

Regulator for 2 MPa **ARX 20**

2.0 MPa compatible, piston type regulator



- Compatible with primary supply pressure of 2.0MPa
- Compact type (face to face dimensions 35mm, overall length 80mm)
- Piston type
- 3 out ports for convenient use
- Employs a handle shape for easy operation
- Ideal for discharge pressure adjustment on a small compressor
- Ideal for pressure adjustment of air blowing applications

Regulator for 2 MPa ARX 20

How to Order

ARX2 0 — 01

Regulator

Regulating pressure range

| | |
|----------|---|
| 0 | 0.05 to 0.85MPa {0.51 to 8.7kgf/cm ² } |
| 1 | 0.05 to 0.30MPa {0.51 to 3.1kgf/cm ² } |

Thread type

| | |
|------------|--------|
| Nil | Rc(PT) |
| N | NPT |
| F | G(PF) |

Port

| | |
|-----------|-----|
| 01 | 1/8 |
| 02 | 1/4 |

● Accessories/Options

| | | | |
|----------------|---|-----|----------------------|
| Bracket | | | 1348112 |
| Pressure gauge | ARX20- □□□ {0.51 to 8.7kgf/cm ² } | 1/8 | G36 – 10 – 01 |
| | | 1/4 | G46 – 10 – 02 |
| | ARX21- □□□ {0.51 to 3.1kgf/cm ² } | 1/8 | G36 – 4 – 01 |
| | | 1/4 | G46 – 4 – 02 |
| Panel nut | | | 1348110A |

Specifications

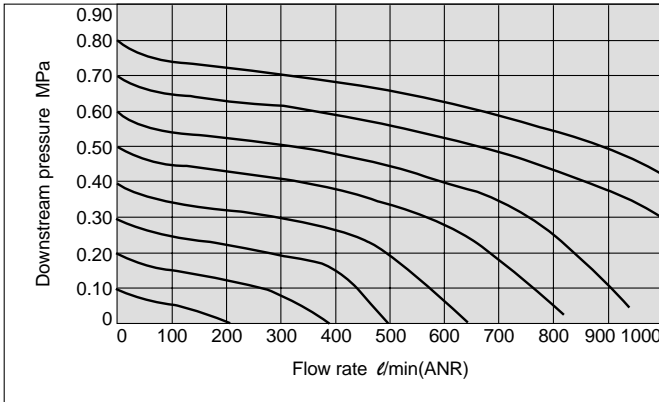


| Model | | ARX20 |
|-------------------------------|---------------|---|
| Regulator construction | | Piston type regulator |
| Relief mechanism | | Relief type |
| Piping port size | | Rc(PT) 1/8, 1/4 |
| Pressure gauge port size | | Rc(PT) 1/8, 1/4 |
| Proof pressure | | 3.0MPa {30.6kgf/cm ² } |
| Maximum operating pressure | | 2.0MPa {20.4kgf/cm ² } |
| Regulating pressure range | Standard type | 0.05 to 0.85MPa {0.51 to 8.7kgf/cm ² } |
| | Low pressure | 0.05 to 0.30MPa {0.51 to 3.1kgf/cm ² } |
| Fluid | | Air |
| Ambient and fluid temperature | | - 5 to 60°C (with no freezing) |
| Weight | | 110g |

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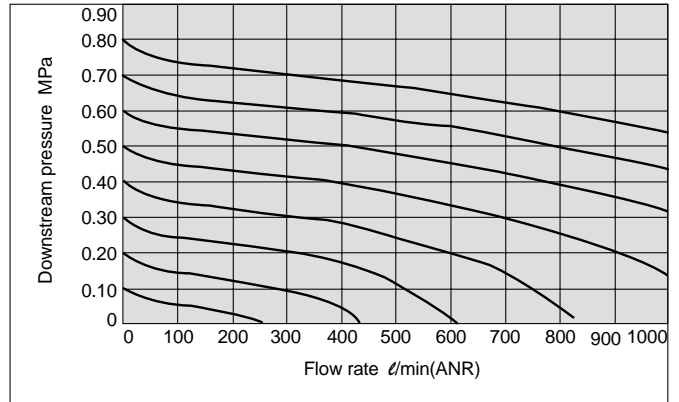
Flow rate characteristics

