

Speed Controller with One-touch Fitting Stainless Steel Series

Elbow Type/Universal Type

Series AS-FG

RoHS

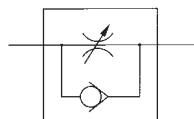


Elbow type



Universal type

JIS symbol



Flow direction symbols on body

	Meter-out type	Meter-in type
Symbol		
JIS symbol		

Models

Elbow type	Universal type	Port size	Applicable tube outside diameter														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	●	●	●												6, 10, 16, 20
AS22□1FG-01	AS23□1FG-01	R(PT) 1/8	●	●	●	●	●*										20, 25, 32
AS22□1FG-02	AS23□1FG-02	R(PT) 1/4		●	●	●	●										20, 25, 32, 40
AS32□1FG-02	AS33□1FG-02	R(PT) 1/4			●	●	●	●									40, 50, 63
AS32□1FG-03	AS33□1FG-03	R(PT) 3/8			●	●	●	●									40, 50, 63
AS42□1FG-04	AS43□1FG-04	R(PT) 1/2					●	●									63, 80, 100
AS12□1FG-U10/32	AS13□1FG-U10/32	10-32UNF								●	●	●	●				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) The meter-out and meter-in types can be visually determined by the flow direction symbol on the resin body.
Note 2) * Elbow type only

Specifications

Proof pressure	1.5MPa
Maximum operating pressure	1MPa
Minimum operating pressure	0.1MPa
Ambient & fluid temperature	-5 to 60°C (with no freezing)
Number of needle revolutions	10 revolutions (8 revolutions Note 1))
Applicable tube material Note 2)	Nylon, Soft nylon, Polyurethane, Soft polyurethane

Note 1) For types AS12□1FG and AS13□1FG

Note 2) Use caution regarding the maximum operating pressure with soft nylon, polyurethane and soft polyurethane.
(For details, refer to CAT.E501-B "Air Fittings and Tubing" pages 7-146 through 7-147.)

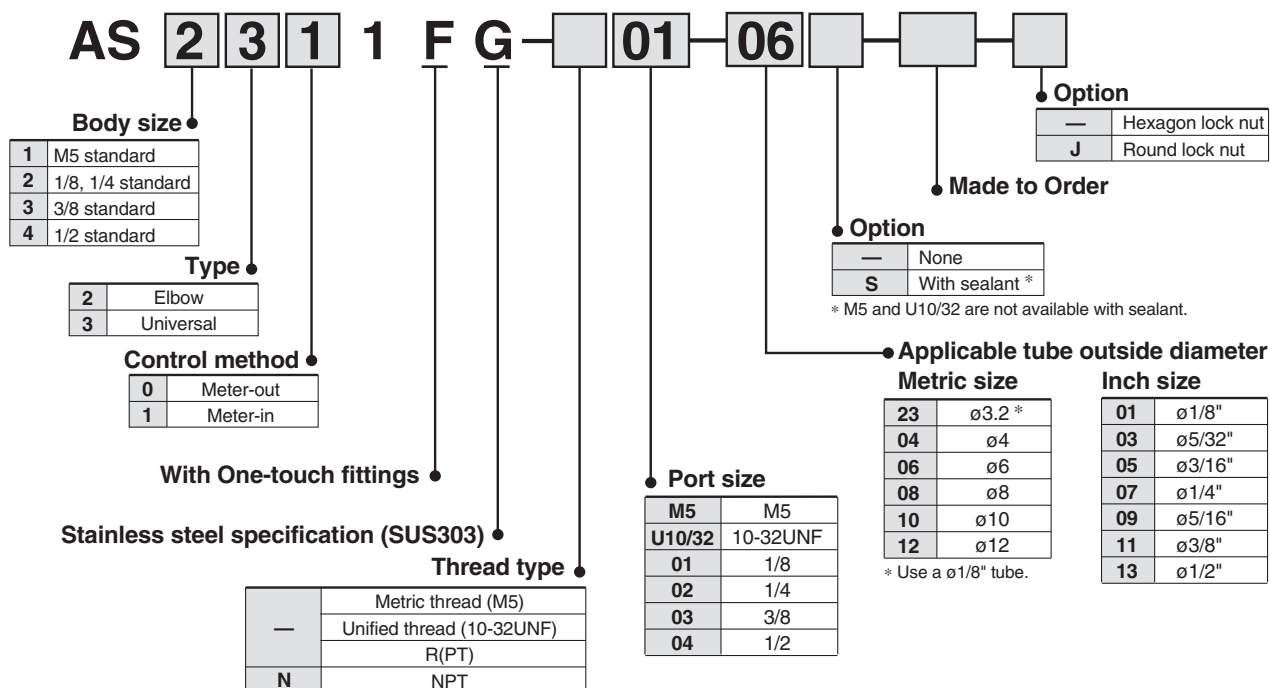
Flow Rate and Effective Area

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			
Tube O.D.	Metric size	ø3.2 ø4 ø6	ø3.2 ø4 ø6 ø8 ø10	ø6	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"	ø3/16" 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 (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) The flow rate values are at a pressure of 0.5MPa and temperature of 20°C.

