

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

AS-FG Series



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.

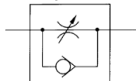


Elbow type



Universal type

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.															
			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	●	●	●													
AS22□1FG-01	AS23□1FG-01	R 1/8	●	●	●	●	*											
AS22□1FG-02	AS23□1FG-02	R 1/4	●	●	●	●												
AS32□1FG-02	AS33□1FG-02	R 1/4			●	●	●											
AS32□1FG-03	AS33□1FG-03	R 3/8			●	●	●											
AS42□1FG-04	AS43□1FG-04	R 1/2				●	●											
AS12□1FG-U10/32	AS13□1FG-U10/32	10-32 UNF							●	●	●	●						
AS22□1FG-N01	AS23□1FG-N01	NPT 1/8							●	●	●	●	●					
AS22□1FG-N02	AS23□1FG-N02	NPT 1/4								●	●	●	●	●				
AS32□1FG-N02	AS33□1FG-N02	NPT 1/4									●	●	●	●				
AS32□1FG-N03	AS33□1FG-N03	NPT 3/8										●	●	●				
AS42□1FG-N04	AS43□1FG-N04	NPT 1/2														●	●	●

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)
Applicable tubing material	Nylon, Soft nylon, Polyurethane

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

(Refer to pages 464 and 465 for details.)

Flow Rate and Sonic Conductance

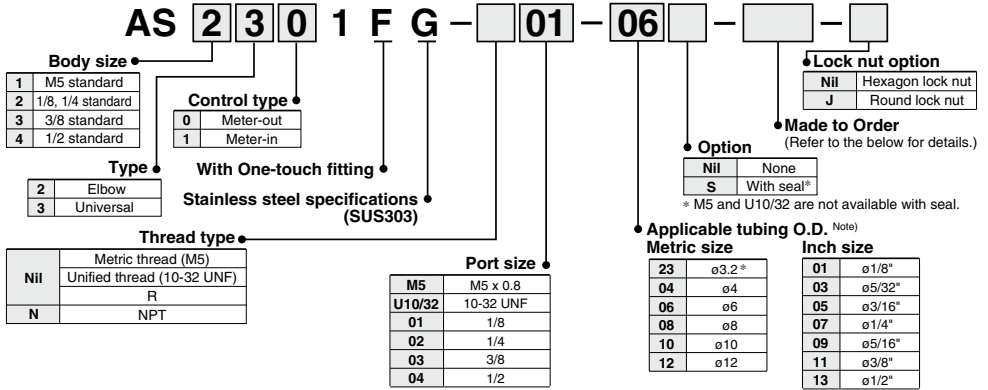
Model	AS12□1FG		AS22□1FG-□01		AS22□1FG-□02		AS32□1FG			AS42□1FG		
	AS12□1FG	AS23□1FG-01	AS23□1FG-01	AS23□1FG-02	AS33□1FG	AS33□1FG	AS33□1FG	AS33□1FG	AS43□1FG	AS43□1FG		
Tubing O.D.	Metric size	ø3.2 ø4 ø6	ø3.2 ø4	ø6 ø8 ø10	ø4 ø6 ø8 ø10	ø6 ø8 ø10	ø6 ø8 ø10	ø8 ø10 ø12	ø10 ø12	ø10 ø12		
	Inch size	ø1/8" ø5/32" ø3/16" ø1/4"	ø1/8" ø5/32" ø1/4" ø5/16"	ø3/16" ø1/4" ø5/16"	ø5/32" ø3/16"	ø1/4" ø5/16" ø3/8"	ø1/4" ø5/16" ø3/8"	ø3/8" ø3/8" ø1/2"	ø3/8" ø3/8" ø1/2"	ø3/8" ø1/2"		
Controlled flow	Flow rate (L/min (ANR))	100	180	230	260	390	460	660	790	920	1580	1710
	Sonic conductance dm ² /(s bar)	0.28	0.50	0.64	0.72	1.1	1.3	1.8	2.2	2.6	4.4	4.8
Critical pressure ratio	Controlled flow	0.2	0.25	0.3			0.25			0.25		
	Free flow	0.4	0.2	0.3			0.2			0.3		

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



Made to Order
(Refer to page 681 for details.)

How to Order



Made to Order

1 Lubricant: Vaseline X12

Ex.) AS1201FG-M5-23-X12

3 Throttle Valve (Without Check Valve) X214

Ex.) AS1201FG-M5-23-X214

Note) This product is a restrictor without a check valve (no control direction). Be aware that all part numbers are for a meter-out type; there is no part number for a meter-in type.

