Precision Clean Regulator

SRP Series

High precision, low flow consumption stainless steel regulator

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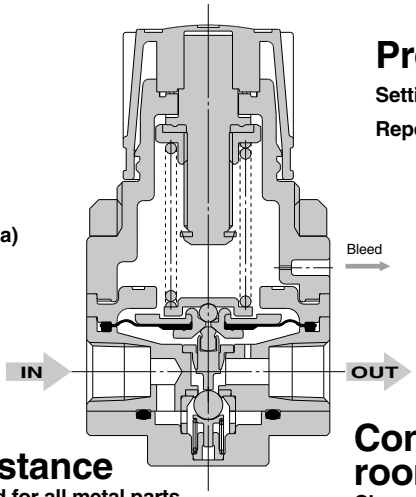
High precision, low flow consumption stainless steel regulator

Achieves flow consumption "under a liter"

Bleed volume
0.5 L/min (ANR) or less
(Outlet pressure at 0.2 MPa)



Precision

Setting sensitivity: 0.3%F.S.

Repeatability: 1%F.S.

Oil free

Parts composition with no use of oils.

All wetted parts degrease washing

Excellent corrosion resistance

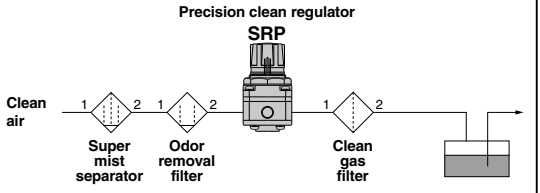
Stainless steel 316 is used for all metal parts in contact with the fluid.

Consistent clean room production

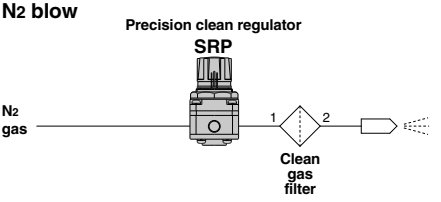
Cleaned, assembled, inspected, and sealed in double packaging in a Class 10,000 environment

Applications

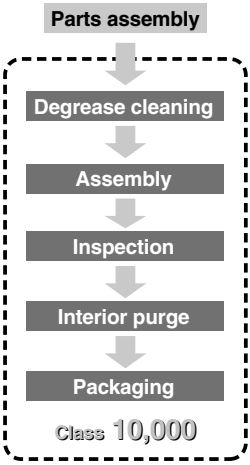
Pressure feed of chemicals



N_2 blow



Manufacturing process



Precision Clean Regulator
SRP Series

How to Order

SRP 1 1 0 1 – 01 – □ – □

Set pressure

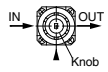
0	0.005 to 0.2 MPa
1	0.01 to 0.4 MPa

Port size

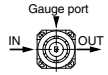
Symbol	Piping port size
M5	M5 x 0.8
01	Rc 1/8
N01	NPT 1/8
F01	G 1/8

Gauge port orientation

Nil: Standard



R: R specifications

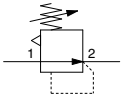


∗ Gauge port positions are indicated with the knob on the top side.

Made to Order
(Refer to page 874 for details.)

Nil	Standard
X201	Machined bleed port M5 thread
X206	With bleed port fittings (Applicable tube O.D.: ø4)

Symbol



Options

Bracket

Model	Material
B21-1-T1	Rolled steel plate (electroless nickel plated)

Pressure gauge

Product part no.	Pressure gauge part no.
SRP1∗∗∗-M5	IN-233-863+G46-□-01M-SRB
SRP1∗∗∗-01	G46-□-01-SRB