Series AS-FG

How to Order



Made to Order

1 Lubricant: Vaseline

X12

Ex.) AS1201FG-M5-23-X12

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.

3 Throttle Valve (Without Check Valve)

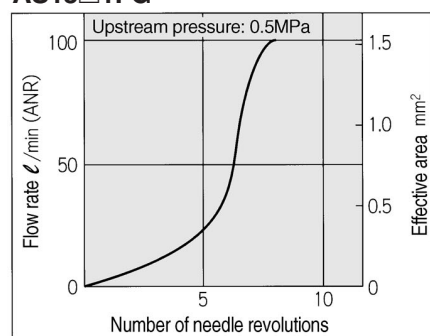
X214

Ex.) AS1201FG-M5-23-X214

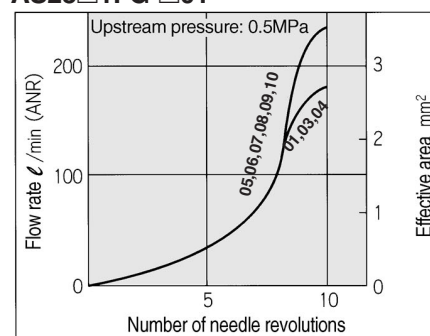
Note) Throttle valve is only compatible with the part no. of the meter-out type.

Needle Valve/Flow Rate Characteristics

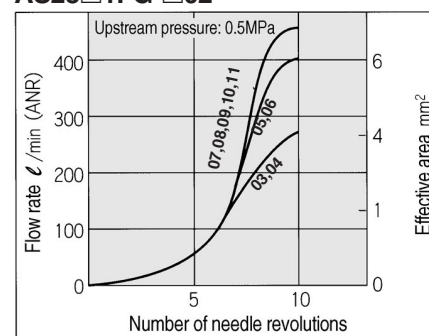
AS12□1FG
AS13□1FG



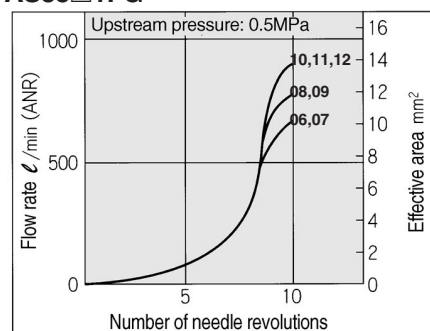
AS22□1FG-□01
AS23□1FG-□01



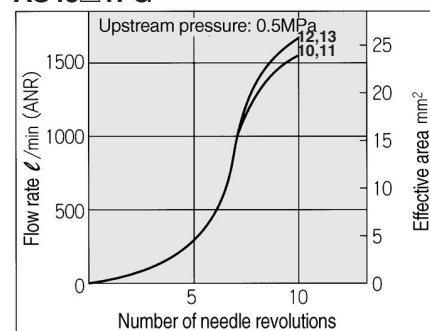
AS22□1FG-□02
AS23□1FG-□02



AS32□1FG
AS33□1FG



AS42□1FG
AS43□1FG

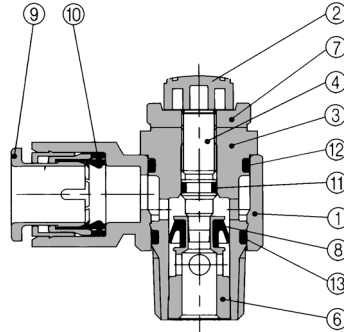
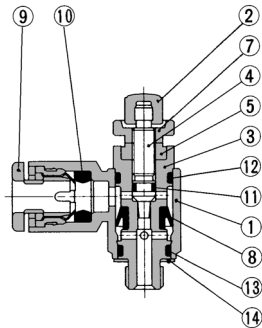