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

Ex.) AS1201FG-M5-23-X21

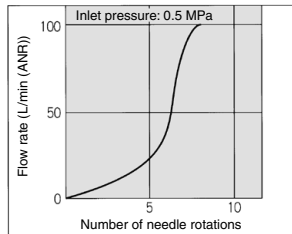
Note 1) Not particle-free

Note 2) This product is a restrictor without a check valve (no control direction). Be aware that all part numbers are for a meter-out type; there is no part number for a meter-in type.

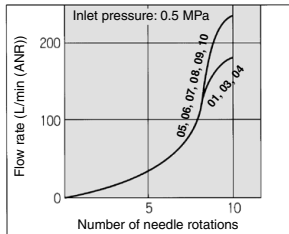
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

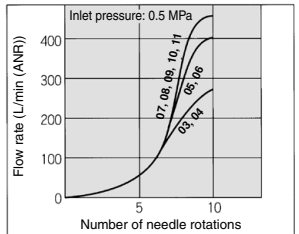
AS12□1FG
AS13□1FG



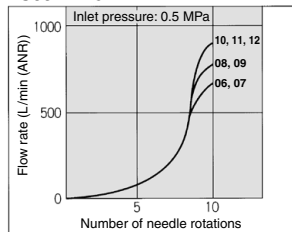
AS22□1FG-□01
AS23□1FG-□01



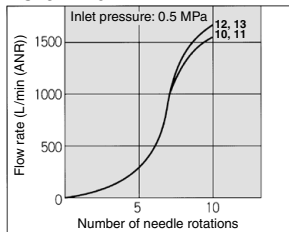
AS22□1FG-□02
AS23□1FG-□02



AS32□1FG
AS33□1FG



AS42□1FG
AS43□1FG



AS-F
TMH
ASD
AS
AS-FE
KE
AS-FG
AS-FP
AS-FM
AS-D
AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASR
ASQ

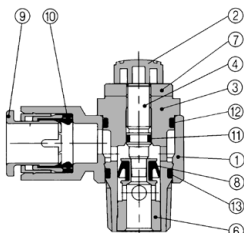
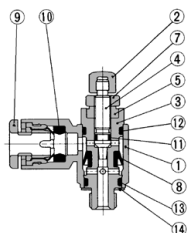


AS-FG Series

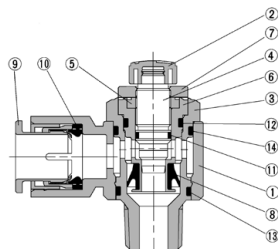
Construction: Elbow Type

Meter-out type

M5 type
U10/32 type

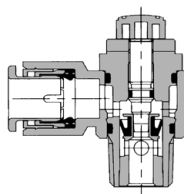
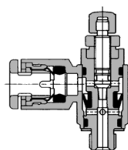


AS3201FG-02

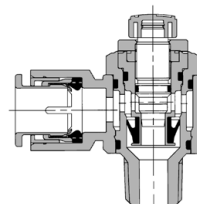


Meter-in type

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

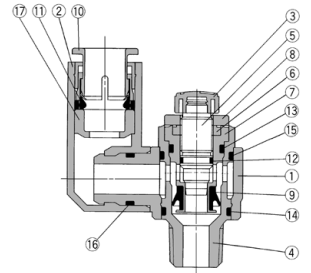
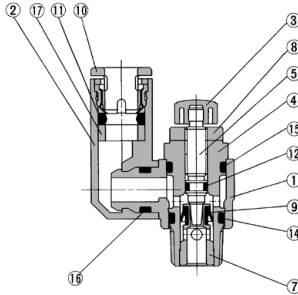
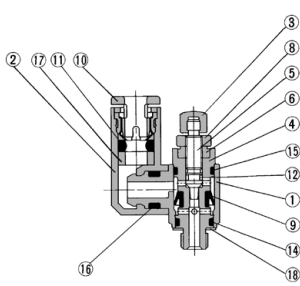
⚠ Caution

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 543 to 546 for Flow Control Equipment Precautions.

Construction: Universal Type

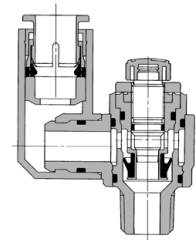
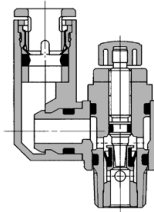
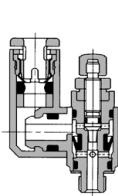
Meter-out type
M5 type
U10/32 type

AS3301FG-02



Meter-in type
M5 type
U10/32 type

AS3311FG-02



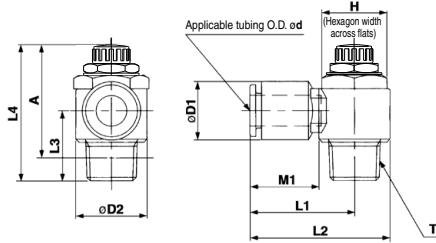
Component Parts

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

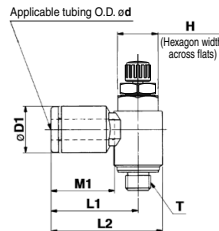
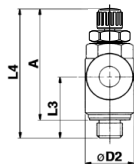
- AS-F
- TMH
- ASD
- AS
- AS-FE
- KE
- AS-FG**
- AS-FP
- AS-FM
- AS-D
- AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASR
- ASQ

