

Clean Regulator



Contamination controlled stainless steel regulator

Series *SRH*

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Outstanding corrosion resistance

All metal parts in contact with fluid use stainless steel SUS316

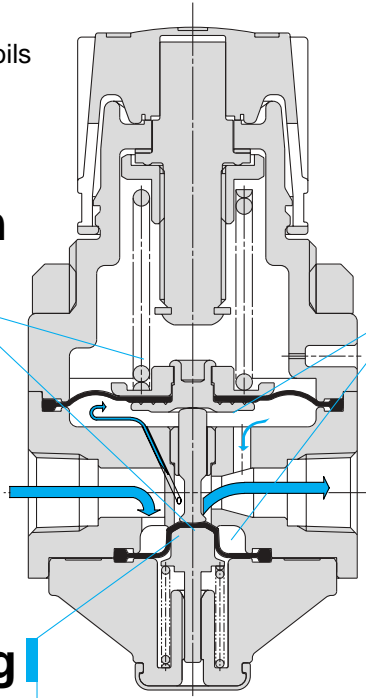
Oil free

Parts assembled without any use of oils



2 types of diaphragm material available

Depending upon the application, PTFE (Grade A) or fluororubber (Grade B) can be selected for the diaphragm material



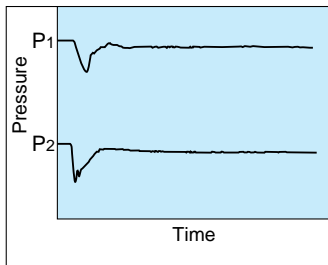
Designed to minimize residual fluid

- Design includes an intake/exhaust port in the diaphragm compartment which facilitates flow
- Valve springs are partitioned by the diaphragm

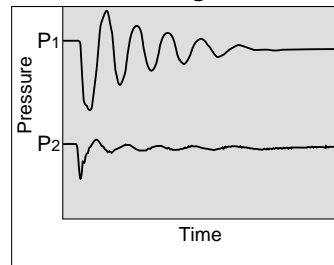
Pulsation suppressing design

Step response comparison

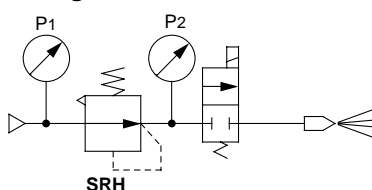
SRH



Conventional regulator



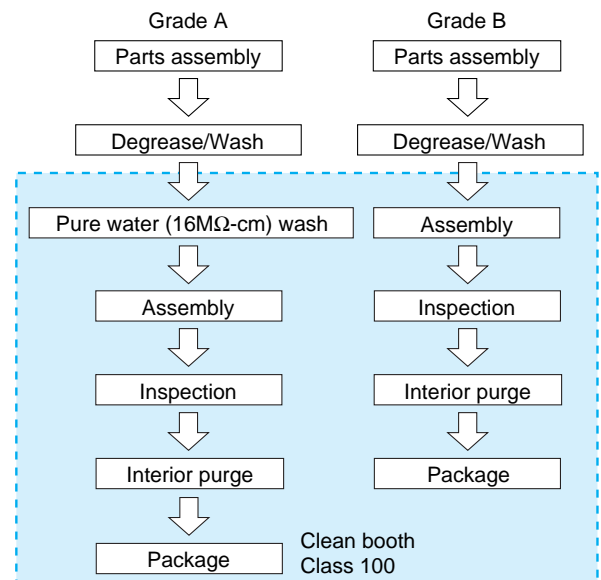
Circuit diagram



Consistent clean room production

Washed, assembled and inspected in a Class 100 environment, and sealed in double bags

Manufacturing process



Clean Regulator

Series *SRH*

How to Order



SRH **3** **0** **0** **0** - **02** - **R**

Body size

3	1/4
4	3/8

Washing grade

0	Grade A
1	Grade B

Set pressure

0	0.01 to 0.2MPa
1	0.05 to 0.7MPa

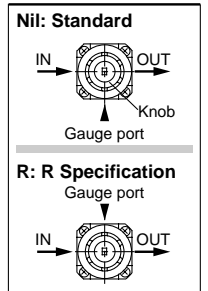
Relief mechanism

0	Non-relief
1	Relief

Port size

Symbol	Piping port size	SRH3000	SRH4000
01	Rc1/8	●	—
02	Rc1/4	●	●
03	Rc3/8	—	●
04	Rc1/2	—	●
A2	With metal gasket seal fitting	9/16-18UNF	—
A3	With metal gasket seal fitting	—	7/8-14UNF

Gauge port orientation



*There is only one gauge port.

