

Speed Controller with One-touch Fitting Elbow Type/Universal Type

Series AS

Minimizes installation time and cost

Reduces the mounting height and enables compact machinery design. Effective area is larger than the former model.

Tube swivels 360°

Universal type permits 360° piping swivel.

ø2 size added to applicable tubing sizes

- **Metric size** (Release button: White color)
ø2, ø3.2, ø4, ø6, ø8, ø10, ø12
- **Inch size** (Release button: Orange color)
ø1/8", ø5/32", ø3/16", ø1/4", ø5/16", ø3/8", ø1/2"

Maximum operating pressure 1 MPa max.

Applicable tubing materials

Nylon, soft nylon, and polyurethane tubing are applicable.

Retainer prevents accidental loss of needle.


























































Option

Hexagonal lock nut, Nickel plated option

Number of needle rotations has been increased (8 to 10 turns)

The increased number of needle rotations (8 to 10 turns) permits easy control at low speeds.

Model

Elbow type	Universal type	Port size	Applicable tubing O.D.														Applicable cylinder bore size (mm)	
			Metric size							Inch size								
			2	3.2	4	6	8	10	12	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"		
AS12□1F-M3	AS13□1F-M3	M3 x 0.5															2.5, 4, 6	
AS12□1F-M5	AS13□1F-M5	M5 x 0.8															6, 10, 16, 20 ⁽¹⁾	
AS12□1F-U10/32	AS13□1F-U10/32	10-32 UNF															6, 10, 16, 20	
AS22□1F-01	AS23□1F-01	R 1/8															20, 25, 32	
AS22□1F-02	AS23□1F-02	R 1/4															20, 25, 32, 40	
AS32□1F-02	AS33□1F-02	R 1/4															40, 50, 63	
AS32□1F-03	AS33□1F-03	R 3/8															40, 50, 63	
AS42□1F-04	AS43□1F-04	R 1/2																63, 80, 100

Note 1) AS12□1F-M5-02 applicable cylinder bore sizes are 2.5, 4, 6.

Note 2) Elbow type only

Note 3) Meter-out and meter-in types can be visually differentiated by the lock nut. The lock nut on the meter-out type is electroless nickel plated, while the meter-in type is black zinc chromate plated.

Note 4) ● Marking is electroless nickel plated, provided as standard. (N specifications)

Specifications

Fluid	Air
Proof pressure	1.5 MPa (1.05 MPa ⁽¹⁾)
Max. operating pressure	1 MPa (0.7 MPa ⁽¹⁾)
Mini. operating pressure	0.1 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)
Number of needle rotations	10 turns (8 turns ⁽²⁾)
Applicable tubing material ⁽³⁾	Nylon, Soft nylon, Polyurethane ⁽⁴⁾
Option	With seal, Hexagon lock nut ⁽⁵⁾ , Electroless nickel plated ⁽⁶⁾

Note 1) In case of AS12□1F-M3-02, AS12□1F-M5-02

Note 2) In case of AS12□1F-M5 and AS12□1F-U10/32 types.

In case of AS13□1F-M5 and AS13□1F-U10/32
AS12□1F-M5-02: 10 turns.

Note 3) Use caution regarding the max. operating pressure when soft nylon or polyurethane tubing is used. (Refer to pages 371 and 372 for details.)

Note 4) In case of AS12□1F-M3-02 and AS12□1F-M5-02, polyurethane only.

Note 5) M3, M5, 10-32UNF type ports are not available with seals.

Note 6) Brass parts are all electroless nickel plated.

Flow Rate and Effective Area

Model	Metric size	AS12□1F-M3 AS13□1F-M3 AS12□1F-M5-02	AS12□1F-M5 AS13□1F-M5	AS22□1F-01 AS23□1F-01	AS22□1F-02 AS23□1F-02	AS32□1F AS33□1F	AS42□1F AS43□1F
		ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4 ø6, ø8, ø10	ø4 ø6 ø8, ø10	ø6 ø8 ø10, ø12	ø10 ø12
Tubing O.D.	Metric size	ø2, ø3.2, ø4	ø3.2, ø4, ø6	ø3.2, ø4 ø6, ø8, ø10	ø4 ø6 ø8, ø10	ø6 ø8 ø10, ø12	ø10 ø12
	Inch size	ø1/8", ø5/32"	ø1/8", ø3/16" ø1/4", ø5/32"	ø1/8", ø3/16", ø1/4", ø5/32" 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)	20	100	180	260 390	460	660 790 920 1580
	Effective area (mm ²)	0.3	1.5	2.7	3.5 4 6	7	10 12 14 24 26

Note 1) Flow rate values are measured at 0.5 MPa and 20°C.