Construction/Elbow Type

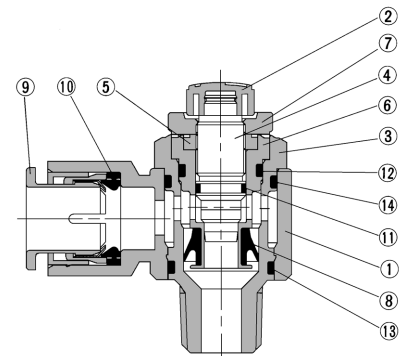
Meter-out type

M5 type

U10/32 type



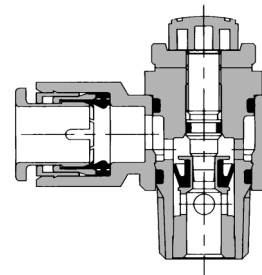
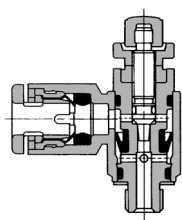
AS3201FG-02



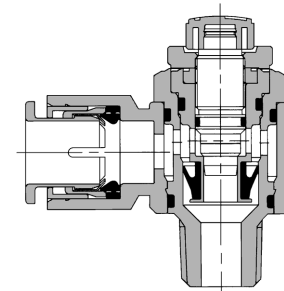
Meter-in type

M5 type

U10/32 type



AS3211FG-02



Parts list

No.	Description	Material	Note
1	Body A	PBT	
2	Knob	PBT	
3	Body B	SUS303	
4	Needle	SUS303	
5	Needle guide	SUS303	
6	Seat ring	SUS303	
7	Lock nut	SUS303	
8	U seal	NBR	
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/SUS304	M5 type only

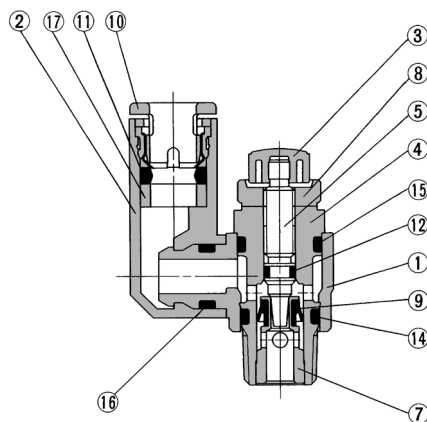
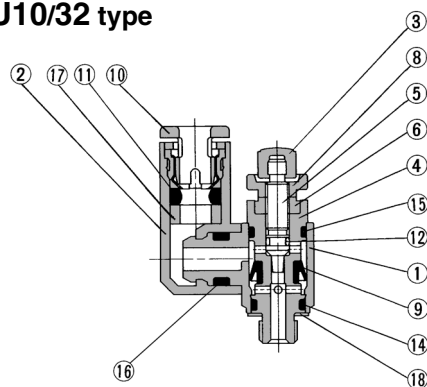
Series AS-FG

Construction/Universal Type

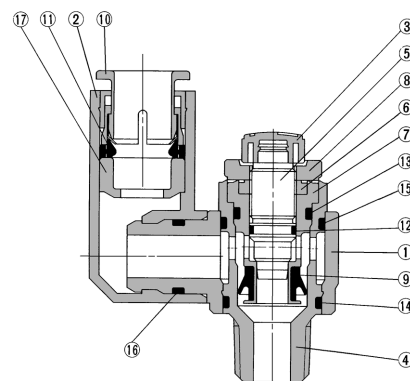
Meter-out type

M5 type

U10/32 type



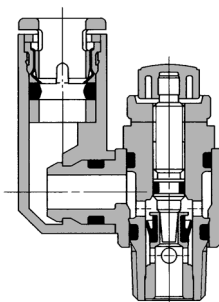
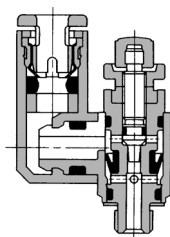
AS3301FG-02