AS-FG Series

Dimensions: Elbow Type



M5 type
U10/32 type



Metric Size

Model	d	T	H	D1	D2	L1	L2	L3	L4 (1)		A (2)		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
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			9.3		20.4	27.5						12.7	17
AS22□1FG-01-06	6			11.6	14.2	20.4	27.5	13.4	35.2	30.2	32.1	27.1	13.5	19
AS22□1FG-01-08	8	R 1/8	12	15.2	15.2	25.3	32.4						18.5	19
AS22□1FG-01-10	10			18.5		32.1	39.2	14.1					21	21
AS22□1FG-02-04	4			10.4		25.2	34.4						16	32
AS22□1FG-02-06	6			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		27.2	36.4						18.5	34
AS22□1FG-02-10	10			18.5		35.3	44.5	18.3					21	36
AS32□1FG-02-06	6			12.8		27.8	39.3						17	60
AS32□1FG-02-08	8			15.2		29.5	41						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			20.9		32.8	44.3						22	69
AS32□1FG-03-06	6			12.8		27.8	39.3						17	55
AS32□1FG-03-08	8	R 3/8	19	15.2	23	29.5	41	19.8	45.4	40.4	40.2	35.2	18.5	57
AS32□1FG-03-10	10			18.5		31.8	43.3						21	59
AS32□1FG-03-12	12			20.9		32.8	44.3						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			20.9		35.2	49.5						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 (2)		M1	Weight (g)
									Max.	Min.	Max.	Min.		
AS12□1FG-U10/32-01	1/8"			8.4	9.6	17.3	22.1	12.3					12.7	
AS12□1FG-U10/32-03	5/32"			11.4	11.4	21.3	26.1	11.7	28.6	25.8	25	22.2	16.5	7
AS12□1FG-U10/32-05	3/16"			13.2	13.2	23.1	28.1		18.3	18.3	23.1		13.5	
AS12□1FG-U10/32-07	1/4"			15.2	15.2	25.3	30.2						17.5	19
AS22□1FG-U10/32-01	1/8"			9.3	14.2	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	11.4	21.3	26.1	11.7	28.6	25.8	25	22.2	16.5	7
AS22□1FG-N01-05	3/16"			13.2	13.2	23.1	28.1		18.3	18.3	23.1		13.5	
AS22□1FG-N01-07	1/4"			15.2	15.2	25.3	30.2						17.5	19
AS22□1FG-N01-09	5/16"			17.9	17.9	27.2	36.4	18.2					18.5	21
AS22□1FG-N02-11	3/8"			15.2	23	31.8	43.3	21.3	48.3	43.3	42.8	37.8	21	67
AS32□1FG-N02-07	1/4"			10.4		25.2	34.4						16	32
AS22□1FG-N02-03	5/32"			11.4	11.4	21.3	26.1	11.7	28.6	25.8	25	22.2	16.5	7
AS22□1FG-N02-05	3/16"			13.2	13.2	23.1	28.1		18.3	18.3	23.1		13.5	
AS22□1FG-N02-07	1/4"			15.2	15.2	25.3	30.2						17.5	19
AS22□1FG-N02-09	5/16"			17.9	17.9	27.2	36.4	18.2					18.5	21
AS22□1FG-N02-11	3/8"			15.2	23	31.8	43.3	21.3	48.3	43.3	42.8	37.8	21	67
AS32□1FG-N02-07	1/4"			10.4		25.2	34.4						16	32
AS32□1FG-N02-09	5/16"			13.2	13.2	23.1	28.1		18.3	18.3	23.1		13.5	
AS32□1FG-N02-11	3/8"			15.2	15.2	25.3	30.2						17.5	19
AS32□1FG-N03-07	1/4"			10.4		25.2	34.4						16	32
AS32□1FG-N03-09	5/16"			13.2	13.2	23.1	28.1		18.3	18.3	23.1		13.5	
AS32□1FG-N03-11	3/8"			15.2	15.2	25.3	30.2						17.5	19
AS32□1FG-N03-13	7/16"			17.9	17.9	27.2	36.4	18.2					18.5	21
AS32□1FG-N03-11	3/8"			15.2	23	31.8	43.3	21.3	48.3	43.3	42.8	37.8	21	67
AS32□1FG-N03-11	3/8"			10.4		25.2	34.4						16	32
AS32□1FG-N03-11	3/8"			13.2	13.2	23.1	28.1		18.3	18.3	23.1		13.5	
AS32□1FG-N03-11	3/8"			15.2	15.2	25.3	30.2						17.5	19
AS42□1FG-N04-11	1/2"			18.5	28.6	33.6	47.9	24.5	56.7	49.2	49.6	42.1	21	100
AS42□1FG-N04-13	3/4"			20.9		35.2	49.5						22	101

