.3	43.3	42.8	37.8	22	69
AS32□1FG-03-06	6	R 3/8	19	12.8	28.6	27.8	39.3	19.8	45.4	40.4	40.2	35.2	17	55
AS32□1FG-03-08	8	R 3/8	19	15.2	28.6	29.5	41	19.8	45.4	40.4	40.2	35.2	18.5	57
AS32□1FG-03-10	10	R 3/8	19	18.5	28.6	31.8	43.3	19.8	45.4	40.4	40.2	35.2	21	59
AS32□1FG-03-12	12	R 3/8	19	20.9	28.6	32.8	44.3	19.8	45.4	40.4	40.2	35.2	22	61
AS42□1FG-04-10	10	R 1/2	24	18.5	28.6	33.6	47.9	24.5	56.7	49.2	49.6	42.1	21	100
AS42□1FG-04-12	12	R 1/2	24	20.9	28.6	34.6	48.9	24.5	56.7	49.2	49.6	42.1	22	101

Note 1) Reference dimensions

Note 2) Reference dimensions of M5 x 0.8, R threads after installation.

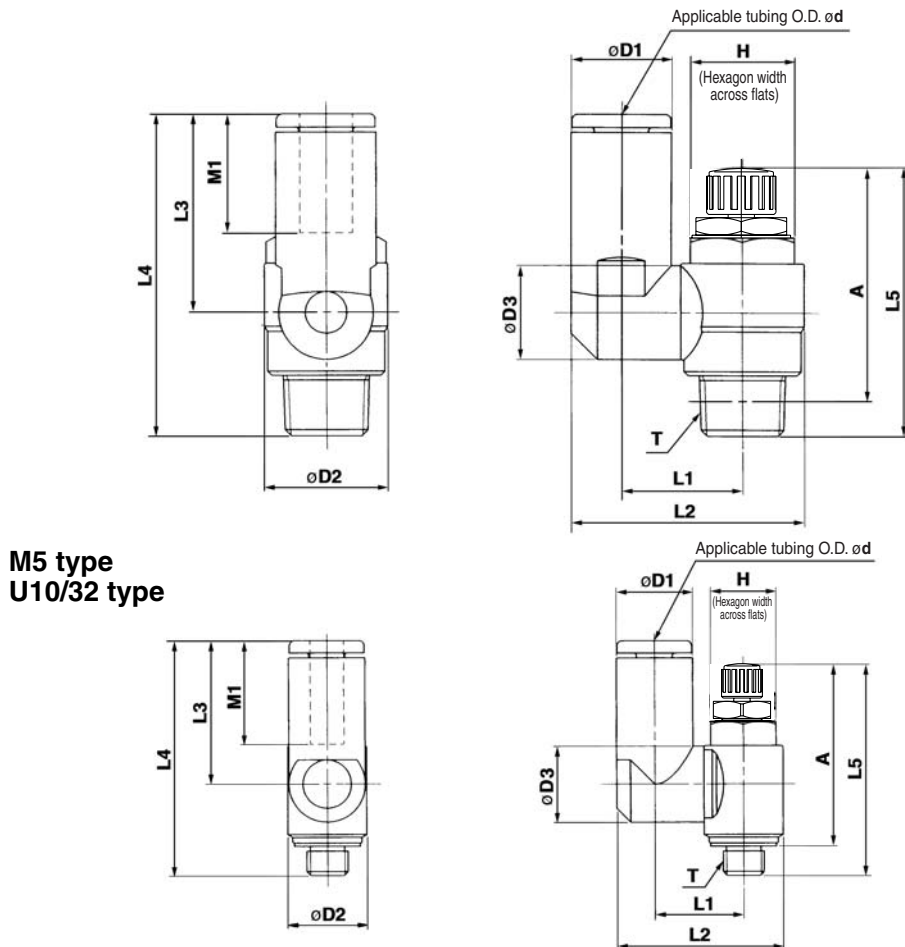
Inch Size

Model	d	T	H	D1	D2	L1	L2	L3	L4 ⁽¹⁾		A*		M1	Mass (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"	10-32 UNF	8	9.3	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7
AS12□1FG-U10/32-05	3/16"	10-32 UNF	8	11.4	11.4	21.3	26.1	11.7	28.6	25.8	25	22.2	16.5	7
AS12□1FG-U10/32-07	1/4"	10-32 UNF	8	12	12	18.3	23.1	11.7	28.6	25.8	25	22.2	13.5	7
AS22□1FG-N01-01	1/8"	NPT 1/8	12.7	9.3	14.2	20.4	27.5	13.4	35.2	30.2	32.1	27.1	12.7	16
AS22□1FG-N01-03	5/32"	NPT 1/8	12.7	11.4	14.2	23.1	30.2	13.4	35.2	30.2	32.1	27.1	13.5	17
AS22□1FG-N01-05	3/16"	NPT 1/8	12.7	13.2	14.2	23.9	31	13.4	35.2	30.2	32.1	27.1	17	19
AS22□1FG-N01-07	1/4"	NPT 1/8	12.7	15.2	14.2	25.3	32.4	14.1	35.2	30.2	32.1	27.1	18.5	21
AS22□1FG-N01-09	5/16"	NPT 1/8	12.7	17.9	14.2	27.2	36.4	14.1	35.2	30.2	32.1	27.1	21	21
AS22□1FG-N02-03	5/32"	NPT 1/4	17.5	10.4	18.5	25.2	34.4	17.7	39.9	34.9	34.4	29.4	16	32
AS22□1FG-N02-05	3/16"	NPT 1/4	17.5	11.4	18.5	24.9	34.2	17.7	39.9	34.9	34.4	29.4	16.5	32
AS22□1FG-N02-07	1/4"	NPT 1/4	17.5	13.2	18.5	25.2	34.5	17.7	39.9	34.9	34.4	29.4	17	34
AS22□1FG-N02-09	5/16"	NPT 1/4	17.5	15.2	18.5	27.2	36.4	19.5	39.9	34.9	34.4	29.4	18.5	36
AS22□1FG-N02-11	3/8"	NPT 1/4	17.5	17.9	18.5	29.5	41	19.5	39.9	34.9	34.4	29.4	21	36
AS32□1FG-N02-07	1/4"	NPT 1/4	19	13.2	23	27.8	39.3	21.3	48.3	43.3	42.8	37.8	17	60
AS32□1FG-N02-09	5/16"	NPT 1/4	19	15.2	23	29.5	41	21.3	48.3	43.3	42.8	37.8	18.5	63
