The addition of the small size Series IR1000 and the large size Series IR3000 provides an increased range of flow rates from approx. 200 l/min. to approx. 6000 l/min.
Bracket and pressure gauge can be mounted from 2 directions
Mounting is possible on either the front or the back.

Expanded regulating pressure range
The maximum set pressure has been expanded from the conventional 0.7MPa to 0.8MPa.

Compact and light weight
IR1000  width 35mm  weight 140g  (previously unavailable small size added)
IR2000  width 50mm  weight 300g  (▲ width 14%, weight ▲6%  Compared to SMC IR200)
IR3000  width 66mm  weight 640g  (▲ width 21%, weight ▲36%  Compared to SMC IR400)

2 air operated models
Air operated style added to series IR2000

IR2120  IR3120

Manifolding is possible
Made to order specifications (except series IR2120, IR3000)
Modular body introduced (-X120)
Can be combined with AF (air filter) and AFM (mist separator).

Superior relief flow characteristics
Relief flow has been increased by nearly 5 times (compared to SMC IR201, IR401)

Attachments such as a pressure switch can be mounted as accessories
Applicable modular sizes
- IR1000: Modular 20 type
- IR2000: Modular 30 type
- IR3000: Modular 40 type

Features 2
Application Examples

Constant fluid pressure

- Since there is a large effective area for supply and exhaust, pressure setting can be done quickly.

Balance and drive
Accurate balance pressure setting

- Limits pressure fluctuation when driving a cylinder, maintaining excellent static and dynamic balance.

Accurate pressure setting – Sensitivity within 0.2%F.S. (full span)
Tension controller

Multistage control of work piece pressing force
(Wrapping machine)

- Adapts to the cylinder's piston displacement, maintaining a constant pressure.

Contact pressure control

Leak test circuit

Features 3
## Standard Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Basic style</th>
<th>Air operated style</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Max. supply pressure</td>
<td>IR10/0:0.005 to 0.2 MPa</td>
</tr>
<tr>
<td></td>
<td>Min. supply pressure</td>
<td>IR10/1:0.01 to 0.4 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IR10/2:0.01 to 0.8 MPa</td>
</tr>
<tr>
<td></td>
<td>Set pressure range</td>
<td>IR20/0:0.01 to 0.2 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IR20/1:0.01 to 0.4 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IR20/2:0.01 to 0.8 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IR30/0:0.01 to 0.2 MPa</td>
</tr>
<tr>
<td></td>
<td>Input signal pressure</td>
<td>—</td>
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<tr>
<td></td>
<td>Sensitivity</td>
<td>Within 0.2% of full span</td>
</tr>
<tr>
<td></td>
<td>Repeatability</td>
<td>Within 0.5% of full span</td>
</tr>
<tr>
<td></td>
<td>Linearity</td>
<td>Within 1% of full span</td>
</tr>
<tr>
<td></td>
<td>Air consumption</td>
<td>4.4 l/min (ANR) or less</td>
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<tr>
<td></td>
<td></td>
<td>11.5 l/min (ANR) or less</td>
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<tr>
<td></td>
<td>Port size</td>
<td>Rc(PT) 1/8</td>
</tr>
<tr>
<td></td>
<td>Pressure gauge port</td>
<td>Rc(PT) 1/8</td>
</tr>
<tr>
<td></td>
<td>Ambient and fluid temperature</td>
<td>– 5 to 60°C (No freezing)</td>
</tr>
<tr>
<td></td>
<td>Weight (kg)</td>
<td>0.14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.71</td>
</tr>
</tbody>
</table>

Note 1) With the condition of no flow on the output side. Together with the set pressure, be sure to maintain a minimum differential pressure of 0.05MPa for models IR1000 and IR2000, and 0.1MPa for model IR3000.

Note 2) Applicable only to air operated styles IR2120 and IR3120. The basic style is excepted.

Note 4) Air is normally being discharged to the atmosphere.