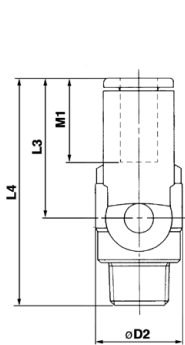
Note 1) Reference dimensions

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

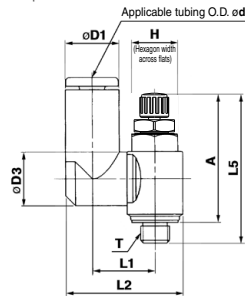
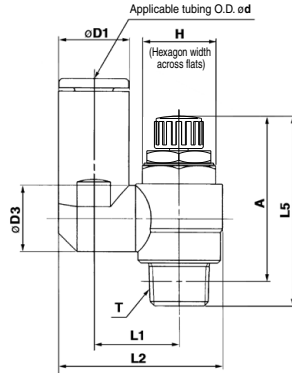
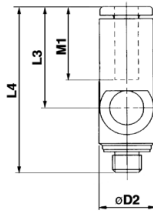
Speed Controller with One-touch Fitting Stainless Steel Series **AS-FG Series**

Elbow Type/Universal Type

Dimensions: Universal Type



M5 type
U10/32 type



Metric Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5 (1)		A (2)		M1	Weight (g)
											Max.	Min.	Max.	Min.		
AS13□1FG-M5-23	3.2		8.4					19.8	17.5	28.7	28.6	28.6	25	22.2	12.7	7
AS13□1FG-M5-04	4	M5×0.8	8	9.3	9.6	10.8	20.3	21.4	20.6	31.8					13.5	
AS13□1FG-M5-06	6		11.6					21.4	20.6	31.8					13.5	17
AS23□1FG-01-23	3.2		8.4					9.3	13.1	24.4	17.5	30.9			12.7	18
AS23□1FG-01-04	4		8.3					10.9	14	26.9	22.9	36.3			13.5	
AS23□1FG-01-06	6		11.6					12.9	16.2	30.9	28.2	40.8			18.5	21
AS23□1FG-01-08	8		15.2												16	32
AS23□1FG-02-04	4		10.4					10.9	16.2	30.6	21.9	39.6			17	33
AS23□1FG-02-06	6		12.8					12.8	18.3	34	25.2	42.1			18.5	36
AS23□1FG-02-08	8		15.2					12.9	18.3	35.2	28.2	45.1			21	40
AS23□1FG-02-10	10		18.5					20.2	20.2	38.7	31	47.9			21	40
AS33□1FG-02-06	6		12.8					12.8	20.8	38.5	25.2	46.5			18.5	63
AS33□1FG-02-08	8		15.2					15.2	23	43.7	28.2	49.5			21	67
AS33□1FG-02-10	10		18.5					18.5	23	43.7	32.6	53.9			22	69
AS33□1FG-02-12	12		20.9					16.2	23	44.9	34.4	55.7			22	69
AS33□1FG-03-06	6		12.8					12.8	20.8	38.5	25.2	45			17	56
AS33□1FG-03-08	8		15.2					12.9	20.8	39.7	28.2	48			18.5	59
AS33□1FG-03-10	10		18.5					16.2	23	43.7	32.6	52.4			21	63
AS33□1FG-03-12	12		20.9					16.2	23	44.9	34.4	54.2			22	65
AS43□1FG-04-10	10		18.5					28.6	16.2	25.8	48.4	32.6	57.1		21	104
AS43□1FG-04-12	12		21.7					28.6	19.4	28.8	52	36.3	60.8		22	105