AS32□1FG-N02-11	3/8"	NPT 1/4	19	17.9	23	31.8	43.3	21.3	48.3	43.3	42.8	37.8	21	67
AS32□1FG-N03-07	1/4"	NPT 3/8	19	13.2	28.6	27.8	39.3	19.8	45.4	40.4	40.2	35.2	17	55
AS32□1FG-N03-09	5/16"	NPT 3/8	19	15.2	28.6	29.5	41	19.8	45.4	40.4	40.2	35.2	18.5	57
AS32□1FG-N03-11	3/8"	NPT 3/8	19	17.9	28.6	31.8	43.3	19.8	45.4	40.4	40.2	35.2	21	59
AS42□1FG-N04-11	3/8"	NPT 1/2	23.8	17.9	28.6	33.6	47.9	24.5	56.7	49.2	49.6	42.1	21	100
AS42□1FG-N04-13	1/2"	NPT 1/2	23.8	21.7	28.6	35.2	49.5	24.5	56.7	49.2	49.6	42.1	22	101

Note 1) Reference dimensions

Note 2) Reference dimensions of 10-32 UNF and NPT threads after installation.

Dimensions: Universal Type



M5 type
U10/32 type

Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5 ⁽¹⁾	A*	M1	Mass (g)
AS13□1FG-M5-23	3.2			8.4			19.8	17.5	28.7		28.6	25	22.2	7
AS13□1FG-M5-04	4	M5 x 0.8	8	9.3	9.6	9.3	10.8	20.3						
AS13□1FG-M5-06	6			11.6			21.4	20.6	31.8					
AS23□1FG-01-23	3.2			8.4			19.8	17.5	28.7		28.6	25	22.2	17
AS23□1FG-01-04	4	R 1/8	12	9.3	14.2	9.3	13.1	24.9						
AS23□1FG-01-06	6			11.6			10.9	14	26.9	22.9	36.3			18
AS23□1FG-01-08	8			15.2			12.9	16.2	30.9	28.2	40.8			21
AS23□1FG-02-04	4			10.4			10.9	16.2	30.6	21.9	39.6			32
AS23□1FG-02-06	6			12.8			18.4	34	25.2	42.1				33
AS23□1FG-02-08	8	R 1/4	17	15.2	18.5	12.9	18.3	35.2	28.2	45.1	39.9	34.9	29.4	36
AS23□1FG-02-10	10			18.5			20.2	38.7	31	47.9				40
AS33□1FG-02-06	6			12.8			38.5	25.2	46.5					60
AS33□1FG-02-08	8	R 1/4	19	15.2	23	12.9	20.6	39.7	28.2	49.5	48.3	43.3	37.8	63
AS33□1FG-02-10	10			18.5			23	43.7	32.6	53.9				67
AS33□1FG-02-12	12			20.9			16.2	23	44.9	34.4	55.7			69
AS33□1FG-03-06	6			12.8			38.5	25.2	45					56
AS33□1FG-03-08	8	R 3/8	19	15.2	23	12.9	20.6	39.7	28.2	48	45.4	40.4	35	59
AS33□1FG-03-10	10			18.5			16.2	23	43.7	32.6	52.4			63
AS33□1FG-03-12	12			20.9			44.9	34.4	54.2					65
AS43□1FG-04-10	10			18.5			16.2	25.8	49.4	32.6	57.1			104
AS43□1FG-04-12	12	R 1/2	24	21.7	28.6	19.4	26.8	52	36.3	60.8	56.7	49.2	42.1	105