Note) The pressure gauge is optional. Refer to option specifications on page 6.

Specifications

Model		SRH3□□0	SRH4□□0	SRH3□□1	SRH4□□1
Relief mechanism		Non-relief		Relief	
Port size		Rc1/8, 1/4 URJF1/4	Rc1/4, 3/8, 1/2 URJF3/8	Rc1/8, 1/4	Rc1/4, 3/8, 1/2
Fluid	Grade A	Clean air, N ₂ , Ar, CO ₂ , Pure water		Clean air, N ₂	
	Grade B	Air, N ₂ , Ar, CO ₂ , Water		Air, N ₂	
Proof pressure		1.5MPa			
Max. operating pressure		1MPa			
Set pressure	Low pressure type	0.01 to 0.2MPa			
	High pressure type	0.05 to 0.7MPa			
Ambient & fluid temperatures		0 to 60°C (With no condensation)			
Fluid-contact material (metal)		Stainless steel SUS316 (Body is SUS316L)			
Diaphragm material	Grade A	PTFE			
	Grade B	Fluororubber			
Weight		360g	730g	360g	730g

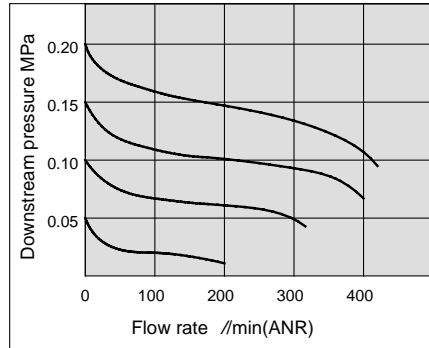
Series SRH

Flow Rate Characteristics

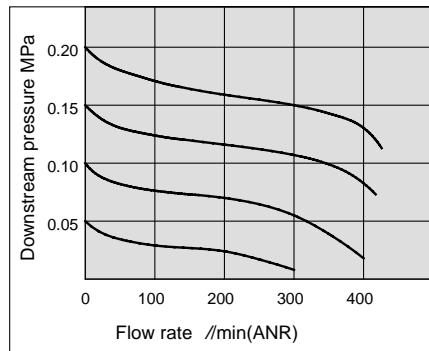
Fluid: Air

Conditions/Supply pressure: 0.5MPa

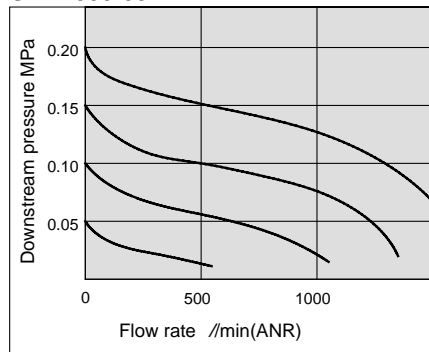
SRH3000-02



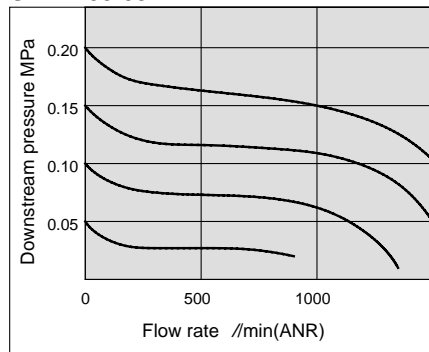
SRH3100-02



SRH4000-03

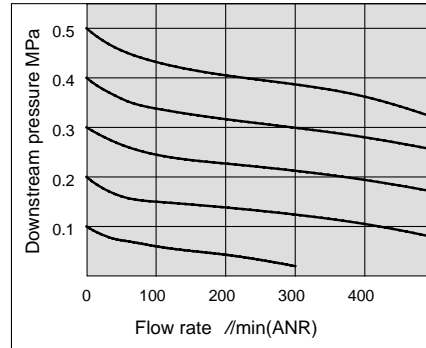


SRH4100-03

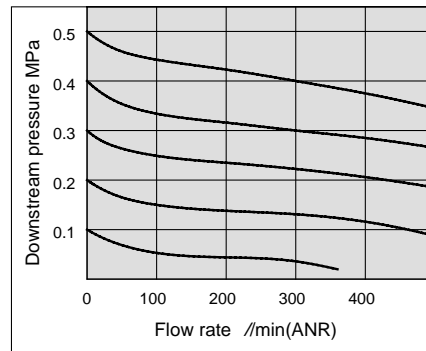


Conditions/Supply pressure: 0.7MPa

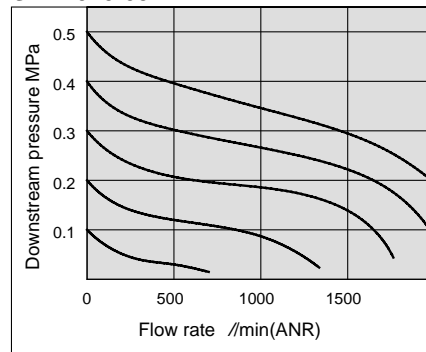
SRH3010-02



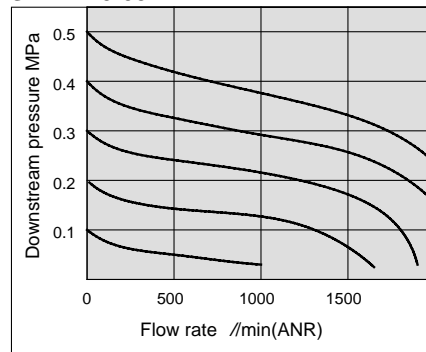
SRH3110-02



SRH4010-03



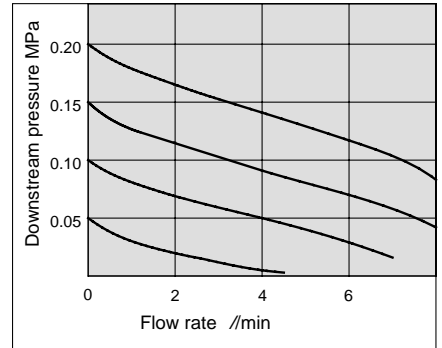
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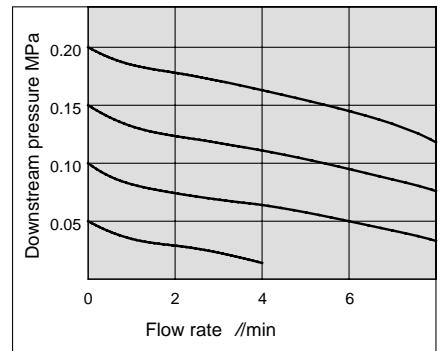
Fluid: Water