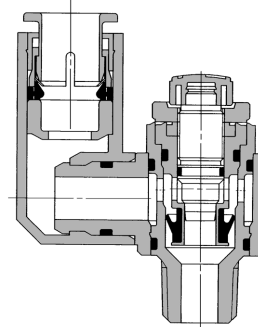
Meter-in type

M5 type

U10/32 type



AS3311FG-02

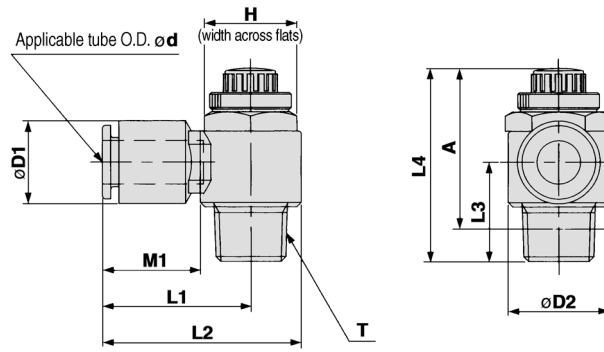


Parts List

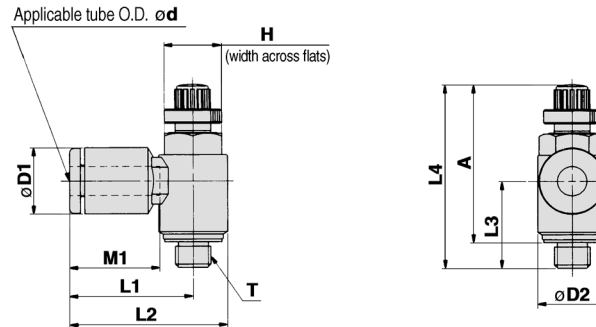
No.	Description	Material	Note
1	Body A	PBT	
2	Elbow body	PBT	
3	Knob	PBT	
4	Body B	SUS303	
5	Needle	SUS303	
6	Needle guide	SUS303	
7	Seat ring	SUS303	
8	Lock nut	SUS303	
9	U seal	NBR	
10	Cassette	POM, Stainless steel	
11	Seal	NBR	
12	O-ring	NBR	
13	O-ring	NBR	
14	O-ring	NBR	
15	O-ring	NBR	
16	O-ring	NBR	
17	Spacer	POM (Note 1)	
18	Gasket	NBR, Stainless steel	

Note 1) $\phi 3/16"$, $\phi 3/8"$ and $\phi 1/2"$ are SUS303.

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	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(PT)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	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			11.6		18.1	22.9	11.7					13.5	
AS22□1FG-01-04	4	R(PT) 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			11.6		20.4	27.5						13.5	
AS22□1FG-01-08	8			15.2		25.3	32.4						18.5	
AS22□1FG-01-10	10	R(PT) 1/4	17	18.5	18.5	33.1	40.2	14.1	40.1	35.1	34.4	29.4	21	21
AS22□1FG-02-04	4			10.4		25.2	34.4						16	
AS22□1FG-02-06	6			12.8		25.2	34.4						17.5	
AS22□1FG-02-08	8	R(PT) 1/4	17	15.2	18.5	27.2	36.4	19.5	40.1	35.1	34.4	29.4	18	34
AS22□1FG-02-10	10			18.5		33.9	43.2						21	
AS32□1FG-02-06	6			12.8		27.8	39.3						17	
AS32□1FG-02-08	8	R(PT) 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			18.5		31.8	43.3						21	
AS32□1FG-02-12	12			20.9		32.8	44.3						22	
AS32□1FG-03-06	6	R(PT) 3/8	19	12.8	23	27.8	39.3	19.8	45.4	40.4	40.2	35.2	17	55
AS32□1FG-03-08	8			15.2		29.5	41						18.5	
AS32□1FG-03-10	10			18.5		31.8	43.3						21	
AS32□1FG-03-12	12	R(PT) 1/2	24	20.9	28.6	32.8	44.3	24.5	56.7	49.2	49.6	42.1	22	101
AS42□1FG-04-10	10			18.5		33.6	47.9						21	
AS42□1FG-04-12	12			20.9		34.6	48.9						22	

* Reference dimensions for threads after installation.