Specifications

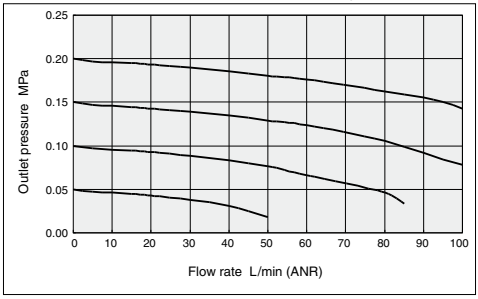
Connection port size		M5, Rc 1/8, NPT 1/8, G 1/8
Fluid		Air, N_2, CO_2, Ar
Proof pressure MPa		1.5
Maximum operating pressure MPa		1.0
Regulating pressure range MPa	**Low pressure type**	0.005 to 0.2
	High pressure type	0.01 to 0.4
Ambient and fluid temperature (°C)		0 to 60
Fluid consumption L/min (ANR) Note)		0.5 or less
Sensitivity		0.3% of full span
Repeatability		± 1% of full span
Fluid-contact parts	**Metal**	Stainless steel 316
	Resin	Fluororesin
	Rubber	Fluororubber
	Other	Ceramics
Assembly environment		Clean room class 10000
Parts cleaning		All wetted parts degrease washing

Note) At set pressure of 0.2 MPa

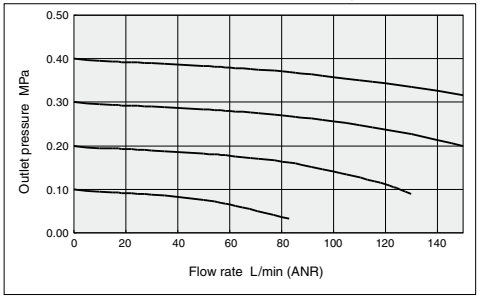
Flow Rate Characteristics (Representative value)

Fluid: Air

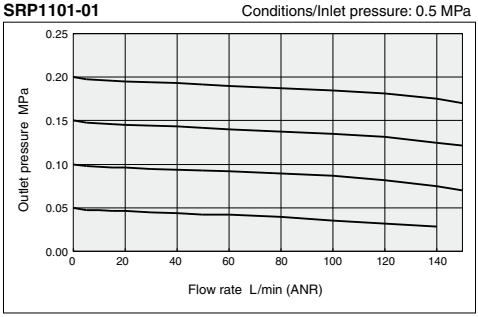
SRP1101-M5 Conditions/Inlet pressure: 0.5 MPa



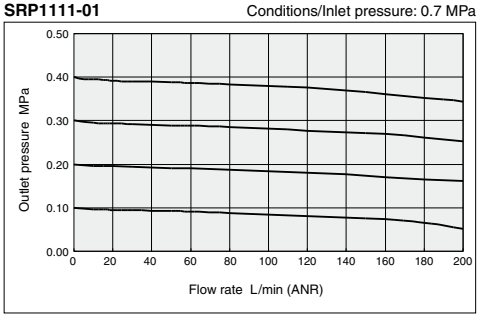
SRP1111-M5 Conditions/Inlet pressure: 0.7 MPa



SRP1101-01 Conditions/Inlet pressure: 0.5 MPa



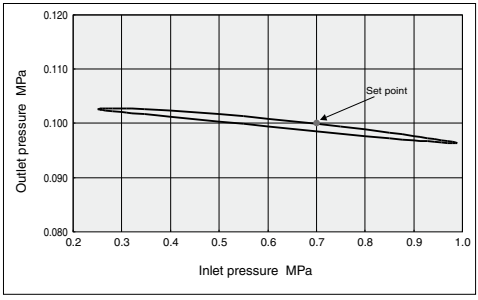
SRP1111-01 Conditions/Inlet pressure: 0.7 MPa



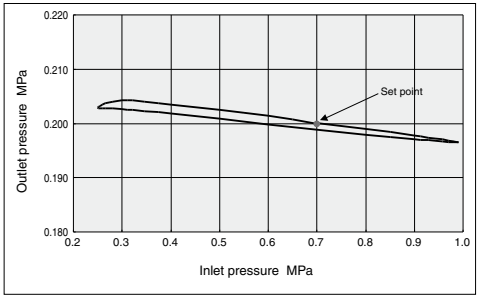
Pressure Characteristics (Representative value)