Note 1) Reference dimensions

Note 2) 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 ⁽¹⁾	A*	M1	Mass (g)
AS13□1FG-U10/32-01	1/8"			8.4			19.8	17.5	28.7		28.6	25	22.2	7
AS13□1FG-U10/32-03	5/32"	10-32 UNF	8	9.3	9.6	9.3	10.8	20.3						
AS13□1FG-U10/32-05	3/16"			11.4			21.3	23.3	34.5					8
AS13□1FG-U10/32-07	1/4"			12			21.6	20.7	31.9					
AS23□1FG-N01-01	1/8"			8.4			19.8	17.5	28.7		28.6	25	22.2	17
AS23□1FG-N01-03	5/32"	NPT 1/8	12.7	9.3	14	9.3	13.1	24.9						
AS23□1FG-N01-05	3/16"			11.4			21.3	23.3	34.5					18
AS23□1FG-N01-07	1/4"			12.7			21.6	20.7	31.9					
AS23□1FG-N01-09	5/16"			15.2			23.3	25.6	36.3					19
AS23□1FG-N02-03	5/32"			10.4			30.6	21.9	39.6					21
AS23□1FG-N02-05	3/16"	NPT 1/4	17.5	11.4	19	10.9	16.2	31.1	23.9	42.1	39.9	34.9	29.4	32
AS23□1FG-N02-07	1/4"			13.2			34.2	25.6	45.1					36
AS23□1FG-N02-09	5/16"			15.2			35.2	28.2	47.9					39
AS23□1FG-N02-11	3/8"			17.9			38.7	31	46.5					40
AS33□1FG-N02-07	1/4"	NPT 1/4	19	13.2	23	12.9	20.6	38.7	25.6	46.9	45.4	40.4	35.2	60
AS33□1FG-N02-09	5/16"			15.2			39.7	28.2	49.5					63
AS33□1FG-N02-11	3/8"			17.9			43.7	32.6	53.9					69
AS33□1FG-N03-07	1/4"	NPT 3/8	19	13.2	23	12.9	20.6	38.7	25.6	45	45.4	40.4	35.2	56
AS33□1FG-N03-09	5/16"			15.2			39.7	28.2	48					59
AS33□1FG-N03-11	3/8"			17.9			43.7	32.6	52.4					65
AS43□1FG-N04-11	3/8"	NPT 1/2	23.8	17.9	29	16.2	25.8	49.4	32.6	54.4	56.7	49.2	42.1	104
AS43□1FG-N04-13	1/2"			21.7			19.4	26.8	52	36.3	57.1			106

Note 1) Reference dimensions

Note 2) Reference dimensions of 10-32 UNF and NPT threads after installation.

Speed Controller with One-touch Fittings Stainless Steel Series In-line Type

Series AS-FG



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

Note 1) In the case of AS1001FG type

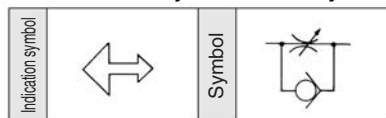
Note 2) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 371 and 372 for details.)

Flow Rate and Effective Area

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



Made to Order
(Refer to page 479 for details.)

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 (Stainless steel 303)

Lock nut option

Nil	Hexagon lock nut
J	Round lock nut

Made to Order
(Refer to the below for details.)

Applicable tubing O.D.

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

* Use ø1/8" tube.

Made to Order



Lubricant: Vaseline

X12

Ex.) AS1001FG-04-X12

Grease-free (Seal: Fluorine Coating) +
Throttle Valve (Without Check Valve)

X21

Ex.) AS1001FG-04-X21

Note) Not particle-free

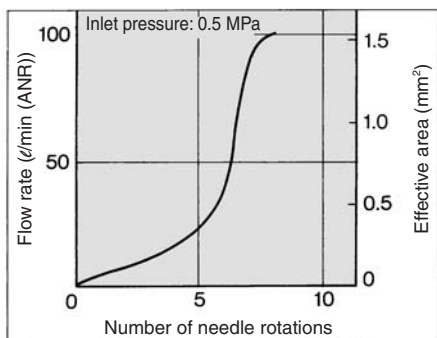
Throttle Valve (Without Check Valve)

