

Modular design SELEX F.R.L.

■ Components for air preparation / pressure adjustment / F.R.L. unit

Overview

F.R.L. module unit is a standard series that the major dimensions (width/depth) are compactly designed and unified per filter (F), regulator (R), and lubricator (L), etc., seeking ultimate performance in all of functionality, operation, maintainability, an safety, etc.

Features

- (1) Standard modular design
Compact modular design whose major dimensions such as filters, regulators, and lubricator, etc., are unified.
- (2) Hybrid materials
Aluminum is provided for the body, and the resin for the cover. Light weight and also durable.
- (3) Supplying various clean air
Supplying clean air and oil free air, etc., according to applications/purposes.
- (4) Various combination
Combination is enables according to applications.
- (5) Long Service life element
Clogging is dramatically eliminated due to original chemical fiber structure.
- (6) Embedded pressure gauge for space saving
Simple front surface design



C O N T E N T S

| | |
|----------------------|------------|
| Product introduction | 270 |
| Series variation | 250 to 265 |
| ▲ Safety precautions | 276 |

Modular design (rotary actuator F.R.L.)

| | |
|-------------------------------------|-----|
| ● Standard white Series (-W) | 285 |
| ● Frame resistant Series (-G4) | 431 |
| ● Oil-prohibition Series | 473 |
| ● Medium pressure Series (RM) | 483 |
| ● Copper and PTFE free Series (-P6) | 499 |
| Custom combination specifications | 510 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Enhanced Systems Using Full-Scale Modules

Systems are easily upgraded using unified key dimensions and a diverse range of options and variations.

* indicates model no. 1, 2, 3, 4, 6, 8. Outlines are shown on this page. Refer to individual pages for details.

F.R.L. combination

"C*000-W" Products using air filter, regulator, and lubricator combined.

- Lubricator "L*000-W" supplies oil mist to pneumatic lines.
- Air filter "F*000-W" Effectively removes dust and moisture.
- Regulator Standard type "R*000-W" Reverse type "R*100-W" Depressurizes supply pressure and supplies stable set pressure.

Element Air filter F*000-W, filter and regulator W*000-W/W*100-W

- Standard (5µm) element "blank" This long-life element filters out harmful dirt and foreign matter, etc., from air.
- Submicron (0.3µm) element "Y" option This dedicated element effectively separates tar and carbon. (No regeneration)

Bowl, bowl guard and drainage Air filter F*000-W, oil mist filter M*000-W, filter regulator W*000-W/W*100-W

* A bowl guard is installed on the plastic bowl as a standard.

▲ Plastic bowl and bowl guard ▲ Metal bowl

| Drainage | Bowl | | | |
|---|--------------------|------------|------------|-----------------------------------|
| | Polycarbonate bowl | Nylon bowl | Metal bowl | Metal bowl with manual drain cock |
| Manual drain cock | Blank (standard) | Z | M | M1 |
| Automatic drain with manual override NO | F | FZ | FM* | FM1 |
| Automatic drain with manual override NC | F1 | F1Z | F1M* | F1M1 |

Refer to page 283 for the chemical resistance of the bowl. A metal bowl is not available for 1000 Series. The asterisk (*) indicates the manual cock with an Rc1/4 port.

Mounting bracket Page 425

- T type bracket "B*10-W" This bracket has two holes on the top and bottom to fix the device, together with the system upgrade, to a wall. The 3000-W Series and 4000-W Series are coupled using B410-W.
- L type bracket "B*30" This bracket fixes parts using the panel mounting nut on the filter regulator or regulator.

Pressure gauge Page 659

- Standard integrated pressure gauge "G401-W"
- Pressure gauge with safety mark "G*OD" The pressure's actual usage range is displayed with red and green zones making visible control easier. * This gauge is assembled with the gauge plug.

Filter/regulator

Standard type "W*000-W" (page 334) Reverse type "W*100-W" (page 342) The air filter and regulator are integrated to simplify the space-saving assembly.

Oil mist filter Page 360

"M*000-W" "MX000-W" Effectively removes oil and oil mist from pneumatic lines.

Shut-off valve Pages 408 to 413

"V*000-W" The pneumatic line is shut off and residual pressure is released. Maintenance and inspection. This is also used to prevent accidents from residual pressure during maintenance. The V3010-W with key holes is also used.

Regulator R*000-W/R*100-W, Filter and regulator W*000-W/W*100-W

- Joiner "C*000-J*00-W" Use this as a joint when upgrading the system. The 2000-W Series, 3000-W Series and 4000-W Series are coupled using J400-W.
- C type bracket "B*20" This bracket fixes isolated parts just by fitting them in.

Pressure switch with digital display "PPD"

This unit functions as the pressure detector and display, the ON-OFF switch, and the switch's external output. * Assembly is an option, indicated by "R1."

Distributor Page 426

- One way branch type "D*01-W" This distributor, which is installed facing either upward or downward, branches pneumatic pressure piping. The effective area of the branch is large.
- 4 way branch type "D*300-W" The pipe branches in four directions. * For 3000-W/4000-W Series.

Bowl and bowl guard Lubricator L*000-W

- Plastic bowl and bowl guard Material: Polycarbonate "blank" standard Nylon "Z" option * Manual drain cock is a "C" option. * A bowl guard is installed on the plastic bowl as a standard.
- Metal bowl Use the metal bowl in an atmosphere where plastic bowls cannot be used. Material: Aluminum "M" option * A metal bowl is not available for 1000 Series.

Pressure switch Pages 402 to 407, 1069

Pneumatic line pressure is repeatedly and accurately checked.

It's NEW CONCEPT

Pursuing high performance for all aspects, functionality, operability, serviceability and safety.

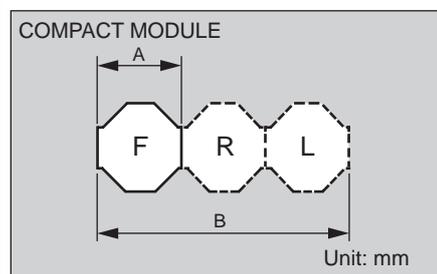
(Compressed air filter, regulator, lubricator and other component)

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

FUNCTIONAL FEATURES

● Compact module

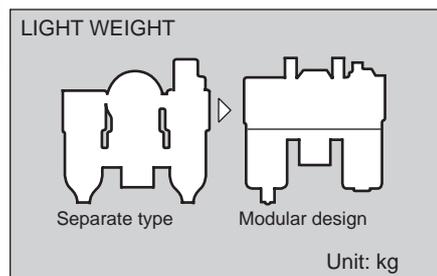
F.R.L. main dimensions (width and depth) are integrated into a compact module. Accurate assembly dimensions are obtained with simple calculation.



| | C1000-W | C2000-W | C2500-W | C3000-W | C4000-W | C6500-W | C8000-W |
|---|---------|-------------------|---------|---------|---------|-----------|---------|
| A | 40 | 50/50/63/63/50/63 | 63 | 63 | 80 | 90/90/100 | 100 |
| B | 40x3 | 50x2+63 | 63x2+50 | 63x3 | 80x3 | 90x2+100 | 100x3 |

● Light weight (1/2 (CKD comparison))

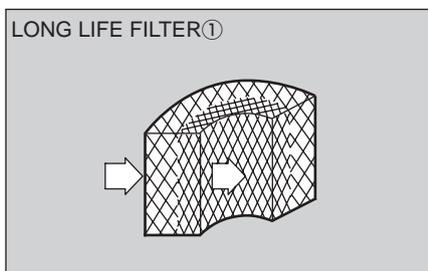
The hybrid material (body: aluminum die cast, cover: resin) provides strength, and reduces weight by 50% compared to the conventional type. (C4000 comparison)



| | C1000-W | C2000-W | C2500-W | C3000-W | C4000-W | C6500-W | C8000-W |
|----------------|---------|---------|---------|---------|---------|---------|---------|
| Modular design | 0.4 | 1.01 | 1.01 | 1.15 | 1.79 | 3.64 | 4.5 |
| Conventional | 0.7 | - | 1.8 | 1.8 | 3.4 | 7.2 | 7.2 |

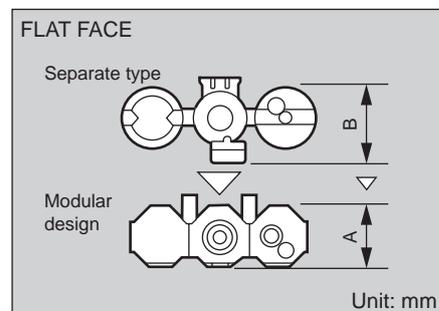
● Long-life element

This element incorporates CKD's original chemical fiber structure (patent pending), which has a rough surface and gradually becomes finer toward the inside. Clogging is greatly reduced, and the element life is greatly extended. There is no worry of rust forming.



● Embedded pressure gauge for saving space

The conventional protruding pressure gauge wasted space on the front, and endangered personnel. A neat design and safety have been realized by embedding the pressure gauge into the body.



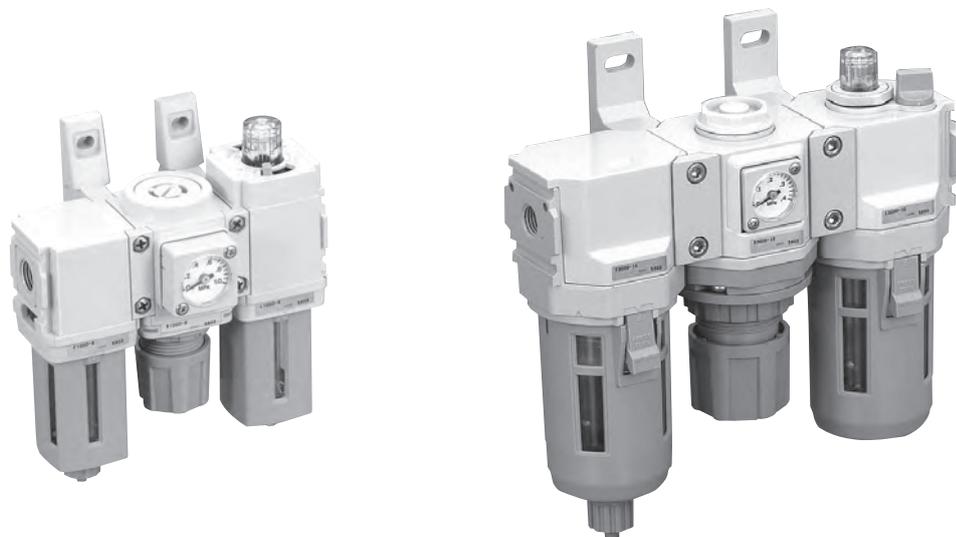
| | C1000-W | C2000-W | C2500-W | C3000-W | C4000-W | C6500-W | C8000-W |
|------------------|---------|---------|---------|---------|---------|---------|---------|
| Modular design A | 57 | 62 | 70.5 | 63 | 79 | 100 | 100 |
| Conventional B | 74 | - | 109 | 109 | 124 | 131 | 131 |

● Mechanism to prevent oil dripping during primary side pressure drop
Oil dripping caused by reverse flow when pressure is released with the shut-off valve, etc., is suppressed.

● Corrosion resistant, safe bowl guard
Very safe and corrosion resistant bowl guard is integrated.

● Gauge plug
The gauge plus is sealed even without a pipe plug. (Refer to page 672 when using the screw in pressure gauge.)

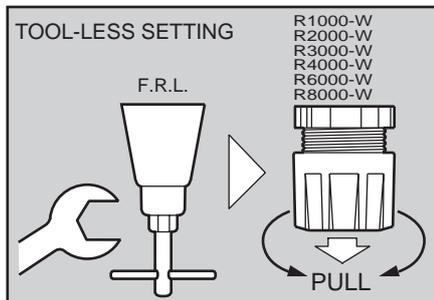
⚠ Read Precautions in the introduction and on page 276 to 283 before use.



OPERATIVE FEATURES

● Pressure adjustment without tool

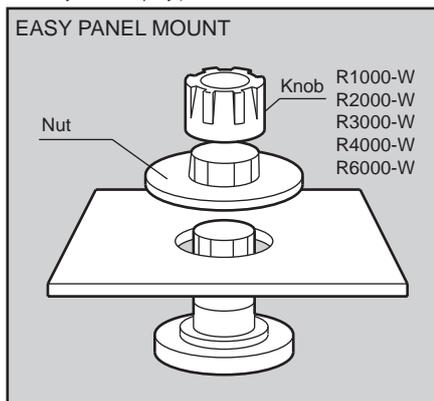
Pressure is adjusted with a hand. The knob is locked with a single push, and easily operated when setting pressure.



● Easily install in panels

when the panel mounting nut is loosened the nut acts as a jack and allows the knob to be removed easily. Fix the nut to mount in the panel. The L-type bracket is also installed similarly to the nut.

(When the L-type bracket is used, the body is fixed securely without play.) *8000-W Series is excluded.

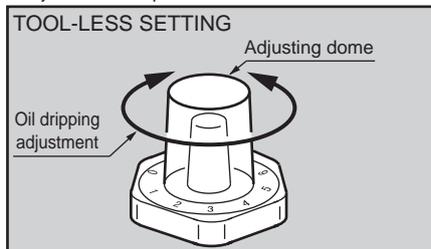


Note: Install the nut before installing the knob. (With the R2000-W, the nut is removed without removing the knob.)

● Oil drip adjustment knob with lock

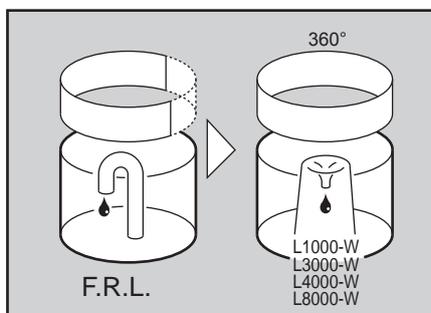
Oil drips are adjusted easily by hands without using tools. A stopper is provided in the opening direction to function as a lock, and increase safety. The number on the dial are used as a guide after adjusting dripping.

* Adjust the oil drip to 0.5 N·m or less.



● Double plastic structure

A double plastic structure is adopted, so oil dripping can be confirmed from 360°



● One-touch integrated attachment

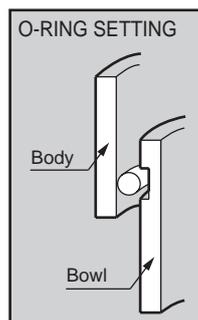
The integrated bowl and bowl guard are easily attached and removed by operating the latch (The 1000-W Series has no latch)

* Confirm that pressure has been released before mounting or removing the bowl and bowl guard.

● O-ring position locking

An O-ring slot is provided on the bowl side to prevent problems caused if the O-ring falls off during bowl attachment and removal.

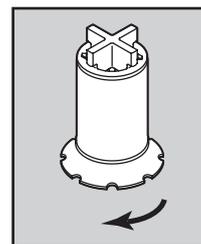
The O-ring does not fall off during maintenance, and safe and accurate seal is attained.



● One-touch integrated filter element.

The integrated element is removed by turning the baffle 45° to the left.

(Only 1000-W Series)



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

F.R.L. unit

F.R.L. Combination

Option explanation

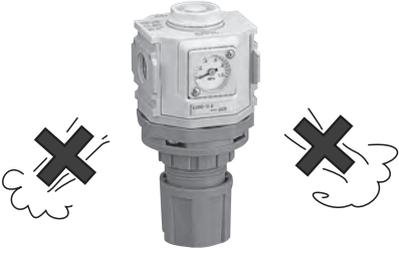
Combination lists of drainage and bowl material of filter (item model no. display (D))

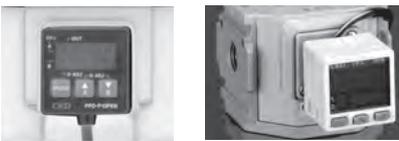
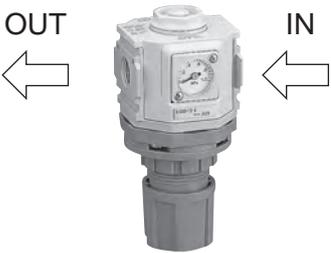
| Applicable series | Bowl material | | Manual drain cock | Automatic drain with manual cock | | Large automatic drain with manual cock | |
|-------------------|---------------|---------------|-------------------|--|--|--|--|
| | | | | NO type | NC type | NO type | NC type |
| 1000-W Series | Plastic bowl | Polycarbonate | ○ (blank) | × | ○ (symbol: F1) | × | × |
| | | Nylon | ○ (symbol: Z1) | × | ○ (symbol: F1Z) | × | × |
| | Metal bowl | Aluminum | × | × | × | × | × |
| 2*00-W Series | Plastic bowl | Polycarbonate | ○ (blank) | ○ (symbol: F) | ○ (symbol: F1) | × | × |
| 3000-W Series | | Nylon | ○ (symbol: Z) | ○ (symbol: FZ) | ○ (symbol: F1Z) | × | × |
| 4000-W Series | Metal bowl | Aluminum | ○ (symbol: M,M1) | ○ (symbol: FM,FM1) | ○ (symbol: F1M,F1M1) | × | × |
| 6000-W Series | | | | | | | |
| 8000-W Series | Plastic bowl | Polycarbonate | ○ (blank) | ○ (symbol: F) | ○ (symbol: F1) | ○ (symbol: FF) | ○ (symbol: FF1) |
| | | Nylon | ○ (symbol: Z) | ○ (symbol: FZ) | ○ (symbol: F1Z) | ○ (symbol: FFZ) | ○ (symbol: FF1Z) |
| | Metal bowl | Aluminum | ○ (symbol: M,M1) | ○ (symbol: FM,FM1) | ○ (symbol: F1M,F1M1) | ○ (symbol: FFM,FFM1) | ○ (symbol: FF1M,FF1M1) |
| Features | | | - | In a nonpressurized state, such as at night, the valve opens and drainage is discharged automatically. | Air is not purged during initial pressurization. | Discharge performance is high and drainage is automatically discharged when the unit is not pressurized. | Discharge performance is high and air is not purged during initial pressurization. |

Combination lists of drainage and bowl material of lubricator (item model no. display (D))

| Applicable series | Bowl material | | Without manual cock | With manual cock |
|-------------------|---------------|---------------|---------------------|------------------|
| 1000-W Series | Plastic bowl | Polycarbonate | ○ (blank) | ○ (symbol: C) |
| | | Nylon | ○ (symbol: Z) | ○ (symbol: CZ) |
| | Metal bowl | Aluminum | × | × |
| 2000-W Series | Plastic bowl | Polycarbonate | ○ (blank) | ○ (symbol: C) |
| | | Nylon | ○ (symbol: Z) | ○ (symbol: CZ) |
| | 2500-W Series | Metal bowl | Aluminum | ○ (symbol: M) |
| 3000-W Series | | | | |
| 4000-W Series | | | | |
| 6000-W Series | | | | |
| 8000-W Series | | | | |

Option and explanation of symbol with pressure range, relief, pressure gauge, flow direction (item model no. display (D))

| Option symbol: L | Option symbol: N | Option symbol: T |
|---|--|--|
|  <ul style="list-style-type: none"> • Pressure display: 0 to 0.4MPa • Pressure range: 0 to 0.35MPa • Pressure gauge: G401-P04 |  <ul style="list-style-type: none"> • Air is not relieved. |  <ul style="list-style-type: none"> • A type without pressure gauge. • The Rc1/4 gauge port is sealed when the plug is assembled. • Refer to page 672 to install pressure gauge. |

| Option symbol: T8,T6 | Option symbol: R1,R2 (note) | Option symbol: X1 |
|--|---|--|
|  <ul style="list-style-type: none"> • Due to round pressure gauge attached, a pressure gauge is not included. • The pressure gauge mounting port is ventilated. • Refer to page 672 to install pressure gauge. |  <ul style="list-style-type: none"> • Pressure switch with display PPD assembly • With digital pressure sensor PPX (Refer to page 1069 for the details.) |  <ul style="list-style-type: none"> • The pressure gauge faces forward, with IN on the right side. |

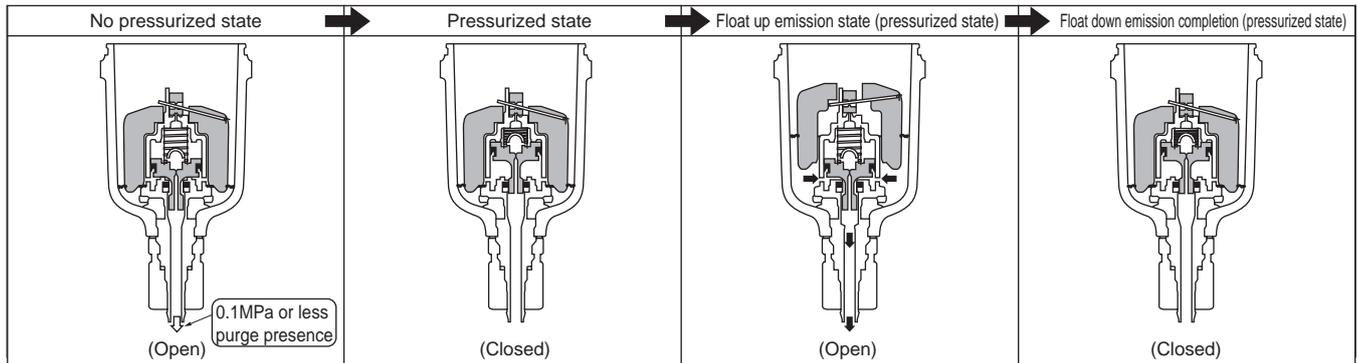
(Note) Option symbol "R1" is not used for the C*000-W Series or C*010-W Series.

F.R.L. Combination

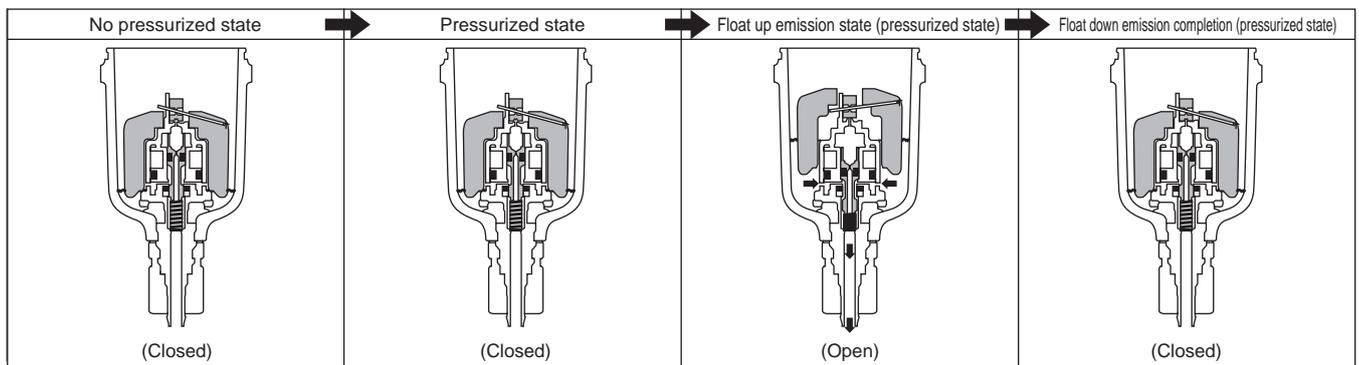
Operational explanation of float type automatic drain

Operational explanation of float type automatic drain

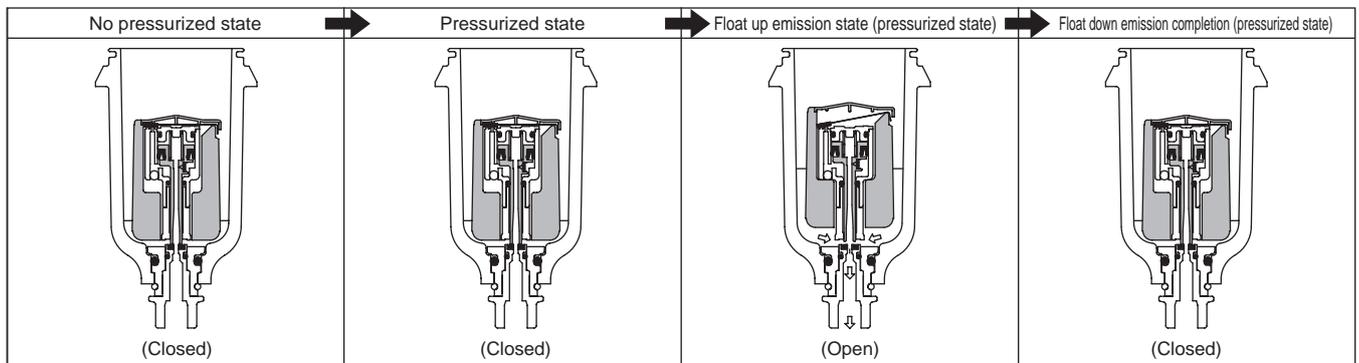
- NO type (F and FF)
3000-W/4000-W/6000-W/8000-W Series



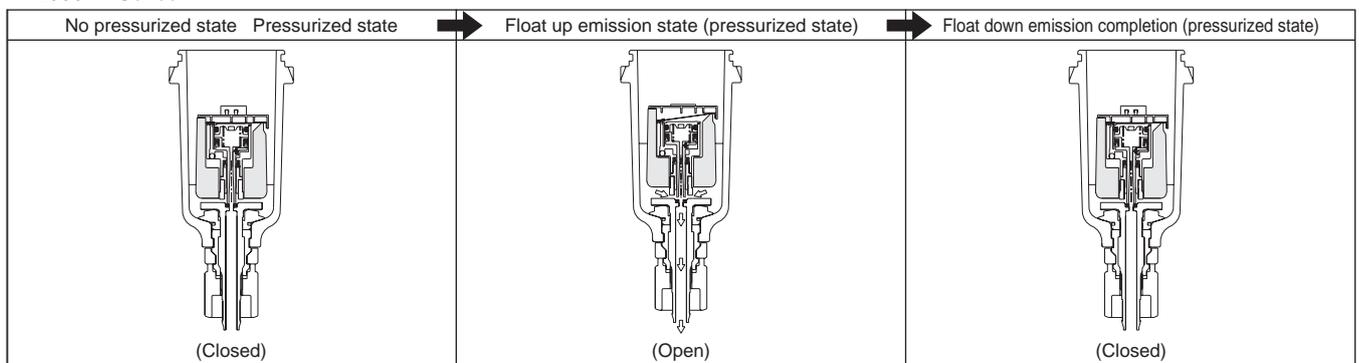
- NC type (F1, FF1)
3000-W/4000-W/6000-W/8000-W Series



- NC type (F1)
1000-W Series



- NC type (F1)
2000-W Series



| | Operation overview | | Features | Cautions |
|---------|--|--|---|--|
| | No pressurized (evening, etc.) | With pressurized | | |
| NO Type | Drainage discharge is opened and drainage is discharged naturally. | Drainage is discharged with air from the drainage discharge section temporarily until pressure becomes the minimum activation pressure or higher. After filling, the drainage discharge section is closed. | Drainage is discharged naturally in the nonpressurized state (nighttime, etc.), so user discharge is not required. In the pressurized state, once pressure is attained, drainage is automatically discharged when it accumulates at a set level. | As indicated in features, air and drainage are temporarily discharged until the pressure attains the minimum activation so pressure may not be sufficient with a compressor (0.75 kW or less) having a small discharge flow. Use the NC type in this case. |
| NC Type | The drainage discharge section is closed | | This type is suitable for a compressor (0.75 kW or less) having a small discharge. There is no temporary air purging during pressurization. Once pressure is maintained, drainage is automatically discharged when it accumulates at a set level. | Drainage is not discharged in a nonpressurized state (nighttime, etc.), so user discharge is required in applications where large amounts of drainage are generated in a nonpressurized state (nighttime, etc.). |

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
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- Total air system (Gamma)
- Ending

F.R.L. unit



Pneumatic components (F.R.L. unit (modular design))

Safety precautions

Always read this section before starting use.

Refer to Intro 63 for pneumatic components general precautions

F.R.L. unit (modular design)

Design & Selection

1. Common

WARNING

■ This product is for industrial use. Must not be used in components or circuits for medical equipment or components that involve human lives.

■ Air filter, lubricator plastic bowl, lubricator' drip window, and pressure gauge lens.

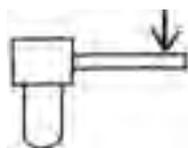
These parts are made of polycarbonate, and cannot be used in environments containing synthetic oil, organic solvents, chemicals, coolant, screw locking agent, leak detection solutions, or hot water, etc., or where these substances may come in contact with them.

Refer to page 283 for details on bowl chemical resistance.

Piping load torque

Check that the piping load or torque is not applied to the body or piping sections.

| Series | 1000-W | 2000-W | 3000-W | 4000-W | 6000-W | 8000-W |
|-----------------|--------|--------|--------|--------|--------|--------|
| Max. torque N·m | 15 | 15 | 50 | 50 | 100 | 100 |



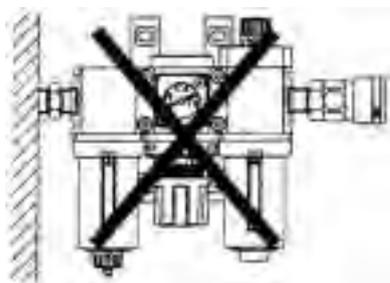
With the 1000-W Series, application of a torque of 30 N·m or more on piping is "hazardous" as the piping could be damaged. Use within the specified torque, even when using the piping adapter.

Avoid piping as followings.

Avoid piping fixed with a single support, as this can result in excessive force and lead to damage.

With the 1000-W Series in particular, application of a torque of 30N·m and over on piping is "hazardous" as the piping could be damaged.

Use within the specified torque, even when using the piping adaptor.



CAUTION

Large drainage

Install the air dryer and drain separator before the air filter.

If there is a large drainage from the compressor. Hot and highly humid air could shorten the device life or result in corrosion.

Dry air

Rubber parts for the regulator could deteriorate quickly, so use of a fluorine rubber valve assembly is recommended. Consult with CKD when required.

■ For compressor circuit of water lubrication method
Take measures to prevent chlorine-based substances from entering the compressed air.

■ Use the automatic drain under the working conditions below. Failure to observe this could result in operation faults.

NO type automatic drain (exhaust without pressurized): For "F" and "FF"

- Use a compressor with a capacity of 0.75 kW {90 ℓ/min. [ANR]} or more.

- Set the working pressure to 0.1 MPa or more. (Air is purged with initial drainage until pressure reaches 0.1 MPa.)

NC type automatic drain (no exhaust without pressurized): For "F1" and "FF1"

- A compressor with a capacity of 0.75 kw or less is used.

- Set the working pressure to 0.15 MPa or more.
For 1000 series NC automatic drain

- Set the working flow to less than the maximum working flow.

- In places with high vibration, such as where the compressor is installed, air could leak from the drain port when the float vibrates. Avoid this use.

- Overflowing drainage causes operation faults.

2. Regulator, filter and regulator

WARNING

■ Install a safety device where an output pressure exceeding the regulator's set pressure value could result in damage or faulty operation of secondary side devices.

■ The regulator cannot process residual pressure (remove secondary pressure) when primary pressure is released.

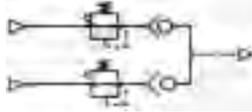
Use a regulator with a check valve when residual pressure must be processed.

■ In some cases, the regulator cannot be used for secondary side sealing circuits or balance circuits. Check with CKD for these applications.

F.R.L. unit (modular design)

⚠ CAUTION

- Set secondary pressure of the regulator to 85% or less of the primary side, or else the pressure drop could increase.
- When using regulators in parallel as shown below, do not use the OUT side as a closed circuit. If a closed circuit is required, set a check valve at the regulator's OUT side.



3. Lubricator

⚠ WARNING

- Lubricator
Consult with CKD for lubrication of the air motor and bearing. Also consult with CKD when using this unit at a high frequency such as in a press machine.

⚠ CAUTION

- If the working air rate is low for the lubricator, oil may not drip.
Check the minimum air rate required for dripping oil.

4. Pressure switch

⚠ CAUTION

- When using the compact pressure switch PPD and digital pressure sensor PPX, avoid using as a set with the lubricator. The switch is not a drip-proof structure, so operation could be disabled if the lubricating oil comes in contact with it.

5. Shut-off valve

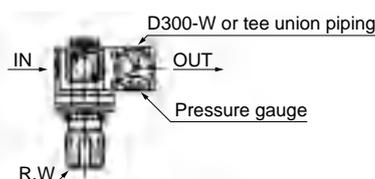
⚠ WARNING

- Cautions on shut-off valve
 - The EXH port is dedicated for installation of the silencer. Tighten with a torque of 3 N·m or less -- as far as is tightened manually. Avoid piping that applies piping load or torque, etc., to the EXH port.
 - If exhaust is incomplete because of air quality, manually discharge air by operating the knob (turn and raise).

6. Pressure gauge

⚠ CAUTION

- When using this unit for a large flow, etc., install a pressure gauge as shown below so that secondary pressure is measured accurately.



■ About G45D

- The chemical resistance of lens is shown below.
- Avoid using products in an atmosphere where chemicals are contained in compressed air, the atmosphere, or where they could adhere to parts.
- Use in the above state could lead to lens damage.

Chemical resistance of lens

| Chemicals | Category of chemicals | Main products of chemicals | General usage examples | Lens |
|---------------------|--|--|--|------|
| Inorganic chemicals | Acid | Hydrochloric acid, sulfuric acid, hydrofluoric acid, phosphoric acid, chromic acid, etc. | Acid washing of metals, acidic degreasing solution, film treatment solution, etc. | × |
| Organic chemicals | Aromatic hydrocarbon | Benzene, toluene, xylene, ethyl benzen, styrene, etc. | Contained in paint thinner (benzene, toluene and xylene) | × |
| | Alcohol | Methyl alcohol, ethyl alcohol, cyclohexanol, benzyl alcohol | Used as freezing prevention agent leakage detection agent | × |
| | Phenol | Carbolic acid, cresol, naphthol, etc. | Liquid disinfectant | × |
| | Ketone | Acetone, methyl ethyl keton, cyclohexanone, acetophenone, etc. | | × |
| | Carboxylic acid | Formic acid, acetic acid, butyl acid, acrylic acid, oxalic acid, phthalic acid, etc. | Dyes; oxalic acid for aluminum processing; phthalic acid for paint base and leak-detection agents Used as leakage detection agent | × |
| | Oxyacid | Glycol acid, lactic acid, malic acid, citric acid, tartaric acid | | × |
| Amine | Methylamine, diethylamine, ethylamine, aniline, acetoacetanilide, etc. | Additive of brake oil | × | |

× : Not available (Lens will break.)

7. Flame resistant Series

⚠ WARNING

- The regulator's diaphragm, check valve resin parts (inside of aluminum plate), and silencer element are not made of flame-resistant materials. Avoid use where spatter could accumulate.

8. Oil-prohibition Series

⚠ CAUTION

- Check the working circuit and working fluid.
Operating faults could occur if fluids containing solids or nonspecified fluids pass. Connect a filter to the product's primary side so that solids do not enter.
- Working or piping conditions could cause pulsation.
Lower primary pressure if pulsation occurs. Select the proper size as pulsation can occur easily if the flow rate is extremely small in respect to the maximum flow rate.
- Consult with CKD if material restrictions apply (copper-based, silicon-based, halogen-based materials not permissible (fluorine, chlorine, oxalic-based)).
An oxalic-acid-based cleaning agent is used to clean parts in some cases.
- If low-dust generation and cleanliness higher than the oil-free regulator are required, use the clean regulator RC2000 series.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |

Ending

F.R.L. unit

F.R.L. unit (modular design)

Design & Selection

9. Oil-prohibition Series

CAUTION

- Pressure and flow characteristics and relief start pressure may be less than the standard regulator (R3000 Series, etc.).

Depending on use, such as when back pressure rises, set pressure may increase 0.2 MPa. It is recommended to use a pressure gauge compatible with set pressure + 0.2 MPa.

- When the primary pressure is released, the secondary pressure flows to the primary side.
If flowing of the secondary side fluid to the primary side

causes faults in other devices, provide a circuit to maintain the pressure.

- When used in applications where primary pressure is 0.7 MPa or more, keep the difference in primary and set pressure within 0.4 MPa.
Pulsation could occur if the difference in pressures is high or if secondary piping is large. If so, lower primary side pressure or restrict the secondary line. If pulsation continues, contact CKD.
- Set primary pressure to 0.1 MPa or higher than set pressure. Pressure adjustment faults or leaks from the relief valve could result depending on use.

Installation & Adjustment

1. Common

CAUTION

- Avoid installing this product where it is subject to direct sunlight.

- Flush and wash pipes to be used.

Dirt or foreign materials in piping will lower product performance.

- Check that foreign materials do not enter when tightening pipes or joints.

When screwing in piping or joints, check that swarf from piping threads or sealing agent does not get inside. Dirt or foreign materials in piping will lower product performance.

- To use F.R.L. correctly

- Set the regulator pressure setting to increase. After setting pressure, lock the handle. Check primary pressure carefully before setting pressure.
- Check the arrow indicating the air inlet before connecting. A reverse connection could result in improper operation.
- Install the air filter and the lubricator case downward vertical. Emission defective and dripping of drain could not be checked.
- Use of the automatic drain where vibration is present could cause faults and malfunctions.

- Pipe automatic drain piping as follows:
Not doing so could cause malfunctions.
Use an inner diameter of 5.7 or more and piping of 5 m or less for the drainage section. Do not use vertical piping.
Pipe so that no lateral load acts on the bowl.
Fix the hexagon side of the cock before screwing the joint, etc., into the Rc1/4 female screw.

- Piping screw-in torque

Make sure that excessive torque is not applied on the body and piping when piping.

| Series | 1000-W | 2000-W | 3000-W | 4000-W | 6000-W | 8000-W |
|-----------------|--------|--------|--------|--------|--------|--------|
| Max. torque N·m | 15 | 30 | 30 | 30 | 70 | 70 |



- Drain piping

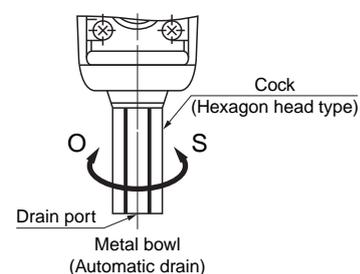
- The drain piping for the plastic bowl has a barbed nipple, and can be directly installed. However, confirm that the drain cock is closed before inserting the tube.
Pipe so that no lateral load acts on the bowl.

- Tightening torque of drain cock

- Max. tightening torque of drain cock of a plastic bowl is as follows.
 - 1000 Series: 0.1N·m
 - Other: 0.5N·m

- Drain piping of metal bowl with automatic drain

- Fix the cock's hexagonal face before screwing the joint, etc., into the drain port's female threads.
When using the metal bowl with automatic drain, if the drain is piped with tightening joint, manual operation is not possible.



F.R.L. unit (modular design)

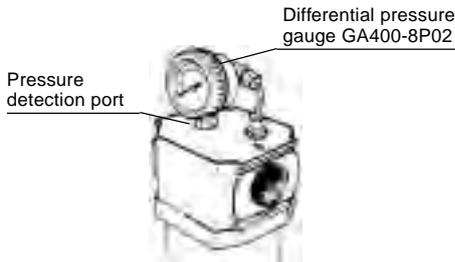
■ Piping the unit with pressure detection port

F6000-*-W-Q/M6000-*-W-Q
 MX6000-*-W-Q/F8000-*-W-Q
 M8000-*-W-Q/MX8000-*-W-Q

Pressure detection port is available as option for F6000-W/M6000-W/MX6000-W/F8000-W/M8000-W/MX8000-W.

The life of the filter element or oil mist filter mantle assembly is visually checked by assembling the differential pressure gauge GA400-8-P02 into the pressure detection port.

When selecting option Q and X1 simultaneously for F6000-W and M6000-W and mounting differential pressure gauge GA400, raise the gauge with piping material so that it does not interfere.



2. Regulator, filter and regulator

⚠ CAUTION

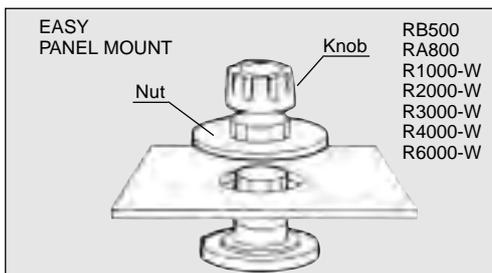
■ Regulator, filter regulator

- Lightly tighten (0.6 N·m or less) mounting screws for embedded pressure gauge G401-OP, G401, and gauge plug.
- When installing the pressure gauge with a safety mark on the gauge plug, or when installing a general screw-in pressure gauge, tighten with a torque of 10 to 15 N·m or less.
- Do not move or swing the product holding the adjustment knob on the regulator.
- Check that pressure exceeding the pressure gauge's full scale is not applied because the pressure gauge could be damaged. (Pay special attention when using the full-scale 0.2 or 0.4 MPa pressure gauge.)

■ Panel mount of regulator

When the panel mounting nut is loosened, the nut acts as a jack and enables the knob to be removed easily. Fix the nut to mount in the panel. The L-type bracket is also installed similarly to the nut. (When the L-type bracket is used, the body is fixed securely without play.)

* 8000-W Series is excluded.



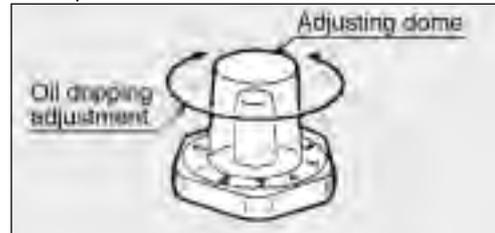
Note: Install the nut before installing the knob. (With the R2000-W, the nut is removed without removing the knob.)

3. Lubricator

⚠ CAUTION

■ Adjustment of lubricator drop down

- Adjust the oil rate by turning the adjusting dome with bare hands. When closing the dome, tighten with a torque of 0.5 N·m or less. The numbers (scale) on the dial are a guide used after adjustment, and do not indicate the oil drip rate.

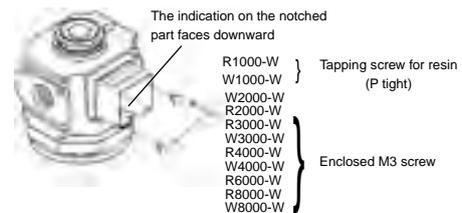


4. Pressure switch

⚠ CAUTION

■ Pressure switch (PPD) installation method

- Separate the body from base.
- Install the O-ring
 - * Refer to the dimension drawing for the direct installation type (PPD-****-1F-1)(PPD-****-1F-2) on the left, and install the O-ring to the O-ring groove with a clean finger.
- Install the base.
 - Install the base with the two enclosed screw (M3).
 - * Carefully install at the designated position in the designed direction while taking care not to dislocate the O-ring.
 - * Do not tighten one screw completely at once, and instead tighten the two screws so that they are balanced. (Tightening torque 0.5 ± 0.1N·m)



- This completes installing the main unit.
 - Confirm no dirt or foreign matter on the base, and then insert the body. Make sure that the body does not catch on the base. Next, insert the two keys. While pressing the body exterior against the base, face the head of the keys so that they face each other, and then insert them so that they are completely stored on the recesses on the base.



Note) Insert two keys. Check that both keys are installed before pressurizing.

Note) When changing the position or orientation of the PPD which has been installed once, install using the new keys, O rings and installing screws enclosed with the option kit.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |

Ending

F.R.L. unit

F.R.L. unit (modular design)

Installation & Adjustment

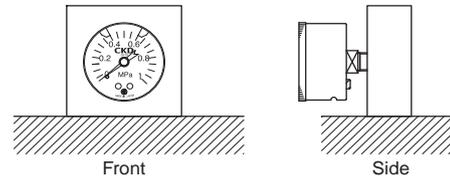
5. Pressure gauge

CAUTION

Pressure gauge

Repeated and sudden increases and decreases in pressure and pressure pulsation must be avoided because it could adversely affect pressure gauge life. Either ease pressure fluctuation in the circuit or check with CKD so that a pressure gauge with cushioning screw is prepared. Applying pressure exceeding the pressure range could damage the pressure gauge.

- Mount vertically in respect to the ground so that the scale can be viewed straightforward. (See below) Mounting in any other direction can cause the needle movement to become unstable, and can cause the accuracy to drop.



6. Flame resistant Series

CAUTION

- When installing a general screw-in pressure gauge, tighten with a torque of 3 to 5 N·m or less.

During use & Maintenance

1. Common

WARNING

- Regularly, once or more in six months, check the air filter and lubricator's plastic bowl for cracks, damage, and other deterioration.

Cracks, damage or other deterioration could result in breakage, so if found, replace with a new bowl or with a metal bowl.

- Check the air filter, lubricator plastic bowl, and lubricator drip window periodically for contamination.

- If parts are heavily contaminated or if transparency has dropped, replace with a new bowl or drip window.
- Use a diluted neutral household detergent to wash parts, and then rinse well with clean water. Use of other agents could result in breakage.

- Removing bowl of filter and lubricator

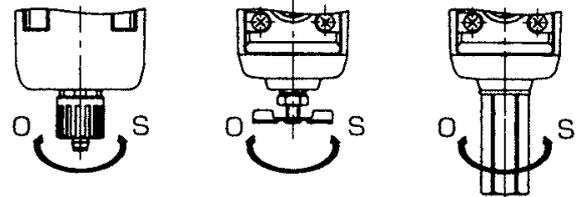
Before removing the bowl, the compressed air, discharge pressure in the bowl completely, and confirm that no residual pressure remains.

CAUTION

- Check the oil drip rate once a day. If the oil drip is faulty, problems could occur in the unit being lubricated.
- Do not branch the air into lubricating air and oilless air with a distributor. The lubricator oil could reverse flow.
- Performance could drop if the filter element is clogged. Regularly inspect and replace the element.
- Do not disassemble or modify the product.

- Read instructions and precautions enclosed with the product before starting use or maintenance.

Discharging drainage



Plastic bowl

Metal bowl

Metal bowl

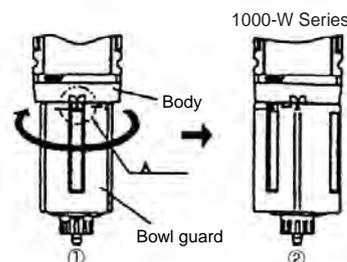
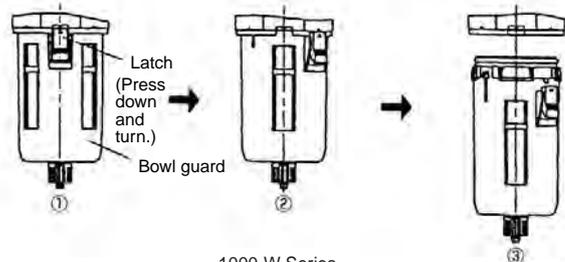
(Manual cock)

(Automatic drain)

- Drainage is started when the cock is turned to the O side, and the discharge is stopped when the cock is turned in the S direction. Tighten by hand in the S direction.
- When the automatic drain is provided, drainage is discharged automatically when it accumulates. Drainage is also discharged manually.

Removing resin bowl

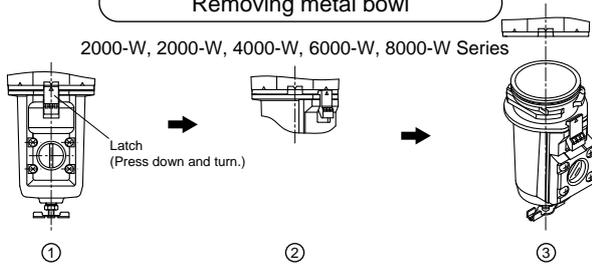
2000-W, 2500-W, 3000-W, 4000-W, 6000-W, 8000-W Series



F.R.L. unit (modular design)

Removing metal bowl

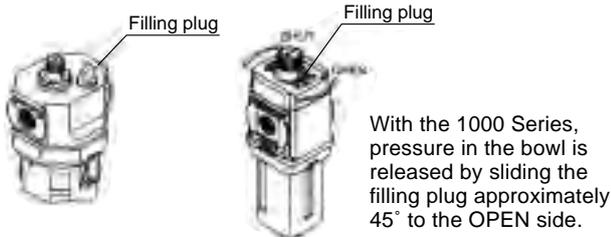
2000-W, 2000-W, 4000-W, 6000-W, 8000-W Series



Removing filling plug

3000-W, 4000-W, 8000-W Series

1000-W Series



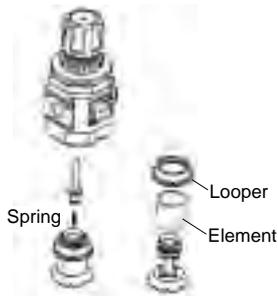
With the 1000 Series, pressure in the bowl is released by sliding the filling plug approximately 45° to the OPEN side.

- Close the filling plug after lubricating.
- Never remove the bowl without removing the filling plug (while the bowl is pressurized). (L3000-W to L8000-W)
- With 1000 Series, never remove the bowl with the filling plug set to the SHUT side (while the bowl is pressurized). (L1000-W)

2. Filter and regulator

CAUTION

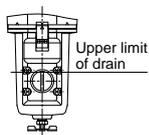
- Element of W1000-W to W8000-W
Inspect the valve assembly when it is removed during maintenance.
Do not lose springs, etc., during maintenance.



3. Filter

WARNING

- Drain so that air filter drainage does not accumulate beyond the maximum. Components could malfunction if drainage flows into the secondary side.



Metal bowl



Metal bowl (flame resistant type, M1 type)

- The resin bowl must not be filled more than the "drain upper limit" or "MAX LEVEL" stamped on the bowl guard.

CAUTION

- Submicron 0.3μm element
This filter cannot be washed and reused. When the pressure drops to 0.07 MPa, replace the filter with a new one. (1000 and 2000 Series are excluded.)
- Oil mist filter
The mantle (element) life ends after one year (6000 hours) or when pressure drops to 0.1 MPa. (excluding the X type) Replace the mantle when life is reached. (Do not touch the urethane foam layer when replacing the mantle.)
- If a differential indicator is provided, replace the mantel (element) before the differential indicator's color changes completely to red.

4. Regulator, filter regulator

CAUTION

- Pull the pressure adjustment knob and release the lock before setting the regulator pressure. The regulator could be damaged if the pressure is set without unlock.
- Pulsation may occur depending on the working conditions or piping conditions. If pulsation occurs, the working conditions or piping conditions should be changed, such as by lowering the primary pressure.

5. Lubricator

WARNING

- Use Class 1 turbine oil (nonadditive) ISO VG32 for the lubricator.
Other oils could cause breakage or improper operation.
- Removing filling plug of lubricator
To prevent the filling plug from popping out, loosen the filling plug by one turn, and then completely depressurize the bowl before removing the filling plug. Wipe away any dirt around the fill plug that could scatter.

CAUTION

- Periodically replenish oil in the lubricator bowl so that it does not drop below the lower limit.
- When lubricating the L1000, pressure in the bowl is released by turning the fill plug. Refer to the section on [During use & Maintenance](#), above, for details on using the fill plug. (Lubrication is done while pipes are pressurized.)
Check that there is no pressure in the bowl, remove the bowl and bowl guard, and then directly lubricate to the bowl.
Refer to the previous page for details on removing the bowl.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |

Ending

F.R.L. unit

F.R.L. unit (modular design)

During use & Maintenance

- When lubricating the L3000-W to L8000-W, loosen the fill plug slightly to release pressure in the bowl, then remove the fill plug. Refer to the section on **During use & Maintenance**, above, for details on using the fill plug.
(Removing the fill plug enables lubrication to be done while pipes are pressurized.)
Oil is supplied from the fill plug hole, and the bowl is directly lubricated by removing the bowl and bowl guard.
With L8000, oil is supplied to the spacer by lubricating from the fill plug hole.

6. Pressure gauge

- Make sure that impact and vibration are not applied directly onto the main unit.
- The limit marks will not completely seat against each other. There may be a clearance of approx. one gradient.

7. Oil-prohibition Series

⚠ CAUTION

- Stop fluid supply and confirm that no residual pressure exists before starting maintenance.
- Keeping
Do not leave the product in a hot or highly humid atmosphere or outside of the specified range for a long time. Resin or rubber parts could deteriorate, and the resin bowl could become discolored. Contact CKD before storing the product outside of the specified range.
- Release the lock before adjusting pressure.
Turning a locked pressure adjustment knob could cause damage.
- Adjust pressure in the direction of pressure increase.
The correct pressure cannot be set if pressure is adjusted downward.
- The nonrelief type cannot be depressurized until the secondary side is spent.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
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| Auto. drain / others |
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| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
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| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Chemical resistance of plastic

⚠ WARNING

- The chemical resistance of plastic parts is shown below.
- Avoid using products in an atmosphere where chemicals are contained in compressed air, the atmosphere, or where they could adhere to parts.
- Use in the above state could lead to bowl damage and accidents.
- Avoid using these types of chemicals or in an atmosphere containing these chemicals.
- A metal bowl is available if these chemicals must be used.

Chemical resistance of plastic bowl and body

Use a metal bowl in an atmosphere containing the following chemicals.

Check whether the testing solutions, sealing agents and adhesives contain the following chemicals.

| Types of chemicals | Category of chemicals | Main products of chemicals | General usage examples | Polycarbonate bowl | Nylon bowl | Nylon body |
|---------------------|---|---|--|--------------------|------------|------------|
| Inorganic chemicals | Acid | Hydrochloric acid, sulfuric acid, hydrofluoric acid, phosphoric acid, chromic acid, etc. | Acid washing of metals, acidic degreasing solution, film treatment solution, etc. | × | × | × |
| | Alkaline | Alkalis such as caustic soda, caustic potash, calcium hydroxide, ammonium water, sodium carbonate | Alkaline degreasing of metal water-based coolant, leakage detection agent | × | ○ | ○ |
| | Inorganic salt | Sodium sulfide, nitrate of soda, potassium bichromate, sodium sulfide, etc. | | × | ○ | ○ |
| Organic chemicals | Aromatic hydrocarbon | Benzene, toluene, xylene, ethyl benzene, styrene, etc. | Contained in paint thinner (benzene, toluene and xylene) | × | × | × |
| | Chlorine aliphatic hydrocarbon | Methyl chloride, ethylene chloride, methylene chloride, acetylene chloride, chloroform, trichylene, perchloroethylene, carbon tetrachloride | Organic solvent-based washing solution for metals (Trichylene, perchloroethylene, carbon tetrachloride) | × | ○ | ○ |
| | Chlorinated aromatic hydrocarbon | Chlorobenzene, dichloro benzene, benzene hexachloride (B, H, C), etc. | Agricultural chemicals | × | ○ | ○ |
| | Petroleum components | Solvent naphtha, gasoline, kerosene | | × | ○ | ○ |
| | Alcohol | Methyl alcohol, ethyl alcohol, cyclohexanol, benzyl alcohol | Used as freezing prevention agent leakage detection agent | × | × | × |
| | Phenol | Carbolic acid, cresol, naphthol, etc. | Liquid disinfectant | × | × | × |
| | Ether | Methyl ether, methyl, ethyl ether | Additive of brake oil | × | ○ | ○ |
| | Ketone | Acetone, methyl ethyl ketone, cyclohexanone, acetophenone, etc. | | × | × | × |
| | Carboxylic acid | Formic acid, acetic acid, butyl acid, acrylic acid, oxalic acid, phthalic acid, etc. | Dyes; oxalic acid for aluminum processing; phthalic acid for paint base and leak-detection agents Used as leakage detection agent | × | × | × |
| | Ester | Dimethyl phthalate (DMP), diethyl phthalate (DEP), dibutyl phthalate (DBP), dioctyl phthalate (DOP) | Used as plasticizer of attached agent composite resin of lubricant, synthetic oil and rust proof oil | × | ○ | ○ |
| | Oxyacid | Glycol acid, lactic acid, malic acid, citric acid, tartaric acid | | × | × | × |
| | Nitro compound | Nitro methane, nitro ethane, nitro ethylene, nitro benzene, etc. | | × | ○ | ○ |
| | Amine | Methylamine, diemethylamine, ethylamine, aniline, acetoacetanilide, etc. | Additive of brake oil | × | × | × |
| Nitrile | Acetonitril, acrylonitrile, benznitrile, acetoilydine nitrile, etc. | Raw material for nitrile rubber | × | ○ | ○ | |

○: Available, X: Not available (plastic will be damaged.)

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
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| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |

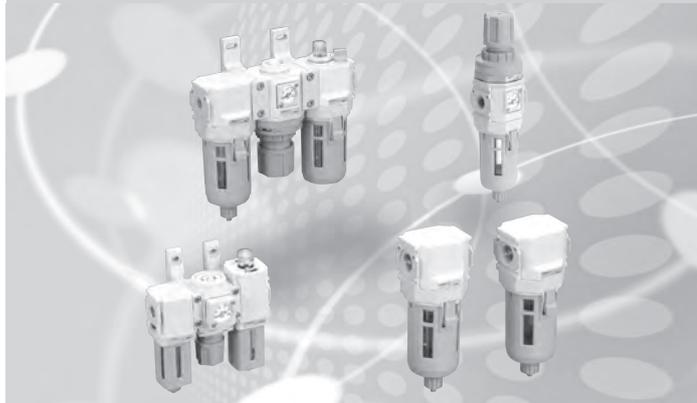
Ending

F.R.L. unit

Modular design

Standard white series

■ Components for air preparation and pressure adjustment / F.R.L. unit



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| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



F.R.L. combination standard white Series
C1000/C2000/C2500-W
C3000/C4000/C6500/C8000-W Series

Space-saving type integrated filter, regulator and lubricator
 Port size: 1/8 to 1

JIS symbol

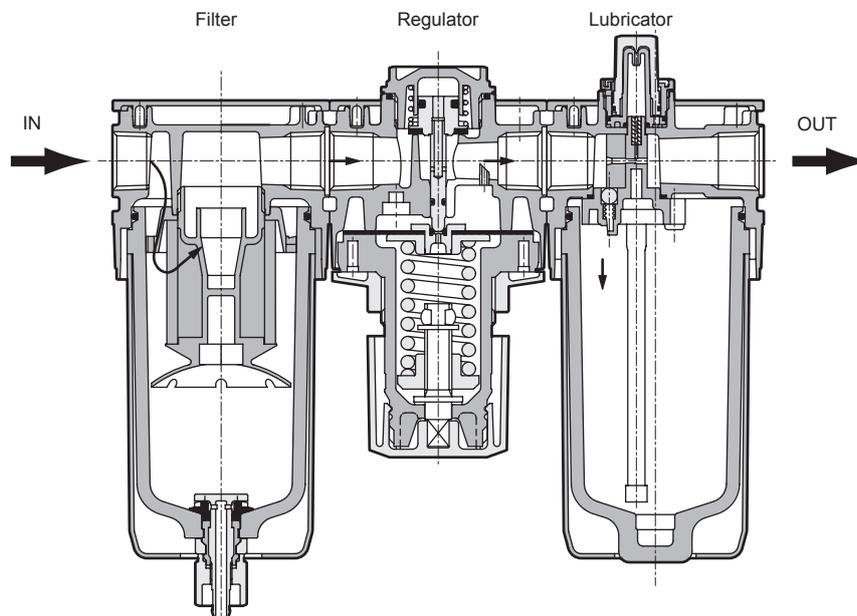


Specifications

| Descriptions | | C1000-W | C2000-W | C2500-W | C3000-W | C4000-W | C6500-W | C8000-W |
|--|------------|--|-----------------------------------|-----------------------------------|-----------------------------------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | | | | |
| Components | Air filter | F1000-W | F2000-W | F3000-W | F3000-W | F4000-W | F6000-W | F8000-W |
| | Regulator | R1000-W | R2000-W | R2000-W | R3000-W | R4000-W | R6000-W | R8000-W |
| | Lubricator | L1000-W | L3000-W | L3000-W | L3000-W | L4000-W | L8000-W | L8000-W |
| Working fluid | | Compressed air | | | | | | |
| Max. working pressure MPa | | 1.0 Note 2 | | | | | | |
| Withstanding pressure MPa | | 1.5 | | | | | | |
| Ambient temperature range °C | | 5 to 60 | | | | | | |
| Filtration rating μm | | 5 | | | | | | |
| Set pressure range MPa | | 0.05 to 0.85 ^{Note 2} | | 0.05 to 0.85 | | | | |
| Min. drip flow (Note 1) m ³ /min. (ANR) | | 0.015 | 0.03 | 0.03 | 0.03 | 0.065 | 0.065 | 0.065 |
| Relief | | With relief mechanism | | | | | | |
| Oil capacity cm ³ | | 20 | 85 | 85 | 85 | 170 | 170 | 170(MAX360) |
| Drain capacity cm ³ | | 12 | 25 | 45 | 45 | 80 | 80 | 80(Note 3) |
| Use oil | | Turbine oil Class 1 ISO VG32 (spindle oil can not be used) | | | | | | |
| Port size Rc, NPT, G | | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.40 | 1.01 | 1.01 | 1.15 | 1.79 | 3.64 | 4.5 |
| Standard accessories | | Pressure gauge, bracket, bowl guard | | | | | | |

Note 1: The minimum drip flow is that at which five drops of turbine oil drip per minute at the set pressure of 0.5 MPa.
 Note 2: When using C1000-W series "F1" with an automatic drain, the minimum operating pressure is 0.2 MPa and maximum operation pressure is 0.7 MPa.
 Refer to the maximum processing flow table (page 350) for the F1000-W-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.
 Note 3: Drainage accumulates up to 170 cm³ only with the manual drain cock.
 Note 4: The automatic drain's minimum operating pressure for "F" or "FF" with an automatic drain is 0.1 MPa. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.
 Note 5: The minimum operation pressure of the automatic drain is 0.15 MPa for the "F1" or "FF1" with an automatic drain.
 Note 6: When element option "Y" is selected, refer to the maximum working flow table (page 352) for maximum flow. Set the working flow to less than the maximum working flow.
 Note 7: When using the "F1" with automatic drain, use the C2000-W Series at less than the maximum flow rate. (Refer to F2000-W on page 350 for the maximum flow rate.)

Internal structure

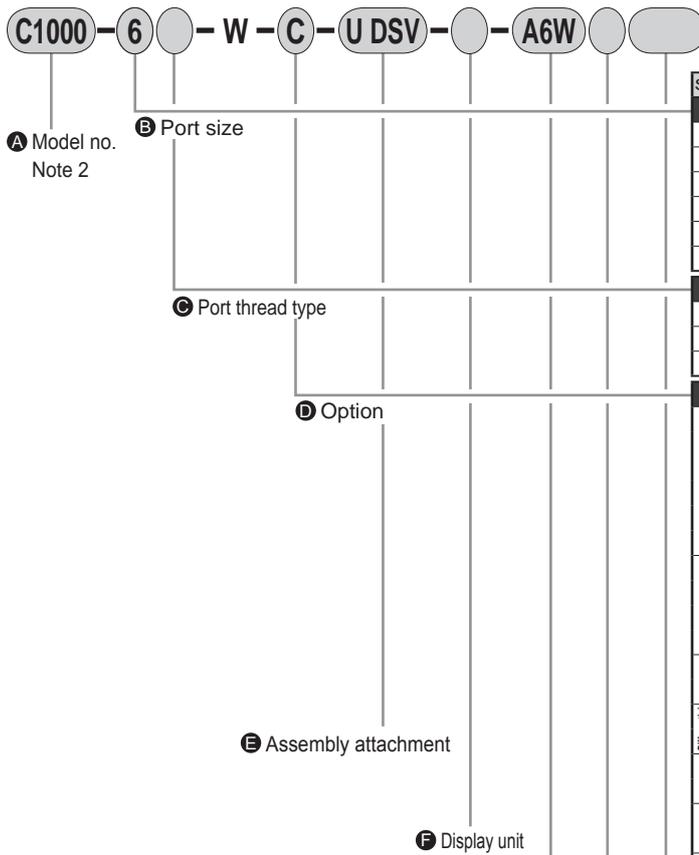


F.R.L. Combination

How to order

How to order

* Refer to page 274 for the explanation of the option.



| | | A Model no. Note 1 | | | | | | |
|---|---|----------------------------|-------|-------|-------|-------|-------|--|
| | | C1000 | C2000 | C3000 | C4000 | C5000 | C8000 | |
| Symbol | Descriptions | | | | | | | |
| B Port size | | | | | | | | |
| 6 | 1/8 | ● | | | | | | |
| 8 | 1/4 | ● | ● | | | | | |
| 10 | 3/8 | | ● | ● | | | | |
| 15 | 1/2 | | | | ● | | | |
| 20 | 3/4 | | | | | ● | | |
| 25 | 1 | | | | | | ● | |
| C Port thread type | | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | ● | ● | |
| D Option | | | | | | | | |
| Drainage Note 4 | | | | | | | | |
| Blank | Filter with manual drain cock, lubricator without manual drain cock | ● | ● | ● | ● | ● | ● | |
| C | Lubricator with manual cock | ● | ● | ● | ● | ● | ● | |
| F | Filter/auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | ● | ● | ● | ● | |
| F1 | Filter/auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● | ● | |
| FF | Filter/large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | | | ● | |
| FF1 | Filter/large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | | | ● | |
| Bowl material | | | | | | | | |
| Blank | Polycarbonate bowl | ● | ● | ● | ● | ● | ● | |
| Z | Nylon bowl | ● | ● | ● | ● | ● | ● | |
| M | Metal bowl | | | | | | ● | |
| M1 | Metal bowl with manual drain cock Note 5 | | | | | | ● | |
| Element | | | | | | | | |
| Blank | 5μm | ● | ● | ● | ● | ● | ● | |
| Y | 0.3μm (submicron) Note 6 | | | | | | ● | |
| Pressure detection | | | | | | | | |
| Blank | Without differential pressure detection port | ● | ● | ● | ● | ● | ● | |
| Q | With differential pressure detection port (Rc1/4) | | | | | | ● | |
| Pressure range | | | | | | | | |
| Blank | 0.05 to 0.85MPa | ● | ● | ● | ● | ● | ● | |
| L | 0.05 to 0.35MPa Note 7 | | | | | | ● | |
| Relief | | | | | | | | |
| Blank | With relief mechanism | ● | ● | ● | ● | ● | ● | |
| N | Nonrelief type | | | | | | ● | |
| Pressure gauge | | | | | | | | |
| Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● | ● | ● | |
| T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● | ● | ● | |
| T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● | ● | ● | |
| Flow direction | | | | | | | | |
| Blank | Standard flow (left → right) | ● | ● | ● | ● | ● | ● | |
| X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● | ● | |
| E Assembly attachment | | Pages 402 to 413, 426, 427 | | | | | | |
| Blank | Without assembly attachment type | ● | ● | ● | ● | ● | ● | |
| U | Assembly attachment type Note 8 | ● | ● | ● | ● | ● | ● | |
| Assembled | | | | | | | | |
| D | Distributor (D101-W, D401-W, D801-W) | ● | ● | ● | ● | ● | ● | |
| P | Pressure switch (P1100-W, 4100-W, 8100-W) | ● | ● | ● | ● | ● | ● | |
| S | Pressure switch (P4000-W) | ● | ● | ● | ● | ● | ● | |
| V | Shut-off valve (V1000-W, 3000-W) | ● | ● | ● | ● | ● | ● | |
| K | Lockout valve (V3010-W, W6010-W) | ● | ● | ● | ● | ● | ● | |
| F Display unit | | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | ● | |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | ● | |
| G Piping adaptor set (attached) | | Page 428 Note 9 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● | |
| A6*W | Rc1/8 piping adaptor set | ● | | | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | | | | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | | | | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● | | | |
| A20*W | Rc3/4 piping adaptor set | | | | ● | ● | | |
| A25*W | Rc1 piping adaptor set | | | | | ● | ● | |
| A32*W | Rc1 1/4 piping adaptor set | | | | | | ● | |
| Adaptor screw type | | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | ● | ● | |
| H Attachment (attached) | | | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● | |
| PW | Pressure switch (P4000-W) + joiner set | ● | ● | ● | ● | ● | ● | |
| VW | Shut-off valve (V1000-W, V3000-W) + joiner set | ● | ● | ● | ● | ● | ● | |
| I Pressure gauge option (attached) | | Note 10 Page 659 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● | |
| G45P | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● | ● | ● | |
| G49P | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● | ● | ● | |
| G59P | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● | ● | ● | |
| G40P | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● | ● | ● | |
| G50P | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● | ● | ● | |
| G41P | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● | ● | ● | |
| G52P | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● | ● | ● | |

Note on model no. selection

- Note 1: The piping adaptor A400-20* is assembled on both ends of C4000-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2: When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target, as are attachments P and V.
- Note 3: Select options for each drainage, bowl material, element, differential pressure detection, and regulator items. When selecting options for several items, list options in order from the top.
- Note 4: Refer to page 276 for the automatic drain use conditions.
- Note 5: Note 5: When selecting option "M1", select the drain discharge option "C", "F" or "F1".
- Note 6: Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 7: The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 8: Installation position for assembly attachments

| Symbol | Installation position | Applicable model |
|--------|-----------------------|---|
| D | F+(D)+R+L | C1000-W to C8000-W |
| S or P | F+R+(S, P)+L | C1000-W to C8000-W (Excluding 1000, 6000, 8000 for "P") |
| V or K | F+R+L+(V, K) | C1000-W to C8000-W (Excluding 6000, 8000 for "V" or 1000 for "K") |

- Note) Indicate "U"+"D", "S","P","V" and "K" when selecting an assembly attachment. Use custom combinations specifications for any other combination.
- Note 9: The joiner set is enclosed with the piping adaptor set.
- Note 10: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

H Attachment (attached)

I Pressure gauge option (attached)

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

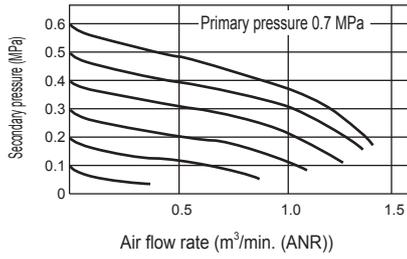
Standard series
F.R.L. unit

F.R.L. Combination

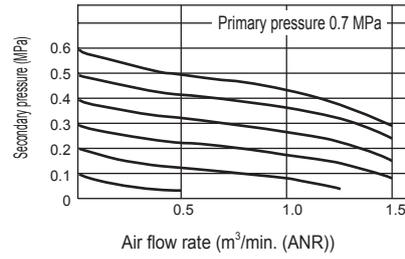
Flow characteristic

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

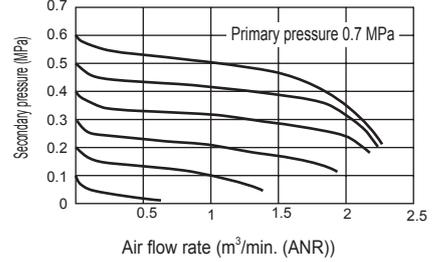
● C1000-6-W



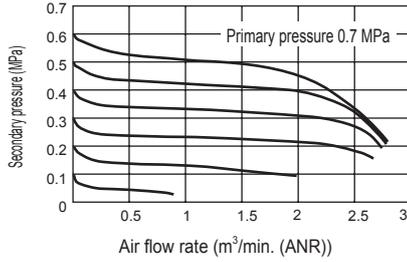
● C1000-8-W



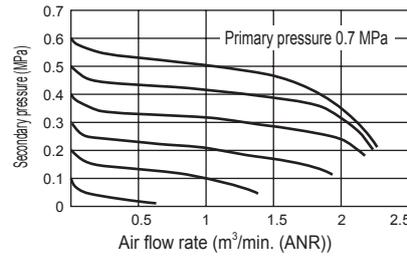
● C2000-8-W



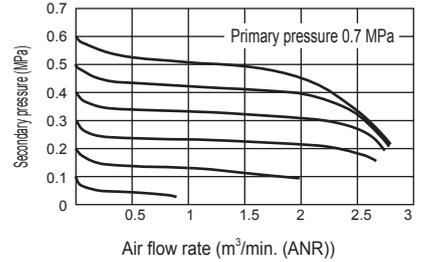
● C2000-10-W



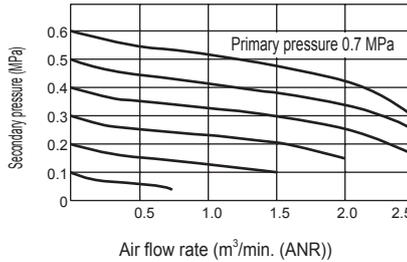
● C2500-8-W



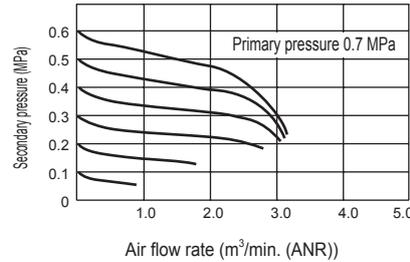
● C2500-10-W



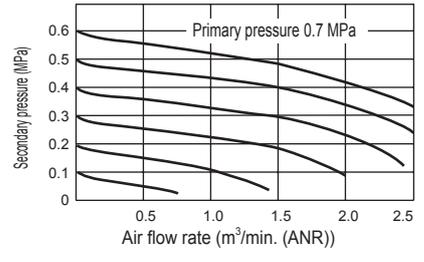
● C3000-8-W



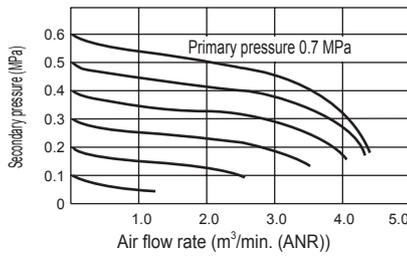
● C3000-10-W



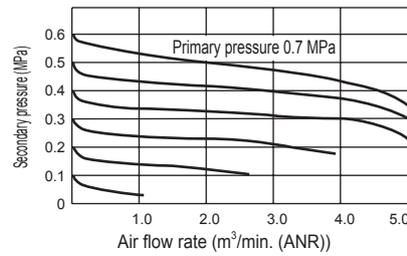
● C4000-8-W



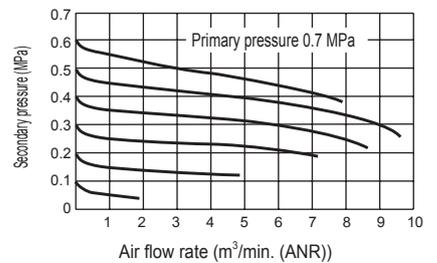
● C4000-10-W



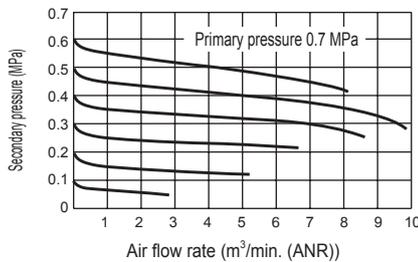
● C4000-15-W



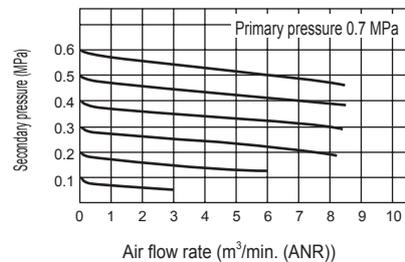
● C6500-20-W



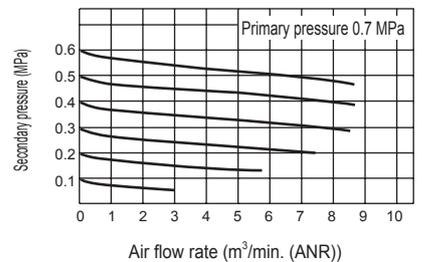
● C6500-25-W



● C8000-20-W



● C8000-25-W



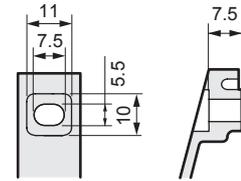
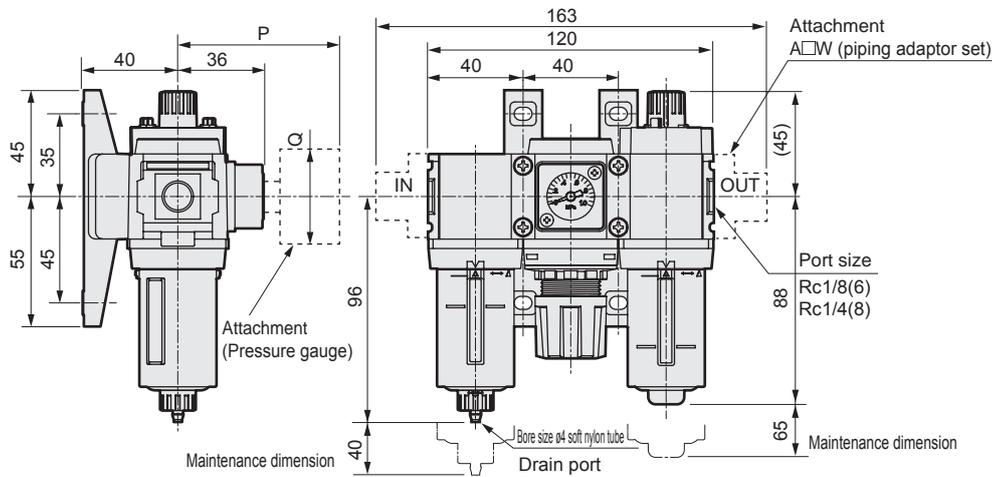
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

F.R.L. Combination

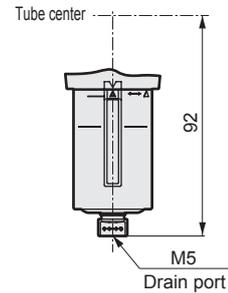
Dimensions

● C1000-W



Enlarged view of bracket section

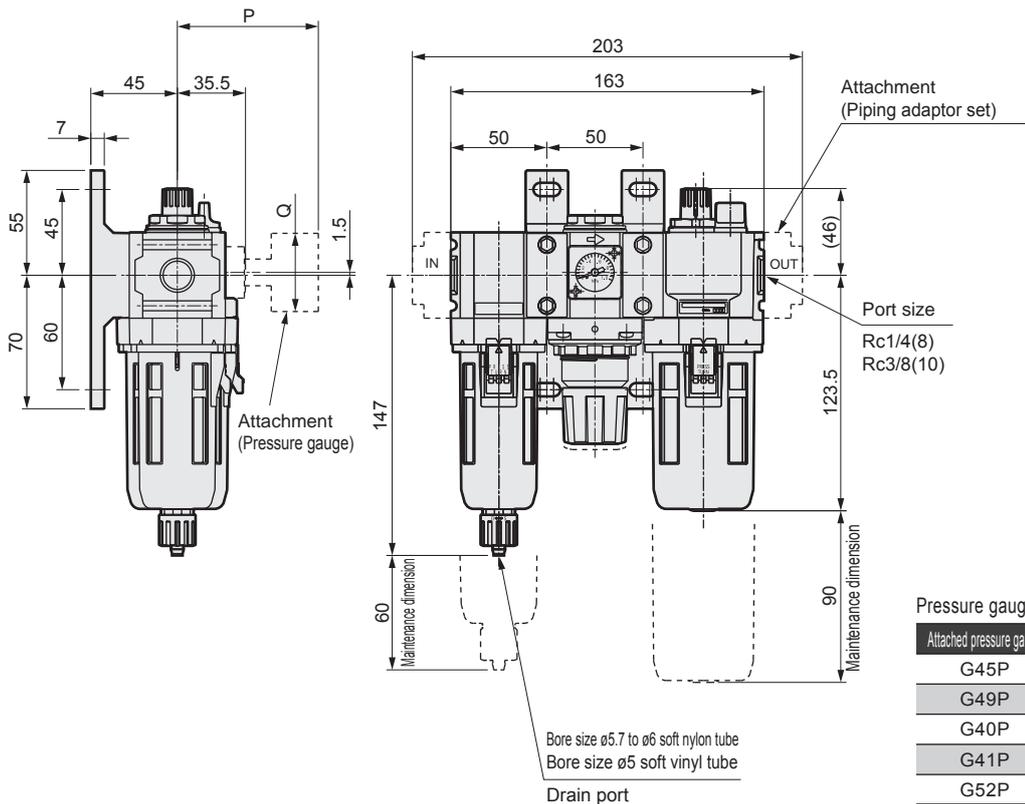
- Option dimensions With automatic drain (F1)



Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (74) | ø39 |
| G49P | (73.5) | ø43.5 |
| G59P | (76) | ø52 |
| G40P | (75.5) | ø42.5 |
| G50P | (75.5) | ø52.5 |
| G41P | (74) | ø42 |
| G52P | (86) | ø52.5 |

● C2000-W

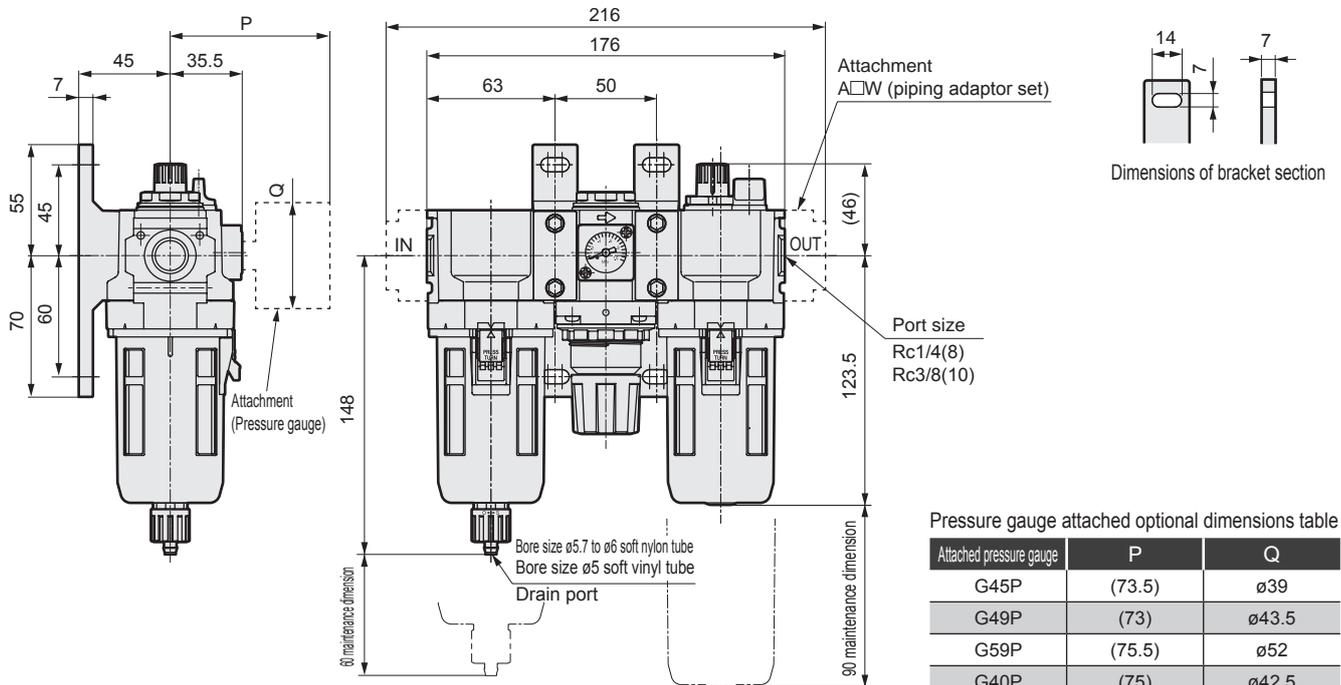


Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (73.5) | ø39 |
| G49P | (73) | ø43.5 |
| G40P | (75) | ø42.5 |
| G41P | (73.5) | ø42 |
| G52P | (85.5) | ø52.5 |

Dimensions

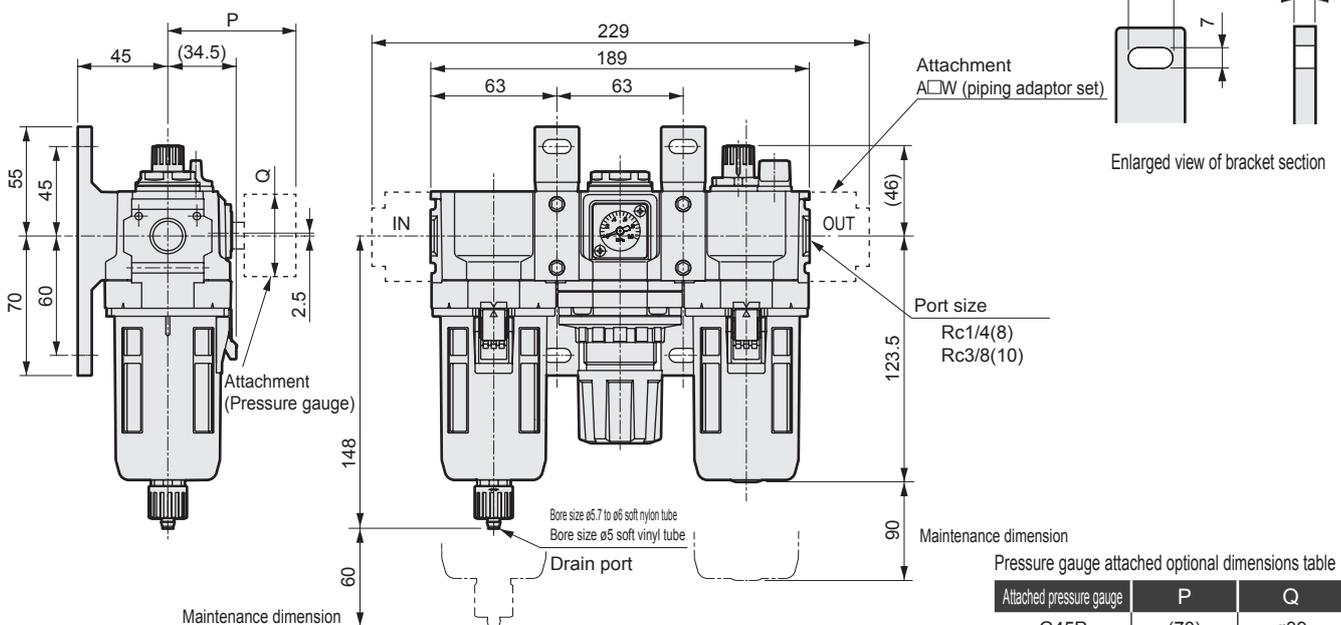
● C2500-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (73.5) | ø39 |
| G49P | (73) | ø43.5 |
| G59P | (75.5) | ø52 |
| G40P | (75) | ø42.5 |
| G50P | (75) | ø52.5 |
| G41P | (73.5) | ø42 |
| G52P | (85.5) | ø52.5 |

● C3000-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (70) | ø39 |
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |
| G52P | (82) | ø52.5 |

● Refer to page 357 for dimensions of metal bowl option filter, and to page 400 for dimensions of lubricator.