### How to Order

**Precision regulator**

- **Body size**
  - 1: IR1000
  - 2: IR2000
  - 3: IR3000

- **Type of setting**
  - 0: Basic type (Handle)
  - 1: Air operated type (Series IR2000/3000 only)

**Regulating pressure range**

- For series IR1000/2000
  - 0: 0.005 to 0.2 MPa
  - 1: 0.01 to 0.4 MPa
  - 2: 0.01 to 0.8 MPa

- For series IR3000
  - 0: 0.01 to 0.2 MPa
  - 1: 0.01 to 0.4 MPa
  - 2: 0.01 to 0.8 MPa

**Thread type**

- Rc
- N
- F
- G

**Port size**

- 01: 1/8
- 02: 3/8
- 04: 1/2

**Accessories**

- B: With bracket
- G: With pressure gauge

### Made to Order Specifications (Refer to page 8)

**Symbol**

- X1: Non-grease specifications
- X120: With digital pressure switch (ISE30A)

**Note**

1. Add prefix (10-) for the clean room specification.
2. Add prefix (20-) for the copper-free and fluorine-free specification.
3. Add prefix (80-) for the ozone-resistant specification.
4. Manifold specification is available for IR1000 and IR2000.
   (Except IR2120 and IR3000)
### Specification Combinations

<table>
<thead>
<tr>
<th>Specifications</th>
<th>IR1000</th>
<th>IR1010</th>
<th>IR1020</th>
<th>IR2000</th>
<th>IR2010</th>
<th>IR2020</th>
<th>IR2120</th>
<th>IR3000</th>
<th>IR3010</th>
<th>IR3020</th>
<th>IR3120</th>
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<tr>
<td><strong>Standard specifications</strong></td>
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<td>Pressure gauge reverse mounted</td>
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<td>●</td>
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<td>●</td>
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</tr>
<tr>
<td>Connection NPT1/8</td>
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<td>Connection NPT1/4</td>
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<td>Connection NPT1/2</td>
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<td>Connection G(PF) 1/8</td>
<td>F01</td>
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<td>●</td>
<td>●</td>
<td>●</td>
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</tr>
<tr>
<td>Connection G(PF) 3/8</td>
<td>F03</td>
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<td>●</td>
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</tbody>
</table>

### Modular Products and Accessory Combinations

#### Description

<table>
<thead>
<tr>
<th>Description</th>
<th>IR1000</th>
<th>IR1010</th>
<th>IR1020</th>
<th>IR2000</th>
<th>IR2010</th>
<th>IR2020</th>
<th>IR2120</th>
<th>IR3000</th>
<th>IR3010</th>
<th>IR3020</th>
<th>IR3120</th>
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</thead>
<tbody>
<tr>
<td>1. Air filter</td>
<td>AF20</td>
<td>AF30</td>
<td>AF40</td>
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<tr>
<td>2. Mist separator</td>
<td>AFM20</td>
<td>AFM30</td>
<td>AFM40</td>
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<tr>
<td>3. Interface</td>
<td>Y200</td>
<td>Y300</td>
<td>Y400</td>
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<tr>
<td>4. Interface with bracket</td>
<td>Y200T</td>
<td>Y300T</td>
<td>Y400T</td>
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<td></td>
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</tbody>
</table>

#### Part no.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket</td>
<td>P36201023</td>
</tr>
<tr>
<td>Pressure gauge</td>
<td>P36202028</td>
</tr>
</tbody>
</table>

Note 1) Use the made-to-order product (IR1000-X120) for modular connections. The interface and interface with bracket listed above cannot be connected to the standard type. Use a conventional connection interface when connecting the standard type with modular connections.

Note 2) The made-to-order product number (IR1000-X120) is for the precision regulator only. For modular connections, please order the applicable products and accessories separately.

### Combination example

- **Interface**
- **Interface with bracket**

### Accessory (Option) / Part no.

<table>
<thead>
<tr>
<th>Description</th>
<th>IR1000</th>
<th>IR1010</th>
<th>IR1020</th>
<th>IR2000</th>
<th>IR2010</th>
<th>IR2020</th>
<th>IR2120</th>
<th>IR3000</th>
<th>IR3010</th>
<th>IR3020</th>
<th>IR3120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket</td>
<td>P36201023</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Pressure gauge*1</td>
<td>G33-2-01</td>
<td>G33-4-01</td>
<td>G33-10-01</td>
<td>G43-2-01</td>
<td>G43-4-01</td>
<td>G43-10-01</td>
<td>G43-2-01</td>
<td>G43-4-01</td>
<td>G43-10-01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 A bracket and two mounting screws (M5 x 35) To mount the bracket, remove two body screws (M5 x 30) on the name plate on the opposite side and replace the attached two bracket mounting screws (M5 x 35).