Note 1) Reference dimensions

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

Inch Size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5 (1)		A (2)		M1	Weight (g)
											Max.	Min.	Max.	Min.		
AS13□1FG-U1032-01	1/8"		8.4					19.8	17.5	28.7	28.6	28.6	25	22.2	12.7	7
AS13□1FG-U1032-03	5/32"	10-32 UNF	8	9.3	9.6	10.8	20.3	21.4	20.6	31.8					13.7	8
AS13□1FG-U1032-05	3/16"		11.4					21.3	23.3	34.5					16.5	
AS13□1FG-U1032-07	1/4"		12					21.6	20.7	31.9					13.7	
AS23□1FG-N01-01	1/8"		8.4					9.3	13.1	24.4	17.5	30.9			12.7	17
AS23□1FG-N01-03	5/32"		9.3					10.9	14	26.9	22.9	36.3			13.5	18
AS23□1FG-N01-05	3/16"		11.4					12.9	16.2	30.9	28.2	40.8			18.5	21
AS23□1FG-N01-07	1/4"		13.2					13.2	19.4	29.6	25.6	36.3			18.5	19
AS23□1FG-N01-09	5/16"		15.2					15.2	19.4	30.9	28.2	40.8			21	21
AS23□1FG-N02-03	5/32"		10.4					10.9	16.2	30.6	21.9	39.6			16	32
AS23□1FG-N02-05	3/16"		11.4					12.9	16.2	31.1	23.9	42.1			17	33
AS23□1FG-N02-07	1/4"		13.2					15.2	16.3	34.2	25.6	45.1			18.5	36
AS23□1FG-N02-09	5/16"		15.2					17.9	19.4	35.2	28.2	47.9			21	39
AS23□1FG-N02-11	3/8"		17.9					20.2	20.2	38.7	31	46.5			21	40
AS33□1FG-N02-07	1/4"		13.2					13.2	19.4	38.7	25.6	46.9			17	60
AS33□1FG-N02-09	5/16"		15.2					15.2	23	43.7	28.2	49.5			18.5	63
AS33□1FG-N03-08	3/8"		17.9					16.2	23	43.7	32.6	53.9			21	69
AS33□1FG-N03-07	1/4"		13.2					13.2	19.4	38.7	25.6	45			17	56
AS33□1FG-N03-09	5/16"		15.2					15.2	23	43.7	28.2	48			18.5	59
AS33□1FG-N03-11	3/8"		17.9					17.9	19.4	38.7	25.6	46.5			21	65
AS43□1FG-N04-11	3/8"		17.9					20.2	23	44.9	34.4	54.4			21	104
AS43□1FG-N04-13	1/2"		23					23	23	48.4	32.6	57.1			22	104

Note 1) Reference dimensions

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

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

AS-FG Series



Model

Model	Applicable tubing O.D.												
	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	●	●	●				●	●	●	●			
AS2001FG		●	●					●	●	●			
AS2051FG				●	●				●	●		●	
AS3001FG			●	●	●	●				●	●	●	●
AS4001FG					●	●						●	●

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)
Applicable tubing material	Nylon, Soft nylon, Polyurethane

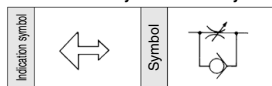
Note) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 464 and 465 for details.)

Flow Rate and Sonic Conductance

Model	AS1001FG		AS2001FG		AS2051FG		AS3001FG			AS4001FG		
	AS1001FG	AS1001FG	AS2001FG	AS2001FG	AS2051FG	AS2051FG	AS3001FG	AS3001FG	AS3001FG	AS4001FG	AS4001FG	
Tubing O.D.	Metric size ø3.2 ø4 ø6	ø4	ø6	ø6	ø8	ø6	ø8	ø10	ø10	ø12		
		Inch size ø1/8" ø5/32" ø3/16"	ø3/16"	ø3/16" ø1/4"	ø3/16"	ø1/4" ø5/16"	ø1/4"	ø5/16"	ø3/8"	ø3/8"	ø1/2"	
Controlled flow	Flow rate (L/min (ANR))	100	130	230	290	460	420	660	920	1050	1390	
Free flow	Sonic conductance dm ³ /(s·bar)	0.28	0.36	0.64	0.8	1.3	1.2	1.8	2.6	2.9	3.9	
Critical pressure ratio	Controlled flow	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
	Free flow	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	

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

Flow Direction Symbols on Body



Made to Order
(Refer to page 700 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

NII	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

* Use ø1/8" tube.

Made to Order



Lubricant: Vaseline

X12

Ex.) AS1001FG-04-X12

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

X21

Ex.) AS1001FG-04-X21

Note) Not particle-free

Throttle Valve (Without Check Valve)

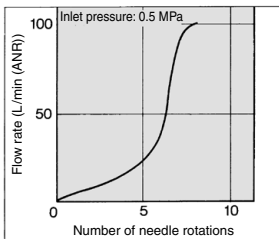
X214

Ex.) AS1001FG-04-X214

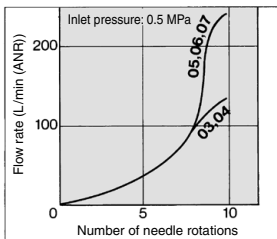
Needle Valve/Flow Rate Characteristics

Note) The flow rate characteristics are representative values.