X214

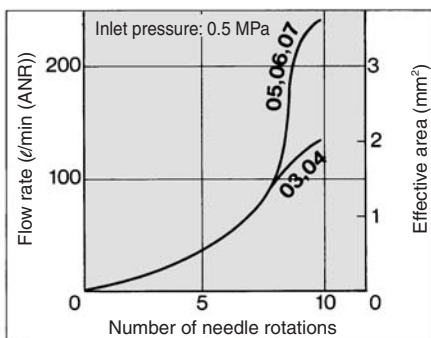
Ex.) AS1001FG-04-X214

Needle Valve/Flow Characteristics

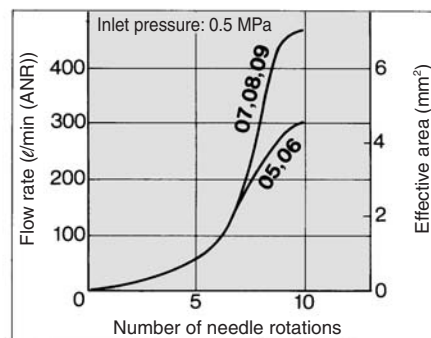
AS1001FG



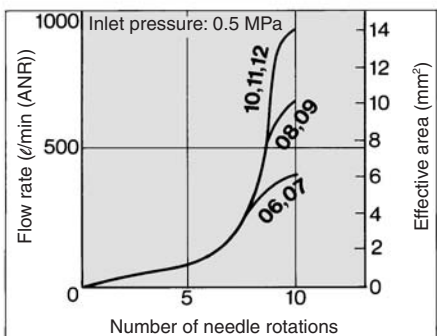
AS2001FG



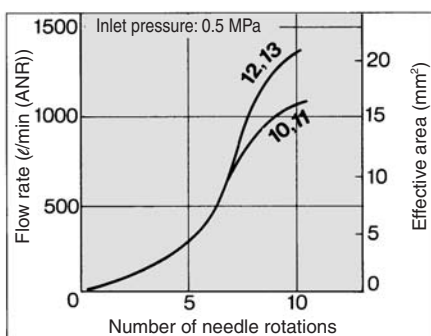
AS2051FG



AS3001FG



AS4001FG



AS

ASP

ASN

AQ

ASV

AK

VCHC

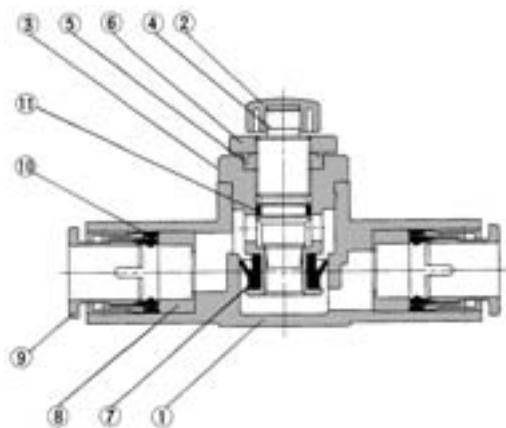
ASS

ASR
ASQ

KE

TMH

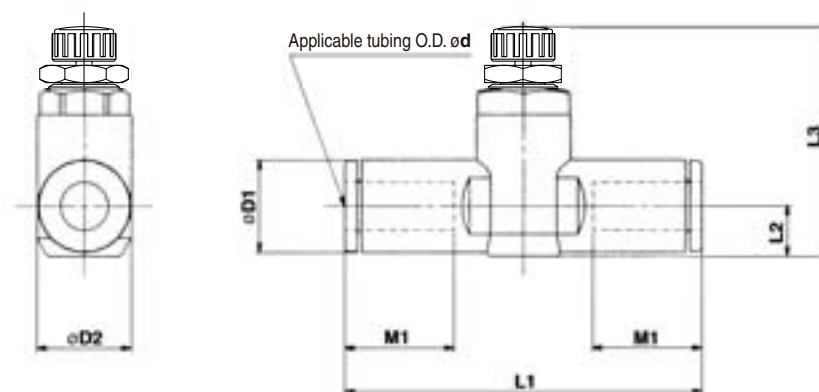
Construction



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	—	
9	Cassette	—	
10	Seal	NBR	
11	O-ring	NBR	