Conditions/Supply pressure: 0.5MPa

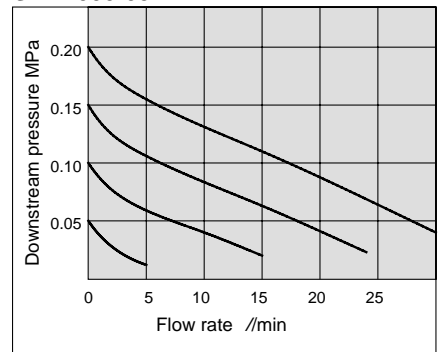
SRH3000-02



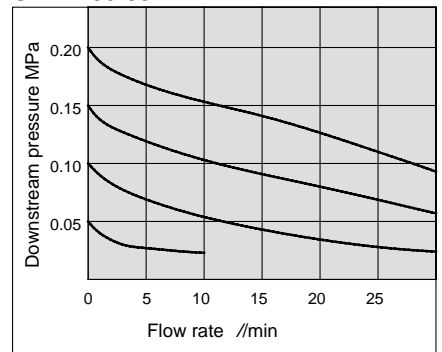
SRH3100-02



SRH4000-03



SRH4100-03

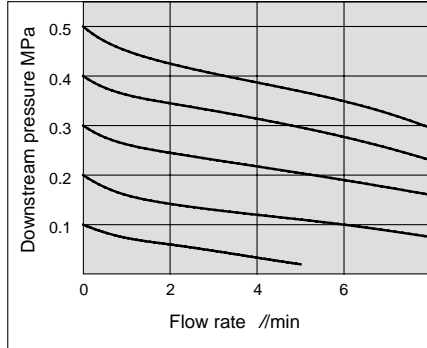


Pressure Characteristics

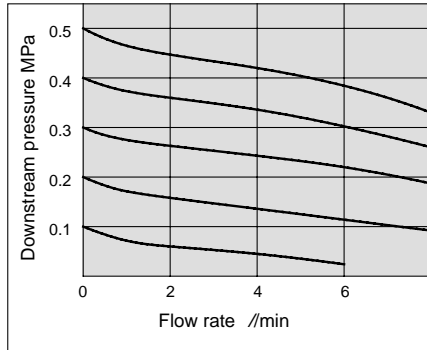
Fluid: Water/Air

Conditions/Supply pressure: 0.7MPa

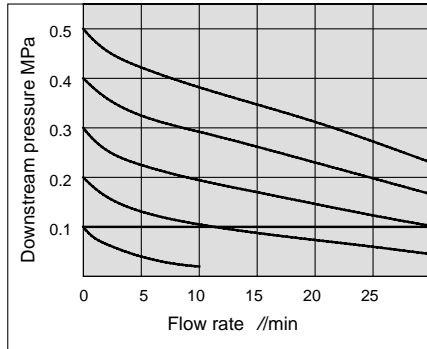
SRH3010-02



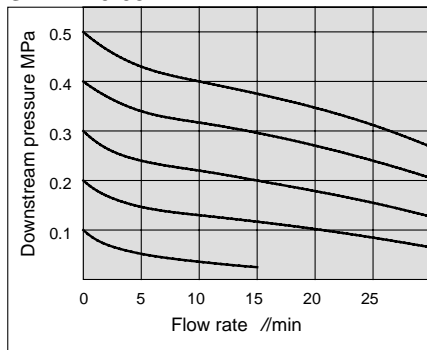
SRH3110-02



SRH4010-03

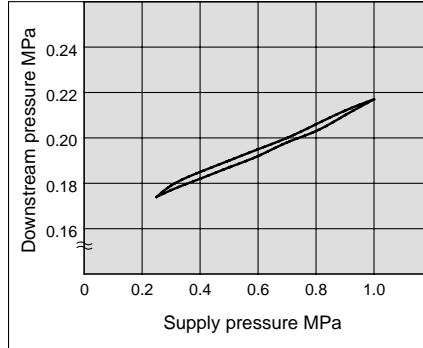


SRH4110-03

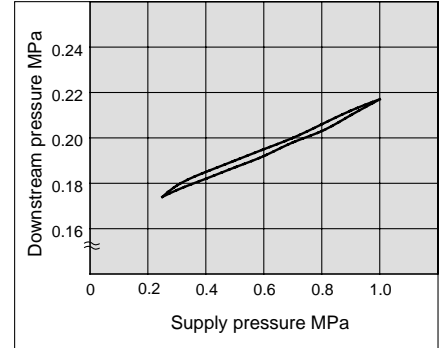


Conditions/Supply pressure: 0.7MPa, Downstream pressure: 0.2MPa, Flow rate 2 l/min