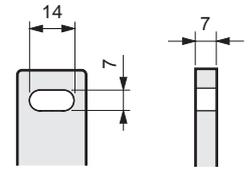
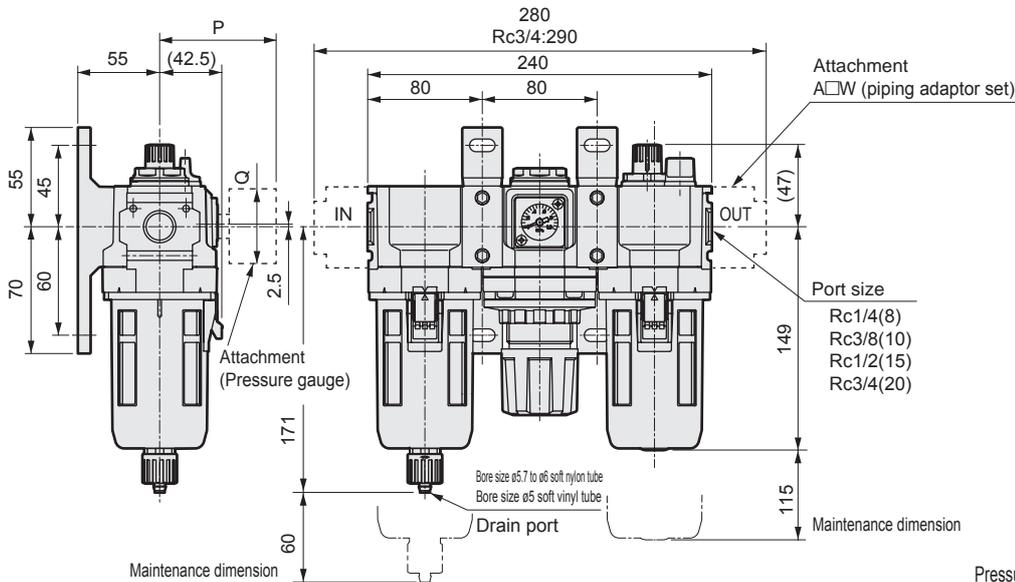
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

F.R.L. Combination

Dimensions

● C4000-W



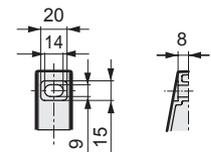
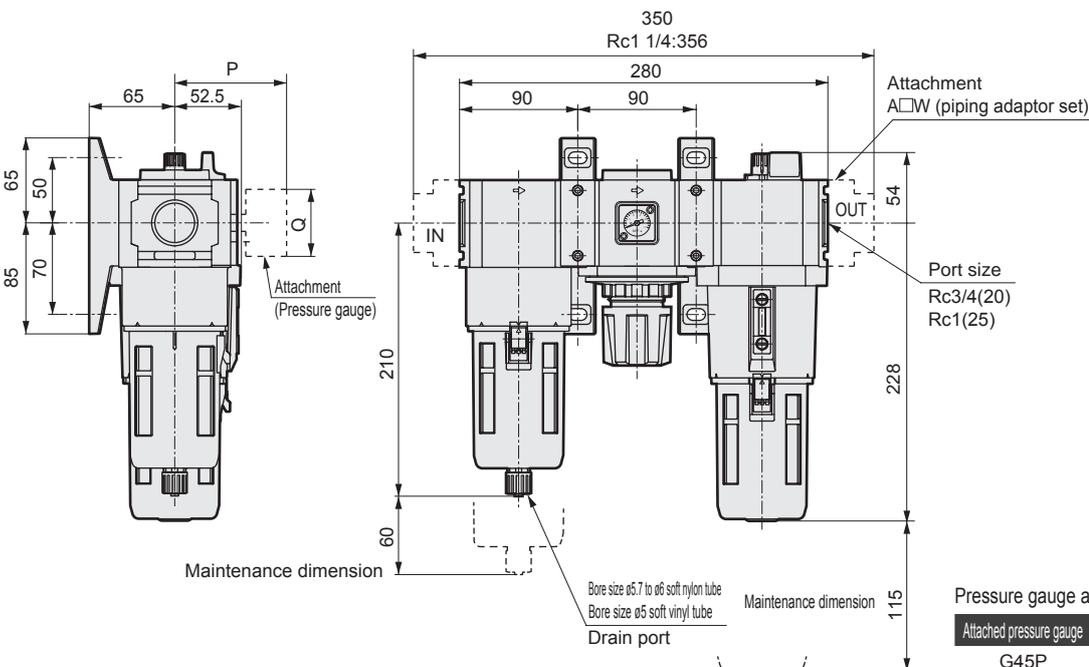
Enlarged view of bracket section

Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (75) | ø39 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |

■ Refer to page 357 for dimensions of metal bowl option filter, and to page 400 for dimensions of lubricator.

● C6500-W



Dimensions of bracket section

Pressure gauge attached optional dimensions table

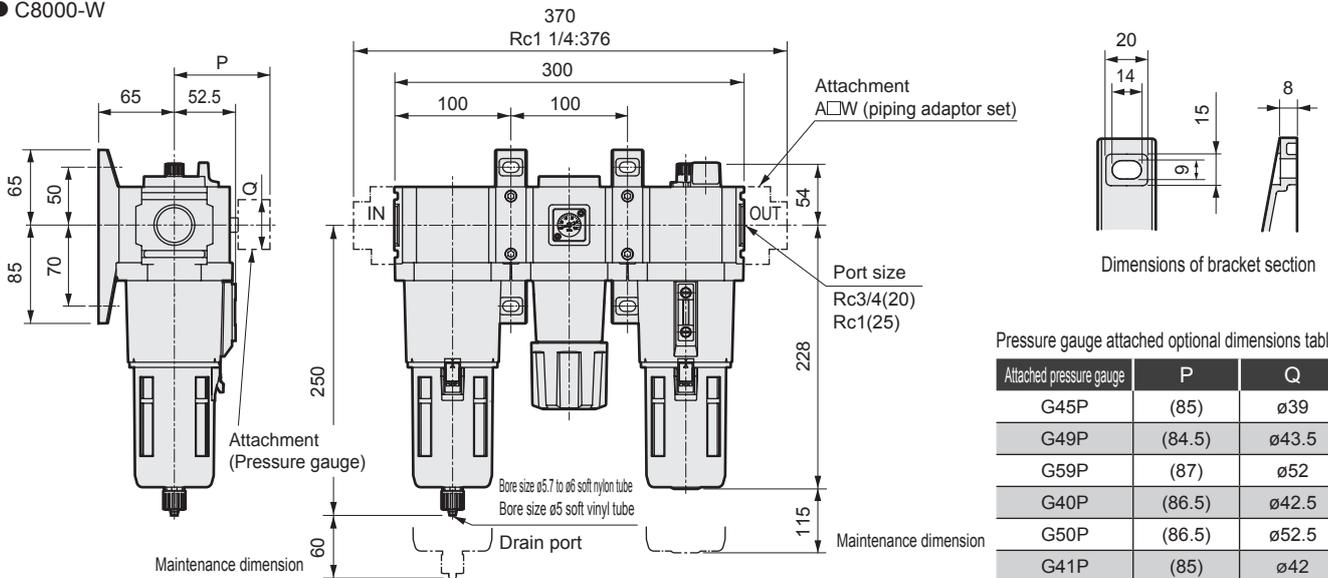
| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (80) | ø39 |
| G49P | (79.5) | ø43.5 |
| G59P | (82) | ø52 |
| G40P | (81.5) | ø42.5 |
| G50P | (81.5) | ø52.5 |
| G41P | (80) | ø42 |
| G52P | (93) | ø52.5 |

F.R.L. Combination

Option assembly dimensions

Dimensions

● C8000-W



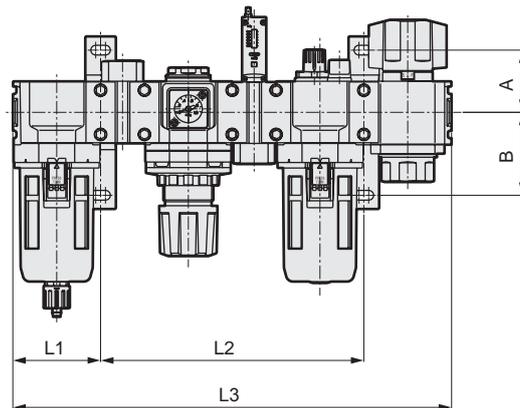
Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (85) | ø39 |
| G49P | (84.5) | ø43.5 |
| G59P | (87) | ø52 |
| G40P | (86.5) | ø42.5 |
| G50P | (86.5) | ø52.5 |
| G41P | (85) | ø42 |
| G52P | (98) | ø52.5 |

- Refer to page 357 for dimensions of metal bowl option filter, and to page 400 for dimensions of lubricator.

Option assembly dimensions

● C1000-W to C8000-W



| Model no. | A | B |
|-----------|----|----|
| C1000-W | 35 | 45 |
| C2000-W | 45 | 60 |
| C2500-W | | |
| C3000-W | | |
| C4000-W | | |
| C6050-W | 50 | 70 |
| C8000-W | | |

| Assembled option Model no. | D | | | S | | | P | | | V | | | K | | | DS | | | DP | | | DV | | | DK | | |
|-------------------------------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|
| | L1 | L2 | L3 |
| C1000-W | 40 | 68 | 148 | 40 | 68 | 148 | - | - | - | 40 | 80 | 160 | - | - | - | 40 | 96 | 176 | - | - | - | 40 | 108 | 188 | - | - | - |
| C2000-W | 50 | 81.5 | 194.5 | 50 | 81.5 | 194.5 | 50 | 130 | 243 | 50 | 113 | 226 | 50 | 113 | 226 | 50 | 113 | 226 | 50 | 161.5 | 274.5 | 50 | 144.5 | 257.5 | 50 | 144.5 | 257.5 |
| C2500-W | 63 | 81.5 | 207.5 | 63 | 81.5 | 207.5 | 63 | 130 | 256 | 63 | 113 | 239 | 63 | 113 | 239 | 63 | 113 | 239 | 63 | 161.5 | 287.5 | 63 | 144.5 | 270.5 | 63 | 144.5 | 270.5 |
| C3000-W | 63 | 94.5 | 220.5 | 63 | 94.5 | 220.5 | 63 | 143 | 269 | 63 | 126 | 252 | 63 | 126 | 252 | 63 | 126 | 252 | 63 | 174.5 | 300.5 | 63 | 157.5 | 283.5 | 63 | 157.5 | 283.5 |
| C4000-W | 80 | 111.5 | 271.5 | 80 | 111.5 | 271.5 | 80 | 160 | 320 | 80 | 160 | 303 | 80 | 160 | 303 | 80 | 143 | 303 | 80 | 191.5 | 351.5 | 80 | 191.5 | 334.5 | 80 | 191.5 | 334.5 |
| C4000-20-W Note 1 | 100 | 111.5 | 311.5 | 100 | 111.5 | 311.5 | 100 | 160 | 360 | 100 | 160 | 343 | 100 | 160 | 343 | 100 | 143 | 343 | 100 | 191.5 | 391.5 | 100 | 191.5 | 374.5 | 100 | 191.5 | 374.5 |
| C6500-W | 90 | 140 | 330 | 90 | 140 | 330 | - | - | - | - | - | - | 90 | 190 | 370 | 90 | 190 | 380 | - | - | - | - | - | - | 90 | 240 | 420 |
| C8000-W | 100 | 150 | 350 | 100 | 150 | 350 | - | - | - | - | - | - | 100 | 200 | 390 | 100 | 200 | 400 | - | - | - | - | - | - | 100 | 250 | 440 |
| Assembled option Model no. | DSV | | | DSK | | | DPV | | | DPK | | | SV | | | SK | | | PV | | | PK | | | | | |
| C1000-W | 40 | 136 | 216 | - | - | - | - | - | - | - | - | - | 40 | 100 | 188 | - | - | - | - | - | - | - | - | - | - | - | - |
| C2000-W | 50 | 176 | 289 | 50 | 176 | 289 | 50 | 224.5 | 337.5 | 50 | 224.5 | 337.5 | 50 | 144.5 | 257.5 | 50 | 144.5 | 257.5 | 50 | 193 | 306 | 50 | 193 | 306 | 50 | 193 | 306 |
| C2500-W | 63 | 176 | 302 | 63 | 176 | 302 | 63 | 224.5 | 350.5 | 63 | 224.5 | 350.5 | 63 | 144.5 | 270.5 | 63 | 144.5 | 270.5 | 63 | 193 | 319 | 63 | 193 | 319 | 63 | 193 | 319 |
| C3000-W | 63 | 189 | 315 | 63 | 189 | 315 | 63 | 237.5 | 363.5 | 63 | 237.5 | 363.5 | 63 | 157.5 | 283.5 | 63 | 157.5 | 283.5 | 63 | 206 | 332 | 63 | 206 | 332 | 63 | 206 | 332 |
| C4000-W | 80 | 223 | 366 | 80 | 223 | 366 | 80 | 271.5 | 414.5 | 80 | 271.5 | 414.5 | 80 | 191.5 | 334.5 | 80 | 191.5 | 334.5 | 80 | 240 | 383 | 80 | 240 | 383 | 80 | 240 | 383 |
| C4000-20-W Note 1 | 100 | 223 | 406 | 100 | 223 | 406 | 100 | 271.5 | 454.5 | 100 | 271.5 | 454.5 | 100 | 191.5 | 374.5 | 100 | 191.5 | 374.5 | 100 | 240 | 423 | 100 | 240 | 423 | 100 | 240 | 423 |
| C6500-W | - | - | - | 90 | 290 | 470 | - | - | - | - | - | - | - | - | - | 90 | 240 | 420 | - | - | - | - | - | - | - | - | - |
| C8000-W | - | - | - | 100 | 300 | 490 | - | - | - | - | - | - | - | - | - | 100 | 250 | 440 | - | - | - | - | - | - | - | - | - |

L1: Dimensions from the IN edge to center of the T-type bracket mounting hole
 L2: Spacing dimensions of the mounting hole from the first T-type bracket to the second T-type bracket
 L3: Dimensions from the IN edge to the OUT edge

* Refer to page 425 for details on bracket mounting hole dimensions.
 Note 1: The piping adaptor is assembled on the OUT side. Piping adaptor A400-20-W is attached on the both ends of C4000-20-W.



W.L. combination standard white Series

C1010/C2010/C3010/C4010/C8010-W Series

Filter, regulator and lubricator integrated.

Port size: 1/8 to 1

JIS symbol 



Specifications

| Descriptions | | C1010-W | C2010-W | C3010-W | C4010-W | C8010-W |
|--|------------|---|---|---|---|---|
| Appearance | |  |  |  |  |  |
| | Components | Filter/regulator Lubricator | W1000-W L1000-W | W2000-W L3000-W | W3000-W L3000-W | W4000-W L4000-W |
| Working fluid | | Compressed air | | | | |
| Max. working pressure MPa | | 1.0 Note 2 | | | | |
| Withstanding pressure MPa | | 1.5 | | | | |
| Ambient temperature range °C | | 5 to 60 | | | | |
| Filtration rating μm | | 5 | | | | |
| Set pressure range MPa | | 0.05 to 0.85 (Note 2) | | 0.05 to 0.85 | | |
| Min. drip flow (Note 1) m ³ /min. (ANR) | | 0.015 | 0.03 | 0.03 | 0.065 | 0.065 |
| Relief | | With relief mechanism | | | | |
| Oil capacity cm ³ | | 20 | 85 | 85 | 170 | 170(MAX360) |
| Drain capacity cm ³ | | 12 | 25 | 45 | 80 | 80(Note 3) |
| Use oil | | Turbine oil Class 1 ISO VG32 (spindle oil can not be used) | | | | |
| Port size Rc, NPT, G | | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.31 | 0.77 | 0.97 | 1.45 | 3.57 |
| Standard accessories | | Pressure gauge, bracket, bowl guard | | | | |

Note 1: The minimum drip flow is that at which five drops of turbine oil drip per minute at the set pressure of 0.5 MPa.

Note 2: When using C1010-W series "F1" with an automatic drain, the minimum operating pressure is 0.2 MPa and maximum operation pressure is 0.7 MPa.

Refer to the maximum processing flow table (page 350) for the F1000-W-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.

Note 3: Drainage accumulates up to 170 cm³ only with the manual drain cock.

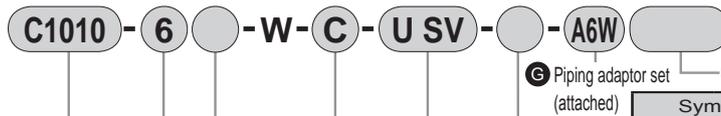
Note 4: The automatic drain's minimum operating pressure for "F" or "FF" with an automatic drain is 0.1 MPa. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

Note 5: The minimum operation pressure of the automatic drain is 0.15 MPa for the "F1" or "FF1" with an automatic drain.

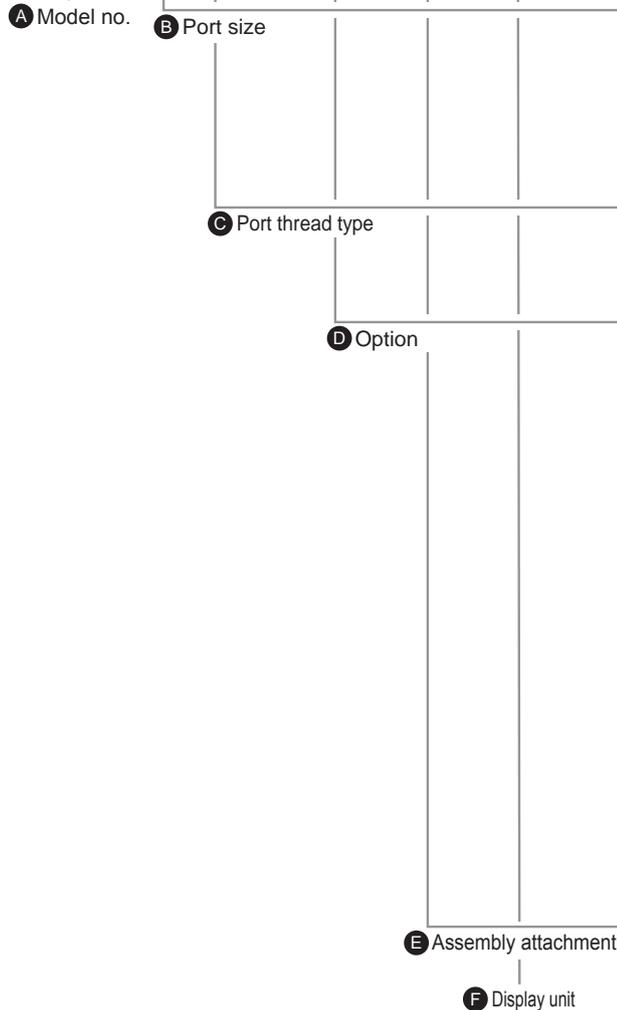
Note 6: Refer to maximum flow rate on page 352 for element option "Y". Set the working flow to less than the maximum working flow.

Note 7: When using the "F1" with automatic drain, use the C2010-W Series at less than the maximum flow rate. (Refer to F2000-W on page 350 for the maximum flow rate.)

How to order



*Refer to page 274 for the explanation of the option.



Note on model no. selection

- Note 1: Piping adaptor A400-20*-W is attached on the both ends of C4010-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2: When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target, as are attachments P and V.
- Note 3: Select options per drainage, bowl material, element, and regulator sections. When selecting options for several items, list options in order from the top.
- Note 4: Refer to page 276 for the automatic drain use conditions.
- Note 5: When selecting option "M1", select the drain discharge option "C", "F" or "F1".
- Note 6: Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 7: The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 8: Installation position for assembly attachments

| Symbol | Installation position | Applicable model |
|--------|-----------------------|---|
| S or P | W+(S, P)+L | C1010-W to C8010-W (Excluding 8000 for "P") |
| V or K | W+M+(V, K) | C1010-W to C8010-W (Excluding 8000 for "V" or 1000 for "K") |

- Note) Indicate "U"+"D", "S", "P", "V" and "K" when selecting an assembly attachment. Use custom combinations specifications for any other combination.
- Note 9: The joiner set is enclosed with the piping adaptor set.
- Note 10: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

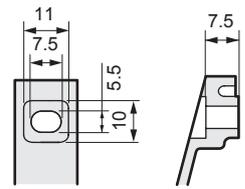
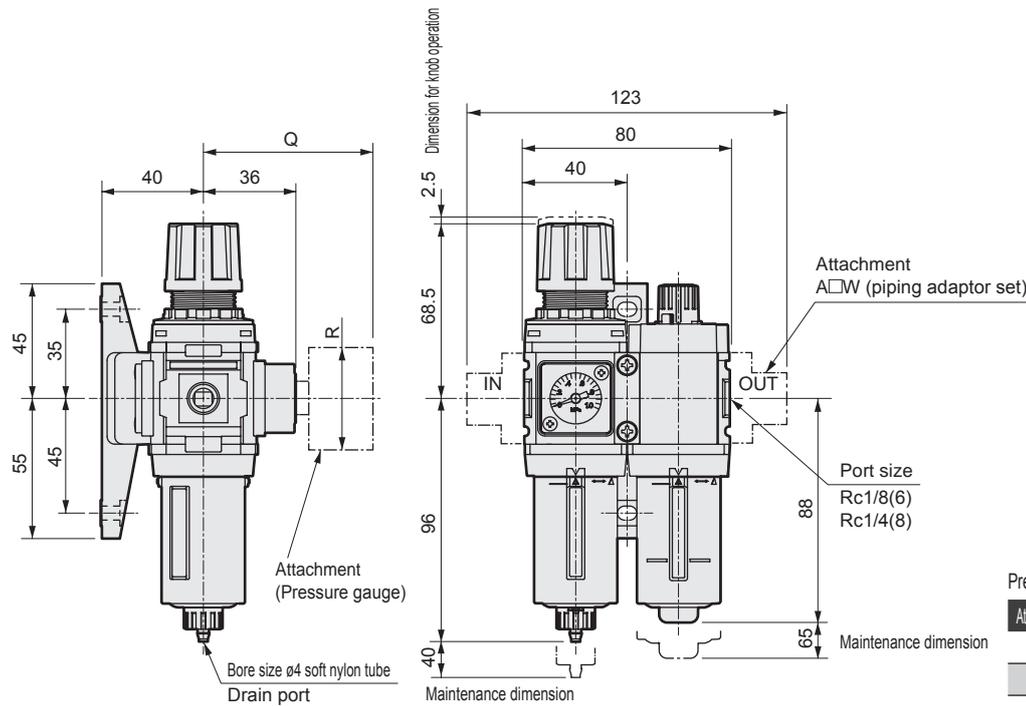
| Symbol | | Descriptions | Model no. | | | | |
|------------------------------------|-------|---|----------------------------|-------|-------|-------|--------|
| B Port size | | | C1010 | C2010 | C3010 | C4010 | C8010 |
| 6 | | 1/8 | ● | | | | |
| 8 | | 1/4 | ● | ● | ● | ● | |
| 10 | | 3/8 | | ● | ● | ● | |
| 15 | | 1/2 | | | | ● | Note 1 |
| 20 | | 3/4 | | | | | ● |
| 25 | | 1 | | | | | ● |
| C Port thread type | | | Note 2 | | | | |
| Blank | | Rc thread | ● | ● | ● | ● | ● |
| N | | NPT thread | ● | ● | ● | ● | ● |
| G | | G thread | ● | ● | ● | ● | ● |
| D Option | | | Note 3 | | | | |
| Drainage | Blank | Filter with manual drain cock, lubricator without manual drain cock | ● | ● | ● | ● | ● |
| | C | Lubricator with manual cock | ● | ● | ● | ● | ● |
| | F | Filter/auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | ● | ● | ● |
| | F1 | Filter/auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● |
| | FF | Filter/large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | ● | ● | ● |
| Note 4 | FF1 | Filter/large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | ● | ● | ● |
| | Blank | Polycarbonate bowl | ● | ● | ● | ● | ● |
| Bowl material | Z | Nylon bowl | ● | ● | ● | ● | ● |
| | M | Metal bowl | | | ● | ● | ● |
| | M1 | Metal bowl with manual drain cock Note 5 | | | ● | ● | ● |
| Element | Blank | 5µm | ● | ● | ● | ● | ● |
| | Y | 0.3µm (submicron) Note 6 | | | ● | ● | ● |
| Pressure Range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa Note 7 | ● | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● | ● |
| | T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● | ● |
| | T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● | ● |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● |
| E Assembly attachment | | | Pages 402 to 413, 426, 427 | | | | |
| Blank | | Without assembly attachment type | ● | ● | ● | ● | ● |
| U | | Assembly attachment type Note 8 | ● | ● | ● | ● | ● |
| Assembled | S | Pressure switch (P1100-W, 4100-W, 8100-W) | ● | ● | ● | ● | ● |
| | P | Pressure switch (P4000-W) | | | ● | ● | ● |
| | V | Shut-off valve (V1000-W, 3000-W) | ● | ● | ● | ● | ● |
| | K | Lockout valve (V3010-W, W6010-W) | | | ● | ● | ● |
| F Display unit | | | | | | | |
| Blank | | MPa display, Rc thread | ● | ● | ● | ● | ● |
| J1 | | MPa display, NPT, G thread | ● | ● | ● | ● | ● |
| G Piping adaptor set (attached) | | | Page 428 Note 9 | | | | |
| Blank | | Not attached | ● | ● | ● | ● | ● |
| A6*W | | Rc1/8 piping adaptor set | ● | | | | |
| A8*W | | Rc1/4 piping adaptor set | ● | ● | ● | ● | |
| A10*W | | Rc3/8 piping adaptor set | ● | ● | ● | ● | |
| A15*W | | Rc1/2 piping adaptor set | | ● | ● | ● | |
| A20*W | | Rc3/4 piping adaptor set | | | | ● | ● |
| A25*W | | Rc1 piping adaptor set | | | | | ● |
| A32*W | | Rc1 1/4 piping adaptor set | | | | | ● |
| *Adaptor screw type | | | | | | | |
| Blank | | Rc thread | ● | ● | ● | ● | ● |
| N | | NPT thread | ● | ● | ● | ● | ● |
| G | | G thread | ● | ● | ● | ● | ● |
| H Pressure gauge option (attached) | | | Note 10 Page 659 | | | | |
| Blank | | Not attached | ● | ● | ● | ● | ● |
| G45P | | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● | ● |
| G49P | | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● | ● |
| G59P | | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● | ● |
| G40P | | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● | ● |
| G50P | | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● | ● |
| G41P | | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● | ● |
| G52P | | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● | ● |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |
| Standard series |
| F.R.L. unit |

W.L. Combination

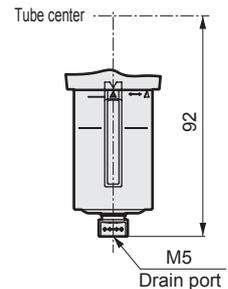
Dimensions

● C1010-W



Enlarged view of bracket section

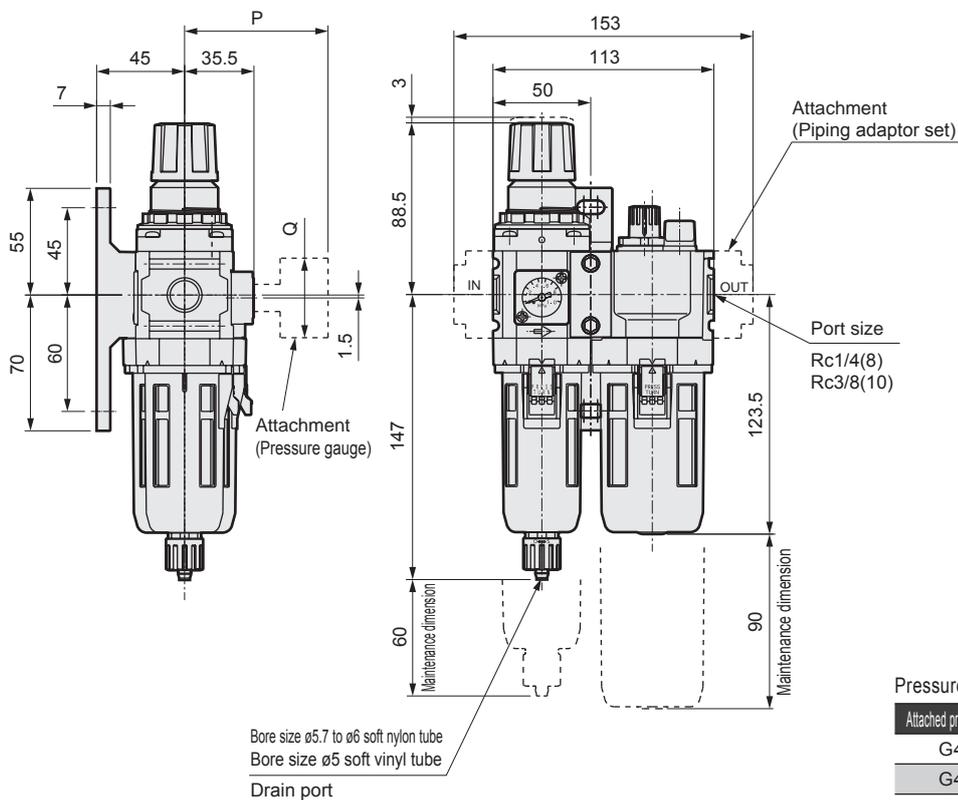
• Option dimensions With automatic drain (F1)



Pressure gauge attached optional dimensions table

| Attached pressure gauge | Q | R |
|-------------------------|--------|-------|
| G45P | (74) | ø39 |
| G49P | (73.5) | ø43.5 |
| G59P | (76) | ø52 |
| G40P | (75.5) | ø42.5 |
| G50P | (75.5) | ø52.5 |
| G41P | (74) | ø42 |
| G52P | (86) | ø52.5 |

● C2010-W

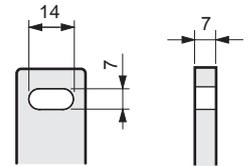
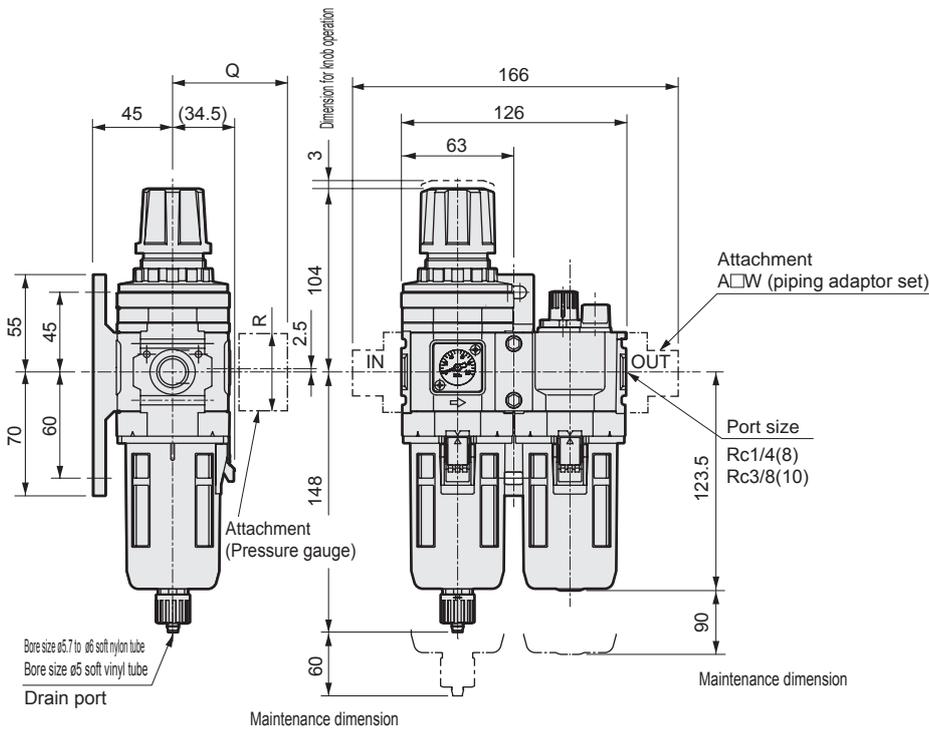


Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (73.5) | ø39 |
| G49P | (73) | ø43.5 |
| G40P | (75) | ø42.5 |
| G41P | (73.5) | ø42 |
| G52P | (85.5) | ø52.5 |

Dimensions

● C3010-W



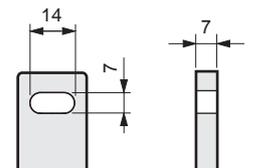
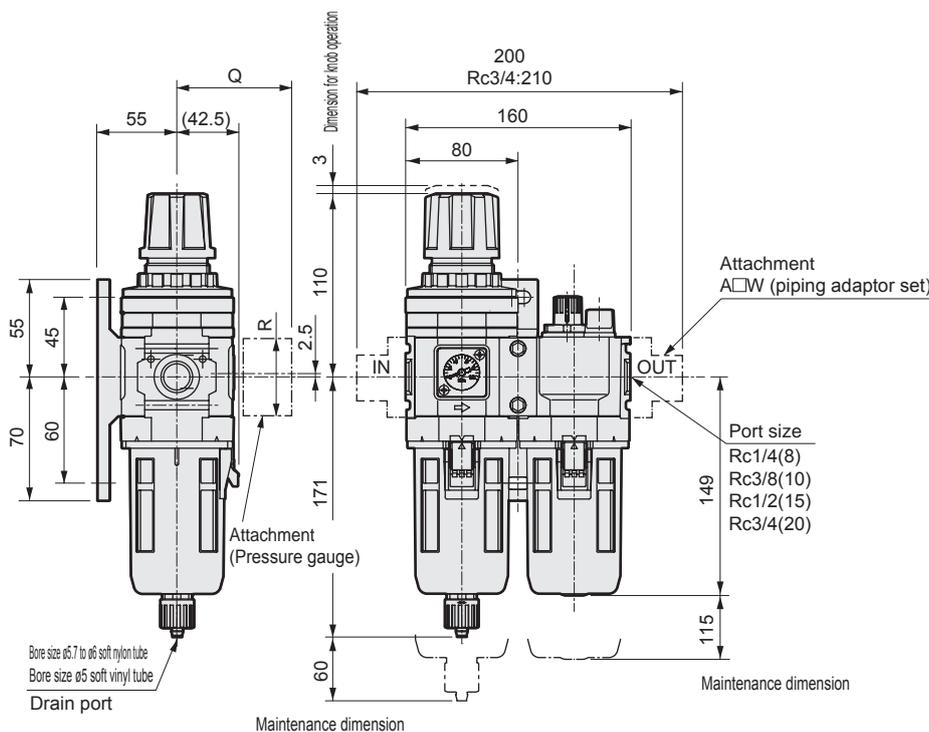
Enlarged view of bracket section

Pressure gauge attached optional dimensions table

| Attached pressure gauge | Q | R |
|-------------------------|--------|-------|
| G45P | (70) | ø39 |
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |
| G52P | (82) | ø52.5 |

- Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 400 for the lubricator.

● C4010-W



Enlarged view of bracket section

Pressure gauge attached optional dimensions table

| Attached pressure gauge | Q | R |
|-------------------------|--------|-------|
| G45P | (75) | ø39 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |

- * Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 400 for the lubricator.

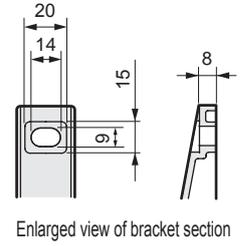
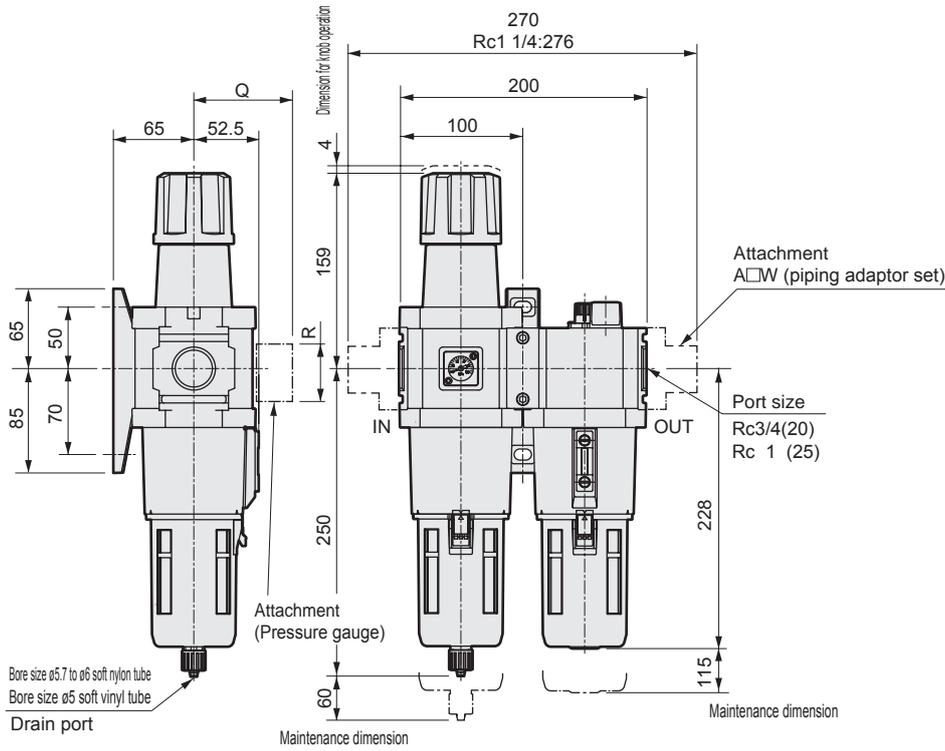
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Standard series
F.R.L. unit

W.L. Combination

Dimensions

● C8010-W



Enlarged view of bracket section

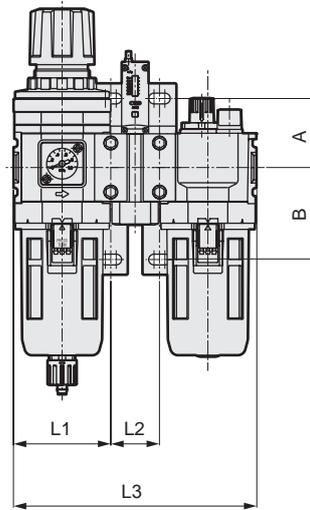
Pressure gauge attached optional dimensions table

| Attached pressure gauge | Q | R |
|-------------------------|--------|-------|
| G45P | (85) | ø39 |
| G49P | (84.5) | ø43.5 |
| G59P | (87) | ø52 |
| G40P | (86.5) | ø42.5 |
| G50P | (86.5) | ø52.5 |
| G41P | (85) | ø42 |
| G52P | (98) | ø52.5 |

- Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 400 for the lubricator.

Option assembly dimensions

● C1010-W to C8010-W



| Model no. | A | B |
|-----------|----|----|
| C1010-W | 35 | 45 |
| C2010-W | 45 | 60 |
| C3010-W | | |
| C4010-W | 50 | 70 |
| C8010-W | | |

| Assembled option Model no. | S | | | P | | | V | | | K | | | SV | | | SK | | | PV | | | PK | | |
|-------------------------------|-----|------|-------|-----|----|-----|-----|----|-----|-----|-----|-----|-----|-------|-------|-----|-------|-------|-----|-----|-----|-----|-----|-----|
| | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| C1010-W | 40 | 28 | 108 | - | - | - | 40 | 40 | 120 | - | - | - | 40 | 68 | 148 | - | - | - | - | - | - | - | - | - |
| C2010-W | 50 | 31.5 | 144.5 | 50 | 80 | 193 | 50 | 63 | 176 | 50 | 63 | 176 | 50 | 94.5 | 207.5 | 50 | 94.5 | 207.5 | 50 | 143 | 256 | 50 | 143 | 256 |
| C3010-W | 63 | 31.5 | 157.5 | 63 | 80 | 206 | 63 | 63 | 189 | 63 | 63 | 189 | 63 | 94.5 | 220.5 | 63 | 94.5 | 220.5 | 63 | 143 | 269 | 63 | 143 | 269 |
| C4010-W | 80 | 31.5 | 191.5 | 80 | 80 | 240 | 80 | 80 | 223 | 80 | 80 | 223 | 80 | 111.5 | 271.5 | 80 | 111.5 | 271.5 | 80 | 160 | 303 | 80 | 160 | 303 |
| C4010-20-W Note 1 | 100 | 31.5 | 231.5 | 100 | 80 | 280 | 100 | 80 | 263 | 100 | 80 | 263 | 100 | 111.5 | 294.5 | 100 | 111.5 | 294.5 | 100 | 160 | 343 | 100 | 160 | 343 |
| C8010-W | 100 | 50 | 250 | - | - | - | - | - | - | 100 | 100 | 290 | - | - | - | 100 | 150 | 340 | - | - | - | - | - | - |

L1: Dimensions from the IN edge to center of the T-type bracket mounting hole
 L2: Spacing dimensions of the mounting hole from the first T-type bracket to the second T-type bracket
 L3: Dimensions from the IN edge to the OUT edge

* Refer to page 425 for details on bracket mounting hole dimensions.
 Note 1: The piping adaptor is assembled on the OUT side. Piping adaptor A400-20-W is attached on the both ends of C4010-20-W.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



F.R. combination standard white Series
C1020/C2020/C2520-W
C3020/C4020/C6020/C8020-W Series

Filter and regulator integrated.

Port size: 1/8 to 1



Specifications

| Descriptions | | C1020-W | C2020-W | C2520-W | C3020-W | C4020-W | C6020-W | C8020-W |
|--------------------------------|-----------|-------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | | | | |
| Components | Filter | F1000-W | F2000-W | F3000-W | F3000-W | F4000-W | F6000-W | F8000-W |
| | Regulator | R1000-W | R2000-W | R2000-W | R3000-W | R4000-W | R6000-W | R8000-W |
| Working fluid | | Compressed air | | | | | | |
| Max. working pressure MPa | | 1.0 Note 2 | | | | | | |
| Withstanding pressure MPa | | 1.5 | | | | | | |
| Ambient temperature range °C | | 5 to 60 | | | | | | Note 1 |
| Filtration rating μm | | 5 | | | | | | |
| Set pressure range MPa | | 0.05 to 0.85 Note 2 | 0.05 to 0.85 | | | | | |
| Relief | | With relief mechanism | | | | | | |
| Drain capacity cm ³ | | 12 | 25 | 45 | 45 | 80 | 80 | 80(Note 3) |
| Port size RC, NPT, G | | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.28 | 0.64 | 0.65 | 0.79 | 1.25 | 2.07 | 2.93 |
| Standard accessories | | Pressure gauge, bracket, bowl guard | | | | | | |

Note 1: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

Note 2: When using C1020 series "F1" with an automatic drain, the minimum operating pressure is 0.2 MPa and maximum operation pressure is 0.7 MPa.

Refer to the maximum processing flow table (page 350) for the F1000-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.

Note 3: Drainage accumulates up to 170 cm³ only with the manual drain cock.

Note 4: The automatic drain's minimum operating pressure for "F" or "FF" with an automatic drain is 0.1 MPa. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

Note 5: The automatic drain's minimum operating pressure for "F1" or "FF1" with an automatic drain is 0.15 MPa.

Note 6: When element option "Y" is selected, refer to page 352 for maximum flow. Set the working flow to less than the maximum working flow.

Note 7: When using the "F1" with automatic drain, use the C2020-W Series at less than the maximum flow rate. (Refer to F2000-W on page 350 for the maximum flow rate.)

F.R. Combination

How to order

How to order

C1020 - **6** - **W** - **L** - **U DSV** - **A6W** - **H**

A Model no. **B** Port size **C** Port thread type **D** Option **E** Assembly attachment **F** Display unit

* Refer to page 274 for the explanation of the option.

G Piping adaptor set (attached) **H** Pressure gauge option (attached)

A Model no.

| C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 |
|-------|-------|-------|-------|-------|-------|-------|
| ● | ● | ● | ● | ● | ● | ● |

| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
|--------------------|--------------|-------|-------|-------|-------|-------|-------|-------|--|
| B Port size | | | | | | | | | |
| 6 | 1/8 | ● | | | | | | | |
| 8 | 1/4 | ● | ● | ● | ● | ● | | | |
| 10 | 3/8 | | ● | ● | ● | ● | | | |
| 15 | 1/2 | | | | | ● | ● | | |
| 20 | 3/4 | | | | | | ● | ● | |
| 25 | 1 | | | | | | | ● | |

| C Port thread type | | | | | | | | | |
|---------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|--|
| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | ● | ● | ● | |

| D Option | | | | | | | | | |
|--|---|-------|-------|-------|-------|-------|-------|-------|--|
| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
| Drainage | | | | | | | | | |
| Blank | Filter with manual drain cock | ● | ● | ● | ● | ● | ● | ● | |
| F | Filter/auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | ● | ● | ● | ● | ● | |
| F1 | Filter/auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● | ● | ● | |
| FF | Filter/large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | | | | ● | |
| FF1 | Filter/large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | | | | ● | |
| Bowl material | | | | | | | | | |
| Blank | Polycarbonate bowl | ● | ● | ● | ● | ● | ● | ● | |
| Z | Nylon bowl | ● | ● | ● | ● | ● | ● | ● | |
| M | Metal bowl | | | ● | ● | ● | ● | ● | |
| M1 | Metal bowl with manual drain cock | | | ● | ● | ● | ● | ● | |
| Element | | | | | | | | | |
| Blank | 5μm | ● | ● | ● | ● | ● | ● | ● | |
| Y | 0.3μm (submicron) Note 5 | ● | ● | ● | ● | ● | ● | ● | |
| Differential pressure detection | | | | | | | | | |
| Blank | Without differential pressure detection port | ● | ● | ● | ● | ● | ● | ● | |
| Q | With differential pressure detection port (Rc1/4) | | | | | | | ● | |
| Pressure Range | | | | | | | | | |
| Blank | 0.05 to 0.85MPa | ● | ● | ● | ● | ● | ● | ● | |
| L | 0.05 to 0.35MPa Note 6 | ● | ● | ● | ● | ● | ● | ● | |
| Relief | | | | | | | | | |
| Blank | With relief mechanism | ● | ● | ● | ● | ● | ● | ● | |
| N | Nonrelief type | ● | ● | ● | ● | ● | ● | ● | |
| Pressure gauge | | | | | | | | | |
| Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● | ● | ● | ● | |
| T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● | ● | ● | ● | |
| T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● | ● | ● | ● | |
| T6 | Digital pressure sensor PPX attachment option Note 7 | ● | ● | ● | ● | ● | ● | ● | |
| R1 | Pressure switch with display PPD assembly Note 8 | ● | ● | ● | ● | ● | ● | ● | |
| Flow direction | | | | | | | | | |
| Blank | Standard flow (left → right) | ● | ● | ● | ● | ● | ● | ● | |
| X1 | IN/OUT reverse flow (right → left) | ● | ● | ● | ● | ● | ● | ● | |

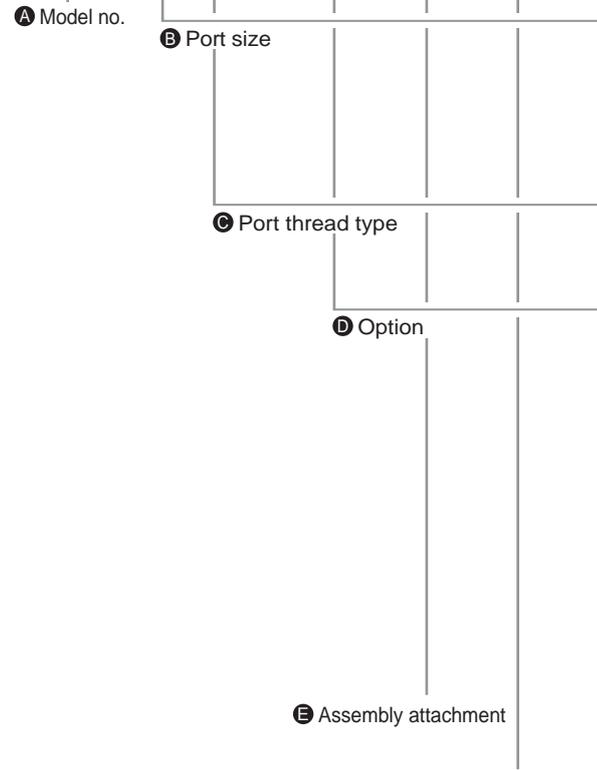
| E Assembly attachment | | | | | | | | | |
|------------------------------|---|-------|-------|-------|-------|-------|-------|-------|--|
| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
| Blank | Without assembly attachment type | ● | ● | ● | ● | ● | ● | ● | |
| U | Assembly attachment type Note 9 | ● | ● | ● | ● | ● | ● | ● | |
| Assembled | | | | | | | | | |
| D | Distributor (D101-W, D401-W, D801-W) | ● | ● | ● | ● | ● | ● | ● | |
| S | Pressure switch (P1100-W, 4100-W, 8100-W) | ● | ● | ● | ● | ● | ● | ● | |
| P | Pressure switch (P4000-W) | ● | ● | ● | ● | ● | ● | ● | |
| V | Shut-off valve (V1000-W, 3000-W) | ● | ● | ● | ● | ● | ● | ● | |
| K | Lockout valve (V3010-W, W6010-W) | ● | ● | ● | ● | ● | ● | ● | |

| F Display unit | | | | | | | | | |
|-----------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|--|
| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | ● | ● | |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | ● | ● | |

| G Piping adaptor set (attached) | | | | | | | | | |
|--|----------------------------|-------|-------|-------|-------|-------|-------|-------|--|
| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● | ● | |
| A6*W | Rc1/8 piping adaptor set | ● | | | | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | ● | ● | ● | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | ● | ● | ● | |
| A15*W | Rc1/2 piping adaptor set | | | | | | ● | ● | |
| A20*W | Rc3/4 piping adaptor set | | | | | | ● | ● | |
| A25*W | Rc1 piping adaptor set | | | | | | | ● | |
| A32*W | Rc1 1/4 piping adaptor set | | | | | | | ● | |

| *Adaptor screw type | | | | | | | | | |
|----------------------------|--------------|-------|-------|-------|-------|-------|-------|-------|--|
| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | ● | ● | ● | |

| H Pressure gauge option (attached) | | | | | | | | | |
|---|--------------------------------------|-------|-------|-------|-------|-------|-------|-------|--|
| Symbol | Descriptions | C1020 | C2020 | C2520 | C3020 | C4020 | C6020 | C8020 | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● | ● | |
| G45P | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● | ● | ● | ● | |
| G49P | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● | ● | ● | ● | |
| G59P | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● | ● | ● | ● | |
| G40P | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● | ● | ● | ● | |
| G50P | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● | ● | ● | ● | |
| G41P | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● | ● | ● | ● | |
| G52P | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● | ● | ● | ● | |
| R2 Note 9 | Digital pressure sensor: PPX-R10N-6M | ● | ● | ● | ● | ● | ● | ● | |



Note on model no. selection

- Note 1: Piping adaptor A400-20*-W is attached on the both ends of C4020-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2: When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target, as are attachments P and V.
- Note 3: Select options for each drainage, bowl material, element, differential pressure detection, and regulator items. When selecting options for several items, list options in order from the top.
- Note 4: Refer to page 276 for the automatic drain use conditions.
- Note 5: Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 6: The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 7: When option "T6" is selected, only "Blank" or "R2" can be selected for "H" pressure gauge (attached). The digital pressure sensor PPX mounting port (Rc1/8) is assembled by open.
- Note 8: The output type is NPN transistor output. Contact CKD when the PNP transistor output is required.
- Note 9: Installation position for assembly attachments

| Symbol | Installation position | Applicable model |
|--------|-----------------------|---|
| D | F+(D)+R | C1020-W to C8020-W |
| S | F+R+(S, P) | C1020-W to C8020-W (Excluding 1000,6000,8000 for "P") |
| V or K | F+R+(V, K) | C1020-W to C8020-W (Excluding 6000, 8000 for "V" or 1000 for "K") |

Note) Indicate "U"+"D", "S", "P", "V" and "K" when selecting an assembly attachment. Use custom combinations specifications for any other combination.

- Note 10: The joiner set is enclosed with the piping adaptor set.
- Note 11: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

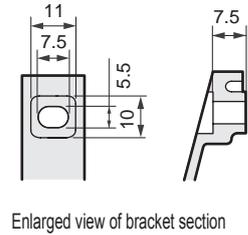
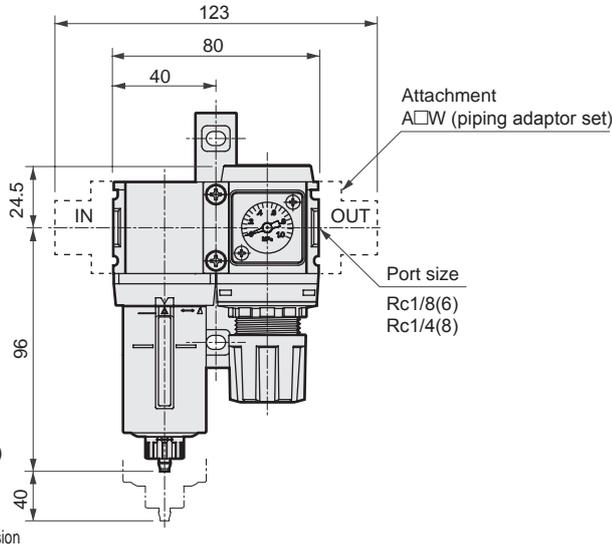
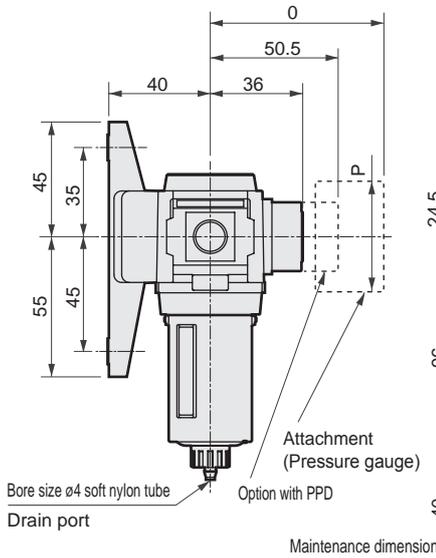
- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series F.R.L. unit

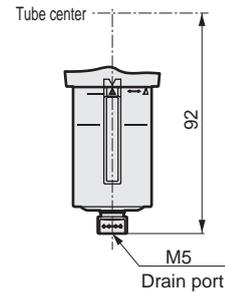
F.R. Combination

Dimensions

● C1020-W



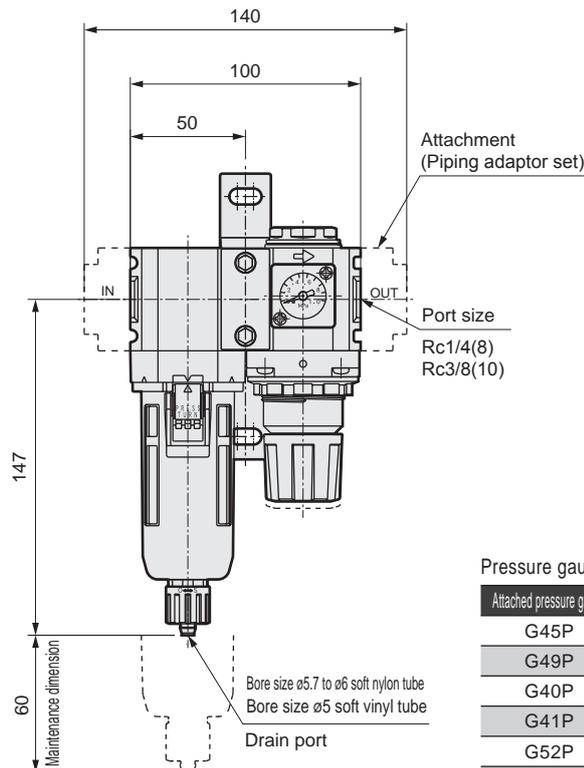
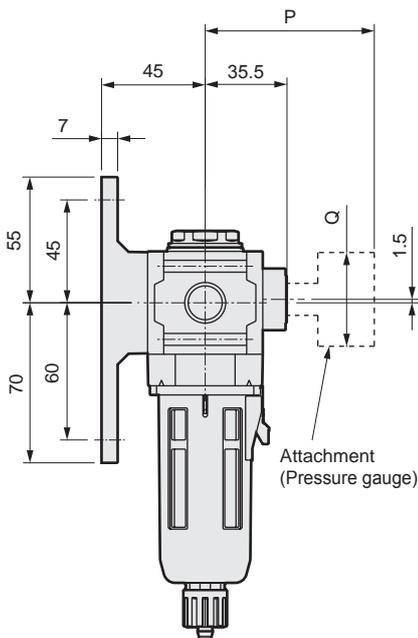
• Option dimensions
With automatic drain (F1)



Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (74) | ø39 |
| G49P | (73.5) | ø43.5 |
| G59P | (76) | ø52 |
| G40P | (75.5) | ø42.5 |
| G50P | (75.5) | ø52.5 |
| G41P | (74) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (74) | □30 |

● C2020-W

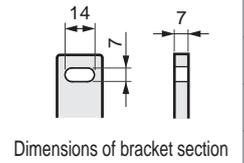
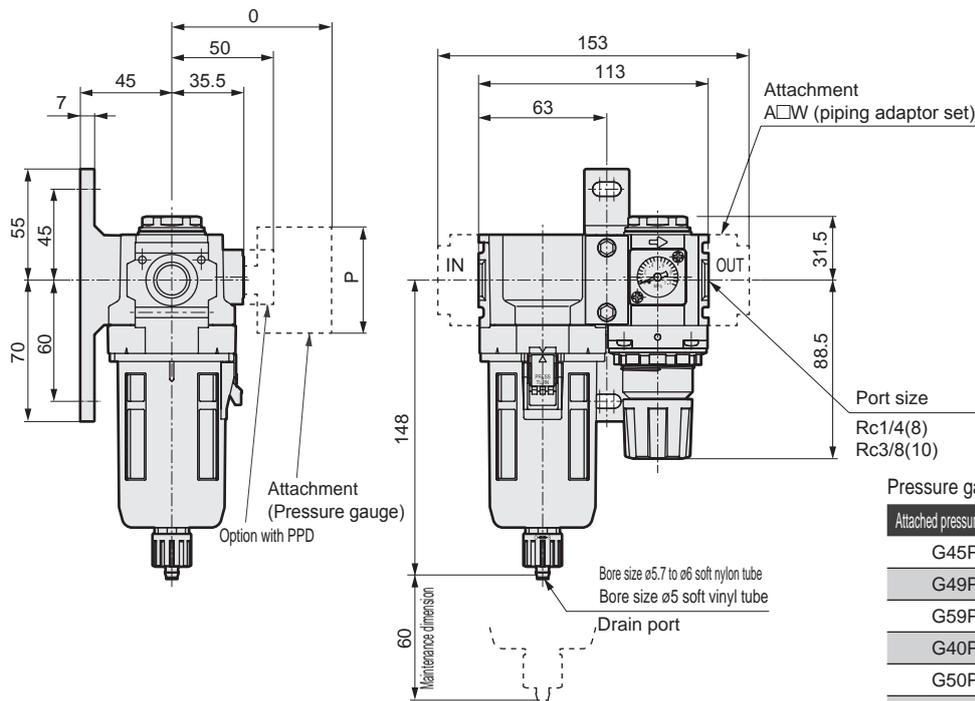


Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (73.5) | ø39 |
| G49P | (73) | ø43.5 |
| G40P | (75) | ø42.5 |
| G41P | (73.5) | ø42 |
| G52P | (85.5) | ø52.5 |
| R2 | (73) | □30 |

Dimensions

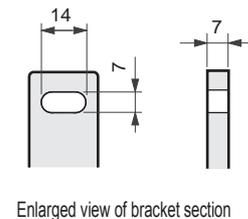
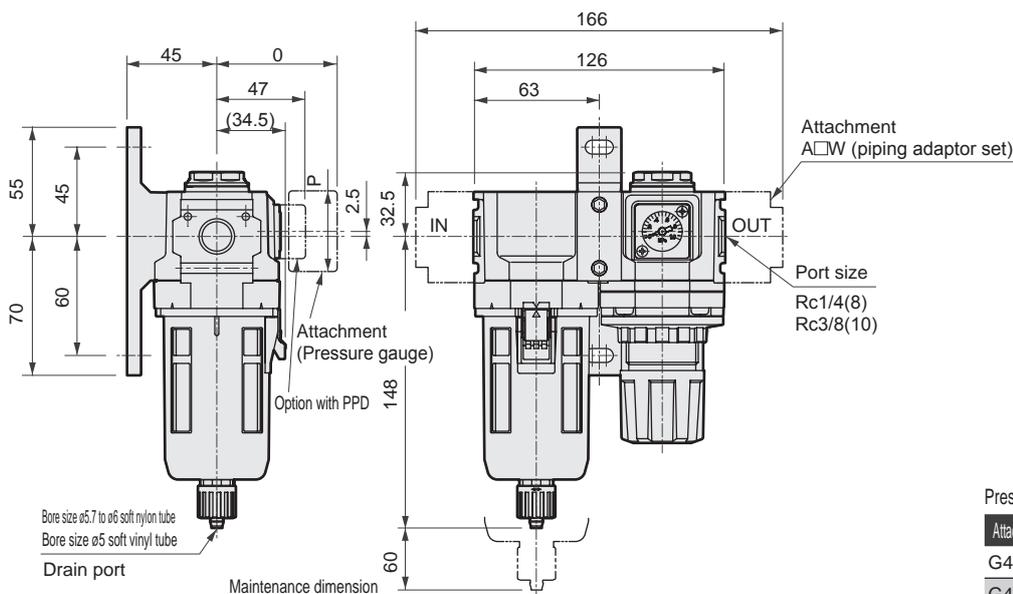
● C2520-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (73.5) | ø39 |
| G49P | (73) | ø43.5 |
| G59P | (75.5) | ø52 |
| G40P | (75) | ø42.5 |
| G50P | (75) | ø52.5 |
| G41P | (73.5) | ø42 |
| G52P | (85.5) | ø52.5 |
| R2 | (73) | □30 |

● C3020-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (70) | ø39 |
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |
| G52P | (82) | ø52.5 |
| R2 | (69.5) | □30 |

● Refer to page 357 for option dimensions of metal bowl.

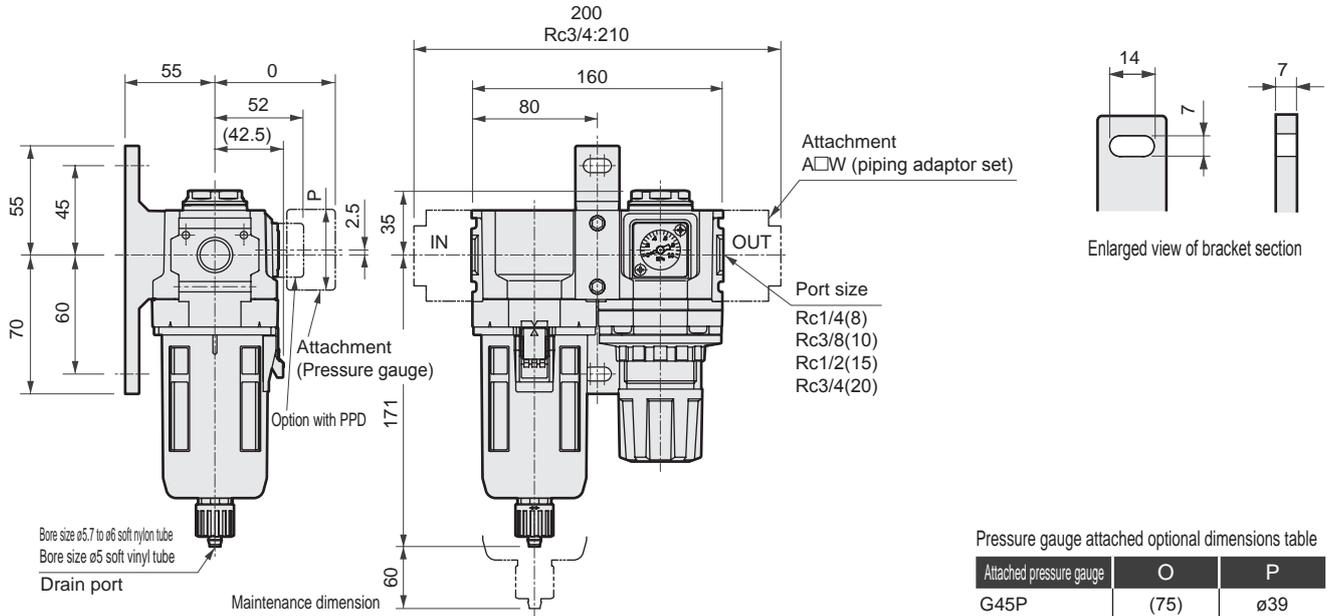
- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series
F.R.L. unit

F.R. Combination

Dimensions

● C4020-W

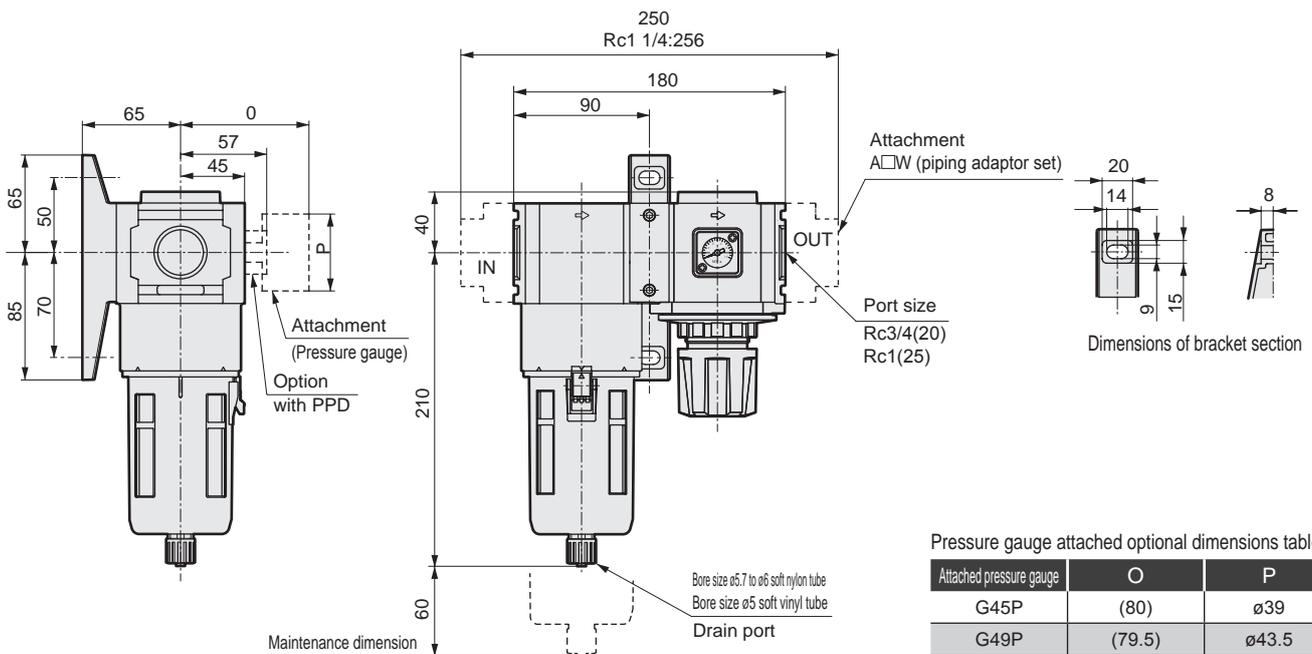


● Refer to page 357 for option dimensions of metal bowl.

Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (75) | ø39 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (75) | □30 |

● C6020-W



Pressure gauge attached optional dimensions table

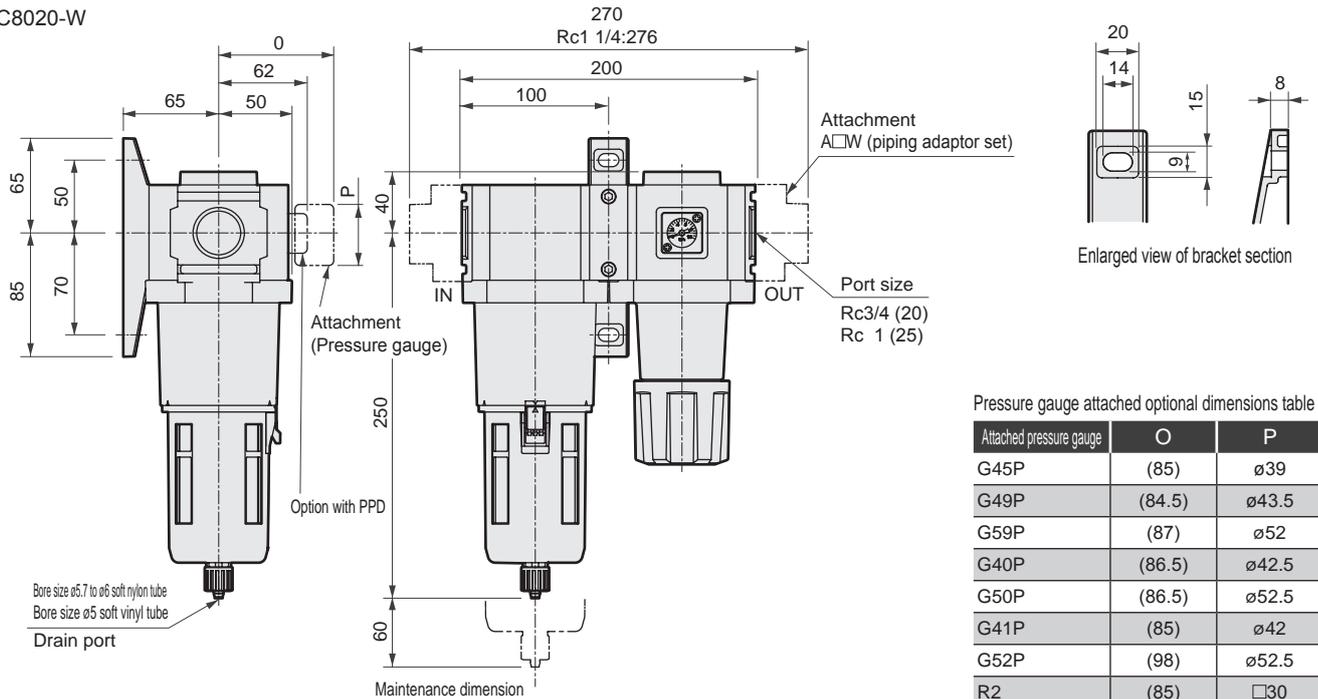
| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (80) | ø39 |
| G49P | (79.5) | ø43.5 |
| G59P | (82) | ø52 |
| G40P | (81.5) | ø42.5 |
| G50P | (81.5) | ø52.5 |
| G41P | (80) | ø42 |
| G52P | (93) | ø52.5 |
| R2 | (80) | □30 |

F.R. Combination

Option assembly dimensions

Dimensions

● C8020-W



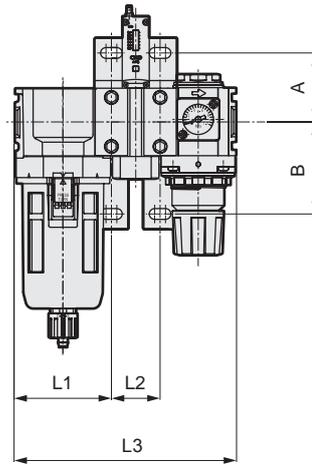
● Refer to page 357 for option dimensions of metal bowl.

Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (85) | ø39 |
| G49P | (84.5) | ø43.5 |
| G59P | (87) | ø52 |
| G40P | (86.5) | ø42.5 |
| G50P | (86.5) | ø52.5 |
| G41P | (85) | ø42 |
| G52P | (98) | ø52.5 |
| R2 | (85) | □30 |

Option assembly dimensions

● C1020-W to C8020-W



| Model no. | A | B |
|-----------|----|----|
| C1020-W | 35 | 45 |
| C2020-W | 45 | 60 |
| C2520-W | | |
| C3020-W | | |
| C4020-W | 50 | 70 |
| C6020-W | | |
| C8020-W | | |

| Assembled option | D | | | S (Note 1) | | | P | | | V | | | K | | | DS (Note 1) | | | DP | | | DV | | | DK | | |
|-------------------|-----|------|-------|------------|-----|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|-------------|-------|-------|-----|-------|-------|-----|-------|-------|-----|-------|-------|
| | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| C1020-W | 40 | 28 | 108 | 40 | 40 | 129.5 | - | - | - | 40 | 40 | 120 | - | - | - | 40 | 68 | 157.5 | - | - | - | 40 | 68 | 148 | - | - | - |
| C2020-W | 50 | 31.5 | 131.5 | 50 | 50 | 151.5 | 50 | 50 | 180 | 50 | 50 | 163 | 50 | 50 | 163 | 50 | 81.5 | 183 | 50 | 81.5 | 211.5 | 50 | 81.5 | 194.5 | 50 | 81.5 | 194.5 |
| C2520-W | 63 | 31.5 | 144.5 | 63 | 50 | 164.5 | 63 | 50 | 193 | 63 | 50 | 176 | 63 | 50 | 176 | 63 | 81.5 | 196 | 63 | 81.5 | 224.5 | 63 | 81.5 | 207.5 | 63 | 81.5 | 207.5 |
| C3020-W | 63 | 31.5 | 157.5 | 63 | 63 | 177.5 | 63 | 63 | 206 | 63 | 63 | 189 | 63 | 63 | 189 | 63 | 94.5 | 209 | 63 | 94.5 | 237.5 | 63 | 94.5 | 220.5 | 63 | 94.5 | 220.5 |
| C4020-W | 80 | 31.5 | 191.5 | 80 | 80 | 211.5 | 80 | 80 | 240 | 80 | 80 | 223 | 80 | 80 | 223 | 80 | 111.5 | 243 | 80 | 111.5 | 271.5 | 80 | 111.5 | 254.5 | 80 | 111.5 | 254.5 |
| C4020-20-W Note 1 | 100 | 31.5 | 231.5 | 100 | 80 | 231.5 | 100 | 80 | 280 | 100 | 80 | 263 | 100 | 80 | 263 | 100 | 111.5 | 263 | 100 | 111.5 | 311.5 | 100 | 111.5 | 294.5 | 100 | 111.5 | 294.5 |
| C6020-W | 90 | 50 | 230 | 90 | 90 | 265 | - | - | - | - | - | - | 90 | 90 | 270 | 90 | 140 | 315 | - | - | - | - | - | - | 90 | 140 | 320 |
| C8020-W | 100 | 50 | 250 | 100 | 100 | 285 | - | - | - | - | - | - | 100 | 100 | 290 | 100 | 150 | 335 | - | - | - | - | - | - | 100 | 150 | 340 |
| Assembled option | DSV | | | DSK | | | DPV | | | DPK | | | SV | | | SK | | | PV | | | PK | | | | | |
| Model no. | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| C1020-W | 40 | 96 | 176 | - | - | - | - | - | - | - | - | - | 40 | 68 | 148 | - | - | - | - | - | - | - | - | - | - | - | - |
| C2020-W | 50 | 113 | 226 | 50 | 113 | 226 | 50 | 162 | 274.5 | 50 | 162 | 274.5 | 50 | 81.5 | 194.5 | 50 | 81.5 | 194.5 | 50 | 130 | 243 | 50 | 130 | 243 | 50 | 130 | 243 |
| C2520-W | 63 | 113 | 239 | 63 | 113 | 239 | 63 | 162 | 287.5 | 63 | 162 | 287.5 | 63 | 81.5 | 207.5 | 63 | 81.5 | 207.5 | 63 | 130 | 256 | 63 | 130 | 256 | 63 | 130 | 256 |
| C3020-W | 63 | 126 | 252 | 63 | 126 | 252 | 63 | 175 | 300.5 | 63 | 175 | 300.5 | 63 | 94.5 | 220.5 | 63 | 94.5 | 220.5 | 63 | 143 | 269 | 63 | 143 | 269 | 63 | 143 | 269 |
| C4020-W | 80 | 143 | 286 | 80 | 143 | 286 | 80 | 191.5 | 334.5 | 80 | 191.5 | 334.5 | 80 | 111.5 | 254.5 | 80 | 111.5 | 254.5 | 80 | 160 | 303 | 80 | 160 | 303 | 80 | 160 | 303 |
| C4020-20-W Note 1 | 100 | 143 | 326 | 100 | 143 | 326 | 100 | 191.5 | 374.5 | 100 | 191.5 | 374.5 | 100 | 111.5 | 294.5 | 100 | 111.5 | 294.5 | 100 | 160 | 343 | 100 | 160 | 343 | 100 | 160 | 343 |
| C6020-W | - | - | - | 90 | 190 | 370 | - | - | - | - | - | - | - | - | - | 90 | 140 | 320 | - | - | - | - | - | - | - | - | - |
| C8020-W | - | - | - | 100 | 200 | 390 | - | - | - | - | - | - | - | - | - | 100 | 150 | 340 | - | - | - | - | - | - | - | - | - |

L1: Dimensions from the IN edge to center of the T-type bracket mounting hole
 L2: Spacing dimensions of the mounting hole from the first T-type bracket to the second T-type bracket
 L3: Dimensions from the IN edge to the OUT edge

* Refer to page 425 for details on bracket mounting hole dimensions.

Note 1: The piping adaptor is assembled on the OUT side. Piping adaptor A400-20-W is attached on the both ends of C4020-20-W.

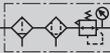


F.M.R. combination standard white Series

C1030/C2030/C2530-W C3030/C4030/C6030/C8030-W Series

Filter, oilmist filter and regulator integrated.

Port size: 1/8 to 1

JIS symbol 



Specifications

| Descriptions | | C1030-W | C2030-W | C2530-W | C3030-W | C4030-W | C6030-W | C8030-W |
|--|-----------------|---|---|---|---|--|---|---|
| Appearance | |  |  |  |  |  |  |  |
| Components | Filter | F1000-W | F2000-W | F3000-W | F3000-W | F4000-W | F6000-W | F8000-W |
| | Oil mist filter | M1000-W | M2000-W | M3000-W | M3000-W | M4000-W | M6000-W | M8000-W |
| | Regulator | R1000-W | R2000-W | R2000-W | R3000-W | R4000-W | R6000-W | R8000-W |
| Working fluid | | Compressed air | | | | | | |
| Max. working pressure MPa | | 1.0 Note 3 | | | | | | |
| Withstanding pressure MPa | | 1.5 | | | | | | |
| Ambient temperature range °C | | 5 to 60 | | | | | | Note 2 |
| Set pressure range MPa | | 0.05 to 0.85 ^{Note 3} | 0.05 to 0.85 | | | | | |
| Relief | | With relief mechanism | | | | | | |
| Port size | Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.40 | 0.98 | 1.02 | 1.10 | 1.86 | 3.19 | 4.45 |
| Secondary oil concentration (Oil mist filter outlet side) | | 0.01mg/m ³ or less | | | | | | |
| Max. flow rate (Note 1) m ³ /min. | | 0.15 | 0.25 | 0.36 | 0.36 | 0.825 | 1.27 | 2.6 |

Note 1: The maximum flow is for a primary pressure of 0.7 MPa. Refer to page 352 for the maximum flow rate of element option "Y".

Note 2: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

Note 3: When "F1" with an automatic drain is selected for the C1030-W series, the NC automatic drain is assembled for both the filter and oil mist filter. Minimum operation pressure is 0.2 MPa and maximum operation pressure is 0.7 MPa. Refer to the maximum processing flow table (page 362) for the M1000-W-F1 automatic drain for the maximum working flow.

Note 4: Refer to page 360 for details on other oil mist filters.

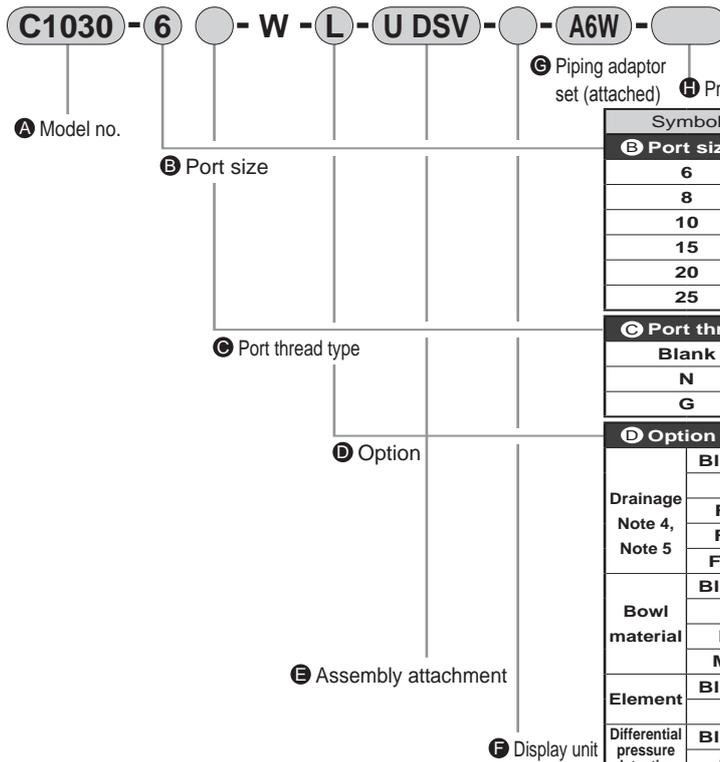
Note 5: When "F" with an automatic drain is selected, the supply air pressure is 0.15 MPa or more. Air filter and automatic drain are purged with initial drainage until pressure reaches 0.1 MPa.

Note 6: When "F1" with an automatic drain is selected, the filter, oil mist filter, and NC automatic drain are assembled, but the supply air pressure must be 0.15 MPa or more.

F.M.R. Combination

How to order

How to order



* Refer to page 274 for the explanation of the option.

| | | A Model no. | | | | | | |
|---|--------------------------------------|--|--------|--------|--------|--------|--------|--------|
| | | C 1030 | C 2030 | C 2530 | C 3030 | C 4030 | C 6030 | C 8030 |
| B Port size | | | | | | | | |
| Symbol | Descriptions | | | | | | | |
| 6 | 1/8 | ● | | | | | | |
| 8 | 1/4 | ● | ● | | | | | |
| 10 | 3/8 | | ● | ● | | | | |
| 15 | 1/2 | | | ● | ● | | | |
| 20 | 3/4 | | | | ● | ● | | |
| 25 | 1 | | | | | | ● | ● |
| C Port thread type | | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● | ● |
| D Option | | | | | | | | |
| Drainage Note 4, Note 5 | Blank | With manual drain cock | | | | | | |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | | | |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | | | |
| | FF | Large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | | | |
| Bowl material | Blank | Polycarbonate bowl | | | | | | |
| | Z | Nylon bowl | | | | | | |
| | M | Metal bowl | | | | | | |
| Element | Blank | 5μm | | | | | | |
| | Y | 0.3μm (submicron) Note 6 | | | | | | |
| | Blank | Without differential pressure detection port | | | | | | |
| Differential pressure detection | Q | With differential pressure detection port (Rc1/4) | | | | | | |
| | Blank | 0.05 to 0.85MPa | | | | | | |
| Pressure Range | L | 0.05 to 0.35MPa Note 7 | | | | | | |
| | Blank | With relief mechanism | | | | | | |
| Relief | N | Nonrelief type | | | | | | |
| | Blank | With standard pressure gauge (G401-W) | | | | | | |
| | T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | | | | | | |
| Pressure gauge | T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | | | | | | |
| | T6 | Digital pressure sensor PPX attachment option Note 8 | | | | | | |
| | R1 | Pressure switch with display PPD assembly Note 9 | | | | | | |
| Flow Direction | Blank | Standard flow (left → right) | | | | | | |
| | X1 | Reverse flow (right → left) | | | | | | |
| E Assembly attachment | | Pages 402 to 413, 426, 427 | | | | | | |
| Assembled | Blank | Without assembly attachment type | | | | | | |
| | U | Assembly attachment type Note 10 | | | | | | |
| | D | Distributor (D101-W, D401-W, D801-W) | | | | | | |
| | S | Pressure switch (P1100-W, 4100-W, 8100-W) | | | | | | |
| | P | Pressure switch (P4000-W) | | | | | | |
| | V | Shut-off valve (V1000-W, 3000-W) | | | | | | |
| K | Lockout valve (V3010-W, W6010-W) | | | | | | | |
| | | | | | | | | |
| F Display unit | | | | | | | | |
| Blank | MPa display, Rc thread | | | | | | | |
| J1 | MPa display, NPT, G thread | | | | | | | |
| G Piping adaptor set (attached) | | Page 428 Note 11 | | | | | | |
| Blank | Not attached | | | | | | | |
| A6*W | Rc1/8 piping adaptor set | | | | | | | |
| A8*W | Rc1/4 piping adaptor set | | | | | | | |
| A10*W | Rc3/8 piping adaptor set | | | | | | | |
| A15*W | Rc1/2 piping adaptor set | | | | | | | |
| A20*W | Rc3/4 piping adaptor set | | | | | | | |
| A25*W | Rc1 piping adaptor set | | | | | | | |
| A32*W | Rc1 1/4 piping adaptor set | | | | | | | |
| *Adaptor screw type | | | | | | | | |
| Blank | Rc thread | | | | | | | |
| N | NPT thread | | | | | | | |
| G | G thread | | | | | | | |
| H Pressure gauge option (attached) | | Note 12 Page 659 | | | | | | |
| Blank | Not attached | | | | | | | |
| G45P | G45D-8-P10(L:G45D-8-P04) | | | | | | | |
| G49P | G49D-8-P10(L:G49D-8-P04) | | | | | | | |
| G59P | G59D-8-P10(L:G59D-8-P04) | | | | | | | |
| G40P | G40D-8-P10(L:G40D-8-P04) | | | | | | | |
| G50P | G50D-8-P10(L:G50D-8-P04) | | | | | | | |
| G41P | G41D-8-P10(L:G41D-8-P04) | | | | | | | |
| G52P | G52D-8-P10(L:G52D-8-P10) | | | | | | | |
| R2 Note 8 | Digital pressure sensor: PPX-R10N-6M | | | | | | | |

Note on model no. selection

- Note 1:Piping adaptor A400-20*-W is attached on the both ends of C4030-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2:When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target, as are attachments P and V.
- Note 3:Select options for each drainage, bowl material, element, differential pressure detection, and regulator items. When selecting options for several items, list options in order from the top.
- Note 4:Refer to page 276 for the automatic drain use conditions.
- Note 5:When option symbol "F" is selected, the NO automatic drain is enclosed for the air filter and the NC automatic drain is enclosed for the oil mist filter.
For "FF" and "FF1", only the filter has a large discharge rate. The oil mist filter is a normal NC automatic drain.
- Note 6:Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 7:The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 8:When option "T6" is selected, only "Blank" or "R2" can be selected for "H" pressure gauge (attached).
The digital pressure sensor PPX mounting port (Rc1/8) is assembled by open.
- Note 9:The output type is NPN transistor output. Consult with CKD when the PNP transistor output is required.
- Note 10: Installation position for assembly attachments

| Symbol | Installation position | Applicable model |
|--------------|-----------------------|---|
| D | F+M+(D)+R | C1030-W to C8030-W |
| S or P | F+M+R+(S, P) | C1030-W to C8030-W (Excluding 1000,6000,8000 for "P") |
| V or K | F+M+R+(V, K) | C1030-W to C4030-W (Excluding 6000, 8000 for "V" or 1000 for "K") |

Note) Indicate "U"+"D", "S", "P", "V" and "K" when selecting an assembly attachment.
Use custom combinations specifications for any other combination.