Dimensions



Metric Size

Model	d	D1	D2	L1	L2	L3 ⁽¹⁾		M1	Mass (g)
						Max.	Min.		
AS1001FG-23	3.2	8.4	10.5	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		8
AS2001FG-04	4	9.3	12.3	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
AS2051FG-06	6	12.8	15.5	53.2	6.7	35.2	30.2	17	22
AS2051FG-08	8	15.2		59.8	8.1	32.6	27.6		25
AS3001FG-06	6	12.8	20.6	59	7.4	38.3	33.3	17	36
AS3001FG-08	8	15.2		64.4	8.2	39.1	34.1		40
AS3001FG-10	10	18.5		71.6	9.8	40.6	35.6		44
AS3001FG-12	12	20.9		76	11	41.8	36.8		48
AS4001FG-10	10	18.5	27.6	77.7	11.3	51.1	43.6	21	85
AS4001FG-12	12	20.9		82.1		52.1	44.6		89

Note 1) Reference dimensions

Inch Size

Model	d	D1	D2	L1	L2	L3 ⁽¹⁾		M1	Mass (g)
						Max.	Min.		
AS1001FG-01	1/8"	8.4	10.5	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		12
AS1001FG-07	1/4"	12	12.3	40.7	5.2	32.6	27.6	12.7	9
AS2001FG-03	5/32"	9.3		40.7	5.2	32.6	27.6		12
AS2001FG-05	3/16"	11.4	15.5	50	6.2	33.6	28.6	16.5	18
AS2001FG-07	1/4"	13.2		52.2	7.1	34.5	29.5		16
AS2051FG-05	3/16"	11.4	20.6	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		22
AS2051FG-09	5/16"	15.2		59.8	8.1	32.6	27.6		25
AS3001FG-07	1/4"	13.2	27.6	59	7.4	38.3	33.3	17	36
AS3001FG-09	5/16"	15.2		64.4	8.2	39.1	34.1		40
AS3001FG-11	3/8"	17.9	27.6	70.8	9.5	40.3	35.3	21	52
AS4001FG-11	3/8"	17.9		76.9	10.3	51	43.5		93
AS4001FG-13	1/2"	21.7		83.1	11.6	52.4	44.9	22	106

Note 1) Reference dimensions

Dual Speed Controller with One-touch Fittings Stainless Steel Series

Series ASD-FG

RoHS

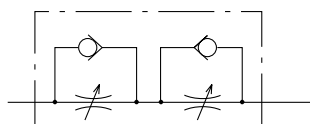
Two flow control valves and check valves have been integrated.

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

Stable speed control is achievable even with load fluctuations.



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

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

Note 1) In the case of ASD230FG type

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

(Refer to pages 371 and 372 for details.)

Flow Rate and Effective Area

Model		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"
	Symbol									
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.

Made to Order



Lubricant: Vaseline

X12

How to Order

ASD

3

30FG

-

01

-

06

S

-

-

Body size

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

Universal

With One-touch fitting

Stainless steel specifications (SUS303)

Thread type

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

Lock nut option

Nil	Hexagon lock nut
J	Round lock nut

Made to Order

X12	Lubricant: Vaseline
-----	---------------------

With seal

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

Applicable tubing O.D.

Note)

Metric size

04	ø4
06	ø6
08	ø8
10	ø10
12	ø12

Inch size

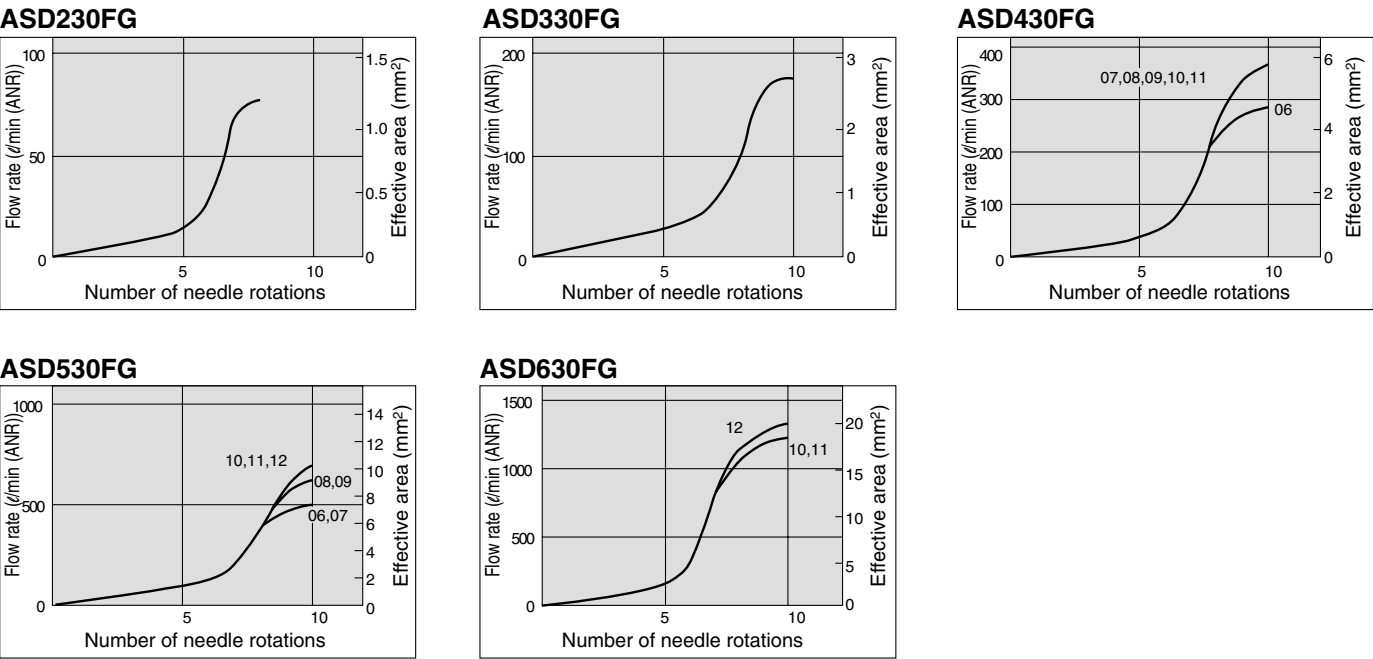
01	ø1/8"
03	ø5/32"
05	ø3/16"
07	ø1/4"
09	ø5/16"
11	ø3/8"