Fluid: Air

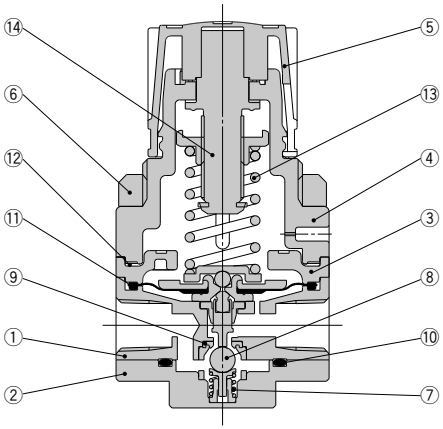
SRP1101 Initial setting/Inlet pressure: 0.7 MPa
Outlet pressure: 0.1 MPa



SRP1111 Initial setting/Inlet pressure: 0.7 MPa
Outlet pressure: 0.2 MPa



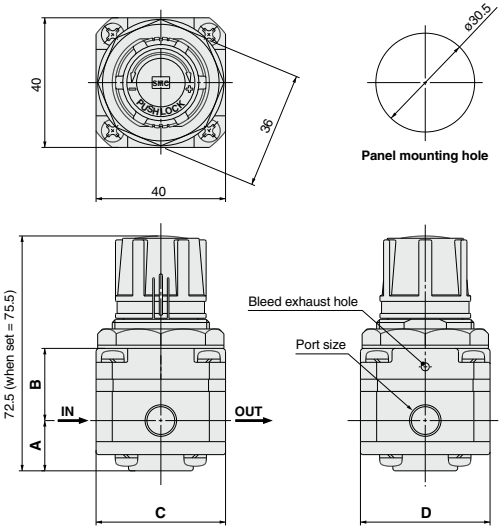
Construction



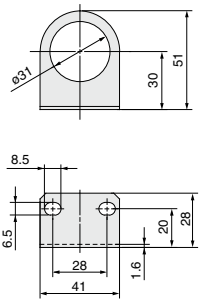
Component parts

No.	Description	Material	Treatment
1	**Body**	Stainless steel 316L	
2	**Valve guide**	Stainless steel 316	
3	**Spacer**	PPS	
4	**Bonnet**	PPS	
5	**Knob**	PBT	
6	**Set nut**	ZDC	Electroless nickel plated
7	**Valve spring**	Stainless steel 316	
8	**Main valve**	Ceramics	
9	**Valve seat**	PTFE	
10	**O-ring**	Fluororubber	
11	**Diaphragm**	Fluororubber	
12	**Gasket**	Fluororubber	
13	**Pressure regulator spring**	Steel wire	
14	**Pressure regulator screw assembly**	———	

Dimensions



Bracket



Model	Port size	A	B	C	D
SRP11□1-M5	M5 x 0.8	14	23.5	30	30
SRP11□1-□01	Rc 1/8, NPT 1/8, G 1/8	15	22.5	40	40

SRP Series
Made to Order Specifications:

Please contact SMC for detailed dimensions, specifications and lead times.

Made to Order

Symbol

1 Machined Bleed Port M5 Thread — X201

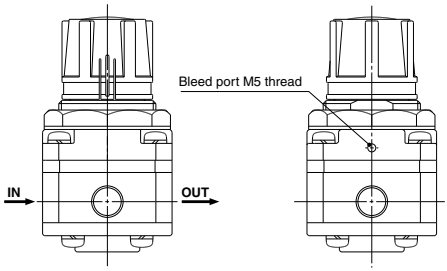
Regulator with a M5 thread machined on the relief port in order to connect it to the bleed port.

Standard model no. — **X201**

- **X201**: Machined bleed port M5 thread

Dimensions

Other dimensions are the same as the standard type.