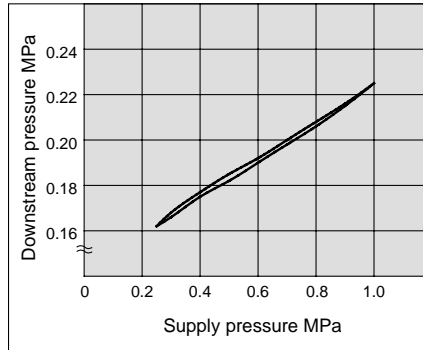
SRH3000



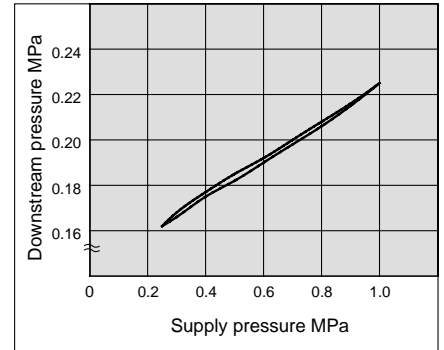
SRH3100



SRH4000

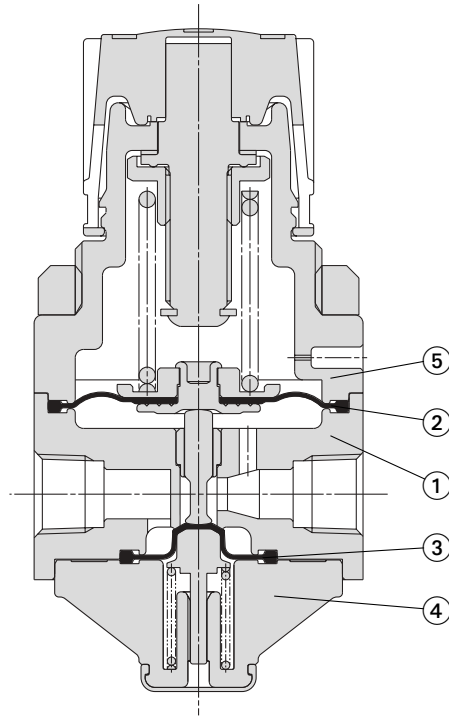


SRH4100



Series SRH

Construction

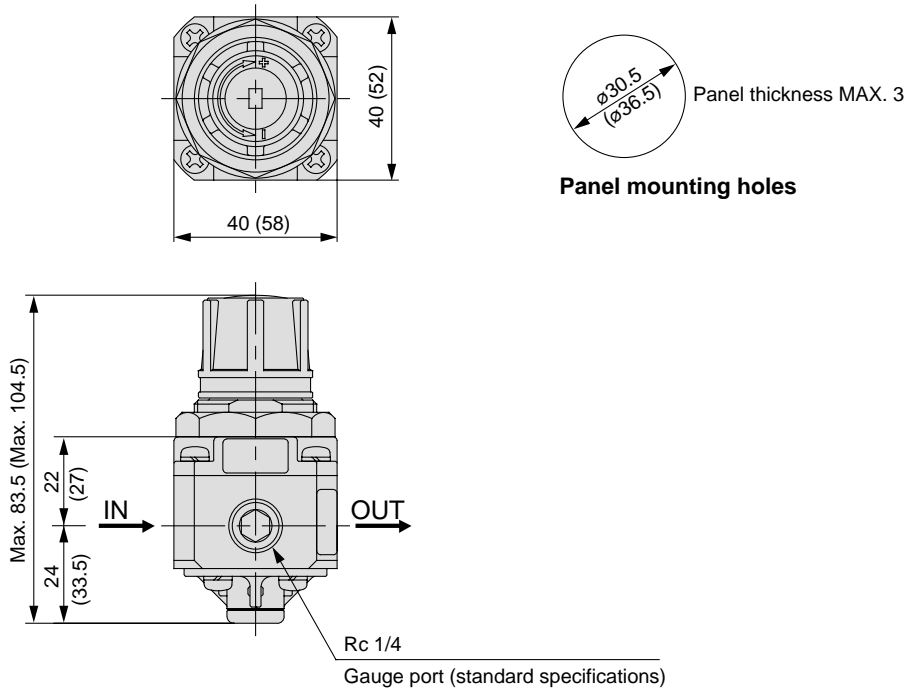


Parts list

No.	Description	Material	
		Grade A	Grade B
1	Body	Stainless steel SUS316L	
2	Diaphragm	PTFE	Fluororubber
3	Diaphragm	PTFE	Fluororubber
4	Valve guide	PPS	
5	Bonnet	PPS	