Note) For applicable tubing O.D. selection, refer to the Model on page 481.

Port size

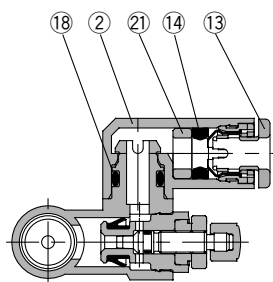
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2

Needle Valve/Flow Characteristics

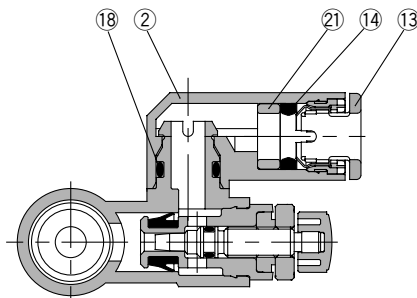


Construction

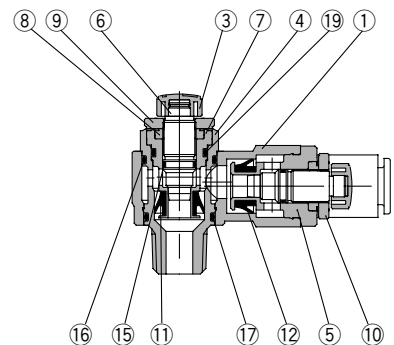
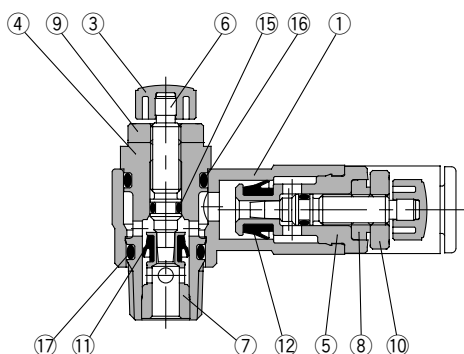
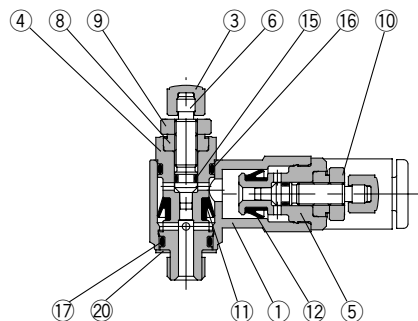
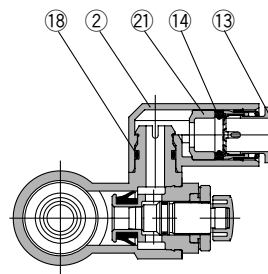
ASD230FG



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	HNBR	
13	Cassette	—	
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	—	