- Note 11: The joiner set is enclosed with the piping adaptor set.
- Note 12: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

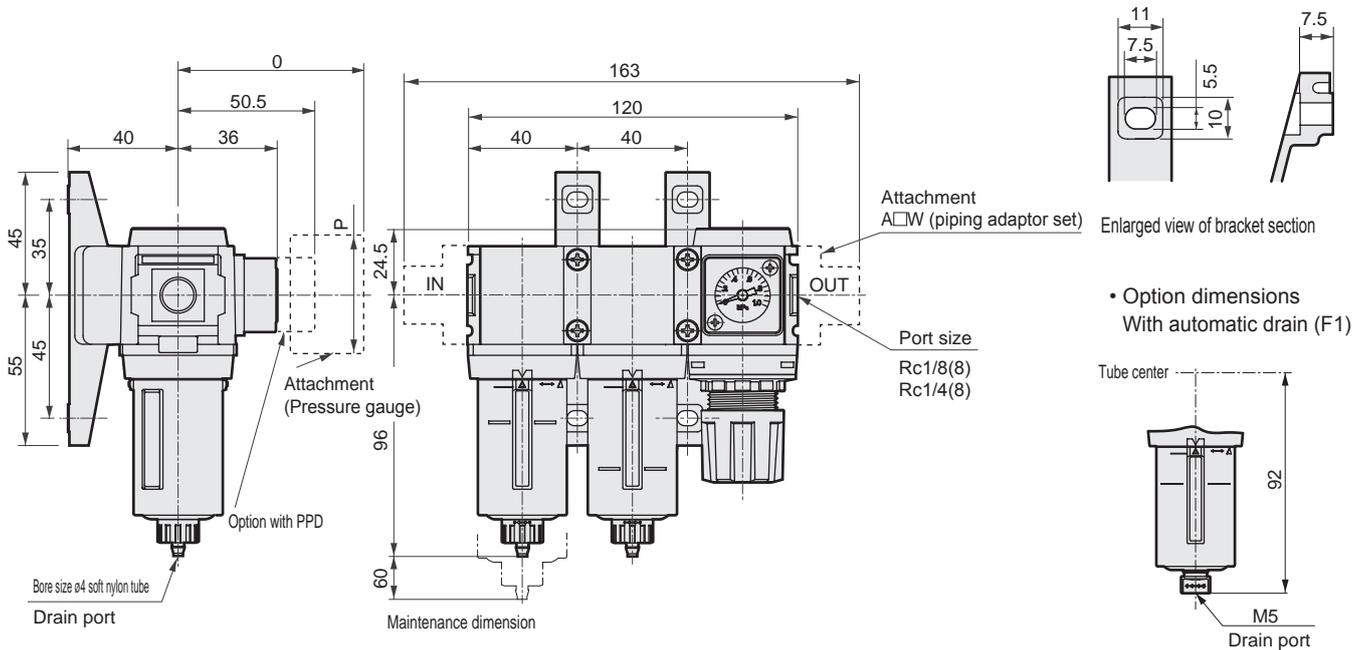
- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series
F.R.L. unit

F.M.R. Combination

Dimensions

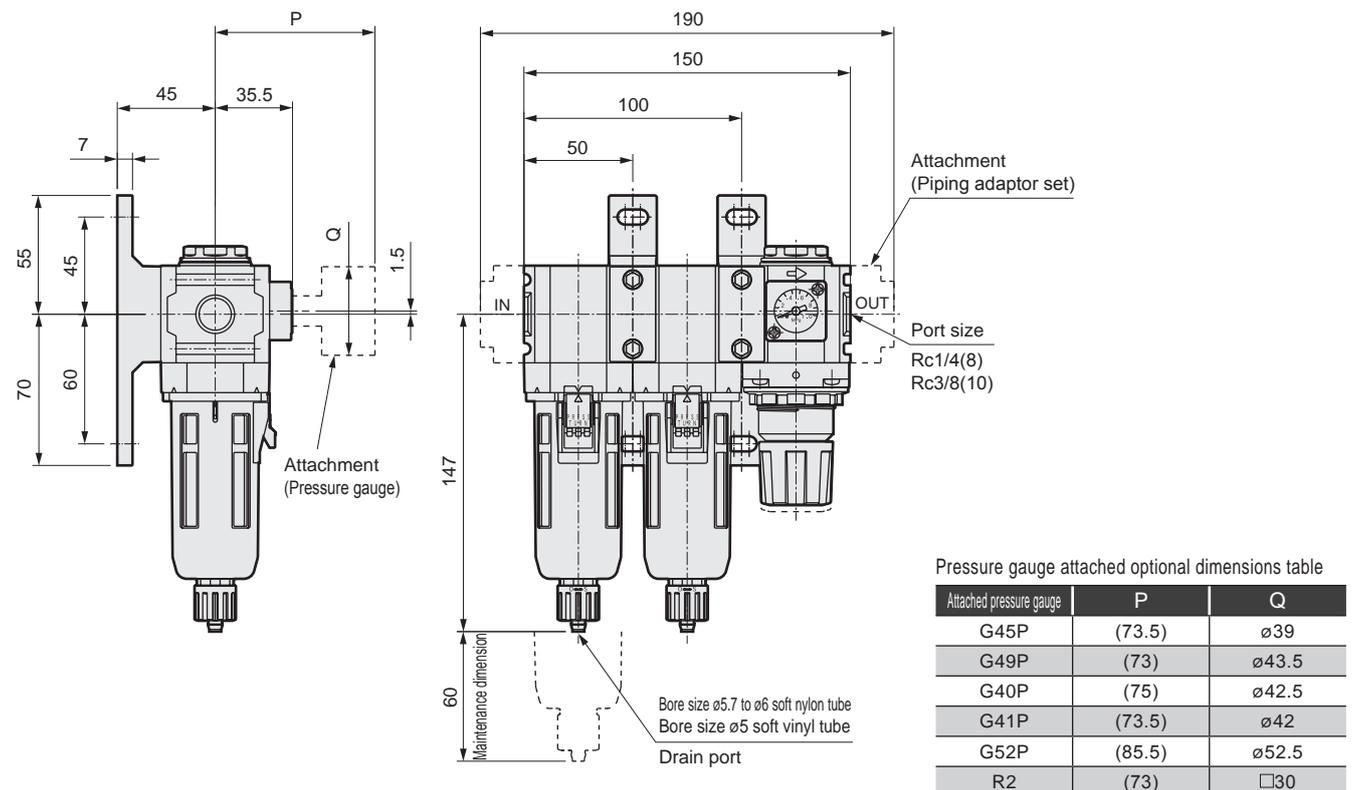
● C1030-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (74) | ø39 |
| G49P | (73.5) | ø43.5 |
| G59P | (76) | ø52 |
| G40P | (75.5) | ø42.5 |
| G50P | (75.5) | ø52.5 |
| G41P | (74) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (74) | □30 |

● C2030-W

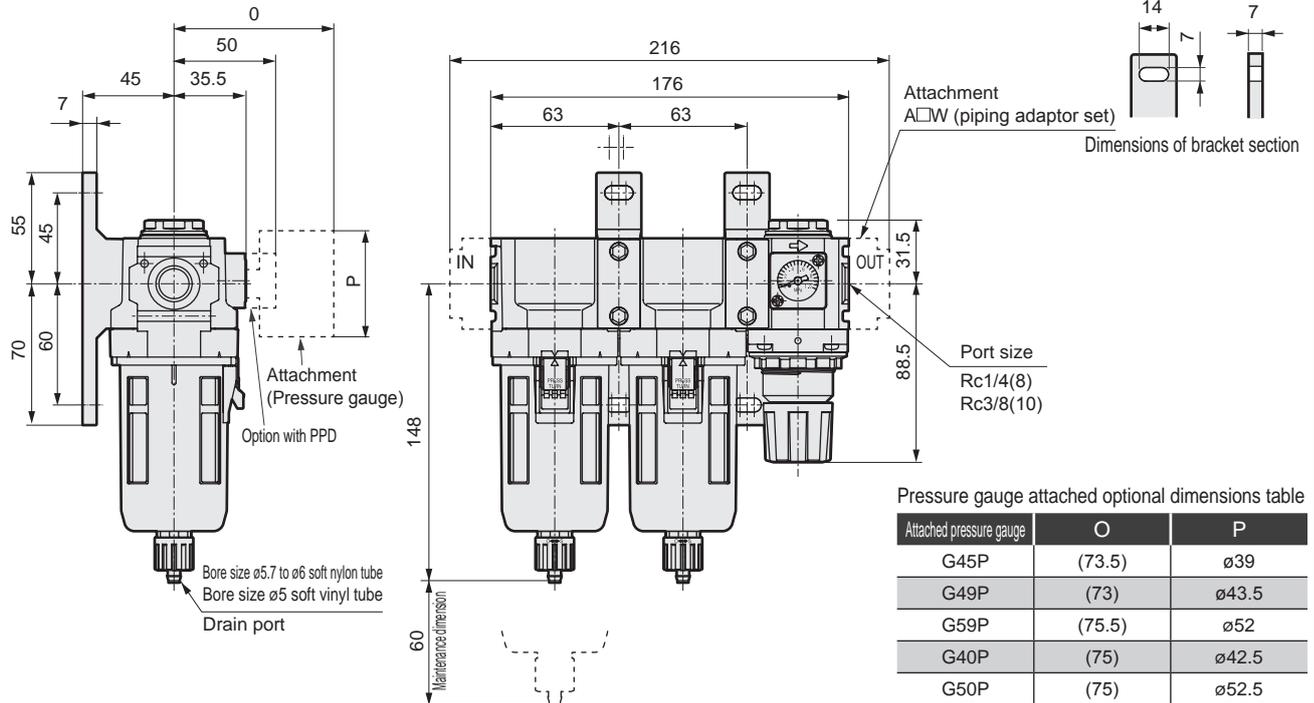


Pressure gauge attached optional dimensions table

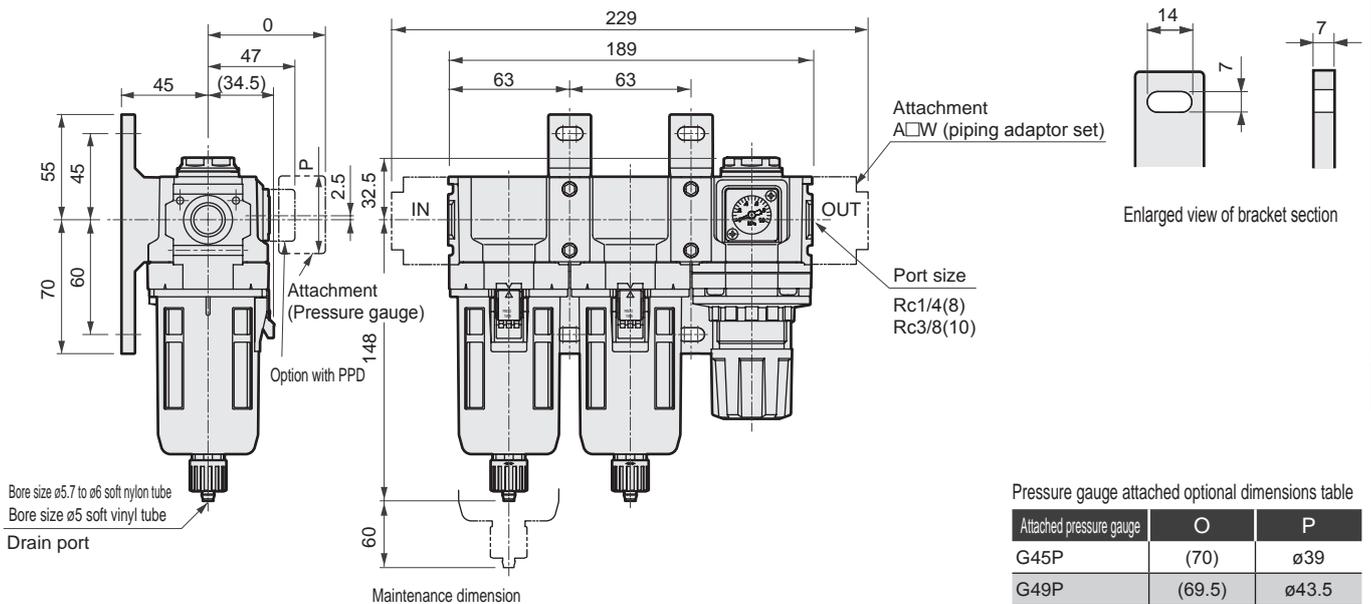
| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (73.5) | ø39 |
| G49P | (73) | ø43.5 |
| G40P | (75) | ø42.5 |
| G41P | (73.5) | ø42 |
| G52P | (85.5) | ø52.5 |
| R2 | (73) | □30 |

Dimensions

● C2530-W



● C3030-W



● Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

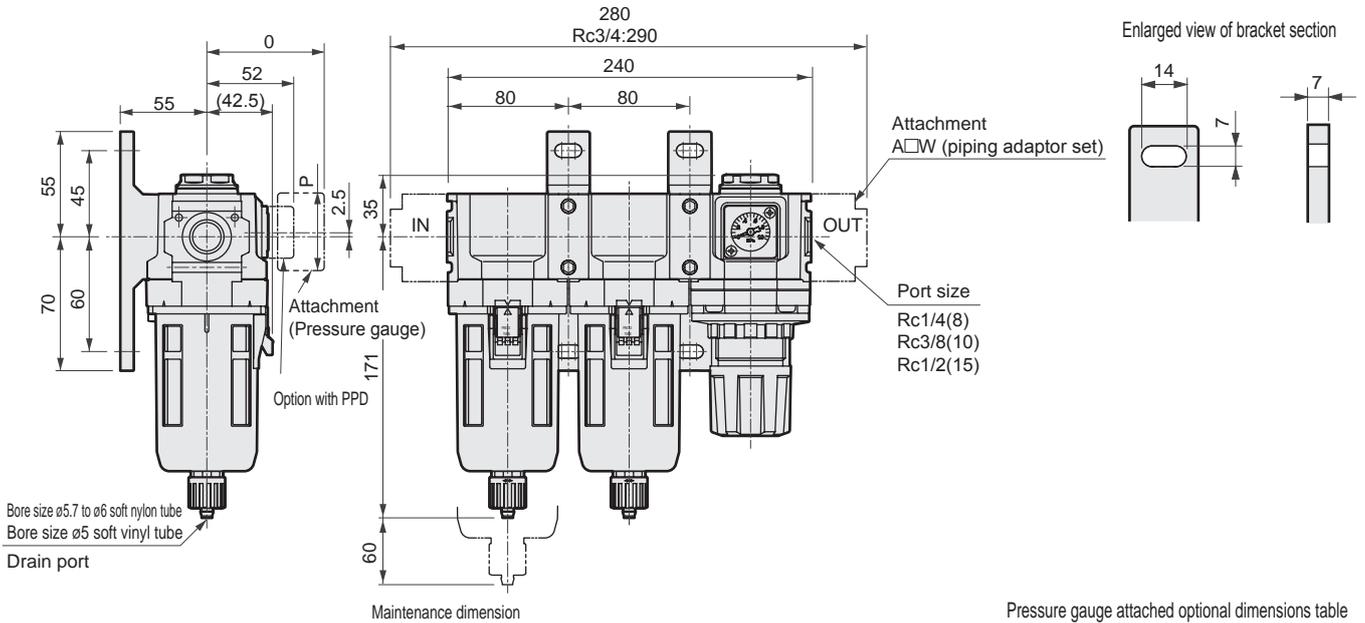
- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.**
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series
F.R.L. unit

F.M.R. Combination

Dimensions

● C4030-W

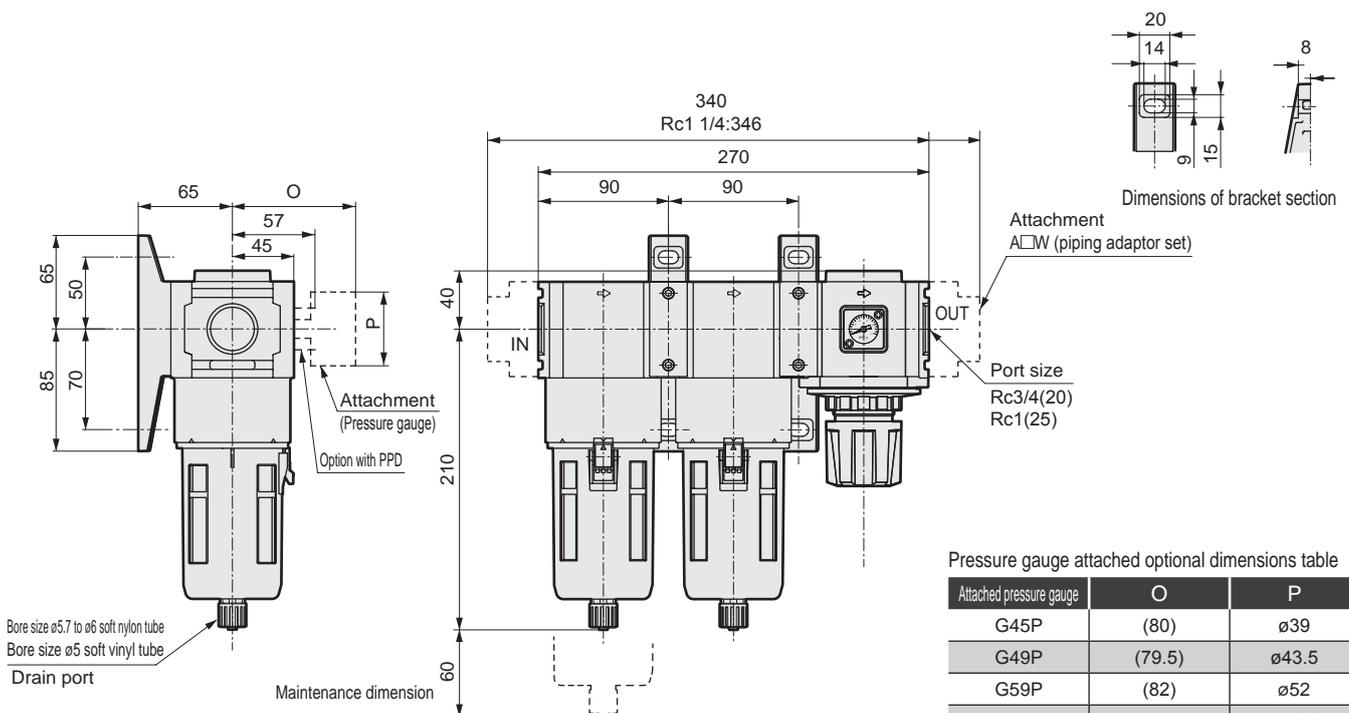


● Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (75) | ø29 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (75) | □30 |

● C6030-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (80) | ø39 |
| G49P | (79.5) | ø43.5 |
| G59P | (82) | ø52 |
| G40P | (81.5) | ø42.5 |
| G50P | (81.5) | ø52.5 |
| G41P | (80) | ø42 |
| G52P | (93) | ø52.5 |
| R2 | (80) | □30 |



W.M. combination standard white Series

C1040/C2040/C3040/C4040/C8040-W Series

Filter/regulator and oilmist filter integrated.

Port size: 1/8 to 1

JIS symbol 



Specifications

| Descriptions | | C1040-W | C2040-W | C3040-W | C4040-W | C8040-W |
|--|------------------|---|---|--|---|---|
| Appearance | |  |  |  |  |  |
| Components | Filter regulator | W1000-W | W2000-W | W3000-W | W4000-W | W8000-W |
| | Oil mist filter | M1000-W | M2000-W | M3000-W | M4000-W | M8000-W |
| Working fluid | | Compressed air | | | | |
| Max. working pressure MPa | | 1.0 Note 3 | | | | |
| Withstanding pressure MPa | | 1.5 | | | | |
| Ambient temperature range °C | | 5 to 60 Note 2 | | | | |
| Set pressure range MPa | | 0.1 to 0.85 Note 3 | 0.1 to 0.85 Note 5 / Note 6 | | | |
| Relief | | With relief mechanism | | | | |
| Port size Rc, NPT, G | | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.31 | 0.74 | 0.97 | 1.52 | 3.52 |
| Secondary oil concentration | | 0.01mg/m ³ or less | | | | |
| Max. flow rate (Note 1) m ³ /min. | | 0.15 | 0.25 | 0.36 | 0.825 | 2.6 |

Note 1: Maximum flow rate is for the regulator setting pressure 0.7MPa Refer to page 352 for the maximum flow of element option "Y".

Note 2: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

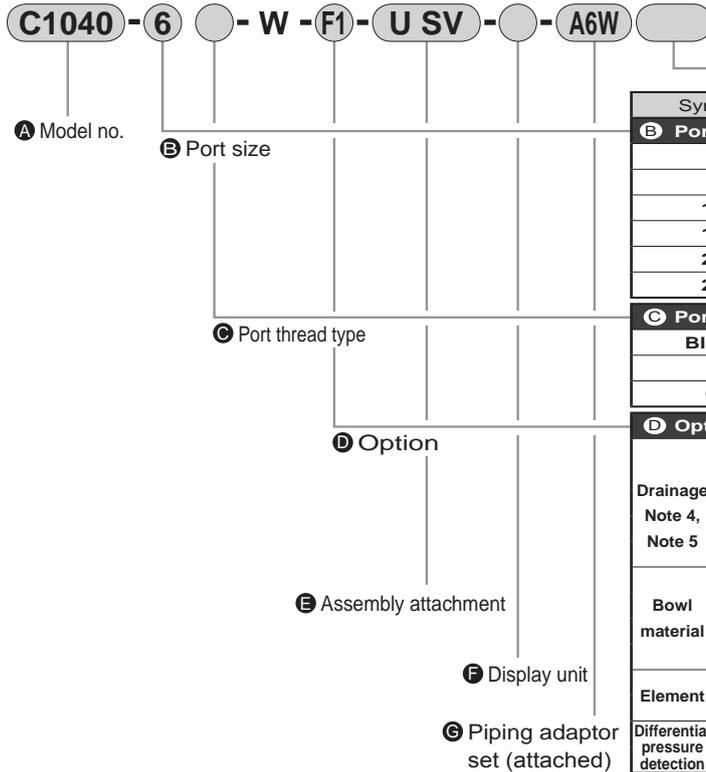
Note 3: When using C1040-W series "F1" with an automatic drain, the minimum operating pressure is 0.2 MPa and maximum operation pressure is 0.7 MPa. Refer to the maximum processing flow table (page 352) for the F1000-W-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.

Note 4: Refer to page 360 for details on other oil mist filters.

Note 5: When "F" with an automatic drain is selected, the supply air pressure is 0.2MPa or more. The minimum setting pressure is 0.15MPa. Automatic drain supply air pressure of a filter/regulator is 0.1MPa. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

Note 6: When "F1" with an automatic drain is selected, the supply air pressure is 0.2MPa or more. The minimum setting pressure is 0.15MPa.

How to order



* Refer to page 274 for the explanation of the option.

| A Model no. | | | | |
|-------------|-----------|-----------|-----------|-----------|
| C 1 0 4 0 | C 2 0 4 0 | C 3 0 4 0 | C 4 0 4 0 | C 8 0 4 0 |

| Symbol | Descriptions | | | | | |
|--|--------------------------------------|--|---|---|---|---|
| B Port size | | | | | | |
| 6 | 1/8 | ● | | | | |
| 8 | 1/4 | ● | ● | ● | ● | |
| 10 | 3/8 | | ● | ● | ● | |
| 15 | 1/2 | | | | ● | |
| 20 | 3/4 | | | | ● | ● |
| 25 | 1 | | | | | ● |
| C Port thread type | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● |
| D Option | | | | | | |
| Drainage Note 4, Note 5 | Blank | With manual drain cock | ● | ● | ● | ● |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● |
| | FF | Large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● |
| | M | Metal bowl | | | ● | ● |
| | M1 | Metal bowl with manual drain cock | | ● | ● | ● |
| Element | Blank | 5µm | ● | ● | ● | ● |
| | Y | 0.3µm (submicron) Note 6 | | | ● | ● |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● |
| | Q | With differential pressure detection port (Rc1/4) | | | | ● |
| Pressure Range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa Note 7 | | | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● |
| | T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● |
| | T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● |
| | T6 | Digital pressure sensor PPX attachment option Note 8 | ● | ● | ● | ● |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● |
| E Assembly attachment Pages 402 to 413, 426, 427 | | | | | | |
| Assembled | Blank | Without assembly attachment type | ● | ● | ● | ● |
| | U | Assembly attachment type Note 10 | ● | ● | ● | ● |
| | S | Pressure switch (P1100-W, 4100-W, 8100-W) | ● | ● | ● | ● |
| | P | Pressure switch (P4000-W) | | ● | ● | ● |
| | V | Shut-off valve (V1000-W, 3000-W) | ● | ● | ● | ● |
| Display unit | Blank | MPa display, Rc thread | ● | ● | ● | ● |
| | J1 | MPa display, NPT, G thread | ● | ● | ● | ● |
| G Piping adaptor set (attached) Page 428 Note 11 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | |
| A6*W | Rc1/8 piping adaptor set | ● | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● | |
| A20*W | Rc3/4 piping adaptor set | | | | ● | |
| A25*W | Rc1 piping adaptor set | | | | ● | |
| A32*W | Rc1 1/4 piping adaptor set | | | | ● | |
| *Adaptor screw type | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | |
| H Pressure gauge option (attached) Note 12 Page 659 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | |
| G45P | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● | |
| G49P | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● | |
| G59P | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● | |
| G40P | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● | |
| G50P | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● | |
| G41P | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● | |
| G52P | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● | |
| R2 Note 8 | Digital pressure sensor: PPX-R10N-6M | ● | ● | ● | ● | |

Note on model no. selection

- Note 1:Piping adaptor A400-20*-W is attached on the both ends of C4040-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2:When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target, as are attachments P and V.
- Note 3:Select options for each drainage, bowl material, element, differential pressure detection, and regulator items. When selecting options for several items, list options in order from the top.
- Note 4:Refer to page 276 for the automatic drain use conditions.
- Note 5:When option symbol "F" is selected, the NO automatic drain is enclosed for the filter regulator and the NC automatic drain is enclosed for the oil mist filter. When option symbol "F1" is selected, the NC automatic drain is enclosed for both the air filter/regulator and oil mist filter. For both "FF" and "FF1", only the filter/regulator has a large discharge rate, and the oil mist filter is a normal NC automatic drainage.
- Note 6:Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 7:The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 8:When option "T6" is selected, only "no symbol" or "R2" can be selected for "H" pressure gauge (attached). The digital pressure sensor PPX mounting port (Rc1/8) is assembled by open.
- Note 9:The output type is NPN transistor output. Consult with CKD when the PNP transistor output is required.
- Note 10: Installation position for assembly attachments

| Symbol | Installation position | Applicable model |
|--------------|-----------------------|--|
| S or P | W+(S, P)+M | C1040-W to C8040-W (Excluding 1000,8000 for "P") |
| V or K | W+M+(V, K) | C1040-W to C8040-W (Excluding 8000 for "V" or 1000 for "K") |

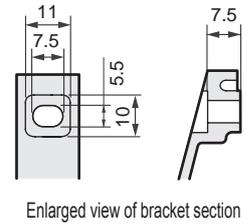
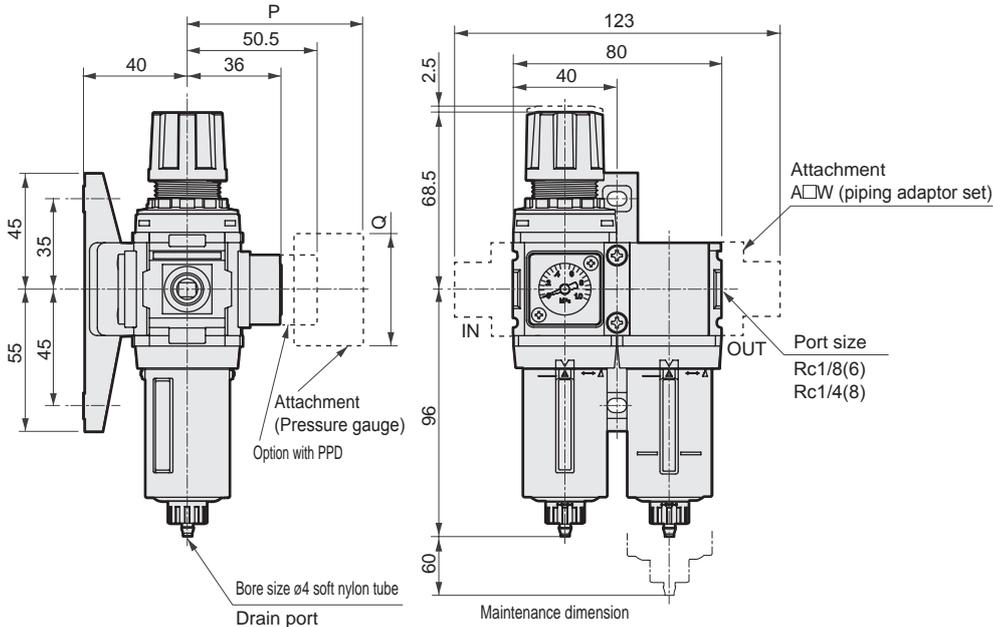
Note) Indicate "U"+"D", "S","P","V" and "K" when selecting an assembly attachment.
Use custom combinations specifications for any other combination.

- Note 11: The joiner set is enclosed with the piping adaptor set.
- Note 12: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

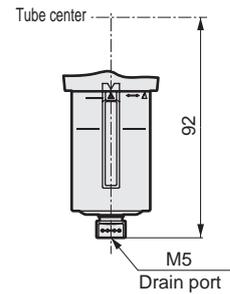
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Standard series
F.R.L. unit

Dimensions

● C1040-W



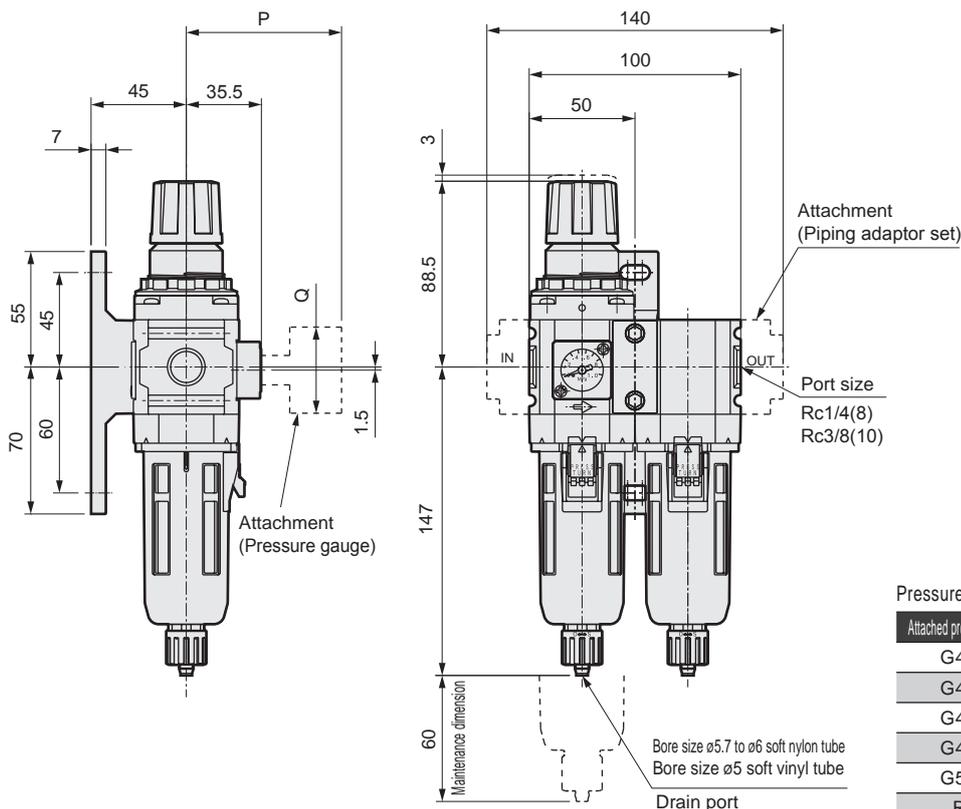
• Option dimensions With automatic drain (F1)



Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (74) | ø39 |
| G49P | (73.5) | ø43.5 |
| G59P | (76) | ø52 |
| G40P | (75.5) | ø42.5 |
| G50P | (75.5) | ø52.5 |
| G41P | (74) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (74) | □30 |

● C2040-W

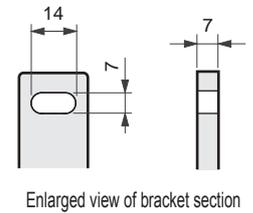
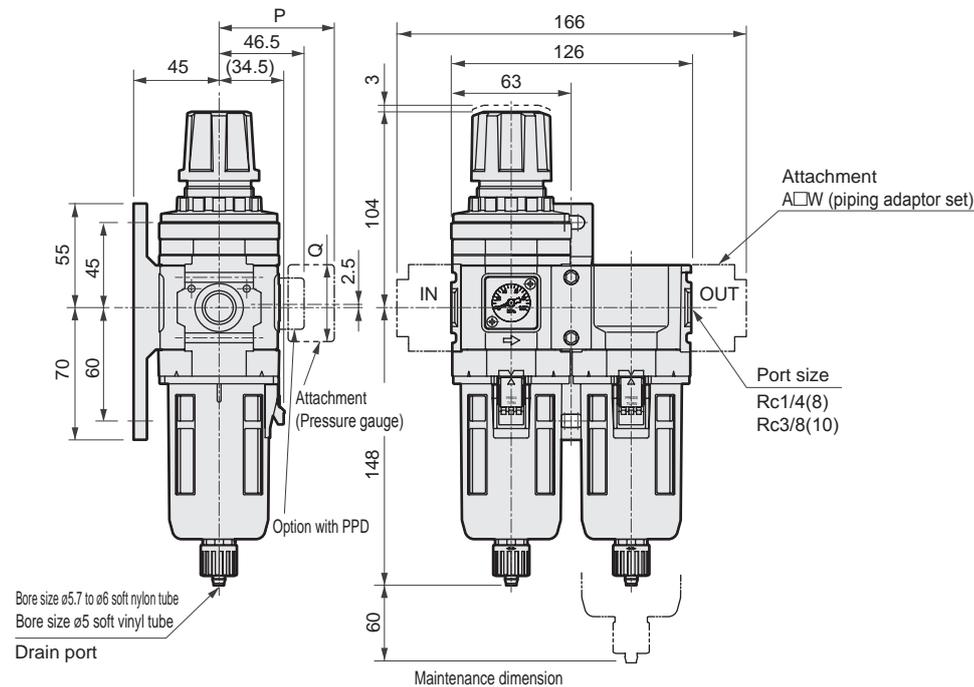


Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (73.5) | ø39 |
| G49P | (73) | ø43.5 |
| G40P | (75) | ø42.5 |
| G41P | (73.5) | ø42 |
| G52P | (85.5) | ø52.5 |
| R2 | (73) | □30 |

Dimensions

● C3040-W

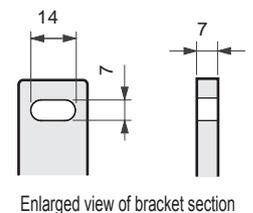
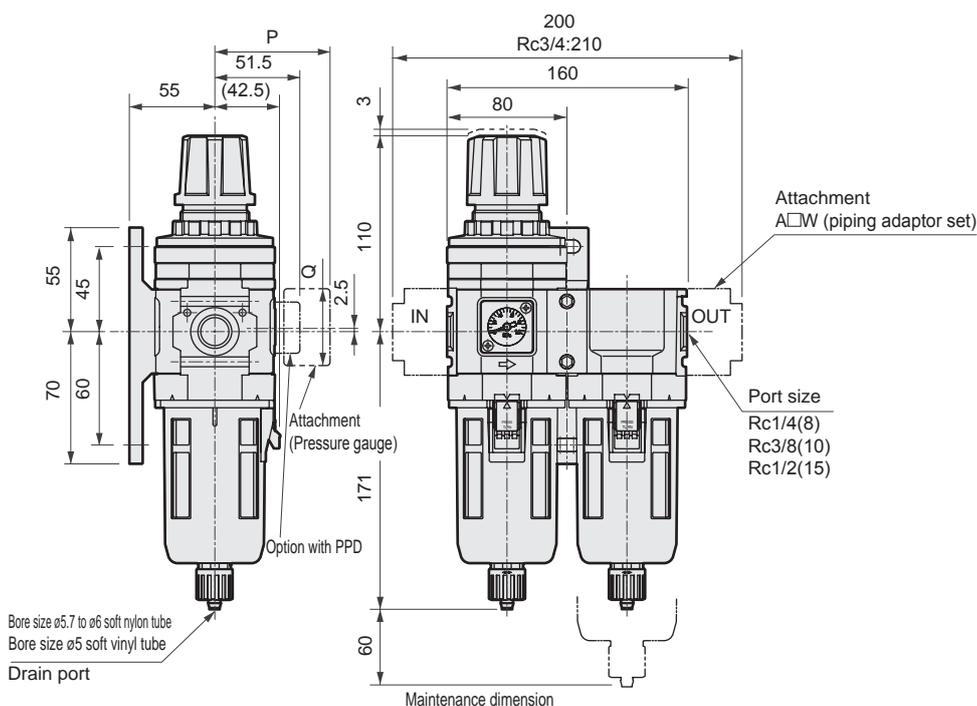


Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (70) | ø39 |
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |
| G52P | (82) | ø52.5 |
| R2 | (69.5) | □30 |

- Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 367 for the oil mist filter.

● C4040-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (75) | ø39 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (75) | □30 |

- Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 367 for the oil mist filter.

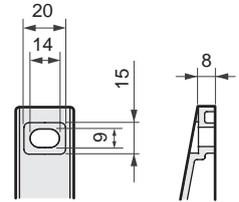
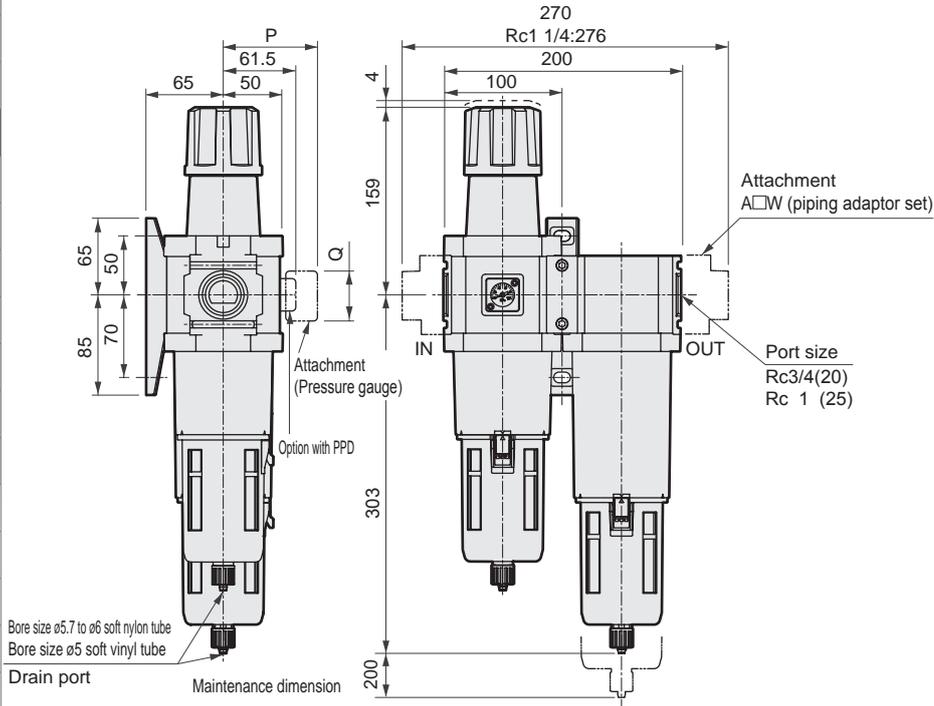
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

W.M. Combination

Dimensions

● C8040-W



Enlarged view of bracket section

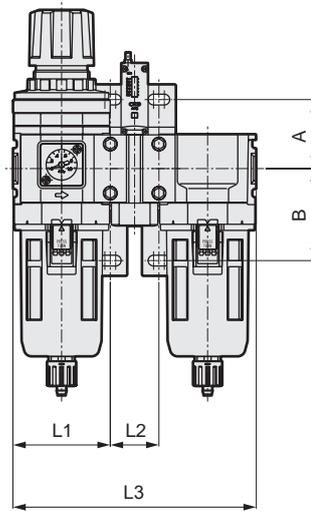
Pressure gauge attached optional dimensions table

| Attached pressure gauge | P | Q |
|-------------------------|--------|-------|
| G45P | (85) | ø39 |
| G49P | (84.5) | ø43.5 |
| G59P | (87) | ø52 |
| G40P | (86.5) | ø42.5 |
| G50P | (86.5) | ø52.5 |
| G41P | (85) | ø42 |
| G52P | (98) | ø52.5 |
| R2 | (85) | □30 |

- Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 367 for the oil mist filter.

Option assembly dimensions

● C1040-W to C8040-W



| Model no. | A | B |
|-----------|----|----|
| C1040-W | 35 | 45 |
| C2040-W | 45 | 60 |
| C3040-W | | |
| C4040-W | 50 | 70 |
| C8040-W | | |

| Assembled option Model no. | S | | | P | | | V | | | K | | | SV | | | SK | | | PV | | | PK | | |
|-------------------------------|-----|------|-------|-----|----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----|-------|-------|-----|-----|-----|-----|-----|-----|
| | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| C1040-W | 40 | 28 | 108 | - | - | - | 40 | 40 | 120 | - | - | - | 40 | 68 | 148 | - | - | - | - | - | - | - | - | - |
| C2040-W | 50 | 31.5 | 131.5 | 50 | 80 | 180 | 50 | 63 | 163 | 50 | 63 | 163 | 50 | 81.5 | 194.5 | 50 | 81.5 | 194.5 | 50 | 130 | 243 | 50 | 130 | 243 |
| C3040-W | 63 | 31.5 | 157.5 | 63 | 80 | 206 | 63 | 63 | 189 | 63 | 63 | 189 | 63 | 94.5 | 220.5 | 63 | 94.5 | 220.5 | 63 | 143 | 269 | 63 | 143 | 269 |
| C4040-W | 80 | 31.5 | 191.5 | 80 | 80 | 240 | 80 | 80 | 223 | 80 | 80 | 223 | 80 | 111.5 | 254.5 | 80 | 111.5 | 254.5 | 80 | 160 | 320 | 80 | 160 | 320 |
| C4040-20-W Note 1 | 100 | 31.5 | 231.5 | 100 | 80 | 280 | 100 | 100 | 263 | 100 | 100 | 263 | 100 | 111.5 | 294.5 | 100 | 111.5 | 294.5 | 100 | 160 | 343 | 100 | 160 | 343 |
| C8040-W | 100 | 50 | 250 | - | - | - | - | - | - | 100 | 100 | 290 | - | - | - | 100 | 150 | 340 | - | - | - | - | - | - |

L1: Dimensions from the IN edge to center of the T-type bracket mounting hole
 L2: Spacing dimensions of the mounting hole from the first T-type bracket to the second T-type bracket
 L3: Dimensions from the IN edge to the OUT edge

* Refer to page 425 for details on bracket mounting hole dimensions.

Note 1: The piping adaptor is assembled on the OUT side.

Piping adaptor A400-20-W is attached on the both ends of C4040-20-W.

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series
F.R.L. unit



R.M. combination standard white Series

C1050/C2050/C2550 C3050/C4050/C6050/C8050-W Series

Regulator and oil mist filter integrated.

Port size: 1/8 to 1

JIS symbol



Specifications

| Descriptions | | C1050-W | C2050-W | C2550-W | C3050-W | C4050-W | C6050-W | C8050-W |
|--|-----------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | | | | |
| Components | Regulator | R1000-W | R2000-W | R2000-W | R3000-W | R4000-W | R6000-W | R8000-W |
| | Oil mist filter | M1000-W | M2000-W | M3000-W | M3000-W | M4000-W | M6000-W | M8000-W |
| Working fluid | | Compressed air | | | | | | |
| Max. working pressure MPa | | 1.0 Note 3 | | | | | | |
| Withstanding pressure MPa | | 1.5 | | | | | | |
| Ambient temperature range °C | | 5 to 60 | | | | | Note 2 | |
| Set pressure range MPa | | 0.1 to 0.85 ^{Note 3} | | 0.1 to 0.85 Note 4 | | | | |
| Relief | | With relief mechanism | | | | | | |
| Port size | Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.29 | 0.65 | 0.66 | 0.82 | 1.32 | 2.12 | 3.12 |
| Secondary oil concentration | | 0.01mg/m ³ or less | | | | | | |
| Max. flow rate (Note 1) m ³ /min. | | 0.15 | 0.25 | 0.38 | 0.36 | 0.825 | 1.27 | 2.6 |

Note 1: Maximum flow rate is for the regulator setting pressure 0.7 MPa.

Note 2: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

Note 3: When "F1" with an automatic drain is selected for the C1050-W series, minimum operating pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa. Refer to the maximum processing flow table (page 362) for the M1000-W-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.

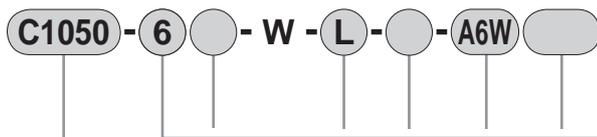
Note 4: The supply air pressure is 0.2 MPa or more with a minimum setting pressure of 0.15 MPa.

Note 5: Refer to page 360 for details on other oil mist filters.

R.M. Combination

How to order

How to order



A Model no. **B** Port size

C Port thread type

D Option

E Display unit

F Piping adaptor set (attached)

G Pressure gauge option (attached)

* Refer to page 274 for the explanation of the option.

| A Model no. | | | | | |
|-------------|-----------|-----------|-----------|-----------|-----------|
| C 1 0 5 0 | C 2 0 5 0 | C 2 5 5 0 | C 3 0 5 0 | C 4 0 5 0 | C 6 0 5 0 |

| Symbol | Descriptions | C 1 0 5 0 | C 2 0 5 0 | C 2 5 5 0 | C 3 0 5 0 | C 4 0 5 0 | C 6 0 5 0 | C 8 0 5 0 | |
|---|--------------------------------------|--|-----------|-----------|-----------|-----------|-----------|-----------|--|
| B Port size | | | | | | | | | |
| 6 | 1/8 | ● | | | | | | | |
| 8 | 1/4 | ● | ● | ● | ● | ● | | | |
| 10 | 3/8 | | ● | ● | ● | ● | | | |
| 15 | 1/2 | | | | | ● | | | |
| 20 | 3/4 | | | | | ● | ● | | |
| 25 | 1 | | | | | | ● | ● | |
| C Port thread type | | | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | ● | ● | ● | |
| D Option | | | | | | | | | |
| Drainage Note 4 | Blank | Filter with manual drain cock | ● | ● | ● | ● | ● | ● | |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● | ● | |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● | ● | ● | |
| | Z | Nylon bowl | ● | ● | ● | ● | ● | | |
| | M | Metal bowl | | ● | ● | ● | ● | | |
| | M1 | Metal bowl with manual drain cock | | ● | ● | ● | ● | | |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● | ● | | |
| | Q | With differential pressure detection port (Rc1/4) | | | | | ● | | |
| Pressure Range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● | ● | | |
| | L | 0.05 to 0.35MPa Note 5 | ● | ● | ● | ● | ● | | |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● | ● | | |
| | N | Nonrelief type | ● | ● | ● | ● | ● | | |
| Pressure gauge | Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● | ● | | |
| | T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● | ● | | |
| | T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● | ● | | |
| | T6 | Digital pressure sensor PPX attachment option Note 6 | ● | ● | ● | ● | ● | | |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● | | |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● | | |
| E Display unit | | | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | ● | | |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | ● | | |
| F Piping adaptor set (attached) | | | | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● | | |
| A6*W | Rc1/8 piping adaptor set | ● | | | | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | ● | | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | ● | | | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● | ● | | | |
| A20*W | Rc3/4 piping adaptor set | | | | | ● | ● | | |
| A25*W | Rc1 piping adaptor set | | | | | | ● | | |
| A32*W | Rc1 1/4 piping adaptor set | | | | | | ● | | |
| *Adaptor screw type | | | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● | | |
| N | NPT thread | ● | ● | ● | ● | ● | ● | | |
| G | G thread | ● | ● | ● | ● | ● | ● | | |
| G Pressure gauge option (attached) | | | | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● | | |
| G45P | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● | ● | ● | | |
| G49P | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● | ● | ● | | |
| G59P | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● | ● | ● | | |
| G40P | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● | ● | ● | | |
| G50P | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● | ● | ● | | |
| G41P | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● | ● | ● | | |
| G52P | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● | ● | ● | | |
| R2 Note 6 | Digital pressure sensor: PPX-R10N-6M | ● | ● | ● | ● | ● | ● | | |

Note on model no. selection

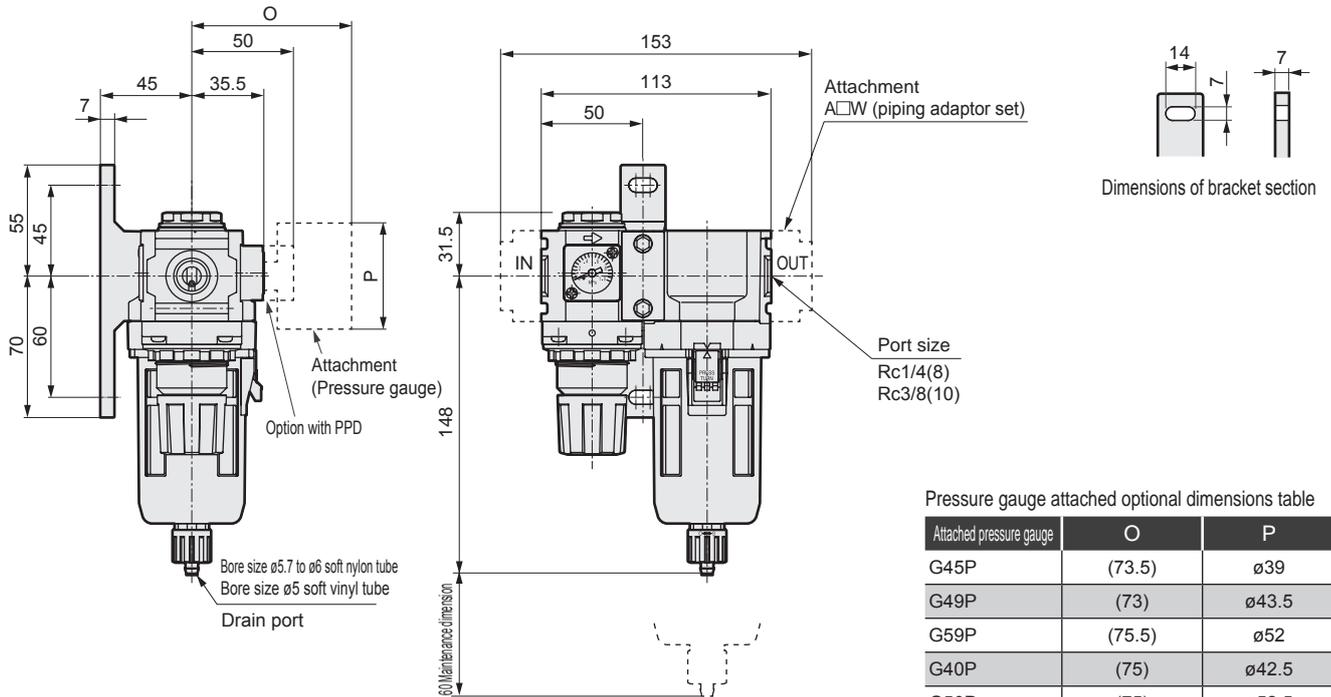
- Note 1:Piping adaptor A400-20*-W is attached on the both ends of C4050-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2:When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 3:Select options for each drainage, bowl material, element, differential pressure detection, and regulator items. When selecting options for several items, list options in order from the top.
- Note 4:Refer to page 276 for the automatic drain use conditions.
- Note 5:The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 6:When option "T6" is selected, only "Blank" or "R2" can be selected for "G" pressure gauge (attached). The digital pressure sensor PPX mounting port (Rc1/8) is assembled by open.
- Note 7:The output type is NPN transistor output. Consult with CKD when the PNP transistor output is required.
- Note 8:The joiner set is enclosed with the piping adaptor set.
- Note 9:If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending
- Standard series F.R.L. unit

Dimensions



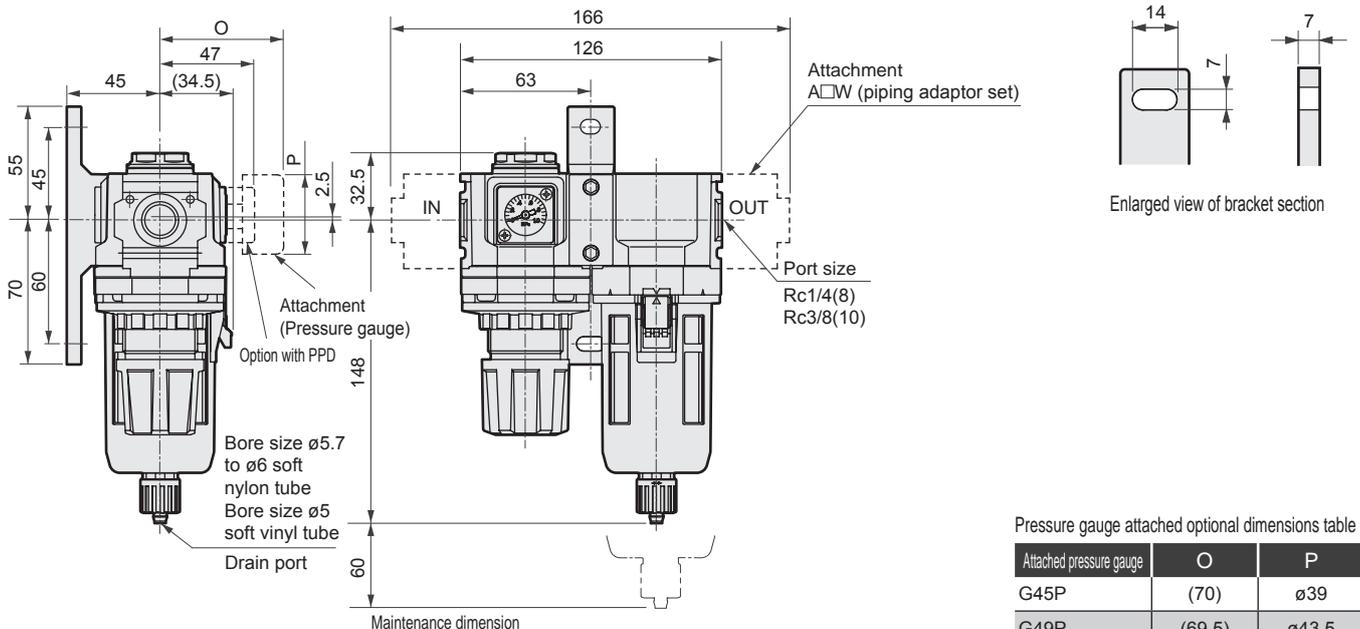
● C2550-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------------|
| G45P | (73.5) | $\phi 39$ |
| G49P | (73) | $\phi 43.5$ |
| G59P | (75.5) | $\phi 52$ |
| G40P | (75) | $\phi 42.5$ |
| G50P | (75) | $\phi 52.5$ |
| G41P | (73.5) | $\phi 42$ |
| G52P | (85.5) | $\phi 52.5$ |
| R2 | (73) | □30 |

● C3050-W



Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------------|
| G45P | (70) | $\phi 39$ |
| G49P | (69.5) | $\phi 43.5$ |
| G59P | (72) | $\phi 52$ |
| G40P | (71.5) | $\phi 42.5$ |
| G50P | (71.5) | $\phi 52.5$ |
| G41P | (70) | $\phi 42$ |
| G52P | (82) | $\phi 52.5$ |
| R2 | (69.5) | □30 |

● Refer to page 367 for the dimensions of metal bowl.

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

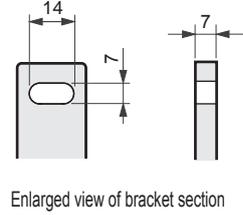
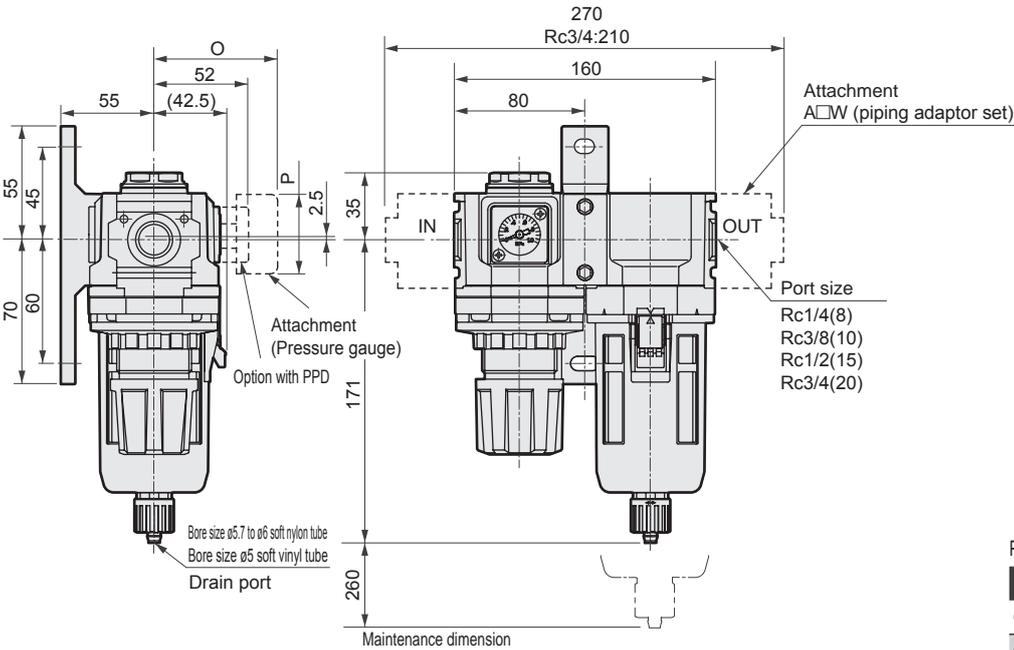
Standard series
F.R.L. unit

R.M. Combination

Dimensions



● C4050-W

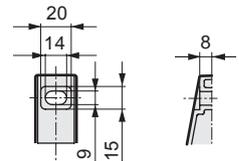
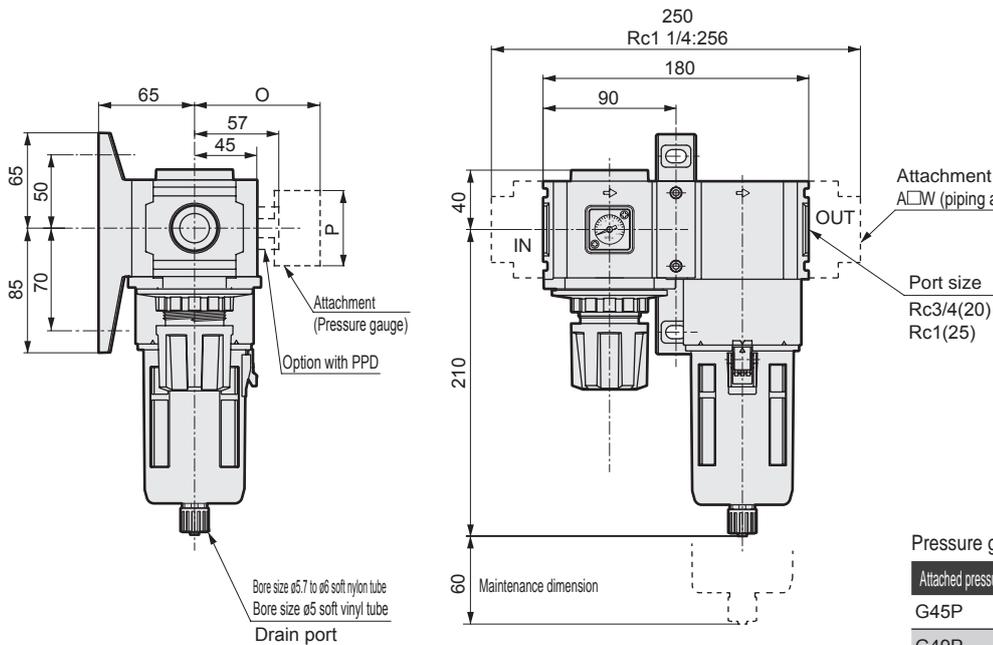


Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|--------------|
| G45P | (75) | $\phi 39$ |
| G49P | (74.5) | $\phi 43.5$ |
| G59P | (77) | $\phi 52$ |
| G40P | (76.5) | $\phi 42.5$ |
| G50P | (76.5) | $\phi 52.5$ |
| G41P | (75) | $\phi 42$ |
| G52P | (86) | $\phi 52.5$ |
| R2 | (75) | $\square 30$ |

● Refer to page 367 for the dimensions of metal bowl.

● C6050-W



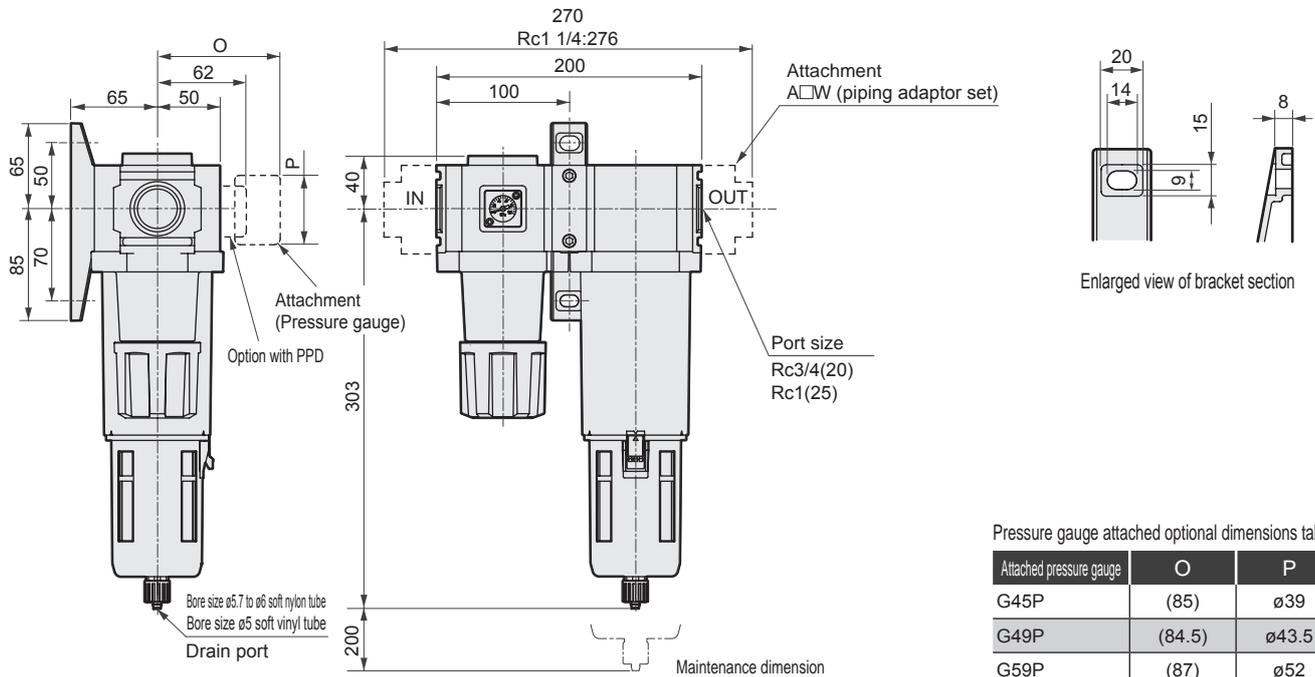
Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|--------------|
| G45P | (80) | $\phi 39$ |
| G49P | (79.5) | $\phi 43.5$ |
| G59P | (82) | $\phi 52$ |
| G40P | (81.5) | $\phi 42.5$ |
| G50P | (81.5) | $\phi 2.5$ |
| G42P | (80) | $\phi 42$ |
| G52P | (93) | $\phi 52.5$ |
| R2 | (80) | $\square 30$ |

Dimensions



● C8050-W



● Refer to page 367 for the dimensions of metal bowl.

Pressure gauge attached optional dimensions table

| Attached pressure gauge | O | P |
|-------------------------|--------|-------|
| G45P | (85) | ø39 |
| G49P | (84.5) | ø43.5 |
| G59P | (87) | ø52 |
| G40P | (86.5) | ø42.5 |
| G50P | (86.5) | ø52.5 |
| G41P | (85) | ø42 |
| G52P | (98) | ø52.5 |
| R2 | (85) | □30 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



F.M. combination standard white Series C1060/C2060/C3060/ C4060/C6060/C8060-W Series

Filter and oil mist filter integrated.

Port size: 1/8 to 1

JIS symbol 



Specifications

| Descriptions | | C1060-W | C2060-W | C3060-W | C4060-W | C6060-W | C8060-W |
|---|-----------------|---|---|---|--|---|---|
| Appearance | |  |  |  |  |  |  |
| Components | Filter | F1000-W | F2000-W | F3000-W | F4000-W | F6000-W | F8000-W |
| | Oil mist filter | M1000-W | M2000-W | M3000-W | M4000-W | M6000-W | M8000-W |
| Working fluid | | Compressed air | | | | | |
| Max. working pressure MPa | | 1.0 Notes 3, 4, 5 | | | | | |
| Withstanding pressure MPa | | 1.5 Note 3 | | | | | |
| Ambient temperature range °C | | 5 to 60 | | | | | |
| Port size Rc, NPT, G | | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.22 | 0.58 | 0.62 | 1.06 | 2.02 | 2.68 |
| Secondary oil concentration | | 0.01mg/m ³ or less | | | | | |
| Max. flow (Notes 1, 2) m ³ /min. | | 0.15 Note 3 | 0.25 | 0.36 | 0.825 | 1.27 | 2.6 |

Note 1: The maximum flow is for a primary pressure of 0.7 MPa.

Note 2: When selecting the element option "Y", refer to page 352 for the maximum flow. The working flow must be less than the maximum working flow.

Note 3: When "F1" with an automatic drain is selected, the NC automatic drain is enclosed for both the filter and oil mist filter. The minimum operation pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa and withstanding pressure is 1.05 MPa. Refer to the maximum processing flow table (page 362) for the M1000-W-F1 automatic drain for the maximum working flow. The working flow must be less than the maximum working flow.

Note 4: When "F" with an automatic drain is selected, the supply air pressure is 0.15 MPa or more. Air is purged with initial drainage until pressure reaches 0.1 MPa.

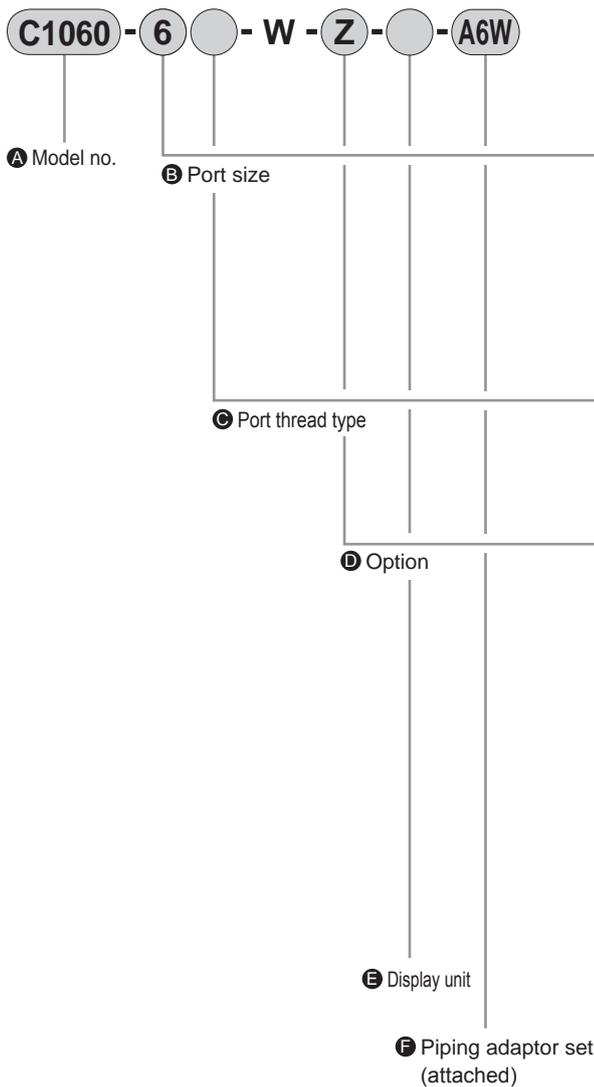
Note 5: When "F1" with an automatic drain is selected, the supply air pressure is 0.15 MPa or more.

Note 6: Refer to page 360 for details on other oil mist filters.

F.M. Combination

How to order

How to order



* Refer to page 274 for the explanation of the option.

| A Model no. | | | | | |
|-------------|---|---|---|---|---|
| C | C | C | C | C | C |
| 1 | 2 | 3 | 4 | 6 | 8 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 6 | 6 | 6 | 6 | 6 |
| 0 | 0 | 0 | 0 | 0 | 0 |

| Symbol | Descriptions | | | | | | |
|--|----------------------------|--|---|---|---|---|---|
| B Port size | | | | | | | |
| 6 | 1/8 | ● | | | | | |
| 8 | 1/4 | ● | ● | ● | ● | | |
| 10 | 3/8 | | ● | ● | ● | | |
| 15 | 1/2 | | | | ● | | |
| 20 | 3/4 | | | | ● | ● | |
| 25 | 1 | | | | | ● | ● |
| C Port thread type | | Note 2 | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |
| D Option | | Note 3 | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● | ● |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | ● | ● | ● |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● |
| | FF | Large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | | ● |
| | FF1 | Large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● | ● |
| | M | Metal bowl | | | ● | ● | ● |
| | M1 | Metal bowl with manual drain cock | | ● | ● | ● | ● |
| Element | Blank | 5µm | ● | ● | ● | ● | ● |
| | Y | 0.3µm (submicron) Note 6 | | | ● | ● | ● |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● | ● |
| | Q | With differential pressure detection port (Rc1/4) | | | | | ● |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● |
| E Display unit | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | ● |
| F Piping adaptor set (Attached) | | Page 428 Note 7 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● | | |
| A20*W | Rc3/4 piping adaptor set | | | | | ● | ● |
| A25*W | Rc1 piping adaptor set | | | | | ● | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | | | ● | ● |
| *Adaptor screw type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |

Note on model no. selection

- Note 1:Piping adaptor A400-20*-W is attached on the both ends of C4060-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2:When G threads or NPT threads are selected, the IN, OUT, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 3:Select the options from drainage, bowl material, element, and differential pressure detection. When selecting options for several items, list options in order from the top.
- Note 4:Refer to page 276 for the automatic drain use conditions.
- Note 5:When option symbol "F" is selected, the NO automatic drain is enclosed for the air filter and the NC automatic drain is enclosed for the oil mist filter. When option symbol "F1" is selected, the NC automatic drain is enclosed for both the air filter and oil mist filter. For "FF" and "FF1", only the filter has a large discharge rate and the oil mist filter is a normal NC automatic drain.
- Note 6:Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 7:The joiner set is enclosed with the piping adaptor set.

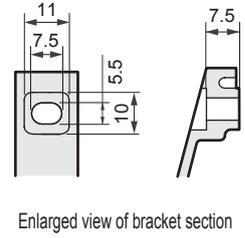
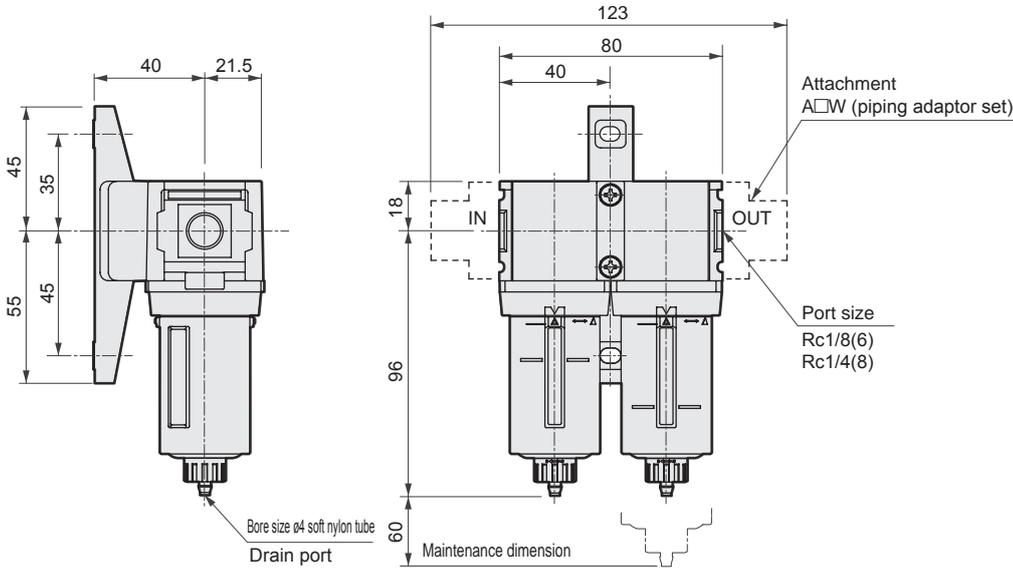
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Standard series F.R.L. unit

F.M. Combination

Dimensions

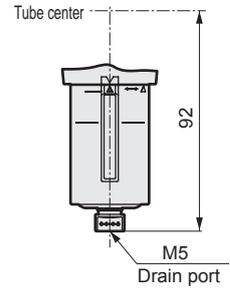


● C1060-W

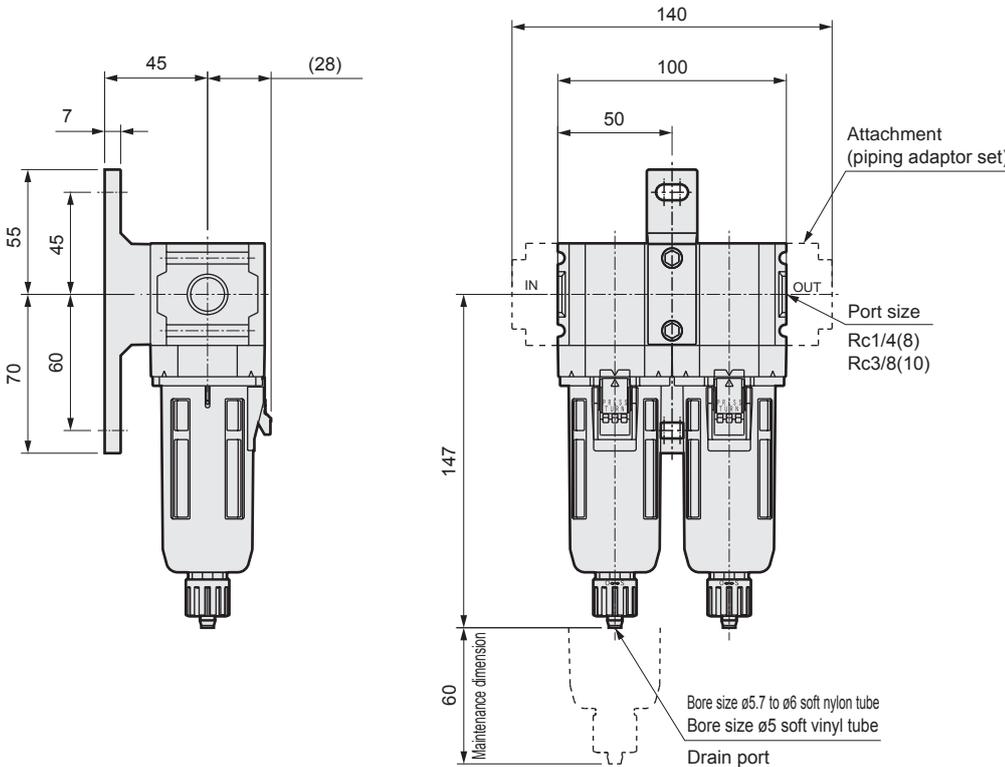


Enlarged view of bracket section

● Option dimensions With automatic drain (F1)



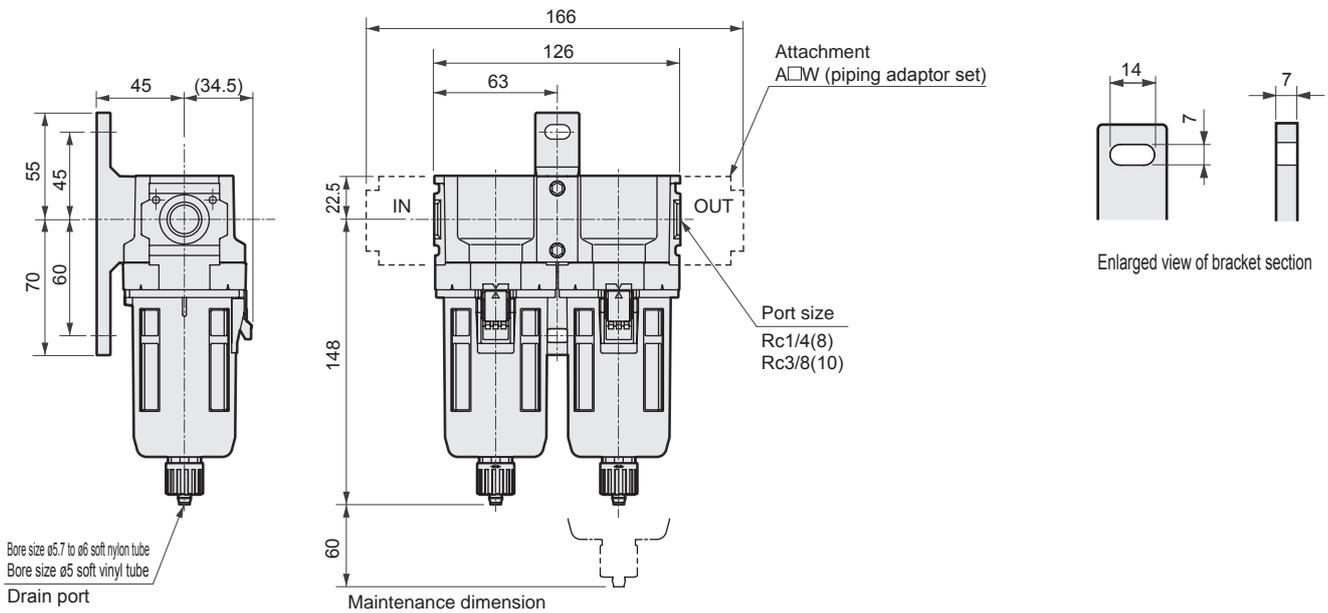
● C2060-W



Dimensions

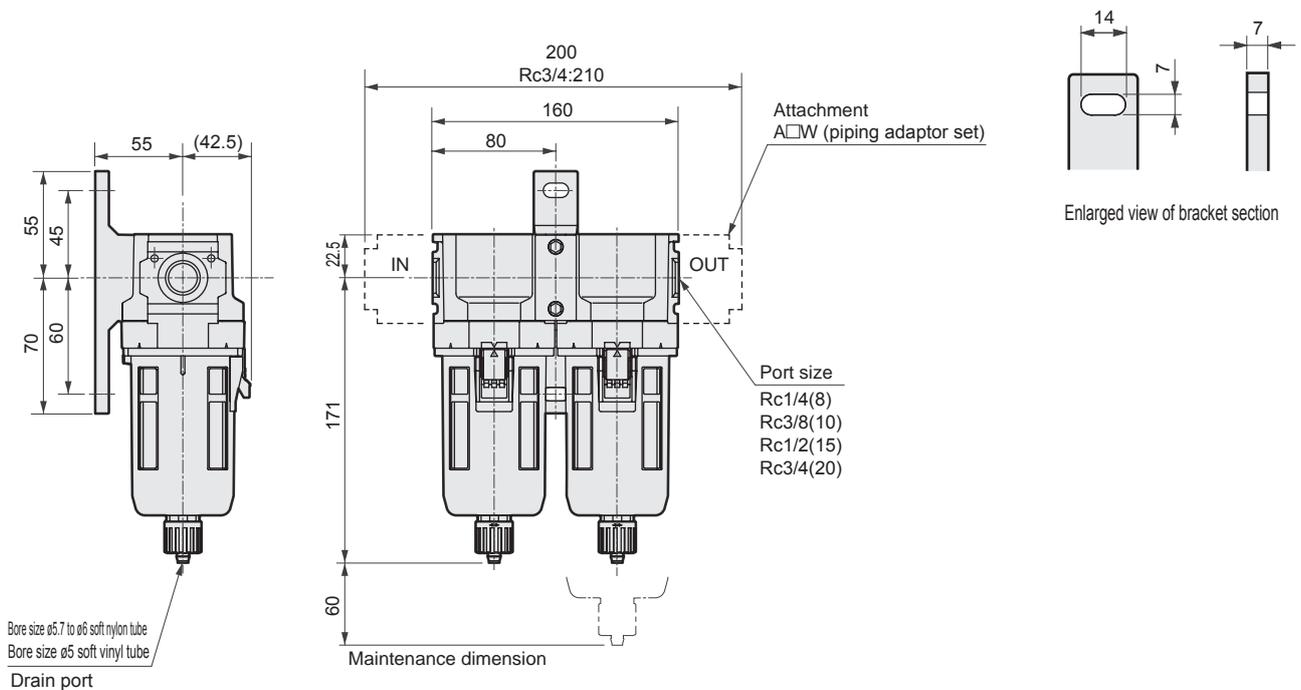


● C3060-W



- Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

● C4060-W



- Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

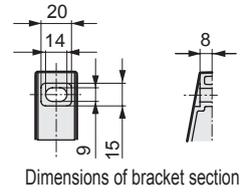
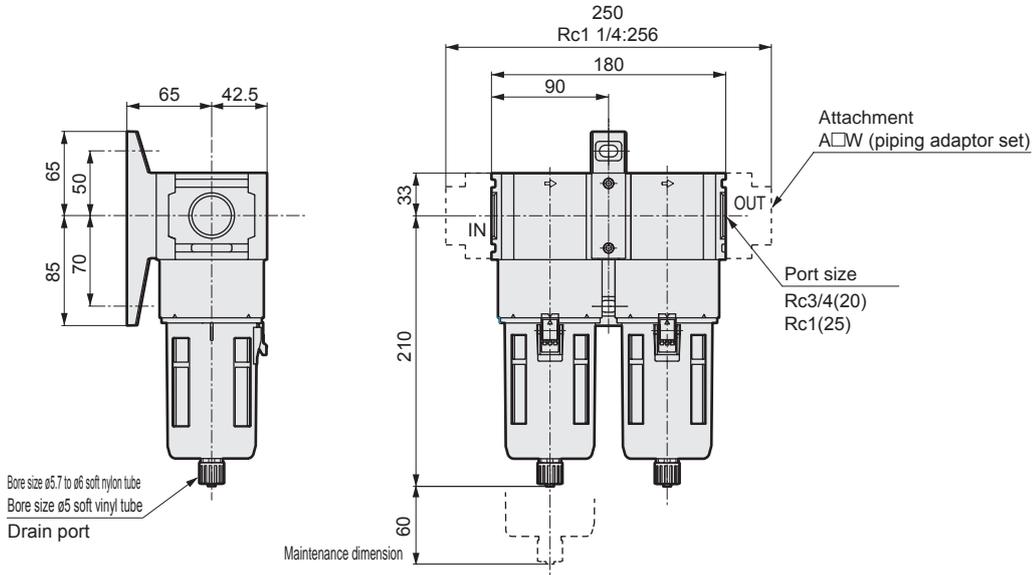
Standard series
F.R.L. unit

F.M. Combination

Dimensions

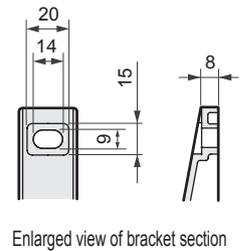
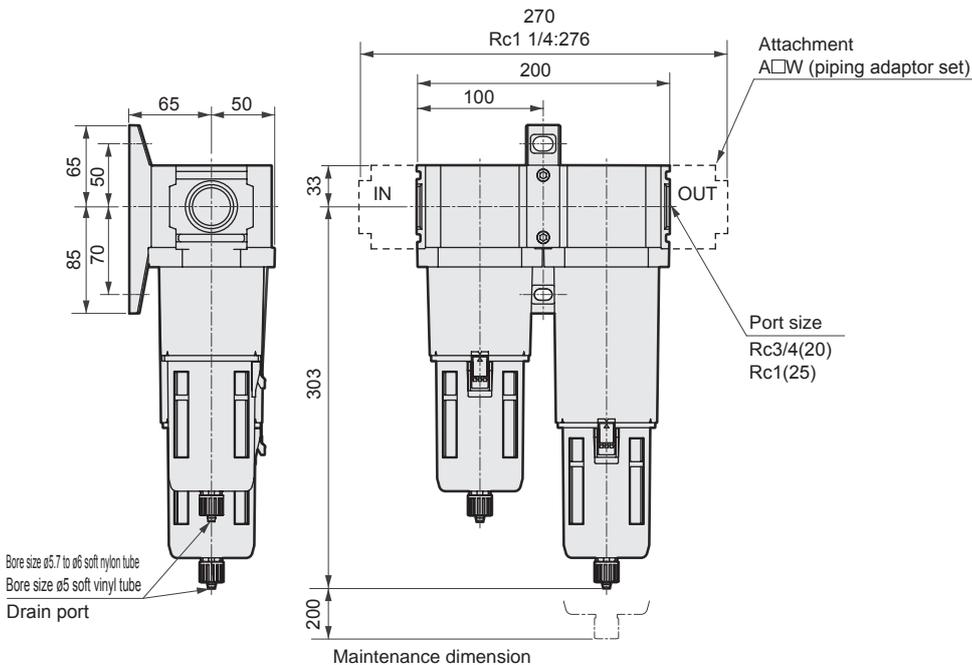


● C6060-W



● Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

● C8060-W



● Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



F.F.M. combination standard white Series

C3070/C4070/C6070/C8070-W Series

5µm filter, 0.3µm filter and oilmist filter integrated.

Port size: 1/4 to 1

JIS symbol 



Specifications

| Descriptions | | C3070-W | C4070-W | C6070-W | C8070-W |
|--|-----------------|---|---|--|---|
| Appearance | |  |  |  |  |
| | Filter (5µm) | F3000-W | F4000-W | F6000-W | F8000-W |
| | Filter (0.3µm) | F3000-W | F4000-W | F6000-W | F8000-W |
| Components | Oil mist filter | M3000-W | M4000-W | M6000-W | M8000-W |
| Working fluid | | Compressed air | | | |
| Max. working pressure MPa | | 1.0 Notes 2, 3 | | | |
| Withstanding pressure MPa | | 1.5 | | | |
| Ambient temperature range °C | | 5 to 60 | | | |
| Port size Rc, NPT, G | | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | | 0.96 | 1.61 | 3.09 | 4.01 |
| Secondary oil concentration | | 0.01mg/m ³ or less | | | |
| Max. flow rate (Note 1) m ³ /min. | | 0.23 | 0.5 | 0.8 | 1.1 |

Note 1: The maximum flow is for a primary pressure of 0.7 MPa.