Note 2) U10/32 has the same specification as M5.

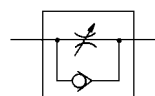
Elbow type
Applicable tubing O.D. ø2



Universal type



JIS Symbol



Flow Direction Symbols on Body

	Meter-out type	Meter-in type
Symbol		
JIS Symbol		

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.



Made to Order
(Refer to page 422 for details.)

How to Order

AS 2 2 0 1 F - 01 - 06 S -

Body size

1	M3, 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

Thread type

Nil	Metric thread (M3, M5)
	Unified thread (10-32 UNF)
N	R
	NPT

Option

Nil	None
S	With seal
K	Hexagonal lock nut
N	Electroless nickel plated

*1 If more than one option is required, write option part numbers in the order of "S", "K", "N".
*2 M3, M5, and U10/32 are not available with seals.

Applicable tubing O.D.

Metric size	Inch size
02	ø2
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"

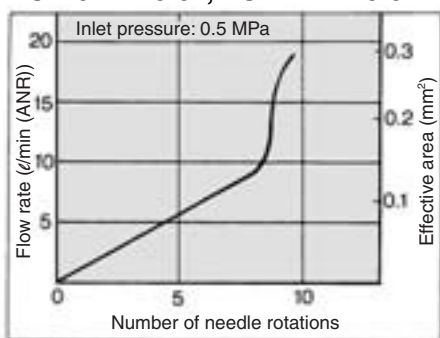
*Use ø1/8" tube.

Port size

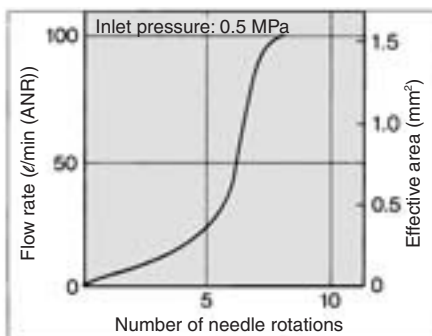
M3	M3 x 0.5
M5	M5 x 0.8
U10/32	10-32 UNF
01	1/8
02	1/4
03	3/8
04	1/2

Needle Valve/Flow Characteristics

AS1201F-M3, AS1211F-M3
AS1301F-M3, AS1311F-M3
AS1201F-M5-02, AS1211F-M5-02

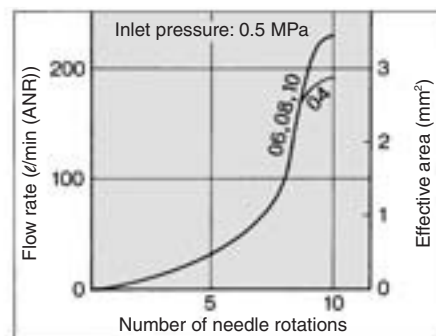


AS1201F-M5, AS1211F-M5
AS1301F-M5, AS1311F-M5

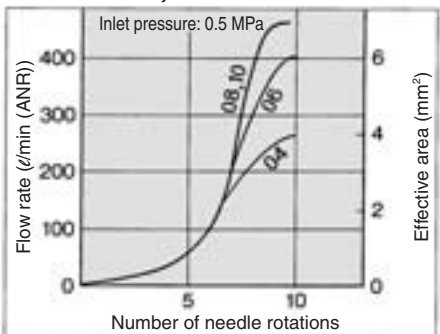


Note) "-U10/32" is the same as "M5".