AS

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR

ASQ

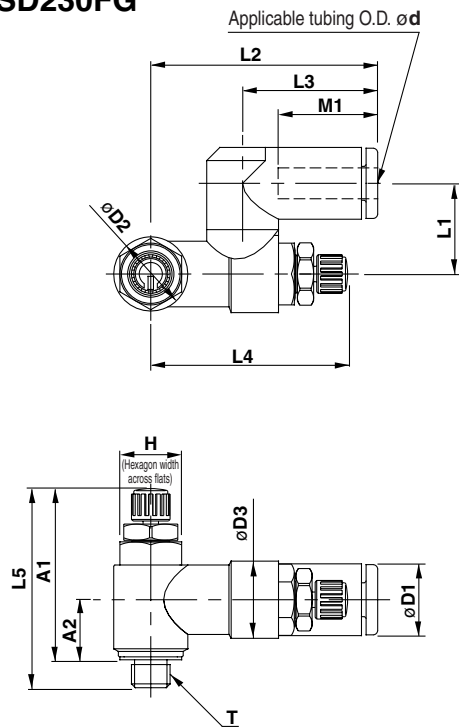
KE

TMH

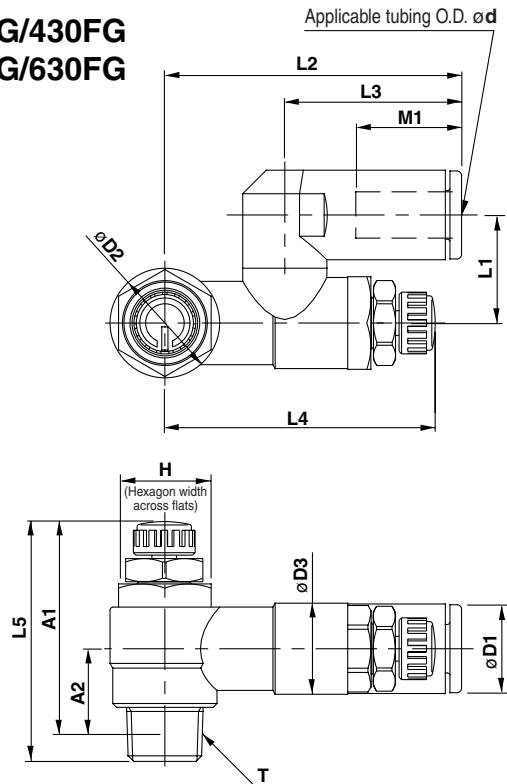
Series ASD-FG

Dimensions: Metric Size

ASD230FG



ASD330FG/430FG
ASD530FG/630FG



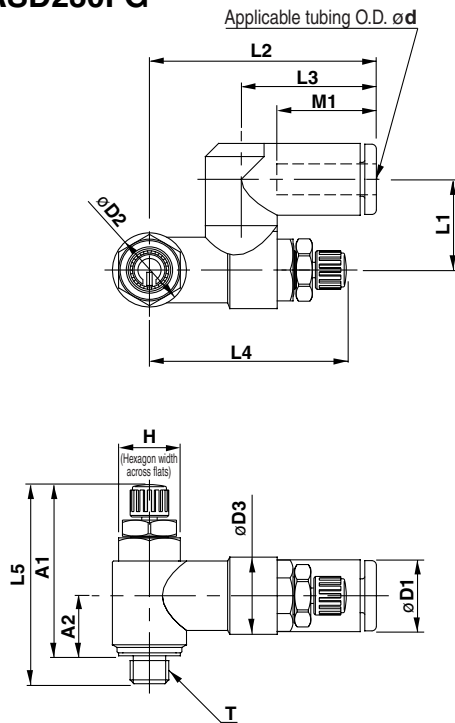
Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4 ⁽¹⁾		L5 ⁽¹⁾		A1 *		A2 *	M1	Mass (g)
										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	12
ASD230FG-M5-06	6			11.6				32.5	20.6								13.7	13
ASD330FG-01-06S	6	R 1/8	12	11.6	14.2	11.8	14	38.5	22.9	39.6	34.6	35.2	30.2	32.1	27.1	10.6	13.7	29
ASD330FG-01-08S	8			15.2			15.8	44.8	28.2	38.9	33.9						18.5	31
ASD430FG-02-06S	6	R 1/4	17	12.8	18.5	15	18	43.5	25.2	41.7	36.7	39.9	34.9	34.4	29.4	11	17	53
ASD430FG-02-08S	8			15.2				46.5	28.2								18.5	55
ASD430FG-02-10S	10			18.5				49.3	31								21	58
ASD530FG-02-06S	6	R 1/4	19	12.8	23	19.8	20.3	48.3	25.2	46.9	41.9	48.3	43.3	42.8	37.8	15.4	17	74
ASD530FG-02-08S	8			15.2				51.3	28.2								18.5	76
ASD530FG-02-10S	10			18.5				54.1	32.6								21	80
ASD530FG-02-12S	12			20.9				55.9	34.4								22	83
ASD530FG-03-06S	6	R 3/8	19	12.8	23	19.8	20.3	48.3	25.2	46.9	41.9	45.4	40.4	40	35	14	17	74
ASD530FG-03-08S	8			15.2				51.3	28.2								18.5	93
ASD530FG-03-10S	10			18.5				54.1	32.6								21	98
ASD530FG-03-12S	12			20.9				55.9	34.4								22	101
ASD630FG-04-10S	10	R 1/2	24	18.5	28.6	26.5	25.9	64.3	32.6	64.8	57.3	56.7	49.2	49.6	42.1	18.6	21	177
ASD630FG-04-12S	12			20.9				66.1	34.4								22	179