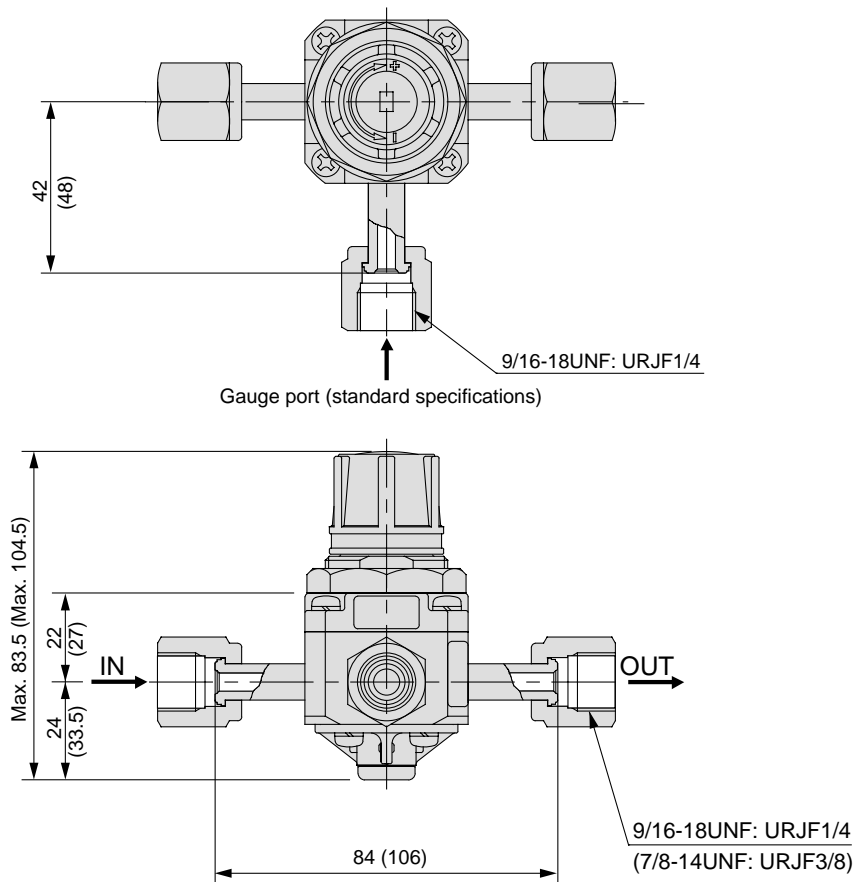
Dimensions

Rc thread type



Dimensions inside () are for SRH4000.

Metal gasket seal fitting type

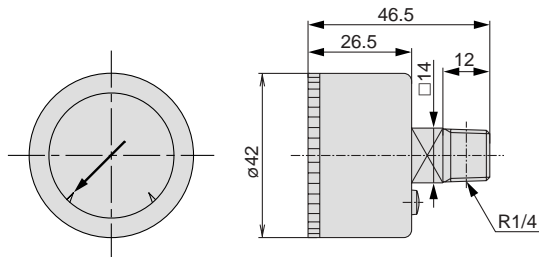


Dimensions inside () are for SRH4000.

Options

Pressure Gauge

Dimensions



Specifications

Item	Model	G46-□-02-SRA	G46-□-02-SRB
Port size		R1/4	
Operating temperature range		0 to 60°C (With no condensation)	
Accuracy		±3%F.S.	
Scale range		270°	
Parts washing (fluid-contact parts)		Precision wash	General degrease
Assembly & adjustment environment		Clean room	General production line
Oil free / Water free		Non-lube / Non-wet	
Materials	Fluid-contact parts	Stainless steel SUS316	
	Case	Stainless steel SUS304 (Black melamine coating)	
	Clear cover	Polycarbonate (Hard coated)	Part No. G46-00-00-2
	Internal parts	Brass	
Weight		80g	

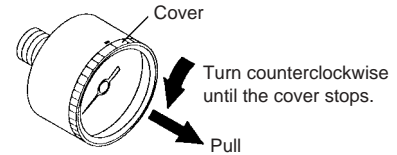
Models

Model	Pressure range	Indicator units
	MPa	
G46-2-02-SRA	0 to 0.2	MPa
G46-2-02-SRB		
G46-4-02-SRA	0 to 0.4	
G46-4-02-SRB		
G46-7-02-SRA	0 to 0.7	
G46-7-02-SRB		
G46-10-02-SRA	0 to 1.0	
G46-10-02-SRB		

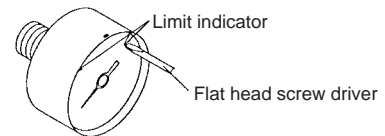
Note) Consult SMC for the supply of types with metal gasket seal.

Procedure for setting the limit gauge indicator

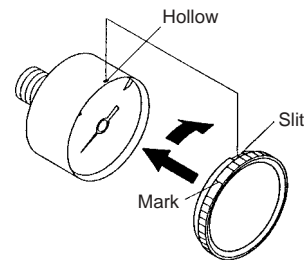
- 1) Before setting the limit indicator, turn the cover counterclockwise (approximately 6 to 7 mm) until it stops. Then, remove by pulling it towards you.