ARX20-01

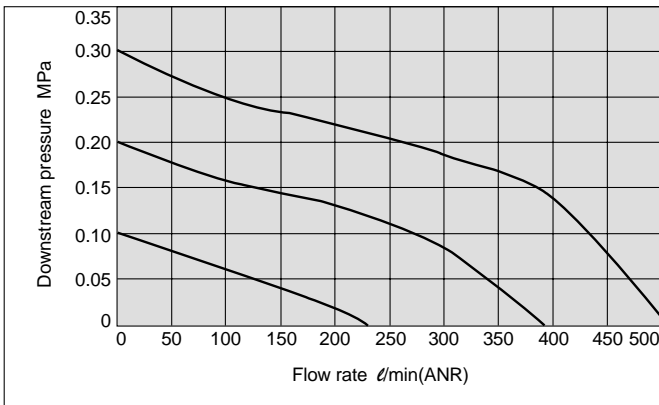


ARX20-02

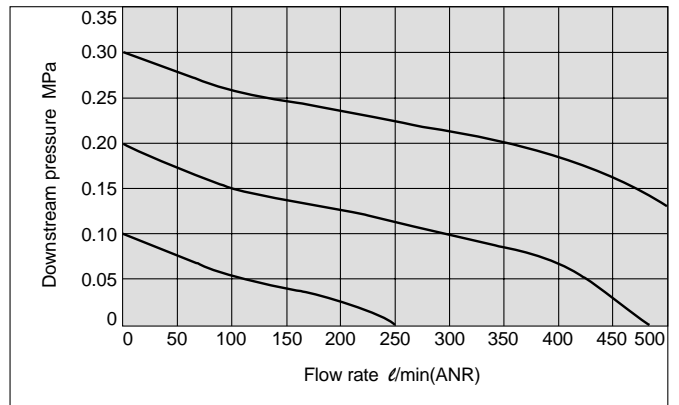
Conditions: Upstream pressure 2.0MPa



ARX21-01



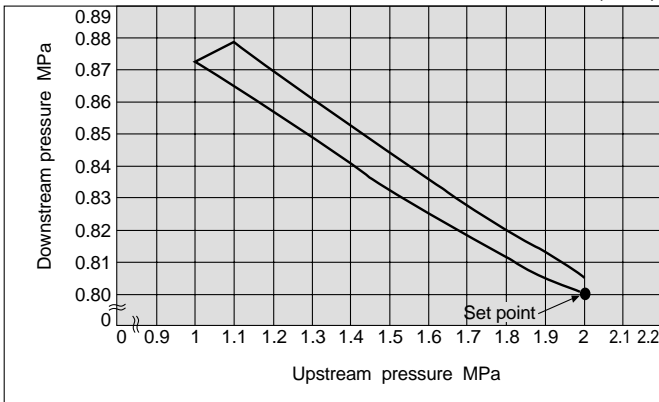
ARX21-02



Pressure characteristics

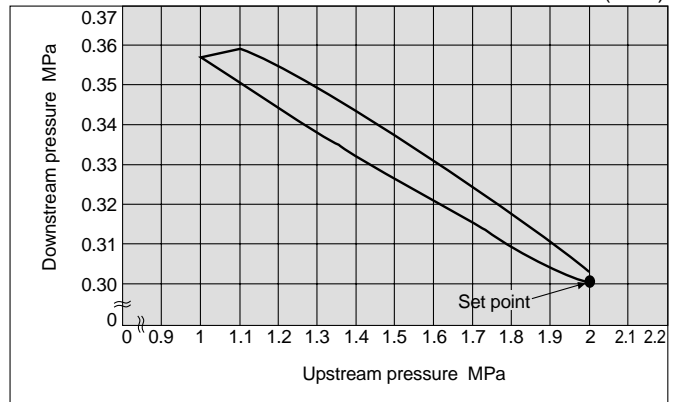
Conditions: Upstream pressure 2.0MPa
Downstream pressure 0.8MPa
Flow rate 60l/min (ANR)