*2 Accuracy ±3% (Full span)
When the setting knob is turned, the nozzle is closed by the flapper allowing the supply air that flows in from the upstream side to pass through the fixed orifice and to act on diaphragm B as nozzle back pressure, the main valve is pushed down by the generated force and the supply pressure flows out to the downstream side. The air pressure that flows in acts on diaphragm C and while opposing the force generated by diaphragm B, it also acts on diaphragm A opposing the compression force of the setting spring and becomes the set pressure. If the set pressure rises too high, diaphragm A is pushed up, the interval between the flapper and the nozzle widens, the nozzle back pressure drops, the balance of diaphragms B and C is broken, the main valve closes, the exhaust valve opens and the excess pressure from the downstream side is discharged to the atmosphere. In this way fine pressure variations are detected by the nozzle/flapper style pilot mechanism, and precise pressure adjustment is performed.

Operating Principles (for IR2000)

When the setting knob is turned, the nozzle is closed by the flapper allowing the supply air that flows in from the upstream side to pass through the fixed orifice and to act on diaphragm B as nozzle back pressure, the main valve is pushed down by the generated force and the supply pressure flows out to the downstream side. The air pressure that flows in acts on diaphragm C and while opposing the force generated by diaphragm B, it also acts on diaphragm A opposing the compression force of the setting spring and becomes the set pressure. If the set pressure rises too high, diaphragm A is pushed up, the interval between the flapper and the nozzle widens, the nozzle back pressure drops, the balance of diaphragms B and C is broken, the main valve closes, the exhaust valve opens and the excess pressure from the downstream side is discharged to the atmosphere. In this way fine pressure variations are detected by the nozzle/flapper style pilot mechanism, and precise pressure adjustment is performed.

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>IR1000</th>
<th>IR2000</th>
<th>IR3000</th>
<th>IR1200</th>
<th>IR3200</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Diaphragm assembly</td>
<td>NBR, other</td>
<td>P362010-1</td>
<td>P362020-2</td>
<td>P362020-2</td>
<td>P362020-13</td>
<td>P362020-13</td>
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<tr>
<td>2</td>
<td>Diaphragm assembly</td>
<td>NBR, other</td>
<td>P362010-2</td>
<td>P362020-5</td>
<td>P362030-1</td>
<td>P362020-5</td>
<td>P362030-1</td>
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<td>4</td>
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<td>Valve</td>
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<td>—</td>
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<tr>
<td>6</td>
<td>Valve</td>
<td>Brass, NBR</td>
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<td>7</td>
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<td>8</td>
<td>Damper</td>
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<td>P36202026</td>
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<td>9</td>
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<td>H-NBR</td>
<td>ø2.5 x 1.05</td>
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<td>O-ring</td>
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<td>Seal (B)</td>
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<td>16</td>
<td>Fixed throttle</td>
<td>Stainless steel</td>
<td>P36202018</td>
<td>P36202018</td>
<td>P36202018</td>
<td>P36202018</td>
<td>P36202018</td>
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</tbody>
</table>

Note) Use mini-flick type.
Flow characteristics
* Testing methods conform to JIS B8372.

IR1000-01 Conditions: Supply pressure 0.5MPa

IR1010-01 Conditions: Supply pressure 0.7MPa

IR1020-01 Conditions: Supply pressure 1.0MPa

Relief characteristics

IR1000-01 Conditions: Back pressure 0.5MPa

IR1010-01 Conditions: Back pressure 0.7MPa

IR1020-01 Conditions: Back pressure 1.0MPa

Pressure characteristics

IR1000-01 Conditions: Supply pressure 0.7MPa
Set pressure 0.2MPa
Flow rate 0 l/min (ANR)

IR1010-01 Conditions: Supply pressure 0.7MPa
Set pressure 0.2MPa
Flow rate 0 l/min (ANR)

IR1020-01 Conditions: Supply pressure 0.7MPa
Set pressure 0.2MPa
Flow rate 0 l/min (ANR)
Flow characteristics

Testing methods conform to JIS B8372.