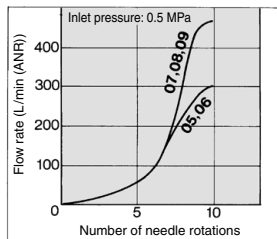
AS1001FG



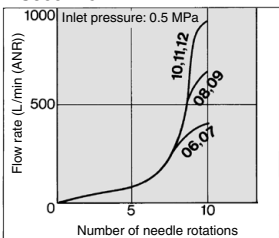
AS2001FG



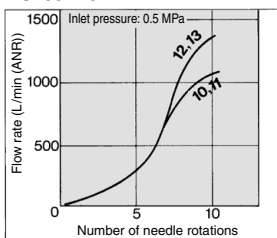
AS2051FG



AS3001FG

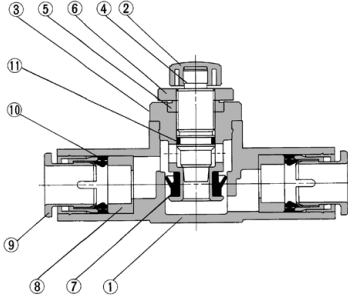


AS4001FG



Speed Controller with One-touch Fitting Stainless Steel Series **AS-FG Series** In-line Type

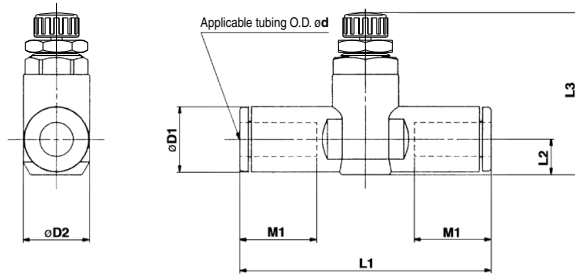
Construction



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	Weight (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	7
AS1001FG-06	6	11.6	12.3	40.7	6.2	25.2	22.4	13.5	8
AS2001FG-04	4	9.3		40.7	5.2	32.6	27.6	12.7	12
AS2001FG-06	6	11.6	15.5	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	22
AS2051FG-08	8	15.2	20.6	59.8	8.1	32.6	27.6	18	25
AS3001FG-06	6	12.8		59	7.4	38.3	33.3	17	36
AS3001FG-08	8	15.2	27.6	64.4	8.2	39.1	34.1	18	40
AS3001FG-10	10	18.5		71.6	9.8	40.6	35.6	21	44
AS3001FG-12	12	20.9	27.6	76	11	41.8	36.8	22	48
AS4001FG-10	10	18.5		77.7	11.3	51.1	43.6	21	85
AS4001FG-12	12	20.9		82.1		52.1	44.6	22	89

Note 1) Reference dimensions

Inch Size

Model	d	D1	D2	L1	L2	L3 ⁽¹⁾		M1	Weight (g)
						Max.	Min.		
AS1001FG-01	1/8"	8.4	10.5	38	4.5	23.5	20.7	12.7	6
AS1001FG-03	3/32"	9.3		39.2	5.2	24.2	21.4	7	7
AS1001FG-05	3/16"	11.4	12.3	48.7	6.2	25.2	22.4	16.5	12
AS1001FG-07	1/4"	12		40.7					
AS2001FG-03	5/32"	9.3	12.3	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	15.5	52.2	7.1	34.5	29.5	17	16
AS2051FG-05	3/16"	11.4		52.2	6.2	34.6	29.6	16.5	24
AS2051FG-07	1/4"	13.2	20.6	54.4	7.1	35.5	30.5	17	22
AS2051FG-09	5/16"	15.2		59.8	8.1	32.6	27.6	18	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	18	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	21	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

ASD-FG Series

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.



Model

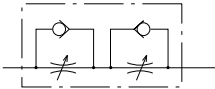
Model	Port size	Applicable tubing O.D.																		
		Metric size					Inch size													
		4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"								
ASD230FG-M5	M5 x 0.8	●	●																	
ASD330FG-01	R 1/8		●	●																
ASD430FG-02	R 1/4		●	●	●															
ASD530FG-02	R 1/4		●	●	●	●														
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)
Applicable tubing material	Nylon, Soft nylon, Polyurethane

Note) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used.
(Refer to pages 464 and 465 for details.)

Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Indication symbol		
Symbol		

Flow Rate and Sonic Conductance

Model	ASD230FG		ASD330FG		ASD430FG		ASD530FG			ASD630FG	
	Metric size	ø4, ø6	ø6, ø8	ø6	ø8, ø10	ø6	ø8	ø10, ø12	ø10	ø12	
Tubing O.D.	Metric size	ø3/16"	ø3/16"	—	ø1/4"	ø1/4"	ø5/16"	ø3/8"	—	ø3/8"	
	Inch size	ø1/4"	ø1/8"	ø1/4"	—	ø1/8"	ø5/32"	—	—	—	
Controlled flow	Flow rate (L/min (ANR))	75	175	295	350	500	600	700	1200	1300	
	Free flow	Sonic conductance dm ³ /(s.bar)	0.21	0.49	0.82	0.97	1.4	1.7	1.9	3.3	3.6
Critical pressure ratio	Controlled flow	0.25	0.2	—	0.2	—	0.2	—	—	0.2	
	Free flow	0.3	0.15	—	0.15	—	0.15	—	—	0.15	

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

Made to Order



Lubricant: Vaseline

X12

How to Order

ASD **3** 30 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

• **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		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"

(Note) For applicable tubing O.D. selection, refer to the Model on page 702.