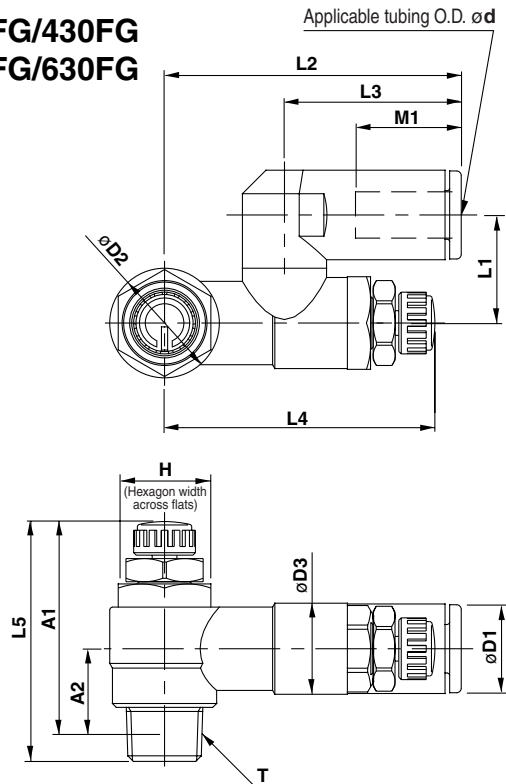
Note 1) Reference dimensions
Note 2) Reference dimensions of M5 x 0.8, R threads after installation.

Dimensions: Inch Size

ASD230FG



**ASD330FG/430FG
ASD530FG/630FG**



Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4 ⁽¹⁾		L5 ⁽¹⁾		A1 *		A2 *	M1	Mass (g)
										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	12
ASD230FG-U10/32-03	5/32"			9.3													13	13
ASD230FG-U10/32-05	3/16"			11.4				35.2	23.3								16.5	15
ASD230FG-U10/32-07	1/4"			12				32.6	20.7								13.5	13
ASD330FG-N01-05S	3/16"	NPT 1/8	12.7	11.6	14.2	11.8	14	38.5	23.9	39.6	34.6	35.2	30.2	32	27	10.6	16.5	30
ASD330FG-N01-07S	1/4"			13.2			15.8	42.2	25.6	38.9	33.9						17	31
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	39.9	34.9	34.6	29.6	11	17	55
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	62
ASD530FG-N02-07S	1/4"	NPT 1/4	19	13.2	23	19.8	20.3	48.7	25.6	46.9	41.9	48.3	43.3	43	38	15.4	17	76
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	84
ASD530FG-N03-07S	1/4"	NPT 3/8	19	13.2	23	19.8	20.3	48.7	25.6	46.9	41.9	45.4	40.4	40.3	35.3	14	17	93
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	102
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	56.7	49.2	46.9	42.1	18.6	21	180

Note 1) Reference dimensions

Note 2) Reference dimensions of 10-32UNF and NPT threads after installation.

AS

ASP

ASN

AQ

ASV

AK

VCHC

ASS

ASR
ASQ

KE

TMH



Series ASD-FG Specific Product Precautions

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 412 to 414 for Flow Control Equipment Precautions.

Design/Selection

⚠ Caution

1. Single acting cylinder

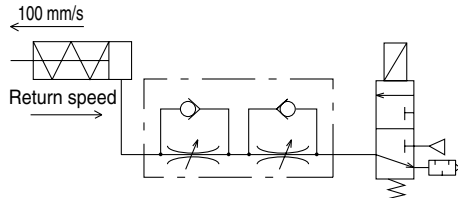
When controlling a single acting cylinder, the cylinder's return speed will differ depending on the operating conditions. Operate after confirming the maximum return speeds shown in the table below.

Speed Controller	Cylinder	Solenoid valve	Tubing	Silencer	Maximum return speed (mm/s)		
					100	200	300
ASD230FG	CJ2	VJ500	TU0604 1 m	AN110-01	ø6		
					ø10		
					ø16		
ASD330FG	CM2	VZ500	TU0604 1 m	AN110-01	ø20		
					ø25		
					ø32		

<Operating conditions>

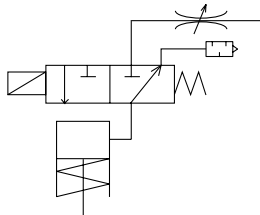
- Cylinder extension speed: 100 mm/s
- Meter-out needle fully open

* 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-FG with -X214 for the throttle valve.