IR2000-02
Conditions: Supply pressure 0.5MPa

IR2010-02
Conditions: Supply pressure 0.7MPa

IR2020-02
Conditions: Supply pressure 1.0MPa

IR2120-02
Conditions: Supply pressure 1.0MPa

Relief characteristics

IR2000-02
Conditions: Back pressure 0.5MPa

IR2010-02
Conditions: Back pressure 0.7MPa

IR2020-02
Conditions: Back pressure 1.0MPa

IR2120-02
Conditions: Back pressure 1.0MPa

Pressure characteristics

IR2000-02
Set pressure 0.2MPa
Flow rate 0 l/min (ANR)

IR2010-02
Set pressure 0.7MPa

IR2020-02
Set pressure 1.0MPa

IR2120-02
Set pressure 1.0MPa

Set point
Flow characteristics

Testing methods conform to JIS B8372.

IR3000-03
Conditions: Supply pressure 0.5MPa

IR3010-03
Conditions: Supply pressure 0.7MPa

IR3020-03
Conditions: Supply pressure 1.0MPa

Relief characteristics

IR3000-03
Conditions: Back pressure 0.5MPa

IR3010-03
Conditions: Back pressure 0.7MPa

IR3020-03
Conditions: Back pressure 1.0MPa

Pressure characteristics

Conditions: Supply pressure 0.7MPa
Set pressure 0.2MPa
Flow rate 0 l/min (ANR)

IR3000-03

IR3010-03

IR3020-03

IR3120-03
Conditions: Supply pressure 1.0MPa
## Series IR1000/2000/3000
### Made to Order Specifications
Contact SMC for detailed dimensions, specifications and delivery times.

### 1 Clean Room

**10** - **Standard model number**

<table>
<thead>
<tr>
<th>Clean room specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cleanliness</strong></td>
</tr>
<tr>
<td><strong>Bleed port</strong></td>
</tr>
<tr>
<td><strong>EXH port</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Grease</strong></td>
</tr>
</tbody>
</table>

### 2 Copper-free

**20** - **Standard model number**

External and internal copper parts are changed to stainless steel or aluminum.

**Note** Contact SMC if equipped with pressure gauge.

### 3 Ozone Resistant

Fluoro rubber is used for rubber seal materials.

**80** - **Standard model number**

**Note** Contact SMC if equipped with pressure gauge.

### 4 For High and Low Temperature Environments

**Standard model number** **T**

**For high/low temperature environments**

<table>
<thead>
<tr>
<th><strong>Symbol</strong></th>
<th><strong>T</strong></th>
<th><strong>L</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environment</strong></td>
<td>For high temp. environments</td>
<td>For low temp. environments</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>-5 to 100°C (Max. 80°C with pressure gauge)</td>
<td>-30 to 60°C</td>
</tr>
<tr>
<td><strong>Rubber material</strong></td>
<td>FKM</td>
<td>Special NBR or silicon rubber</td>
</tr>
</tbody>
</table>

### 5 Non-Grease

Assembly is performed in an ordinary environment without using grease. However, since parts are not washed, they are not completely oil-free.

**Standard model number** **X1**

**Non-grease specifications**

### 6 With Digital Pressure Switch

With digital pressure switch (model no: ISE30A-01-C-ML). Mount a digital pressure switch into the connection port for pressure gauge, as it is not mounted at the time of shipment.