ARX20



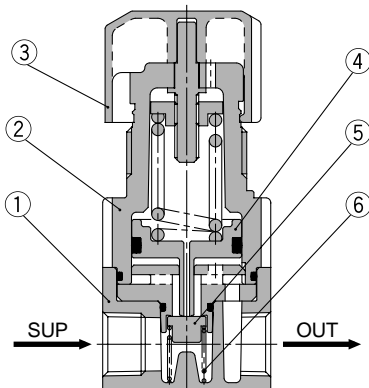
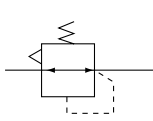
Conditions: Upstream pressure 2.0MPa
Downstream pressure 0.3MPa
Flow rate 60l/min (ANR)

ARX21



Construction

JIS Symbol



Parts list

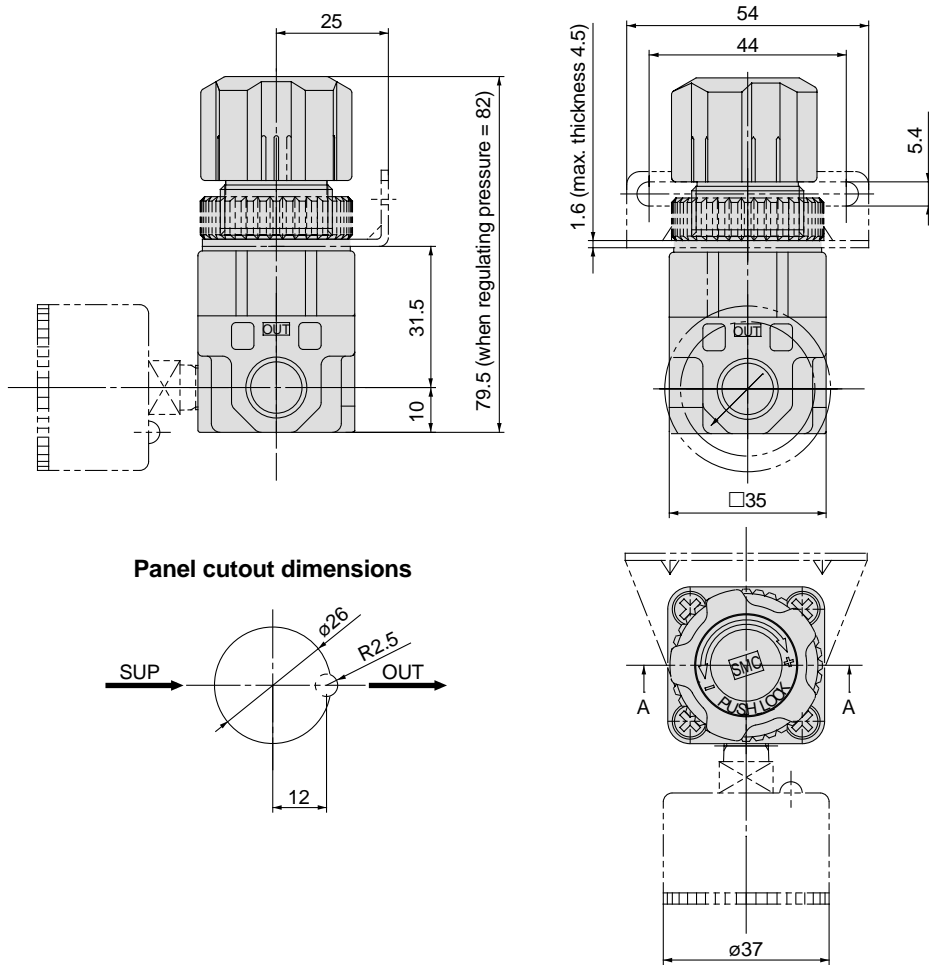
| No. | Description | Material | Note |
|-----|-------------|----------|------|
| 1 | Body | ADC | |
| 2 | Bonnet | POM | |
| 3 | Handle | POM | |

Replacement parts list

| No. | Description | Material | Part No. |
|-----|-----------------|-----------------|----------|
| 4 | Piston assembly | POM/NBR | 1348104A |
| 5 | Valve | Brass/NBR | 1348105 |
| 6 | Valve spring | Stainless steel | 1348109 |