Symbol

2 With Bleed Port Fittings (Applicable Tubing O.D.: ø4) — X206

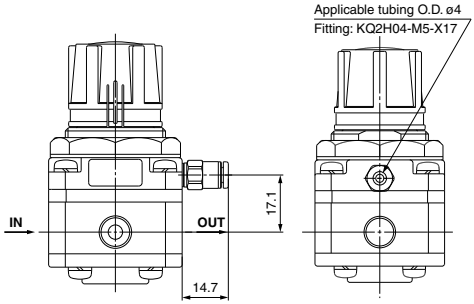
Regulator with a fitting in order to connect it to the bleed port.

Standard model no. — **X206**

- **X206**: With bleed port fittings

Dimensions

Other dimensions are the same as the standard type.



SMC

SRP Series
Specific Product Precautions

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 387 to 391 for Precautions on every series.

Design and Selection

⚠Warning

1. Types of fluid

This product is designed for use with air, N_2, CO_2 and Ar as fluids. Consult SMC if it will be used with any other fluids.

Since this product uses a bleed mechanism and fluid is released from the bleed hole, poisonous or corrosive gases cannot be used.

2. Fluids containing solids cannot be used.

Since this can cause malfunction, install a mist separator, etc., upstream from the regulator.

3. For air containing a large amount of drainage, install an air dryer or after cooler, etc., upstream from the regulator.

This can otherwise cause malfunction.

4. Do not use in locations subject to vibration or impact.

5. Avoid direct sunlight by providing a protective cover, etc.

6. When sources of heat are located nearby, block off any radiated heat.

⚠Caution

1. It is recommended that the outlet pressure be set in the range of 25 to 85% of the inlet pressure.

2. Depends on operating conditions, oscillation (buzz) may occur even when used within the specification range detailed in this catalog. Consult SMC for details.

3. When operating at an inlet pressure lower than the inlet pressure used in the flow rate characteristics graph, the pressure drop on the outlet side may be greater. Therefore, be sure to conduct testing using the actual equipment.

Mounting

⚠Caution

1. Open the sealed package inside a clean room.

This product is packaged in sealed double packaging in a clean room. It is recommended that the inside packaging be opened in a clean room or other clean environment.

2. Flush out the piping.

Connect this product to piping only after the piping has been flushed or washed, etc. If debris or scale, etc., remains in the piping, this can cause malfunction or failure.

3. Keep sealing material from getting inside the piping.

When screwing in pipes and fittings, etc., take care that chips from the pipe threads, sealing material, and other debris do not get inside the piping. If debris or scale, etc., remain inside the piping, this can cause malfunction or failure. Also, when sealant tape is used, leave 1.5 to 2 threads ridges exposed at the end of the threads.

Mounting

⚠Caution

4. Confirm the mounting orientation of the product.

The side marked IN is the fluid inlet, and the side marked OUT is the fluid outlet. If mounted backwards, the product will not operate properly.

5. Do not block the bleed hole.

If the bleed hole is blocked, the product will not operate properly.

Pressure Adjustment

⚠Warning

1. Do not use tools when operating the pressure regulator knob.

If tools, etc., are used to operate the pressure regulator knob, damage can occur. Operate this knob only by hand.

2. Perform settings while confirming inlet and outlet pressure indicators.

Turning the knob more than necessary can cause damage to internal parts.

⚠Caution

1. Perform pressure adjustments only after releasing the lock.

When the pressure regulator knob will not turn, it is locked. Release the lock by pulling the pressure regulator knob out. If the knob is turned by force damage will occur.

After adjusting the pressure, lock the knob again by pressing it back down.

2. Adjust pressure in an upward direction.

A correct pressure setting cannot be achieved by adjusting the pressure downward. The outlet pressure is increased by turning the pressure regulator knob to the right, and decreased by turning the knob to the left.

3. Confirm the inlet pressure.

Set the outlet pressure to no more than 85% of the inlet pressure. If the inlet pressure is too low, a correct set pressure cannot be attained.

4. A small volume of fluid will be expended from the bleed hole.

The bleed mechanism is used to perform high precision pressure adjustment. Therefore, it is not abnormal for a small volume of fluid to be expended from the bleed hole.