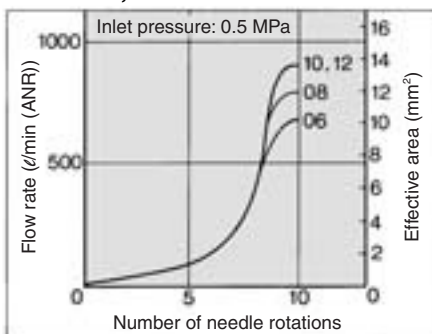
AS2201F-01, AS2211F-01
AS2301F-01, AS2311F-01



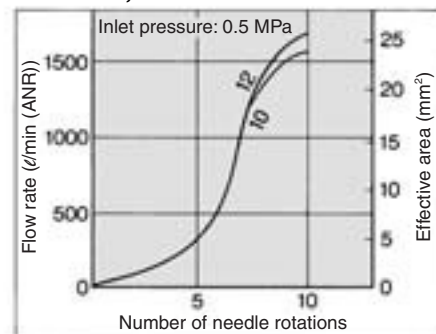
AS2201F-02, AS2211F-02
AS2301F-02, AS2311F-02



AS3201F, AS3211F
AS3301F, AS3311F



AS4201F, AS4211F
AS4301F, AS4311F



How to Order

AS 2 2 1 1F - U02 - 06 - - -

Body size

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

Made to Order

X260 Antistatic type
Refer to page 450 for details.

Option*

Nil	None
K	Hexagonal lock nut
N	Electroless nickel plated

* If more than one option is required, write option part numbers in the order of "K", "N".

Applicable tubing O.D.

Metric size		Inch size	
23	ø3.2 *	01	1/8"
04	ø4	03	5/32"
06	ø6	05	3/16"
08	ø8	07	1/4"
10	ø10	09	5/16"
12	ø12	11	3/8"
		13	1/2"

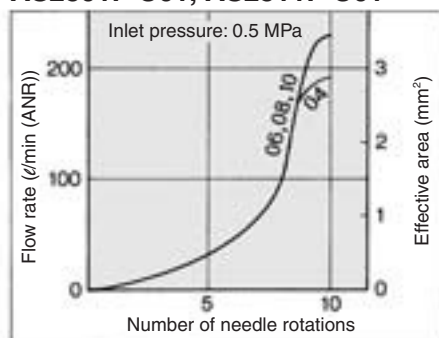
* Use ø1/8" tube.

Bore size

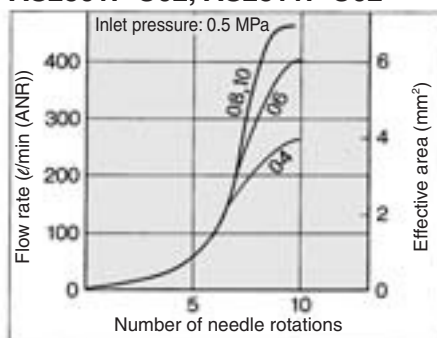
U01	Uni 1/8"
U02	Uni 1/4"
U03	Uni 3/8"
U04	Uni 1/2"

Needle Valve/Flow Characteristics

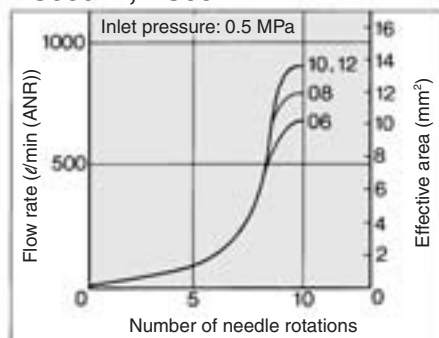
AS2201F-U01, AS2211F-U01
AS2301F-U01, AS2311F-U01



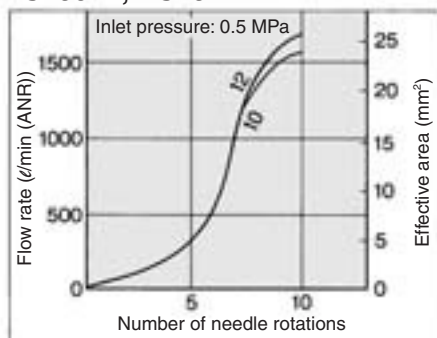
AS2201F-U02, AS2211F-U02
AS2301F-U02, AS2311F-U02



AS3201F, AS3211F
AS3301F, AS3311F



AS4201F, AS4211F
AS4301F, AS4311F



How to Order

AS 2 2 1 1 F - 01 - 06 S D -

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

0	Meter-out
1	Meter-in

Port size

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

Applicable tubing O.D.

Metric size		Inch size	
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"

Type adjustable by flat head screwdriver

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

Made to Order
Refer to the below for details.