Inch size

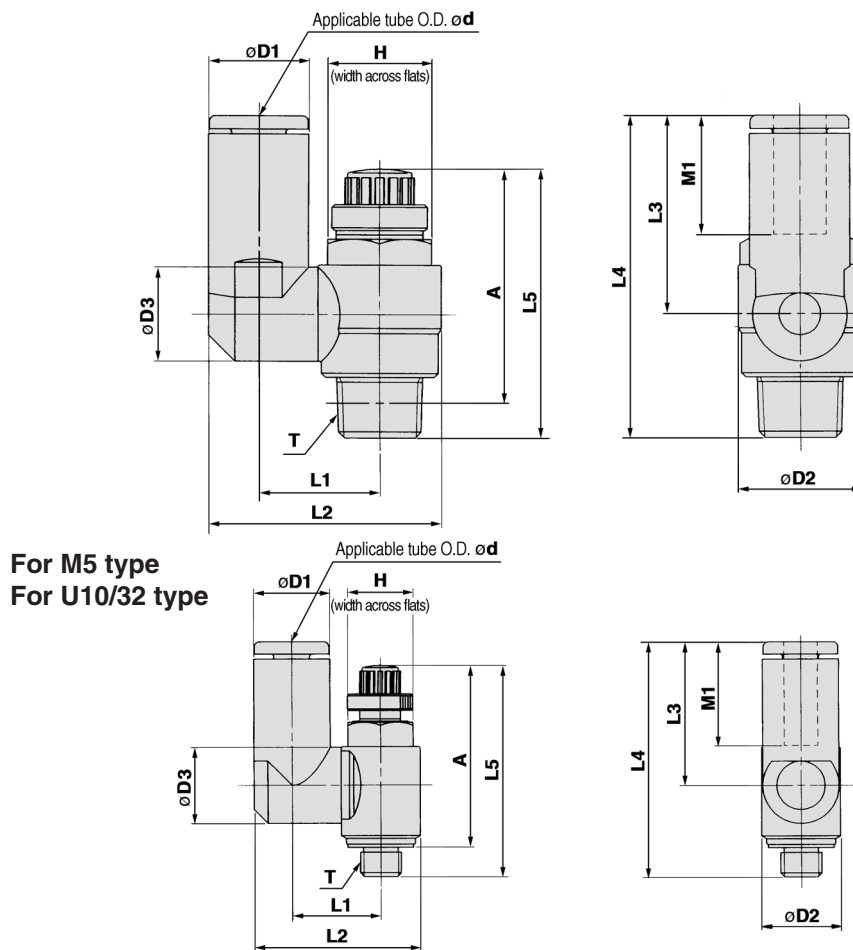
Model	d	T	H	D1	D2	L1	L2	L3	L4		A *		M1	Weight g
									Max.	Min.	Max.	Min.		
AS12□1FG-U10/32-01	1/8"	10-32UNF	8	8.4	9.6	17.3	22.1	12.3	28.6	25.8	25	22.2	12.7	7
AS12□1FG-U10/32-03	5/32"			9.3		21.3	26.1						16.5	
AS12□1FG-U10/32-05	3/16"			11.4		18.3	23.1						13.5	
AS12□1FG-U10/32-07	1/4"	NPT 1/8	12.7	12	14.2	20.4	27.5	13.4	35.2	30.2	32.1	27.1	12.7	16
AS22□1FG-N01-01	1/8"			9.3		20.4	27.5						12.7	
AS22□1FG-N01-03	5/32"			11.4		23.1	30.2						16.5	
AS22□1FG-N01-05	3/16"	NPT 1/8	12.7	13.2	14.2	23.9	31	14.1	35.2	30.2	32.1	27.1	18.5	19
AS22□1FG-N01-07	1/4"			15.2		25.3	32.4						21	
AS22□1FG-N01-09	5/16"			17.9		33.9	43.2						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"			11.4		24.9	34.2						17	
AS22□1FG-N02-07	1/4"			13.2		27.2	36.4						18.5	
AS22□1FG-N02-11	3/8"	NPT 1/4	19	15.2	23	31.8	43.3	19.5	48.3	43.3	42.8	37.8	21	36
AS32□1FG-N02-07	1/4"			17.9		33.9	43.2						21	
AS32□1FG-N02-09	5/16"			20.9		32.8	44.3						22	
AS32□1FG-N03-07	1/4"	NPT 3/8	19	13.2	23	27.8	39.3	19.8	45.4	40.4	40.2	35.2	17	55
AS32□1FG-N03-09	5/16"			15.2		29.5	41						18.5	
AS32□1FG-N03-11	3/8"			17.9		31.8	43.3						21	
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"			21.7		35.2	49.5						22	