Note 2: When "F" with an automatic drain is selected, the supply air pressure is 0.15 MPa or more. Air is purged with initial drainage until pressure reaches 0.1 MPa.

Note 3: When "F1" with an automatic drain is selected, the supply air pressure is 0.15 MPa or more.

Note 4: Refer to page 360 for details on other oil mist filters.

F.F.M. Combination

How to order

How to order

C3070 - **6** - **W** - **Z** - **A6W**

A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Piping adaptor set (attached)

* Refer to page 274 for the explanation of the option.

| A Model no. | | | |
|-------------|---|---|---|
| C | C | C | C |
| 3 | 4 | 6 | 8 |
| 0 | 0 | 0 | 0 |
| 7 | 7 | 7 | 7 |
| 0 | 0 | 0 | 0 |

| Symbol | Descriptions | | | | | | |
|--|----------------------------|--|--|---|---|---|---|
| B Port size | | | | | | | |
| 8 | 1/4 | ● | ● | | | | |
| 10 | 3/8 | ● | ● | | | | |
| 15 | 1/2 | | ● | | | | |
| 20 | 3/4 | | ● | ● | | | |
| 25 | 1 | | | ● | ● | | |
| C Port thread type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | | |
| N | NPT thread | ● | ● | ● | ● | | |
| G | G thread | ● | ● | ● | ● | | |
| D Option | | | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● | |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | ● | ● | ● | ● | |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | |
| | Note 4, Note 5 | FF | Large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | ● |
| | | FF1 | Large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● | |
| | Z | Nylon bowl | ● | ● | ● | ● | |
| | M | Metal bowl | ● | ● | ● | ● | |
| | M1 | Metal bowl with manual drain cock | ● | ● | ● | ● | |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● | |
| | Q | With differential pressure detection port (Rc1/4) | | | ● | ● | |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | |
| E Display unit | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | | |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | | |
| F Piping adaptor set (attached) | | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | | | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | | | | |
| A15*W | Rc1/2 piping adaptor set | ● | ● | | | | |
| A20*W | Rc3/4 piping adaptor set | | ● | ● | ● | | |
| A25*W | Rc1 piping adaptor set | | | ● | ● | | |
| A32*W | Rc1 1/4 piping adaptor set | | | ● | ● | | |
| *Adaptor screw type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | | |
| N | NPT thread | ● | ● | ● | ● | | |
| G | G thread | ● | ● | ● | ● | | |

⚠ Note on model no. selection

- Note 1: Piping adaptor A400-20*-W is attached on the both ends of C4070-20*-W. "A20*W" does not need to be selected for the piping adaptor set.
- Note 2: When G threads or NPT threads are selected, the IN, OUT, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 3: Select the options from drainage, bowl material, element, and differential pressure detection. When selecting options for several items, list options in order from the top.
- Note 4: Refer to page 276 for the automatic drain use conditions.
- Note 5: When option symbol "F" is selected, the NO automatic drain is enclosed for the air filter and the NC automatic drain is enclosed for the oil mist filter. When option symbol "F1" is selected, the NC automatic drain is enclosed for both the air filter and oil mist filter. For "FF" and "FF1", only the filter has a large discharge rate and the oil mist filter is a normal NC automatic drain.
- Note 6: The joiner set is enclosed with the piping adaptor set.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

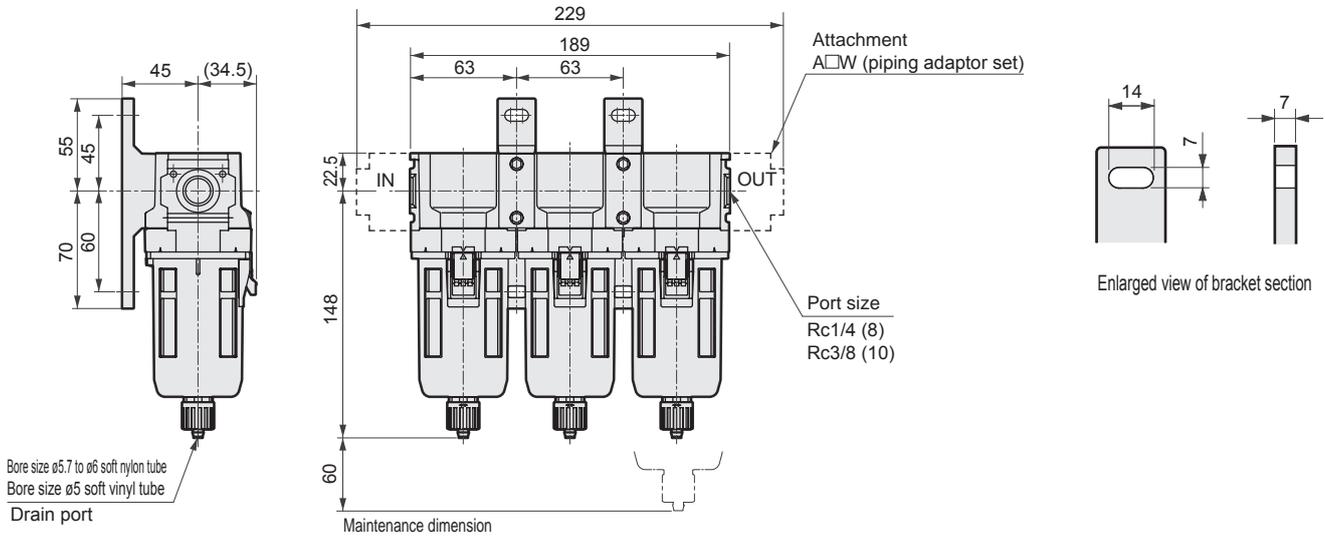
Standard series
F.R.L. unit

F.F.M. Combination

Dimensions

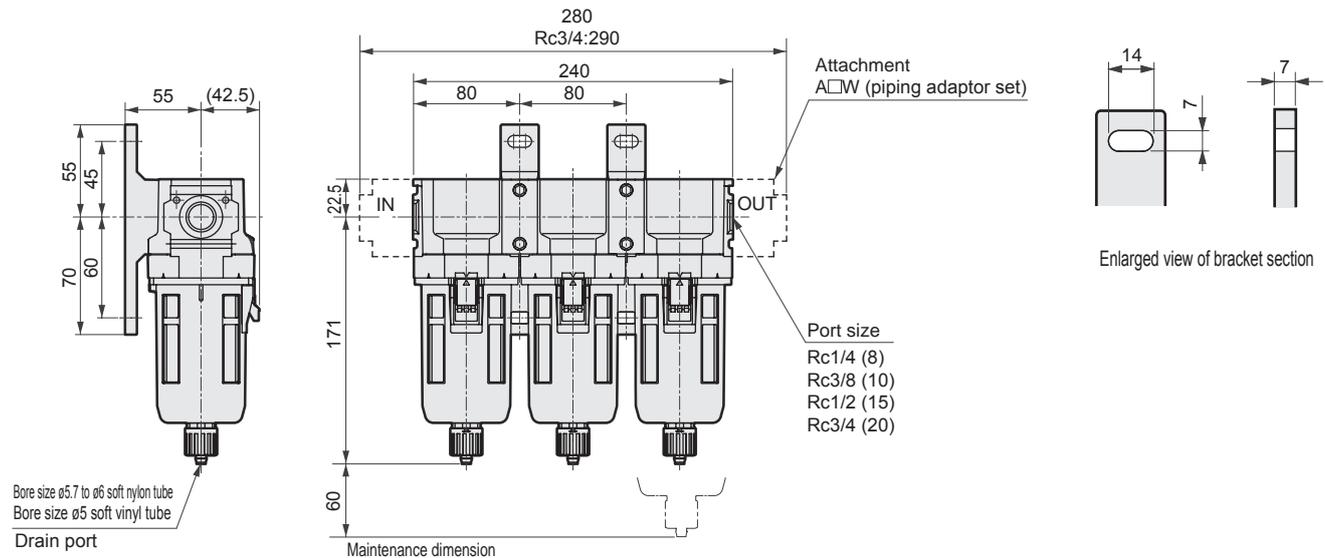


● C3070-W



● Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

● C4070-W

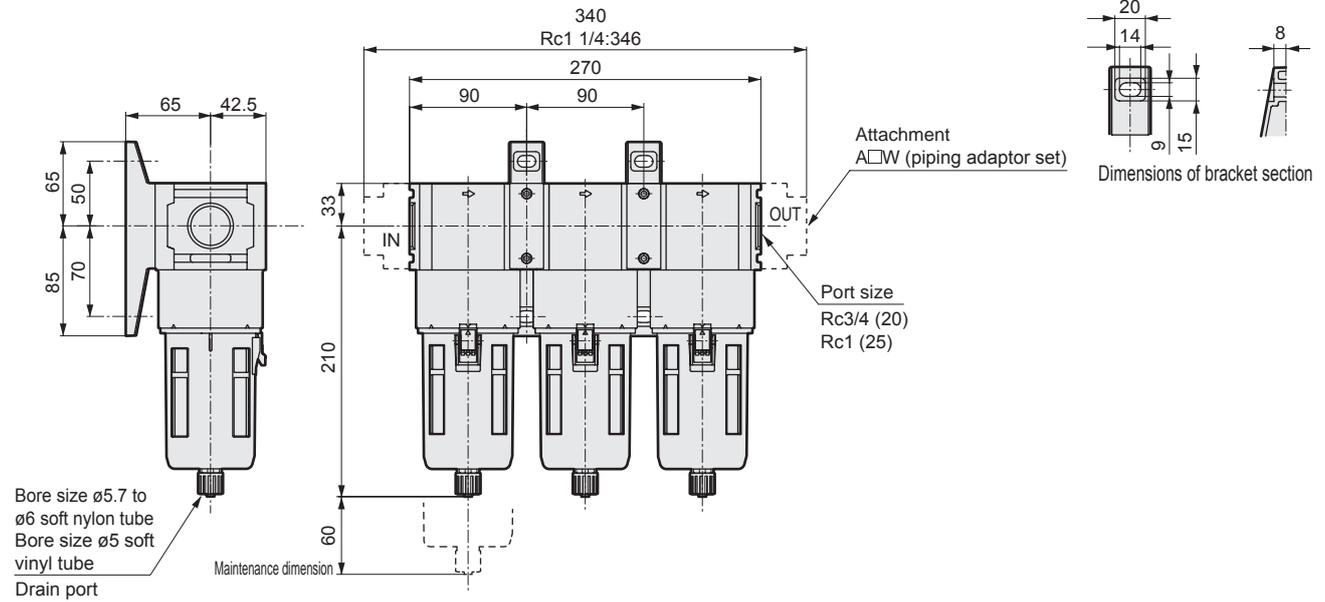


● Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

Dimensions

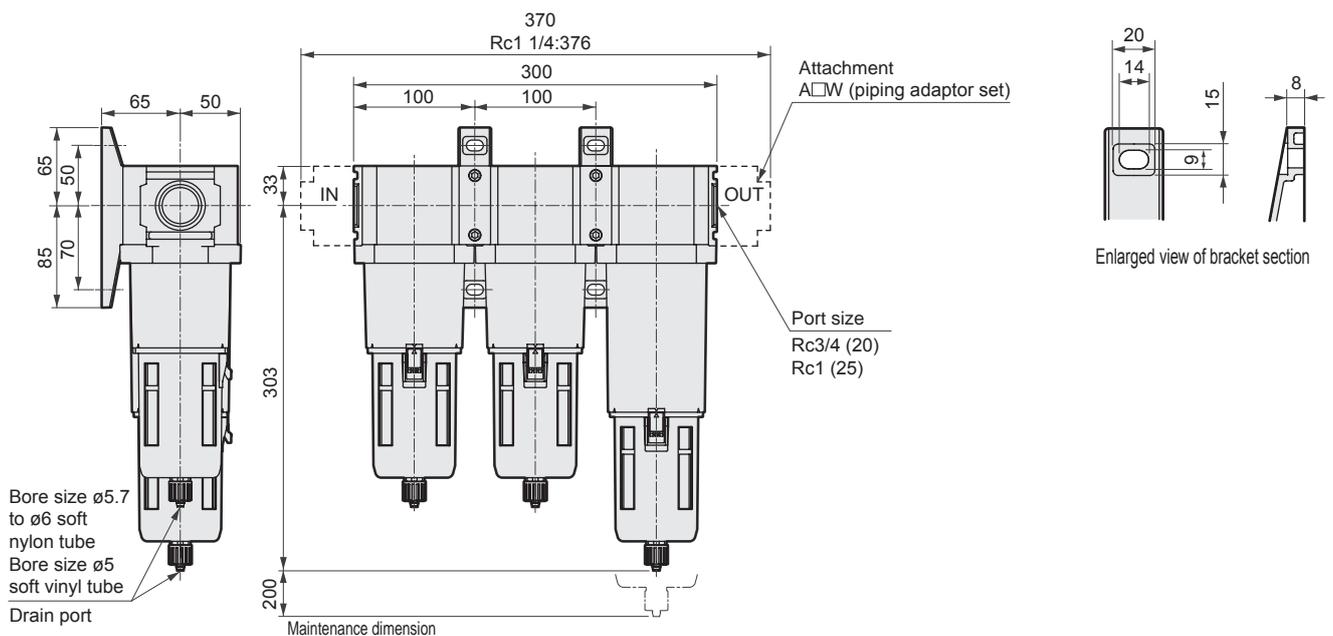


● C6070-W



- Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

● C8070-W



- Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



Filter/regulator standard white Series

W1000/W2000/W3000/W4000/W8000-W Series

New Series of 5µm elements for dust removal, and 0.3µm elements for tar removal.

Port size: 1/8 to 1

JIS symbol



Specifications

| Descriptions | W1000-W | W2000-W | W3000-W | W4000-W | W8000-W |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------------|--------------------------------|
| Appearance | | | | | |
| Working fluid | Compressed air | | | | |
| Max. working pressure MPa | 1.0 Notes 1, 2, 3 | | | | |
| Withstanding pressure MPa | 1.5 Note 1 | | | | |
| Ambient temperature range °C | 5 to 60 | | | | Note 4 |
| Filtration rating µm | 5 | | 5 or 0.3 | | |
| Set pressure range MPa | 0.05 to 0.85 Note 1 | 0.05 to 0.85 | | | |
| Relief | With relief mechanism | | | | |
| Drain capacity cm ³ | 12 | 25 | 45 | 80 | 80 (Note 5) |
| Port size Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | 0.175 | 0.40 | 0.6 | 0.9 | 2.0 |
| Standard accessories | Pressure gauge and bowl guard | | | | |

Note 1: When "F1" with an automatic drain is selected for the W1000-W series, minimum operating pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa and withstanding pressure is 1.05 MPa. Refer to the maximum processing flow table (page 350) for the F1000-W-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.

Note 2: When "F" with an automatic drain is selected, minimum operation pressure must be 0.1 MPa. Air is purged with initial drainage until pressure reaches 0.1 MPa.

Note 3: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15 MPa.

Note 4: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

Note 5: Drainage accumulates up to 170 cm³ only with the manual drain cock.

Note 6: When using the "F1" with automatic drain, use the W2000-W Series at less than the maximum flow rate. (Refer to F2000-W on page 350 for the maximum flow rate.)

Ozone specifications

(Ending 11)

W*000 - - W - -

P11

Clean room specifications

(catalog No. CB-033S)

- Dust generation preventing structure for use in cleanrooms

W*000 - -

P7*

Secondary battery compatible specifications

(catalog No. CC-947)

- Structured for use in secondary battery manufacturing processes

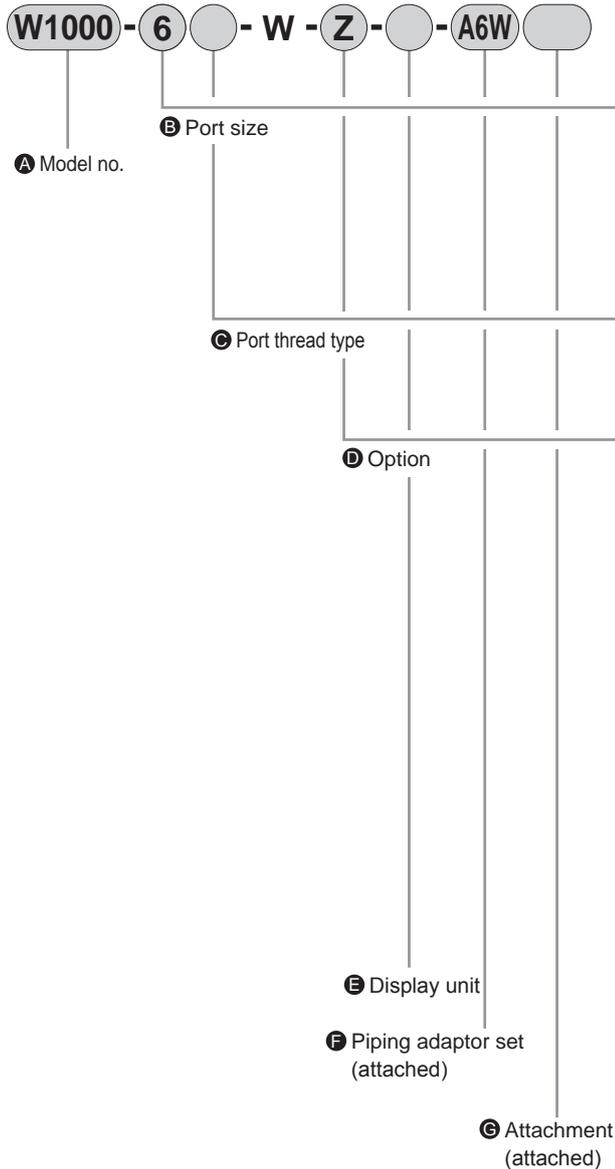
W*000 - -

P4*

Filter/Regulator series

How to order

How to order



* Refer to page 274 for the explanation of the option.

A Model no.

| W1000 | W2000 | W3000 | W4000 | W8000 |
|-------|-------|-------|-------|-------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |

| Symbol | Descriptions | | | | | |
|--|---|--|---|---|---|---|
| B Port size | | | | | | |
| 6 | 1/8 | ● | | | | |
| 8 | 1/4 | ● | ● | ● | ● | |
| 10 | 3/8 | | ● | ● | ● | |
| 15 | 1/2 | | | | ● | |
| 20 | 3/4 | | | | | ● |
| 25 | 1 | | | | | ● |
| C Port thread type | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● |
| D Option | | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | ● | ● |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● |
| | FF | Large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | ● |
| | FF1 | Large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● |
| | M | Metal bowl | | | | ● |
| | M1 | Metal bowl with manual drain cock | | | ● | ● |
| Element | Blank | 5µm | ● | ● | ● | ● |
| | Y | 0.3µm (submicron) Note 4 | | | ● | ● |
| Pressure Range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa Note 5 | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● |
| | T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● |
| | T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● |
| | T6 | Digital pressure sensor PPX attachment option Note 6 | ● | ● | ● | ● |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● |
| E Display unit | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● |
| F Piping adaptor set (attached) | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | |
| A15*W | Rc1/2 piping adaptor set | | | | ● | ● |
| A20*W | Rc3/4 piping adaptor set | | | | | ● |
| A25*W | Rc1 piping adaptor set | | | | | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | | | ● |
| *Adaptor screw type | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● |
| G Attachment (attached) | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● |
| B3W | L type bracket | ● | ● | ● | ● | ● |
| G45P | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● | ● |
| G49P | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● | ● |
| G59P | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● | ● |
| G40P | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● | ● |
| G50P | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● | ● |
| G41P | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● | ● |
| G52P | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● | ● |
| R2 | Note 6 Digital pressure sensor: PPX-R10N-6M | ● | ● | ● | ● | ● |

Note on model no. selection

- Note 1:When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 2:Select options per drainage, bowl material, element, and regulator sections.
When selecting options for several items, list options in order from the top.
- Note 3:Refer to page 276 for the automatic drain use conditions.
- Note 4:Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 5:The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 6:When "D" option "T6" is selected, only "Blank" or "R2" can be selected for pressure gauge (enclosed). The digital pressure sensor PPX mounting port (Rc1/8) is assembled by open.
- Note 7:The output type is NPN transistor output. Consult with CKD when the PNP transistor output is required.
- Note 8:The C-type bracket and piping adaptor set attachments cannot be used at the same time.
- Note 9:The joiner set is enclosed with the piping adaptor set.
- Note 10:If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.
- Note 11:Refer to Section (2. Regulator), in "▲ PRECAUTIONS for Installation and Adjustment" (page 279) for details on mounting the L-type bracket.

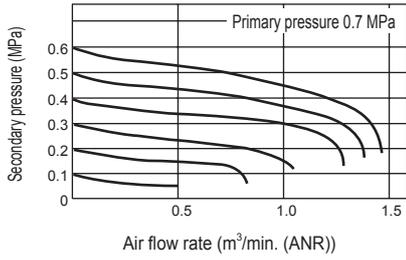
- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series
F.R.L. unit

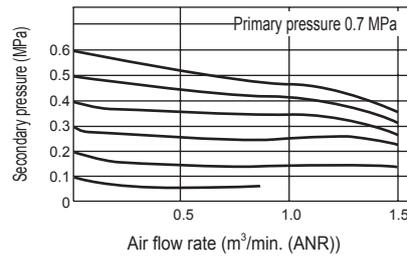
Filter/Regulator series

Flow characteristic

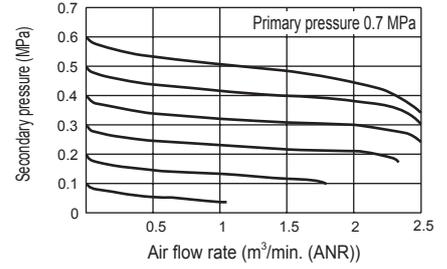
● W1000-6-W



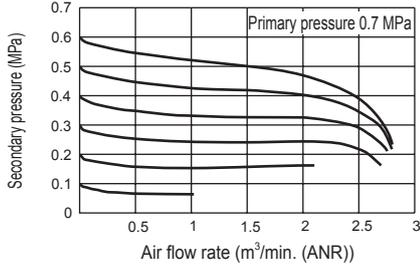
● W1000-8-W



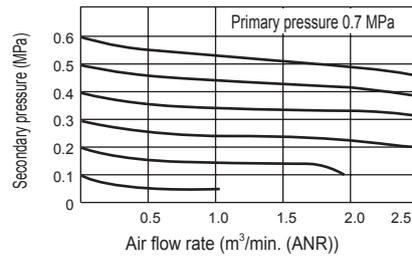
● W2000-8-W



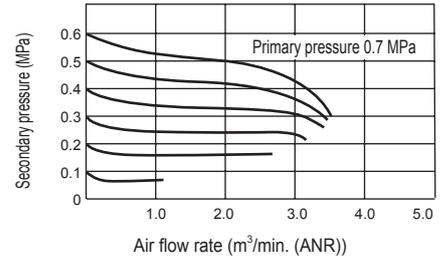
● W2000-10-W



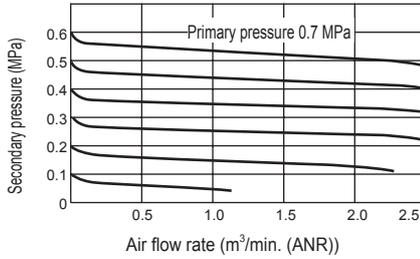
● W3000-8-W



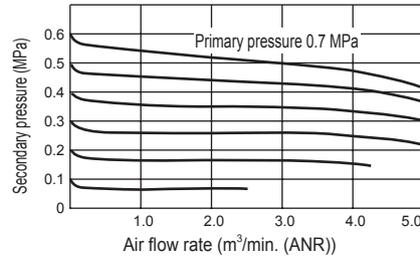
● W3000-10-W



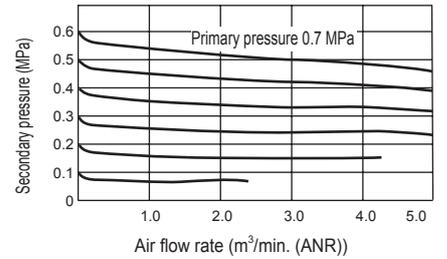
● W4000-8-W



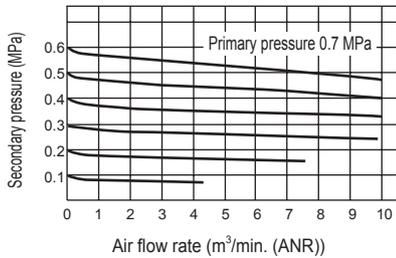
● W4000-10-W



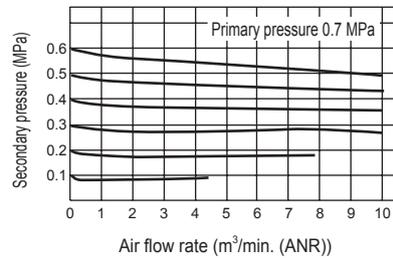
● W4000-15-W



● W8000-20-W

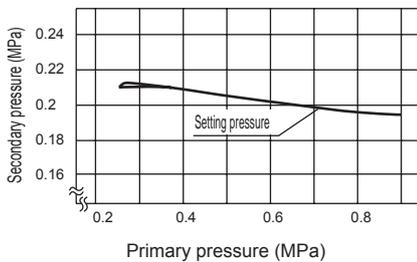


● W8000-25-W

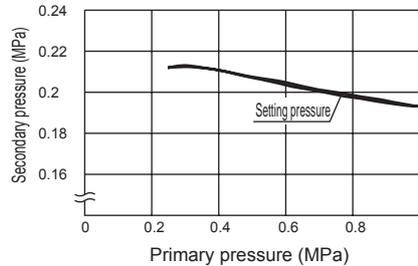


Pressure characteristic

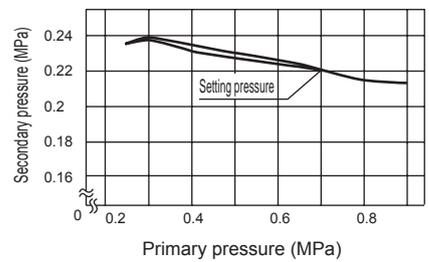
● W1000-W



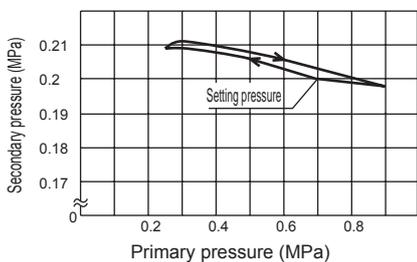
● W2000-W



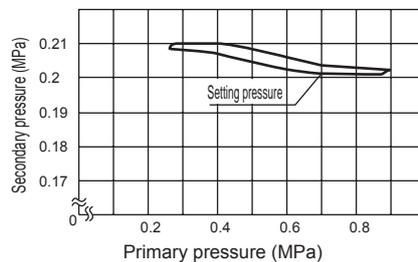
● W3000-W



● W4000-W



● W8000-W



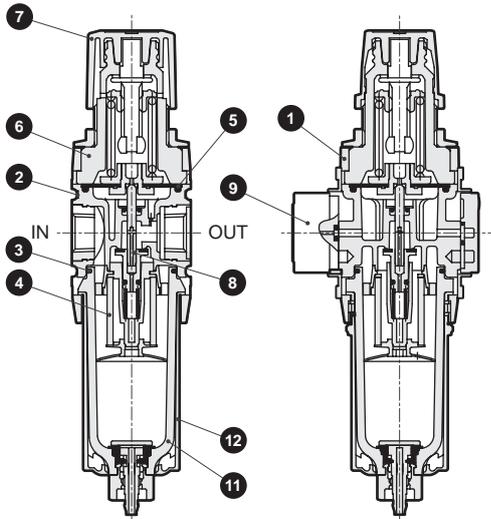
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Filter/Regulator series

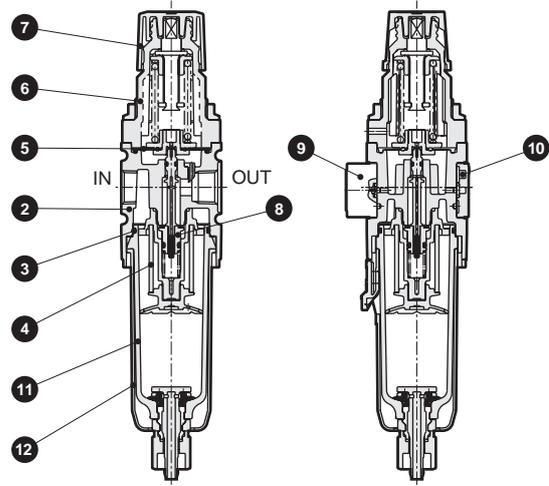
Internal structure and parts list

Internal structure and parts list

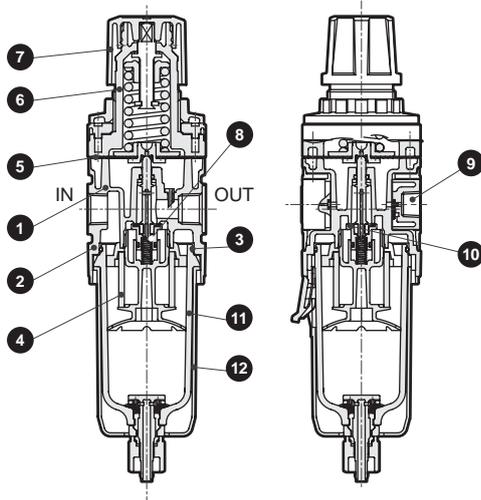
● W1000-W



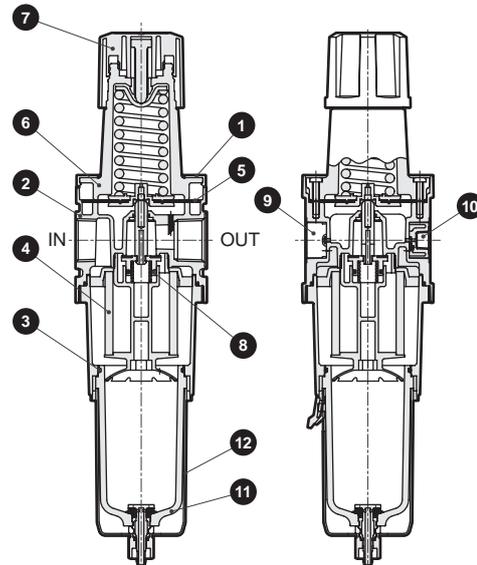
● W2000-W



● W3000-W/W4000-W



● W8000-W



| No. | Parts name | Material | | | | |
|-----|-------------------------------|---|----------------------------------|--|--|----------------------------|
| | | W1000-W | W2000-W | W3000-W | W4000-W | W8000-W |
| 1 | Plate cover | ABS resin | - | ABS resin | | |
| 2 | Body | Polyamide resin, steel | Aluminum alloy die-casting | | | |
| 3 | O ring <small>Note 2</small> | Special nitrile rubber | | | | |
| 4 | Element <small>Note 1</small> | Polyacetal resin Polypropylene | Polypropylene | | | |
| 5 | Diaphragm assembly | Polyacetal resin Polypropylene | Polyacetal resin, nitrile rubber | Zinc alloy die-casting, nitrile rubber | | |
| 6 | Cover | Polyamide resin | PBT resin | | | Aluminum alloy die-casting |
| 7 | Knob | Polyacetal resin | | | | |
| 8 | Valve assembly | Brass, hydrogen nitrile rubber (polyacetal resin: W2000-W, W3000-W, W4000-W only) | | | | |
| 9 | Pressure gauge assembly | PBT resin, polyacetal resin, polycarbonate resin, nitrile rubber, brass, steel | | | | |
| 10 | Gage plug assembly | - | | | Polyamide resin, nitrile rubber, steel | |
| | Blanking plug assembly | PBT resin, nitrile rubber, steel | | | - | |
| 11 | Bowl assembly | Polycarbonate resin, polyacetal resin, urethane resin | | | | |
| 12 | Bowl guard | Polyamide resin | Polyamide resin | | | |

Note 1: W1000-W is element assembly.

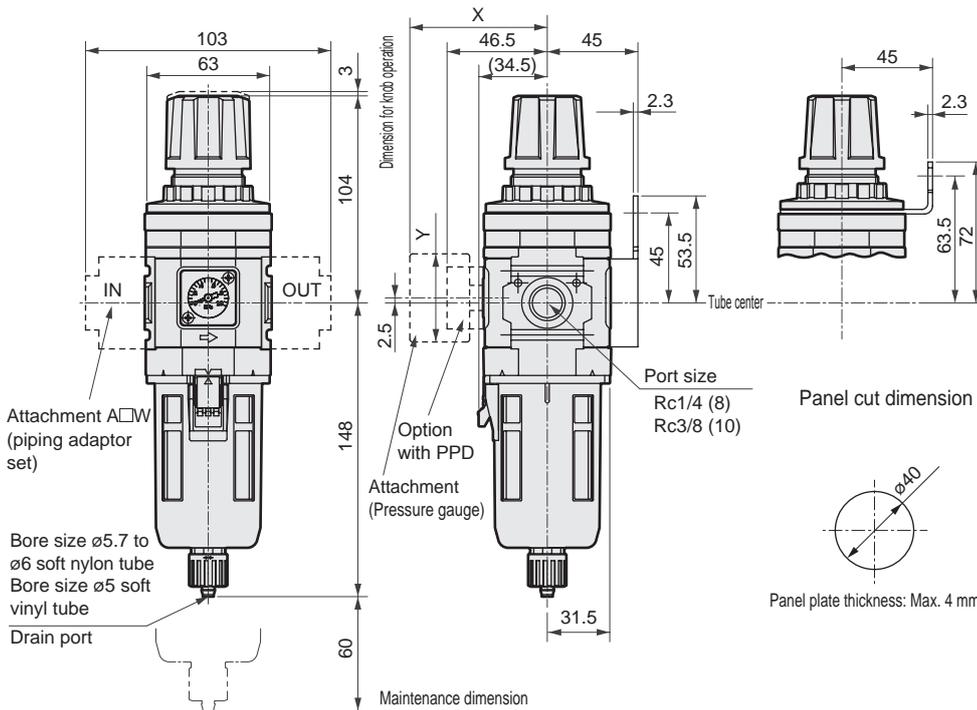
Note 2: O-ring of W1000-W is special shaped.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Standard series
F.R.L. unit

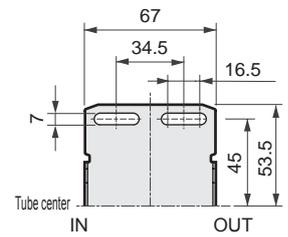
Dimensions



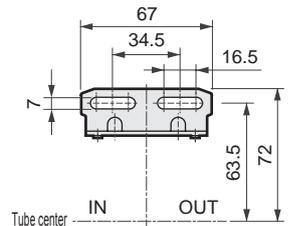
● W3000-W



• Attachment
C type bracket (-BW)
Part model no.: B320



L type bracket (-B3W)
Part model no.: B330

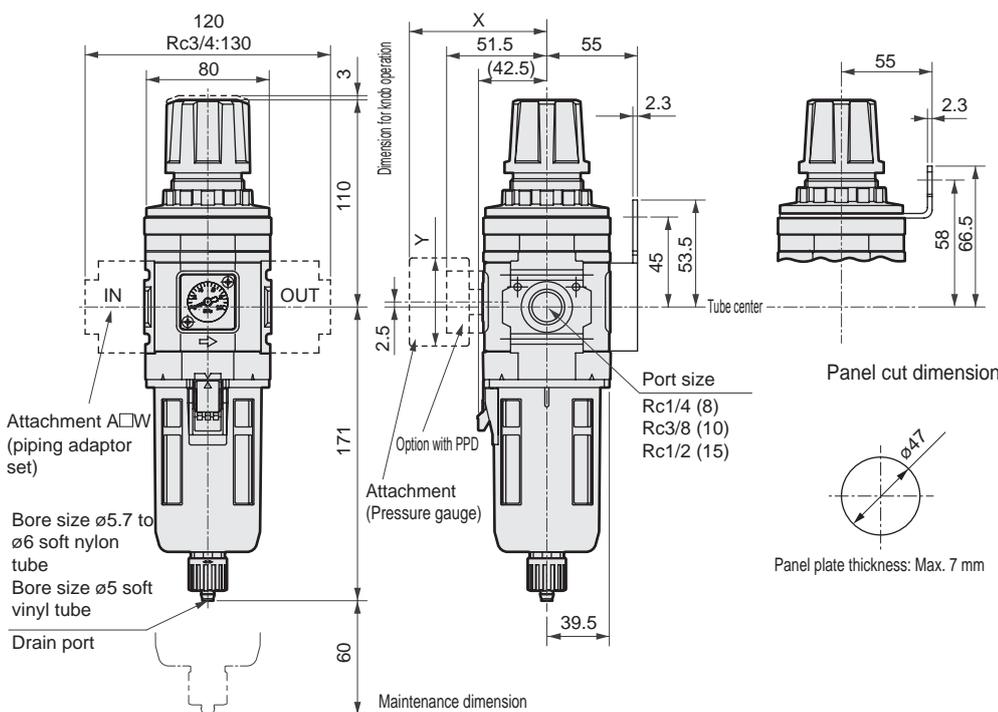


Pressure gauge attached optional dimensions table

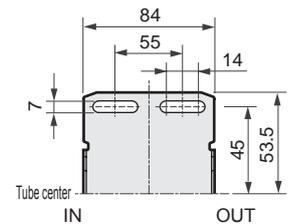
| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (70) | ø39 |
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |
| G52P | (82) | ø52.5 |
| R2 | (69.5) | □30 |

● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

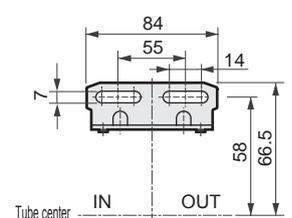
● W4000-W



• Attachment
C type bracket (-BW)
Part model no.: B420



L type bracket (-B3W)
Part model no.: B430



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (75) | ø39 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (75) | □30 |

● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

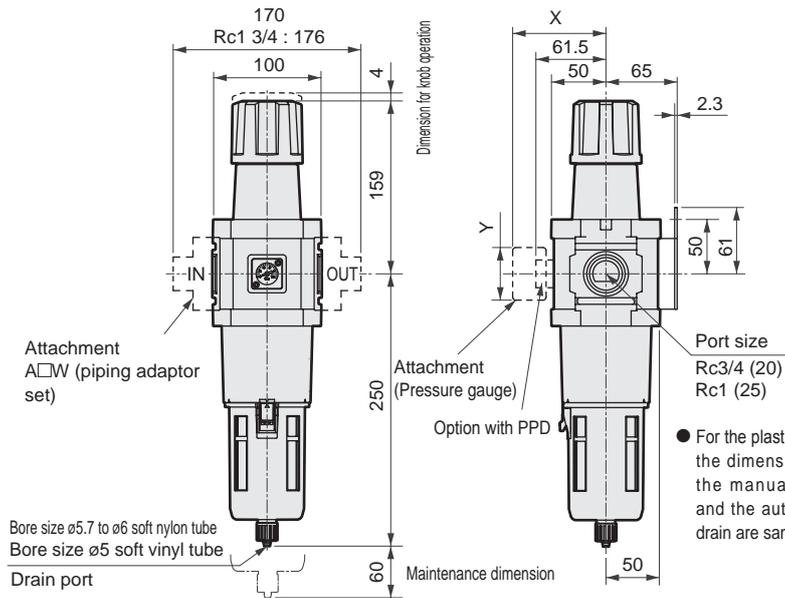
Standard series
F.R.L. unit

Filter/Regulator Series

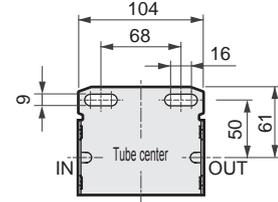
Dimensions



W8000-W



• Attachment
C type bracket (-BW)
Part model no.: B820



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (85) | $\phi 39$ |
| G49P | (84.5) | $\phi 43.5$ |
| G59P | (87) | $\phi 52$ |
| G40P | (86.5) | $\phi 42.5$ |
| G50P | (86.5) | $\phi 52.5$ |
| G41P | (85) | $\phi 42$ |
| G52P | (98) | $\phi 52.5$ |
| R2 | (85) | $\square 30$ |

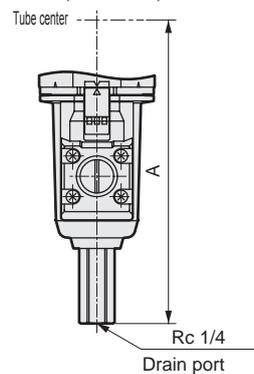
• For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

Optional dimensions

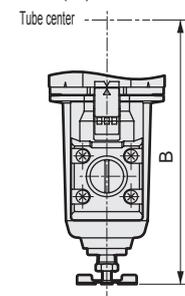


• Metal bowl (option) [W2000-W, 3000-W, 4000-W, 8000-W]

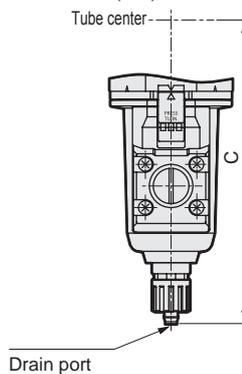
With automatic drain (FM, F1M)



Automatic drain cock (M)



Standard manual drain cock (M1)



Dimensions

| Model no. | F1M | M | M1 |
|-----------|-------|-------|-----|
| | A | B | C |
| W2000-W | - | - | 147 |
| W3000-W | 163.5 | 143.5 | 154 |
| W4000-W | 187 | 166.5 | 177 |
| W8000-W | 266 | 245.5 | 256 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



Reverse filter/regulator standard white Series

W1100/W2100/W3100/W4100/W8100-W Series

Introducing the 5µm dust removing element and 0.3µm tar removing element, with back flow function, to the lineup.

Port size: 1/8 to 1

JIS symbol



Specifications

| Descriptions | W1100-W | W2100-W | W3100-W | W4100-W | W8100-W |
|---------------------------------|--------------------------------|--------------------------------|--------------------------------|-------------------------------------|--------------------------------|
| Appearance | | | | | |
| Working fluid | Compressed air | | | | |
| Max. working pressure MPa | 1.0 Notes 1, 2, 3 | | | | |
| Withstanding pressure MPa | 1.5 Note 3 | | | | |
| Ambient temperature range °C | 5 to 60 Note 4 | | | | |
| Filtration rating µm | 5 | | 5 or 0.3 | | |
| Set pressure range (Note 2) MPa | 0.05 to 0.85 Note 1 | | 0.05 to 0.85 | | |
| Relief | With relief mechanism | | | | |
| Drain capacity cm ³ | 12 | 25 | 45 | 80 | 80 (Note 5) |
| Port size Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | 0.175 | 0.40 | 0.6 | 0.9 | 2.0 |
| Standard accessories | Pressure gauge and bowl guard | | | | |

Note 1: When "F" with an automatic drain is selected, minimum operation pressure must be 0.15MPa. Air is purged with initial drainage until pressure reaches 0.1 MPa.
 Note 2: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15MPa.
 Note 3: When "F1" with an automatic drain is selected for the W1100 series, minimum operating pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa and withstanding pressure is 1.05 MPa. Refer to the maximum processing flow table (page 350) for the F1000-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.
 Note 4: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.
 Note 5: Up to 170 m³ is stored only with the manual drain cock type.
 Note 6: Check that the primary pressure is at least 0.05 MPa or more than the secondary pressure.
 Note 7: Refer to the set pressure range for the back pressure given on page 344 when selecting the model.
 Note 8: When using the "F1" with automatic drain, use the W2100-W Series at less than the maximum flow rate. (Refer to F2000-W on page 350 for the maximum flow rate.)

Ozone specifications

(Ending 11)

W*000 - - W - - P11

Clean room specifications

(catalog No. CB-033S)

● Dust generation preventing structure for use in cleanrooms

W*100 - - - P7*

Secondary battery compatible specifications

(catalog No. CC-947)

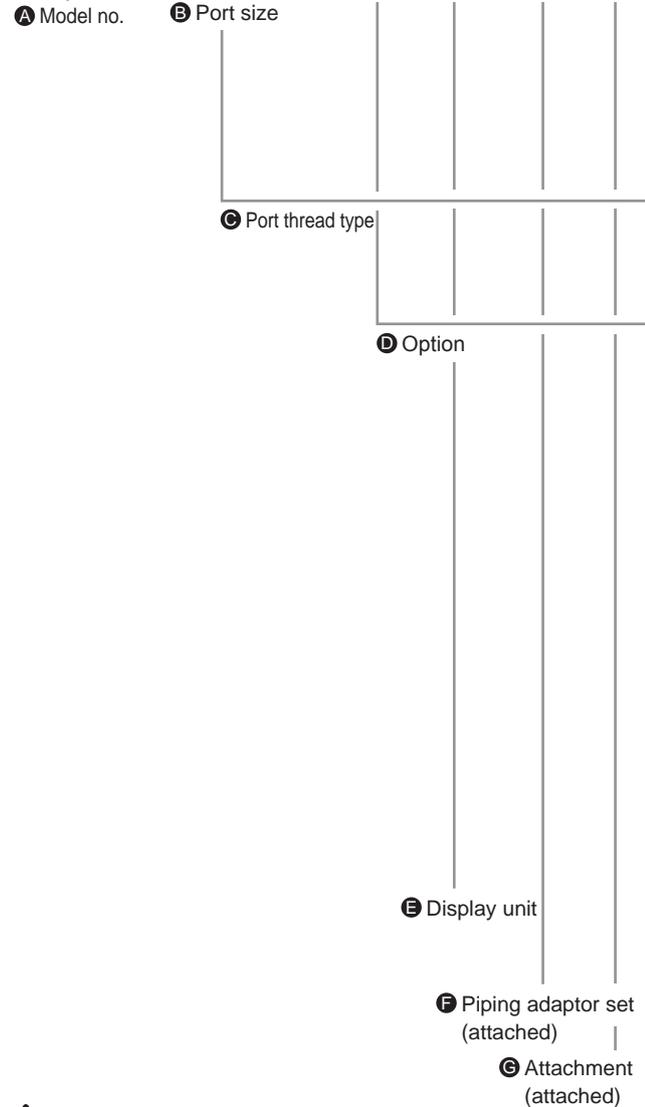
● Structured for use in secondary battery manufacturing processes

W*100 - - P4*

Filter/Regulator series

How to order

How to order



⚠ Note on model no. selection

- Note 1: When G threads or NPT threads are selected, the IN, OUT, gauge port, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 2: Select options per drainage, bowl material, element, and regulator sections. When selecting options for several items, list options in order from the top.
- Note 3: **Positions of a check valve and pressure gauge can not be changed. If the IN and OUT direction must be reversed, indicate "X1" at the end of the option field.**
- Note 4: Refer to page 276 for the automatic drain use conditions.
- Note 5: Refer to page 352 for maximum processing flow when option "Y" is selected.
- Note 6: The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 7: When "D" option "T6" is selected, only "Blank" or "R2" can be selected for pressure gauge (enclosed). The digital pressure sensor PPX mounting port (Rc1/8) is assembled by open.
- Note 8: The output type is NPN transistor output. Consult with CKD when the PNP transistor output is required.
- Note 9: The C-type bracket and piping adaptor set attachments cannot be used at the same time.
- Note 10: The joiner set is enclosed with the piping adaptor set.
- Note 11: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.
- Note 12: Refer to Section (2. Regulator), in "⚠ PRECAUTIONS for Installation and Adjustment" (page 279) for details on mounting the L-type bracket.

* Refer to page 274 for the explanation of the option.

| Symbol | Descriptions | A Model no. | | | |
|--------|--------------|-------------|-------|-------|-------|
| | | W1000 | W2100 | W3100 | W4100 |
| | | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 |

| B Port size | | Note 1 | | | |
|-------------|-----|--------|---|---|---|
| 6 | 1/8 | ● | ● | ● | ● |
| 8 | 1/4 | ● | ● | ● | ● |
| 10 | 3/8 | | ● | ● | ● |
| 15 | 1/2 | | | ● | ● |
| 20 | 3/4 | | | | ● |
| 25 | 1 | | | | ● |

| C Port thread type | | Note 2, Note 3 | | | |
|--------------------|------------|----------------|---|---|---|
| Blank | Rc thread | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● |

| D Option | | Note 2, Note 3 | | | | |
|----------------|-----------------------------|--|---|---|---|---|
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | | ● | ● | ● |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | | ● | ● |
| | FF | Large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | ● |
| Note 4 | FF1 | Large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | ● |
| | Blank | Polycarbonate bowl | ● | ● | ● | ● |
| Bowl material | Z | Nylon bowl | ● | ● | ● | ● |
| | M | Metal bowl | | ● | ● | ● |
| | M1 | Metal bowl with manual drain cock | | ● | ● | ● |
| Element | Blank | 5µm | ● | ● | ● | ● |
| | Y | 0.3µm (submicron) Note 5 | | ● | ● | ● |
| Pressure Range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa Note 6 | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● |
| | T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● |
| | T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● |
| | T6 | Digital pressure sensor PPX attachment option Note 7 | ● | ● | ● | ● |
| Flow Direction | R1 | Pressure switch with display PPD assembly Note 8 | ● | ● | ● | ● |
| | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| X1 | Reverse flow (right → left) | ● | ● | ● | ● | |

| E Display unit | | Note 9, Note 10 428 pages | | | |
|----------------|----------------------------|---------------------------|---|---|---|
| Blank | MPa display, Rc thread | ● | ● | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● |

| F Piping adaptor set (attached) | | Note 9, Note 10 428 pages | | | |
|---------------------------------|----------------------------|---------------------------|---|---|---|
| Blank | Not attached | ● | ● | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● |
| A20*W | Rc3/4 piping adaptor set | | | ● | ● |
| A25*W | Rc1 piping adaptor set | | | | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | | ● |

| *Adaptor screw type | | Note 11 425, 659 pages | | | |
|---------------------|------------|------------------------|---|---|---|
| Blank | Rc thread | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● |

| G Attachment (attached) | | Note 11 425, 659 pages | | | |
|-------------------------|--------------------------------------|------------------------|---|---|---|
| Blank | Not attached | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● |
| B3W | L type bracket Note 12 | ● | ● | ● | ● |
| G45P | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● |
| G49P | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● |
| G59P | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● |
| G40P | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● |
| G50P | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● |
| G41P | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● |
| G52P | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● |
| R2 Note 7 | Digital pressure sensor: PPX-R10N-6M | ● | ● | ● | ● |

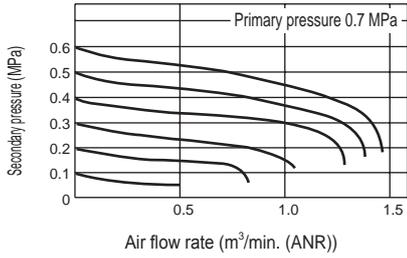
- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series
F.R.L. unit

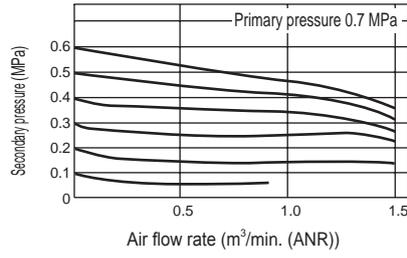
Filter/Regulator series

Flow characteristic

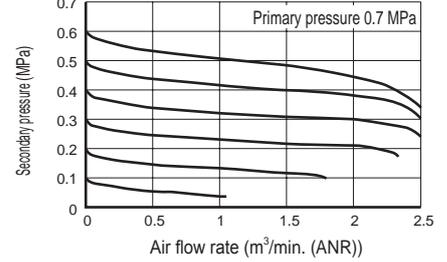
● W1100-6-W



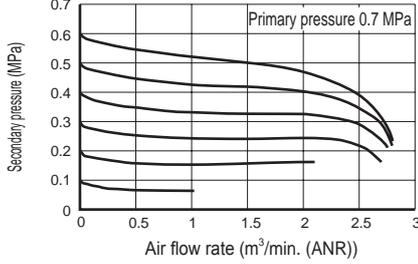
● W1100-8-W



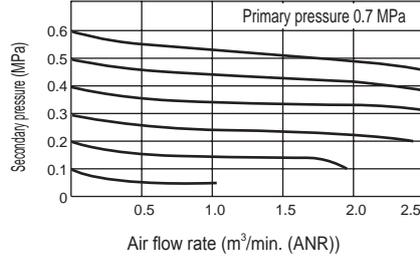
● W2100-8-W



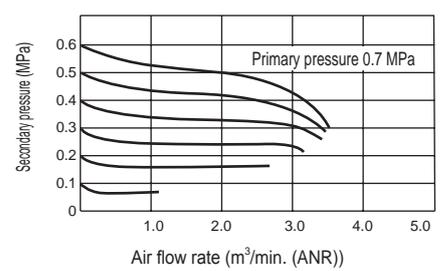
● W2100-10-W



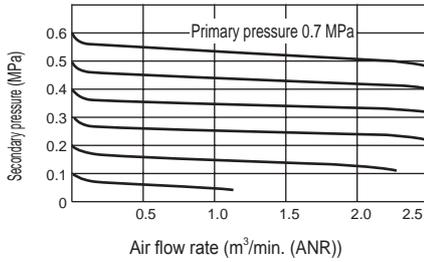
● W3100-8-W



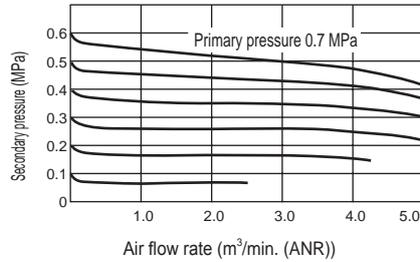
● W3100-10-W



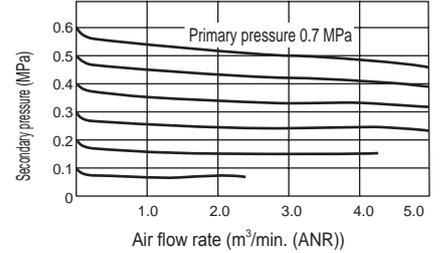
● W4100-8-W



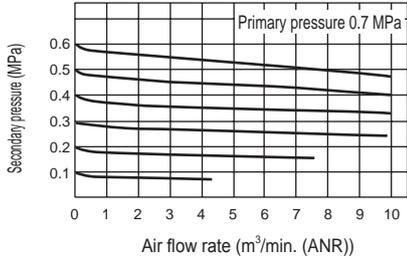
● W4100-10-W



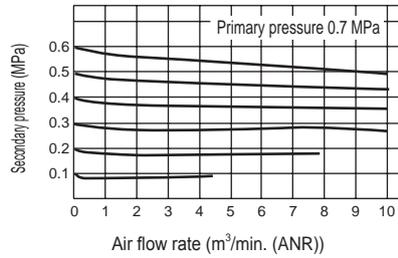
● W4100-15-W



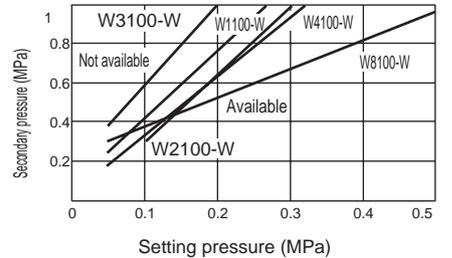
● W8100-20-W



● W8100-25-W



● Set pressure range to back pressure

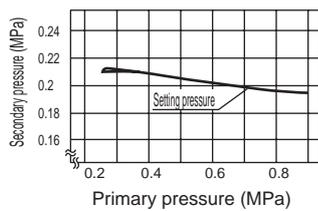


Note: The upper side of the graph is nonusable and the lower side usable.

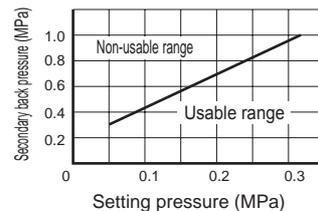
Example: If W4100-W is set to set pressure 0.2 MPa and the secondary back pressure is 0.6 MPa or more, the secondary pressure will not be released to the primary side.

Pressure characteristic

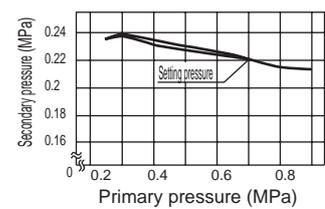
● W1100-W



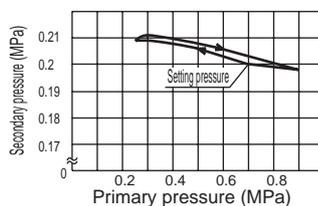
● W2100-W



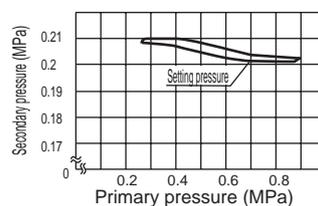
● W3100-W



● W4100-W



● W8100-W



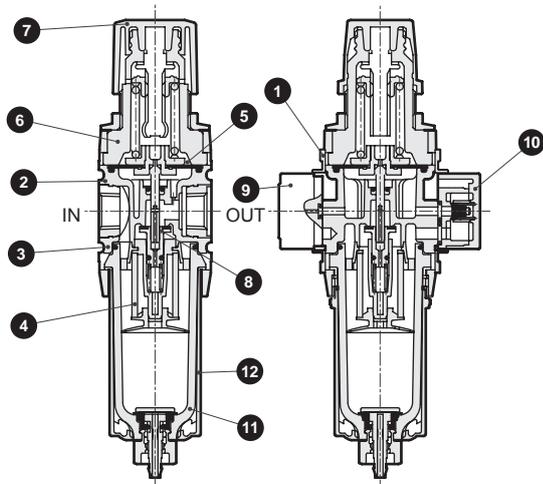
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Filter/Regulator series

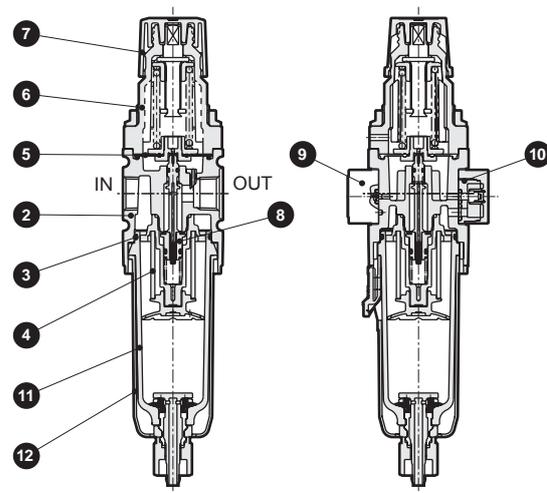
Internal structure and parts list

Internal structure and parts list

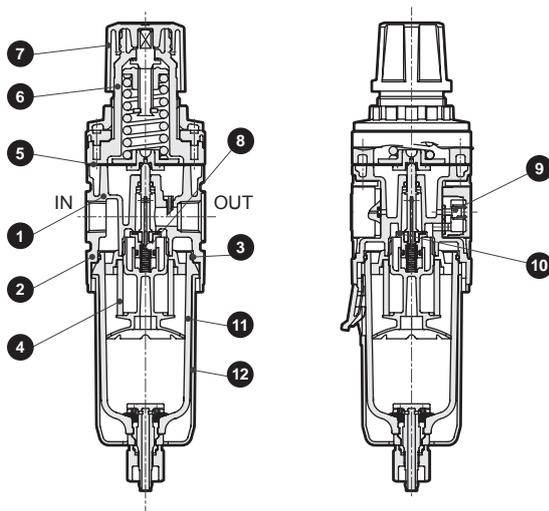
● W1100-W



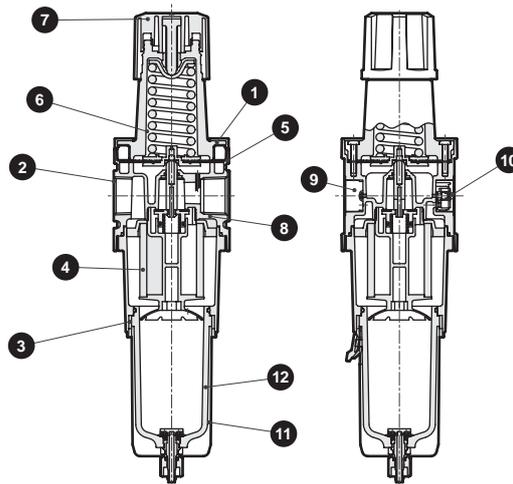
● W2100-W



● W3100-W/W4100-W



● W8100-W



| No. | Parts name | Material | | | | |
|-----|----------------------------|--|------------------------|--|----------------------------|---------|
| | | W1100-W | W2100-W | W3100-W | W4100-W | W8100-W |
| 1 | Plate cover | ABS resin | - | ABS resin | | |
| 2 | Body | Polyamide resin, steel Aluminum alloy die-casting | | | | |
| 3 | O ring Note 2 | Special nitrile rubber | | | | |
| 4 | Element Note 1 | Polyacetal resin Polypropylene Polypropylene | | | | |
| 5 | Diaphragm assembly | Polyacetal resin Nitrile rubber | | Zinc alloy die-casting, nitrile rubber | | |
| 6 | Cover | Polyamide resin | PBT resin | | Aluminum alloy die-casting | |
| 7 | Knob | Polyacetal resin | | | | |
| 8 | Valve assembly | Brass, hydrogen nitrile rubber (polyacetal resin: W2100-W, W3100-W, 4100-W) | | | | |
| 9 | Pressure gauge assembly | PBT resin, polyacetal resin, polycarbonate resin, nitrile rubber, brass, steel | | | | |
| 10 | Check valve total assembly | PBT resin, nitrile rubber, stainless steel wire, steel | | | | |
| 11 | Bowl assembly | Polycarbonate resin, polyacetal resin, urethane resin | | | | |
| 12 | Bowl guard | Polyamide resin | Polyamide resin, steel | | | |

Note 1: W1100-W is element assembly.

Note 2: O-ring of W1000-W is special shaped.

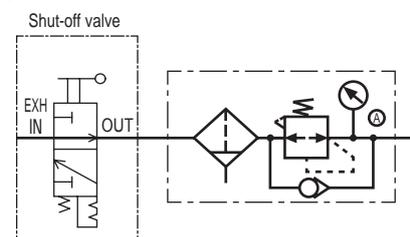
Note 3: Refer to page 349 for repair kits model No.

Functional explanation

When the primary pressure is introduced from the IN side, the check valve functions as a regular regulator because it closes with primary pressure and spring load. When primary pressure is released by a switching valve such as a shut-off valve, the check valve opens with secondary pressure. Pressure in the diaphragm chamber is released and pressure drops. This causes the diaphragm to be pressed down by the pressure adjustment spring. The main valve (valve assembly) opens, and the air on the OUT side is discharged.

Note: Set back pressure A for when the primary pressure is released within the range in the graph for the regulator's set pressure. (Refer to page 344 for the graph)

● Circuit diagram



When using shut-off valve in front of reverse filter and regulator.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster

Speed control valve

Silencer

Check valve / others

Joint / tube

Vacuum filter

Vacuum regulator

Suction plate

Magnetic spring buffer

Mechanical pressure SW

Electronic pressure SW

Contact / close contact cont. SW

Air sensor

Pressure SW for coolant

Small flow sensor

Small flow controller

Flow sensor for air

Flow sensor for water

Total air system

Total air system (Gamma)

Ending

Standard series

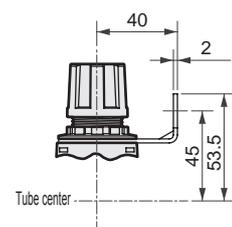
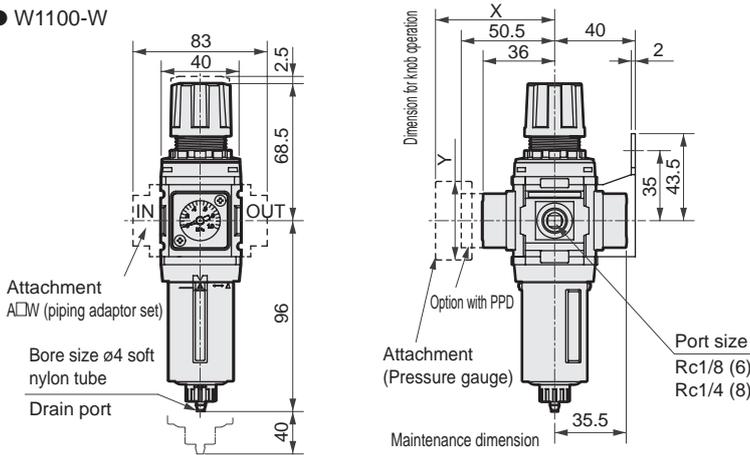
F.R.L. unit

Filter/Regulator series

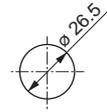
Dimensions



W1100-W

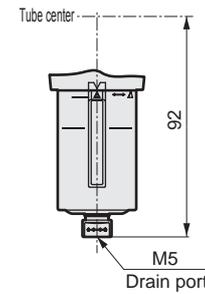


Panel cut dimension



Panel plate thickness: Max. 6 mm

Option dimensions With automatic drain (F1)



Attachment ACW (piping adaptor set)

Bore size $\phi 4$ soft nylon tube

Drain port

Attachment (Pressure gauge)

Port size Rc1/8 (6)
Rc1/4 (8)

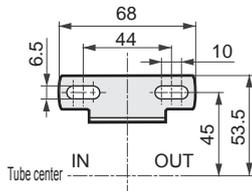
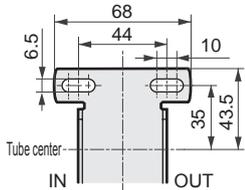
Maintenance dimension

M5
Drain port

Attachment

C type bracket (-BW)
Part model no.: B120

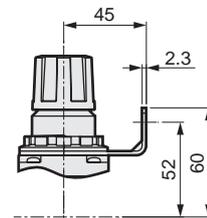
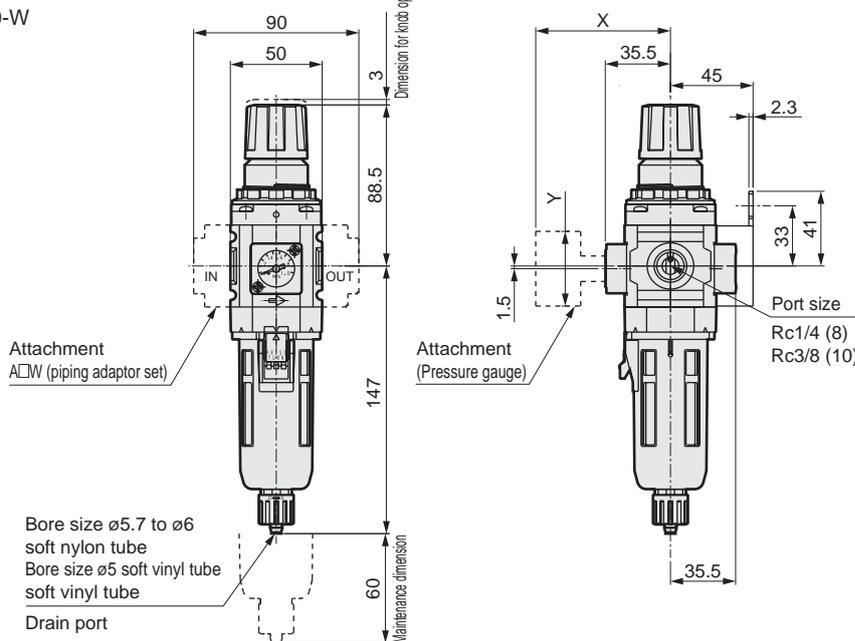
L type bracket (-B3W)
Part model no.: B130



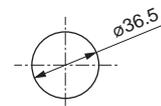
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (74) | $\phi 39$ |
| G49P | (73.5) | $\phi 43.5$ |
| G59P | (76) | $\phi 52$ |
| G40P | (75.5) | $\phi 42.5$ |
| G50P | (75.5) | $\phi 52.5$ |
| G41P | (74) | $\phi 42$ |
| G52P | (86) | $\phi 52.5$ |
| R2 | (74) | $\square 30$ |

W2100-W



Panel cut dimension



Panel plate thickness: Max. 4 mm

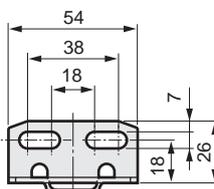
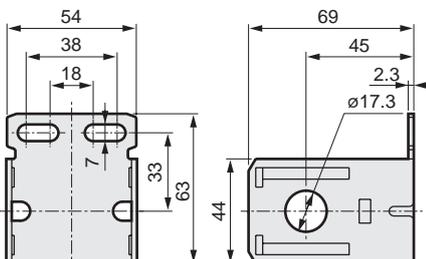
Bore size $\phi 5.7$ to $\phi 6$ soft nylon tube
Bore size $\phi 5$ soft vinyl tube
soft vinyl tube
Drain port

Port size Rc1/4 (8)
Rc3/8 (10)

Attachment

C type bracket (-BW)
Part model no.: B220

L type bracket (-B3W)
Part model no.: B230



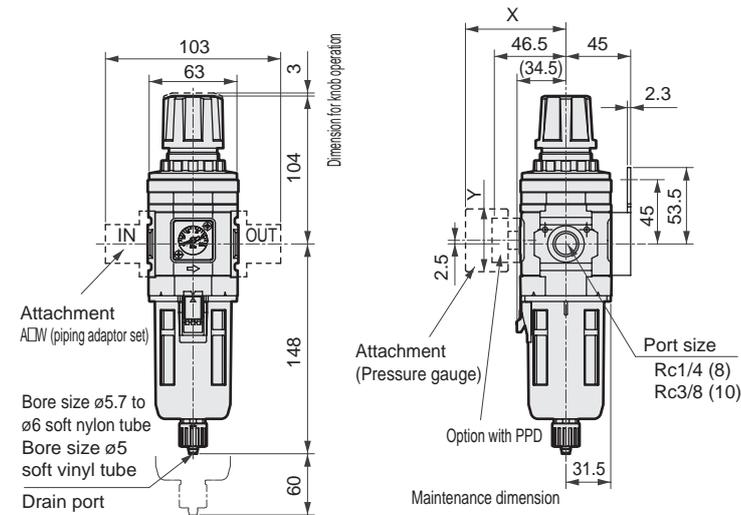
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (73.5) | $\phi 39$ |
| G49P | (73) | $\phi 43.5$ |
| G40P | (75) | $\phi 42.5$ |
| G41P | (73.5) | $\phi 42$ |
| G52P | (85.5) | $\phi 52.5$ |
| R2 | (73) | $\square 30$ |

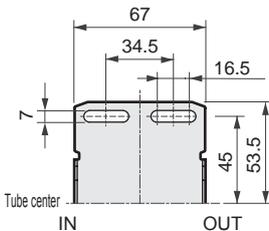
Dimensions



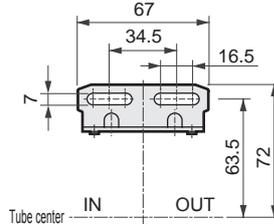
W3100-W



- Attachment
C type bracket (-BW)
Part model no.: B320



- Attachment
L type bracket (-B3W)
Part model no.: B330



- For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

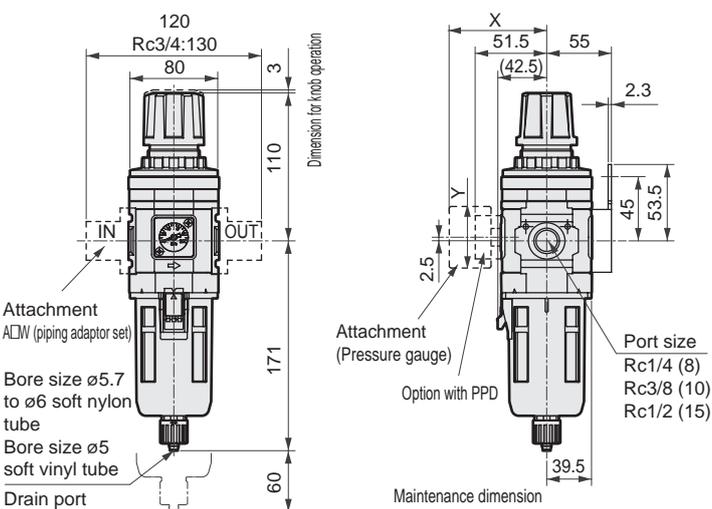
Panel cut dimension

Panel plate thickness: Max. 4 mm

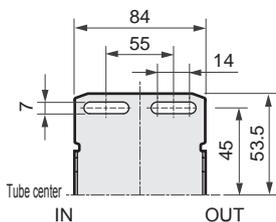
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (70) | $\phi 39$ |
| G49P | (69.5) | $\phi 43.5$ |
| G59P | (72) | $\phi 52$ |
| G40P | (71.5) | $\phi 42.5$ |
| G50P | (71.5) | $\phi 52.5$ |
| G41P | (70) | $\phi 42$ |
| G52P | (82) | $\phi 52.5$ |
| R2 | (69.5) | $\square 30$ |

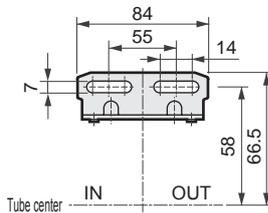
W4100-W



- Attachment
C type bracket (-BW)
Part model no.: B420



- Attachment
L type bracket (-B3W)
Part model no.: B430



- For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

Panel cut dimension

Panel plate thickness: Max. 7 mm

Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (75) | $\phi 39$ |
| G49P | (74.5) | $\phi 43.5$ |
| G59P | (77) | $\phi 52$ |
| G40P | (76.5) | $\phi 42.5$ |
| G50P | (76.5) | $\phi 52.5$ |
| G41P | (75) | $\phi 42$ |
| G52P | (86) | $\phi 52.5$ |
| R2 | (75) | $\square 30$ |

Standard series
F.R.L. unit

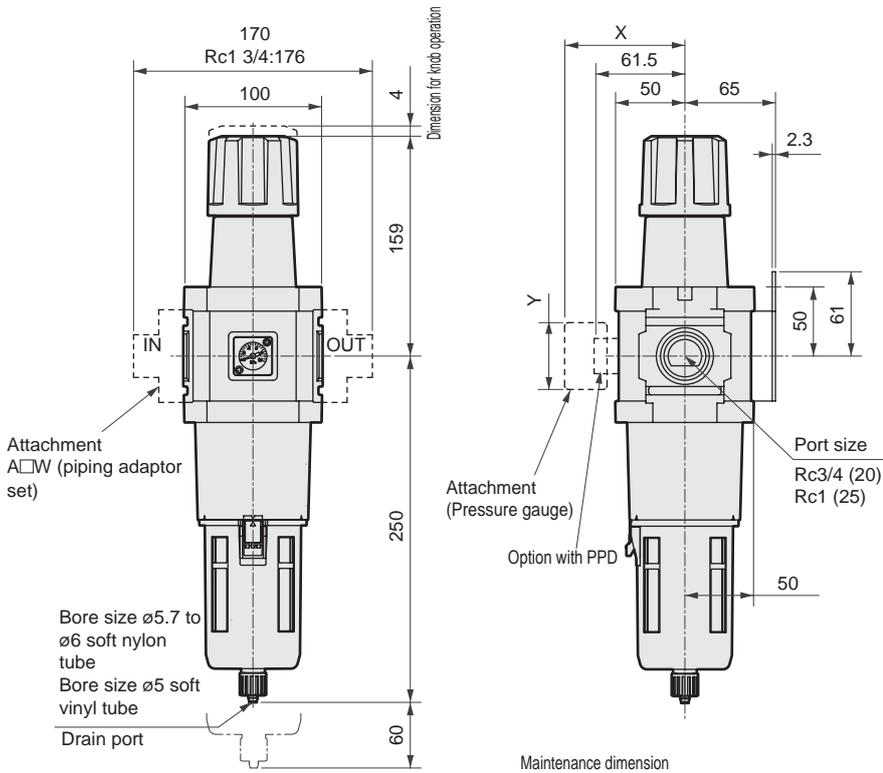
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Filter/Regulator Series

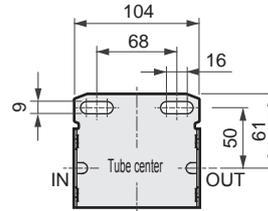
Dimensions



● W8100-W



- Attachment
C type bracket (-BW)
Part model no.: B820



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (85) | $\phi 39$ |
| G49P | (84.5) | $\phi 43.5$ |
| G59P | (87) | $\phi 52$ |
| G40P | (86.5) | $\phi 42.5$ |
| G50P | (86.5) | $\phi 52.5$ |
| G41P | (85) | $\phi 42$ |
| G52P | (98) | $\phi 52.5$ |
| R2 | (85) | $\square 30$ |

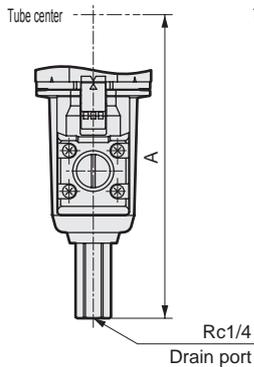
- For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

Optional dimensions

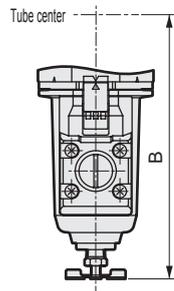


● Metal bowl W2100-W/W3100-W/W4100-W/W8100-W (option)

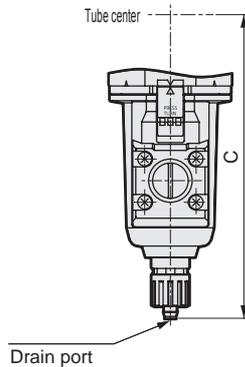
With automatic drain (FM, F1M)



Automatic drain cock (M)



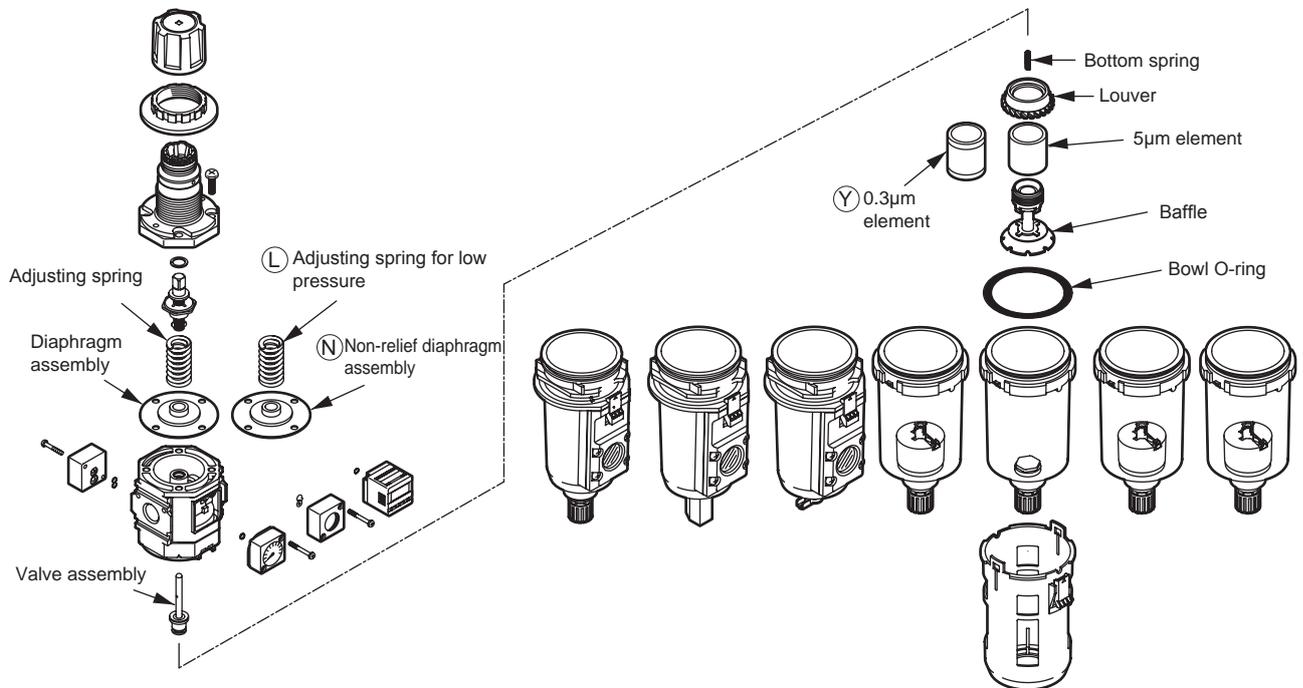
Standard manual drain cock (M1)



Dimensions

| Model no. | F1M | M | M1 |
|-----------|-------|-------|-----|
| | A | B | C |
| W2100-W | - | - | 147 |
| W3100-W | 163.5 | 143.5 | 154 |
| W4100-W | 187 | 166.5 | 177 |
| W8100-W | 266 | 245.5 | 256 |

Optional parts diagram



Repair kits (set of diaphragm assembly, valve assembly, bottom spring, louver, element, baffle, bowl O-ring)

| Repair kits model no. | Relief diaphragm assembly | Non-relief diaphragm assembly | Relief diaphragm assembly | Non-relief diaphragm assembly |
|-----------------------|---------------------------|-------------------------------|---------------------------|-------------------------------|
| Model | 5µm element (blank) | 5µm element (N) | 0.3 µm element (Y) | 0.3 µm element (NY) |
| W1000-W, W1100-W | W1000-KIT | W1000-KIT-N | — | — |
| W2000-W, W2100-W | W2000-KIT | W2000-KIT-N | — | — |
| W3000-W, W3100-W | W3000-KIT | W3000-KIT-N | W3000-KIT-Y | W3000-KIT-NY |
| W4000-W, W4100-W | W4000-KIT | W4000-KIT-N | W4000-KIT-Y | W4000-KIT-NY |
| W8000-W, W8100-W | W8000-KIT | W8000-KIT-N | W8000-KIT-Y | W8000-KIT-NY |

Note: With the W1000-W and W1100-W, the element and baffle are assembly parts, and the louver is assembled onto the body. These parts are excluded from consumables.

Valve assembly (set of valve assembly and bottom spring)

| Model | Valve assembly model no. |
|------------------|--------------------------|
| W1000-W, W1100-W | W1000-VALVE-ASSY |
| W2000-W, W2100-W | W2000-VALVE-ASSY |
| W3000-W, W3100-W | W3000-VALVE-ASSY |
| W4000-W, W4100-W | W4000-VALVE-ASSY |
| W8000-W, W8100-W | W8000-VALVE-ASSY |

* Refer to the regulator options and parts table (page 393) for details on the adjustment spring, diaphragm, and gauge plug assembly. Refer to air filter options and parts table (pages 358 to 359) for details on the element, bowl assembly, and bowl guard.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Standard series
F.R.L. unit



Air filter standard white Series

F1000/F2000/F3000 F4000/F6000/F8000-W Series

Introducing the 5µm element for dust removal and 0.3µm element for tar removal.
(Excluding F1000 Series.) Port size: 1/8 to 1

JIS symbol



Specifications

| Descriptions | F1000-W | F2000-W | F3000-W | F4000-W | F6000-W | F8000-W |
|--------------------------------|-----------------------------------|-----------------------------------|---------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | | |
| Working fluid | Compressed air | | | | | |
| Max. working pressure MPa | 1.0 Notes 1, 2, 3 | | | | | |
| Withstanding pressure MPa | 1.5 Note 1 | | | | | |
| Ambient temperature range °C | 5 to 60 | | | | | |
| Filtration rating µm | 5 | | | 5 or 0.3 | | |
| Drain capacity cm ³ | 12 | 25 | 45 | 80 | 80 | 80 (Note 4) |
| Port size Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | 0.087 | 0.24 | 0.25 | 0.45 | 0.9 | 1.16 |
| Standard accessories | Bowl guard | | | | | |

Note 1: When selecting "F1" with automatic drain for the F1000-W Series, the minimum operation pressure is 0.2MPa, maximum operation pressure is 0.7MPa, the guaranteed withstand pressure is 1.05MPa. For the maximum flow rate, refer to the maximum working flow rate (table below) for F1000-W-F1 with automatic drain. The working flow rate must be less than the maximum working flow rate value. When selecting "F1" with automatic drain for the F2000-W Series, refer to the maximum working flow rate (table below). The working flow rate must be less than the maximum working flow rate.

Note 2: When "F" with an automatic drain is selected, minimum operation pressure must be 0.1 MPa. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

Note 3: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15 MPa.

Note 4: Up to 170 m³ is stored only with the manual drain cock type.

Clean room specifications (catalog No. CB-033S)

- Dust generation preventing structure for use in cleanrooms

F*000 - - P7*

Secondary battery compatible specifications (catalog No. CC-947)

- Structured for use in secondary battery manufacturing processes

F*000 - - P4*

- Max. usage rate with F1000-W-F1 automatic drain (m³/min. (ANR))

| Primary pressure MPa | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 |
|----------------------|-------|-------|-------|-------|-------|-------|
| Port size | | | | | | |
| 6 | 0.185 | 0.250 | 0.310 | 0.375 | 0.435 | 0.500 |
| 8 | 0.225 | 0.300 | 0.375 | 0.450 | 0.525 | 0.600 |

- Max. usage rate with F2000-W-F1 automatic drain (m³/min. (ANR))

| Primary pressure MPa | 0.15 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 | 1 |
|----------------------|------|------|------|------|------|------|------|------|------|------|
| Flow | 0.50 | 0.60 | 0.80 | 1.00 | 1.20 | 1.40 | 1.65 | 1.85 | 2.05 | 2.25 |

How to order



A Model no. **B** Port size

C Port thread type

D Option

E Display unit

F Piping adaptor set (attached)

G Bracket (Attached)

* Refer to page 274 for the explanation of the option.

A Model no.

| | | | | | |
|---|---|---|---|---|---|
| F | F | F | F | F | F |
| 1 | 2 | 3 | 4 | 6 | 8 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |

| Symbol | Descriptions | | | | | | |
|--|----------------------------|--|---|---|---|---|---|
| B Port size | | | | | | | |
| 6 | 1/8 | ● | | | | | |
| 8 | 1/4 | ● | ● | ● | ● | | |
| 10 | 3/8 | | ● | ● | ● | | |
| 15 | 1/2 | | | | ● | | |
| 20 | 3/4 | | | | | ● | ● |
| 25 | 1 | | | | | ● | ● |
| C Port thread type | | Note 1 | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |
| D Option | | Note 2 | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● | ● |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | ● | ● | ● |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● |
| | FF | Large auto. drain with manual override (NO type: Exhaust w/o pressurized) | | | | | ● |
| | FF1 | Large auto. drain with manual override (NC type: No exhaust w/o pressurized) | | | | | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● | ● |
| | M | Metal bowl | | | ● | ● | ● |
| | M1 | Metal bowl with manual drain cock | | ● | ● | ● | ● |
| Element | Blank | 5μm | ● | ● | ● | ● | ● |
| | Y | 0.3μm (submicron) | | | ● | ● | ● |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● | ● |
| | Q | With differential pressure detection port (Rc1/4) | | | | | ● |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● |
| E Display unit | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | ● |
| F Piping adaptor set (attached) | | Note 4, Note 5 page 428 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● | | |
| A20*W | Rc3/4 piping adaptor set | | | | ● | ● | ● |
| A25*W | Rc1 piping adaptor set | | | | | ● | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | | | ● | ● |
| *Adaptor screw type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |
| G Bracket (attached) | | page 425 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● | ● |

⚠ Note on model no. selection

- Note 1: When G threads or NPT threads are selected, the IN, OUT, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 2: Select the options from drainage, bowl material, element, and differential pressure detection. When selecting options for several items, list options in order from the top.
- Note 3: Refer to page 276 for the automatic drain use conditions.
- Note 4: The C-type bracket and piping adaptor set attachments cannot be used at the same time.
- Note 5: The joiner set is enclosed with the piping adaptor set.