With One-touch fitting

Made to Order



Lubricant: Vaseline

X12

Ex.) AS1201F-M5-23D-X12

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

X21

Ex.) AS1201F-M5-23D-X21

Note 1) Not particle-free

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

Throttle Valve (Without Check Valve)

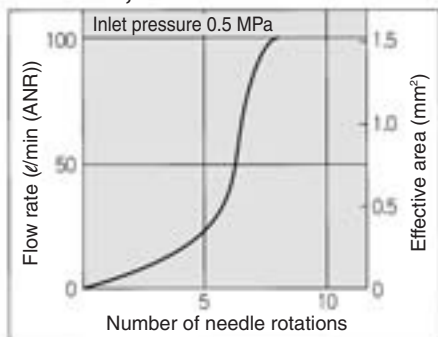
X214

Ex.) AS1201F-M5-23D-X214

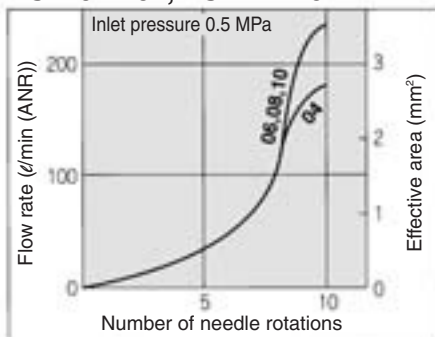
Note) Throttle valve is only compatible with the part no. of the meter-out type.

Needle Valve/Flow Characteristics

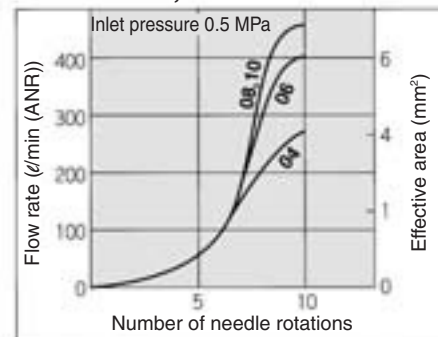
AS1201F, AS1211F



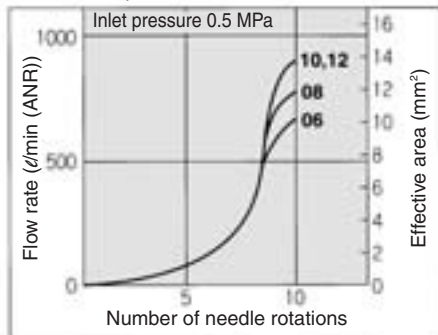
AS2201F-01, AS2211F-01



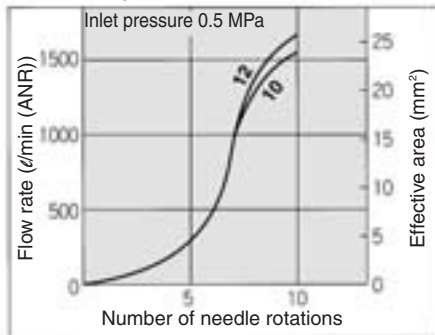
AS2201F-02, AS2211F-02



AS3201F, AS3211F

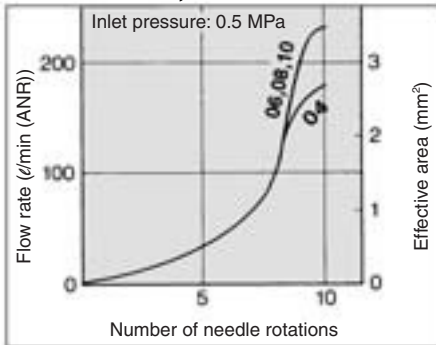


AS4201F, AS4211F

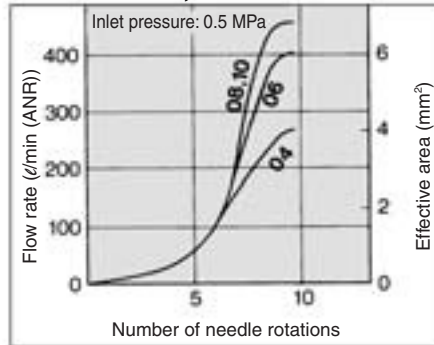


Needle Valve/Flow Characteristics

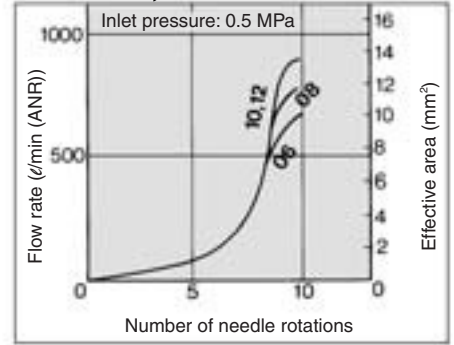
AS2201FE-01, AS2211FE-01
AS2301FE-01, AS2311FE-01