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

Series AS-FG

Dimensions/Universal Type

Dimensions/Universal Type



Metric size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A *		M1	Weight 9				
											Max.	Min.	Max.	Min.						
AS13□1FG-M5-23	3.2	M5	8	8.4	9.6	9.3	10.8	19.8	17.5	28.7	28.6	25.8	25	22.2	12.7	7				
AS13□1FG-M5-04	4			9.3				20.3												
AS13□1FG-M5-06	6			11.6				21.4									20.6	31.8		
AS23□1FG-01-23	3.2	R(PT) 1/8	12	8.4	14.2	9.3	13.1	24.4	17.5	30.9	35.2	30.2	32.1	27.1	13.5	17				
AS23□1FG-01-04	4			9.3				24.9												
AS23□1FG-01-06	6			11.6				10.9									14	26.9	22.9	36.3
AS23□1FG-01-08	8	R(PT) 1/4	17	15.2	18.5	12.9	16.2	30.9	28.2	40.8	39.9	34.9	34.4	29.4	18.5	21				
AS23□1FG-02-04	4			10.4				10.9									16.2	30.6	21.9	39.6
AS23□1FG-02-06	6			12.8				18.4									34	25.2	42.1	
AS23□1FG-02-08	8	R(PT) 1/4	19	15.2	23	12.9	18.3	35.2	28.2	45.1	48.3	43.3	42.8	37.8	21	32				
AS23□1FG-02-10	10			18.5				20.2									38.7	31	47.9	
AS33□1FG-02-06	6			12.8				12.9									20.6	38.5	25.2	46.5
AS33□1FG-02-08	8	R(PT) 1/4	19	15.2	23	16.2	23	39.7	28.2	49.5	48.3	43.3	42.8	37.8	18.5	63				
AS33□1FG-02-10	10			18.5				43.7									32.6	53.9		
AS33□1FG-02-12	12			20.9				44.9									34.4	55.7		
AS33□1FG-03-06	6	R(PT) 3/8	19	12.8	23	12.9	20.6	38.5	25.2	45	45.4	40.4	40	35	17	56				
AS33□1FG-03-08	8			15.2				39.7									28.2	48		
AS33□1FG-03-10	10			18.5				43.7									32.6	52.4		
AS33□1FG-03-12	12	R(PT) 1/2	24	20.9	28.6	16.2	25.8	44.9	34.4	54.2	56.7	49.2	49.6	42.1	22	65				
AS43□1FG-04-10	10			18.5				49.4									32.6	57.1		
AS43□1FG-04-12	12			20.9				52									36.3	60.8		

* Reference dimensions for M5 and R(PT) threads after installation.

Inch size

Model	d	T	H	D1	D2	D3	L1	L2	L3	L4	L5		A *		M1	weight 9											
											Max.	Min.	Max.	Min.													
AS13□1FG-U10/32-01	1/8"	10-32UNF	8	8.4	9.6	9.3	10.8	19.8	17.5	28.7	28.6	25.8	25	22.2	12.7	7											
AS13□1FG-U10/32-03	5/32"			20.3																							
AS13□1FG-U10/32-05	3/16"			11.4				21.3	23.3	34.5																	
AS13□1FG-U10/32-07	1/4"			12				21.6	20.7	31.9																	
AS23□1FG-N01-01	1/8"	NPT 1/8	12.7	8.4	14	10.9	13.1	24.4	17.5	30.9	35.2	30.2	32.1	27.1	16.5	17											
AS23□1FG-N01-03	5/32"			9.3																							
AS23□1FG-N01-05	3/16"			11.4				26.8	23.9	35.2																	
AS23□1FG-N01-07	1/4"			13.2				29.9	25.6								36.3										
AS23□1FG-N01-09	5/16"	NPT 1/4	17.5	15.2	19	12.9	16.2	30.9	28.2	40.8	39.9	34.9	34.4	29.4	18.5	21											
AS23□1FG-N02-03	5/32"			10.4				30.6									21.9	39.6									
AS23□1FG-N02-05	3/16"			11.4				31.1	23.9	42.1																	
AS23□1FG-N02-07	1/4"			13.2				34.2	25.6	45.1																	
AS23□1FG-N02-09	5/16"	NPT 1/4	17.9	15.2	23	12.9	18.3	35.2	28.2	47.9	48.3	43.3	42.8	37.8	21	39											
AS23□1FG-N02-11	3/8"			17.9				20.2									38.7	31	46.5								
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	40.2	35.2	17	60
AS33□1FG-N02-09	5/16"								15.2										39.7								
AS33□1FG-N02-11	3/8"	17.9	16.2		23	43.7	32.6		53.9																		
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	40.2			35.2	17	56						
AS33□1FG-N03-09	5/16"			15.2	39.7			28.2		48																	
AS33□1FG-N03-11	3/8"			17.9	16.2			23		43.7	32.6	52.4															
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	49.6	42.1	21	104
AS43□1FG-N04-13	1/2"	21.7	19.4			28.8	52	36.3	57.1																		

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