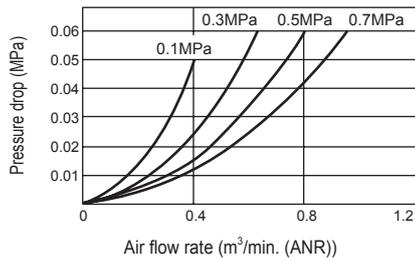
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Standard series
F.R.L. unit

Air Filter Series

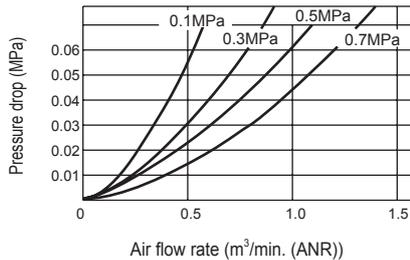
Flow characteristic

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

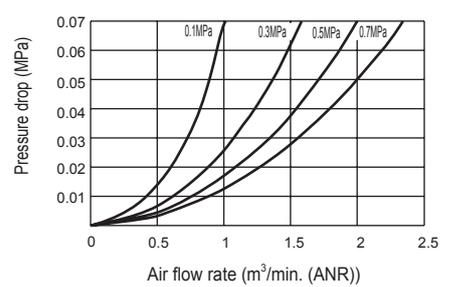
● F1000-6-W



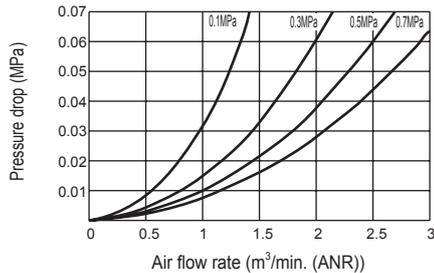
● F1000-8-W



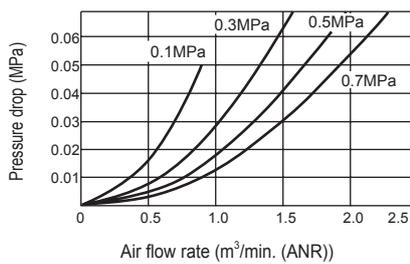
● F2000-8-W



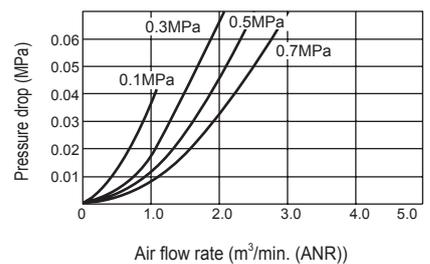
● F2000-10-W



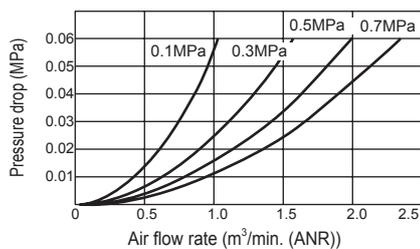
● F3000-8-W



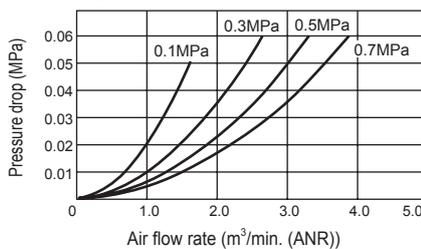
● F3000-10-W



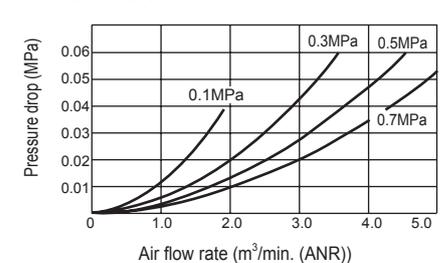
● F4000-8-W



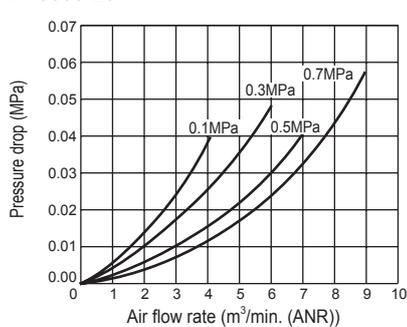
● F4000-10-W



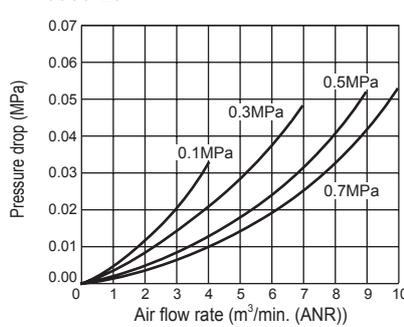
● F4000-15-W



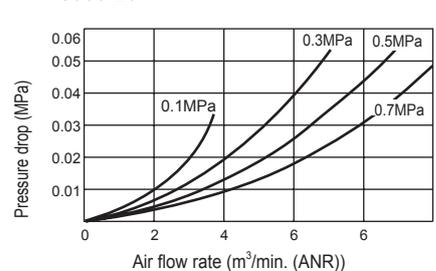
● F6000-20-W



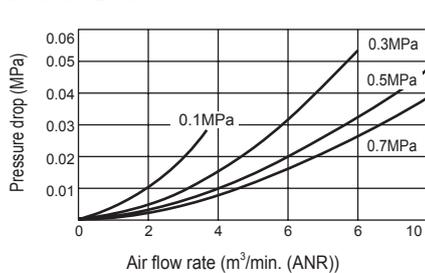
● F6000-25-W



● F8000-20-W



● F8000-25-W



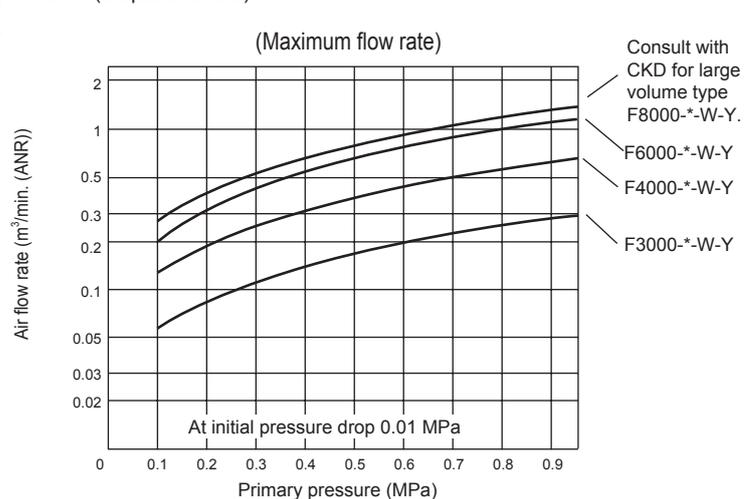
F3000

F4000

● F6000

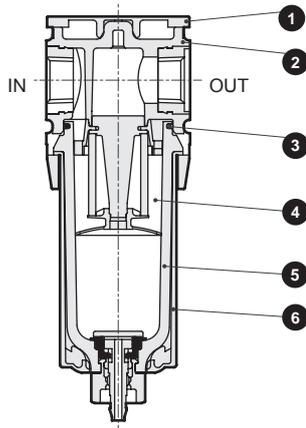
F8000

-*-W-Y (0.3μm element)

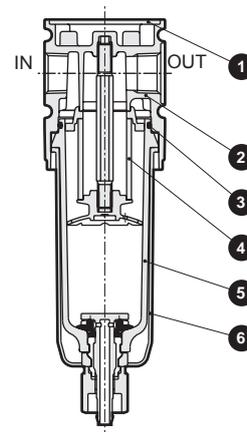


Internal structure and parts list

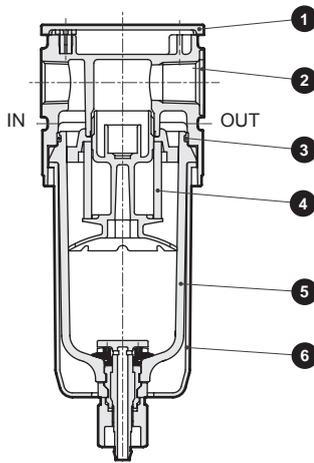
● F1000-W



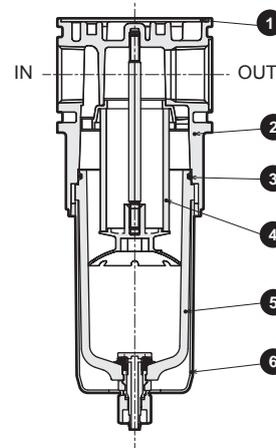
● F2000-W



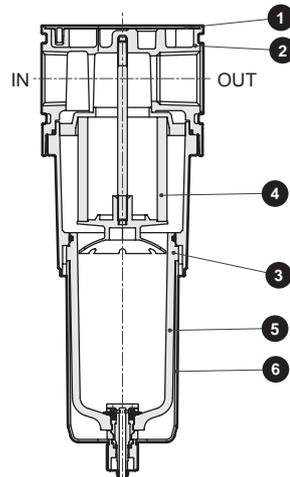
● F3000-W / F4000-W



● F6000-W



● F8000-W



| No. | Parts name | Material | | | | | |
|-----|-----------------|---|----------------------------|---------|---------|---------|---------|
| | | F1000-W | F2000-W | F3000-W | F4000-W | F6000-W | F8000-W |
| 1 | Plate cover | ABS resin | | | | | |
| 2 | Body | Polyamide resin, steel | Aluminum alloy die-casting | | | | |
| 3 | O ring | Note 1 | Special nitrile rubber | | | | |
| 4 | Element (5μm) | Note 2 | Polypropylene | | | | |
| | Element (0.3μm) | | - | | | | |
| 5 | Bowl assembly | Polycarbonate resin, polyacetal resin, urethane resin | | | | | |
| 6 | Bowl guard | Polyamide resin | Polyamide resin, steel | | | | |

Note 1: O-ring of F1000-W is special shaped.

Note 2: F1000-W is element assembly.

Note 3: Refer to page 358 for repair kits.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

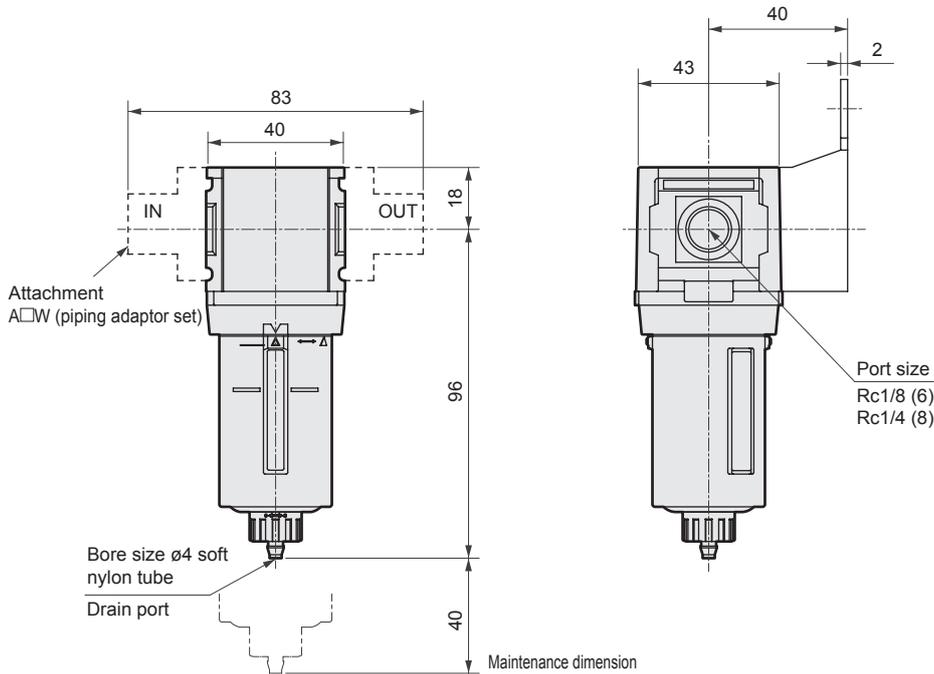
Air Filter Series

Dimensions

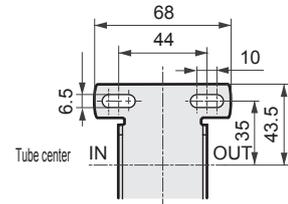


| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

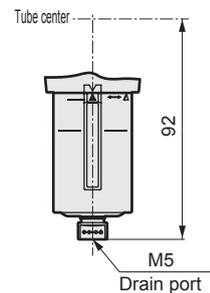
● F1000-W



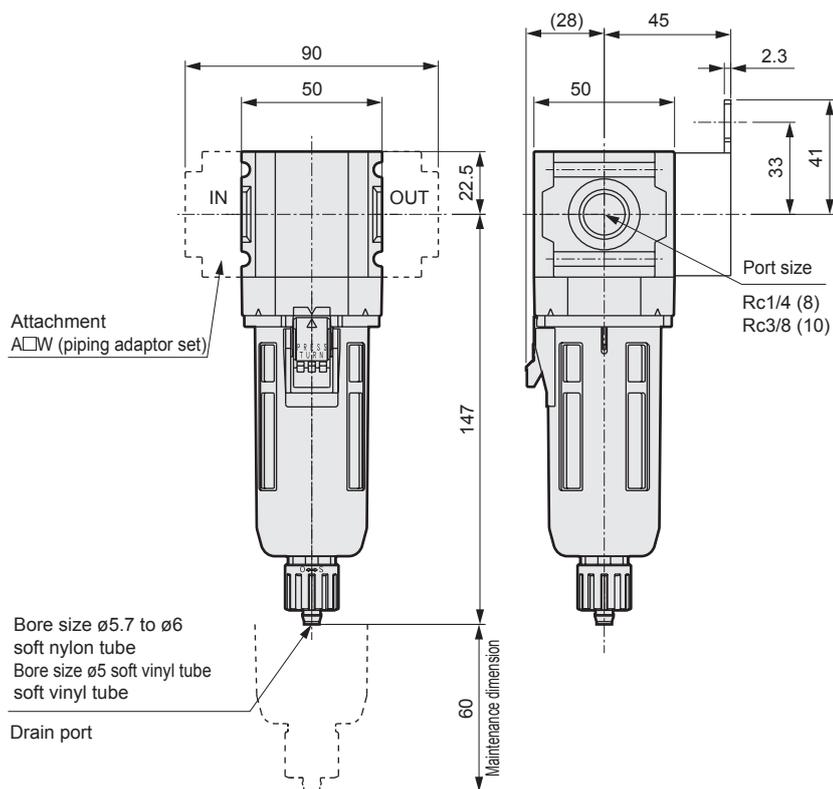
• Attachment
C type bracket (-BW)
Part model no.: B120



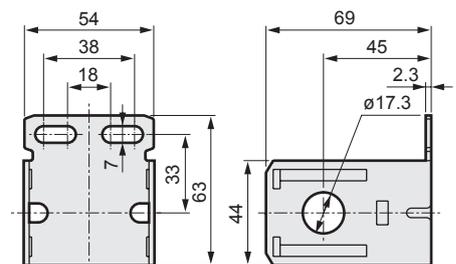
• Option dimensions
With automatic drain (F1)



● F2000-W



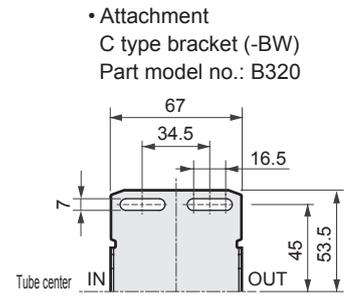
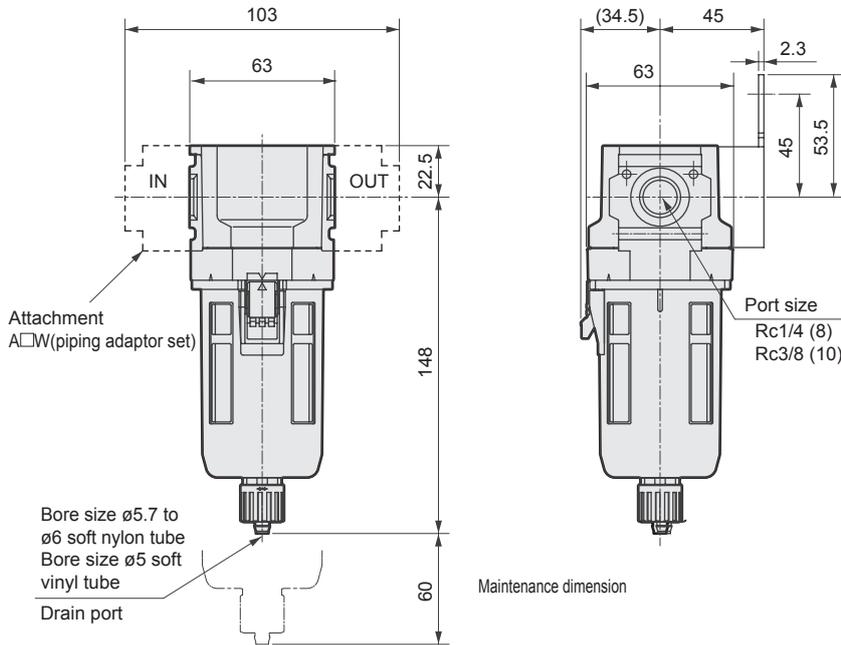
• Attachment
C type bracket (-BW)
Part model no.: B220



Dimensions



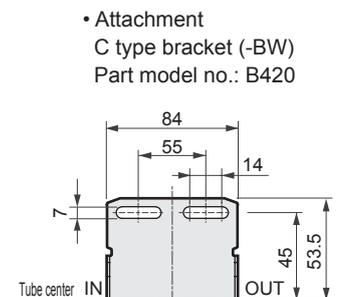
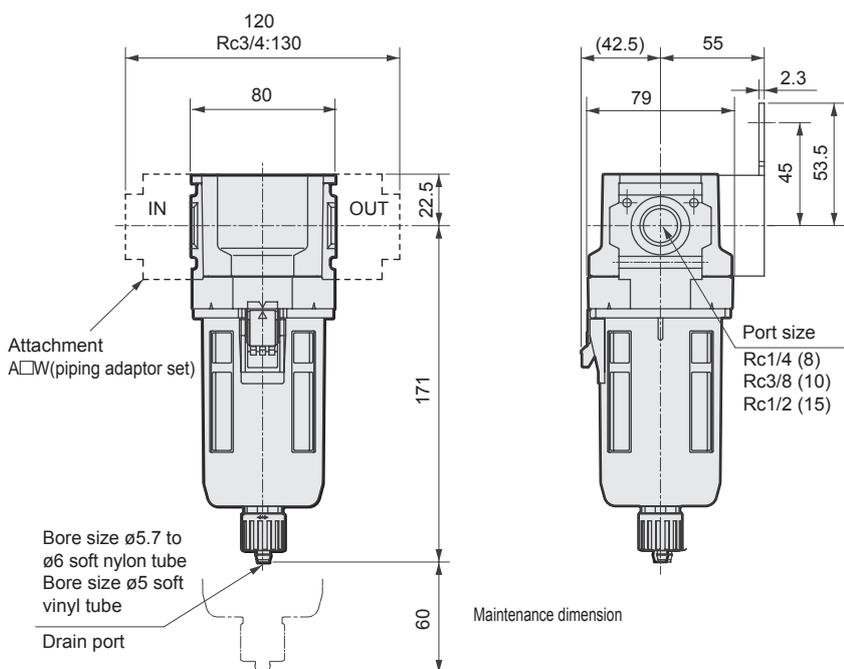
● F3000-W



● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

● F4000-W



● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

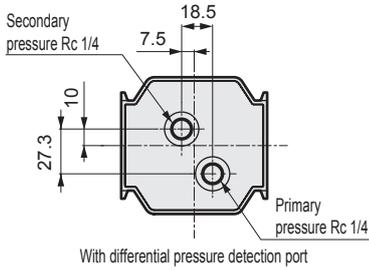
Standard series
F.R.L. unit

Air Filter Series

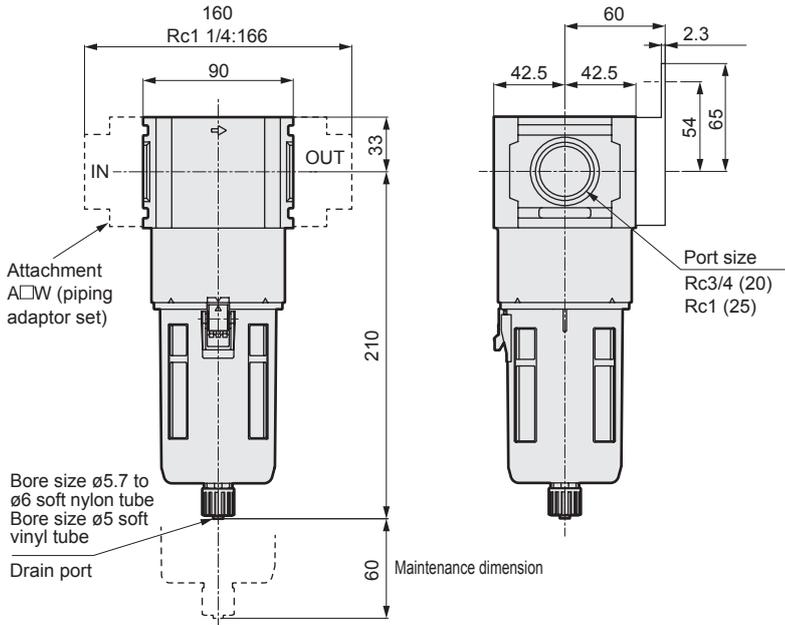
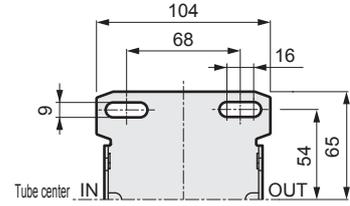
Dimensions



● F6000-W

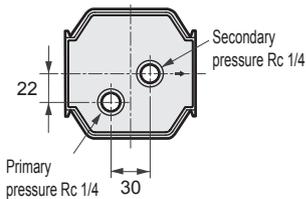


• Attachment
C type bracket (-BW)
Part model no.: B620

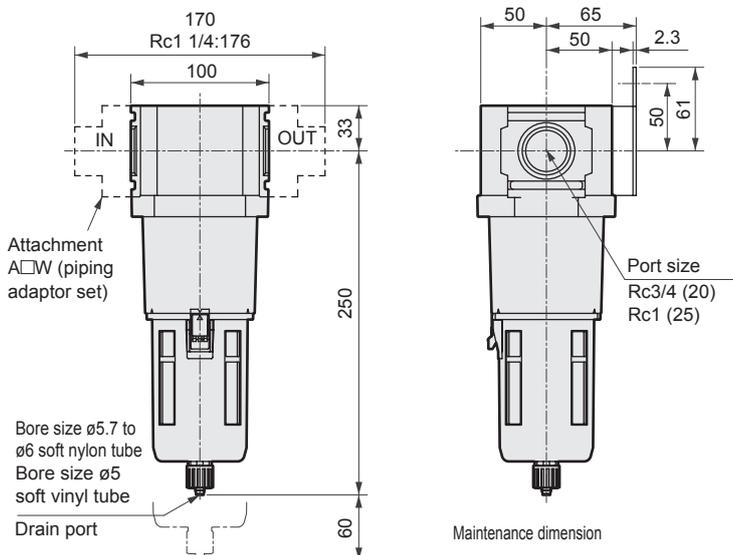
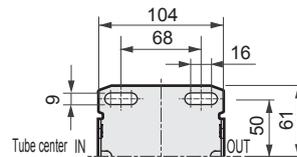


● F8000-W

With differential pressure detection port (Q)



• Attachment
C type bracket (-BW)
Part model no.: B820



● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

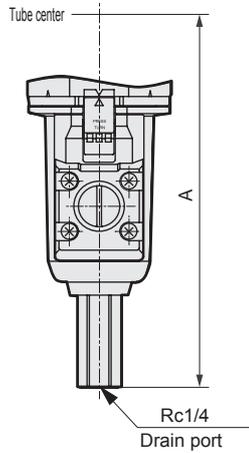
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Optional dimensions

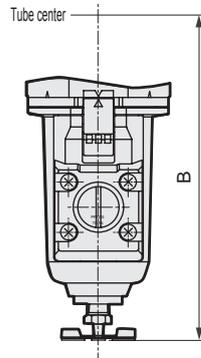


- Metal bowl F2000-W/F3000-W/F4000-W/F6000-W/F8000-W(option)

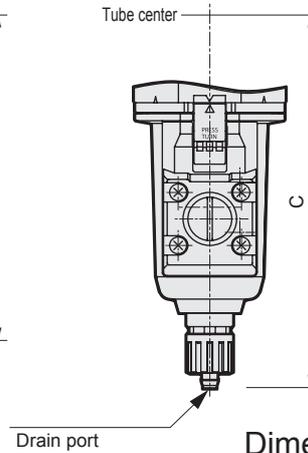
Metal manual cock with automatic drain (F1M)



With petcock (M)



Standard manual drain cock (M1)



Dimensions

| Model no. | F1M | M | M1 |
|-----------|-----|-------|-----|
| | A | B | C |
| F2000-W | - | - | 147 |
| F3000-W | 164 | 143.5 | 154 |
| F4000-W | 187 | 166.5 | 177 |
| F6000-W | 226 | 205 | 216 |
| F8000-W | 266 | 245.5 | 256 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

Air Filter Series

Optional parts diagram

Element

| Element model no. | 5µm Element | 0.3µm Element (Y) |
|-------------------|--------------------|-------------------|
| Model | | |
| F1000-W | F1000-ELEMENT-ASSY | - |
| W1000-W, W1100-W | W1000-ELEMENT-ASSY | - |
| F2000-W | F2000-ELEMENT | - |
| W2000-W, W2100-W | W2000-ELEMENT | - |
| F3000-W, FM3000-W | F3000-ELEMENT | F3000-ELEMENT-Y |
| W3000-W, W3100-W | W3000-ELEMENT | W3000-ELEMENT-Y |
| F4000-W, FM4000-W | F4000-ELEMENT | F4000-ELEMENT-Y |
| W4000-W, W4100-W | W4000-ELEMENT | W4000-ELEMENT-Y |
| F6000-W, FM6000-W | F6000-ELEMENT | F6000-ELEMENT-Y |
| F8000-W, FM8000-W | F8000-ELEMENT | F8000-ELEMENT-Y |
| W8000-W, W8100-W | W8000-ELEMENT | W8000-ELEMENT-Y |

Note: For the F1000-W and W1000-W, the baffle and element are assembly parts.

- (M1) Metal bowl assembly with manual drain cock
- (FM1) Automatic drain NO type metal bowl assembly with manual drain cock
- (F1M1) Automatic drain NC type metal bowl assembly with manual drain cock



- *8000 series large emission
- (FFM1) High discharge automatic drain NO type metal bowl assembly with manual drain cock
- (FF1M1) High discharge automatic drain NC type metal bowl assembly with manual drain cock

- (FM) NO type automatic drain bowl assembly with metal manual cock

- (F1M) NC type automatic drain bowl assembly with metal manual cock



- *8000 series large emission
- (FFM) NO type large automatic drain bowl assembly with metal manual cock
- (FF1M) NC type large automatic drain bowl assembly with metal manual cock

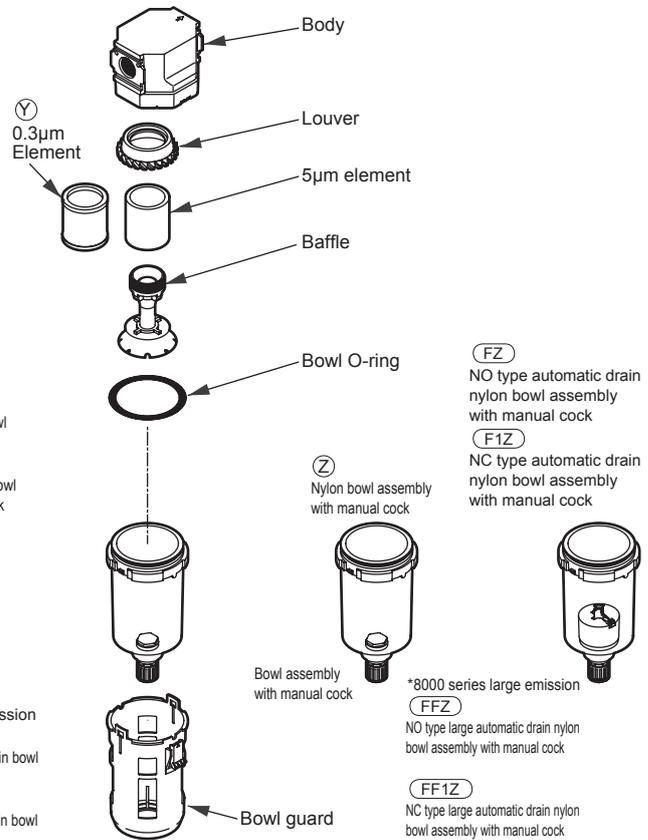
- (M) Metal bowl assembly with cock



- (F) NO type automatic drain bowl assembly with manual cock
- (F1) NC type automatic drain bowl assembly with manual cock



- *8000 series large emission
- (FF) NO type large automatic drain bowl assembly with manual cock
- (FF1) NC type large automatic drain bowl assembly with manual cock



Repair kits model no.

(Set of louver, baffle, element, bowl O-ring)

| Repair kits model no. | 5µm Element | 0.3µm Element (Y) |
|--------------------------|-------------|-------------------|
| Model | | |
| F1000-W Note 1 | F1000-KIT | - |
| F2000-W | F2000-KIT | - |
| F3000-W, FM3000-W | F3000-KIT | F3000-KIT-Y |
| F4000-W, FM4000-W | F4000-KIT | F4000-KIT-Y |
| F6000-W, FM6000-W | F6000-KIT | F6000-KIT-Y |
| F8000-W, FM8000-W Note 2 | F8000-KIT | F8000-KIT-Y |

Note 1: For the F1000-W, the baffle and element are assembly parts, so the set consists of the element assembly and bowl O-ring.

Note 2: For the F8000-W, the set consists of the baffle, element, and bowl O-ring.

Bowl guard

| Bowl guard model no. | Polycarbonate bowl | Nylon bowl |
|--|---------------------|-----------------------|
| Model | | |
| F1000-W, W1000-W, W1100-W | F1000-W-BOWL-GUARD | F1000-W-BOWL-GUARD-Z |
| L1000-W | L1000-W-BOWL-GUARD | L1000-W-BOWL-GUARD-Z |
| M1000-W | M1000-W-BOWL-GUARD | M1000-W-BOWL-GUARD-Z |
| F2000-W, W2000-W, W2100-W | F2000-W-BOWL-GUARD | F2000-W-BOWL-GUARD-Z |
| W3100-W, F3000-W, W3000-W, M3000-W | F3000-W-BOWL-GUARD | F3000-W-BOWL-GUARD-Z |
| L3000-W | L3000-W-BOWL-GUARD | L3000-W-BOWL-GUARD-Z |
| F4000-W, W4000-W, M4000-W, W4100-W, F6000-W, M6000-W, W8100-W, F8000-W, W8000-W, M8000-W | F4000-W-BOWL-GUARD | F4000-W-BOWL-GUARD-Z |
| L4000-W, L8000-W | L4000-W-BOWL-GUARD | L4000-W-BOWL-GUARD-Z |
| W8100-W, F8000-W, W8000-W-FF, FF1 | DT4000-W-BOWL-GUARD | DT4000-W-BOWL-GUARD-Z |

Note: The bowl guard for the 1000 Series F1 is sold as a set with the bowl assembly. The model is "F1000-W-BOWL-BOWL-GUARD-F1".

Bowl assembly (set of bowl assembly and bowl O-ring)

| Bowl assembly Model | With manual cock PC bowl assembly | With manual cock PA bowl assembly | With manual cock Metal bowl assembly | With standard manual cock Metal bowl assembly | With manual cock NO type Automatic drain PC bowl assembly Note 1 | With manual cock NC type Automatic drain PC bowl assembly | | |
|--|---|--|--|--|---|---|--|--|
| F1000-W, W1000-W M1000-W, W1100-W | F1000-W-BOWL | F1000-W-BOWL-Z | - | - | - | F1000-W-BOWL-BOWL GUARD-F1 Note 3 | | |
| F2000-W, W2000-W M2000-W, W2100-W | F2000-W-BOWL | F2000-W-BOWL-Z | - | F2000-W-BOWL-M1 | - | M2000-W-BOWL-F1 | | |
| F3000-W, M3000-W W3000-W, W3100-W | F3000-W-BOWL | F3000-W-BOWL-Z | F3000-W-BOWL-M | F3000-W-BOWL-M1 | F3000-W-BOWL-F | M3000-W-BOWL-F1 | | |
| FM3000-W, MM3000-W | - | - | - | - | - | - | | |
| F4000-W, F6000-W M4000-W, M6000-W F8000-W, M8000-W W4000-W, W4100-W W8000-W, W8100-W | F4000-W-BOWL | F4000-W-BOWL-Z | F4000-W-BOWL-M | F4000-W-BOWL-M1 | F4000-W-BOWL-F | M4000-W-BOWL-F1 | | |
| FM4000-W, FM6000-W FM8000-W, MM4000-W MM6000-W, MM8000-W | - | - | - | - | - | - | | |
| Bowl assembly Model | With manual cock NO type Automatic drain PA bowl assembly Note 1 | With manual cock NC type Automatic drain PA bowl assembly | With metal manual cock NO type Automatic drain Metal bowl assembly Note 1 | With standard manual cock NO type Automatic drain Metal bowl assembly | With metal manual cock NC type Automatic drain Metal bowl assembly | With standard manual cock NC type Automatic drain Metal bowl assembly | For medium pressure NO type Automatic drain Bowl assembly Note 1 | For medium pressure NC type Automatic drain Bowl assembly |
| F1000-W, W1000-W M1000-W, W1100-W | - | F1000-W-BOWL- BOWL GUARD- F1Z Note 3 | - | - | - | - | - | - |
| F2000-W, W2000-W M2000-W, W2100-W | - | M2000-W-BOWL-F1Z | - | - | - | M2000-W-BOWL-F1M1 | - | - |
| F3000-W, M3000-W W3000-W, W3100-W | F3000-W-BOWL-FZ | M3000-W-BOWL-F1Z | F3000-W-BOWL-FM | F3000-W-BOWL-FM1 | M3000-W-BOWL-F1M | M3000-W-BOWL-F1M1 | - | - |
| FM3000-W, MM3000-W | - | - | - | - | - | - | FM3000-W-BOWL-F | MM3000-W-BOWL-F1 |
| F4000-W, F6000-W M4000-W, M6000-W F8000-W, M8000-W W4000-W, W4100-W W8000-W, W8100-W | F4000-W-BOWL-FZ | M4000-W-BOWL-F1Z | F4000-W-BOWL-FM | F4000-W-BOWL-FM1 | M4000-W-BOWL-F1M | M4000-W-BOWL-F1M1 | - | - |
| FM4000-W, FM6000-W FM8000-W, MM4000-W MM6000-W, MM8000-W | - | - | - | - | - | - | FM4000-W-BOWL-F | MM4000-W-BOWL-F1 |
| Bowl assembly Model | With manual cock NO type Large automatic drain PC bowl assembly | With manual cock NC type Large automatic drain PC bowl assembly | With manual cock NO type Large automatic drain PA bowl assembly | With manual cock NC type Large automatic drain PA bowl assembly | With metal manual cock NO type Large automatic drain Metal bowl assembly | With metal manual cock NC type Large automatic drain Metal bowl assembly | With standard manual cock NO type Large automatic drain Metal bowl assembly | With standard manual cock NC type Large automatic drain Metal bowl assembly |
| F8000-W, W8000-W W8100-W | F8000-W-BOWL-FF | F8000-W-BOWL-FF1 | F8000-W-BOWL-FFZ | F8000-W-BOWL-FF1Z | F8000-W-BOWL-FFM | F8000-W-BOWL-FF1M | F8000-W-BOWL-FFM1 | F8000-W-BOWL-FF1M1 |

Note 1: The NO automatic drain cannot be selected for the oil Mist filter M1000-W, M3000-W, M4000-W, M6000-W, or M-8000W and oil Mist filter for Medium pressure MM3000-W, MM4000-W, MM6000-W, MM8000-W.

Note 2: The large discharge automatic drain cannot be installed on the M8000-W.

Note 3: The bowl assembly for the 1000 Series F1 is sold as a set with the bowl guard.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



Oil mist filter standard white Series
M1000/M2000/M3000
M4000/M6000/M8000-W Series

Ideal for circuits susceptible to oil, including measuring, and instrumentation circuits.
 Port size: 1/8 to 1

JIS symbol



Specifications

| Descriptions | M1000-W | M2000-W | M3000-W | M4000-W | M6000-W | M8000-W |
|--------------------------------|-----------------------------------|-----------------------------------|---------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | | |
| Working fluid | Compressed air | | | | | |
| Working pressure range MPa | 0.1 to 1.0 Notes 2, 3 | | | | | |
| Withstanding pressure MPa | 1.5 Note 2 | | | | | |
| Drain capacity cm ³ | 3 | 25 | 45 | 80 | 80 | 80 |
| Port size Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | 0.096 | 0.25 | 0.28 | 0.52 | 0.95 | 1.35 |
| Standard accessories | Bowl guard | | | | | |

| Mantle option name | Blank (M type) | S (S type) | X (X type) |
|--|--|--------------------|--------------------------------------|
| Maximum flow rate Note 1 ℓ/min. (ANR) | M1000*-W 150 Note 2 | M2000*-W 250 | M3000*-W 360 |
| Primary pressure 0.7 MPa | M4000*-W 825 | M6000*-W 1270 | M8000*-W 2600 |
| Pressure drop 0.01 MPa | M4000*-W 1000 | M6000*-W 1400 | M8000*-W 2900 |
| Ambient temperature range °C | 5 to 60 | | 5 to 30 |
| Filtration rating μm | 0.01 (nominal) | 0.3 | Suction by activated charcoal Note 4 |
| Secondary side oil concentration mg/m ³ | 0.01 or less Note 5, Note 6 | 0.5 or less Note 5 | 0.003 or less Note 7 |
| Mantle (element) change | 1 year (6000 hours) or pressure drop 0.1 MPa | | - Note 8 |

- Note 1: Use within the maximum processing flow rate.
 If the maximum processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil or drainage, etc., could splatter to the secondary side and result in faults at the terminal.
- Note 2: With M1000-W-F1 automatic drain, minimum operating pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa and withstanding pressure is 1.05 MPa. Refer to the maximum processing flow graph (page 362) for the maximum working flow.
- Note 3: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15MPa.
- Note 4: Activated charcoal particles could flow to the secondary side, so install an air filter (F Series) or oil mist filter (M Series M type or S type) on the secondary side.
- Note 5: The secondary oil concentration is the value when the primary oil concentration is 30 mg/m³ and inlet air temperature is 21°C.
- Note 6: Install an oil mist filter (S type) as a prefilter on the primary side to prevent early clogging.
- Note 7: When an oil mist filter (M Series M type) is installed on the primary side.
- Note 8: The mantle (element) replacement period differs with the odor density in compressed air, and thus cannot be clearly indicated.
 Consider the total period from initial installation to when the smell of oil is confirmed as the effective deodorizing period, and replace at the same time as the M type or control with usage time. (When the inlet temperature is 21°C, replace at the control time or 1,000 hours, whichever is sooner)
 Keep the primary air temperature at 30°C or less. The deodorizing effect will drop if the temperature is high, so provide heat dissipation measures.

Clean room specifications (catalog No. CB-033S)

- Dust generation preventing structure for use in cleanrooms

Secondary battery compatible specifications (catalog No. CC-947)

- Structured for use in secondary battery manufacturing processes

M*000 - - **P7***

M*000 - - **P4***

Oil Mist Filter Series

How to order

How to order



A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Piping adaptor set (attached)

G Bracket (attached)

*Refer to page 274 for the explanation of the option.

| A Model no. | | | | | |
|-------------|---|---|---|---|---|
| M | M | M | M | M | M |
| 1 | 2 | 3 | 4 | 6 | 8 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |

| Symbol | Descriptions | M | M | M | M | M | M |
|---|----------------------------|--|---|---|---|---|---|
| B Port size | | | | | | | |
| 6 | 1/8 | ● | | | | | |
| 8 Note 1 | 1/4 | ● | ● | ● | ● | | |
| 10 | 3/8 | | ● | ● | ● | | |
| 15 | 1/2 | | | | ● | | |
| 20 | 3/4 | | | | | ● | ● |
| 25 | 1 | | | | | ● | ● |
| C Port thread type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |
| D Option | | | | | | | |
| Drainage Note 4, Note 5 | Blank | With manual drain cock | ● | ● | ● | ● | ● |
| | F1 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● | ● |
| | M | Metal bowl Note 6 | | | ● | ● | ● |
| | M1 | Metal bowl with manual drain cock | | ● | ● | ● | ● |
| Mantle (Element) | Blank | M type (nominal 0.01µm; remaining oil 0.01mg/m ³) | ● | ● | ● | ● | ● |
| | S | S type (0.3µm; remaining oil 0.5mg/m ³) | ● | ● | ● | ● | ● |
| | X Note 7 | X type (deodorization; remaining oil 0.003mg/m ³) | ● | ● | ● | ● | ● |
| Differential pressure Detection | Blank | Without differential pressure detection port | ● | ● | ● | ● | ● |
| | Q | With differential pressure detection port (Rc1/4) | | | | ● | ● |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● | ● |
| | Q1 Note 6, Note 7 | With differential pressure indicator | | | ● | | |
| Flow direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● |
| E Display unit | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | ● |
| F Piping adaptor set (attached) Note 8, Note 9 page 428 | | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● | | |
| A20*W | Rc3/4 piping adaptor set | | | | ● | ● | ● |
| A25*W | Rc1 piping adaptor set | | | | | ● | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | | | ● | ● |
| *Adaptor screw type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |
| G Bracket (attached) page 425 | | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● | ● |

Note on model no. selection

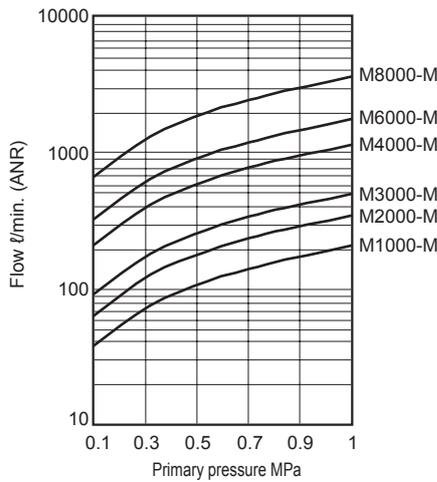
- Note 1: "Q1" with differential indicator cannot be selected for port size "8".
- Note 2: When G threads or NPT threads are selected, the IN, OUT, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 3: Select options for each drainage, bowl material and differential pressure detection. When selecting options for several items, list options in order from the top.
- Note 4: NO automatic drain cannot be selected.
- Note 5: Refer to page 276 for the automatic drain use conditions.
- Note 6: "Q1" with differential indicator cannot be selected for bowl material "M".
- Note 7: Cannot be combined with option F1 or "Q1" with differential indicator.
- Note 8: The C-type bracket and piping adaptor set attachments cannot be used at the same time.
- Note 9: The joiner set is enclosed with the piping adaptor set.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Standard series
F.R.L. unit

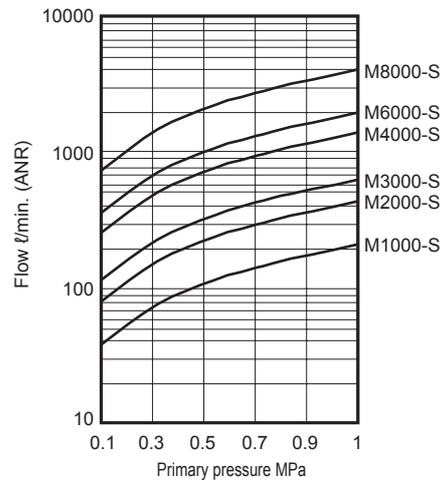
Oil Mist Filter Series

Flow characteristic (maximum flow rate)

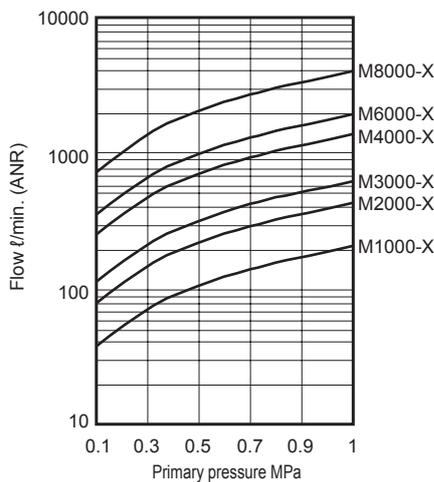
● M*000-W-M



● M*000-W-S

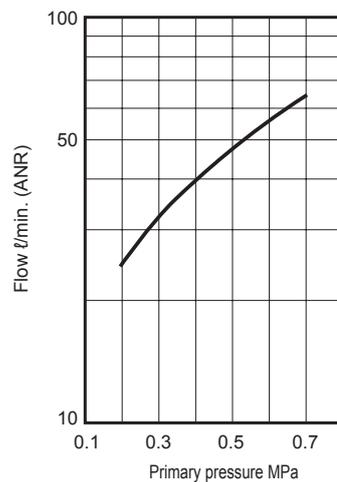


● M*000-W-X



● M1000-W-F1

With automatic drain (M type, S type)



Oil mist filter: Using optional mantle

Major recommended circuit

◆ S type



Applications

- General industrial air
- Air tool
 - air drill, air screw driver
 - air grinder
- Labor saving device and components
- Pneumatic jigs and tools
- Air chuck
- Air vice
- Precision part cleaning air blow

◆ M type



Oil free air

- Instrumentation
- Measurement
- Logic control
- movable element / pure fluid element
- Luxury painting
- Precise industry

◆ X type



Deodorization air

- Food industry
- Pharmaceutical industry
- Agitation
- Transportation
- Dry
- Package
- Air for brewing

Option symbol of mantle and shape

| Option symbol | Appearance |
|----------------|--|
| Blank (M type) | <p>End plate Black</p> <p>Plastic form Red</p> |
| S (S type) | <p>End plate Green</p> <p>Plastic form Red</p> |
| X (X type) | <p>End plate Black</p> <p>Punching metal</p> |

NOTE: Changes for product upgrades may be made without prior notice.
When placing an order, confirm the option symbol for the part model given here.

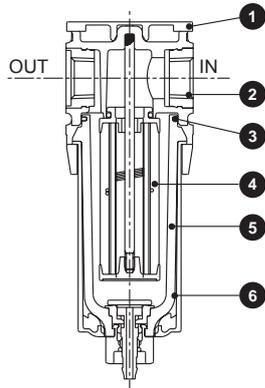
- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Oil Mist Filter Series

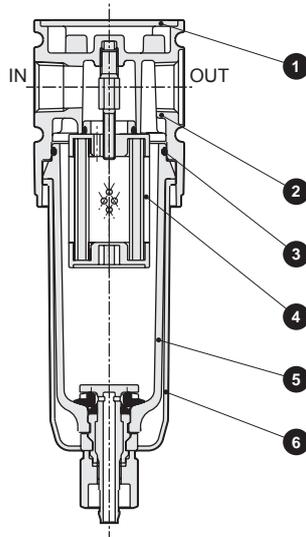
Internal structure and parts list

Internal structure and parts list

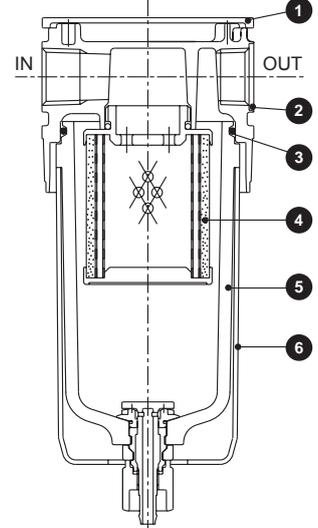
● M1000-W



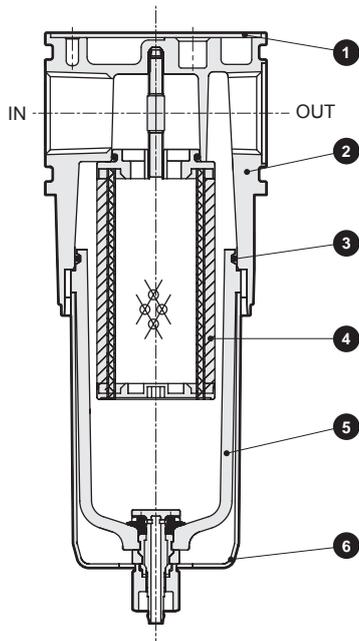
● M2000-W



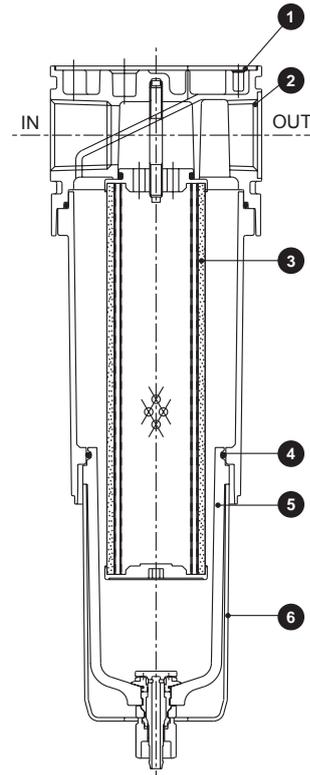
● M3000-W/M4000-W



● M6000-W



● M8000-W



| No. | Parts name | Material | | | | | |
|-----|-----------------|---|----------------------------|---------|---------|---------|---------|
| | | M1000-W | M2000-W | M3000-W | M4000-W | M6000-W | M8000-W |
| 1 | Plate cover | ABS resin | | | | | |
| 2 | Body | Polyamide resin | Aluminum alloy die-casting | | | | |
| 3 | O-ring Note 1 | Special nitrile rubber | | | | | |
| 4 | Mantle assembly | - | | | | | |
| 5 | Bowl assembly | Polycarbonate resin, polyacetal resin, urethane resin | | | | | |
| 6 | Bowl guard | Polyamide resin | Polyamide resin, steel | | | | |

Note 1: O-ring of M1000-W is special shaped.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

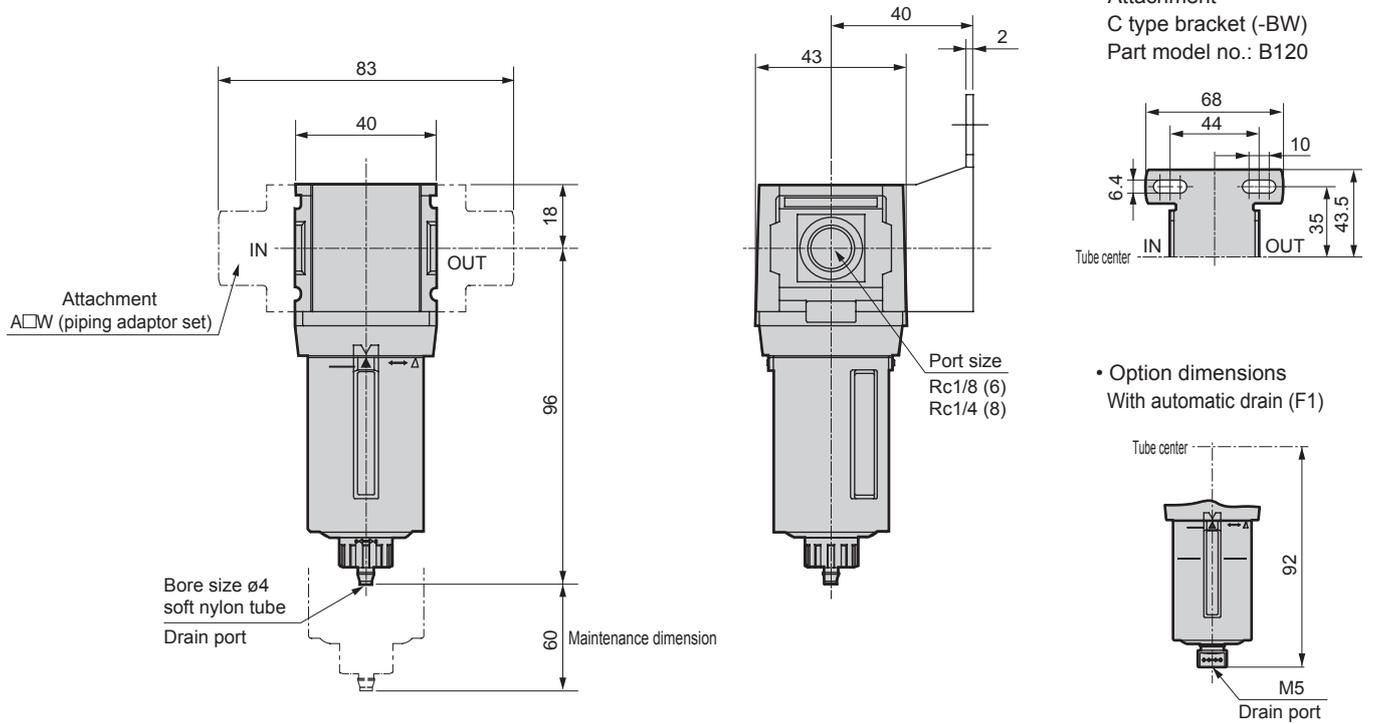
Standard series
F.R.L. unit

Oil Mist Filter Series

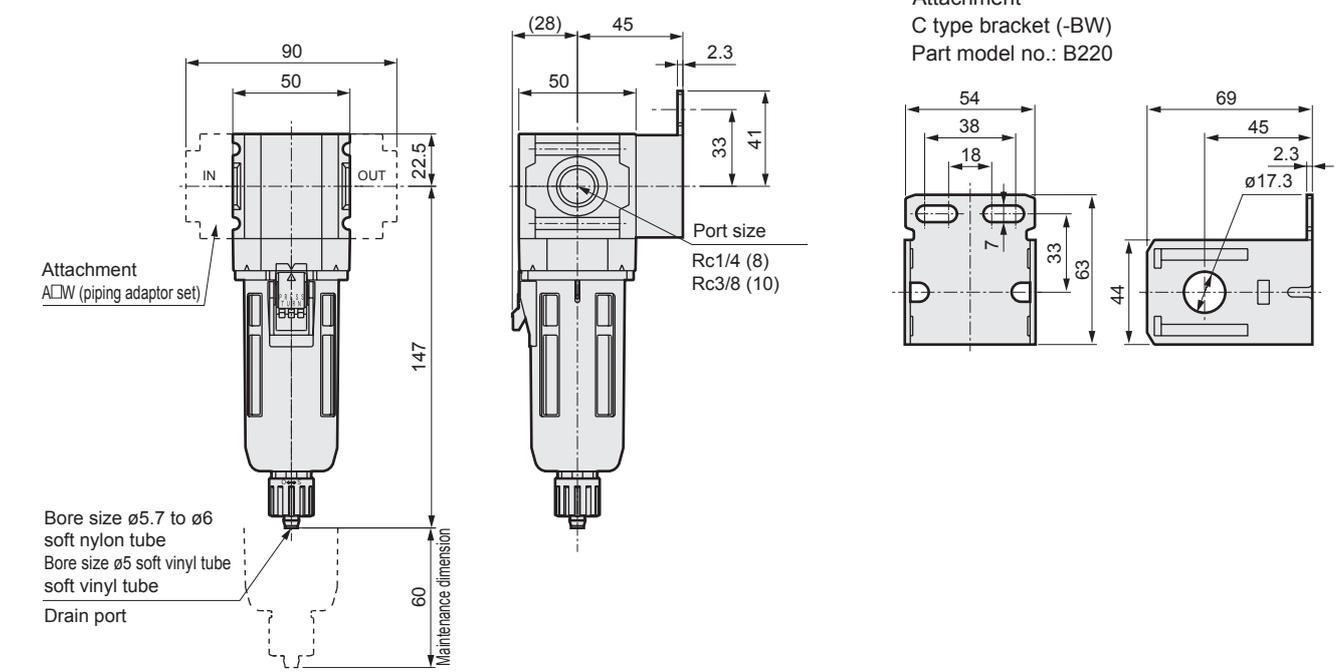
Dimensions



● M1000-W



● M2000-W



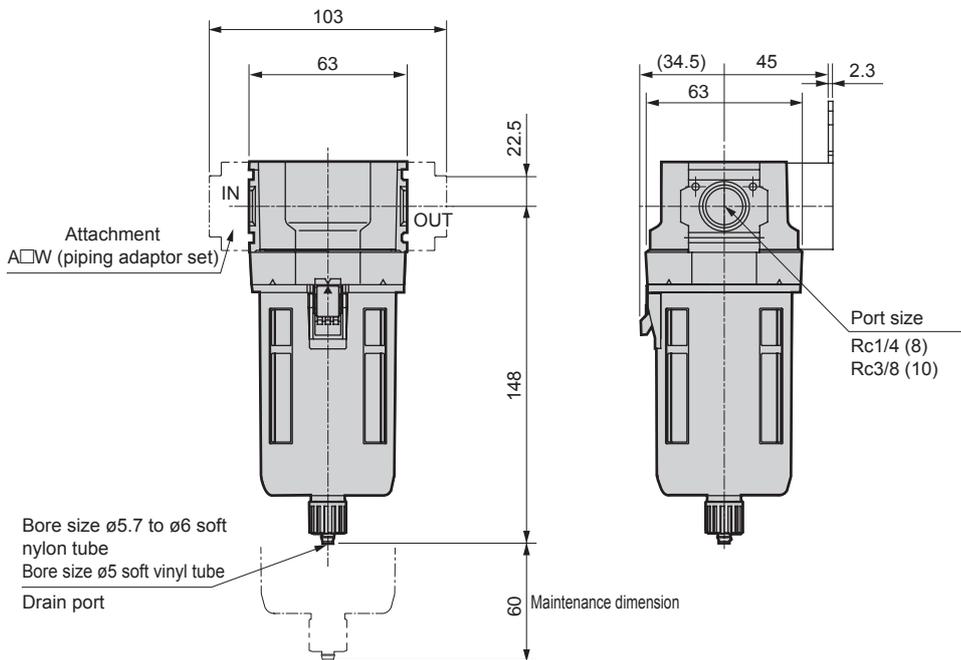
Oil Mist Filter Series

Dimensions

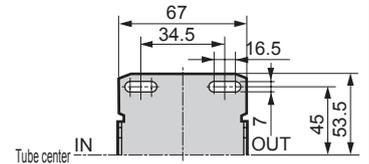
Dimensions



● M3000-W

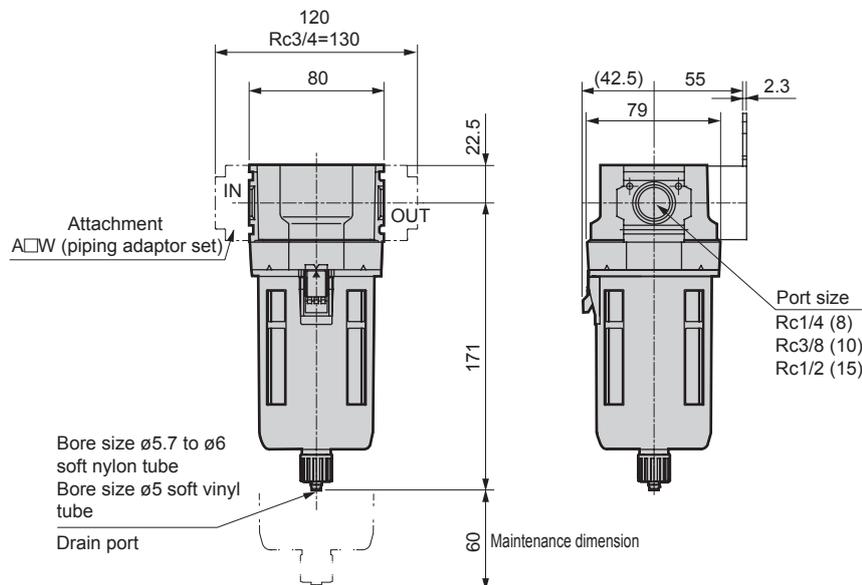


- Attachment
C type bracket (-BW)
Part model no.: B320

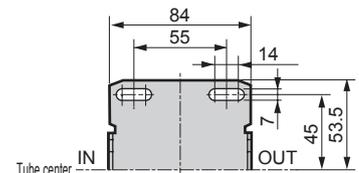


- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

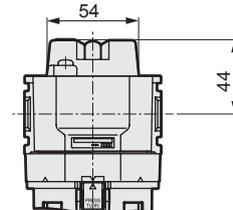
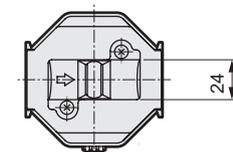
● M4000-W



- Attachment
C type bracket (-BW)
Part model no.: B420



- Option dimensions
with differential pressure indicator (Q1)



- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

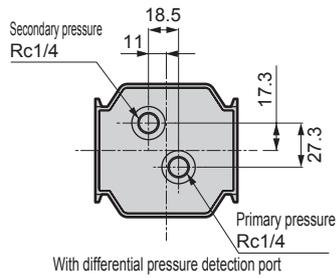
Standard series
F.R.L. unit

Oil Mist Filter Series

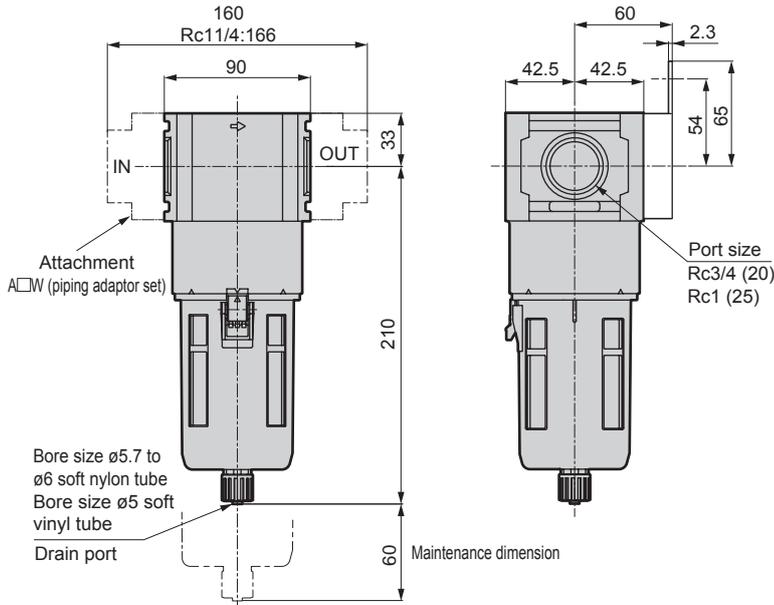
Dimensions



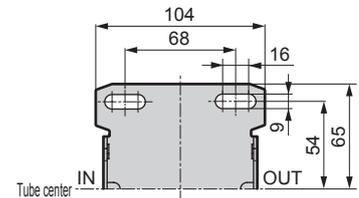
● M6000-W



With differential pressure detection port

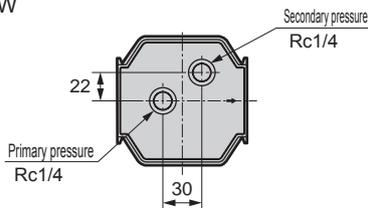


- Attachment
C type bracket (-BW)
Part model no.: B620

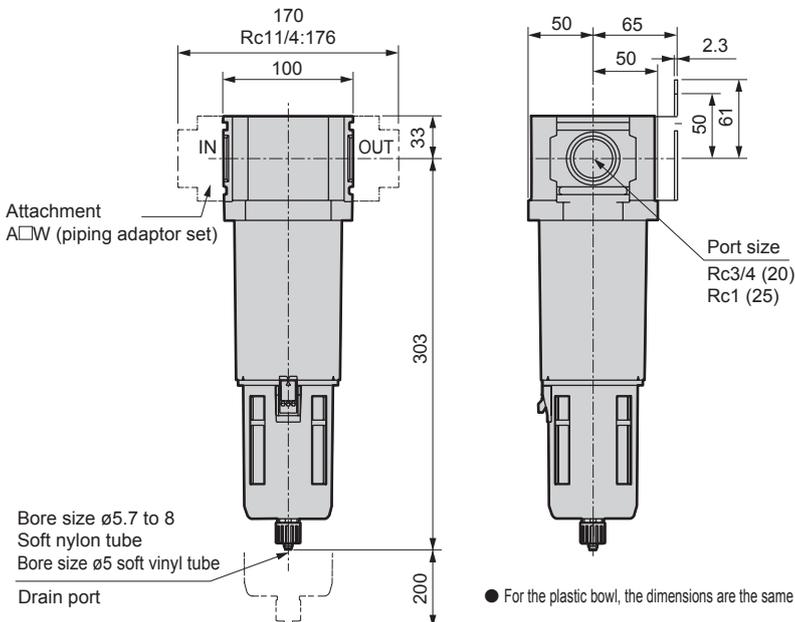


- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

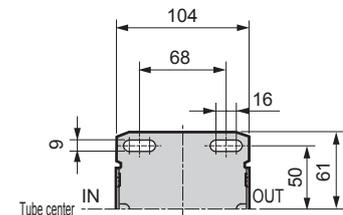
● M8000-W



Option
(With differential pressure detection port)



- Attachment
C type bracket (-BW)
Part model no.: B820

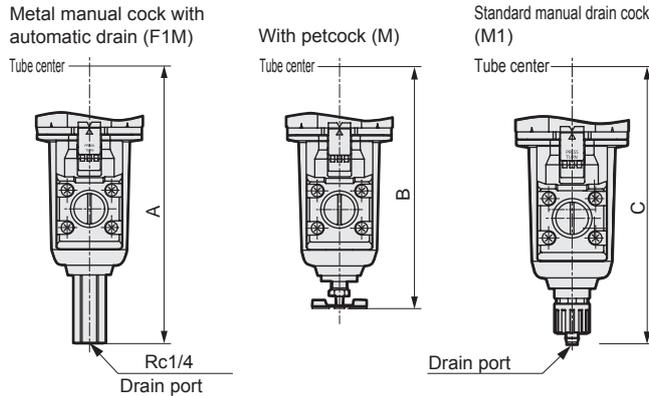


- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

Optional dimensions



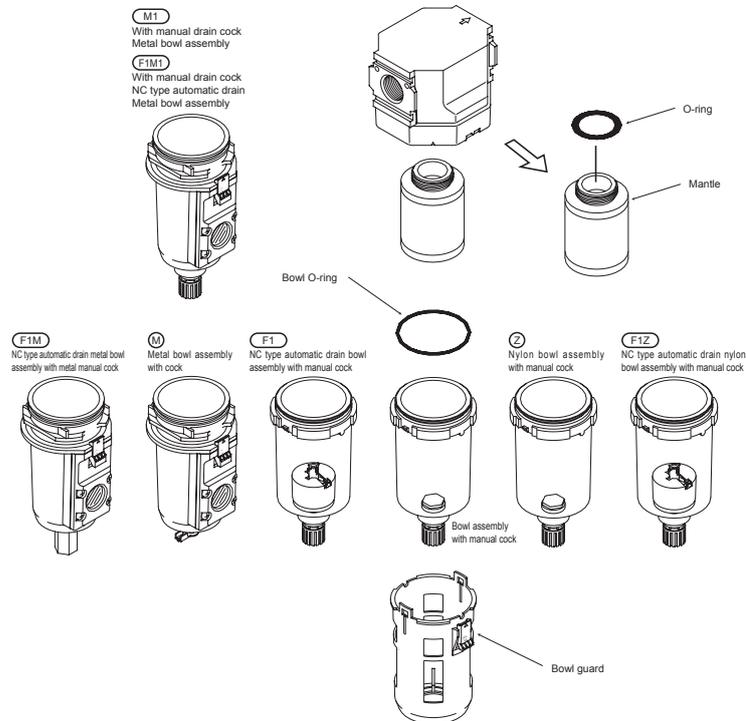
- Metal bowl (option)
(M2000-W, M3000-W, M4000-W, M6000-W, M8000-W)



Dimensions

| Model no. | F1M | M | M1 |
|-----------|-----|-------|-----|
| | A | B | C |
| M2000-W | - | - | 147 |
| M3000-W | 164 | 143.5 | 154 |
| M4000-W | 187 | 166.5 | 177 |
| M6000-W | 226 | 205 | 216 |
| M8000-W | 319 | 298 | 309 |

Optional parts table - oil mist filter



Repair kits model no. (Set of O-ring, mantle, bowl O-ring)

| Model | M type | S type | X type |
|-------------------|--------------|---------------|-------------|
| M1000-W | M1000-KIT | M1000-KIT-S | M1000-KIT-X |
| M1000-W-F1 | M1000-KIT-F1 | M1000-KIT-F1S | - |
| M2000-W | M2000-KIT | M2000-KIT-S | M2000-KIT-X |
| M3000-W, MM3000-W | M3000-KIT | M3000-KIT-S | M3000-KIT-X |
| M4000-W, MM4000-W | M4000-KIT | M4000-KIT-S | M4000-KIT-X |
| M6000-W, MM6000-W | M6000-KIT | M6000-KIT-S | M6000-KIT-X |
| M8000-W, MM8000-W | M8000-KIT | M8000-KIT-S | M8000-KIT-X |

Repair kits model no. (Set of O-ring, mantle)

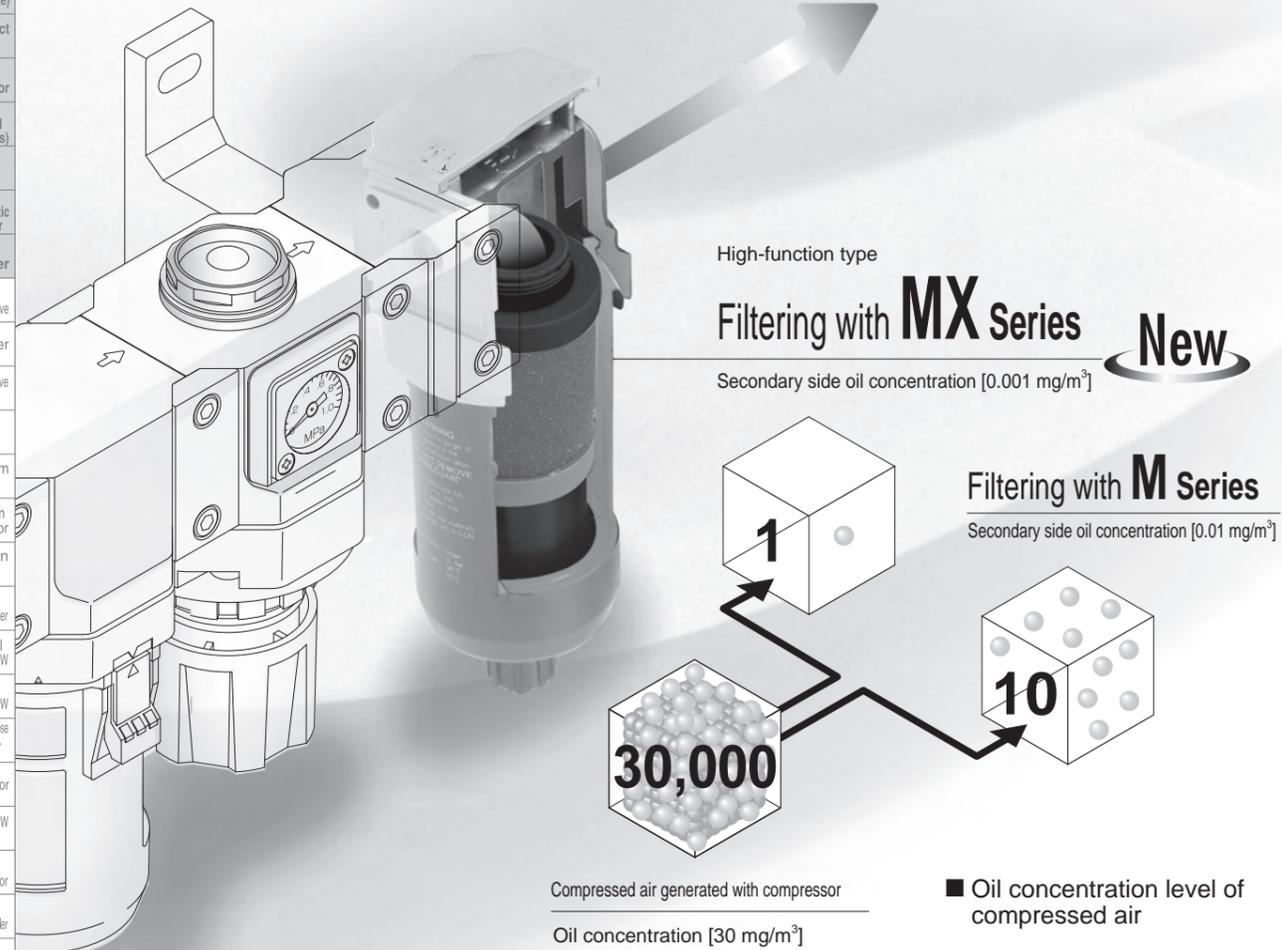
| Model | M type | S type | X type |
|-------------------|----------------------|-----------------------|---------------------|
| M1000-W | M1000-MANTLE-ASSY | M1000-MANTLE-ASSY-S | M1000-MANTLE-ASSY-X |
| M1000-W-F1 | M1000-MANTLE-ASSY-F1 | M1000-MANTLE-ASSY-F1S | - |
| M2000-W | M2000-MANTLE-ASSY | M2000-MANTLE-ASSY-S | M2000-MANTLE-ASSY-X |
| M3000-W, MM3000-W | M3000-MANTLE-ASSY | M3000-MANTLE-ASSY-S | M3000-MANTLE-ASSY-X |
| M4000-W, MM4000-W | M4000-MANTLE-ASSY | M4000-MANTLE-ASSY-S | M4000-MANTLE-ASSY-X |
| M6000-W, MM6000-W | M6000-MANTLE-ASSY | M6000-MANTLE-ASSY-S | M6000-MANTLE-ASSY-X |
| M8000-W, MM8000-W | M8000-MANTLE-ASSY | M8000-MANTLE-ASSY-S | M8000-MANTLE-ASSY-X |

* M1000-W, 3000-W, 4000-W, and 8000-W Series products released before May 1998 are compatible with M parts, so select M parts.

* Refer to the air filter options and parts table for details on the bowl assembly and bowl guard.

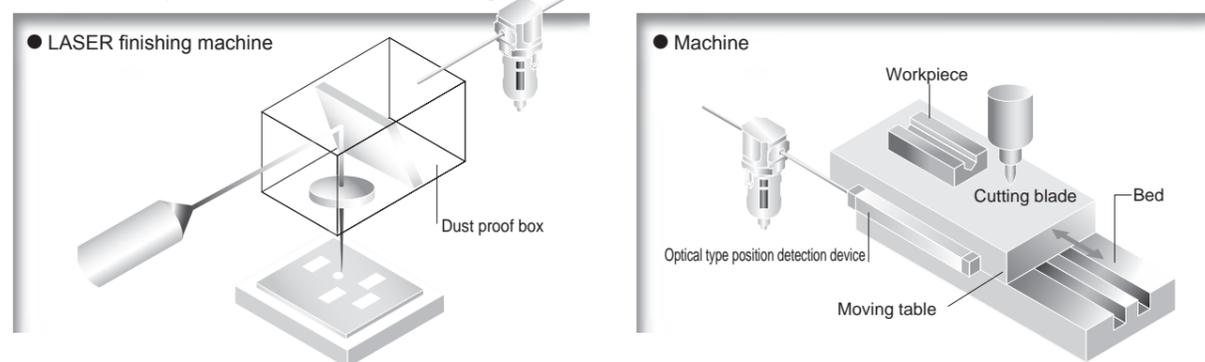
High-performance with x10 oil removal.

Highly efficient oil removing mantle removes oil up to a secondary oil concentration 0.001mg/m^3 . MX Series high-performance oil mist filter with x10 (compared to oil mist filter M Series) oil removal.



Further expanding high-purity oilless air applications

This series is ideal for applications requiring high-purity oilless air, including laser processing systems, optical positioning units, and foodstuff and pharmaceutical manufacturing lines.



High performance oil mist filter MX Series

Mantle structural explanation

Form layer

Oil is efficiently collected to prevent outflow to the secondary side.

Stainless steel support tube

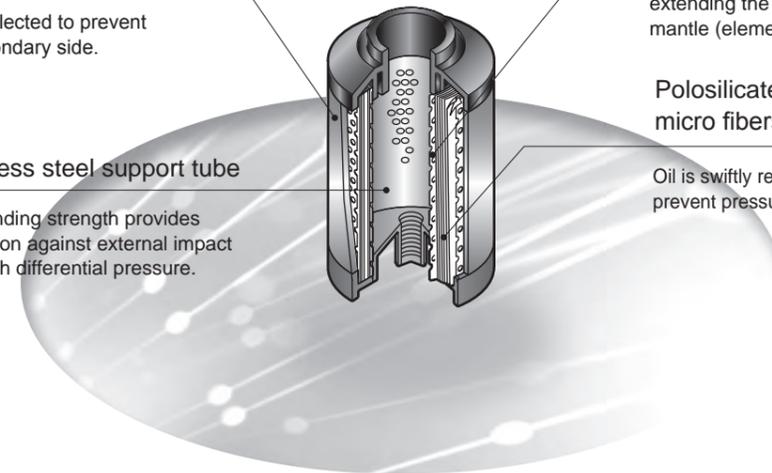
Outstanding strength provides protection against external impact and high differential pressure.

Pre-filter support layer

Solid particles are removed, extending the life of the mantle (element).

Polosilicate micro fibers

Oil is swiftly removed to prevent pressure loss.



Secondary side oil concentration 0.001mg/m^3 or less

The highly efficient oil removing mantle removes oil up to the secondary oil concentration of 0.001mg/m^3 at 21°C . This series is compatible with the JIS Standards Oil Class 1---1.

High accuracy filtration

Impurities up to $0.01\mu\text{m}$ are removed.

Long life, low pressure loss

The gap rate within the mantle (element) fibers is high at 94%, suppressing pressure loss and extending life.

Module connections

A system is configured with module connections in the same manner as the conventional filter F Series and oil mist filter M Series.

Diverse models

Dive types -- MX1000, 3000, 4000, 6000 and 8000 -- are used to match the flow.

Cleanroom-compatible

The P70 Series is available. (3000, 4000 and 6000 Series are available)

High performance oil mist filter MX Series variations

| | Filtration rating μm | Secondary side oil concentration mg/m^3 (21°C) | Treating flow rate ℓ/min | | | | | Ambient temperature range $^\circ\text{C}$ | |
|------------------|---------------------------------|---|--------------------------------------|-------------|-------------|-------------|-------------|--|---------|
| | | | 1000 Series | 3000 Series | 4000 Series | 6000 Series | 8000 Series | | |
| MX Series | 0.01 | 0.001 or less | 75 | 180 | 370 | 670 | 1490 | 5 to 60 | |
| M Series | M Type | 0.01 | 0.01 or less | 150 | 360 | 825 | 1270 | 2600 | 5 to 60 |
| | S Type | 0.3 | 0.5 or less | 150 | 450 | 1000 | 1400 | 2900 | 5 to 60 |
| | X Type | Suction by activated charcoal | 0.003 or less | 150 | 450 | 1000 | 1400 | 2900 | 5 to 30 |

Read Safety Precautions to ensure correct, safe product use.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending



High performance oil mist filter standard white Series

MX1000/MX3000/MX4000 MX6000/MX8000-W Series

Secondary side oil concentration 0.001mg/m³

Appropriate for optical device such as optical type positioning device, LASER finishing machine, etc.

Port size: 1/8 to 1

JIS symbol



Specifications

| Descriptions | MX1000-W | MX3000-W | MX4000-W | MX6000-W | MX8000-W |
|--|--|-----------------------------------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | |
| Working fluid | Compressed air | | | | |
| Working pressure range MPa | 0.1 to 1.0 Note 2, Note 3 | | | | |
| Withstanding pressure MPa | 1.5 Note 2 | | | | |
| Ambient temperature range °C | 5 to 60 | | | | |
| Filtration rating μm | 0.01(nominal) | | | | |
| Secondary side oil concentration mg/m ³ | 0.001 or less Note 2, Note 3 | | | | |
| Maximum flow rate ℓ/min. (ANR) Note 1 | 75 Note 4 | 180 | 370 | 670 | 1480 |
| Drain capacity cm ³ | 3 | 45 | 80 | 80 | 80 |
| Port size Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | 0.096 | 0.28 | 0.52 | 0.95 | 1.35 |
| Mantle (element) change | 1 year (6000 hours) or pressure drop 0.1 MPa | | | | |
| Standard accessories | Bowl guard | | | | |

Note 1: Values for primary pressure 0.7 MPa and pressure drop 0.01 MPa. Use within the maximum processing flow rate.
If the maximum processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil drainage, etc., could splatter to the secondary side and result in faults at the terminal.

Note 2: When MX1000-W-F1 with an automatic drain is selected, the minimum operation pressure is 0.2 MPa, the maximum operation pressure is 0.7 MPa, and the guaranteed pressure resistance is 1.05 MPa. Refer to the maximum processing flow graph (next page) for maximum working flow.

Note 3: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15 MPa.

Note 4: The secondary oil concentration is the value when the primary oil concentration is 30 mg/m³, the inlet air temperature is 21°C and before the oil is saturated.

Note 5: Install an oil mist filter (S type) as a prefilter on the primary side to prevent early clogging.

Clean room specifications (catalog No. CB-033S)

- Dust generation preventing structure for use in cleanrooms

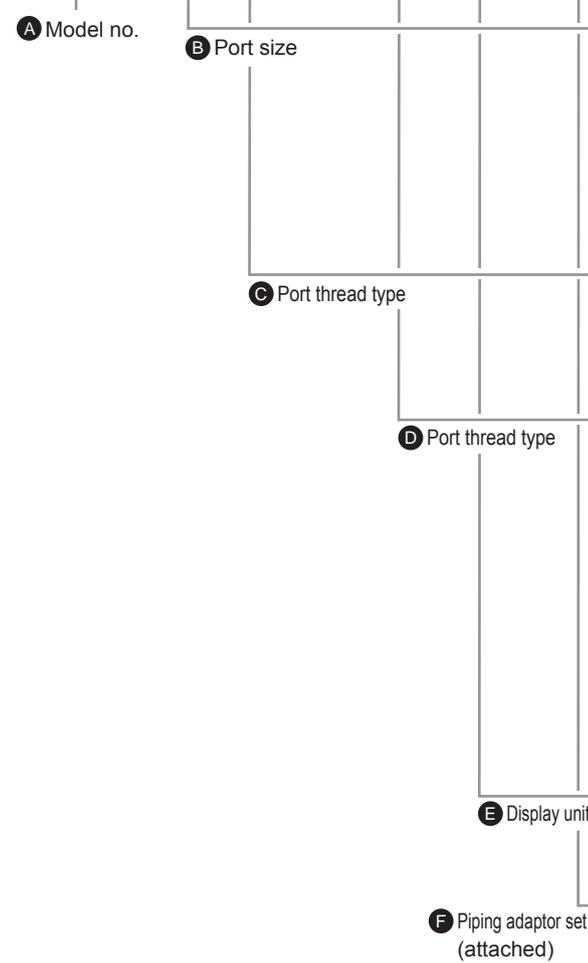
MX*000 - - **P7***

How to order



*Refer to page 274 for the explanation of the option.

| A Model no. | | | | |
|-------------|---|---|---|---|
| M | M | M | M | M |
| X | X | X | X | X |
| 1 | 3 | 4 | 6 | 8 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 |



| Symbol | Descriptions | A Model no. | | | | | |
|--|----------------------------|--|---|---|---|---|---|
| B Port size | | M | M | M | M | M | |
| 6 | 1/8 | X | X | X | X | X | |
| 8 | 1/4 | 1 | 3 | 4 | 6 | 8 | |
| 10 | 3/8 | 0 | 0 | 0 | 0 | 0 | |
| 15 | 1/2 | 0 | 0 | 0 | 0 | 0 | |
| 20 | 3/4 | 0 | 0 | 0 | 0 | 0 | |
| 25 | 1 | 0 | 0 | 0 | 0 | 0 | |
| C Port thread type | | Note 1 | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | ● | |
| D Option | | Note 2 | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● | ● |
| | F1 Note 3, Note 4 | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● | ● |
| | M | Metal bowl | ● | ● | ● | ● | ● |
| | M1 | Metal bowl with manual drain cock | ● | ● | ● | ● | ● |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● | ● |
| | Q | With differential pressure detection port (Rc1/4) | ● | ● | ● | ● | ● |
| Flow | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● |
| Direction | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● |
| E Display unit | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | |
| F Piping adaptor set (attached) | | Note 5 page 428 Note 6 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | |
| A6*W | Rc1/8 piping adaptor set | ● | ● | ● | ● | ● | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | ● | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | ● | |
| A15*W | Rc1/2 piping adaptor set | ● | ● | ● | ● | ● | |
| A20*W | Rc3/4 piping adaptor set | ● | ● | ● | ● | ● | |
| A25*W | Rc1 piping adaptor set | ● | ● | ● | ● | ● | |
| A32*W | Rc1 1/4 piping adaptor set | ● | ● | ● | ● | ● | |
| *Adaptor screw type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | ● | |
| G Bracket (attached) | | page 425 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | |
| BW | C type bracket | ● | ● | ● | ● | ● | |

⚠ Note on model no. selection

- Note 1: When G threads or NPT threads are selected, the IN, OUT, and drainage discharge port (metal bowl automatic drain) are the target.
- Note 2: Select options for each drainage, bowl material and differential pressure detection.
When selecting options for several items, list options in order from the top.
- Note 3: NO automatic drain cannot be selected.
- Note 4: Refer to page 276 for the automatic drain use conditions.
- Note 5: The C-type bracket and piping adaptor set attachments cannot be used at the same time.
- Note 6: The joiner set is enclosed with the piping adaptor set.