**Specifications**

<table>
<thead>
<tr>
<th><strong>Made to order part no.</strong></th>
<th>-X465</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Symbol</strong></td>
<td><strong>A</strong></td>
</tr>
<tr>
<td><strong>Pressure switch</strong></td>
<td>NPN open collector 1 output</td>
</tr>
<tr>
<td><strong>Set pressure range (MPa)</strong></td>
<td>0.1 to 1</td>
</tr>
<tr>
<td><strong>Resolution of setting and display (MPa)</strong></td>
<td>0.001</td>
</tr>
<tr>
<td><strong>Power supply voltage</strong></td>
<td>12 to 24 VDC 10%, Ripple (p-p) 10% or less</td>
</tr>
<tr>
<td><strong>Current consumption</strong></td>
<td>40 mA or less</td>
</tr>
</tbody>
</table>

**How to Order**

**Standard model number** **Note**

**With digital pressure switch**

**Switch specifications**

<table>
<thead>
<tr>
<th><strong>Symbol</strong></th>
<th><strong>Output specifications</strong></th>
<th><strong>A</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong></td>
<td>NPN open collector 1 output</td>
<td></td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>PNP open collector 1 output</td>
<td></td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>NPN open collector 1 output + Analog voltage output</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PNP open collector 1 output + Analog current output</td>
<td></td>
</tr>
</tbody>
</table>

### 7 Manifold Specifications (Except type IR2120 and series IR3000)

2 to 8 station manifold type regulators.

**Note** Contact SMC regarding 9 or more stations.

**Standard model number**

**Symbols**

- **IRM** - For IR type regulators
- **I** - For IR1 type regulators
- **R** - For IR2 type regulators
- **M** - For IR3 type regulators

**Notes**

1. Regulators to be manifolded are counted starting from stations 1 on the left side with the OUT ports in front.
2. When regulators with a different set pressure are manifolded, viewing OUT ports from front, the low pressure range is installed on the left side and high pressure range is on the right side. In case of the “Example 2)” above mentioned, stations 1 and 2 are of 0.2 MPa setting, stations 3 and 4 are of 0.4 MPa setting, and station 5 is of 0.8 MPa setting.
3. Please consult with SMC when a blanking plate is needed.
Series IR1000/2000/3000 Specific Product Precautions

Be sure to read before handling.
Refer to p.0-26 and 0-27 for Safety Instructions and common precautions on the products mentioned in this catalogue.

Air Supply

⚠️ Caution
1. If the supply pressure line contains drainage or dirt, etc., the fixed throttle can become clogged leading to malfunction, and therefore, in addition to an air filter (SMC Series AF) be sure to use a mist separator (SMC Series AM, AFM).

Refer to SMC's "Compressed Air Cleaning Systems" catalogue regarding air quality.
2. Never use a lubricator on the supply side of the regulator, as this will positively cause the fixed throttle to become clogged and lead to malfunction. If lubrication is required for terminal devices, connect a lubricator on the output side of the regulator.

Maintenance

⚠️ Warning
1. When the valve guide (refer to construction drawing on p.1.6-6) is to be removed during maintenance, first reduce the set pressure to "0" and completely shut off the supply pressure.
2. When a pressure gauge is to be mounted, remove the plug after reducing the set pressure to "0".

⚠️ Warning
1. When remounting the valve guide after removing it for maintenance, use a tightening torque of no more than 0.6Nm. Since the valve guide on this product is made of resin, there is a danger of damage if tightened with a torque exceeding the prescribed value.

Operation

⚠️ Caution
1. Do not use a precision regulator outside the range of its specifications as this can cause failure. (Refer to specifications.)
2. When mounting is performed, make connections while confirming port indications.

⚠️ Caution
3. If a directional switching valve (solenoid valve, mechanical valve, etc.) is mounted on the supply side of the regulator and repeatedly switched ON and OFF, wear of the nozzle/flapper section will be accelerated and a discrepancy in the setting value may occur. Therefore, avoid using a directional switching valve on the supply side. In the event a directional switching valve will be used, install it on the output side of the regulator.
4. Air is normally discharged from the bleed port (the hole on the side of the body's mid-section). This is a necessary consumption of air based on the construction of the precision regulator, and is not an abnormality.
5. Be sure to tighten the lock nut after pressure adjustment.

⚠️ Caution
1. The supply pressure is relatively high (approx. 0.5MPa or more), the set pressure is low (approx. 0.1MPa or less), and when operated with the output side released to the atmosphere, there may be pulsations in the setting side pressure. In this kind of situation, operate with the supply pressure reduced as much as possible, or increase the set pressure somewhat and restrict the output line (add and adjust a stop valve, etc.).
2. The capacity of the output side is large, and when used for the purpose of a relief function, the exhaust sound will be loud when being relieved. Therefore, operate with a silencer (SMC Series AN) mounted on the exhaust port (EXH port). The connection is Rc(PT) 1/2.