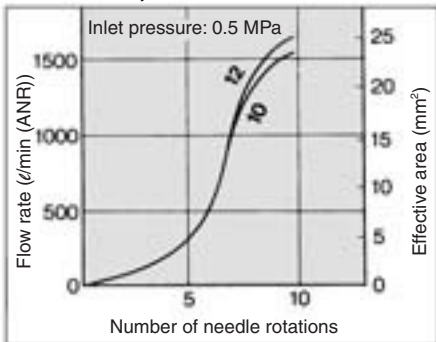
AS2201FE-02, AS2211FE-02
AS2301FE-02, AS2311FE-02



AS3201FE, AS3211FE
AS3301FE, AS3311FE



AS4201FE, AS4211FE
AS4301FE, AS4311FE



⚠ 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.

Made to Order



Lubricant: Vaseline

X12

Ex.) AS2201FE-01-04SK-X12

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

X21

Ex.) AS2201FE-01-04SK-X21

Note 1) Not particle-free

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

Throttle Valve (Without Check Valve)

X214

Ex.) AS2201FE-01-04SK-X214

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

AS

ASP

ASN

AQ

ASV

AK

VCHC

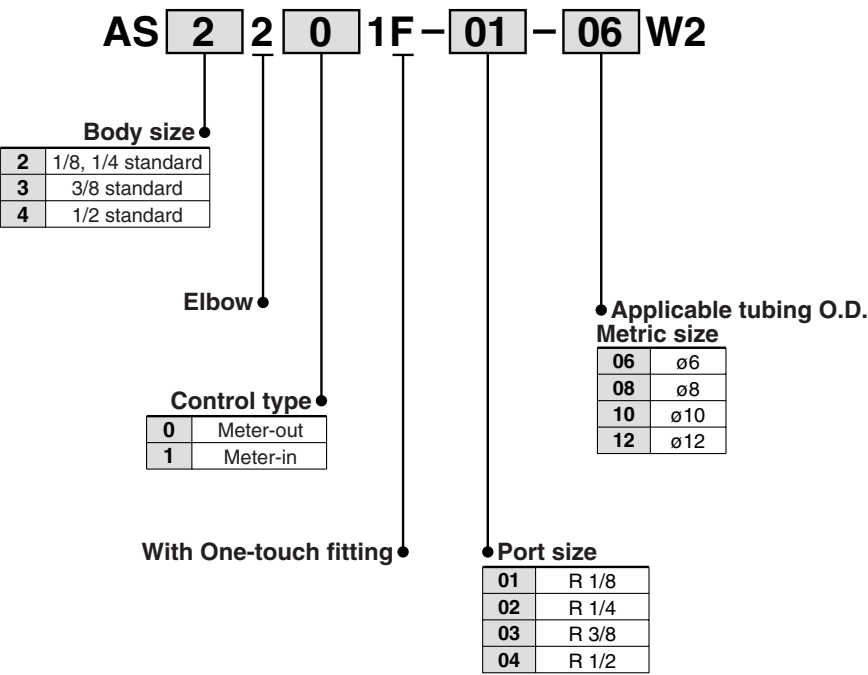
ASS

ASR
ASQ

KE

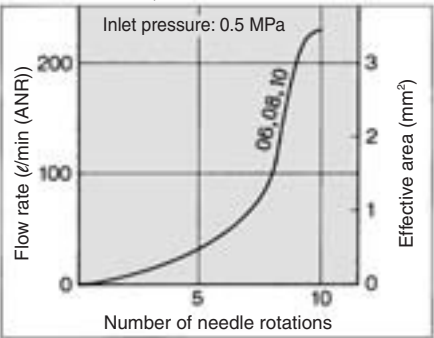
TMH

How to Order

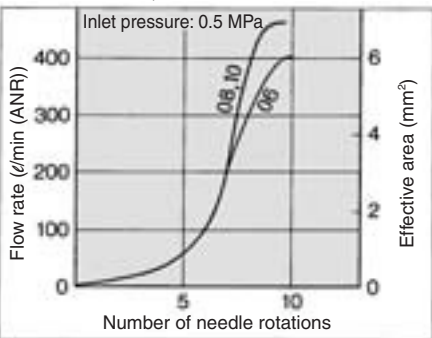


Needle Valve/Flow Characteristics

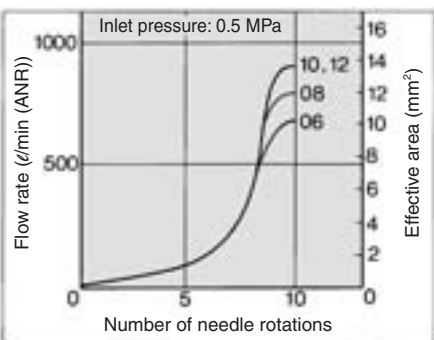
AS2201F-01, AS2211F-01



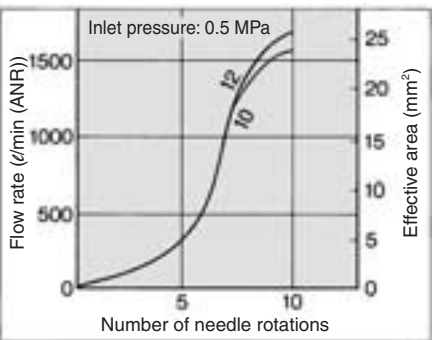
AS2201F-02, AS2211F-02



AS3201F, AS3211F

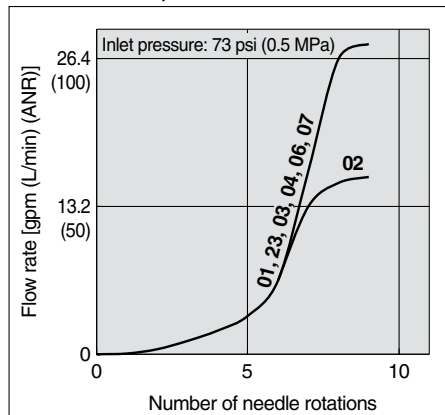


AS4201F, AS4211F



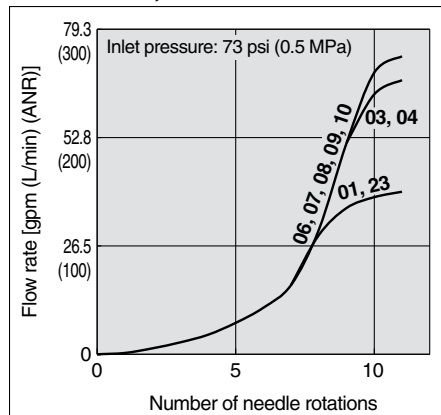
Needle Valve/Flow-rate Characteristics

AS1201F-M5, AS1211F-M5

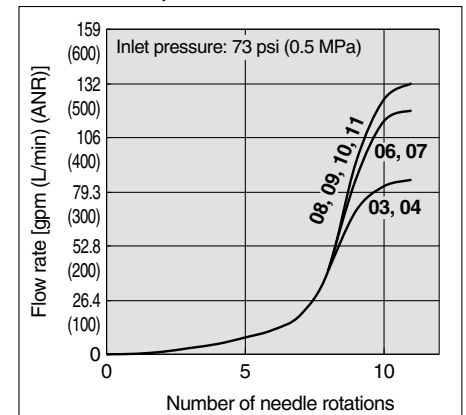


Note) -U10/32 has the same specification as M5.