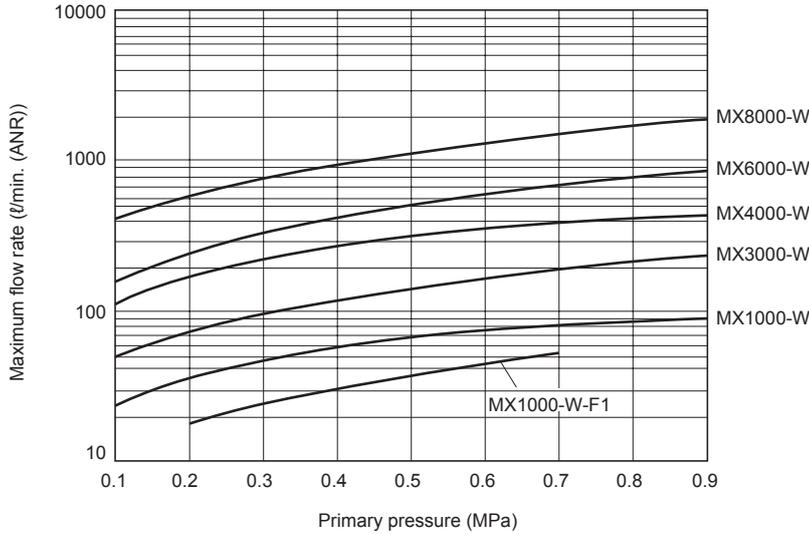
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Standard series
F.R.L. unit

Super Oil Mist Filter Series

Flow characteristic (maximum flow rate)

● MX*000-W



Oil mist filter: Using optional mantle

Major recommended circuit

Applications

◆ S type



General industrial air
(Secondary side oil concentration
0.5mg/m³ or less)

- Air tool
air drill / air screw driver
air grinder
- Labor saving device and components
- Pneumatic jigs and tools
- Air chuck
- Air vice
- Precision part cleaning air blow

◆ M type



Oil free air
(Secondary side oil concentration
0.01mg/m³ or less)

- Instrumentation
- Measurement
- Logic control movable element, pure fluid element
movable element / pure fluid element
- Luxury painting
- Precise industry

◆ X type



Deodorization air
(Secondary side oil concentration
0.003mg/m³ or less)

- Food industry
- Pharmaceutical industry
- Agitation
- Transportation
- Dry
- Package
- Air for brewing

◆ MX type



Super oilless air
(Secondary side oil concentration
0.001mg/m³ or less)

- Optical type positioning device
- LASER finishing machine

Option symbol of mantle and shape

| | Option symbol | Appearance |
|----------|----------------|--|
| | Blank (M type) | End plate Black Plastic form Red |
| M*000-W | S (S type) | End plate Green Plastic form Red |
| | X (X type) | End plate Black Punching metal |
| MX*000-W | | Black End plate Green Plastic form Red |

NOTE: Changes for product upgrades may be made without prior notice.
When placing an order, confirm the option symbol for the part model given here.

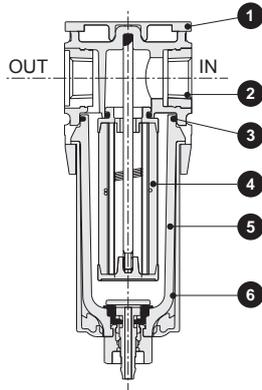
NOTE: The secondary oil density is the value when the primary oil density is 30 mg/m³, the inlet air temperature is 21°C and before the oil is saturated.

Super Oil Mist Filter Series

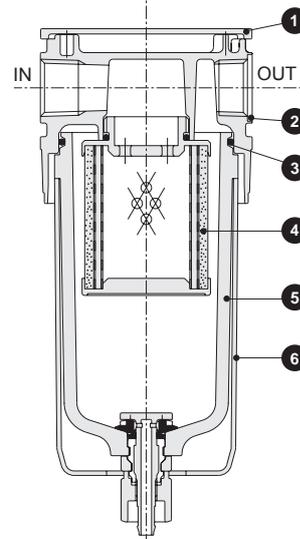
Internal structure and parts list

Internal structure and parts list

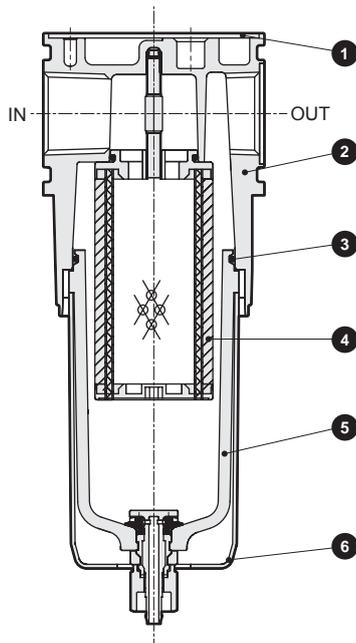
● MX1000-W



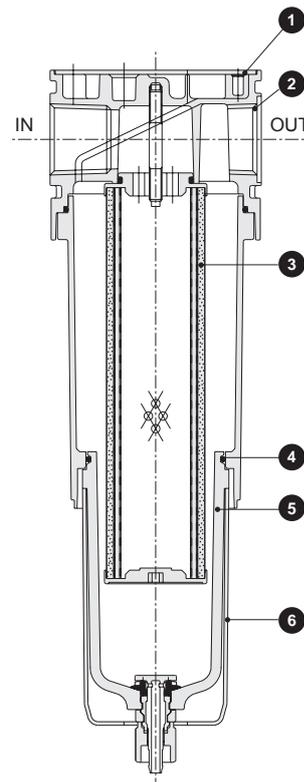
● MX3000-W/MX4000-W



● MX6000-W



● MX8000-W



| No. | Parts name | Material | | | | |
|-----|-----------------|---|----------------------------|----------|----------|----------|
| | | MX1000-W | MX3000-W | MX4000-W | MX6000-W | MX8000-W |
| 1 | Plate cover | ABS resin | | | | |
| 2 | Body | Polyamide resin | Aluminum alloy die-casting | | | |
| 3 | O-ring Note 1 | Special nitrile rubber | | | | |
| 4 | Mantle assembly | - | | | | |
| 5 | Bowl assembly | Polycarbonate resin, polyacetal resin, urethane resin | | | | |
| 6 | Bowl guard | Polyamide resin | Polyamide resin, steel | | | |

Note 1: O-ring of MX1000-W is special shaped.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

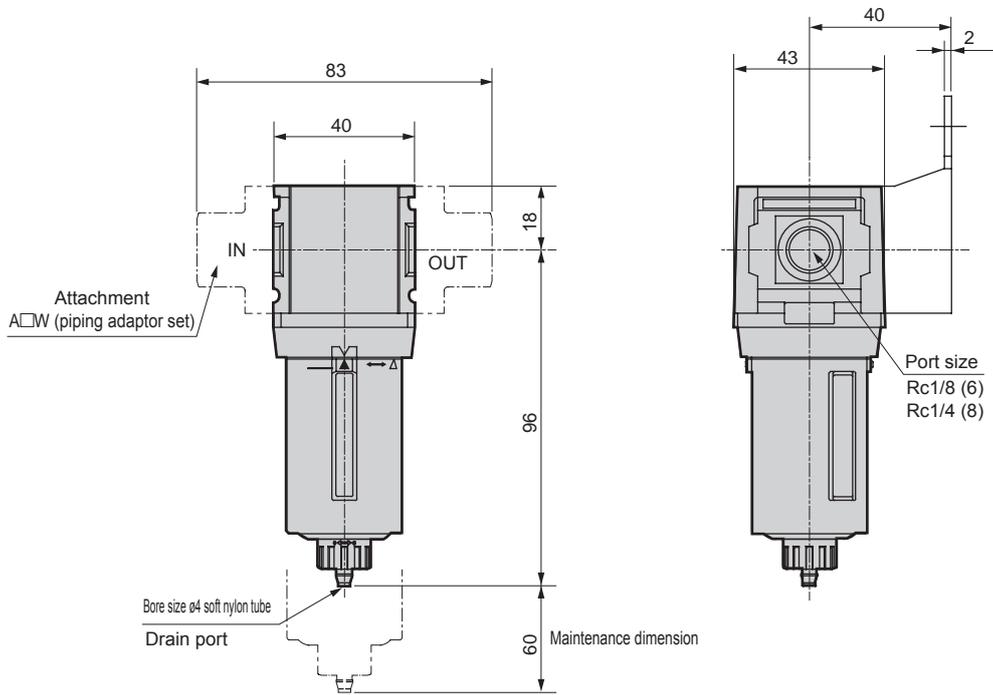
Super Oil Mist Filter Series

Dimensions

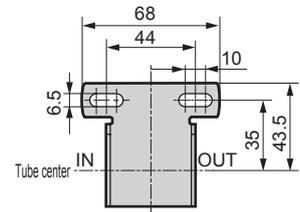


| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

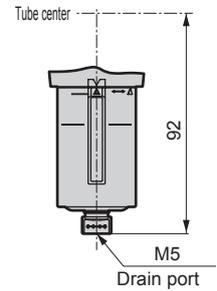
● MX1000-W



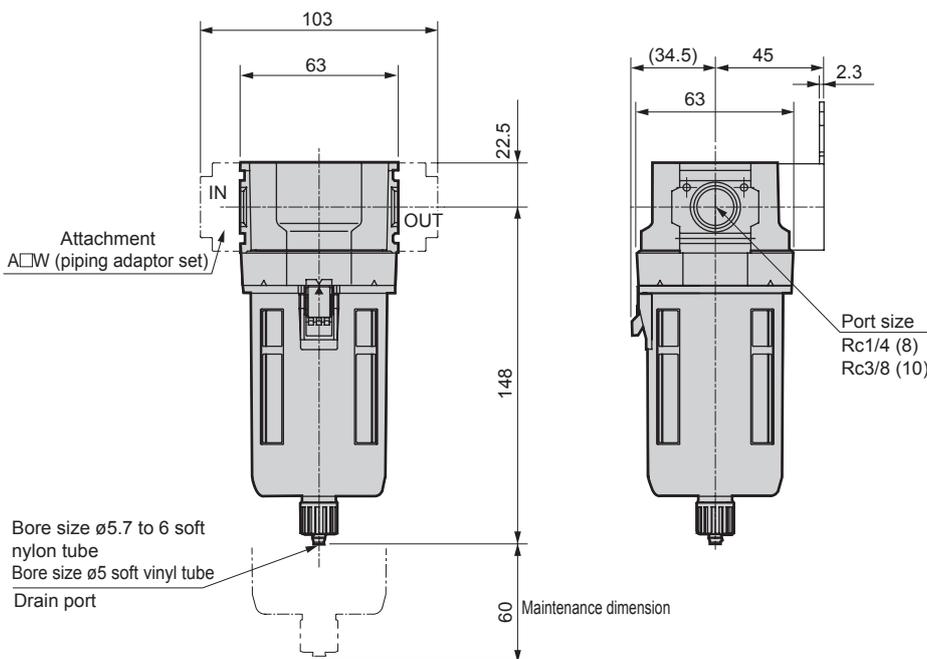
- Attachment
C type bracket (-BW)
Part model no.: B120



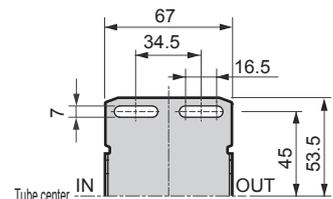
- Option dimensions with automatic drain (F1)



● MX3000-W



- Attachment
C type bracket (-BW)
Part model no.: B320

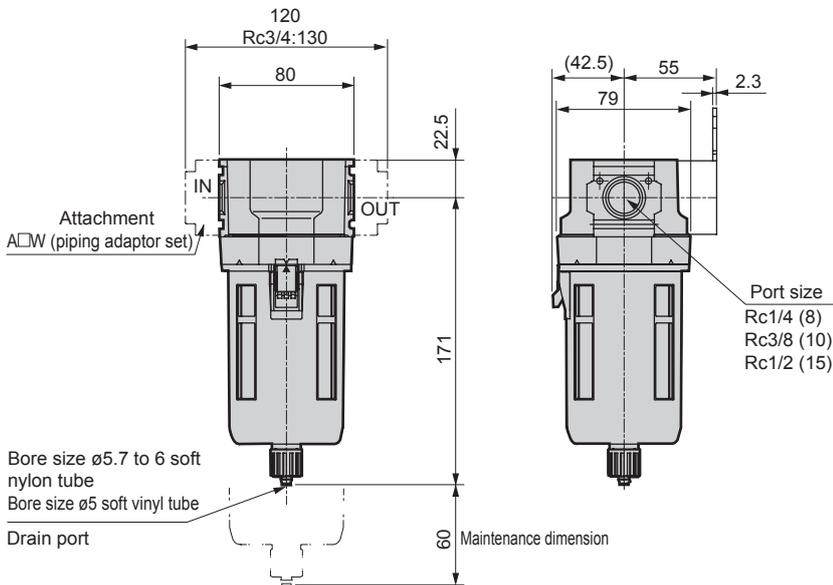


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

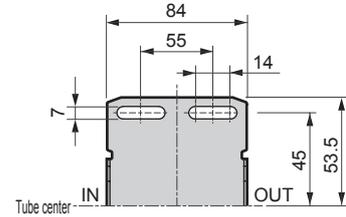
Dimensions



● MX4000-W

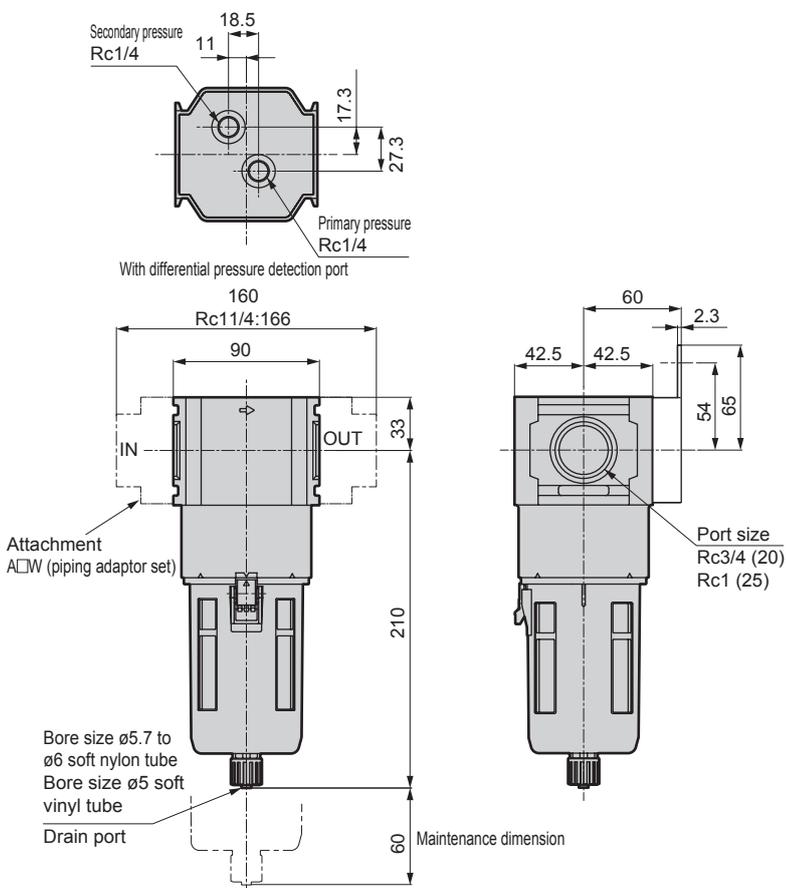


- Attachment
C type bracket (-BW)
Part model no.: B420

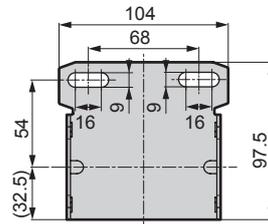


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

● MX6000-W



- Attachment
C type bracket (-BW)
Part model no.: B620



● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

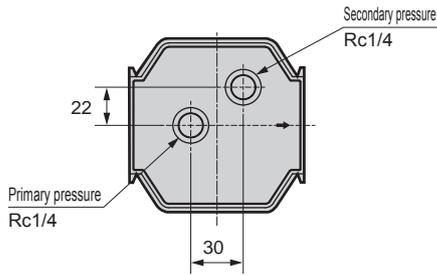
Standard series
F.R.L. unit

Super Oil Mist Filter Series

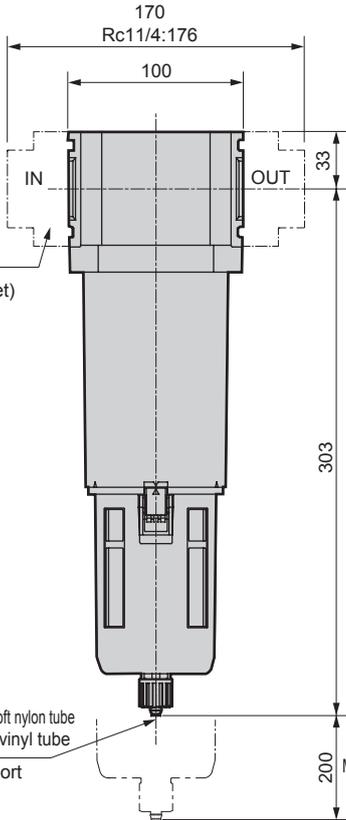
Dimensions



● MX8000-W



Option
(With differential pressure detection port)



Attachment
A□W (piping adaptor set)

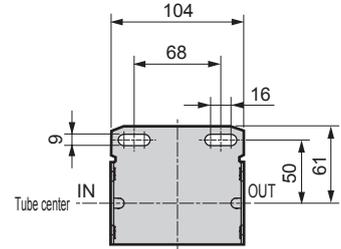
Bore size $\phi 5.7$ to $\phi 8$ soft nylon tube
Bore size $\phi 5$ soft vinyl tube

Drain port

Maintenance dimension

● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

• Attachment
C type bracket (-BW)
Part model no.: B820



Port size
Rc3/4 (20)
Rc1 (25)

● Metal bowl (option)

(MX3000-W, MX4000-W, MX6000-W, MX8000-W)

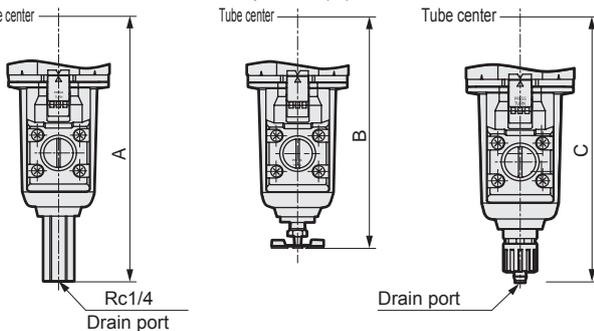
Metal manual cock

With automatic drain (F1M)

With petcock (M)

Standard manual drain cock

(M1)



Dimensions

| Model no. | F1M | M | M1 |
|-----------|-----|-------|-----|
| | A | B | C |
| MX3000-W | 164 | 143.5 | 154 |
| MX4000-W | 187 | 166.5 | 177 |
| MX6000-W | 226 | 205 | 216 |
| MX8000-W | 319 | 298 | 309 |

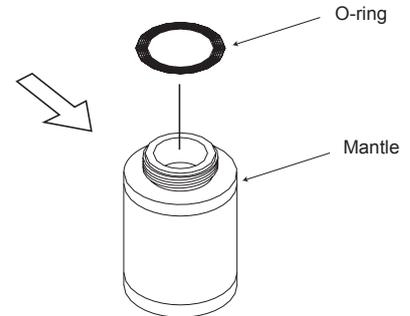
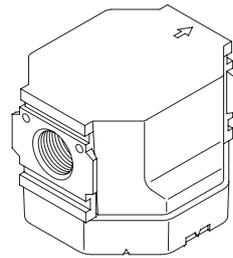
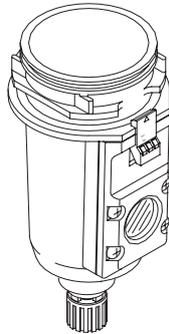
Optional parts table - oil mist filter

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

M1
With manual drain cock
Metal bowl assembly

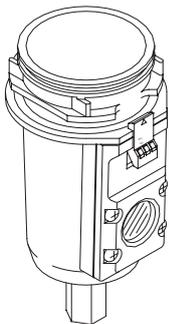
F1M1
With manual drain cock
NC type automatic drain
Metal bowl assembly



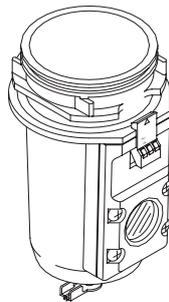
Bowl O-ring



F1M
NC type automatic drain metal bowl
assembly with metal manual cock



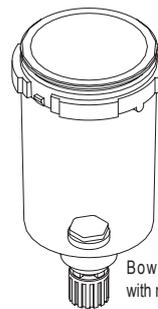
M
Metal bowl assembly
with cock



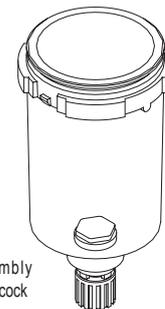
F1
NC type automatic drain bowl
assembly with manual cock



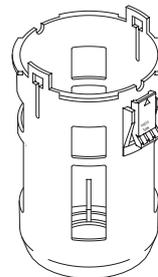
Z
Nylon bowl assembly with
manual cock



F1Z
NC type automatic drain nylon bowl
assembly with manual cock



Bowl assembly
with manual cock



Bowl guard

Repair kits model no. (Set of O-ring, mantle, bowl O-ring)

| Model | |
|-------------|---------------|
| MX1000-W | MX1000-KIT |
| MX1000-W-F1 | MX1000-KIT-F1 |
| MX3000-W | MX3000-KIT |
| MX4000-W | MX4000-KIT |
| MX6000-W | MX6000-KIT |
| MX8000-W | MX8000-KIT |

Repair kits model no. (Set of O-ring, mantle)

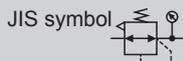
| Model | |
|-------------|-----------------------|
| MX1000-W | MX1000-MANTLE-ASSY |
| MX1000-W-F1 | MX1000-MANTLE-ASSY-F1 |
| MX3000-W | MX3000-MANTLE-ASSY |
| MX4000-W | MX4000-MANTLE-ASSY |
| MX6000-W | MX6000-MANTLE-ASSY |
| MX8000-W | MX8000-MANTLE-ASSY |

* Refer to the air filter options and parts table on pages 358, 359 for the bowl assembly and bowl guard.



Regulator standard white Series
R1000/R2000/R3000
R4000/R6000/R8000-W Series

Compact, pressure gauge embedded.
 Port size: 1/8 to 1



Specifications

| Descriptions | R1000-W | R2000-W | R3000-W | R4000-W | R6000-W | R8000-W |
|------------------------------|---|-----------------------------------|-----------------------------------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | | |
| Working fluid | Compressed air | | | | | |
| Max. working pressure MPa | 1 | | | | | |
| Withstanding pressure MPa | 1.5 | | | | | |
| Ambient temperature range °C | 5 to 60 Note 1 | | | | | |
| Set pressure range MPa | 0.05 to 0.85 | | | | | |
| Relief | With relief mechanism | | | | | |
| Port size Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | 0.16 | 0.31 | 0.45 | 0.7 | 1.0 | 1.6 |
| Standard accessories | Pressure gauge, nut for panel mount | | | | | Pressure gauge |

Note 1: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

Ozone specifications (Ending 12)

R*000 - ... - W ... - P11

Clean room specifications (catalog No. CB-033S)

- Dust generation preventing structure for use in cleanrooms

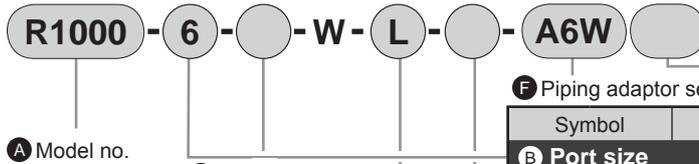
R*000 - - P7*

Secondary battery compatible specifications (catalog No. CC-947)

- Structured for use in secondary battery manufacturing processes

R*000 - - P4*

How to order



*Refer to page 274 for the explanation of the option.

| A Model no. | | | | | |
|-------------|---|---|---|---|---|
| R | R | R | R | R | R |
| 1 | 2 | 3 | 4 | 6 | 8 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 |

A Model no.

B Port size

C Port thread type

D Option

E Display unit

| F Piping adaptor set (attached) | | A Model no. | | | | | |
|---------------------------------|--------------------------------------|--|---|---|---|---|---|
| Symbol | Descriptions | R | R | R | R | R | R |
| B Port size | | 1 | 2 | 3 | 4 | 6 | 8 |
| 6 | 1/8 | ● | | | | | |
| 8 | 1/4 | ● | ● | ● | ● | | |
| 10 | 3/8 | | ● | ● | ● | | |
| 15 | 1/2 | | | | ● | | |
| 20 | 3/4 | | | | | ● | ● |
| 25 | 1 | | | | | ● | ● |
| C Port thread type | | Note 1 | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |
| D Option | | Note 2 | | | | | |
| Pressure Range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa | ● | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401-W) | ● | ● | ● | ● | ● |
| | T | W/o pressure gauge (pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● | ● |
| | T8 | Pressure gauge attached (pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● | ● |
| | T6 | Digital pressure sensor PPX attachment option | ● | ● | ● | ● | ● |
| | R1 | Pressure switch with display PPD assembly | ● | ● | ● | ● | ● |
| Flow Direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● |
| E Display unit | | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● | ● | ● |
| F Piping adaptor set (attached) | | Note 6, Note 7 page 428 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | | | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | ● | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | ● | | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | ● | | |
| A20*W | Rc3/4 piping adaptor set | | | | ● | ● | ● |
| A25*W | Rc1 piping adaptor set | | | | | ● | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | | | ● | ● |
| *Adaptor screw type | | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● | ● | ● |
| G Attachment (attached) | | Note 8 pages 425, 659 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● | ● |
| B3W | L type bracket | ● | ● | ● | ● | ● | ● |
| B4W | B type bracket | | ● | | | | |
| G45P | G45D-8-P10(L:G45D-8-P04) | ● | ● | ● | ● | ● | ● |
| G49P | G49D-8-P10(L:G49D-8-P04) | ● | ● | ● | ● | ● | ● |
| G59P | G59D-8-P10(L:G59D-8-P04) | ● | ● | ● | ● | ● | ● |
| G40P | G40D-8-P10(L:G40D-8-P04) | ● | ● | ● | ● | ● | ● |
| G50P | G50D-8-P10(L:G50D-8-P04) | ● | ● | ● | ● | ● | ● |
| G41P | G41D-8-P10(L:G41D-8-P04) | ● | ● | ● | ● | ● | ● |
| G52P | G52D-8-P10(L:G52D-8-P10) | ● | ● | ● | ● | ● | ● |
| R2 Note 4 | Digital pressure sensor: PPX-R10N-6M | ● | ● | ● | ● | ● | ● |

⚠ Note on model no. selection

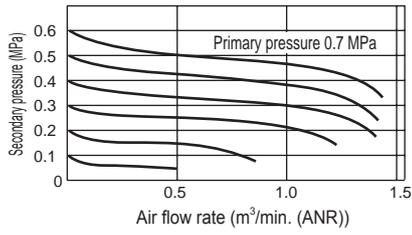
- Note 1: When G threads or NPT threads are selected, the IN, OUT and gauge port are the target
- Note 2: When selecting options for several items, list options in order from the top.
- Note 3: The pressure gauge's indication range is 0 to 0.4MPa for option "L".
- Note 4: When "D" option "T6" is selected, only "Blank" or "R2" can be selected for pressure gauge (enclosed). The digital pressure sensor PPX mounting port (Rc1/8) is assembled by open.
- Note 5: The output type is NPN transistor output. Consult with CKD when the PNP transistor output is required.
- Note 6: The C-type bracket and piping adaptor set attachments cannot be used at the same time.
- Note 7: The joiner set is enclosed with the piping adaptor set.
- Note 8: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.
- Note 9: Refer to Section (2.Regulator), in "⚠ PRECAUTIONS for Installation and Adjustment" (page 279) for details on mounting the L-type bracket.

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending
- Standard series
- F.R.L. unit

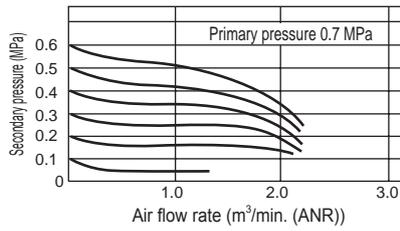
Regulator Series

Flow characteristic

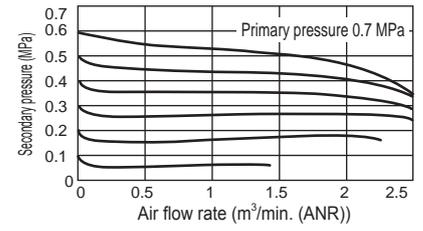
● R1000-6-W



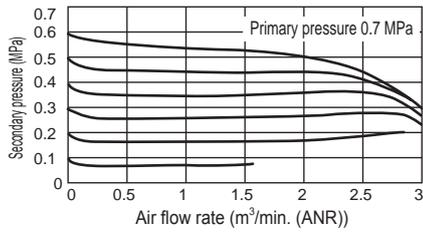
● R1000-8-W



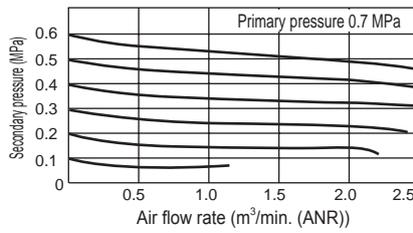
● R2000-8-W



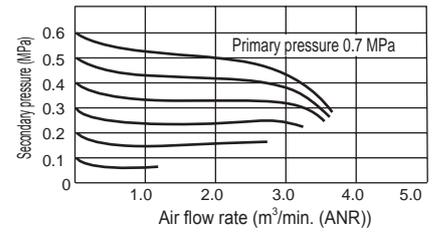
● R2000-10-W



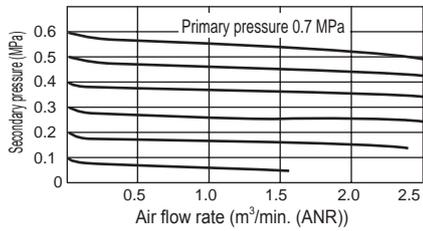
● R3000-8-W



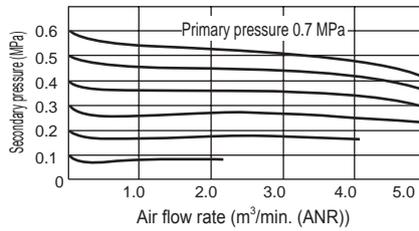
● R3000-10-W



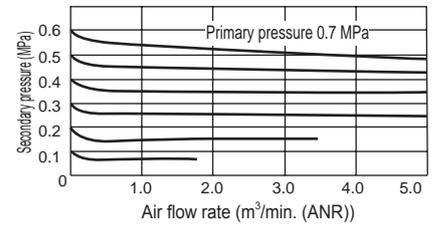
● R4000-8-W



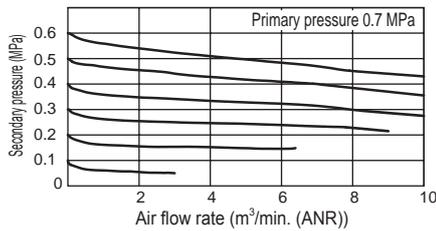
● R4000-10-W



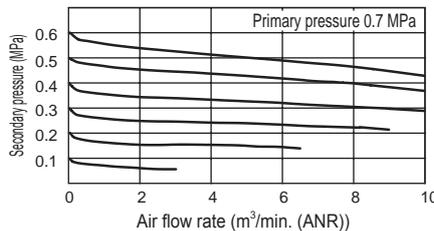
● R4000-15-W



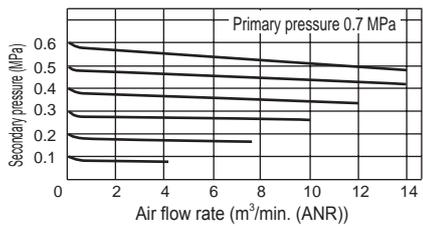
● R6000-20-W



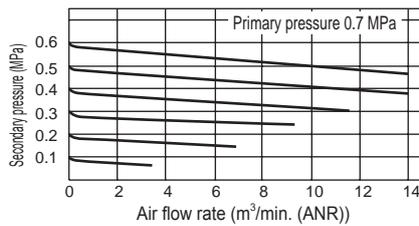
● R6000-25-W



● R8000-20-W

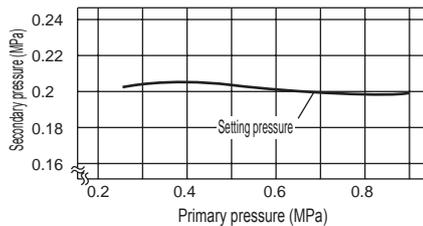


● R8000-25-W

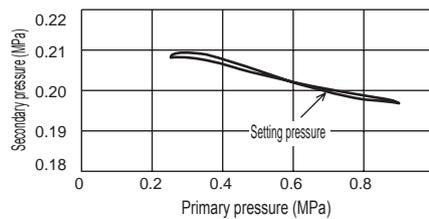


Pressure characteristic

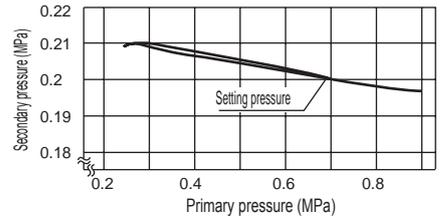
● R1000-W



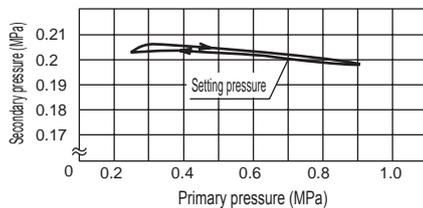
● R2000-W



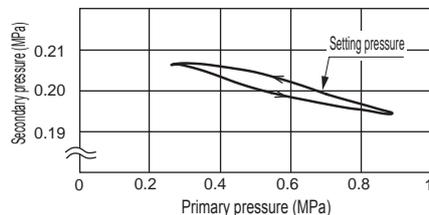
● R3000-W



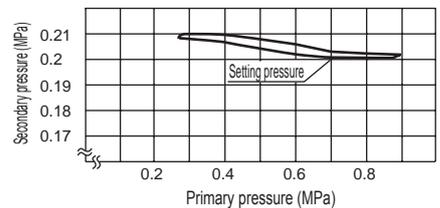
● R4000-W



● R6000-W



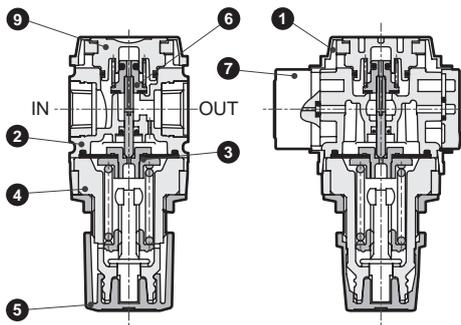
● R8000-W



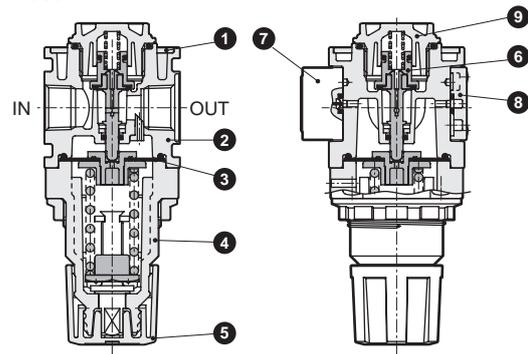
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Internal structure and parts list

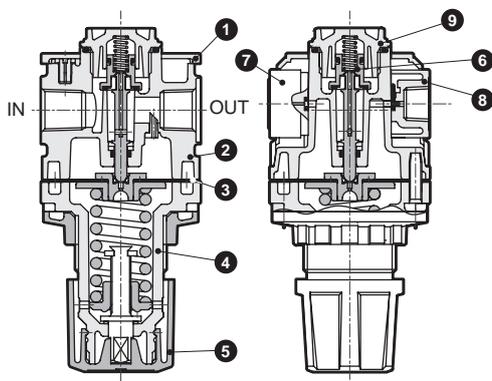
● R1000-W



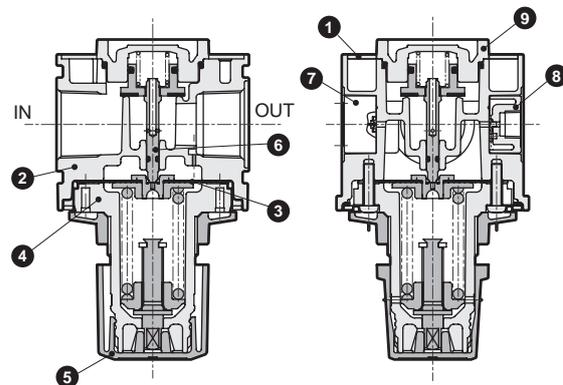
● R2000-W



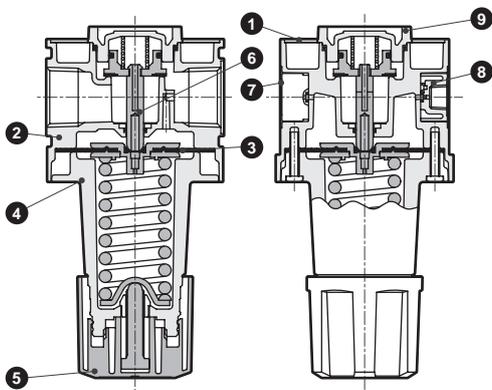
● R3000-W / R4000-W



● R6000-W



● R8000-W



| No. | Parts name | Material | | | | | |
|-----|-------------------------------|--|----------------------------|---|----------------------------|---------|----------------------------|
| | | R1000-W | R2000-W | R3000-W | R4000-W | R6000-W | R8000-W |
| 1 | Plate cover | ABS resin | | | | | |
| 2 | Body | Polyamide resin, steel | Aluminum alloy die-casting | Aluminum alloy die-casting | | | |
| 3 | Diaphragm assembly | Polyacetal resin, nitrile rubber | | Zinc alloy die-casting, nitrile rubber Note 3 | | | |
| 4 | Cover | Polyamide resin | PBT resin | | | | Aluminum alloy die-casting |
| 5 | Knob | Polyacetal resin | | | | | |
| 6 | Valve assembly | Brass, hydrogen nitrile rubber (polyacetal resin: R2000, R3000, 4000, 8000) | | | | | |
| 7 | Pressure gauge assembly | PBT resin, nitrile rubber, polyacetal resin, polycarbonate resin, brass, steel | | | | | |
| 8 | Gage plug assembly | Polyamide resin, nitrile rubber, steel | | | | | |
| | Blanking plug assembly Note 1 | PBT resin, nitrile rubber, copper | | - | - | - | - |
| 9 | Bottom plug Note 4 | Polyacetal resin | | | Aluminum alloy die-casting | | |

Note 1: A blank plug is enclosed with the R1000-W standard type.

Note 2: Refer to page 393 for repair parts.

Note 3: Aluminum is added for the R6000-W low-pressure type.

Note 4: The material of RM3000-W and RM4000-W is aluminum die-casting.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

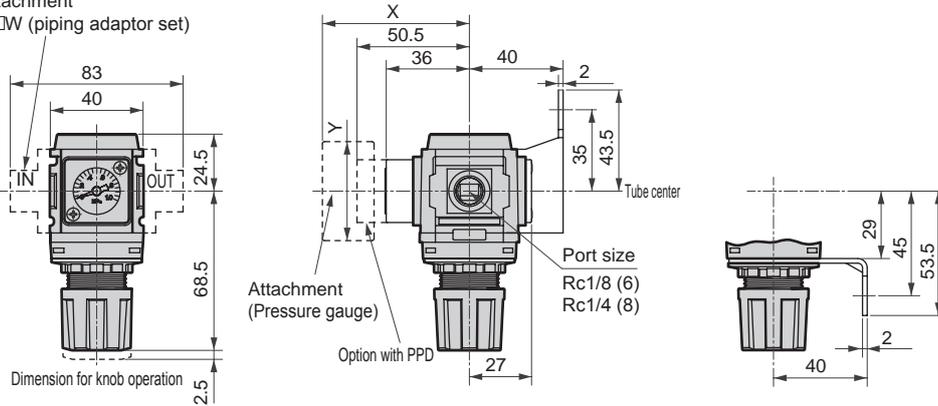
Regulator Series

Dimensions



● R1000-W

Attachment
A□W (piping adaptor set)



Panel cut dimension



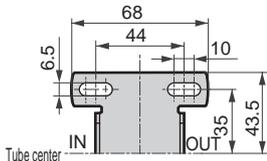
Panel plate thickness: Max. 6 mm

Pressure gauge attached optional dimensions table

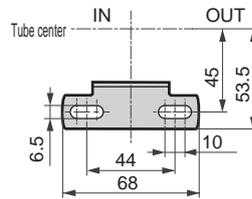
| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (74) | ∅39 |
| G49P | (73.5) | ∅43.5 |
| G59P | (76) | ∅52 |
| G40P | (75.5) | ∅42.5 |
| G50P | (75.5) | ∅52.5 |
| G41P | (74) | ∅42 |
| G52P | (86) | ∅52.5 |
| R2 | (74) | □30 |

● Attachment

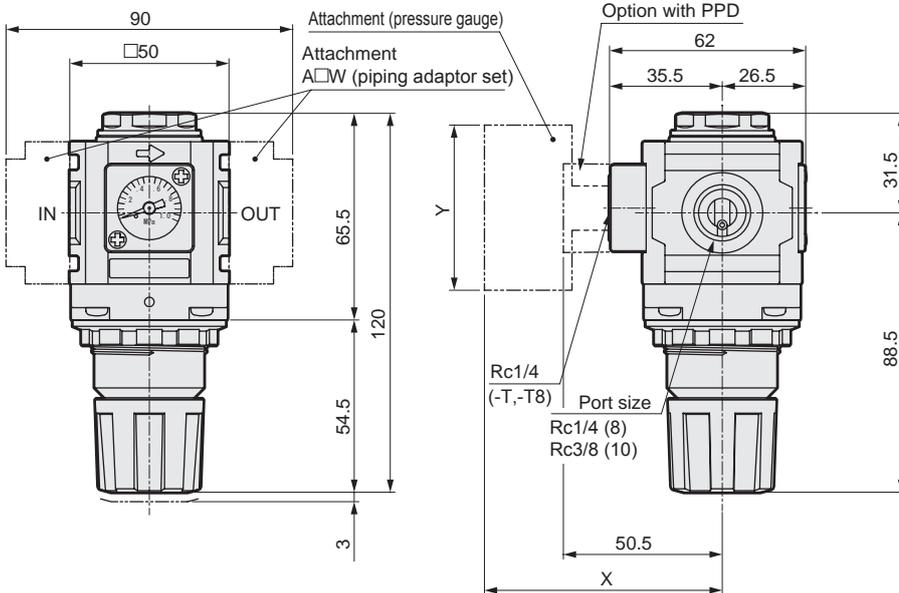
C type bracket (-BW)
Part model no.: B120



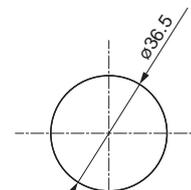
L type bracket (-B3W)
Part model no.: B130



● R2000-W



Panel cut dimension

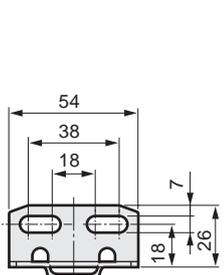


Panel plate thickness: Max. 4 mm

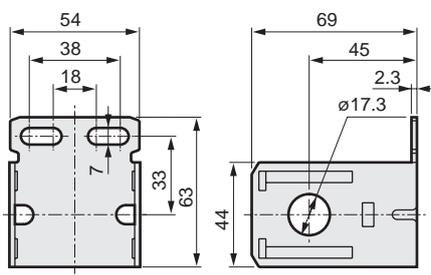
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (73.5) | ∅39 |
| G49P | (73) | ∅43.5 |
| G59P | (75.5) | ∅52 |
| G40P | (75) | ∅42.5 |
| G50P | (75) | ∅52.5 |
| G41P | (73.5) | ∅42 |
| G52P | (85.5) | ∅52.5 |
| R2 | (73) | □30 |

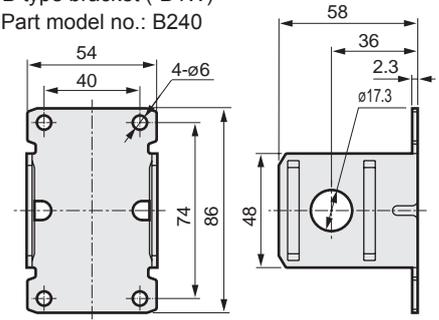
● L type bracket (-B3W)
Part model no.: B230



● C type bracket (-BW)
Part model no.: B220



● B type bracket (-B4W)
Part model no.: B240

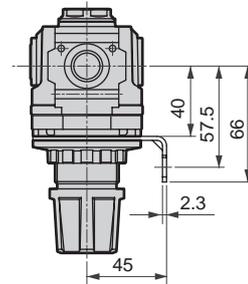
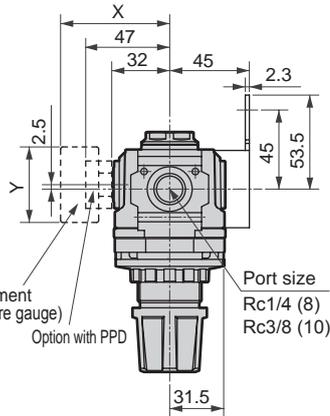
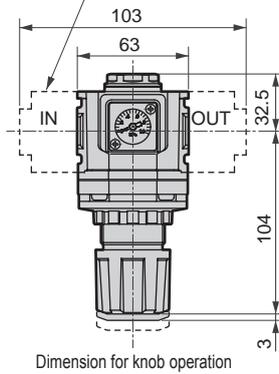


Dimensions

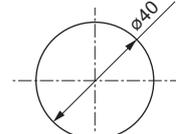


● R3000-W

Attachment
A□W (piping adaptor set)



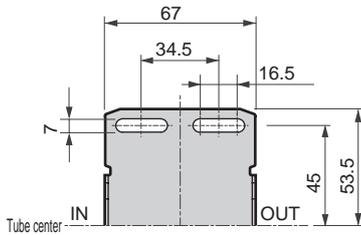
Panel cut dimension



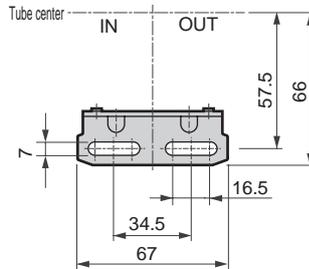
Panel plate thickness: Max. 7 mm

• Attachment (C type bracket)

C type bracket (-BW)
Part model no.: B320



L type bracket (-B3W)
Part model no.: B330

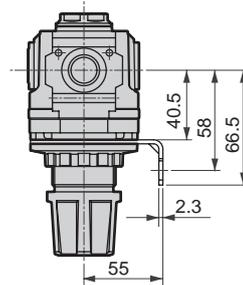
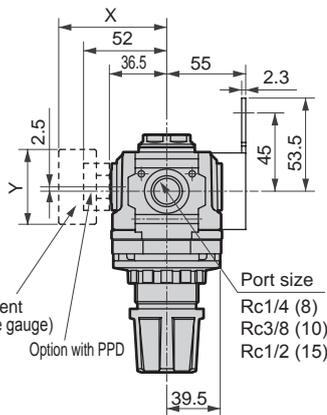
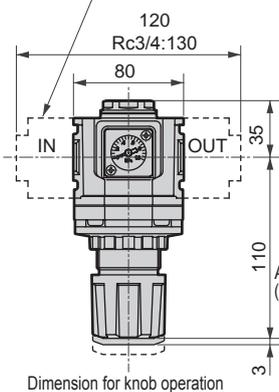


Pressure gauge attached optional dimensions table

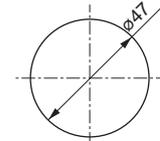
| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (70) | ø39 |
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |
| G52P | (82) | ø52.5 |
| R2 | (69.5) | □30 |

● R4000-W

Attachment
A□W (piping adaptor set)



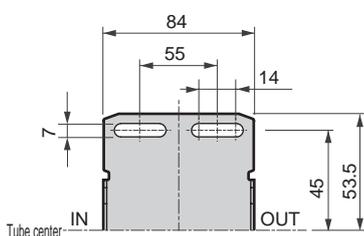
Panel cut dimension



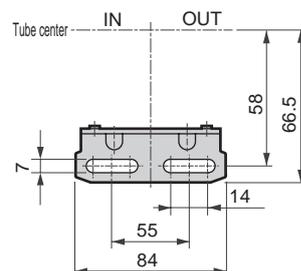
Panel plate thickness: Max. 7 mm

• Attachment

C type bracket (-BW)
Part model no.: B420



L type bracket (-B3W)
Part model no.: B430



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (75) | ø39 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (75) | □30 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

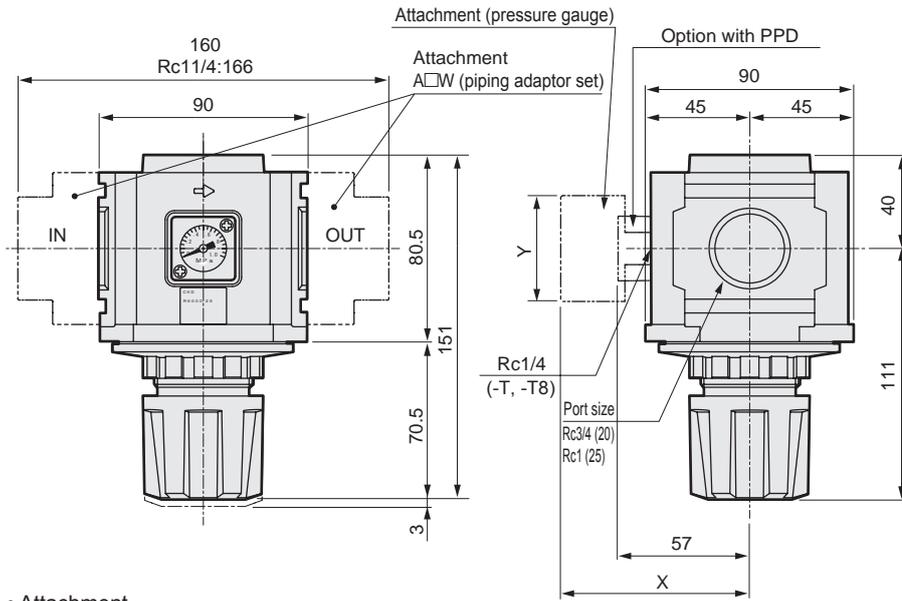
Standard series
F.R.L. unit

Regulator Series

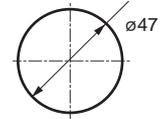
Dimensions



● R6000-W



Panel cut dimension

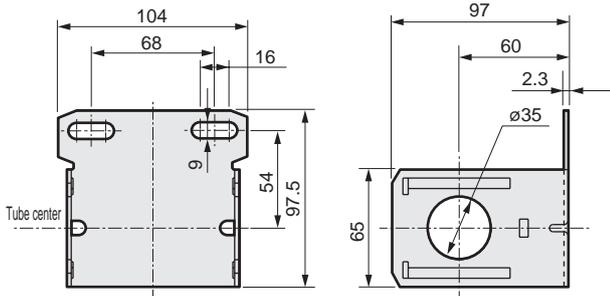


Pressure gauge attached optional dimensions table

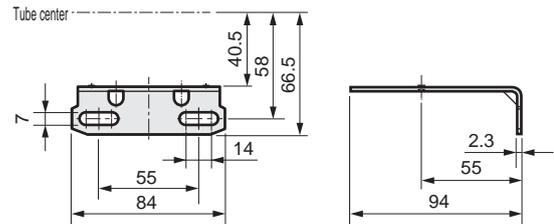
| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (80) | ø39 |
| G49P | (79.5) | ø43.5 |
| G59P | (82) | ø52 |
| G40P | (81.5) | ø42.5 |
| G50P | (87.5) | ø52.5 |
| G41P | (80) | ø42 |
| G52P | (93) | ø52.5 |
| R2 | (80) | □30 |

• Attachment

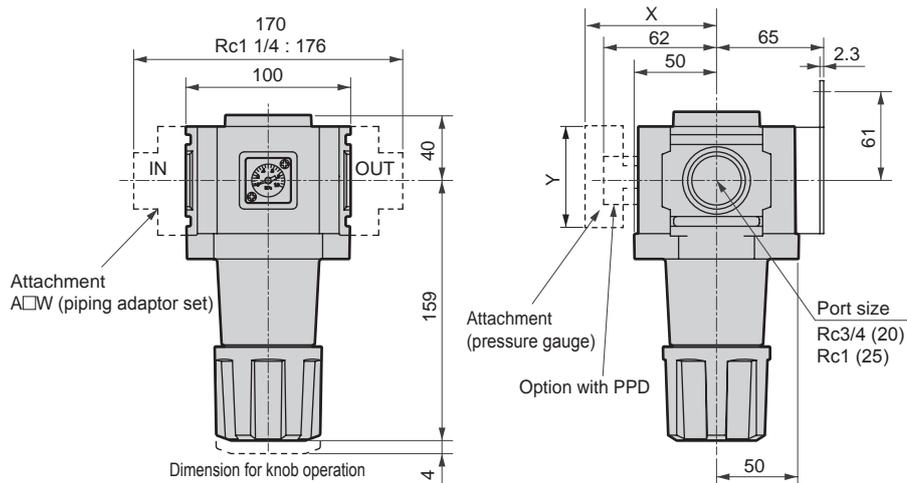
C type bracket (-BW)
Part model no.: B620



L type bracket (-B3W)
Part model no.: B430

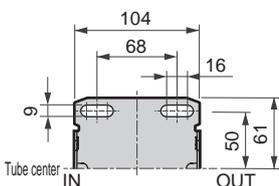


● R8000-W



• Attachment

C type bracket (-BW)
Part model no.: B820



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (85) | ø39 |
| G49P | (84.5) | ø43.5 |
| G59P | (87) | ø52 |
| G40P | (86.5) | ø42.5 |
| G50P | (86.5) | ø52.5 |
| G41P | (85) | ø42 |
| G52P | (98) | ø52.5 |
| R2 | (85) | □30 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



Reverse regulator standard white Series

R1100/R2100/R3100 R4100/R6100/R8100-W Series

From secondary pressure to primary pressure with back flow function
Port size: 1/8 to 1



Specifications

| Descriptions | R1100-W | R2100-W | R3100-W | R4100-W | R6100-W | R8100-W |
|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|--|-----------------------------------|-----------------------------------|
| Appearance | | | | | | |
| Working fluid | Compressed air | | | | | |
| Max. working pressure MPa | 1.0 | | | | | |
| Withstanding pressure MPa | 1.5 | | | | | |
| Ambient temperature range °C | 5 to 60 | | | | | Note 2 |
| Set pressure range (Note 1) MPa | 0.05 to 0.85 | | | | | |
| Relief | With relief mechanism | | | | | |
| Port size Rc, NPT, G | 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight kg | 0.16 | 0.31 | 0.45 | 0.7 | 1.0 | 1.6 |
| Standard accessories | Pressure gauge, nut for panel mount | | | | | Pressure gauge |

Note 1: Refer to the set pressure range for the back pressure given on page 388 when selecting the model.

Note 2: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

Note 3: Check that the primary pressure is at least 0.05 MPa or more than the secondary pressure.

Ozone specifications (Ending 13)

R*100 - ...W... - P11

Clean room specifications (catalog No. CB-033S)

● Dust generation preventing structure for use in cleanrooms

R*100 - - P7*

Secondary battery compatible specifications (catalog No. CC-947)

● Structured for use in secondary battery manufacturing processes

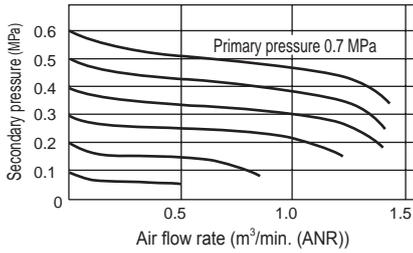
R*100 - - P4*

Regulator Series

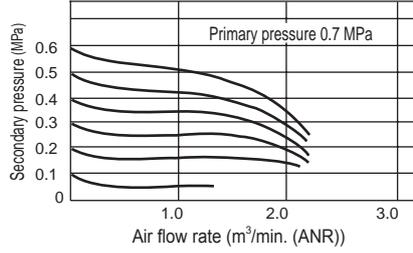
Flow characteristic

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

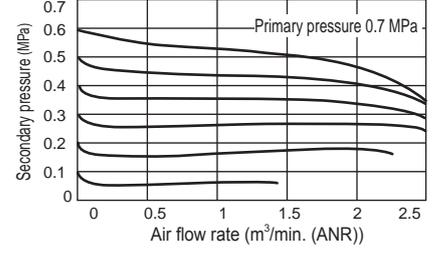
● R1100-6-W



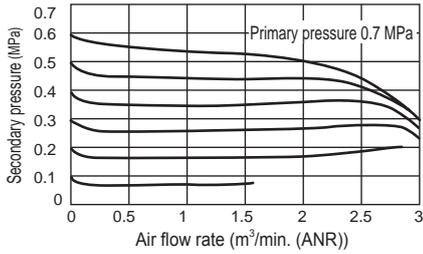
● R1100-8-W



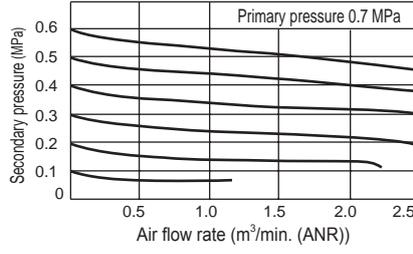
● R2100-8-W



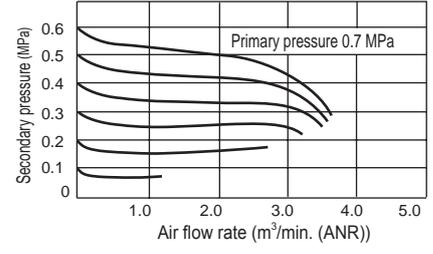
● R2100-10-W



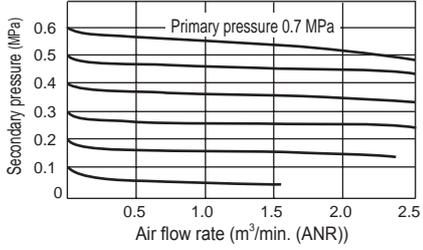
● R3100-8-W



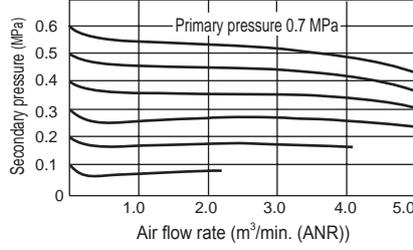
● R3100-10-W



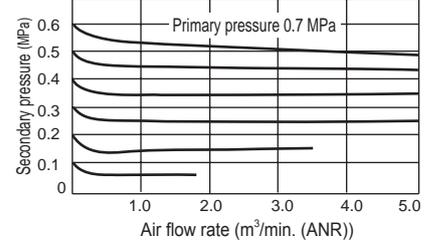
● R4100-8-W



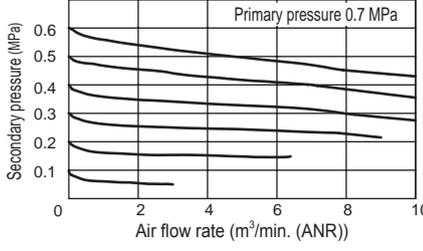
● R4100-10-W



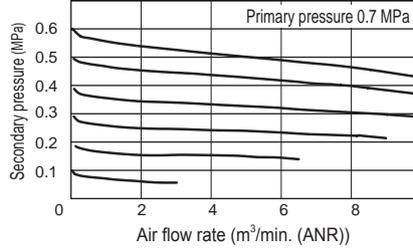
● R4100-15-W



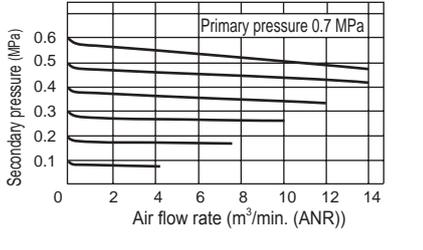
● R6100-20-W



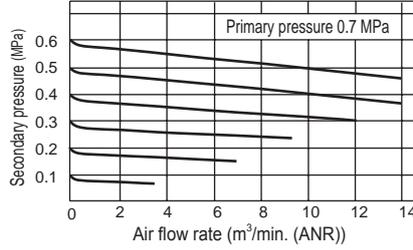
● R6100-25-W



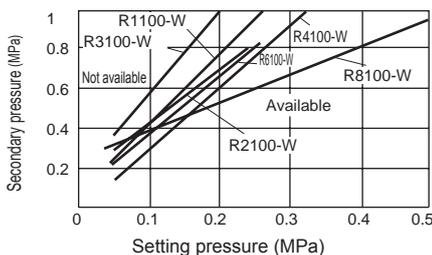
● R8100-20-W



● R8100-25-W



● Set pressure range to back pressure

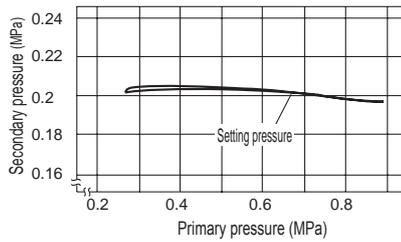


Note: The upper side of the graph is nonusable and the lower side usable.

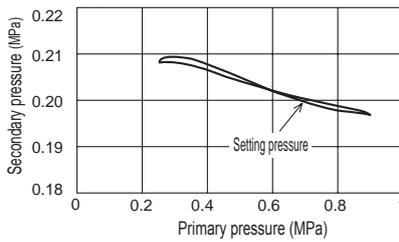
Example: If R4100-W is set to set pressure 0.2 MPa and the secondary back pressure is 0.6 MPa or more, the secondary pressure will not be released to the primary side.

Pressure characteristic

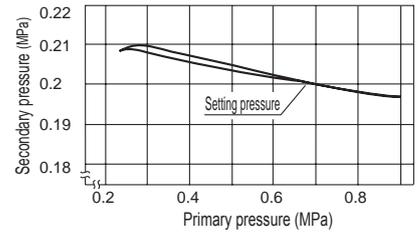
● R1100-W



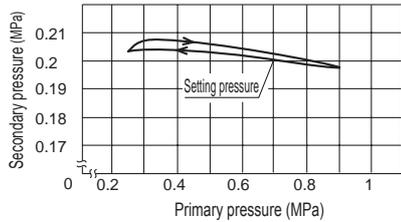
● R2100-W



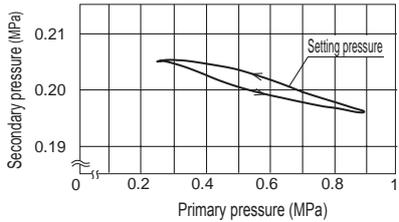
● R3100-W



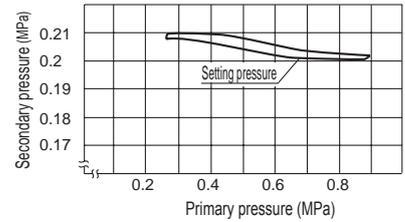
● R4100-W



● R6100-W

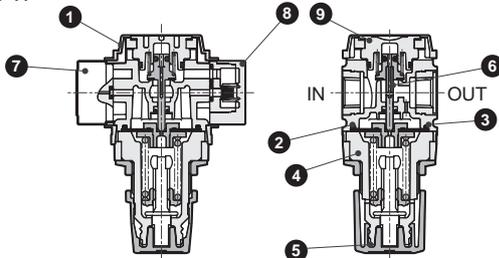


● R8100-W

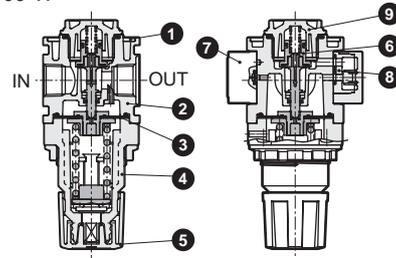


Internal structure and parts list

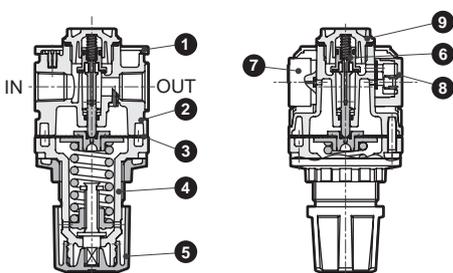
● R1100-W



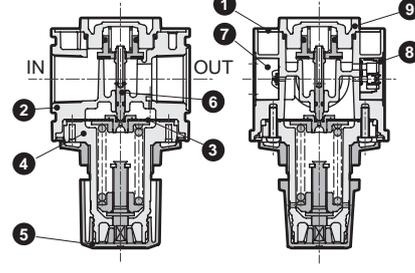
● R2100-W



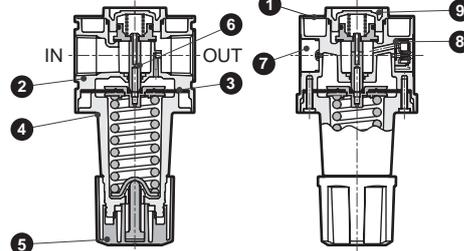
● R3100-W / R4100-W



● R6100-W



● R8100-W



| No. | Parts name | Material | | | | | |
|-----|----------------------------|--|----------------------------|---|---------|----------------------------|---------|
| | | R1100-W | R2100-W | R3100-W | R4100-W | R6100-W | R8100-W |
| 1 | Plate cover | ABS resin | | | | | |
| 2 | Body | Polyamide resin, steel | Aluminum alloy die-casting | | | | |
| 3 | Diaphragm assembly | Polyacetal resin, nitrile rubber | | Zinc alloy die-casting, nitrile rubber Note 2 | | | |
| 4 | Cover | Polyamide resin | PBT resin | | | Aluminum alloy die-casting | |
| 5 | Knob | Polyacetal resin | | | | | |
| 6 | Valve assembly | Brass, hydrogen nitrile rubber (polyacetal resin: R2100-W, 3100-W, 4100-W, 8100-W) | | | | | |
| 7 | Pressure gauge assembly | PBT resin, nitrile rubber, polyacetal resin, polycarbonate resin, brass, steel | | | | | |
| 8 | Check valve total assembly | PBT resin, nitrile rubber, stainless steel wire, steel | | | | | |
| 9 | Bottom plug | Polyacetal resin | | | | Aluminum alloy die-casting | |

Note 1: Refer to page 393 for repair kits.

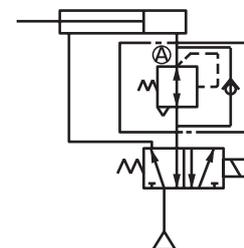
Note 2: Aluminum is added for the R6000-W low-pressure type.

Functional explanation

When the primary pressure is introduced from the IN side, the check valve functions as a regular regulator because it closes with primary pressure and spring load. When primary pressure is released by a switching valve such as a shut-off valve, the check valve opens with secondary pressure. Pressure in the diaphragm chamber is released and pressure drops. This causes the diaphragm to be pressed down by the pressure adjustment spring. The main valve (valve assembly) opens, and the air on the OUT side is discharged.

● Circuit diagram

When cylinder head end and rod end pressure differs.



Note: Set back pressure A for when the primary pressure is released within the range in the graph for the regulator's set pressure.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

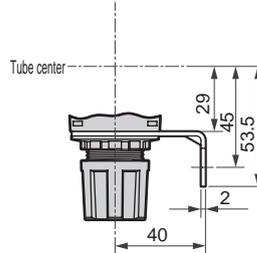
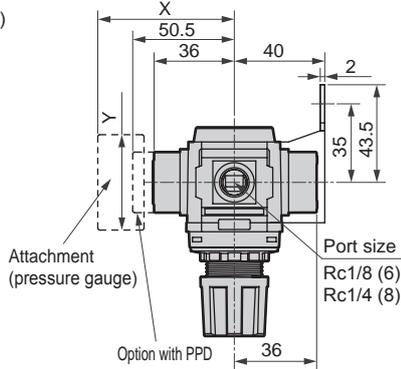
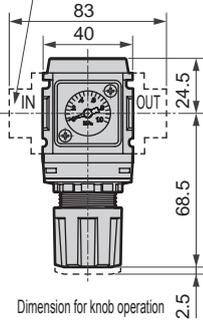
Regulator Series

Dimensions

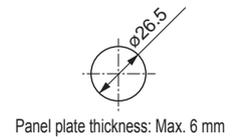


● R1100-W

Attachment
A□W (piping adaptor set)

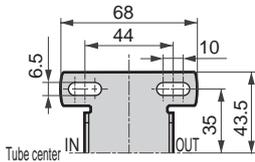


Panel cut dimension

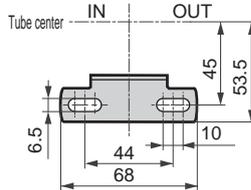


● Attachment

C type bracket (-BW)
Part model no.: B120



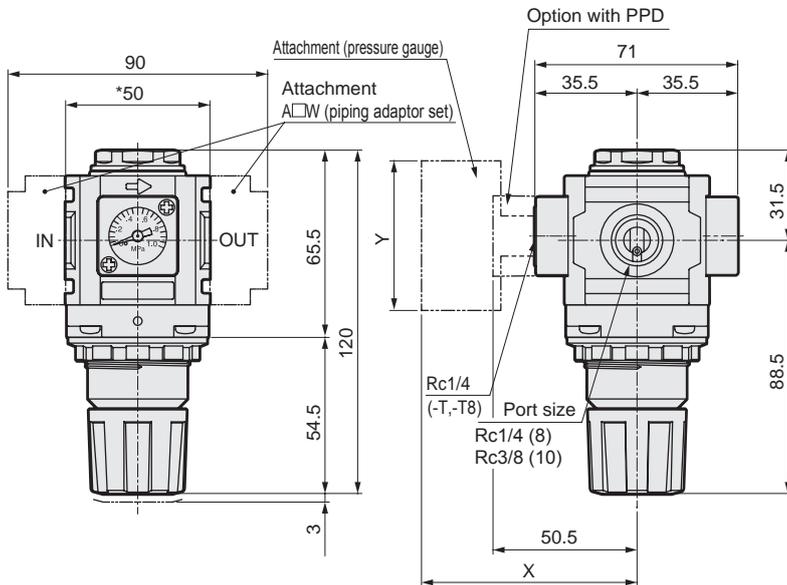
L type bracket (-B3W)
Part model no.: B130



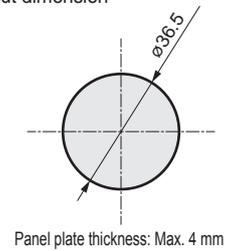
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (74) | $\phi 39$ |
| G49P | (73.5) | $\phi 43.5$ |
| G59P | (76) | $\phi 52$ |
| G40P | (75.5) | $\phi 42.5$ |
| G50P | (75.5) | $\phi 52.5$ |
| G41P | (74) | $\phi 42$ |
| G52P | (86) | $\phi 52.5$ |
| R2 | (74) | $\square 30$ |

● R2100-W



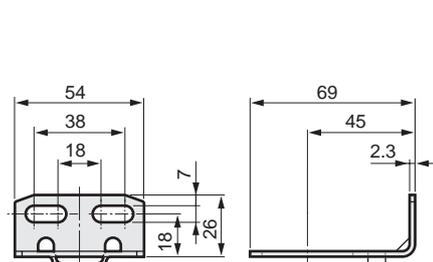
Panel cut dimension



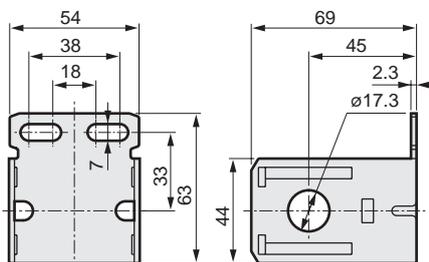
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------------|
| G45P | (73.5) | $\phi 39$ |
| G49P | (73) | $\phi 43.5$ |
| G59P | (75.5) | $\phi 52$ |
| G40P | (75) | $\phi 42.5$ |
| G50P | (75) | $\phi 52.5$ |
| G41P | (73.5) | $\phi 42$ |
| G52P | (85.5) | $\phi 52.5$ |
| R2 | (73) | $\square 30$ |

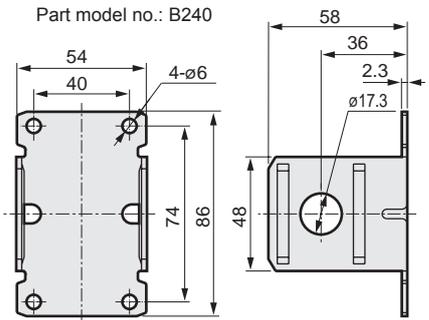
● L type bracket (-B3W)
Part model no.: B230



● C type bracket (-BW)
Part model no.: B220



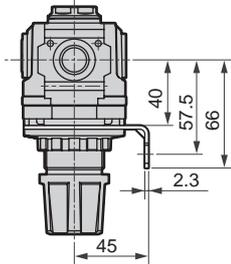
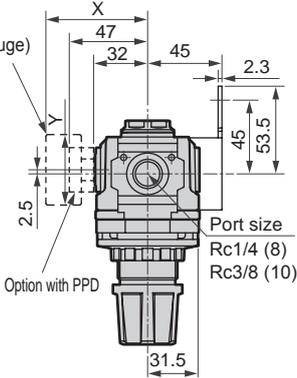
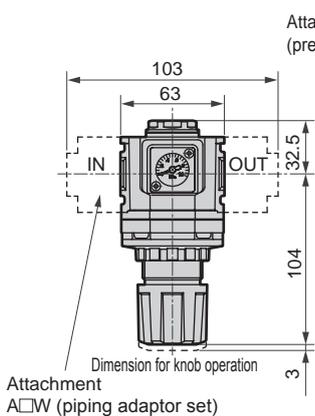
● B type bracket (-B4W)
Part model no.: B240



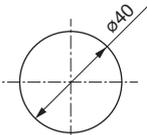
Dimensions



● R3100-W

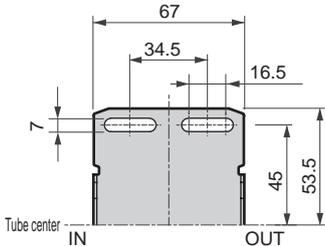


Panel cut dimension

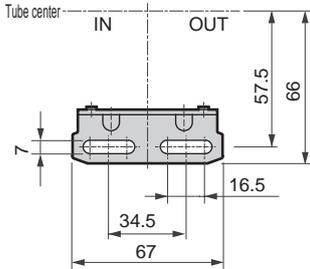


Panel plate thickness: Max. 7 mm

- Attachment
C type bracket (-BW)
Part model no.: B320



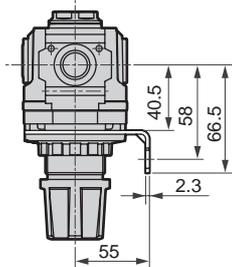
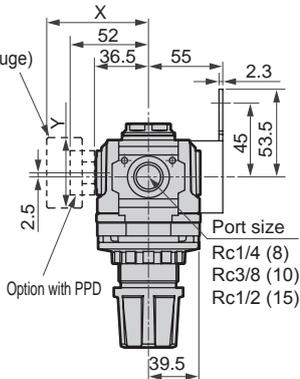
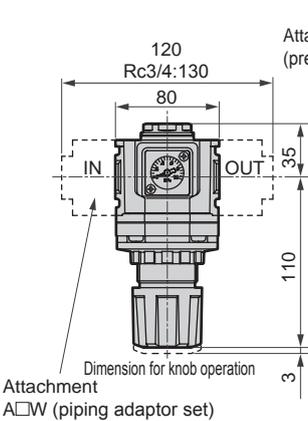
- L type bracket (-B3W)
Part model no.: B330



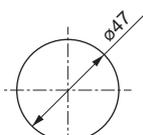
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (70) | ∅39 |
| G49P | (69.5) | ∅43.5 |
| G59P | (72) | ∅52 |
| G40P | (71.5) | ∅42.5 |
| G50P | (71.5) | ∅52.5 |
| G41P | (70) | ∅42 |
| G52P | (82) | ∅52.5 |
| R2 | (69.5) | □30 |

● R4100-W

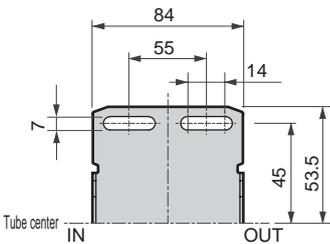


Panel cut dimension

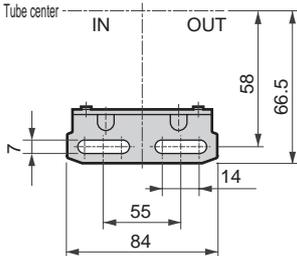


Panel plate thickness: Max. 7 mm

- Attachment
C type bracket (-BW)
Part model no.: B420



- L type bracket (-B3W)
Part model no.: B430



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (75) | ∅39 |
| G49P | (74.5) | ∅43.5 |
| G59P | (77) | ∅52 |
| G40P | (76.5) | ∅42.5 |
| G50P | (76.5) | ∅52.5 |
| G41P | (75) | ∅42 |
| G52P | (86) | ∅52.5 |
| R2 | (75) | □30 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

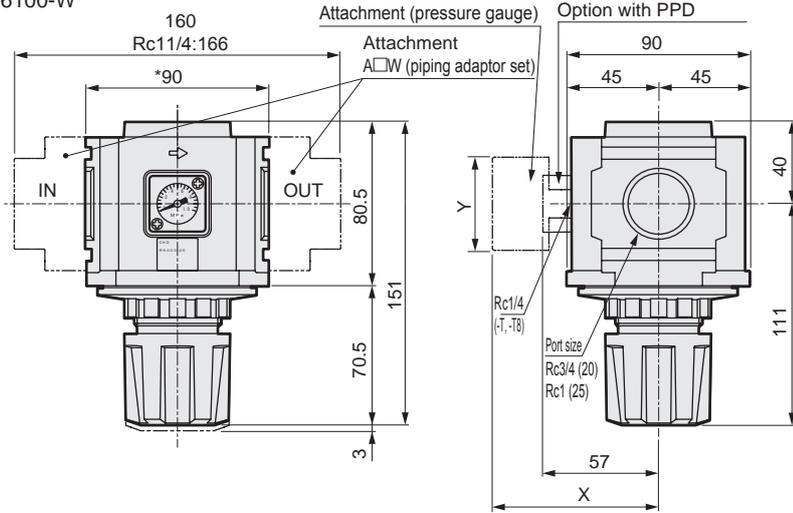
Standard series
F.R.L. unit

Regulator Series

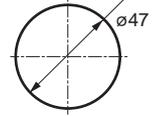
Dimensions



● R6100-W



Panel cut dimension



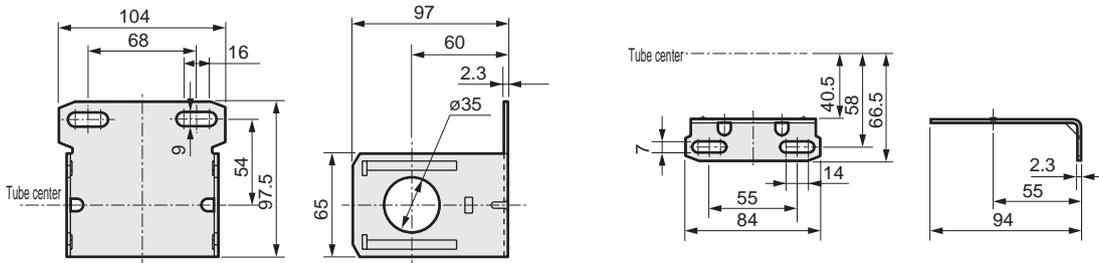
Pressure gauge optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (80) | ø39 |
| G49P | (79.5) | ø43.5 |
| G59P | (82) | ø52 |
| G40P | (81.5) | ø42.5 |
| G50P | (81.5) | ø52.5 |
| G41P | (80) | ø42 |
| G52P | (93) | ø52.5 |
| R2 | (80) | □30 |

• Attachment

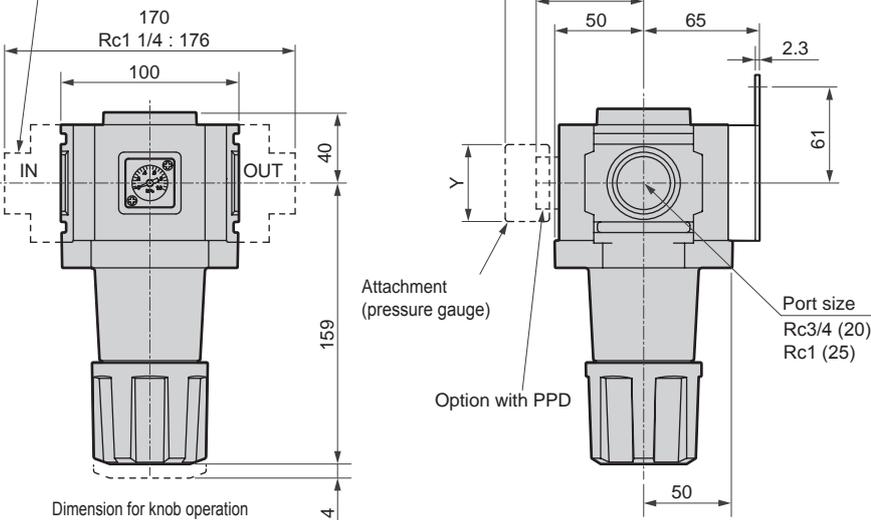
C type bracket (-BW)
Part model no.: B620

L type bracket (-B3W)
Part model no.: B430



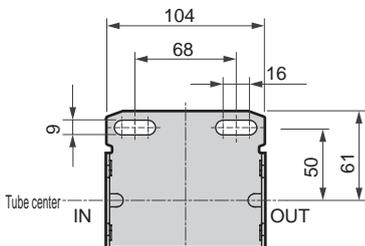
● R8100-W

Attachment
A□W (piping adaptor set)



• Attachment

C type bracket (-BW)
Part model no.: B820



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (85) | ø39 |
| G49P | (84.5) | ø43.5 |
| G59P | (87) | ø52 |
| G40P | (86.5) | ø42.5 |
| G50P | (86.5) | ø52.5 |
| G41P | (85) | ø42 |
| G52P | (98) | ø52.5 |
| R2 | (85) | □30 |

Optional parts diagram

Repair kits (set of diaphragm assembly, valve assembly, bottom spring, bottom O-ring)

| Repair kits model no. Model | Relief diaphragm assembly | Nonrelief diaphragm assembly |
|--------------------------------|---|--|
| R1000-W, R1100-W | R1000-KIT | R1000-KIT-N |
| R2000-W, R2100-W | R2000-W-KIT | R2000-W-KIT-N |
| R3000-W, R3100-W, RM3000-W | R3000-KIT | R3000-KIT-N |
| R4000-W, R4100-W, RM4000-W | R4000-KIT | R4000-KIT-N |
| R6000-W, R6100-W | R6000-KIT R6000-KIT-L (low pressure range) | R6000-KIT-N R6000-KIT-LN (low pressure range) |
| R8000-W, R8100-W | R8000-KIT | R8000-KIT-LN |

Valve assembly (set of valve assembly, bottom spring, bottom O-ring)

| Model | Valve assembly model no. |
|----------------------------|--------------------------|
| R1000-W, R1100-W | R1000-VALVE-ASSY |
| R2000-W, R2100-W | R2000-W-VALVE-ASSY |
| R3000-W, R3100-W, RM3000-W | R3000-VALVE-ASSY |
| R4000-W, R4100-W, RM4000-W | R4000-VALVE-ASSY |
| R6000-W, R6100-W | R6000-VALVE-ASSY |
| R8000-W, R8100-W | R8000-VALVE-ASSY |

* Refer to page 672 for the gauge plug assembly.

Check valve assembly for reverse regulator

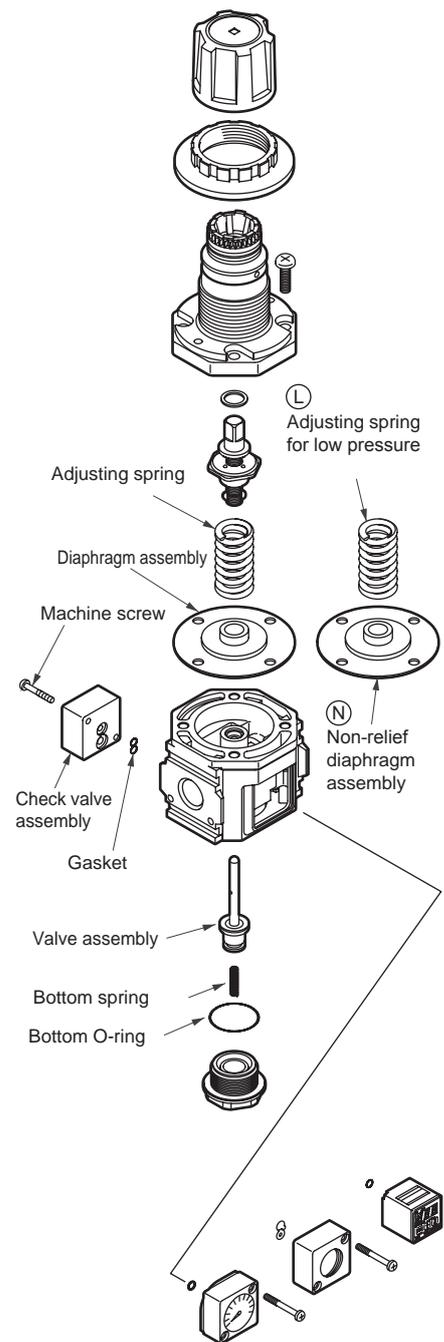
| Model | Check valve assembly model no. |
|---|--------------------------------|
| R1000-W, R1100-W | R1100-W-CHECK-VALVE-ASSY |
| R2100-W | R3100-W-CHECK-VALVE-ASSY |
| R3100-W, RM3000-W, W3100-W R4100-W, RM4000-W, W4100-W R6100-W, R8100-W W8100-W | R3100-W-CHECK-VALVE-ASSY |

Adjusting spring

| Adjusting spring model no. Model | Standard spring (0.05 to 0.85MPa) | Spring for low pressure (0.05 to 0.35MPa) |
|--|--------------------------------------|--|
| R1000-W, R1100-W W1000-W, W1100-W | R1000-SPRING | R1000-SPRING-L |
| R2000-W, R2100-W | R2000-W-SPRING | R2000-W-SPRING-L |
| R3000-W, R3100-W, RM3000-W W3000-W, W3100-W | R3000-SPRING | R3000-SPRING-L |
| R4000-W, R4100-W, RM4000-W W4000-W, W4100-W | R4000-SPRING | R4000-SPRING-L |
| R8000-W, R8100-W | R8000-SPRING | R8000-SPRING-L |
| W8000-W, W8100-W | W8000-SPRING | W8000-SPRING-L |

Diaphragm assembly (only diaphragm assembly)

| Diaphragm assembly model no. Model | Relief type diaphragm | Nonrelief type diaphragm |
|--|---|--|
| R1000-W, R1100-W W1000-W, W1100-W | R1000-DIAPHRAGM-ASSY | R1000-DIAPHRAGM-ASSY-N |
| R2000-W, R2100-W | R2000-DIAPHRAGM-ASSY | R2000-DIAPHRAGM-ASSY-N |
| R3000-W, R3100-W, RM3000-W W3000-W, W3100-W | R3000-DIAPHRAGM-ASSY | R3000-DIAPHRAGM-ASSY-N |
| R4000-W, R4100-W, RM4000-W W4000-W, W4100-W | R4000-DIAPHRAGM-ASSY | R4000-DIAPHRAGM-ASSY-N |
| R6000-W, R6100-W | R6000-DIAPHRAGM-ASSY R6000-DIAPHRAGM-ASSY-L (low pressure range) | R6000-DIAPHRAGM-ASSY-N R6000-DIAPHRAGM-ASSY-LN (low pressure range) |
| R8000-W, R8100-W | R8000-DIAPHRAGM-ASSY | R8000-DIAPHRAGM-ASSY-N |
| W8000-W, W8100-W | W8000-DIAPHRAGM-ASSY | W8000-DIAPHRAGM-ASSY-N |



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



Lubricator standard white Series

L1000/L3000/L4000/L8000-W Series

Supplies fine oil mist.