⚠️ Caution
1. Since the output of types IR2120 and IR3120 is the same pressure as the input signal pressure, select a type of regulator (general purpose or precision type) for input signal pressure adjustment according to the application.
2. The screw on the topmost section is a zero point adjustment screw which is locked at the factory and requires no adjustment for operation.

⚠️ Precautions for IR10□0 only
1. When the valve guide (refer to construction drawing on p.1.6-6) is to be removed during maintenance, first reduce the set pressure to "0" and completely shut off the supply pressure. When a pressure gauge is to be mounted, remove the plug after reducing the set pressure to "0".

⚠️ Precautions for IR30□0, IR3120 only
1. The supply pressure is relatively high (approx. 0.5MPa or more), the set pressure is low (approx. 0.1MPa or less), and when operated with the output side released to the atmosphere, there may be pulsations in the setting side pressure. In this kind of situation, operate with the supply pressure reduced as much as possible, or increase the set pressure somewhat and restrict the output line (add and adjust a stop valve, etc.).

⚠️ Precautions for IR2120, IR3120 (air operated style) only
1. Do not use a precision regulator outside the range of its specifications as this can cause failure. (Refer to specifications.)
2. When mounting is performed, make connections while confirming port indications.
Piping

⚠️ Warning

1. Screw piping together with the recommended proper torque while holding the side with female threads.
Looseness or faulty sealing will occur if tightening torque is insufficient, while thread damage will result if the torque is excessive. Furthermore, if the side with the female threads is not held while tightening, excessive force will be applied directly to piping brackets, etc. causing damage or other problems.

<table>
<thead>
<tr>
<th>Connection thread</th>
<th>1/8</th>
<th>1/4</th>
<th>3/8</th>
<th>1/2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torque</td>
<td>7 to 9</td>
<td>12 to 14</td>
<td>22 to 24</td>
<td>28 to 30</td>
</tr>
</tbody>
</table>

2. Do not allow twisting or bending moment to be applied other than the weight of the equipment itself.
Provide separate support for external piping, as damage may otherwise occur.

3. Since excessive moment loads and the propagation of vibrations, etc. can easily result from inflexible piping made of steel, etc., avoid these problems by using flexible tubing for intermediate connections.

⚠️ Caution

1. Preparation before piping
Before piping is connected, it should be thoroughly blown out with air (flushing) or washed to remove cutting chips, cutting oil and other debris from inside the pipe.

2. Wrapping of pipe tape
When connecting pipes and fittings, etc., be sure that cutting chips from the pipe threads and sealing material do not get inside.
Further, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the pipe/fitting.

Operating Environment

⚠️ Warning

1. Do not operate in locations having an atmosphere of corrosive gases, chemicals, sea water, water or steam, or where there will be contact with the same.
2. Do not operate in locations where vibration or impact occurs.
3. In locations which receive direct sunlight, provide a protective cover, etc.
4. In locations near heat sources, block off any radiated heat.
5. In locations where there is contact with spatter from water, oil or solder, etc., implement suitable protective measures.

Air Supply

⚠️ Warning

1. These products are designed for use with compressed air. Contact SMC if any other fluid will be used.
2. Do not use compressed air which includes chemicals, synthetic oils containing organic solvents, salt, or corrosive gases, etc., as this can cause damage or malfunction.
3. If drainage is not removed from air filters and mist separators, it can flow out to the downstream side and lead to the malfunction of pneumatic equipment.
In cases where the management of drainage removal will be difficult, the use of filters with auto drains is recommended.
These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)1), and other safety regulations.

### Safety Instructions

#### Caution:
The product specified here may become unsafe if handled incorrectly. The product referring to its latest catalogue information, with a view to giving due safety and must be followed in addition to International Standards (ISO/IEC)1), and other safety regulations.

#### Warning:
Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

#### Danger:
Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

### Limited warranty and Disclaimer/Compliance Requirements

#### Limited warranty

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.

2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.

3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

#### Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.

2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

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