- 2) Use a flat head screwdriver (with a 2.9 mm blade width) to set the limit indicator. Be careful not to bend other needle or damage the dial plate.



- 3) After completing the setting, replace the cover. Fit the cover by aligning the cutout in the cover to the groove on the top of the black case. Turn the cover clockwise (approximately 6 to 7 mm) and make sure that the matching mark on the cover is aligned with the groove on the top of the case.



⚠ Specific Product Precautions

Be sure to read before handling.
Refer to page 8 for Safety Instructions.

Selection

⚠ Caution

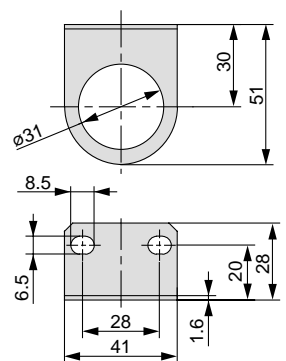
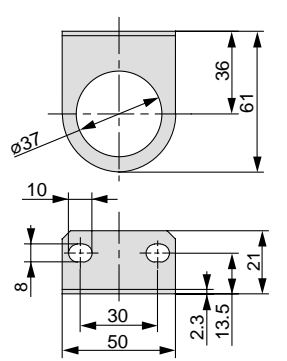
- 1) Avoid use in locations with strong pressure pulsation or vibration.
- 2) Contact SMC if the product is to be used in an application with a high frequency of operation.

Mounting

⚠ Caution

- 1) Do not subject the gauge to shocks, such as dropping during transportation and mounting, as this can cause loss of indication accuracy.
- 2) Do not use this gauge in a location with high temperature and humidity, as this may cause faulty operation.
- 3) When mounting the pressure gauge, be certain to use a wrench on the square wrench flats to screw it into place. If the wrench is applied on any other part, air leakage or other damage may occur.

Brackets

	For SRH3000	For SRH4000
Model	B21-1-T1	1350112-T1
Material	Rolled sheet steel (Electroless nickel plated)	
Dimensions		



Series **SRH**

Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by label of "**Caution**", "**Warning**" or "**Danger**". To ensure safety, be sure to observe ISO 4414 ^{Note 1)}, JIS B 8370 ^{Note 2)} and other safety practices.

⚠ Caution : Operator error could result in injury or equipment damage.

⚠ Warning : Operator error could result in serious injury or loss of life.

⚠ Danger : In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414 : Pneumatic fluid power – General rules relating to systems

Note 2) JIS B 8370 : Pneumatic system axiom.

⚠ Warning

1. The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications.

Since the products specified here are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalog information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. Only trained personnel should operate pneumatically operated machinery and equipment.

Compressed air can be dangerous if handled incorrectly. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced operators.

3. Do not service machinery/equipment or attempt to remove component until safety is confirmed.

1. Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
3. Before machinery/equipment is re-started, take measures to prevent shooting/out of cylinder piston rod etc. (Bleed air into the system gradually to create back-pressure.)

4. Contact SMC if the product is to be used in any of the following conditions:

1. Conditions and environments beyond the given specifications, or if product is used outdoors.
2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.
3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.



Series SRH Specific Product Precautions

Be sure to read before handling.
Refer to page 8 for Safety Instructions.

Design and Selection

Warning

1. Confirm the fluid.

Because the fluid to be used differs depending on the product, be certain to confirm the specifications. If an incompatible fluid is used, special characteristics will change and this may cause improper operation.

2. Residual pressure relief is not possible without supply pressure.

In the SRH series, if the supply pressure is cut off while pressure still remains on the downstream side, it is not possible to eliminate the downstream pressure (residual pressure relief). If it will be necessary to eliminate pressure from the downstream side, a circuit should be provided for residual pressure relief.

Mounting

Caution

1. Open the sealed package inside a clean room.

These products are 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 these products to piping only after it has been flushed and cleaned properly. If debris or scale etc. remains in the piping, this can cause faulty operation or failure.