Port size: 1/8 to 1

JIS symbol



Specifications

| Descriptions | L1000-W | L3000-W | L4000-W | L8000-W |
|--------------------------|--|--------------------------------|-------------------------------------|--------------------------------|
| Appearance | | | | |
| Working fluid | Compressed air | | | |
| Max. working pressure | MPa 1.0 | | | |
| Withstanding pressure | MPa 1.5 | | | |
| Working temperature | °C 5 to 60 | | | |
| Minimum drip flow Note 1 | m ³ /min. (ANR) 0.015 | 0.03 | 0.065 | 0.065 |
| Oil capacity | cm ³ 20 | 85 | 170 | 170(MAX360) |
| Use oil | Turbine oil Class 1 ISO VG32 (spindle oil can not be used) | | | |
| Port size | Rc, NPT, G 1/8, 1/4 (3/8 uses an adaptor) | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) | 3/4, 1 (1 1/4 uses an adaptor) |
| Product weight | kg 0.1 | 0.28 | 0.45 | 1.4 |
| Standard accessories | Bowl guard | | | |

Note 1: The minimum drip flow is the rate at which five drops of turbine oil drip per minute at the primary pressure 0.5 MPa and inlet air temperature 20°C. (This cannot be used for dry fog.)

Float switch electric specifications

| Descriptions | |
|--|--|
| Control point | 1 point |
| Operation | Switch turns off when float rises (oil level detected), and turns on when float lowers (no oil level detected) |
| Max. applicable voltage | 240VAC, 200VDC |
| Max. contact capacitance | 50 VA or 50 W, whichever is smaller |
| Max. open and close current | 0.5A |
| Withstanding pressure between contacts | 400 VDC for one minute and leak current 1mA or less |
| Contact resistance | 220mΩ or less (between terminal sections) |
| Insulation resistance | 100MΩ and over (between terminal and cases, 500 VDC megger) |
| Withstand voltage | 1500 VAC for one minute (between terminal and cases) |
| Electric service life | 10 ⁶ time (caused by 200 VAC, 200mA or resistance load) |

How to order

L1000 - **6** - **W** - **C** - **A6W**

*Refer to page 274 for the explanation of the option.

A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Piping adaptor set (attached)

G Bracket (attached)

⚠ Note on model no. selection

Note 1: When G threads or NPT threads are selected, the IN and OUT are the target.

Note 2: When selecting options for several items, list options in order from the top.

Note 3: The adjusting dome's material will change to polyacetal resin when the nylon bowl or metal bowl is selected.

Note 4: When selecting option "M1", select the drain discharge option "C".

Note 5: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Note 6: The joiner set is enclosed with the piping adaptor set.

Drainage and bowl material combination (Item "D" in How to order)

Option ● With float switch

| 3000/4000/8000 Series | | | |
|-----------------------|---------------|-------|------------|
| Material | Plastic bowl | | Metal bowl |
| | Polycarbonate | Nylon | Aluminum |
| Lubricator L*000-W | LL | LLZ | LLM |

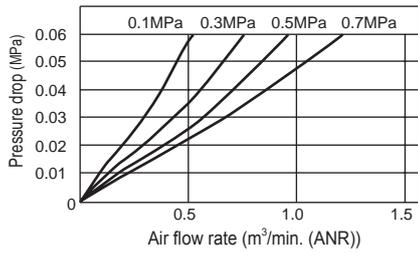
| | | A Model no. | | | |
|--|----------------------------|--|-------|-------|-------|
| | | L1000 | L3000 | L4000 | L8000 |
| B Port size | | | | | |
| Symbol | Descriptions | | | | |
| 6 | 1/8 | ● | | | |
| 8 | 1/4 | ● | ● | ● | |
| 10 | 3/8 | | ● | ● | |
| 15 | 1/2 | | | ● | |
| 20 | 3/4 | | | | ● |
| 25 | 1 | | | | ● |
| C Port thread type | | | | | |
| Blank | Rc thread | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● |
| D Option | | Note 1 | | | |
| Drainage | Blank | Without manual cock | ● | ● | ● |
| | C | With manual cock | ● | ● | ● |
| | LL | With float switch | | ● | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● |
| | M | Metal bowl | | ● | ● |
| Note 3 | M1 | Metal bowl with manual drain cock Note 4 | | ● | ● |
| Flow direction | Blank | Standard flow (left → right) | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● |
| E Display unit | | Note 2 | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● | ● | ● |
| F Piping adaptor set (attached) | | Note 5, Note 6 page 428 | | | |
| Blank | Not attached | ● | ● | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | | | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | ● | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | ● | |
| A15*W | Rc1/2 piping adaptor set | | ● | ● | |
| A20*W | Rc3/4 piping adaptor set | | | ● | ● |
| A25*W | Rc1 piping adaptor set | | | | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | | ● |
| *Adaptor screw type | | | | | |
| Blank | Rc thread | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● |
| G Bracket (attached) | | | | | |
| Blank | Not attached | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

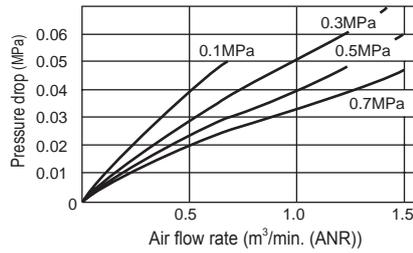
Standard series
F.R.L. unit

Flow characteristic

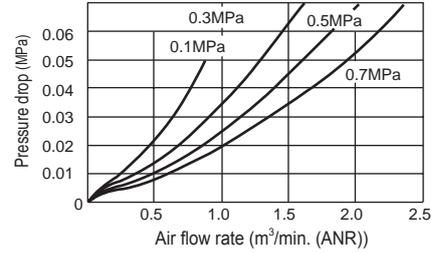
● L1000-6-W



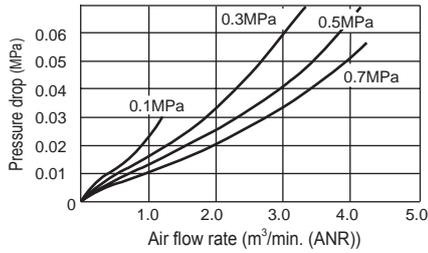
● L1000-8-W



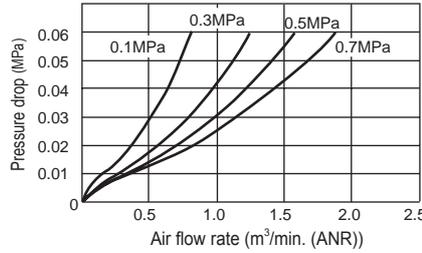
● L3000-8-W



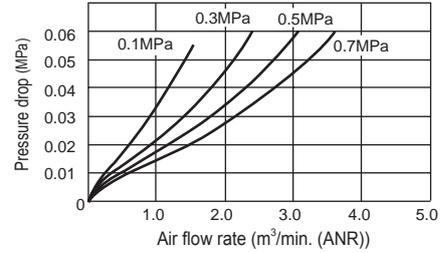
● L3000-10-W



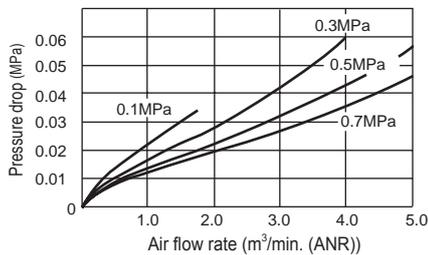
● L4000-8-W



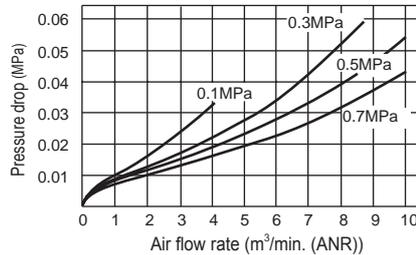
● L4000-10-W



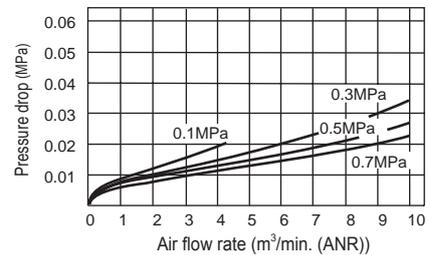
● L4000-15-W



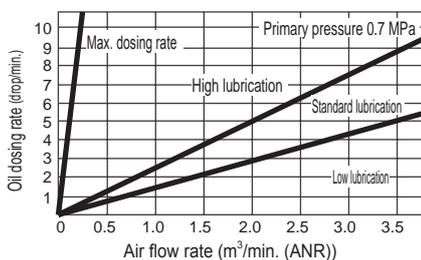
● L8000-20-W



● L8000-25-W

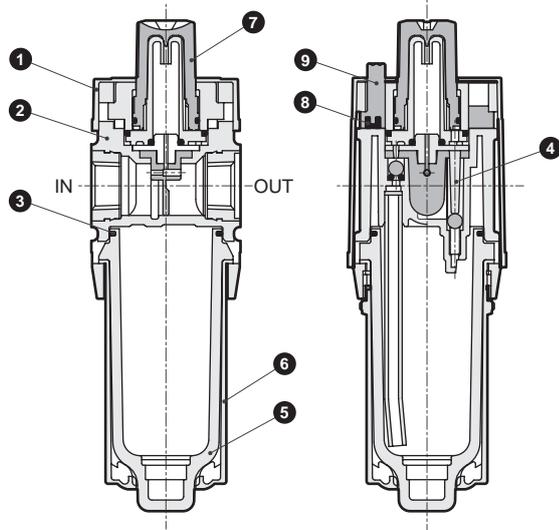


Oil dosing rate

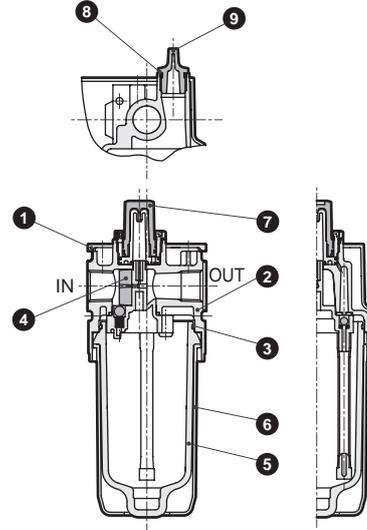


Internal structure and parts list

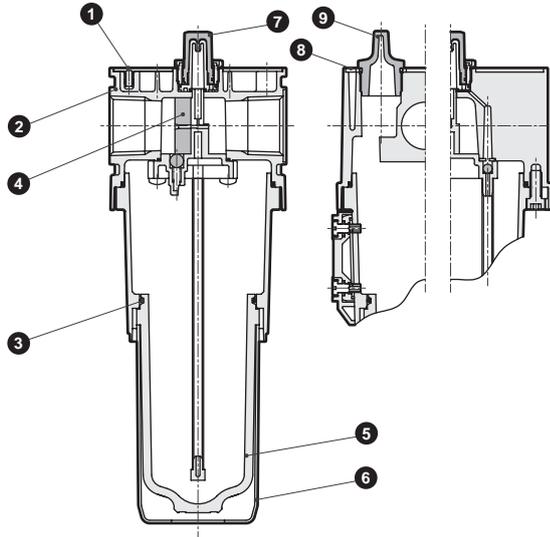
● L1000-W



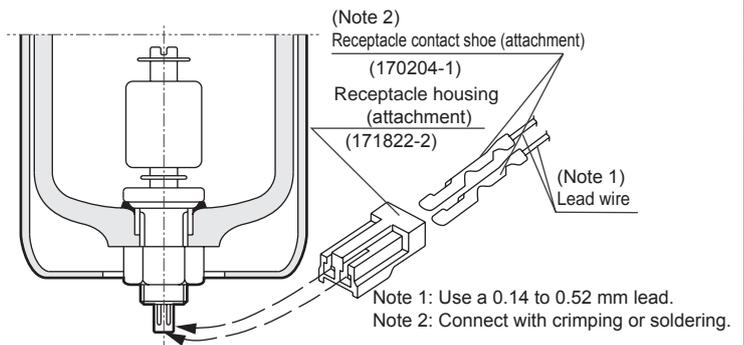
● L3000-W / L4000-W



● L8000-W



● Option float switch



A Japan AMP post header (part No. AMP171825-2) is used for the terminal.
Use an AMP171822-2 (standard) or AMP172142-2 (rope file) for the connector.

| No. | Parts name | Material | | | |
|-----|----------------|------------------------|----------------------------|----------------|---------|
| | | L1000-W | L3000-W | L4000-W | L8000-W |
| 1 | Plate cover | ABS resin | | | |
| 2 | Body | Polyamide resin, steel | Aluminum alloy die-casting | | |
| 3 | O ring | Note 1 | Special nitrile rubber | | |
| 4 | Flow guide | Urethane rubber resin | | Nitrile rubber | |
| 5 | Bowl | Polycarbonate resin | | | |
| 6 | Bowl guard | Polyamide resin | Polyamide resin, steel | | |
| 7 | Adjusting dome | Polycarbonate resin | | | |
| 8 | O-ring | Nitrile rubber | | | |
| 9 | Filling plug | Polyacetal resin | | | |

Note 1: O-ring of L1000-W is special shaped.

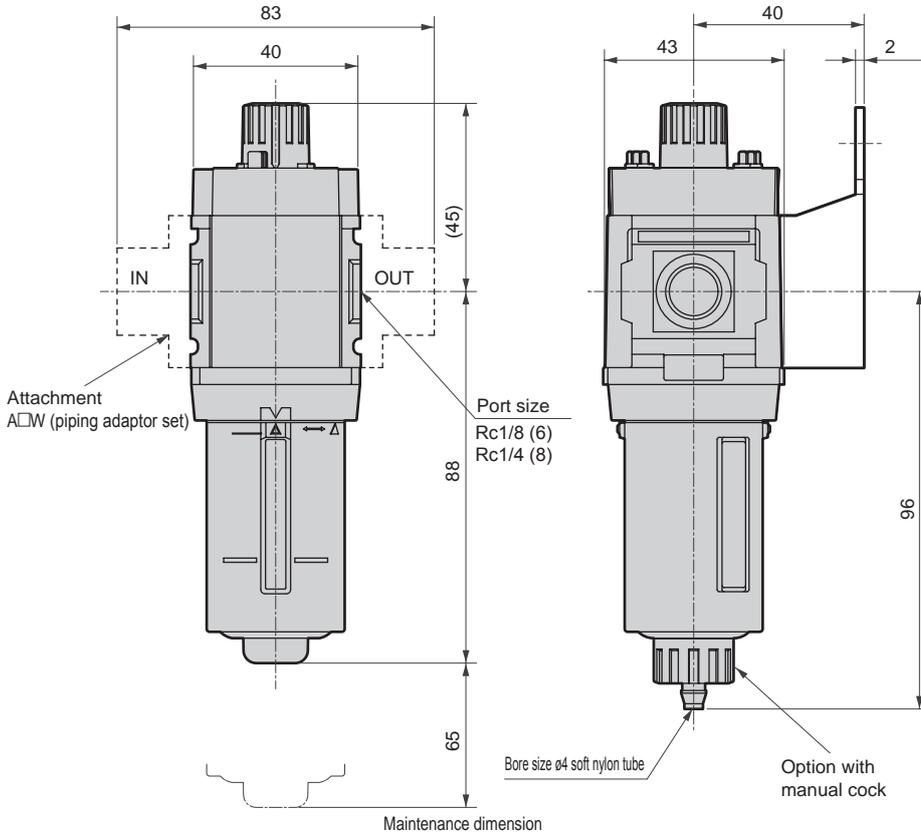
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Standard series
F.R.L. unit

Lubricator Series

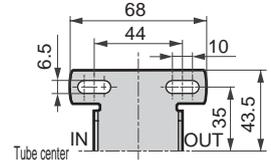
Dimensions



● L1000-W

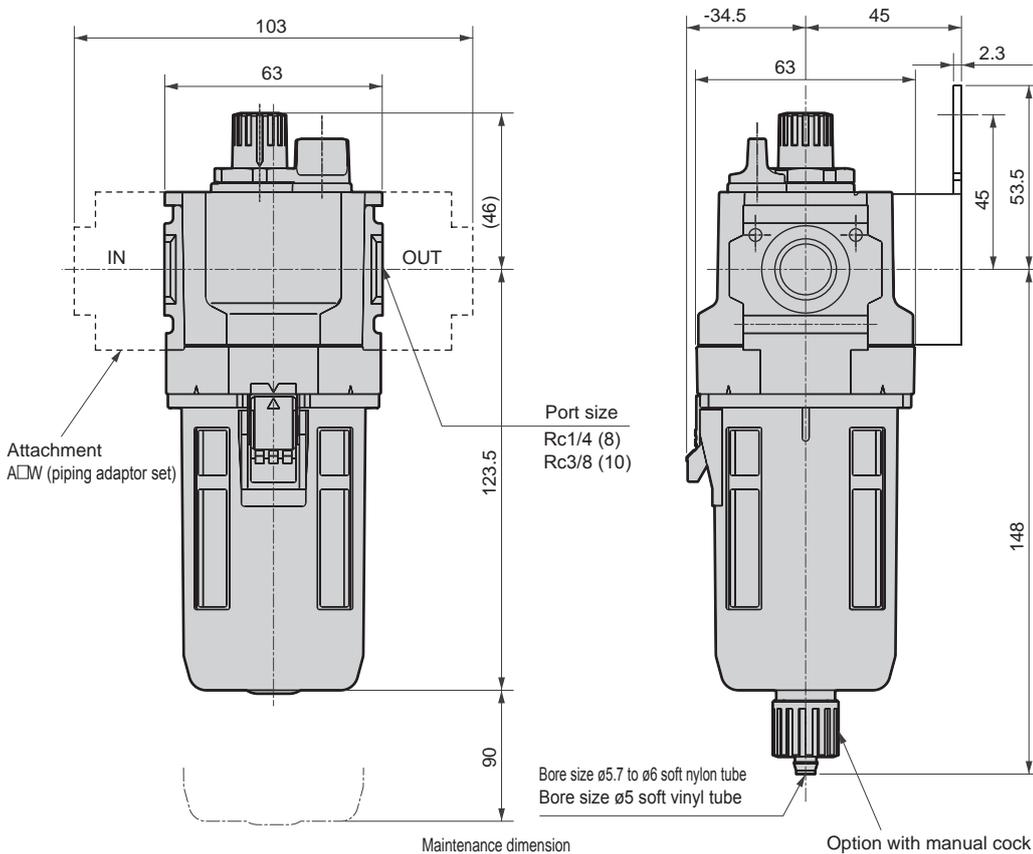


Attachment
(C type bracket)
Part model no.: B120

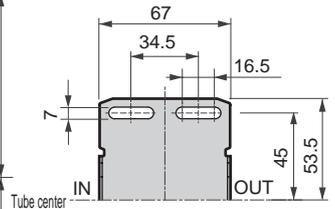


Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

● L3000-W



Attachment
(C type bracket)
Part model no.: B320

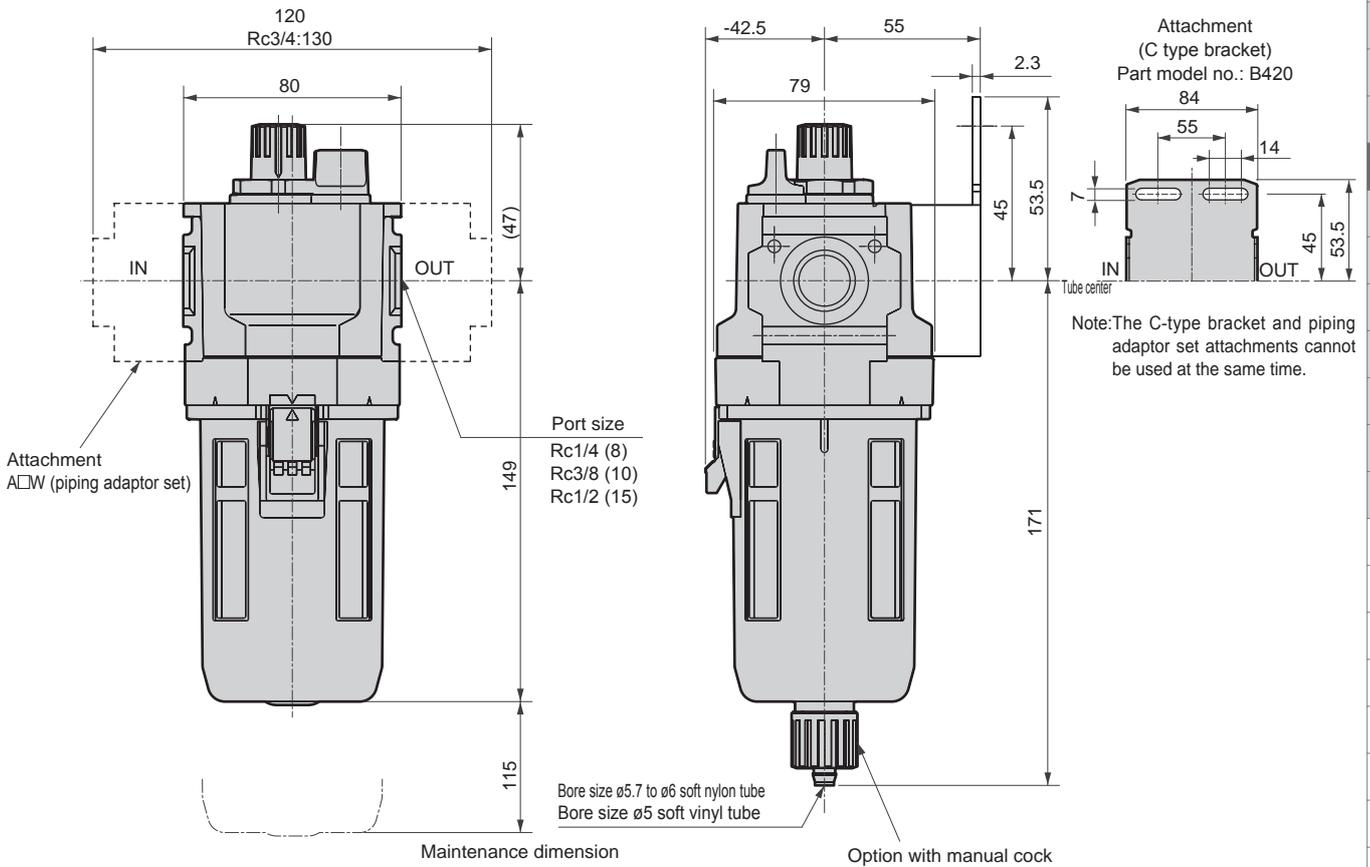


Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Dimensions

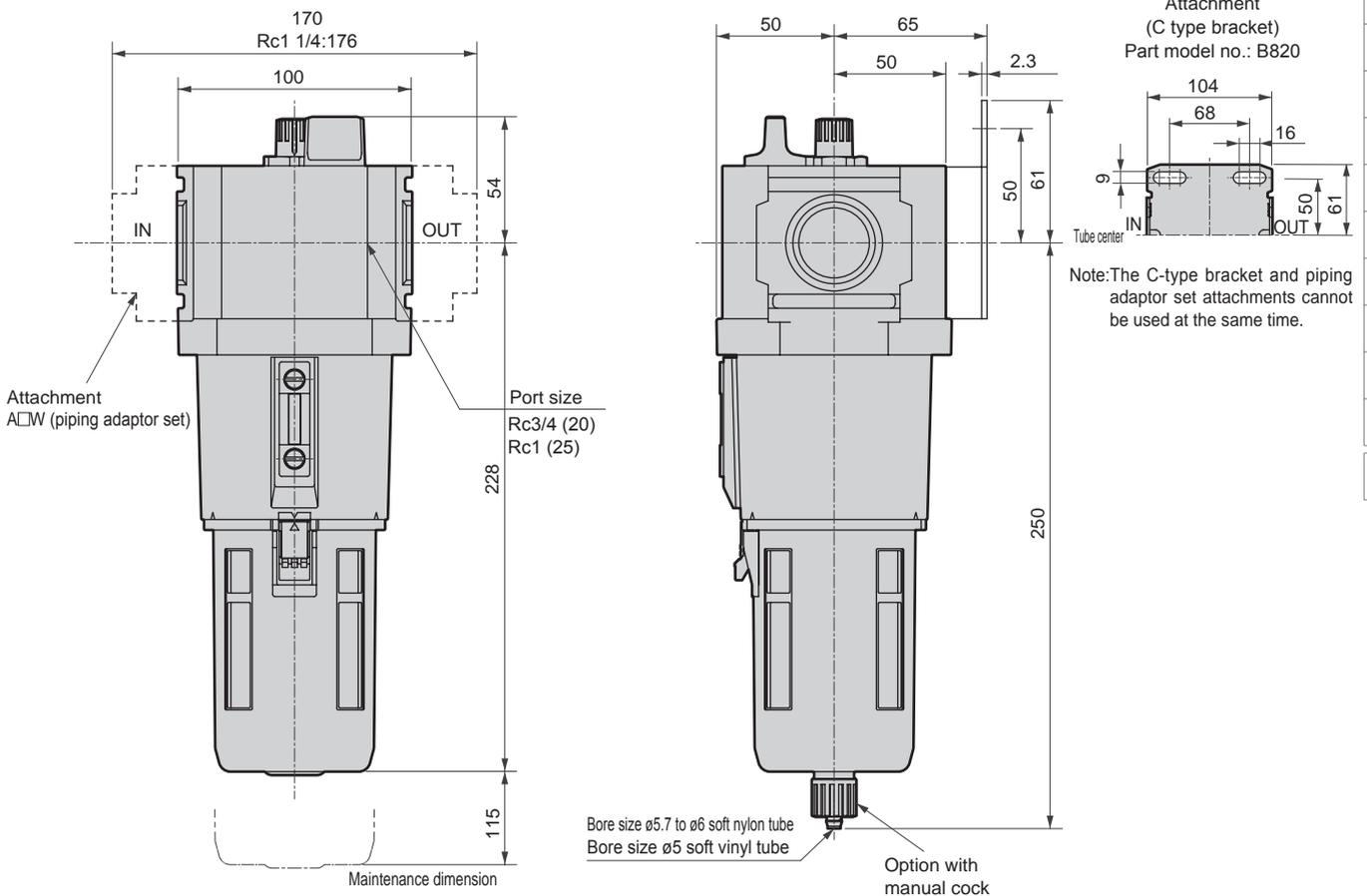


● L4000-W



Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

● L8000-W



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

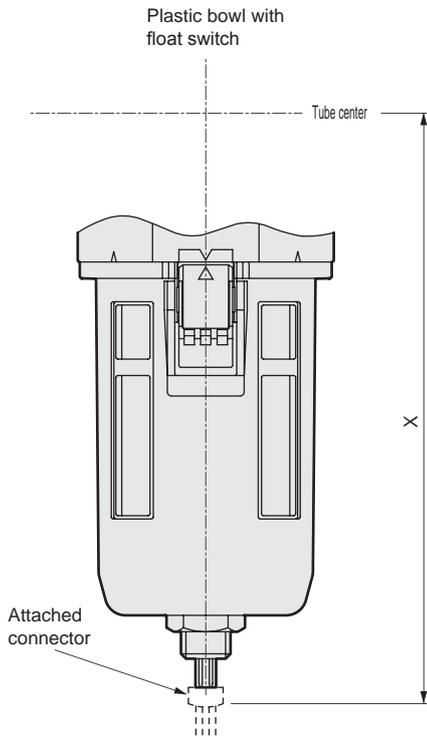
Lubricator Series

Optional dimensions

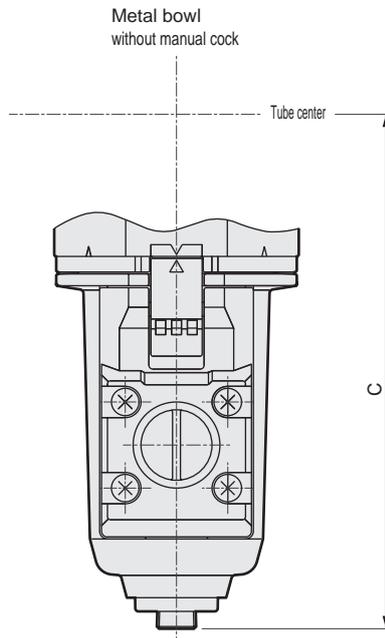


Other options (L3000-W, 4000-W, 8000-W)

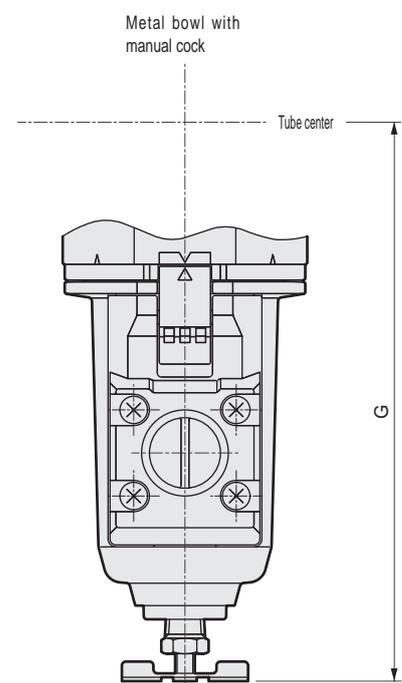
● Plastic bowl (blank)



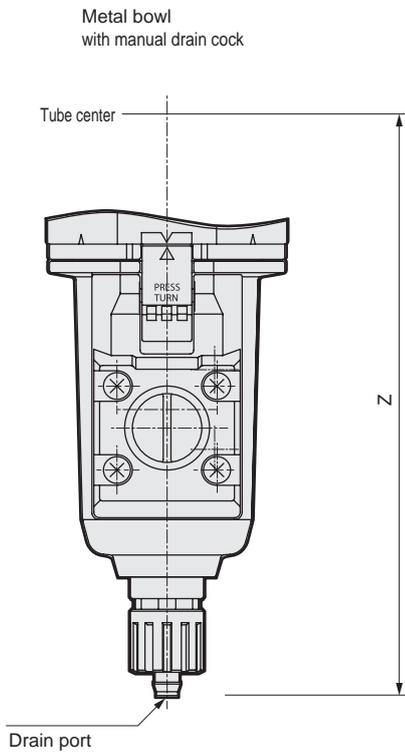
● Metal bowl without manual cock (M)



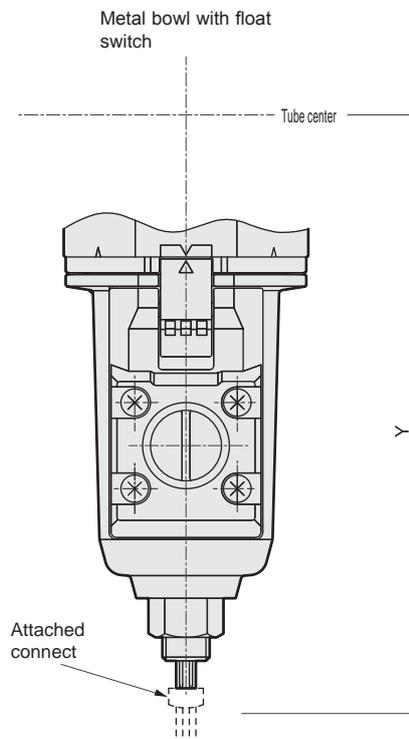
● Metal bowl with manual cock (CM)



● Metal bowl with manual cock (CM1)



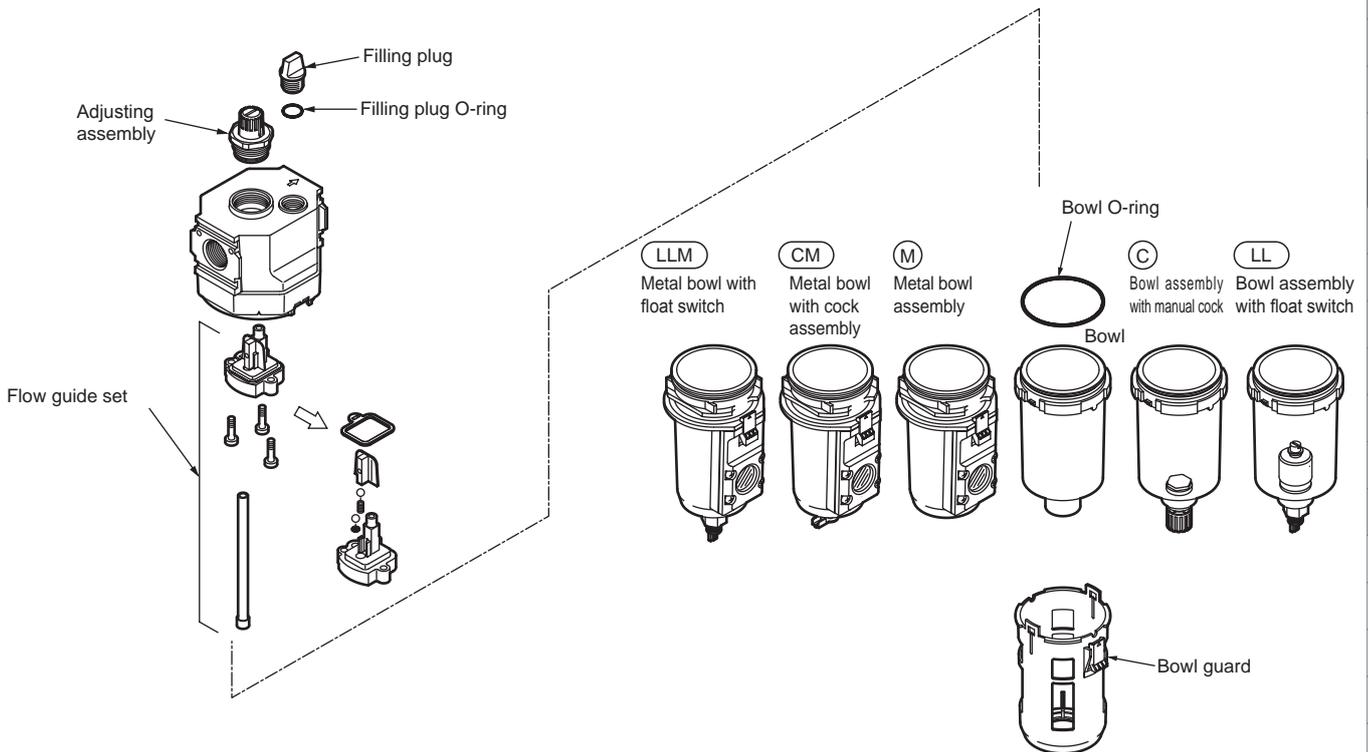
● Metal bowl with float switch (LLM)



| Model no. | C | G | X | Y | Z |
|-----------|-------|-------|-----|-------|-----|
| L3000-W | 129 | 143.5 | 147 | 153.5 | 154 |
| L4000-W | 152 | 166.5 | 170 | 177 | 177 |
| L8000-W | 231.5 | 245.5 | 249 | 256 | 256 |

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Optional dimensions



Repair kits (Set of fill plug O-ring, adjustment assembly, flow guide set, bowl O-ring)

| Model no. | Repair kits model no. (for polycarbonate bowl) | Repair kits model no. (for nylon bowl, metal bowl) |
|-----------|--|--|
| L3000-W | L3000-W-KIT | L3000-W-KIT-Z |
| L4000-W | L4000-W-KIT | L4000-W-KIT-Z |
| L8000-W | L8000-W-KIT | L8000-W-KIT-Z |

Bowl assembly (Set of bowl assembly and bowl O ring)

| Bowl assembly Model no. | Polycarbonate bowl w/o cock (Blank) | Nylon bowl without cock (Z) | Metal bowl without cock (M) | Polycarbonate bowl w/ cock (C) | Nylon bowl with cock (CZ) | Metal bowl with cock (CM) | Polycarbonate bowl w/ float switch (LL) | Nylon bowl with float switch (LLZ) | Metal bowl with float switch (LLM) |
|-------------------------|-------------------------------------|-----------------------------|-----------------------------|--------------------------------|---------------------------|---------------------------|---|------------------------------------|------------------------------------|
| L1000-W | L1000-BOWL | L1000-BOWL-Z | - | F1000-W-BOWL | F1000-W-BOWL-Z | - | - | - | - |
| L3000-W | L3000-BOWL | L3000-BOWL-Z | L3000-W-BOWL-M | F3000-W-BOWL | F3000-W-BOWL-Z | F3000-W-BOWL-M | L3000-BOWL-LL | L3000-BOWL-LLZ | L3000-W-BOWL-LLM |
| L4000-W, L8000-W | L4000-BOWL | L4000-BOWL-Z | L4000-W-BOWL-M | F4000-W-BOWL | F4000-W-BOWL-Z | F4000-W-BOWL-M | L4000-BOWL-LL | L4000-BOWL-LLZ | L4000-W-BOWL-LLM |

* Refer to the air filter options and parts table for details on the bowl guard.

Adjusting assembly

| Model no. | Adjusting assembly model no. (for polycarbonate bowl) | Adjusting assembly model no. (for nylon bowl, metal bowl) |
|---------------------------|---|---|
| L3000-W, L4000-W, L8000-W | L3000-W-AJ-KIT | L3000-W-AJ-KIT-Z |

Flow guide set

| Model no. | Flow guide set model no. |
|-----------|--------------------------|
| L3000-W | L3000-FLOW-GUIDE |
| L4000-W | L4000-FLOW-GUIDE |
| L8000-W | L8000-FLOW-GUIDE |

Filling plug set (set of filling plug and filling plug O-ring)

| Model no. | Filling plug set model no. |
|------------------|----------------------------|
| L3000-W, L4000-W | L3000-W-PLUG |
| L8000-W | L8000-W-PLUG |

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Standard series
F.R.L. unit



Mechanical pressure switch standard white series

P4000-W Series

Wide pressure setting range covers 0.1 to 0.8 MPa.

● Port size: 1/4 to 1/2

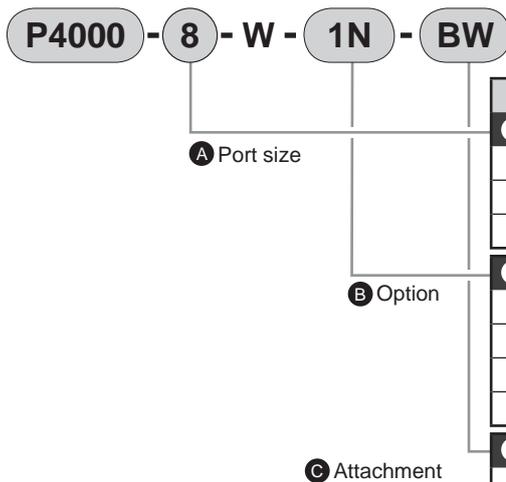
JIS symbol



Specifications

| Descriptions | P4000-8-W | P4000-10-W | P4000-15-W | | | | | |
|--|--------------------------------------|------------|------------|------|--------------------|-----|---------------------|-----|
| Working fluid | Compressed air | | | | | | | |
| Max. working pressure MPa | 1.0 | | | | | | | |
| Withstanding pressure MPa | 1.5 | | | | | | | |
| Pressure adjusting range MPa | 0.1 to 0.8 | | | | | | | |
| Fluid temperature °C | 5 to 60 | | | | | | | |
| Port size Rc | 1/4 | 3/8 | 1/2 | | | | | |
| Micro switch type | Z-15GD-B (OMRON) | | | | | | | |
| Contact configuration ab | 1 | | | | | | | |
| Hysteresis MPa | 0.1 to 0.49, hysteresis within 0.049 | | | | | | | |
| | 0.5 to 0.8, hysteresis within 0.078 | | | | | | | |
| Repeatability MPa | ±0.02 of set pressure | | | | | | | |
| Allowable operation frequency cycle/min. | 20 | | | | | | | |
| Insulation resistance MΩ | 100 and over (with 500 VDC megger) | | | | | | | |
| Product weight kg | 0.5 | | | | | | | |
| Mounting attitude | Install adjusting screw vertically | | | | | | | |
| Micro switch rated | | | | | | | | |
| Load | No inductive load (A) | | | | Inductive load (A) | | | |
| Circuit | Resistance load | | Light load | | Inductive load | | Electric motor load | |
| Voltage | N.C | N.O | N.C | N.O | N.C | N.O | N.C | N.O |
| 125 VAC | 15 | 15 | 3.0 | 1.5 | 15 | 15 | 5.0 | 2.5 |
| 250 VAC | 15 | 15 | 2.5 | 1.25 | 15 | 15 | 3.0 | 1.5 |
| 30 VDC | 6.0 | 6.0 | 3.0 | 1.5 | 5.0 | 5.0 | 5.0 | 2.5 |

How to order



| Symbol | Descriptions |
|---|------------------------------------|
| A Port size | |
| 8 | Rc1/4 |
| 10 | Rc3/8 |
| 15 | Rc1/2 |
| B Option | |
| Blank | Without indicator light |
| 1N | 100 V/200 VAC with indicator light |
| 3N | 24 VDC with indicator light |
| T | Without pressure gauge |
| C Attachment (attached) Note 1, Note 3 | |
| Blank | Not attached |
| A8W | Rc1/4 piping adaptor set |
| A10W | Rc3/8 piping adaptor set |
| A15W | Rc1/2 piping adaptor set |
| A20W | Rc3/4 piping adaptor set |
| BW | C type bracket |

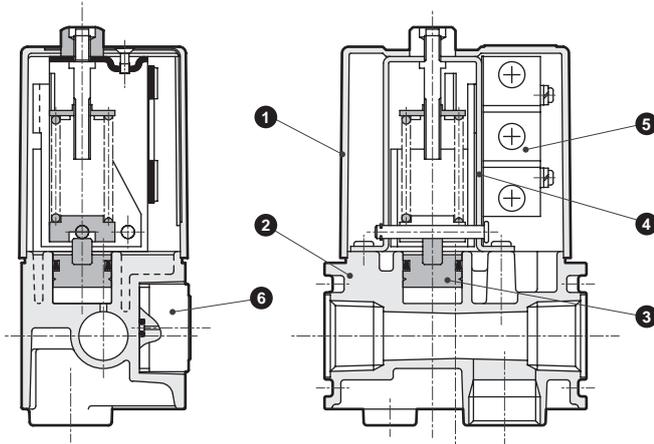
⚠ Note on model no. selection

Note 1:C type bracket and piping adaptor set can not be used together.

Note 2:Due to modular design, a gasket is attached.

Note 3:The joiner set is enclosed with the piping adaptor set.

Internal structure and parts list



| No. | Parts name | Material | No. |
|-----|-------------------------|----------------------------------|------------------|
| 1 | Cover | Resin | - |
| 2 | Body | Aluminum alloy die-casting | - |
| 3 | Piston assembly | Polyacetal resin, nitrile rubber | - |
| 4 | Frame | Steel | - |
| 5 | Micro switch | - | Z-15GD-B (OMRON) |
| 6 | Pressure gauge assembly | PBT resin, brass | G401-W |

* To wire, remove cover (1), and connect directly to the microswitch (5).
 * One gasket is enclosed.

⚠ Safety precautions

■ Design & Selection

⚠ Caution

1 Micro switch contact specifications

Closed circuit max. 30A Open circuit max. 15A
 Rush current should be measured beforehand.

■ Installation & Adjustment

⚠ Caution

1 When wiring, loosen cover mounting screws, remove the cover, then wire to the microswitch inside.

2 Wiring the sensor with light

- The light is connected to the microswitch's NC terminal and NO terminal. A fine current flows even when the load (relay, etc.) is not energized, so take care when selecting the load.
 100 VAC 1.5mA 200 VAC 2.0mA 24 VDC 4.5mA
- To turn the light on at a level higher than the set pressure and off at a level less than the set pressure, wire to the microswitch COM terminal and NC terminal. Attach the Pressure Rise Light ON plate at a visible section on the cover.
- To turn the light on at a level less than the set pressure and off at a level higher than the set pressure, wire to the microswitch COM terminal and NO terminal. Attach the Pressure Rise Light OFF plate at a visible section of the cover.
- If there is a large amount of drainage, pipe so that the pressure adjustment screw is facing upward.

3 Due to a guard is resin, avoid use in the high ambient temperature.

4 Hold the body when piping or installing.

5 Use with air that has been passed through an air filter.

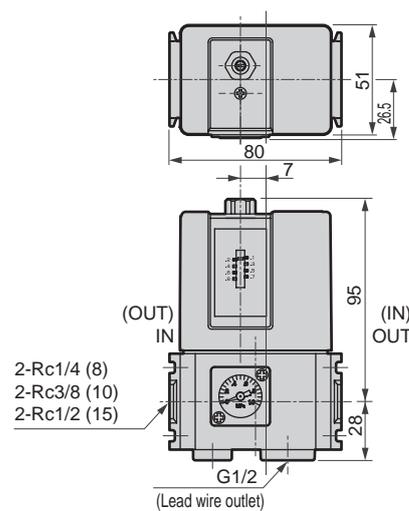
6 Use the pressure absorbing nipple (6556) to detect sudden changes in pressure such as when confirming air cylinder pressure.

7 Use the pressure absorbing nipple (6556) if pressure rise/lower pulsation is frequent. The product life could be shortened if the pressure absorbing nipple is not used.

8 Loosen the nut on the top of the cover, and adjust the pressure with the adjustment screw. The set pressure will rise when the screw is turned to the plus (+) side and will drop when turned to the minus (-) side. (Working tools: Wrench 13 mm, flat-tip screwdriver) Fix with the nut after setting.

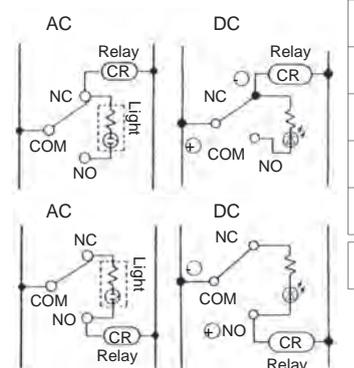
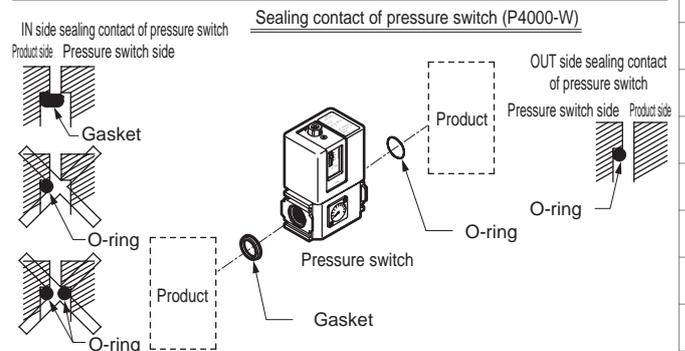
9 The scale plate is for reference. (Scale error within ± 0.05 MPa)

Dimensions



Reduction rate 0.24.
 (Photocopy at 141% four times to see actual dimensions.)

How to assemble



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
 F.R.L. unit

Refrigerating type dryer
 Desiccant type dryer
 High polymer membrane type dryer
 Air filter
 Auto. drain / others
 F.R.L. (Module unit)
 F.R.L. (Separate)
 Compact F.R.
 Precise regulator
 F.R.L. (Related products)
 Clean F.R.
 Electro pneumatic regulator
 Air booster
 Speed control valve
 Silencer
 Check valve / others
 Joint / tube
 Vacuum filter
 Vacuum regulator
 Suction plate
 Magnetic spring buffer
 Mechanical pressure SW
 Electronic pressure SW
 Contact / close contact cont. SW
 Air sensor
 Pressure SW for coolant
 Small flow sensor
 Small flow controller
 Flow sensor for air
 Flow sensor for water
 Total air system
 Total air system (Gamma)
 Ending



Compact read switch type mechanical pressure switch standard white series

P1100-W/P4100-W/P8100-W Series

Compatible with module connection to SELEX F.R.L.



Specifications

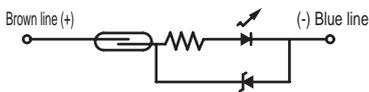
| Descriptions | P*100-W |
|---|--|
| Working fluid | Compressed air |
| Max. working pressure MPa | 1.0 |
| Set pressure range MPa | 0.1 to 0.6 |
| Hysteresis MPa | 0.08 or less |
| Repeatability MPa | ±0.02 or less |
| Contact configuration | 1a Note 1 |
| Wiring | Lead wire (oil resistant vinyl cabtire code 2-conductor 0.2mm ²) |
| Ambient temperature / fluid temperature | 5 to 60°C |
| Protective structure Note 2 | IP20 or equivalent |

Note 1: The contact turns on if air pressure exceeding the scale setting pressure is applied.
 Note 2: Note that when connecting an option joint into the atmospheric release port and extend the tube until water does not entrain, IP65 or equivalent is applied. This port can not be used outdoors.

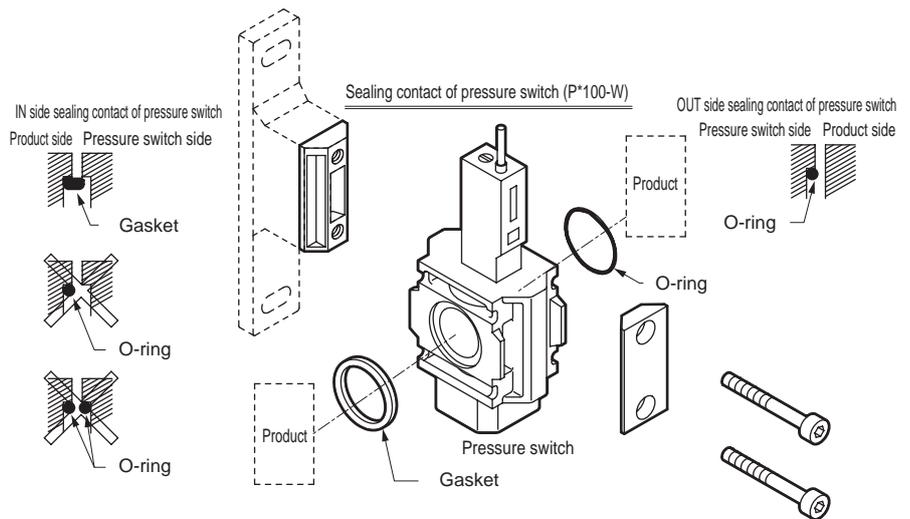
Electric component section specifications

| | | |
|--------------------------|--|-----------|
| Load voltage | 12/24 VDC | 100 VAC |
| Load current | 5 to 50mA | 7 to 20mA |
| Internal voltage drop | 3 V or less | |
| Light | LED (ON lighting) | |
| Maximum shock resistance | 294m/S ² | |
| Insulation resistance | 20MΩ and over at 500 VDC megger | |
| Withstand voltage | No failure when 1000 VAC is applied for one minute | |

Internal circuit design



How to assemble (P1100-W, P4100-W, P8100-W)



How to order (modular design)



A Series

B Port size

C Branch direction

D Attachment

E Length of lead wire

F Option

⚠ Note on model no. selection

Note 1: This is used for intermediate connection of the module series so the module connection section is not threaded.

Note 2: A masking plug matching the port size is enclosed.

Note 3: When piping the isolated p*100-W unit, use piping adaptor A*00-W.
(The horizontal direction port does not have threads.)

| Symbol | Descriptions | | | |
|----------------------------------|--|------|------|------|
| A Series | | | | |
| 1100 | 1000-W Series modular design | | | |
| 4100 | 2500-W, 3000-W, 4000-W Series modular design | | | |
| 8100 | 6000-W, 8000-W Series modular design | | | |
| B Port size | | | | |
| | | 1100 | 4100 | 8100 |
| 6 | Rc1/8 | ● | | |
| 8 | Rc1/4 | ● | ● | |
| 10 | Rc3/8 | | ● | |
| 15 | Rc1/2 | | ● | |
| 20 | Rc3/4 | | | ● |
| 25 | Rc1 | | | ● |
| C Branch direction Note 1 | | | | |
| Blank Note 2 | | L | R | |
| | | | | |
| D Attachment | | | | |
| | | 1100 | 4100 | 8100 |
| Blank | Joiner set, gasket | ● | ● | ● |
| B11W | T type bracket, gasket | ● | | |
| B31W | T type bracket, gasket | | ● | |
| B41W | T type bracket, gasket | | ● | |
| B81W | T type bracket, gasket | | | ● |
| 4 | Joint for atmospheric release port attached (M3 elbow) | ● | ● | ● |
| E Length of lead wire | | | | |
| Blank | 1m | | | |
| 3 | 3m | | | |
| 5 | 5m | | | |
| F Option | | | | |
| Blank | None | | | |
| P6 | Copper and PTFE free specification (custom order) | | | |

Secondary battery compatible specifications

(catalog No. CC-947)

- Structured for use in secondary battery manufacturing processes

P4100 - - P4

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

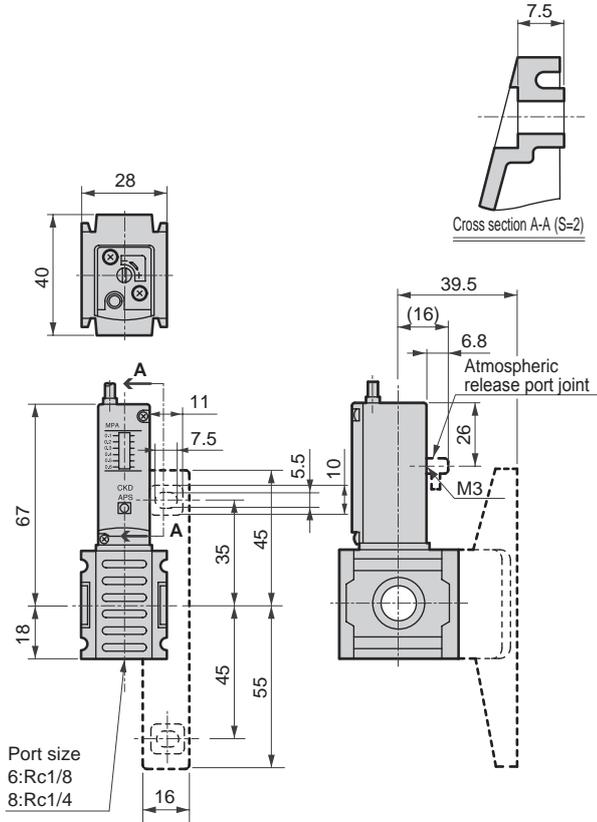
P*100-W Series

Dimensions



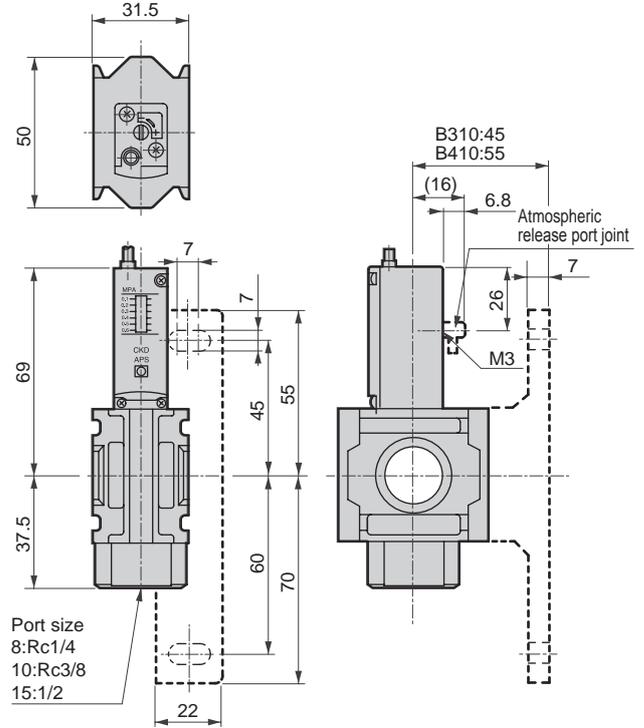
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

● P1100-W



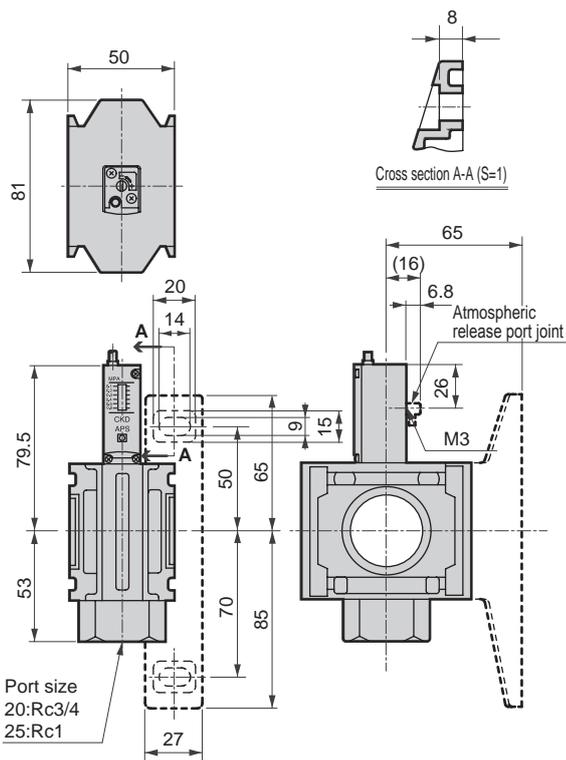
Weight 126g

● P4100-W



Weight 190g

● P8100-W



Weight 467g

⚠ Safety precautions

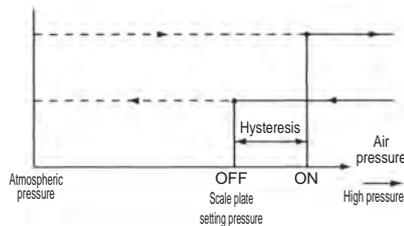
■ Installation & Adjustment

⚠ Caution

1 Setting pressure

- Pressure displayed on the scale plate is used as the reference. When setting pressure, refer to the separate pressure gauge.
- Pressure displayed on the scale plate is the value when the contact is off. To set the scale plate to a value smaller than that from which hysteresis has been subtracted. Refer to the chart diagram below. If not set, operation may not take place at the set value. (Hysteresis refer to the pressure width from when the switch operates once with the set pressure to when the pressure drops and the switch turns off.)

Operation chart



2 Installation

- Do not drop or bump the panel when handling it.
- Wire the lead so that the repeated bending strain and tensile strength are not applied to the wire. Failure to do so could lead to disconnection.
- Do not use this sensor near a strong magnetic field or large current (large magnet or spot water, etc.) because the sensor could malfunction.
- The pressure switch is equivalent to IP-20, but the installation direction is limited to upward vertical. If water enters the atmospheric release port for atmospheric pressure from below, pipe an M3 joint and extend with tubing to where water will not enter. Do not plug the introduction port for atmospheric pressure or else malfunctions could occur. This port can not be used outdoors.



3

- Connecting the lead
 - (1) **Do not connect the lead directly to the power supply. Connect the load serially. Failure to do so could result in lamp blowing or contact melting.**
 - (2) When using for DC, connect the brown wire to the + side and the blue wire to the - side. The lamp will not light if wires are connected in reverse.
 - (3) When connected to the AC relay or PC input, if half wave rectification is done with these circuits, the switch lamp may not light. In this case, the lamp will light if the switch lead polarity is reversed.
- Contact capacity

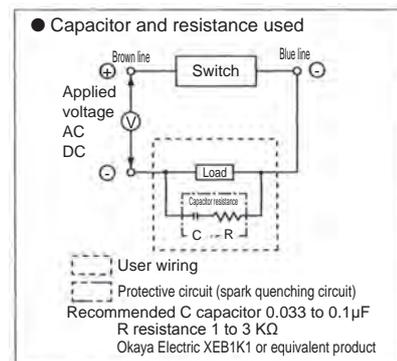
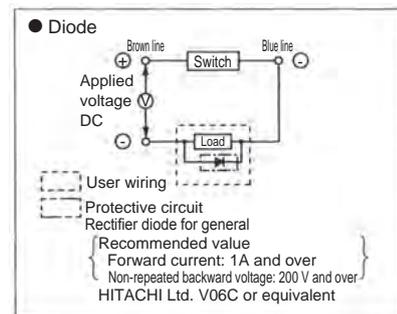
Do not exceed the specified load voltage and load current range.

Failure to observe this could result in problems such as lamp blowing and contact melting.

The lamp may not light if the current is less than the rated current value.

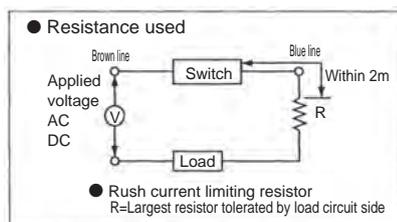
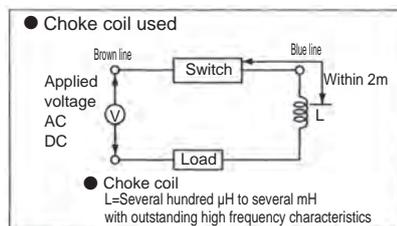
● Contact protection

- (1) When using this sensor with a conductive load such as a relay, provide the contact protection circuit shown at right. The contact could melt if this protection circuit is not provided.



- (2) DC wiring exceeds 50m or AC wiring exceeds 10m, the wiring capacity will be attained. A rush current will occur, damaging the switch or shortening life.

Install a contact protection circuit if the wiring length is exceeded.



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



Shut-off valve standard white Series

V1000-W/V3000-W Series

One action exhaust operation. Prevent residual pressure accidents in pneumatic lines.

Port size: 1/8 to 1/2

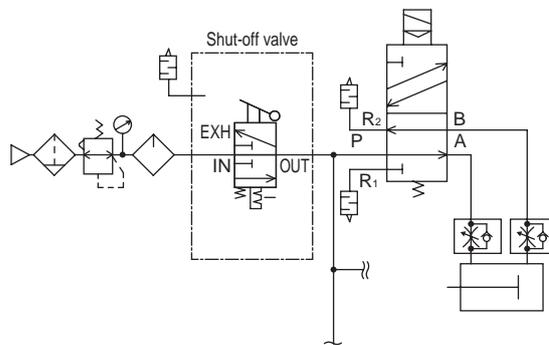


Specifications

| Descriptions | | V1000-W | | V3000-W | | |
|---|-----------------|----------------|-----------|-----------|------------|------------|
| Appearance | | | | | | |
| Descriptions | | V1000-6-W | V1000-8-W | V3000-8-W | V3000-10-W | V3000-15-W |
| Working fluid | | Compressed air | | | | |
| Max. working pressure MPa | | 1.0 | | | | |
| Withstanding pressure MPa | | 1.5 | | | | |
| Fluid temperature °C | | 5 to 60 | | | | |
| Operation lever switchover angle | | 90° | | | | |
| Operating force | Pushing force N | 18 | | 80 | | |
| | Torque N-m | 0.5 | | 2 | | |
| Valve section leakage cm ³ /min. (ANR) | | 10 | | | | |
| External leakage cm ³ /min. (ANR) | | 10 | | | | |
| Port size | IN/OUT | 1/8 | 1/4 | 1/4 | 3/8 | 1/2 |
| | (Rc, NPT, G) | 1/8 | | 3/8 | | |
| Product weight kg | | 0.17 | | 0.25 | | |
| Effective sectional area (mm ²) | IN/OUT | 15 | 18 | 40 | 70 | 85 |
| | OUT/EXH | 5 | | 40 | 50 | 50 |

Application

Explanation: For safety, release compressed air in the pneumatic circuit from the lockout valve before repairing or adjusting the solenoid valve or air cylinder, etc.



How to order

- F.R.L.1000 Series



- F.R.L.3000, 4000 Series



A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Attachment

| Symbol | Descriptions | A Model no. | |
|--|------------------------------------|--------------------|-------|
| | | V1000 | V3000 |
| B Port size | | | |
| 6 | Rc1/8 | ● | |
| 8 | Rc1/4 | ● | ● |
| 10 | Rc3/8 | | ● |
| 15 | Rc1/2 | | ● |
| C Port thread type | | | |
| Blank | Rc thread | ● | ● |
| N | NPT thread | ● | ● |
| G | G thread | ● | ● |
| D Option | | | |
| Blank | Standard flow (left → right) | ● | ● |
| X1 | IN/OUT reverse flow (right → left) | ● | ● |
| E Display unit | | | |
| Blank | MPa display, Rc thread | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● |
| F Attachment (attached) Note 1, Note 2 | | | |
| Blank | Without attachment | ● | ● |
| A6*W | Rc1/8 piping adaptor set | ● | |
| A8*W | Rc1/4 piping adaptor set | ● | ● |
| A10*W | Rc3/8 piping adaptor set | ● | ● |
| A15*W | Rc1/2 piping adaptor set | | ● |
| A20*W | Rc3/4 piping adaptor set | | ● |
| BW | C type bracket | ● | ● |
| S | Silencer | ● | ● |
| *Adaptor screw type | | | |
| Blank | Rc thread | ● | ● |
| N | NPT thread | ● | ● |
| G | G thread | ● | ● |

⚠ Note on model no. selection

Note 1: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Note 2: The joiner set is enclosed with the piping adaptor set.

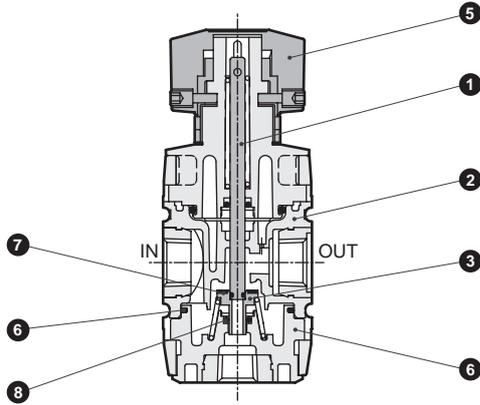
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

⚠ Select the reverse regulator (R*100-W) or reverse filter regulator (W*100-W) when installing the V*000-W onto the primary side of the regulator or filter regulator.

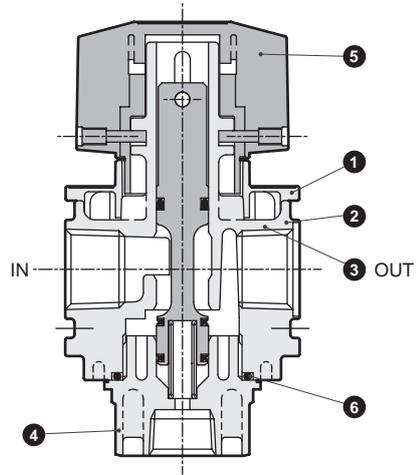
Internal structure and parts list

● V1000-W



| No. | Parts name | Material |
|-----|---------------|------------------------|
| 1 | Spool | Steel |
| 2 | Body assembly | Polyamide resin, steel |
| 3 | Valve element | Brass, nitrile rubber |
| 4 | Bottom plug | Polyamide resin, steel |
| 5 | Knob | Polyacetal resin |
| 6 | Packing seal | Nitrile rubber |
| 7 | O-ring | Nitrile rubber |
| 8 | O-ring | Nitrile rubber |

● V3000-W



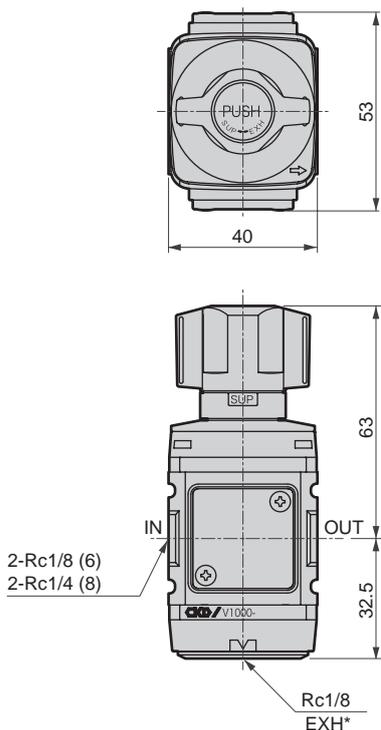
| No. | Parts name | Material |
|-----|----------------|--------------------------------------|
| 1 | Plate cover | ABS resin |
| 2 | Body | Aluminum alloy die-casting |
| 3 | Spool assembly | Aluminum alloy urethane rubber resin |
| 4 | Bottom plug | PBT resin Note 1 |
| 5 | Knob | Polyacetal resin |
| 6 | O-ring | Nitrile rubber |

Note 1: The metal bottom plug is used as a custom-order part.

Dimensions

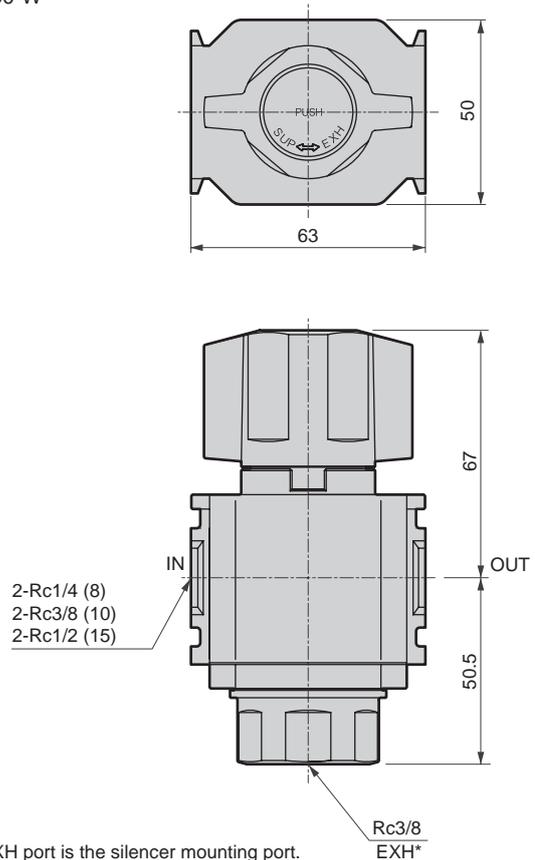


● V1000-W



* The EXH port is the silencer mounting port.

● V3000-W



* The EXH port is the silencer mounting port.



Lockout valve (OSHA compliant) standard white series

V3010-W/V6010-W Series

Prevent residual pressure accidents in pneumatic lines.

Port size: 1/4 to 1



Specifications

| Descriptions | | V3010-8-W | V3010-10-W | V3010-15-W | V6010-20-W | V6010-25-W |
|--|------------------|----------------|------------|------------|------------|------------|
| Working fluid | | Compressed air | | | | |
| Max. working pressure MPa | | 1.0 | | | | |
| Withstanding pressure MPa | | 1.5 | | | | |
| Fluid temperature °C | | 5 to 60 | | | | |
| Operation lever switchover angle | | 90° | | | | |
| Operating force | Pushing force N | 80 or less | | | | |
| | Torque N·m | 2.5 or less | | | | |
| Valve seat leakage cm ³ /min. (ANR) | | 10 or less | | | | |
| External leakage cm ³ /min. (ANR) | | 10 or less | | | | |
| Port size | IN-OUT | 1/4 | 3/8 | 1/2 | Rc 3/4 | Rc1 |
| | (Rc, NPT, G) EXH | | | | Rc1/2 | |
| Product weight kg | | 0.3 | | | 0.8 | |
| Effective sectional area (mm ²) | IN→OUT | 40 | 70 | 85 | 145 | 150 |
| | OUT→EXH | 40 | 50 | 50 | 105 | 110 |

OSHA (Occupational Safety and Health Administration)

US Safety Standards related to worker safety are set.

<Code of Lockout/Tagout>

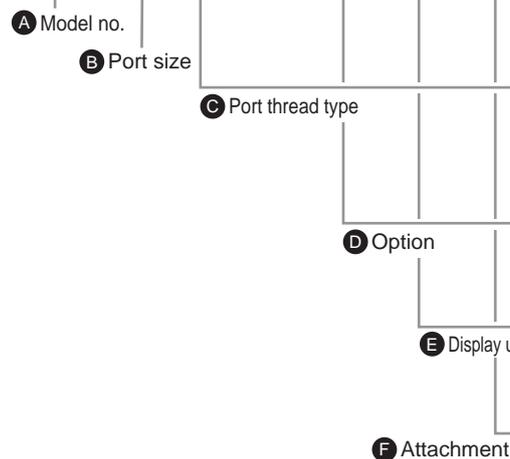
When serving or maintaining machinery, the air source shall be closed with a shut-off valve (lockout valve), and residual pressure shall be discharged. If a third party inadvertently operates the valve during such operation and compressed air is applied, the cylinder, etc., could move suddenly and injure personnel. This standard states that, "All valves used for such purposes shall have a key or a structure which can be locked with a key."

How to order

- SELEX F.R.L.2000, 3000, 4000 Series



- SELEX F.R.L.6000, 8000 Series



⚠ Note on model no. selection

Note 1: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Note 2: The joiner set is enclosed with the piping adaptor set.

- ⚠ Select the reverse regulator (R*100-W) or reverse filter regulator (W*100-W) when installing the V*010-W onto the primary side of the regulator or filter regulator.

Secondary battery compatible specifications

(catalog No. CC-947)

- Structured for use in secondary battery manufacturing processes

V3010 - - P4*

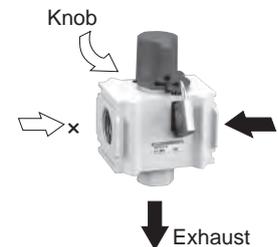
How to use

- Regular use



- During maintenance work

A lock is set where residual pressure is released.



| A Model no. | |
|-------------|-------|
| V3010 | V6010 |

| Symbol | Descriptions | V3010 | V6010 |
|--------------------|--------------|-------|-------|
| B Port size | | | |
| 8 | 1/4 | ● | |
| 10 | 3/8 | ● | |
| 15 | 1/2 | ● | |
| 20 | 3/4 | | ● |
| 25 | 1 | | ● |

| C Port thread type | | | |
|---------------------------|------------|---|---|
| Blank | Rc thread | ● | ● |
| N | NPT thread | ● | ● |
| G | G thread | ● | ● |

| D Option | | | |
|-----------------|------------------------------------|---|---|
| Blank | None | ● | ● |
| X1 | IN/OUT reverse flow (right → left) | ● | ● |

| E Display unit | | | |
|-----------------------|----------------------------|---|---|
| Blank | MPa display, Rc thread | ● | ● |
| J1 | MPa display, NPT, G thread | ● | ● |

| F Attachment (attached) Note 1, Note 2 | | | |
|---|----------------------------|---|---|
| Blank | Without attachment | ● | ● |
| A8W | Rc1/4 piping adaptor set | ● | |
| A10W | Rc3/8 piping adaptor set | ● | |
| A15W | Rc1/2 piping adaptor set | ● | |
| A20W | Rc3/4 piping adaptor set | ● | ● |
| A25W | Rc1 piping adaptor set | ● | ● |
| A32W | Rc1 1/4 piping adaptor set | | ● |
| BW | C type bracket | ● | ● |
| S | Silencer | ● | ● |

| * Adaptor screw type | | | |
|-----------------------------|------------|---|---|
| Blank | Rc thread | ● | ● |
| N | NPT thread | ● | ● |
| G | G thread | ● | ● |

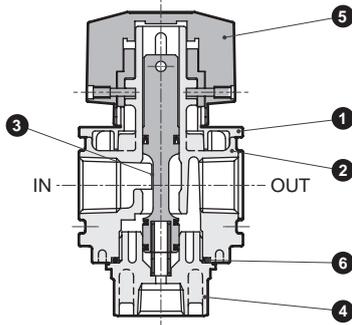
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

V*010-W Series

Internal structure and parts list

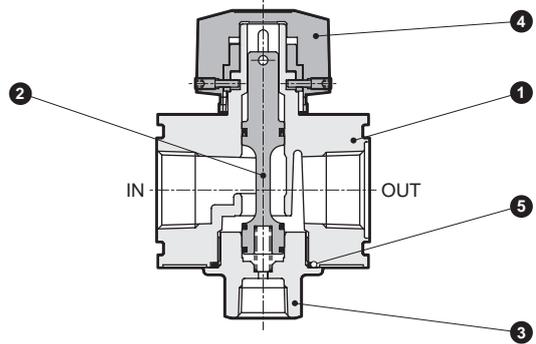
● V3010-W



| No. | Parts name | Material |
|-----|----------------|--------------------------------------|
| 1 | Plate cover | ABS resin (Note 2) |
| 2 | Body | Aluminum alloy die-casting |
| 3 | Spool assembly | Aluminum alloy urethane rubber resin |
| 4 | Bottom plug | PBT resin (Note 1) (Note 2) |
| 5 | Knob | Aluminum alloy die-casting |
| 6 | O-ring | Nitrile rubber |

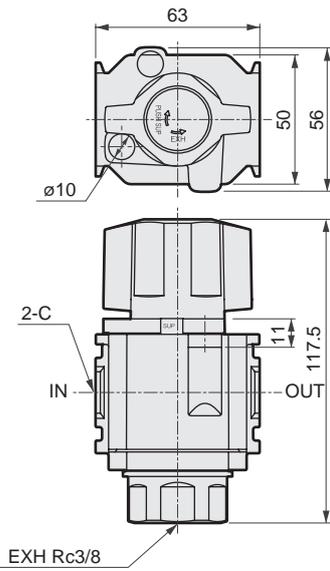
Note 1: The metal bottom plug is used as a custom-order part.
 Note 2: Flame resistance resin equivalent to UL94 Standard V-O

● V6010-W



| No. | Parts name | Material |
|-----|----------------|-----------------------------------|
| 1 | Body | Aluminum alloy die-casting |
| 2 | Spool assembly | Aluminum, hydrogen nitrile rubber |
| 3 | Bottom plug | Aluminum alloy die-casting |
| 4 | Knob | Aluminum alloy die-casting |
| 5 | O-ring | Nitrile rubber |

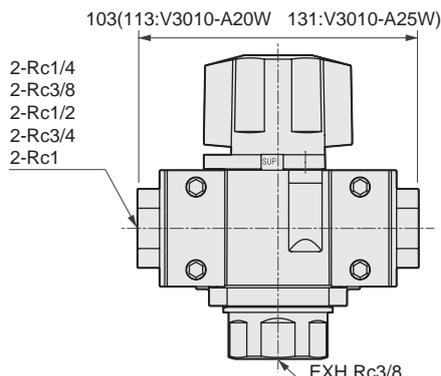
Dimensions (V3010-W)



* The EXH port is the silencer mounting port.

| Descriptions | C |
|--------------|-------|
| V3010-8-W | Rc1/4 |
| V3010-10-W | Rc3/8 |
| V3010-15-W | Rc1/2 |

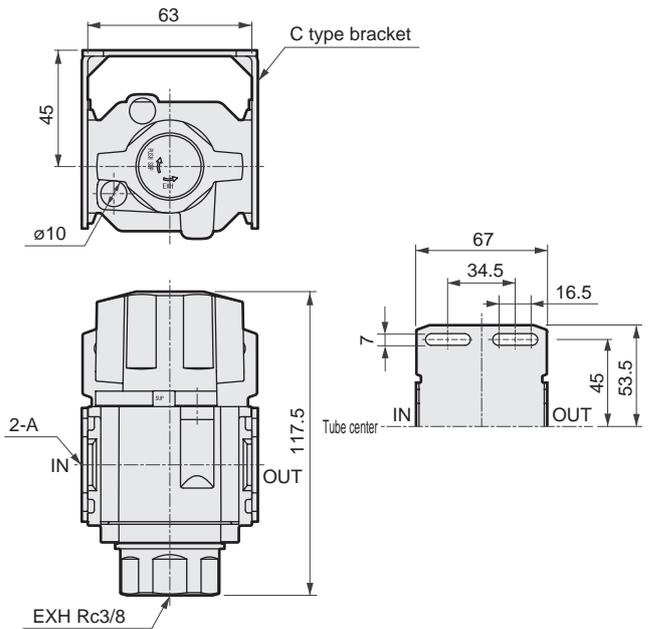
● Adaptor attachment



The piping adaptor set is attached at shipment.

● C type bracket (-BW)

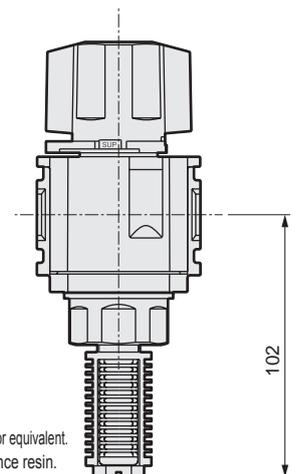
Part model no.: B320



The C type bracket is attached at shipment.
 C type bracket and piping adaptor set can not be used together.

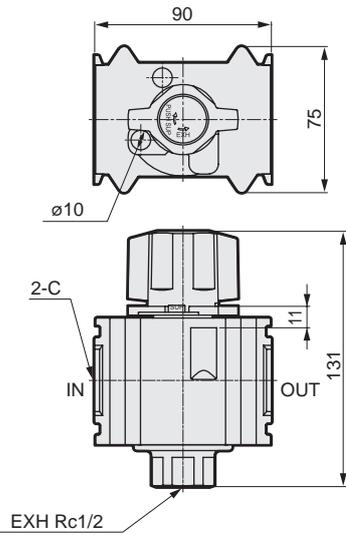
● Silencer (-S)

Part model no.: SLW-10A



The silencer is attached at shipment.
 The silencer is made of flame resistance resin UL94 Standard V-O or equivalent.
 Note that the element is not manufactured of flame resistance resin.

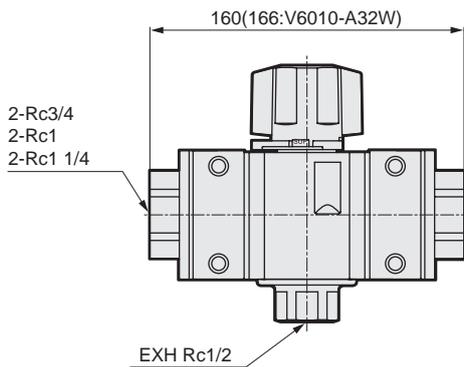
Dimensions (V6010-W)



* The EXH port is the silencer mounting port.

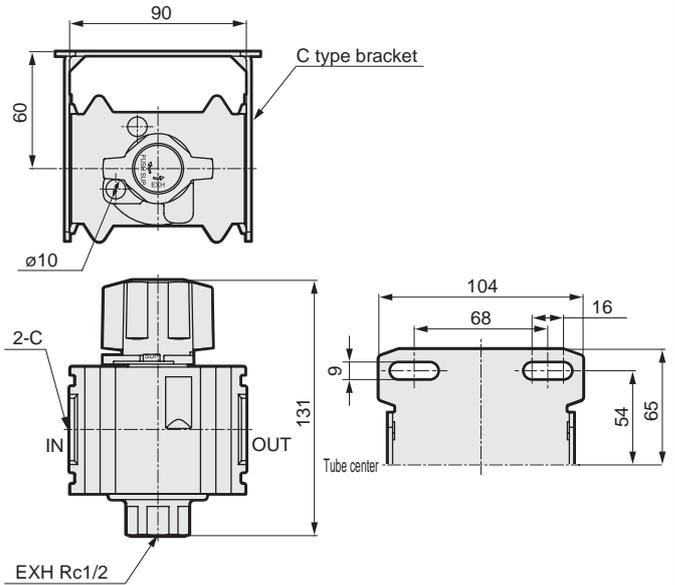
| Descriptions | C |
|--------------|-------|
| V6010-20-W | Rc3/4 |
| V6010-25-W | Rc1 |

● Adaptor attachment



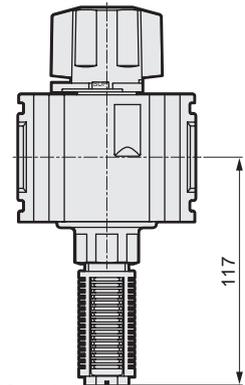
The piping adaptor set is enclosed with the shipment.

● C type bracket (-BW) Part model no.: B620



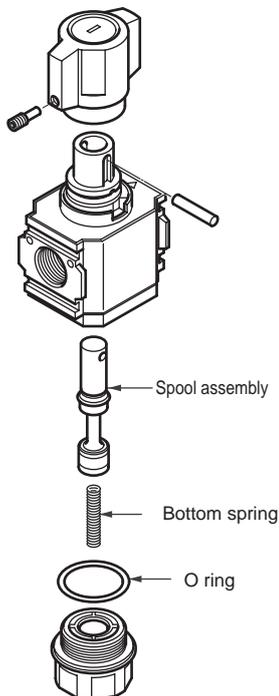
The C type bracket is attached at shipment.
C type bracket and piping adaptor set can not be used together.

● Silencer (-S) Part model no.: SLW-15A



The silencer is attached at shipment.
The silencer is made of flame resistance resin UL94 Standard V-O or equivalent.
Note that the element is not manufactured of flame resistance resin.

Shut-off valve (V3000-W, V3010-W) optional parts drawing



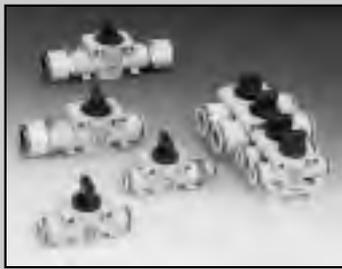
Spool assembly

(Sets of spool assembly, bottom spring)

| Model | Spool assembly model no. |
|--------------|--------------------------|
| V3000, V3010 | V3000-SPOOL |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

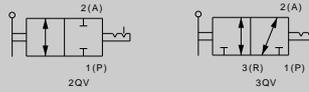


Quick exhaust valve

2QV/3QV Series

- Port size: Push-in joint $\varnothing 4, \varnothing 6, \varnothing 8, \varnothing 10, \varnothing 12, R1/8$ to $R1/2$

JIS symbol



Features

- Straight flow path and large effective sectional area.
- Flame resistance resin provided as standard. (Equivalent to flame resistance resin UL94 standards V-0)
- Manifold enabled by optional bracket.
- 2 and 3 port valves are available.

Specifications

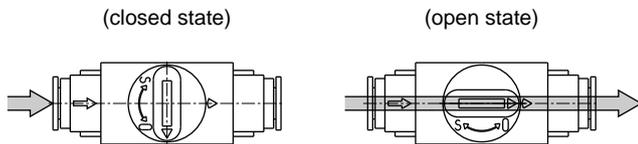
| Descriptions | 2QV/3QV |
|---------------------------|---|
| Working fluid | Air |
| Max. working pressure MPa | 1 |
| Min. working pressure kPa | -100 (Note 1) |
| Withstanding pressure MPa | 1.5 |
| Fluid temperature °C | 0 to 60 |
| Ambient temperature °C | 0 to 60 |
| Switching angle ° | 90 |
| Applicable tube | Soft nylon tube (tube F-15**) Urethane tube (tube U-95**, NU-**) |
| Mounting attitude | Any |

Note 1: When using urethane tube (U-95**, NU-**) at vacuum, use an insert ring.