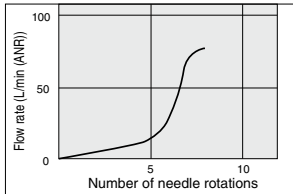
• **Port size**

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

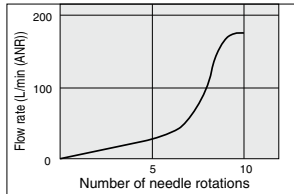
Needle Valve/Flow Rate Characteristics

(Note) The flow rate characteristics are representative values.

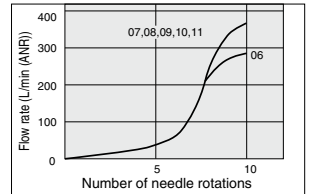
ASD230FG



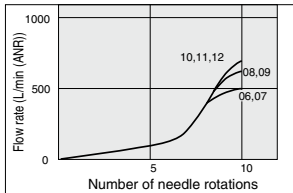
ASD330FG



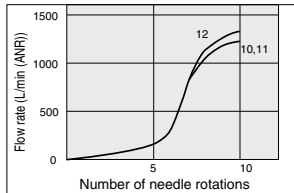
ASD430FG



ASD530FG



ASD630FG

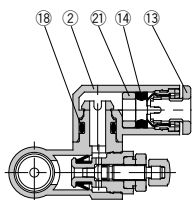


AS-F
TMH
ASD
AS
AS-FE
KE
AS-FG
AS-FP
AS-FM
AS-D
AS-T
ASP
ASN
AQ
ASV
AK
VCHC
ASR
ASQ

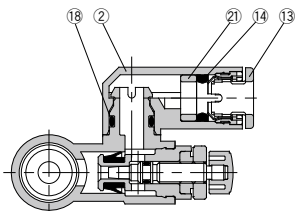
ASD-FG Series

Construction

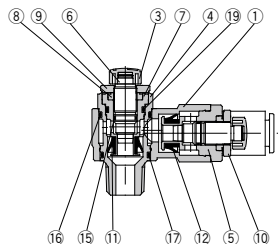
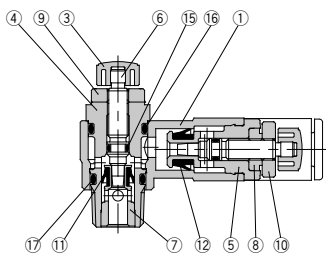
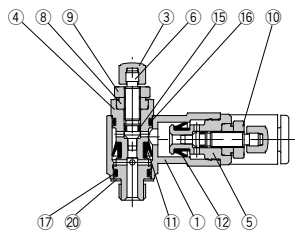
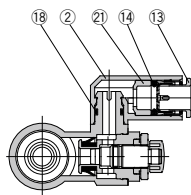
ASD230FG



ASD330FG/430FG
ASD530FG/630FG



ASD530FG-02



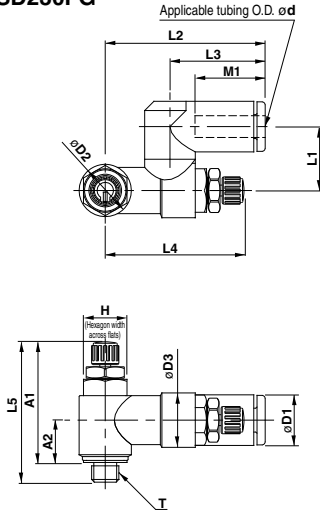
Component Parts

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	

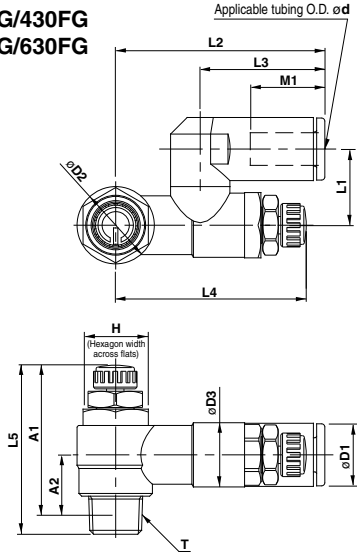
No.	Description	Material	Note
12	U seal	HNBR	
13	Cassette	—	
14	Seal	NBR	
15	O-ring	NBR	
16	O-ring	NBR	
17	O-ring	NBR	
18	O-ring	NBR	
19	O-ring	NBR	
20	Gasket	NBR, Steel	M5 type only
21	Spacer	—	