ARX 20

Dimensions



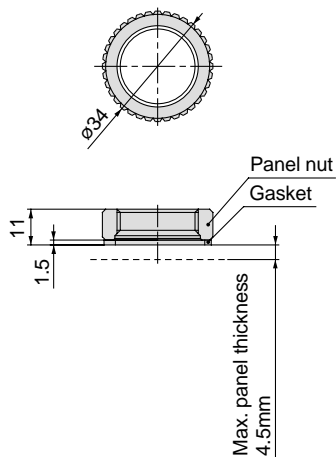
Panel cutout dimensions

Options

Panel nut

| | |
|----------|-------------------|
| Part No. | 1348110A |
| Material | POM, NBR (gasket) |

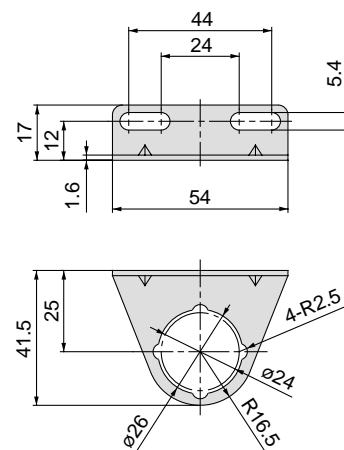
Dimensions



Bracket

| | |
|----------|-----------------------------|
| Part No. | 1348112 |
| Material | SPCC (black zinc chromated) |

Dimensions

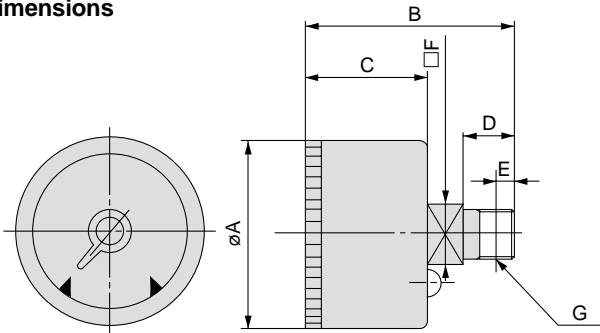


* Install the gasket underneath the panel and bracket (bonnet side).
Tighten the panel nut by hand without the use of tools.

Options

Pressure gauge

Dimensions



Dimension table

| Model | A | B | C | D | E | F | G |
|----------|----|------|------|----|---|----|-----|
| G36-□-01 | 37 | 40.8 | 23.8 | 10 | 4 | 12 | 1/8 |
| G46-□-02 | 42 | 44.5 | 24.5 | 12 | 6 | 14 | 1/4 |

Specifications

| Model | G36-□-01 | G46-□-02 |
|------------------|-------------|--|
| Piping port size | R(PT) 1/8 | R(PT) 1/4 |
| Scale angle | 270° | |
| Materials | Case | Rolled steel plate (black melamine coated) |
| | Clear cover | Polycarbonate |
| | Stem | Brass |
| Weight | 55g | 80g |

Models

| Model | Pressure range | | Indicator units |
|-----------|----------------|---------------------|--|
| | MPa | kgf/cm ² | |
| G36-2-01 | 0 to 0.2 | 0 to 2 | MPa kgf/cm ² combined |
| G46-2-02 | | | |
| G36-4-01 | 0 to 0.4 | 0 to 4 | |
| G46-4-02 | | | |
| G36-7-01 | 0 to 0.7 | 0 to 7 | |
| G46-7-02 | | | |
| G36-10-01 | 0 to 1.0 | 0 to 10 | |
| G46-10-02 | | | |

Instructions for Pressure Gauge with Limit Gauge Indicators

• Removing the Cover

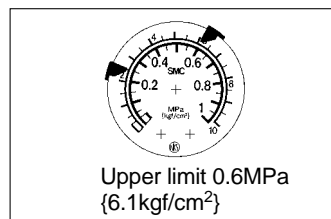
Grasp the outer edge of the front cover with your fingers, push it in while turning to the left (about 6 to 7mm) until it stops, and then pull it off.



• Setting the Indicator Needles

Move the indicator needles with your fingers. If it is done with a small screw driver, etc., take care not to bend the indicator needles or scratch the gauge dial.

There are 2 green indicator needles, to be set at the upper and lower limits of the pressure range.



• Installing the Cover

After setting the indicator needles, return the cover to its original position by aligning the indentation at the top of the black case with the notch in the cover, and then pushing the cover back into place.

Turn the cover to the right (about 6 to 7mm) until it stops, and confirm that the cover is firmly in place.