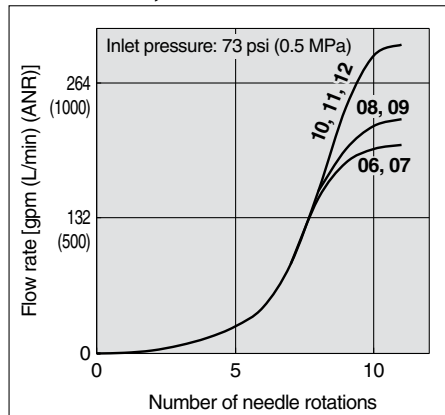
AS2201F-01, AS2211F-01



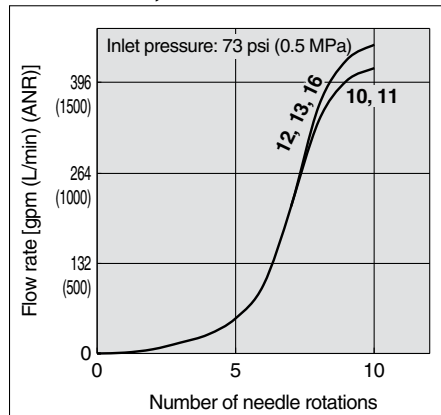
AS2201F-02, AS2211F-02



AS3201F-03, AS3211F-03



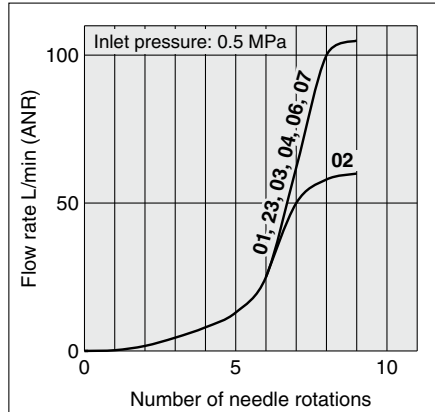
AS4201F-04, AS4211F-04



Note) The numbers above the flow-rate characteristic curves in the charts show the tubing diameter as defined by the product number.

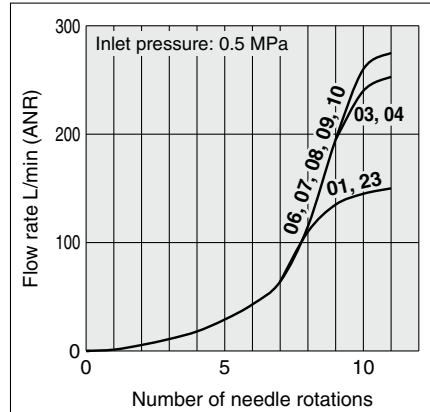
Needle Valve/Flow-rate Characteristics

AS1201FS-M5, AS1211FS-M5

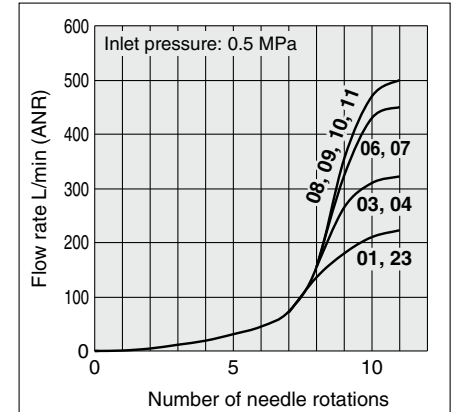


Note) -U10/32 has the same specification as M5.

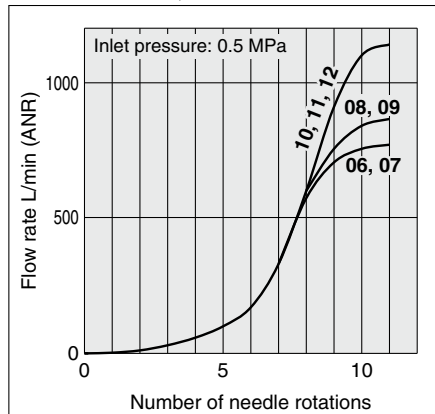
AS2201FS-01, AS2211FS-01



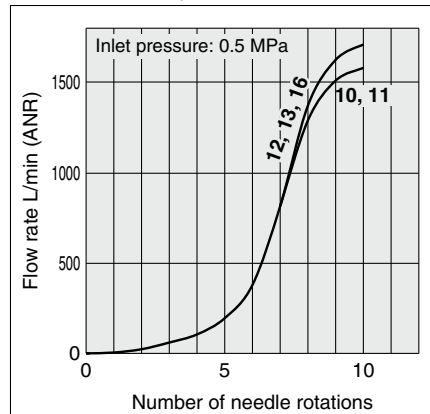
AS2201FS-02, AS2211FS-02



AS3201FS-03, AS3211FS-03



AS4201FS-04, AS4211FS-04



Note) The numbers above the flow-rate characteristic curves in the charts show the applicable tubing outside diameter as defined by the product number.