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 ⁽²⁾		A2 ⁽²⁾	M1	Weight (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				44.8	28.2								38.9	33.9
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			19.7	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			23.1	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			23.1	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

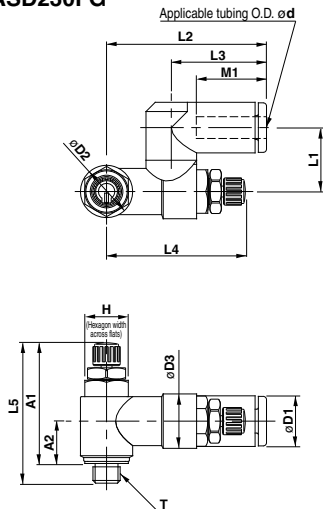
Note 2) Reference dimensions of M5 x 0.8, R threads after installation.

- AS-F
- TMH
- ASD
- AS
- AS-FE
- KE
- AS-FG
- AS-FP
- AS-FM
- AS-D
- AS-T
- ASP
- ASN
- AQ
- ASV
- AK
- VCHC
- ASR
- ASQ

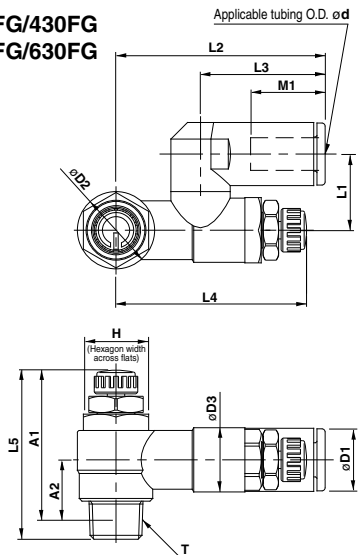
ASD-FG Series

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 ⁽²⁾		A2 ⁽²⁾	M1	Weight (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				35.2	23.3								16.5	15
ASD230FG-U10/32-05	3/16"			11.4				32.6	20.7								13.5	13
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			42.2	25.6	17	17								
ASD330FG-N01-09S	5/16"			15.2			44.8	28.2	18.5	31								
ASD430FG-N02-07S	1/4"			13.2			43.9	25.6	17	17								
ASD430FG-N02-09S	5/16"	NPT 1/4	17.5	15.2	18.5	15	18	46.5	28.2	41.7	36.7	39.9	34.9	34.6	29.6	11	18.5	55
ASD430FG-N02-11S	3/8"			18.5			49.3	31	21	62								
ASD530FG-N02-07S	1/4"			13.2			48.7	25.6	17	17								
ASD530FG-N02-09S	5/16"			15.2			51.3	28.2	18.5	76								
ASD530FG-N02-11S	3/8"	NPT 1/4	19	18.5	23	19.8	20.3	54.1	32.6	46.9	41.9	48.3	43.3	43	38	15.4	21	84
ASD530FG-N03-07S	1/4"			13.2			48.7	25.6	17	17								
ASD530FG-N03-09S	5/16"			15.2			51.3	28.2	18.5	76								
ASD530FG-N03-11S	3/8"			18.5			54.1	32.6	21	84								
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
				13.2			48.7	25.6	17	17								
				15.2			51.3	28.2	18.5	76								
				18.5			54.1	32.6	21	84								

Note 1) Reference dimensions

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



ASD-FG Series Specific Product Precautions

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 543 to 546 for Flow Control Equipment Precautions.

Design/Selection

⚠ Caution

1. Single acting cylinder

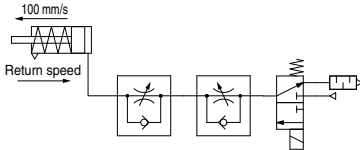
When controlling a single acting cylinder, the cylinder's return speed will differ depending on the operating conditions. Operate after confirming the maximum return speeds shown in the table below.

Speed Controller	Cylinder	Solenoid valve	Tubing	Silencer	Maximum return speed (mm/s)		
					100	200	300
ASD230FG	CJ2	SYJ500	TU0604 1 m	AN110-01	ø6		
					ø10		
					ø16		
					Cylinder size		
ASD330FG	CM2	SYJ700	TU0604 1 m	AN110-01	ø20		
					ø25		
					ø32		
					Cylinder size		

* Values at 0.5 MPa and 20°C.

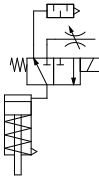
<Operating conditions>

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



(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 AS-FG series with -X214 for the throttle valve.

AS-F

TMH

ASD

AS

AS-FE

KE

AS-FG

AS-FP

AS-FM

AS-D

AS-T

ASP

ASN

AQ

ASV

AK

VCHC

ASR

ASQ