3. Be certain that sealing material does not get inside the piping.

When screwing in pipes and joints etc., take care that cutting dust from the pipe threads, sealing material, and the like do not get inside the piping. If debris or scale etc. remain inside the piping, this may cause faulty operation or failure. Also, when thread tape is used, leave 1.5 or 2 threads exposed at the end of the pipe.

4. Confirm the mounted orientation of the product.

The side marked IN is the fluid supply port, and the side marked OUT is the fluid exhaust port. If mounted backwards, the device 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 may occur. Operate this knob only by hand.

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.

Lock again after adjusting the pressure by pressing the knob back down.

2. Adjust pressure in an upward direction.

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

3. In the case of the non-relief type, the pressure cannot be reduced by turning the pressure regulator knob to the left.

In the case of the non-relief type regulator, the downstream pressure will not decrease even if the knob is turned to the left, when there is no downstream fluid consumption. The knob will be damaged if it is turned by force.

In case the pressure setting is too high, reduce the pressure on the downstream side to less than the desired setting pressure by consuming fluid on the downstream side, and then reset to the desired pressure.

4. Confirm the supply pressure.

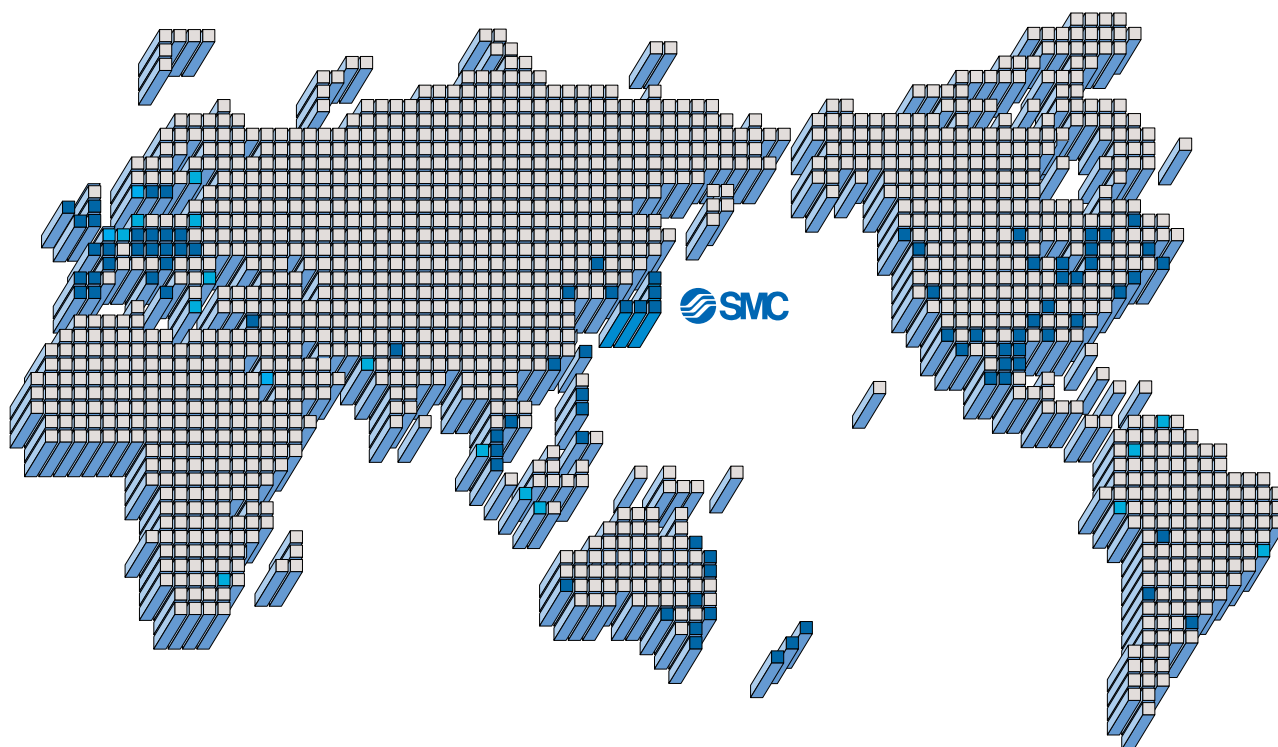
Set the downstream pressure to no more than 85% of the supply pressure. If the supply pressure is too low, a correct setting pressure cannot be attained.

5. Do not use fluid containing solid matter.

This will cause faulty operation.



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