⚠ Pressure Gauge Precautions

Be sure to read before handling. Refer to page 5 for safety instructions.

Selection

⚠ Caution

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

Mounting

⚠ Caution

- Do not subject the gauge to impacts, such as dropping, during transportation and mounting.
This can cause loss of indication accuracy.
- Do not use in locations with high temperature and humidity.
This can cause malfunction.
- When screwing the pressure gauge into place, be sure to apply your wrench on the square wrench flats. If the wrench is applied on any other area, air leakage or damage can occur.



Regulator for 2 MPa **ARX 20**

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 labels 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 – Recommendations for the application of equipment to transmission and control 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.

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

Compressed air can be dangerous if an operator is unfamiliar with it. 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 components 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 beverages, 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.



Regulator for 2 MPa ARX 20/Precautions

Be sure to read before handling.

Design & Selection

⚠ Warning

1. Confirm the specifications.

The products appearing in this catalog are designed for use only in compressed air systems.

Do not use outside the specified ranges of pressure, temperature, etc., as this may cause damage or faulty operation. Consult with SMC if fluids other than compressed air are to be used.

2. Confirm the regulating pressure range.

Be sure to install safety devices in locations where output pressure above the regulating pressure range can lead to damage or malfunction of equipment downstream.

3. Residual pressure relief without supply pressure.

In cases where the supply pressure is removed with the downstream pressure in a low pressure setting state, it may not be possible to eliminate the downstream pressure (residual pressure relief). Provide a residual pressure relief circuit for cases in which reliable elimination of downstream pressure must be performed.

4. When used with a closed downstream circuit and balance circuit.

Contact SMC as there are cases in which the product cannot be used.

5. Perform downstream pressure setting in a range that is 85% or less of the supply pressure.

However, the setting should be performed within the regulating pressure range.

Mounting

⚠ Warning

1. Read the instruction manual carefully.

The product should be mounted and operated with a good understanding of its contents. Also, keep the manual where it can be easily referred to at any time.

2. Ensure space for maintenance.

Ensure the necessary space for maintenance activities.

Mounting

⚠ Warning

3. Strictly observe the fastening of screws and their tightening torques.

When mounting is performed, use the recommended tightening torques in the table below.

| PT, NPT, PF | Recommended tightening torque |
|-------------|-------------------------------|
| 1/8 | 7 to 9N·m |
| 1/4 | 12 to 14N·m |

⚠ Caution

1. To set the correct pressure

1. Set the pressure by increasing from a lower pressure to the desired setting, and lock the handle after the pressure is set.
2. Make connections after confirming the "SUP" mark which indicates the air inlet. Reversed connections will cause malfunction.

Piping

⚠ 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 screwing together pipes and fittings, etc., be certain that cutting chips from the pipe threads and sealing material do not get inside the piping.

Further, when pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

Air Supply

⚠ Warning

1. Types of fluid.

This product is designed for use with pressurized air. Consult with SMC if a different fluid is to be used.

2. Type of air

Compressed air which contains substances such as organic solvents, synthetic oils, chemicals, salt, or corrosive gases can cause damage and malfunction of equipment.

Operating Environment

⚠ Warning

1. Do not operate in locations having an atmosphere of corrosive gases, chemicals, sea water, fresh water or water vapor, or where there will be contact with the same.

2. In locations which receive direct sunlight, the sunlight should be blocked.

3. Do not operate in locations where vibration or impact occurs.

4. Do not operate in a location near a heat source or where radiated heat will be received.

Maintenance

⚠ Warning

1. Maintenance operations.

Improper handling of compressed air is dangerous. Therefore, in addition to observing the product specifications, replacement of elements and other maintenance activities should be performed by personnel having sufficient knowledge and experience pertaining to pneumatic equipment.

2. Pre-maintenance inspection.

When removing this product, turn off the electric power, and be certain to shut off the supply pressure and exhaust the compressed air in the system. Proceed only after confirming that all pressure has been released to the atmosphere.

3. Post maintenance inspection.

After installation, repair or reconstruction, reconnect pressurized air and electric power, and then perform inspections for proper operation and air leakage. If the sound of air leakage can be heard, or if the equipment does not operate properly, stop operation and confirm that it is mounted correctly.

4. Modification prohibited.

Do not modify or reconstruct the unit.

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