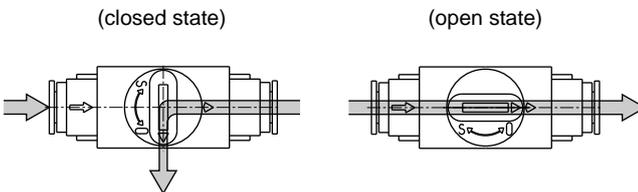
Note 2: Lubricant is used, so oil-prohibited specification are not available.

Operational explanation

- 2 port valve (2QV Series)

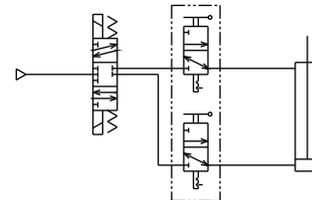


- 3 port valve (3QV Series)



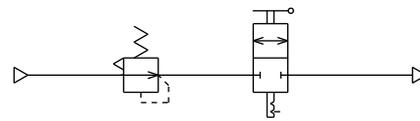
Applications

- Shut-off valve in air cylinder circuit



Quick exhaust valve (3QV)

- Stop valve in air blow circuit



Quick exhaust valve (2QV)

Clean room specifications (catalog No. CB-033S)

- Dust generation preventing structure for use in cleanrooms

2QV- - P70

How to order

- Quick exhaust valve

2 QV - 04-04

A Valve type

B Port size (P port) - (A port)

| | | Symbol | Descriptions | | | |
|----------|-------------------|--|--------------|------|-------------------|--------|
| | | A Valve type | | | | |
| | | 2 | 2 way valve | | | |
| | | 3 | 3 way valve | | | |
| | | B Port size (P port) - (A port) | | | Bracket * | |
| | | | IN side | - | OUT side | |
| Standard | 04-04 | Push-in joint ø4 | | - | Push-in joint ø4 | 2QV-P1 |
| | 06-06 | Push-in joint ø6 | | - | Push-in joint ø6 | |
| | 08S-08S | Push-in joint ø8 | | - | Push-in joint ø8 | |
| | 08-08 | Push-in joint ø8 | | - | Push-in joint ø8 | |
| | 10-10 | Push-in joint ø10 | | - | Push-in joint ø10 | |
| | 12-12 | Push-in joint ø12 | | - | Push-in joint ø12 | |
| Option | 6A-04 | R1/8 | | | Push-in joint ø4 | 2QV-P1 |
| | 6A-06 | R1/8 | | | Push-in joint ø6 | |
| | 8A-06 | R1/4 | | | Push-in joint ø6 | |
| | 8A-08S | R1/4 | | | Push-in joint ø8 | |
| | 10A-08 | R3/8 | | | Push-in joint ø8 | 2QV-P2 |
| | 10A-10 | R3/8 | | | Push-in joint ø10 | |
| | 15A-10 | R1/2 | | | Push-in joint ø10 | |
| | 15A-12 | R1/2 | | | Push-in joint ø12 | |
| | 04-6A | Push-in joint ø4 | | - | R1/8 | 2QV-P1 |
| | 06-6A | Push-in joint ø6 | | - | R1/8 | |
| | 06-8A | Push-in joint ø6 | | - | R1/4 | |
| | 08S-8A | Push-in joint ø8 | | - | R1/4 | |
| | 08-10A | Push-in joint ø8 | | - | R3/8 | 2QV-P2 |
| | 10-10A | Push-in joint ø10 | | - | R3/8 | |
| | 10-15A | Push-in joint ø10 | | - | R1/2 | |
| 12-15A | Push-in joint ø12 | | - | R1/2 | | |
| 6A-6A | R1/8 | | | R1/8 | 2QV-P1 | |
| 8A-8A | R1/4 | | | R1/4 | | |
| 10A-10A | R3/8 | | | R3/8 | 2QV-P2 | |
| 15A-15A | R1/2 | | | R1/2 | | |

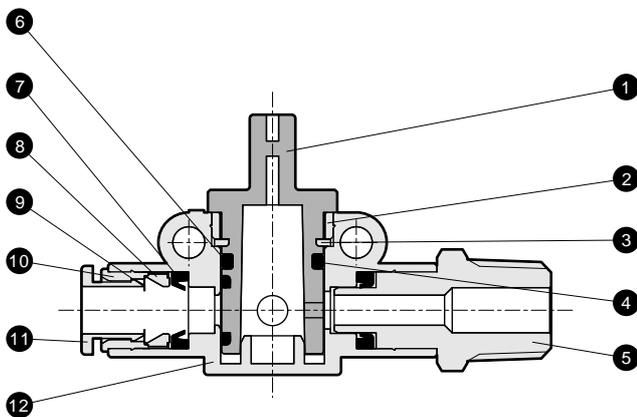
*For 2 and 3 port valve, a bracket is common.

* Note that this may differ according to the body size.

Internal structure and parts list



Select the reverse regulator (R*100) or reverse filter regulator (W*100) when installing the 3QV onto the primary side of the regulator or filter regulator.



Parts list

| No. | Parts name | Material |
|-----|--------------|--|
| 1 | Rotary shaft | PBT (UL94V-0 or equivalent) |
| 2 | Stopper | Brass (electroless nickeling treatment) *1 |
| | | Stainless steel *2 |
| 3 | Ring | Steel |
| 4 | O-ring | Nitrile rubber |
| 5 | Nipple | Brass (electroless nickeling treatment) |
| 6 | O-ring | Nitrile rubber |
| 7 | Packing seal | Nitrile rubber |
| 8 | Chuck holder | Polyacetal |
| 9 | Chuck | Stainless steel |
| 10 | Outer ring | Brass (electroless nickeling treatment) |
| 11 | Push ring | PBT (UL94V-0 or equivalent) |
| 12 | Body | PBT (UL94V-0 or equivalent) |

*1: The "A" dimensions in the outline drawing apply to the "18" model material.

*2: The "A" dimensions in the outline drawing apply to the "22" model material.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

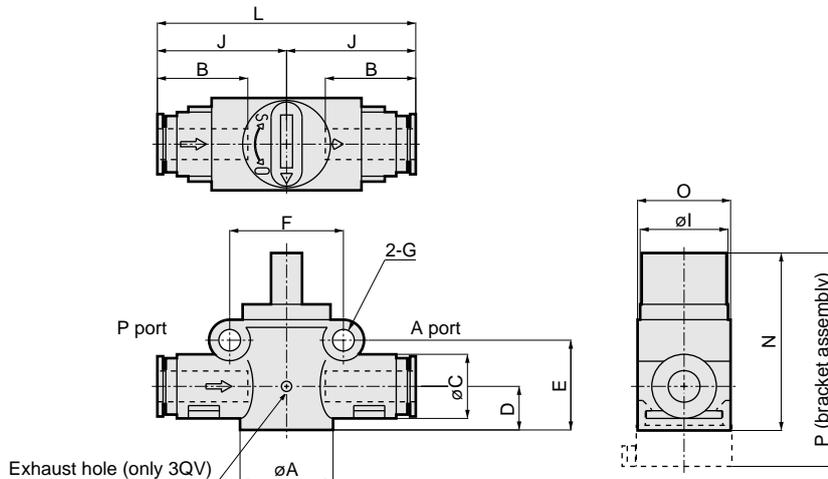
Standard series
F.R.L. unit

2QV/3QV Series

Dimensions



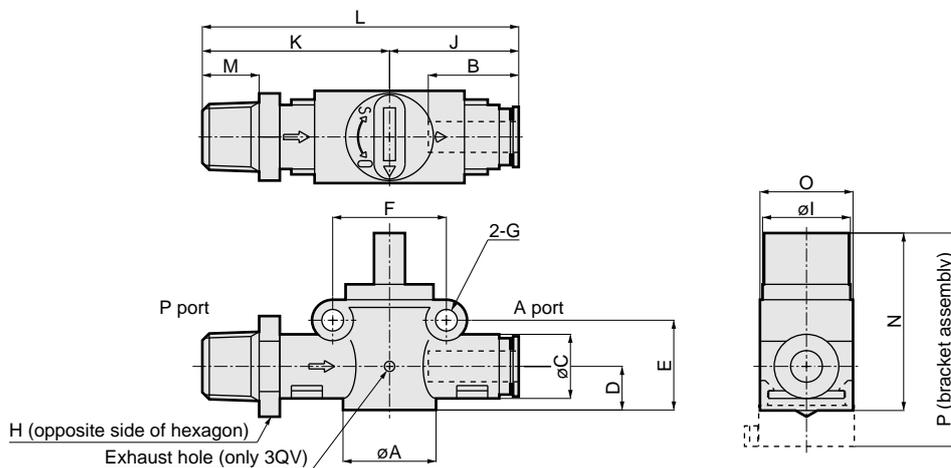
- Port size
 - P port (push-in joint), A port (push-in joint)



| Applicable tube O.D. (mm) | Model no. | A | B | C | D | E | F | G | I | J | L | N | O | P | Weight (g) | Effective sectional area (mm ²) | |
|---------------------------|----------------|----|------|------|------|------|------|-----|----|------|----|------|----|------|------------|---|-----|
| | | | | | | | | | | | | | | | | P→A | A→R |
| ø4 | 2/3 QV-04-04 | 18 | 16 | 12.5 | 8.5 | 17.5 | 22 | 4.2 | 17 | 25 | 50 | 34.5 | 18 | 41.5 | 20 | 4.2 | 1.8 |
| ø6 | 2/3 QV-06-06 | | 17.5 | | | | | | | | | | | | 21 | 9.3 | |
| ø8 | 2/3 QV-08S-08S | | 19 | 14.5 | | | | | | | | | | | 23 | 10.2 | |
| ø8 | 2/3 QV-08-08 | 22 | 19 | 17.5 | 10.7 | 22.8 | 26.5 | 4.2 | 17 | 31.5 | 63 | 39.8 | 22 | 46.8 | 34 | 17.5 | 4.0 |
| ø10 | 2/3 QV-10-10 | | 21.5 | | | | | | | | | | | | 35 | 22.5 | |
| ø12 | 2/3 QV-12-12 | | 23 | 20 | | | | | | | | | | | 38 | 22.5 | |

* Tolerance of effective sectional area is ±10%.

- Port size
 - P port (male thread), A port (push-in joint)



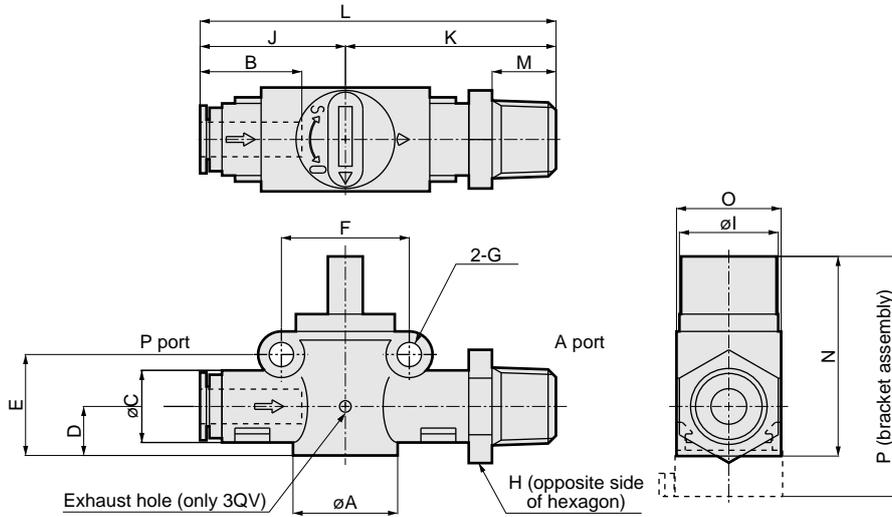
| Port thread R | Applicable tube O.D. (mm) | Model no. | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Weight (g) | Effective sectional area (mm ²) | | |
|---------------|---------------------------|---------------|----|------|------|------|------|------|-----|----|----|------|------|------|----|------|----|------|------------|---|-----|------|
| | | | | | | | | | | | | | | | | | | | | P→A | A→R | |
| 1/8 | ø4 | 2/3 QV-6A-04 | 18 | 16 | 12.5 | 8.5 | 17.5 | 22 | 4.2 | 14 | 17 | 25 | 33.5 | 58.5 | 8 | 34.5 | 18 | 41.5 | 26 | 4.2 | 1.8 | |
| 1/8 | ø6 | 2/3 QV-6A-06 | | 17.5 | | | | | | | | | | | | | | | | 32 | | 9.3 |
| 1/4 | ø6 | 2/3 QV-8A-06 | | 19 | | | | | | | | | | | | | | | 14.5 | 35 | | 9.3 |
| 1/4 | ø8 | 2/3 QV-8A-08S | 19 | 14.5 | 40 | 10.2 | | | | | | | | | | | | | | | | |
| 3/8 | ø8 | 2/3 QV-10A-08 | 22 | 19 | 17.5 | 10.7 | 22.8 | 26.5 | 4.2 | 17 | 17 | 31.5 | 44.5 | 76 | 12 | 39.8 | 22 | 46.8 | 57 | 16.3 | 4.0 | |
| 3/8 | ø10 | 2/3 QV-10A-10 | | 21.5 | | | | | | | | | | | | | | | | 63 | | 21.4 |
| 1/2 | ø10 | 2/3 QV-15A-10 | | 23 | | | | | | | | | | | | | | | 20.0 | 76 | | 21.4 |
| 1/2 | ø12 | 2/3 QV-15A-12 | 23 | 20.0 | 85 | 21.4 | | | | | | | | | | | | | | | | |

* Tolerance of effective sectional area is ±10%.

Dimensions



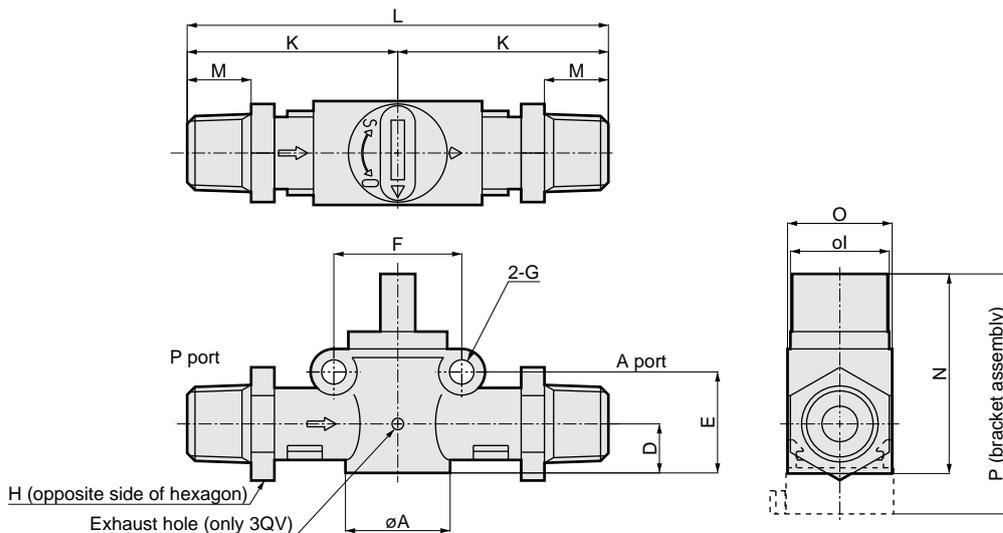
- Port size
 - P port (push-in joint), A port (male thread)



| Applicable tube O.D.(mm) | Port thread R | | Model no. | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Weight (g) | Effective sectional area (mm ²) | |
|--------------------------|---------------|--------|-----------|----|------|------|------|------|------|-----|----|----|------|------|------|----|------|----|------|------------|---|-----|
| | P port | A port | | | | | | | | | | | | | | | | | | | P→A | A→R |
| ø4 | 1/8 | 2/3 | QV-04-6A | 18 | 16 | 12.5 | 8.5 | 17.5 | 22 | 4.2 | 14 | 17 | 25 | 33.5 | 58.5 | 8 | 34.5 | 18 | 41.5 | 26 | 3.5 | 1.8 |
| | | 2/3 | QV-06-6A | | 32 | | | | | | | | | | | | | | | | 9.3 | |
| ø6 | 1/8 | 2/3 | QV-06-6A | 18 | 17.5 | 12.5 | 8.5 | 17.5 | 22 | 4.2 | 17 | 17 | 25 | 33.5 | 58.5 | 8 | 34.5 | 18 | 41.5 | 32 | 9.3 | 1.8 |
| | | 2/3 | QV-06-8A | | 35 | | | | | | | | | | | | | | | | 9.3 | |
| ø6 | 1/4 | 2/3 | QV-06-8A | 18 | 19 | 14.5 | 8.5 | 17.5 | 22 | 4.2 | 17 | 17 | 26.5 | 38 | 63 | 11 | 34.5 | 18 | 41.5 | 40 | 10.2 | 1.8 |
| | | 2/3 | QV-08S-8A | | 40 | | | | | | | | | | | | | | | | 10.2 | |
| ø8 | 1/4 | 2/3 | QV-08S-8A | 18 | 19 | 14.5 | 8.5 | 17.5 | 22 | 4.2 | 17 | 17 | 26.5 | 38 | 63 | 11 | 34.5 | 18 | 41.5 | 40 | 10.2 | 1.8 |
| | | 2/3 | QV-08-10A | | 57 | | | | | | | | | | | | | | | | 15.8 | |
| ø8 | 3/8 | 2/3 | QV-08-10A | 18 | 19 | 14.5 | 8.5 | 17.5 | 22 | 4.2 | 17 | 17 | 26.5 | 38 | 63 | 11 | 34.5 | 18 | 41.5 | 57 | 15.8 | 1.8 |
| | | 2/3 | QV-10-10A | | 63 | | | | | | | | | | | | | | | | 21.4 | |
| ø10 | 3/8 | 2/3 | QV-10-10A | 22 | 21.5 | 17.5 | 10.7 | 22.8 | 26.5 | 4.2 | 19 | 17 | 31.5 | 44.5 | 76 | 12 | 39.8 | 22 | 46.8 | 76 | 21.4 | 4.0 |
| | | 2/3 | QV-10-15A | | 76 | | | | | | | | | | | | | | | | 21.4 | |
| ø10 | 1/2 | 2/3 | QV-10-15A | 22 | 21.5 | 17.5 | 10.7 | 22.8 | 26.5 | 4.2 | 19 | 17 | 31.5 | 44.5 | 76 | 12 | 39.8 | 22 | 46.8 | 76 | 21.4 | 4.0 |
| | | 2/3 | QV-12-15A | | 85 | | | | | | | | | | | | | | | | 21.4 | |
| ø12 | 1/2 | 2/3 | QV-12-15A | 22 | 23 | 20.0 | 10.7 | 22.8 | 26.5 | 4.2 | 22 | 17 | 33 | 49 | 82 | 15 | 39.8 | 22 | 46.8 | 85 | 21.4 | 4.0 |
| | | 2/3 | QV-12-15A | | 85 | | | | | | | | | | | | | | | | 21.4 | |

* Tolerance of effective sectional area is ±10%.

- Port size
 - P port (male thread), A port (male thread)



| Port thread R | | Model no. | A | D | E | F | G | H | I | K | L | M | N | O | P | Weight (g) | Effective sectional area (mm ²) | | |
|---------------|--------|-----------|------------|----|------|------|------|-----|----|----|------|----|----|------|-----|------------|---|------|-----|
| P port | A port | | | | | | | | | | | | | | P→A | | A→R | | |
| 1/8 | 1/8 | 2/3 | QV-6A-6A | 18 | 8.5 | 17.5 | 22 | 4.2 | 14 | 17 | 33.5 | 67 | 8 | 34.5 | 18 | 41.5 | 42 | 9.5 | 1.8 |
| | | 2/3 | QV-8A-8A | | | | | | | | | | | | | | | 48 | |
| 1/4 | 1/4 | 2/3 | QV-8A-8A | 18 | 8.5 | 17.5 | 22 | 4.2 | 17 | 17 | 38 | 76 | 11 | 34.5 | 18 | 41.5 | 48 | 9.5 | 1.8 |
| | | 2/3 | QV-10A-10A | | | | | | | | | | | | | | | 90 | |
| 3/8 | 3/8 | 2/3 | QV-10A-10A | 22 | 10.7 | 22.8 | 26.5 | 4.2 | 19 | 17 | 44.5 | 89 | 12 | 39.8 | 22 | 46.8 | 90 | 21.4 | 4.0 |
| | | 2/3 | QV-15A-15A | | | | | | | | | | | | | | | 116 | |
| 1/2 | 1/2 | 2/3 | QV-15A-15A | 22 | 10.7 | 22.8 | 26.5 | 4.2 | 22 | 17 | 47.5 | 95 | 15 | 39.8 | 22 | 46.8 | 116 | 21.4 | 4.0 |
| | | 2/3 | QV-15A-15A | | | | | | | | | | | | | | | 116 | |

* Tolerance of effective sectional area is ±10%.

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)

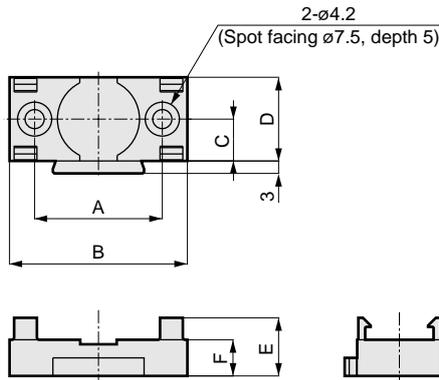
Ending

Standard series
F.R.L. unit

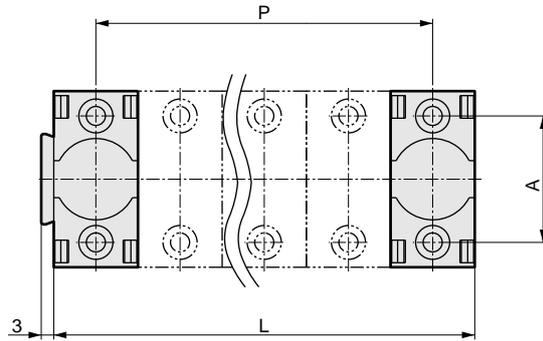
Dimensions



● Bracket



● Manifold mounting pitch dimension



| Model no. | A | B | C | D | E | F | P | L | Subject dimension A |
|-----------|----|----|-------|------|------|---|-----------|-------|---------------------|
| 2QV-P1 | 28 | 39 | 9.25 | 18.5 | 13 | 8 | D × (n-1) | D × n | 18 |
| 2QV-P2 | 32 | 44 | 11.25 | 22.5 | 12.5 | 8 | | | 22 |

n = station number

Introduction of custom order

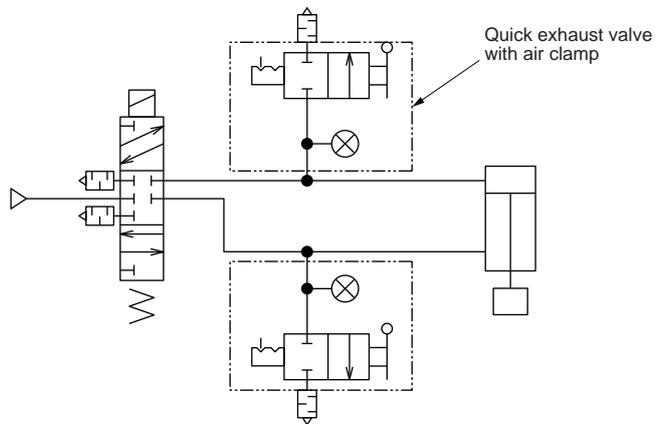
A quick valve with air lamp is available as a customized order part. Contact CKD for details.
 Note: Note that the ø12 diameter type is not available.

Specifications

| Descriptions | Air lamp |
|----------------------------|-------------|
| Working fluid | Air |
| Working pressure range MPa | 0.05 to 0.8 |
| Fluid temperature °C | 0 to 60 |
| Ambient temperature °C | 0 to 60 |
| Display color | Red, green |

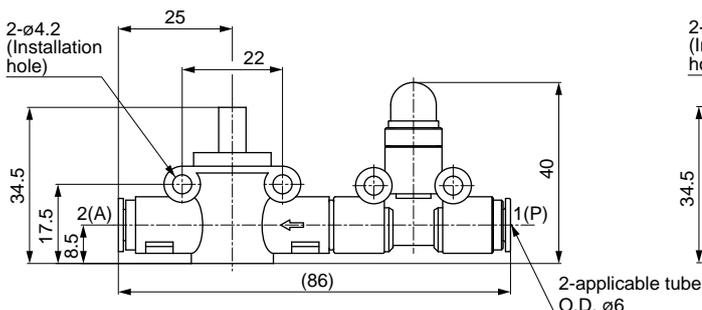
Application

- Cylinder residual pressure exhaust

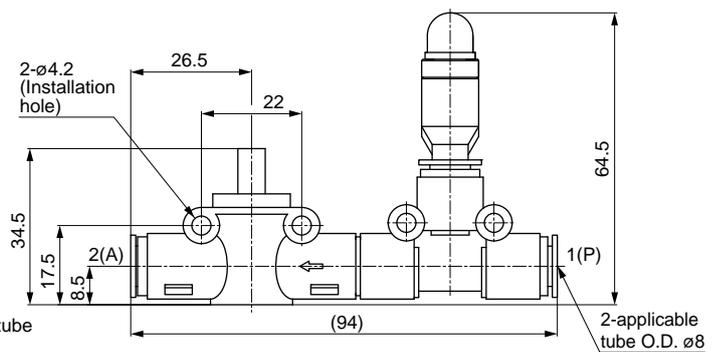


Example of assembly

● 2QV-06-06 with air lamp



● 2QV-08S-08S with air lamp



● Types 3QV-06 to 10 with air lamps are also available. Contact CKD for details.

Installation & Adjustment

CAUTION

■ Apply adequate torque when connecting pipes.

- To prevent air leakage and screw damage. First tighten the screw by hand to prevent damage to screw threads, then use a tool.
- Check that the tool's hexagon face and wrench are the correct size.
- (Reference value)

| Port thread | Tightening torque N·m |
|-------------|-----------------------|
| R1/8 | 3 to 5 |
| R1/4 | 6 to 8 |
| R3/8 | 13 to 15 |
| R1/2 | 16 to 18 |

*The above values apply when the matching screw is a JISB0203 tapered female thread to piping (material: C3604BD)

■ Connect piping so that connections are not dislocated by system movement, vibration, or tension, etc.

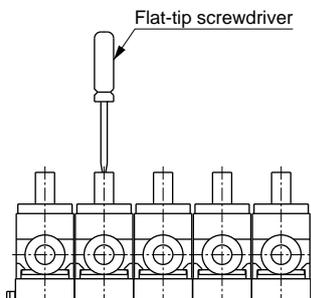
- Control of actuator speed will be disabled if piping on the exhaust side of the pneumatic circuit is disengaged.
- When using the chuck holding mechanism, the chuck will be released creating a hazardous state.
- Confirm that the tube has been inserted properly, and make sure that there is no tension during use.
The tube could be dislocated or damaged if there is any tension.

■ Make sure that the joint and tube are not twisted or pulled, and that moment load is not applied.

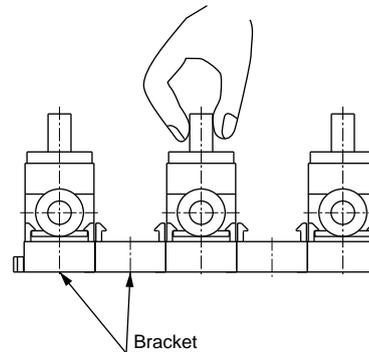
■ Do not tighten while pressure is applied.

■ When using a urethane rubber tube (U-95**, NU-**) for a vacuum, use an insert ring.

■ If the manifolds are installed with a priority on space, it may be difficult to operate the valve manually. Operate by inserting a screwdriver, etc., into the slot on the top of the dial.



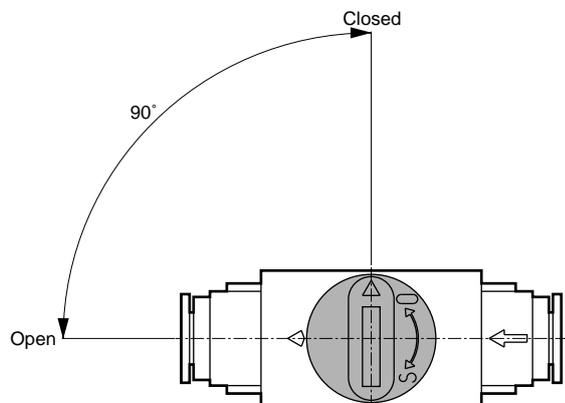
■ If manifolds are installed with a priority on manual operation, valves are operated easily by installing them every other space.



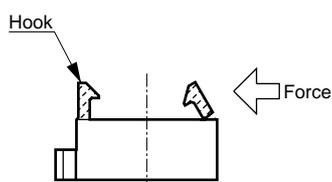
During use & Maintenance

⚠ CAUTION

- Operation angle of this product is 90°
Do not turn the product more than 90°.

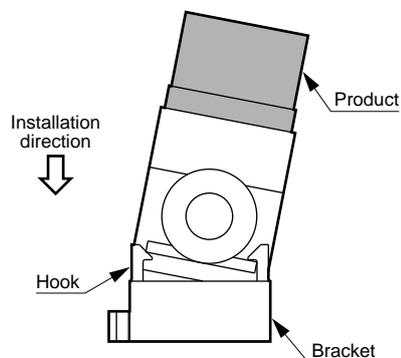


- The dedicated bracket's hooks can be damaged by external force. Use brackets correctly.

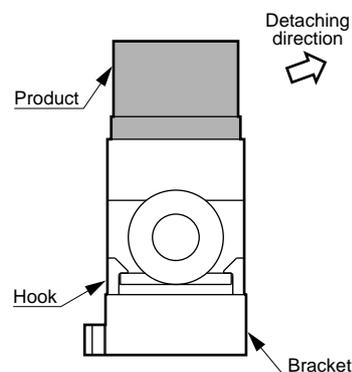


■ How to use bracket

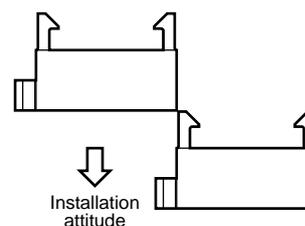
- (1) Fix the bracket before starting use. To mount, insert the product at a slant into the bracket, and then fit into hooks.



- (2) To remove the product, tilt it slightly to the side, and release one hook.



- (3) When mounting a manifold, the project on the bracket into the other bracket's slot.



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit



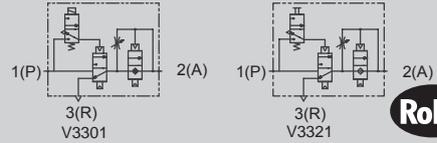
Slow start valve standard white Series

V3301-W/V3321-W Series

To maintain safety at starting and stopping

- Port size: Rc1/4 to Rc1/2

JIS symbol

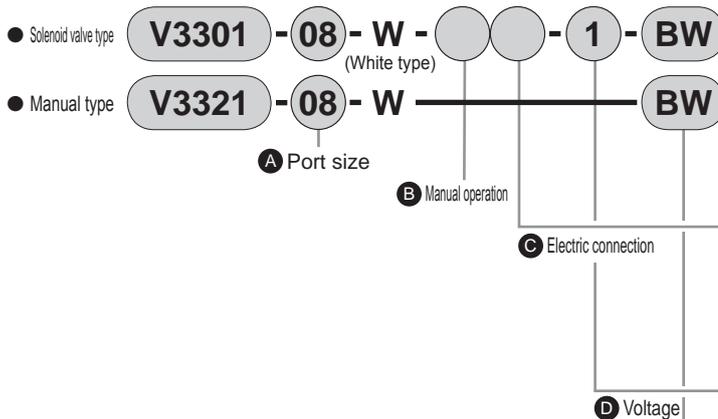


Specifications

| Descriptions | | V3301-W/V3321-W | | |
|--|-----------------------|--|------------------|-------|
| Operation method | | Pilot operated soft spool valve | | |
| Working fluid | | Compressed air (excluding ultra dry compressed air) Note 1 | | |
| Working pressure range MPa | | 0.2 to 1.0 | | |
| Withstanding pressure MPa | | 1.5 | | |
| Ambient temperature range °C | | 5 to 60 | | |
| Port size | 1(P)/2(A) port | Rc1/4 | Rc3/8 | Rc1/2 |
| | 3(R) port | Rc3/8 | | |
| | Gauge port | Rc1/4 | | |
| Effective sectional area mm ² | Low speed air supply | 6 | | |
| | High speed air supply | 40 | 64 | 76 |
| | High speed exhaust | 50 | 74 | 78 |
| Response time | | 0.2 sec or less | | |
| Lubrication | | oil-free Note 2 | | |
| Weight g | | V3301-W:635 V3321-W:515 | | |
| Solenoid valve specifications | | V3301-W | | |
| Rated voltage | V | 100 AC (50/60Hz) | 200 AC (50/60Hz) | 24 DC |
| Starting current | A | 0.076/0.058 | 0.038/0.030 | 0.092 |
| Holding current | A | 0.038/0.029 | 0.019/0.015 | |
| Power consumption | W | 2.2/1.7 | 2.2/1.7 | 2.2 |
| Temperature rises K | | 40 or less | | |
| Voltage fluctuation range | | ±10% | | |
| Insulation class | | Class B | | |
| Electric connection | | Grommet lead wire, terminal box | | |

Note 1: Consult with CKD when using ultra dry air.
 Note 2: Use the turbine oil Class 1 ISO VG32 if lubricated.

How to order



⚠ Select the reverse regulator (R*100) or reverse filter regulator (W*100) when installing the V3301-W, V3321-W onto the primary side of the regulator or filter regulator.

Secondary battery compatible specifications (catalog No. CC-947A)

- Structured for use in secondary battery manufacturing processes

V3301 - - P4*

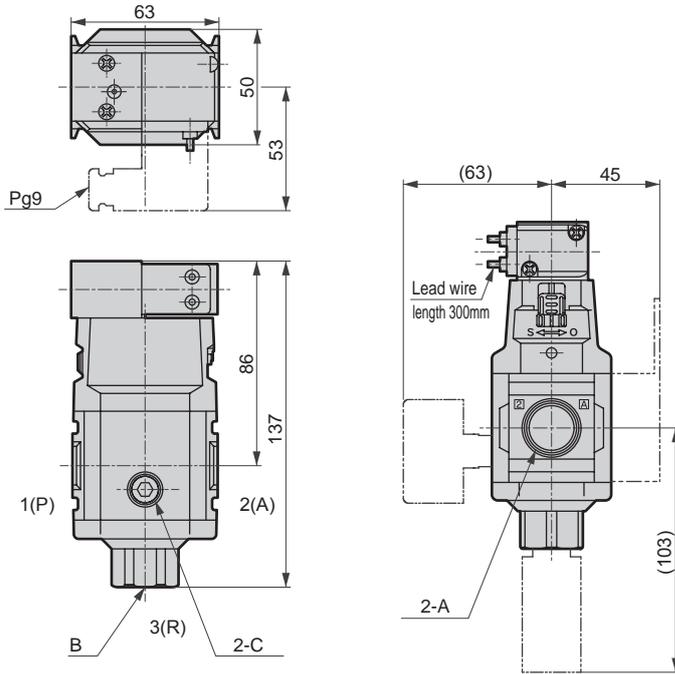
| Symbol | Descriptions | |
|--------------------------------|--------------------------------------|----------|
| A Port size | | |
| 1(P)/2(A) port | | |
| 08 | Rc1/4 | |
| 10 | Rc3/8 | |
| 15 | Rc1/2 | |
| B Manual operation | | |
| Blank | Non-locking | |
| M1 | Locking | |
| C Electric connection | | |
| Blank | Grommet lead wire | |
| S | Grommet lead wire, surge suppressor | |
| B | Terminal box | |
| LS | Terminal box surge suppressor, light | |
| D Voltage | | |
| 1 | 100 VAC 50/60Hz | Standard |
| 2 | 200 VAC 50/60Hz | |
| 3 | 24 VDC | Option |
| 4 | 12 VDC | |
| 5 | 110 VAC 50/60Hz | |
| 6 | 220 VAC 50/60Hz | |
| E Attachment (attached) | | |
| Blank | Without attachment | |
| BW | C type bracket | |
| G49P | Pressure gauge: G49D-8-P10 | |
| S | Silencer | |

V3301-W/V3321-W Series

Dimensions

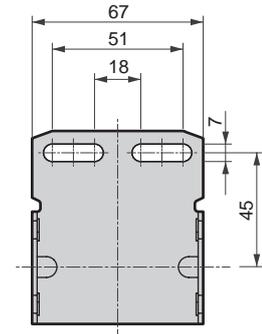
Dimensions

● V3301-W

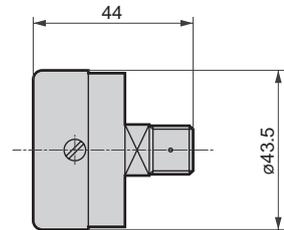


| | A | B | C |
|------------|-------|-------|-------|
| V3301-08-W | Rc1/4 | Rc3/8 | Rc1/4 |
| V3301-10-W | Rc3/8 | | |
| V3301-15-W | Rc1/2 | | |

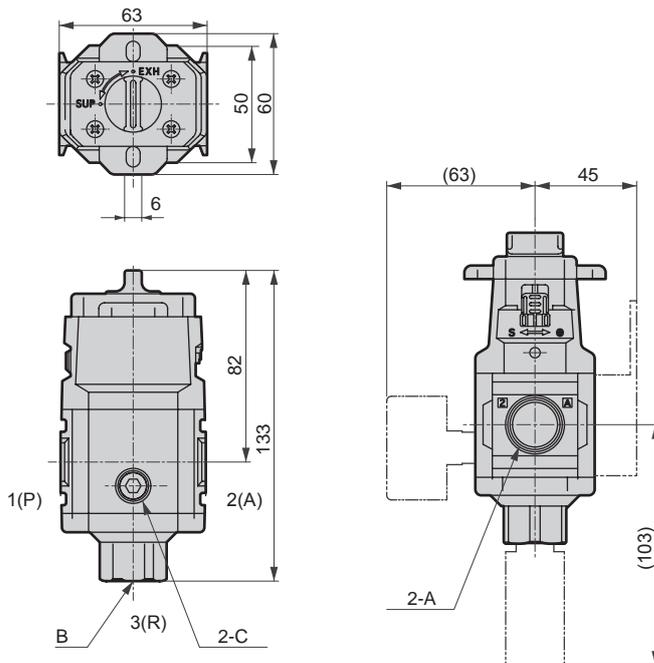
● Bracket: B320



● Pressure gauge: G49D-8-P10

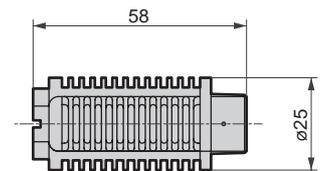


● V3321-W



| | A | B | C |
|------------|-------|-------|-------|
| V3321-08-W | Rc1/4 | Rc3/8 | Rc1/4 |
| V3321-10-W | Rc3/8 | | |
| V3321-15-W | Rc1/2 | | |

● Silencer: SLW-10A



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

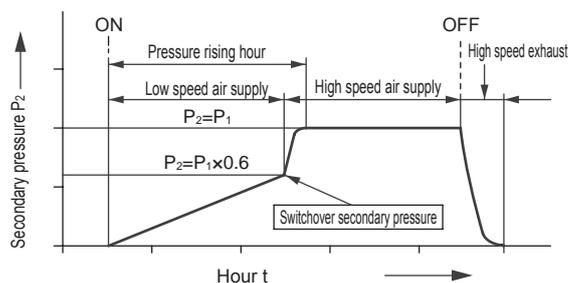
Standard series
F.R.L. unit

Operational explanation (refer to the operation characteristics)

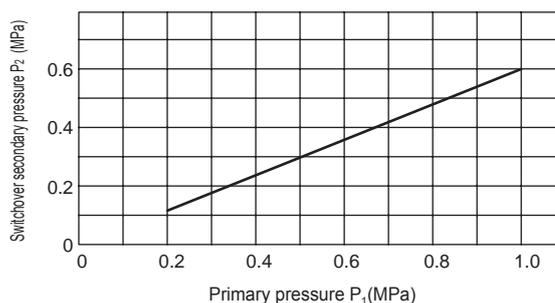
The slow start valve turns ON when the solenoid valve is energized or the manual section is set to SUP. The valve turns OFF when the solenoid valve is deenergized or the manual section is set to EXH.

- (1) First, when the main unit is turned ON, the low speed supply path opens and compressed air starts to flow to the secondary side. Secondary pressure gradually starts to rise. Operable cylinders start moving at a low speed and do not pop out.
- (2) Next, when secondary pressure exceeds 60% of primary pressure, the high speed supply path opens. Secondary pressure suddenly rises to the same pressure as primary pressure. (Fully open state)
- (3) When the main unit is turned OFF, high speed exhaust starts and residual pressure in the unit is exhausted.

● Operation characteristics



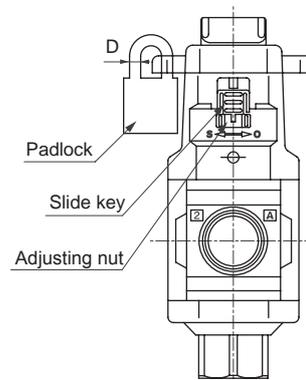
● Switchover secondary pressure



Adjustment method of slow start (refer to the side view)

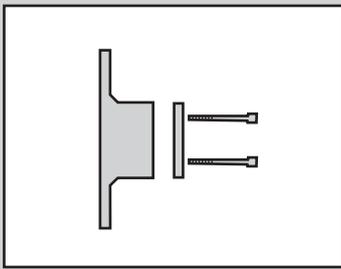
- (1) Press up the slide key and release the adjusting nut lock.
- (2) Turn the main unit ON, and confirm cylinder operation speed and secondary pressure rise time. Turn the main unit OFF.
- (3) Turn the adjusting nuts explained below, and adjust the state.
 - Cylinder pops out → Turn to the S side
 - Low speed operation time is too long → Turn to the O side
 Repeat steps (2) and (3) as necessary, and adjust to the optimum state.
- (4) Align the adjustment nut keyway to the projection on the slide key.
- (5) Press down the slide key and lock the adjusting nut.
- (6) Confirm that the main unit is OFF.

● Side view



⚠ Safety precautions

- Note 1:** This valve is for device starting and stopping including emergency stops. This valve should not be used for cylinder repeat operation or as a normal 3-way valve.
- Note 2:** If the minimum operating pressure of the cylinder, which is to be prevented from popping out, is less than 50% of working pressure, popping out is not prevented.
- Note 3:** The manual override is locked with a manual valve. Select a padlock with a D dimension of 3.8 to 5.8mm.
- Note 4:** Connect a silencer or exhaust filter, etc., on the exhaust port for safety and noise reduction.



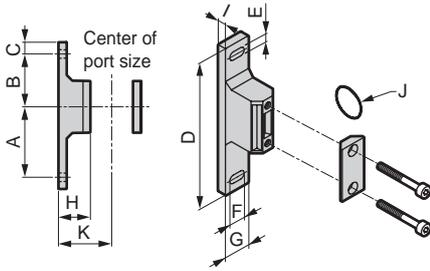
Bracket standard white Series
B-W/B Series
 Joiner standard white Series
J-W Series



Dimensions / Applications

T type bracket set

- Model No.: B110-W/B310-W/B410-W/B810-W
- Application

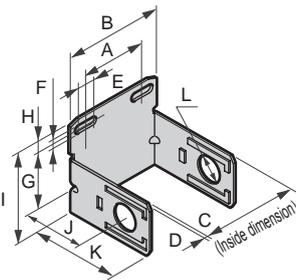


Note: Select B410-W when using the 3000-W Series and 4000-W Series combined.

| Model no. | Applicable model | A | B | C | D | E | F | G | H | I | J | K |
|-----------|------------------|----|----|----|-----|-----|-----|----|----|-----|--------------|----|
| B110-W | 1000 Series | 45 | 35 | 10 | 100 | 5.5 | 7.5 | 16 | 25 | 7.5 | JASO-2013 | 40 |
| B310-W | 2000 Series | 60 | 45 | 10 | 125 | 7 | 14 | 22 | 27 | 7 | JISB2401-P21 | 45 |
| | 3000 Series | | | | | | | | | | | |
| B410-W | 4000 Series | 60 | 45 | 10 | 125 | 7 | 14 | 22 | 37 | 7 | JISB2401-P21 | 55 |
| B810-W | 6000 Series | 70 | 50 | 15 | 150 | 9 | 14 | 27 | 37 | 8 | AS568-127 | 65 |
| | 8000 Series | | | | | | | | | | | |

C type bracket

- Model No.: B120/B220/B320/B420/B620/B820
- Attachment: BW



- Application

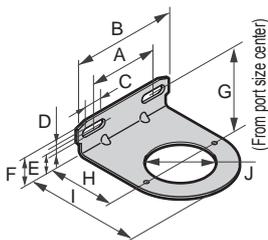


| Model no. | Applicable model | A | B | C | D | E | F | G | H | I | J | K | L |
|-----------|------------------|------|-----|-----|------|------|-----|----|-----|------|----|-----|-------|
| B120 | 1000 Series | 44 | 68 | 40 | t2.0 | 10 | 6.5 | 35 | 8.5 | 61.5 | 40 | 60 | ø19.5 |
| B220 | 2000 Series | 28 | 54 | 50 | t2.3 | 10 | 7 | 33 | 8 | 63 | 45 | 69 | 17.3 |
| B320 | 3000 Series | 34.5 | 67 | 63 | t2.3 | 16.5 | 7 | 45 | 9 | 75.5 | 45 | 69 | ø21.7 |
| B420 | 4000 Series | 55 | 84 | 80 | t2.3 | 14.0 | 7 | 45 | 9 | 75.5 | 55 | 79 | ø21.7 |
| B620 | 6000 Series | 68 | 104 | 90 | t2.3 | 16 | 9 | 54 | 11 | 97.5 | 60 | 97 | ø35 |
| B820 | 8000 Series | 68 | 104 | 100 | t2.3 | 16 | 9 | 50 | 11 | 93.5 | 65 | 102 | ø35 |

L type bracket

- Model No.: B130/B230/B330/B430
- Attachment: B3W

Loosen the mounting nut to remove the knob. After inserting L type bracket, fix the bracket by the mounting nut. Press the knob in manually after fixing. Refer to page 279 for the details.



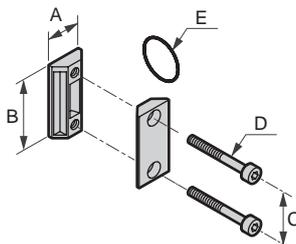
- Application



| Model no. | Applicable model | A | B | C | D | E | F | G | H | I | J | Other |
|-----------|----------------------------|------|----|------|-----|------|------|-----------|----|----|-------|--------------------------------------|
| B130 | 1000 Series | 44 | 68 | 10 | 6.5 | 16 | 24.5 | 45 | 40 | 59 | ø26.5 | |
| B230 | 2000 Series | 28 | 54 | 10 | 7 | 18 | 26 | 52 | 45 | 69 | 38 | |
| B330 | 3000 Series | 34.5 | 67 | 16.5 | 7 | 17.5 | 26 | 58 (63.5) | 45 | 76 | ø40 | Dimensions in () are for W3000/3100 |
| B430 | 4000 Series 6000 Series | 55 | 84 | 14 | 7 | 17.5 | 26 | 58 | 55 | 94 | ø47 | |

Joiner set

- Model No.: C1000-J100-W
C4000-J400-W
C8000-J800-W



- Application



| Model no. | Applicable model | A | B | C | D | E |
|--------------|---|----|----|----|------|---------------|
| C1000-J100-W | 1000 Series | 10 | 36 | 26 | M3.5 | JASO-2013 |
| C4000-J400-W | 2000 Series 3000 Series 4000 Series | 21 | 44 | 32 | M5 | JIS B2401-P21 |
| C8000-J800-W | 6000 Series 8000 Series | 26 | 65 | 50 | M6 | AS568-127 |

Refrigerating type dryer
 Desiccant type dryer
 High polymer membrane type dryer
 Air filter
 Auto, drain / others
 F.R.L. (Module unit)
 F.R.L. (Separate)
 Compact F.R.
 Precise regulator
 F.R.L. (Related products)
 Clean F.R.
 Electro pneumatic regulator
 Air booster
 Speed control valve
 Silencer
 Check valve / others
 Joint / tube
 Vacuum filter
 Vacuum regulator
 Suction plate
 Magnetic spring buffer
 Mechanical pressure SW
 Electronic pressure SW
 Contact / close contact cont. SW
 Air sensor
 Pressure SW for coolant
 Small flow sensor
 Small flow controller
 Flow sensor for air
 Flow sensor for water
 Total air system
 Total air system (Gamma)
 Ending

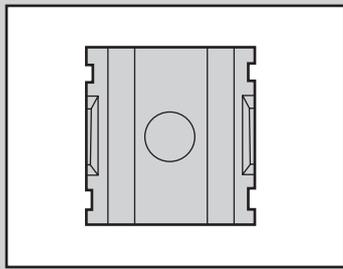
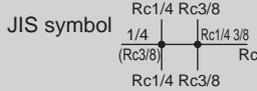
Standard series
 F.R.L. unit

Distributor standard white Series

D101/D401/D801/D300-W Series

Applicable for pipe branching.

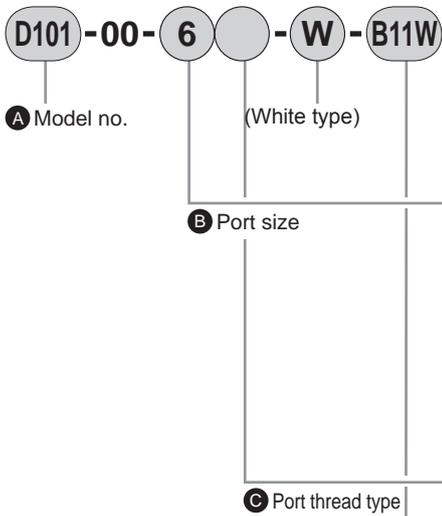
Port size: 1/8 to 1



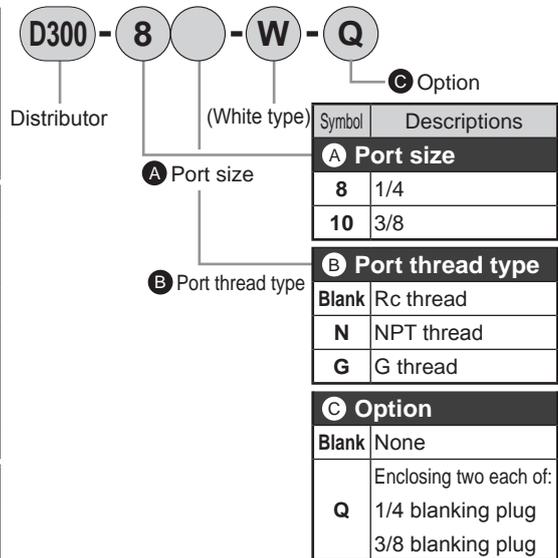
Specifications

| Descriptions | D101-00-W | D401-00-W | D801-00-W | D300-W |
|---------------------------|----------------|---------------|-----------|----------|
| Working fluid | Compressed air | | | |
| Max. working pressure MPa | 1.0 | | | |
| Withstanding pressure MPa | 1.5 | | | |
| No. of branch port | 1 | | | 4 |
| Port size Rc, NPT, G | 1/8, 1/4 | 1/4, 3/8, 1/2 | 3/4, 1 | 1/4, 3/8 |
| Working temperature °C | 5 to 60 | | | |
| Product weight kg | 0.045 | 0.13 | 0.35 | 0.26 |

How to order



| Symbol | Descriptions | | | |
|---------------------------|-------------------------|------|------|---|
| A Model no. | | | | |
| D101 | 1000 series | | | |
| D401 | 2000, 3000, 4000 series | | | |
| D801 | 6000, 8000 series | | | |
| B Port size | | | | |
| | D101 | D401 | D801 | |
| 6 | 1/8 | ● | | |
| 8 | 1/4 | ● | ● | |
| 10 | 3/8 | | ● | |
| 15 | 1/2 | | ● | |
| 20 | 3/4 | | | ● |
| 25 | 1 | | | ● |
| C Port thread type | | | | |
| Blank | Rc thread | | | |
| N | NPT thread | | | |
| G | G thread | | | |
| D T type bracket | | | | |
| Blank | None | ● | ● | ● |
| B11W | 1000 series | ● | | |
| B31W series | 2000 series | | ● | |
| | 3000 series | | ● | |
| B41W | 4000 series | | ● | |
| B81W series | 6000 series | | | ● |
| | 8000 series | | | ● |



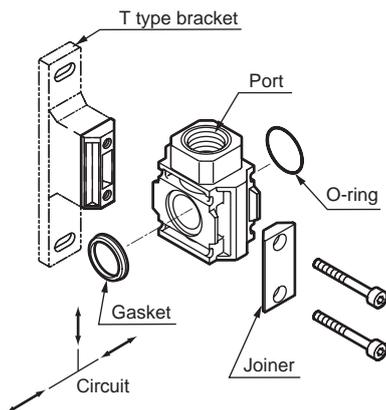
Note on model no. selection

- Note 1: The joiner set (joiner, bolt, O-ring) and one gasket are enclosed as a standard.
- Note 2: Contact CKD for 2 way branch.
- Note 3: D401-W can be connected to both 3000-W Series and 4000-W Series.

Note on model no. selection

- Note 1: When using with C3000-W, C4000-W, a joiner set C4000-J400-W, or T type bracket set B310-W or B410-W is required to connect.
- Note 2: Joiner set C4000-J400-W or T type bracket set should be ordered separately. (Refer to page 425)

Assembly method (D101-00-W, D401-00-W, D801-00-W)



- Note 1: When installing at the primary side, insert an O-ring, while installing at the secondary side, insert a gasket.
- Note 2: When inserting O-ring and gasket to assemble, O-ring and gasket must not be folded.

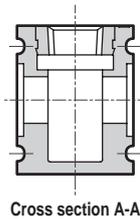
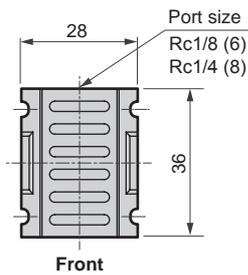
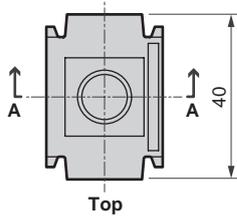
(Application (D101-00-W/D401-00-W/D801-00-W))



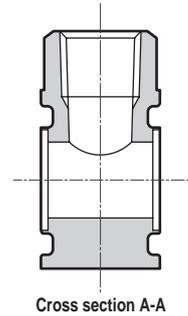
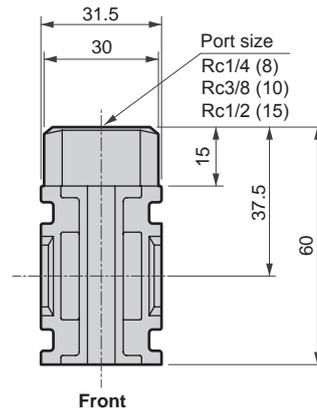
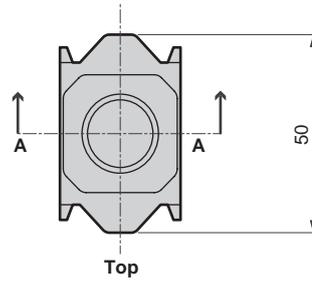
Dimensions



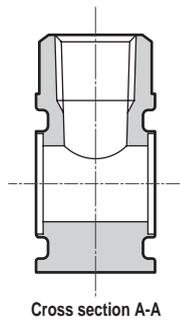
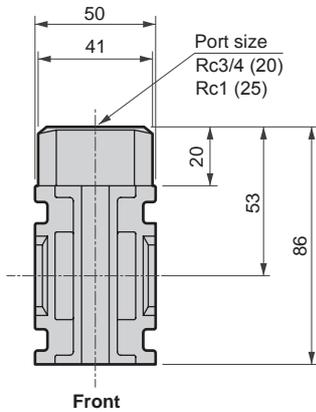
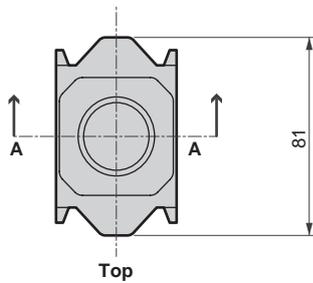
● D101-00-W



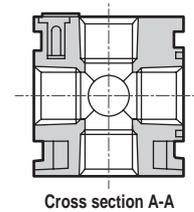
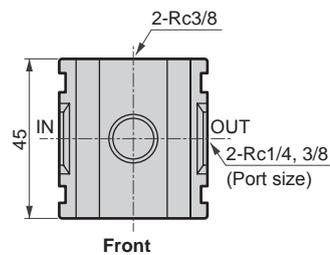
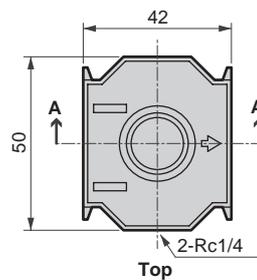
● D401-00-W



● D801-00-W



● D300-W



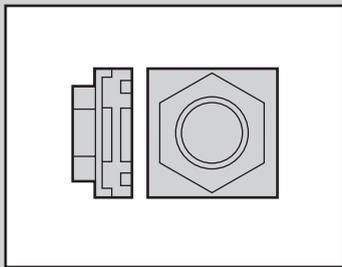
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Standard series
F.R.L. unit

Piping adaptor standard white Series

A100/A400/A800-W Series

Port size: 1/8 to 1

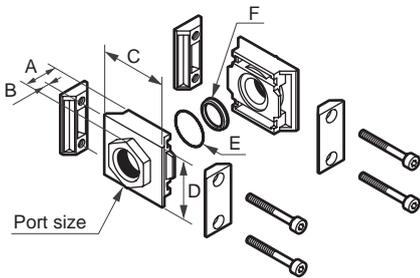


Dimensions and Applications

Piping adaptor set

- Model No.: A100-6, 8, 10-W
A400-8, 10, 15, 20-W
A800-20, 25, 32-W

● Application



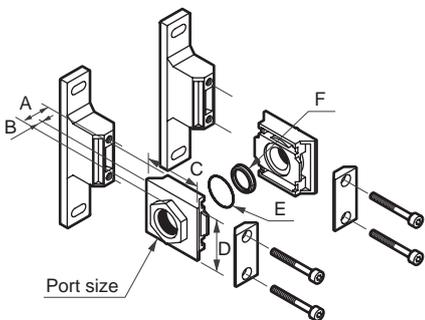
| Model no. | Port size | Applicable model | A | B | C | D | E (O-ring) | F (gasket) | Other |
|------------|-----------|--|--------------------|-------------------|----|----|--------------------------|------------|---|
| A100-6*-W | 1/8 | 1000 Series | 21.5 | 13.5 | 40 | 36 | JASO-2013 1 pc. | 1 pc. | - |
| A100-8*-W | 1/4 | | | | | | | | |
| A100-10*-W | 3/8 | | | | | | | | |
| A400-8*-W | 1/4 | 2000 3000 Series ----- 4000 Series | 20 (25) {34} | 6 (11) {20} | 50 | 45 | JISB2401 P21 1 pc. | 1 pc. | Numbers in () is for 3/4. Number in { } is for 1. |
| A400-10*-W | 3/8 | | | | | | | | |
| A400-15*-W | 1/2 | | | | | | | | |
| A400-20*-W | 3/4 | | | | | | | | |
| A400-25*-W | 1 | | | | | | | | |
| A800-20*-W | 3/4 | 6000 8000 Series | 35 (38) | 15 (18) | 81 | 66 | AS568-127 1 pc. | 1 pc. | Numbers in () is for 1 1/4. |
| A800-25*-W | 1 | | | | | | | | |
| A800-32*-W | 1 1/4 | | | | | | | | |

*Blank: Rc thread / N: NPT thread / G: G thread

Piping adaptor set

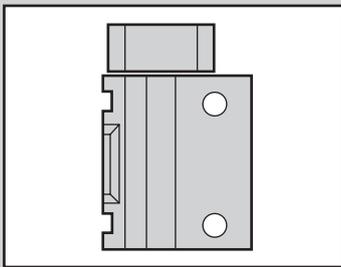
- Model No.: A100-6, 8, 10-W-B11W
A400-8, 10, 15-W-B31W
A400-8, 10, 15, 20-W-B41W
A800-20, 25, 32-W-B81W
(with T type bracket set)

● Application



| Model no. | Port size | Applicable model | A | B | C | D | E (O-ring) | F (gasket) | Other |
|-----------------|-----------|---------------------|--------------------|-------------------|----|----|--------------------------|------------|---|
| A100-6*-W-B11W | 1/8 | 1000 Series | 21.5 | 13.5 | 40 | 36 | JASO-2013 1 pc. | 1 pc. | - |
| A100-8*-W-B11W | 1/4 | | | | | | | | |
| A100-10*-W-B11W | 3/8 | | | | | | | | |
| A400-8*-W-B31W | 1/4 | 2000 3000 Series | 20 | 6 | 50 | 45 | JISB2401 P21 1 pc. | 1 pc. | |
| A400-10*-W-B31W | 3/8 | | | | | | | | |
| A400-15*-W-B31W | 1/2 | | | | | | | | |
| A400-8*-W-B41W | 1/4 | | | | | | | | |
| A400-10*-W-B41W | 3/8 | | | | | | | | |
| A400-15*-W-B41W | 1/2 | 4000 Series | 20 (25) {34} | 6 (11) {20} | 50 | 45 | JISB2401 P21 1 pc. | 1 pc. | Numbers in () is for 3/4. Number in { } is for 1. |
| A400-20*-W-B41W | 3/4 | | | | | | | | |
| A400-25*-W-B41W | 1 | | | | | | | | |
| A800-20*-W-B81W | 3/4 | 6000 8000 Series | 35 (38) | 15 (18) | 81 | 66 | AS568-127 1 pc. | 1 pc. | Numbers in () is for 1 1/4. |
| A800-25*-W-B81W | 1 | | | | | | | | |
| A800-32*-W-B81W | 1 1/4 | | | | | | | | |

*Blank: Rc thread / N: NPT thread / G: G thread



L type piping adaptor standard white Series

A101/A401/A801-W Series

Port size: 1/8 to 1



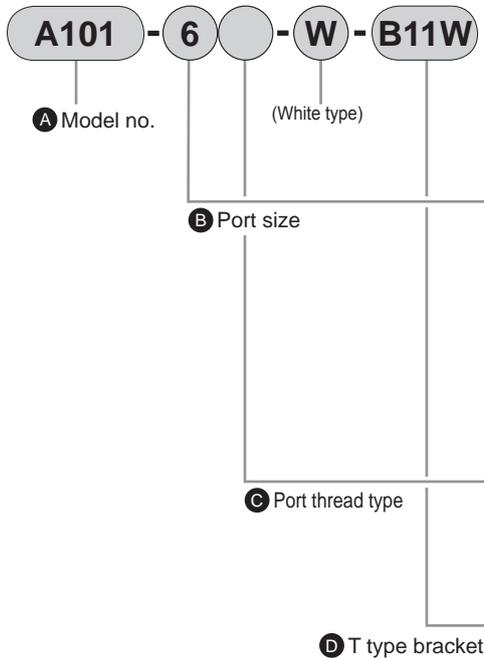
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Specifications

| Descriptions | A101-W | A401-W Note 1 | A801-W |
|---------------------------|----------------|---------------|--------|
| Working fluid | Compressed air | | |
| Max. working pressure MPa | 1.0 | | |
| Withstanding pressure MPa | 1.5 | | |
| Port size Rc, NPT, G | 1/8, 1/4 | 1/4, 3/8, 1/2 | 3/4, 1 |
| Working temperature °C | 5 to 60 | | |
| Product weight kg | 0.045 | 0.13 | 0.4 |

Note 1: A401-W can be connected to both 3000-W and 4000-W Series.

How to order



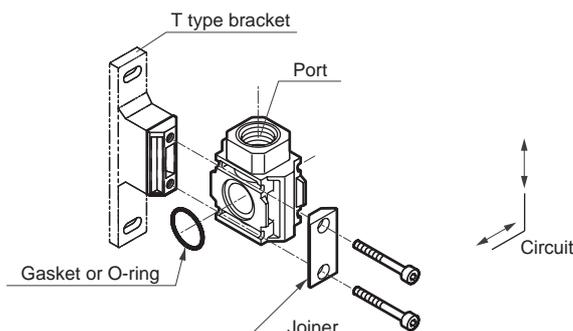
| Symbol | Descriptions | | | |
|--------------------------------|----------------------------|------|------|------|
| A Model no. | | | | |
| A101 | L type piping adaptor | | | |
| A401 | L type piping adaptor | | | |
| A801 | L type piping adaptor | | | |
| B Port size | | | | |
| | | A101 | A401 | A801 |
| 6 | 1/8 | ● | | |
| 8 | 1/4 | ● | ● | |
| 10 | 3/8 | | ● | |
| 15 | 1/2 | | ● | |
| 20 | 3/4 | | | ● |
| 25 | 1 | | | ● |
| C Port thread type | | | | |
| Blank | Rc thread | | | |
| N | NPT thread | | | |
| G | G thread | | | |
| D T type bracket Note 1 | | | | |
| Blank | None | ● | ● | ● |
| B11W | 1000 series | ● | | |
| B31W | 2000 series 3000 series | | ● | |
| B41W | 4000 series | | ● | |
| B81W | 6000 series 8000 series | | | ● |

- Applicable model
- A101-6/8-W: 1000-W Series
- A401-8/10/15-W: 2000/3000/4000-W Series
- A801-20, 25-W: 6000, 8000-W Series

⚠ Note on model no. selection

Note 1: The joiner set (joiner, bolt, O-ring) and one gasket are enclosed as a standard.

L type piping adaptor



● Application



Note: Insert the O-ring when mounting on the primary side for the air flow, and insert the gasket when mounting on the secondary side.

Note: Refer to the following page on dimensions

Standard series
F.R.L. unit

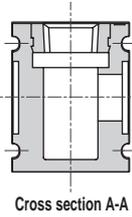
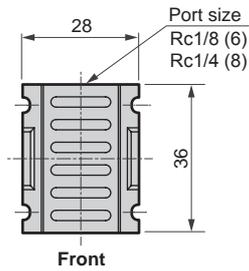
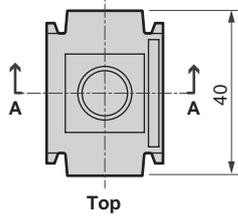
Piping adaptor

Dimensions

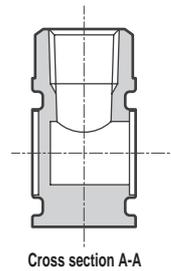
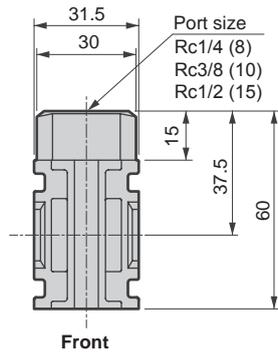
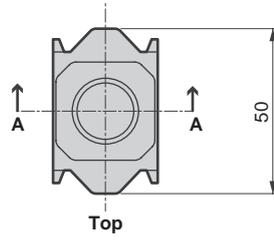


| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

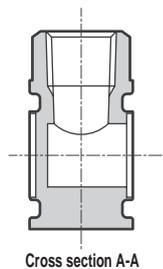
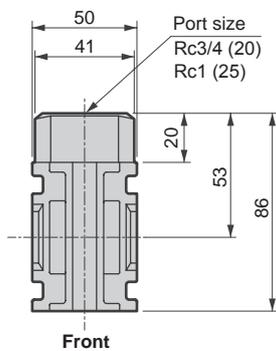
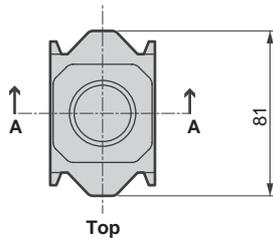
● A101-W



● A401-W



● A801-W



SELEX F.R.L. Modular type

Medium pressure Series

■ Components for air preparation / pressure adjustment / F.R.L. unit



C O N T E N T S

| | |
|------------------------------|------------|
| Product introduction | 270 |
| Series variation | 250 to 265 |
| ▲ Safety precautions | 276 |
| Air filter | |
| ● Air filter (FM*000-W) | 484 |
| ● Oil mist filter (MM*000-W) | 490 |
| Bracket / joiner (B/J) | 425 |
| Distributor (D*01-00) | 426 |
| Piping adaptor (A***) | 428 |
| Regulator | |
| ● Regulator (RM*000-W) | 496 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Medium pressure Series
F.R.L. Unit



Air filter medium pressure type standard white Series

FM3000-W/FM4000-W/FM6000-W/FM8000-W Series

F3000 to 8000 Series medium pressure specifications

Port size: 1/4 to 1

JIS symbol



Specifications

| Model no. | FM3000-W | FM4000-W | FM6000-W | FM8000-W |
|--------------------------------|-------------------------------------|---------------|----------|-------------|
| Appearance | | | | |
| Working fluid | Compressed air | | | |
| Max. working pressure MPa | 1.6 (Notes 1, 2) | | | |
| Withstanding pressure MPa | 2.4 (Note 2) | | | |
| Ambient temperature °C | -5 to 60 (no freezing) (Notes 1, 2) | | | |
| Fluid temperature °C | 5 to 60 (Notes 1, 2) | | | |
| Filtration rating μm | 5 or 0.3 | | | |
| Drain capacity cm ³ | 45 | 80 | 80 | 80 (Note 3) |
| Port size Rc, NPT, G | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4, 1 | 3/4, 1 |
| Product weight kg | 0.35 | 0.55 | 1.0 | 1.26 |

Note 1: When "F" with an automatic drain is selected, minimum operation pressure must be 0.1 MPa.

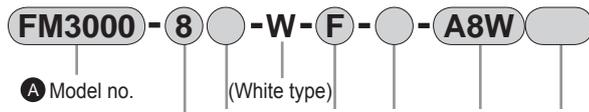
Air is purged with initial drainage until pressure reaches 0.1 MPa. The maximum working pressure is 1.5MPa, the guaranteed withstand pressure is 2.25MPa, the ambient temperature is -5 to 45°C, and the fluid temperature is 5 to 45°C.

Note 2: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15MPa.

The maximum working pressure is 1.5MPa, the guaranteed withstand pressure is 2.25MPa, the ambient temperature is -5 to 45°C, and the fluid temperature is 5 to 45°C.

Note 3: Drainage accumulates up to 170 cm³ only with the manual drain cock.

How to order



*Refer to page 274 for the explanation of the option.

| A Model no. | | | |
|-------------|--------|--------|--------|
| FM3000 | FM4000 | FM6000 | FM8000 |

| Symbol | Descriptions | FM3000 | FM4000 | FM6000 | FM8000 | |
|---------------------------------|----------------------------|---|--------|--------|--------|---|
| B Port size | | | | | | |
| 8 | 1/4 | ● | ● | | | |
| 10 | 3/8 | ● | ● | | | |
| 15 | 1/2 | | ● | | | |
| 20 | 3/4 | | | ● | ● | |
| 25 | 1 | | | ● | ● | |
| C Port thread type | | | | | | |
| Note 1 | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | |
| D Option | | | | | | |
| Note 2 | | | | | | |
| Drainage Note 3, Note 4 | Blank | With manual drain cock | ● | ● | ● | ● |
| | F | NO type automatic drain (exhaust without pressurized) Drain port Rc1/8 Max. working pressure 1.5 MPa, Max. working temperature 45°C | ● | ● | ● | ● |
| | F1 | NC type automatic drain (no exhaust without pressurized) Drain port Rc1/8 Max. working pressure 1.5 MPa, Max. working temperature 45°C | ● | ● | ● | ● |
| Bowl material | Blank | Metal bowl | ● | ● | ● | ● |
| Element | Blank | 5μm | ● | ● | ● | ● |
| | Y | 0.3μm | ● | ● | ● | ● |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● |
| | Q | With differential pressure detection port (Rc1/4) | | | ● | ● |
| Flow direction | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● |
| E Display unit | | | | | | |
| Blank | MPa display, Rc thread | ● | ● | ● | ● | |
| J1 | MPa display, NPT/G thread | ● | ● | ● | ● | |
| F Attachment (attached) | | | | | | |
| Note 5, Note 6 page 428 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | |
| A8*W | Rc1/4 piping adaptor set | ● | ● | | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | | | |
| A15*W | Rc1/2 piping adaptor set | ● | ● | | | |
| A20*W | Rc3/4 piping adaptor set | | ● | ● | ● | |
| A25*W | Rc1 piping adaptor set | | | ● | ● | |
| A32*W | Rc1 1/4 piping adaptor set | | | ● | ● | |
| *Adaptor screw type | | | | | | |
| Blank | Rc thread | ● | ● | ● | ● | |
| N | NPT thread | ● | ● | ● | ● | |
| G | G thread | ● | ● | ● | ● | |
| G Bracket (attached) | | | | | | |
| page 425 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | |
| BW | C type bracket | ● | ● | ● | ● | |

⚠ Note on model no. selection

- Note 1: NPT and G threads are available for IN, OUT, and drain ports.
- Note 2: Select options based on drainage, bowl material, element, and differential pressure detection. When selecting options for several items, list options in order from the top.
- Note 3: Refer to page 276 for the automatic drain use conditions.
- Note 4: Drain exhaust "F" and "F1" of FM8000-W are large exhaust.
- Note 5: The piping adaptor set and C bracket cannot be used together.
- Note 6: The joiner set is enclosed with the piping adaptor set.

G Bracket (attached)

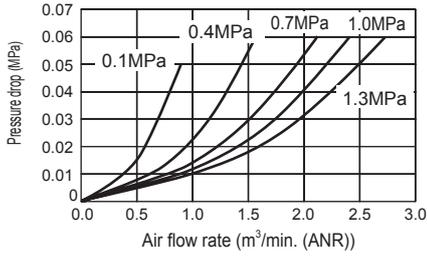
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Medium pressure Series
F.R.L Unit

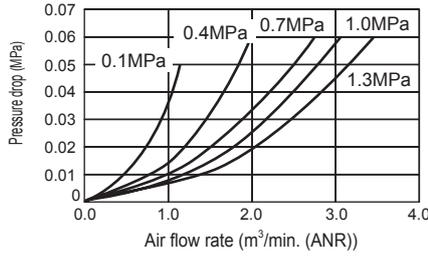
Air Filter Series

Flow characteristic

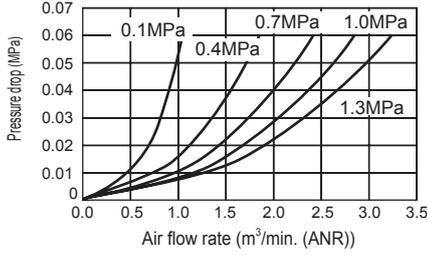
● FM3000-8-W



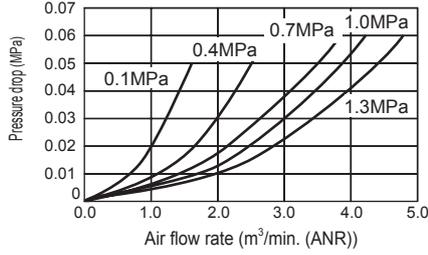
● FM3000-10-W



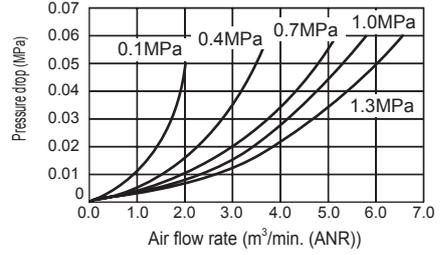
● FM4000-8-W



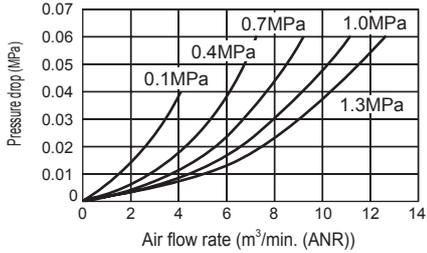
● FM4000-10-W



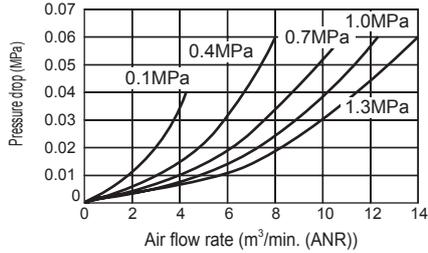
● FM4000-15-W



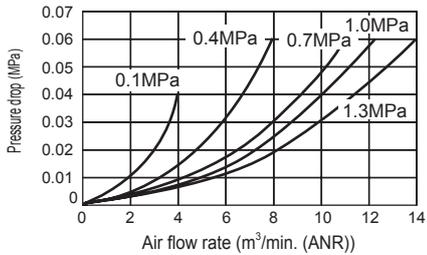
● FM6000-20-W



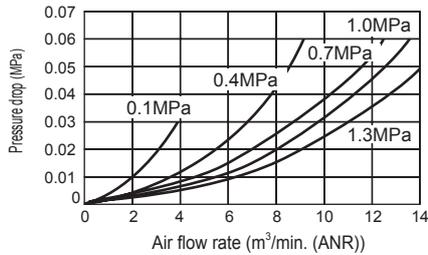
● FM6000-25-W



● FM8000-20-W



● FM8000-25-W

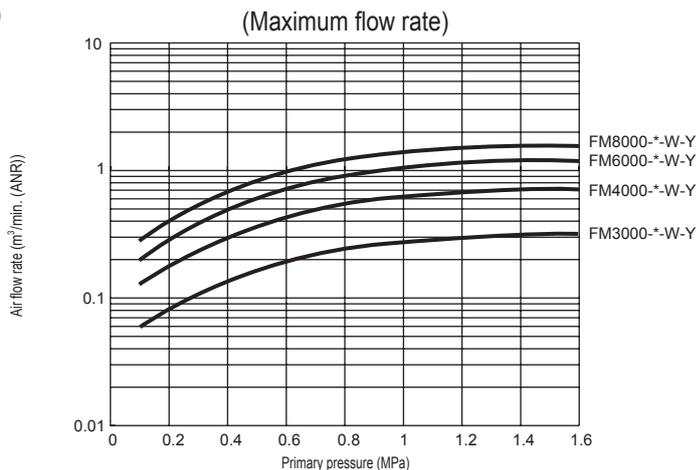


FM3000

● FM4000-*-W-Y(0.3µm element)

FM6000

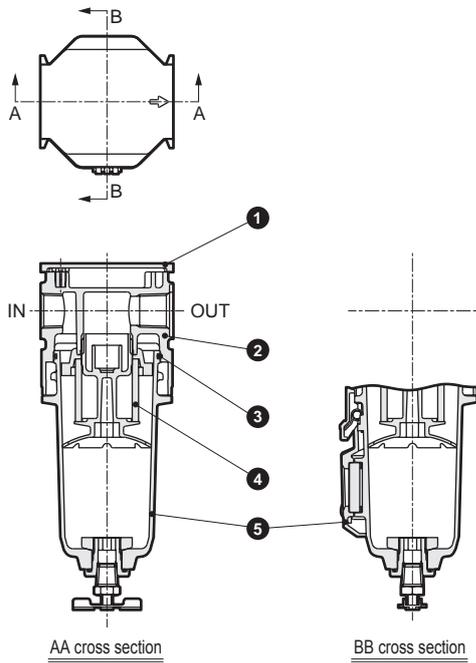
FM8000



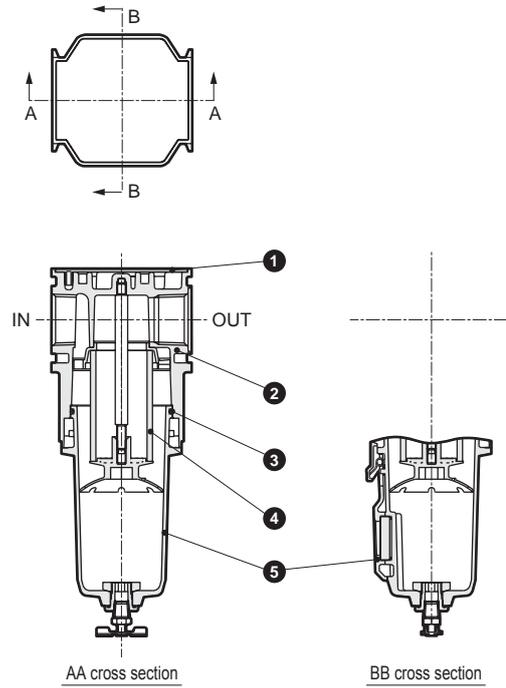
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Internal structure and parts list

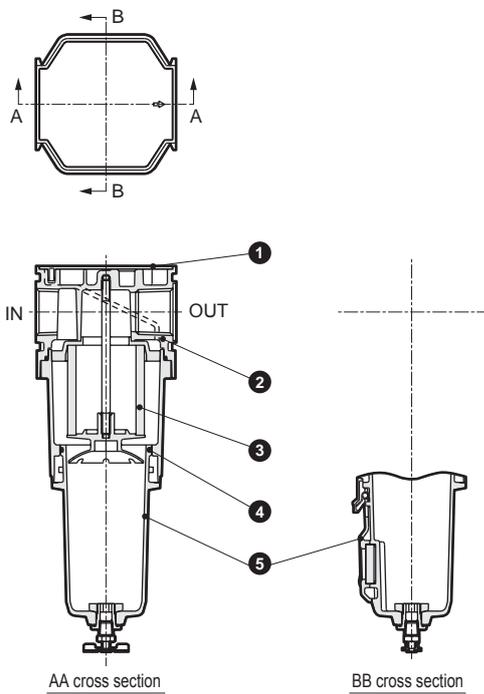
● FM3000-W/FM4000-W



● FM6000-W



● FM8000-W



| No. | Parts name | Material |
|-----|-----------------------|--|
| (1) | Plate cover | ABS resin |
| (2) | Body | Aluminum alloy die-casting |
| (3) | O-ring | Special nitrile rubber |
| (4) | Element (5 μ m) | Polypropylene |
| | Element (0.3 μ m) | - |
| (5) | Metal bowl assembly | Aluminum alloy die-casting, brass, glass, nitrile rubber, steel, stainless steel |

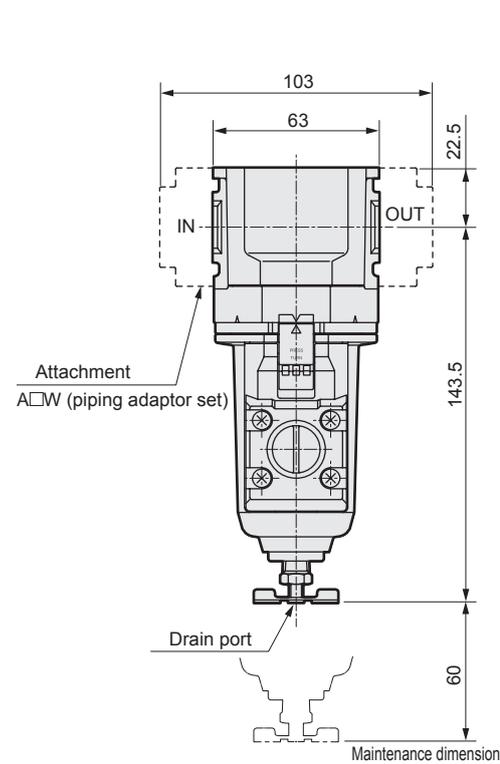
Note 1: Refer to pages 358 to 359 for repair parts element, repair kit or bowl assembly.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

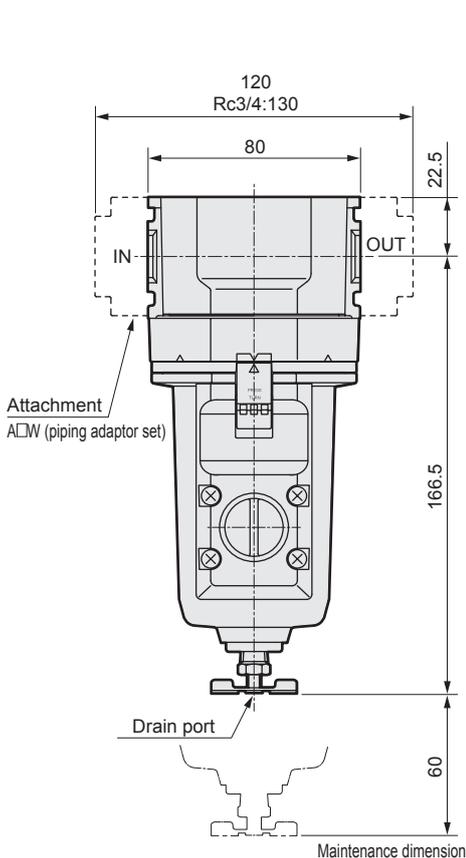
Air Filter Series

Dimensions

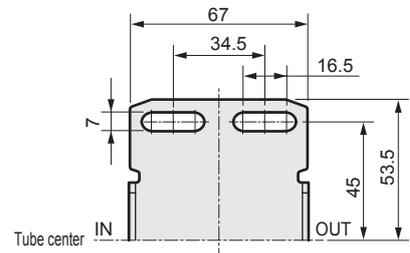
● FM3000-W



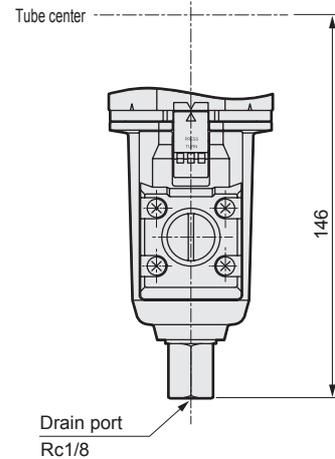
● FM4000-W



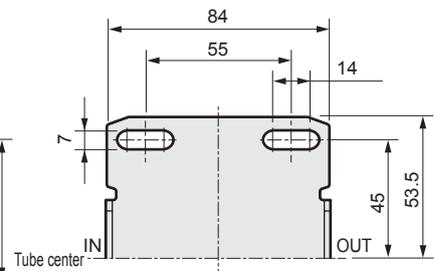
- Attachment
C type bracket (-BW)
Part model no.: B320



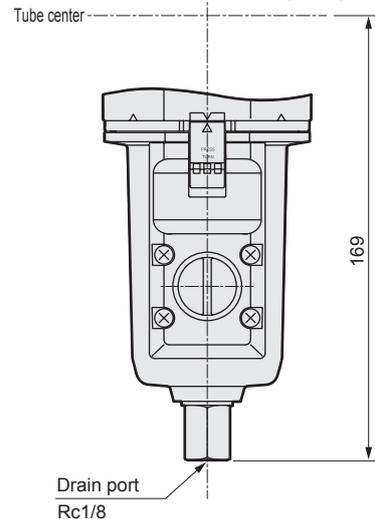
- Option dimensions
Automatic drain (F, F1)



- Attachment
C type bracket (-BW)
Part model no.: B420



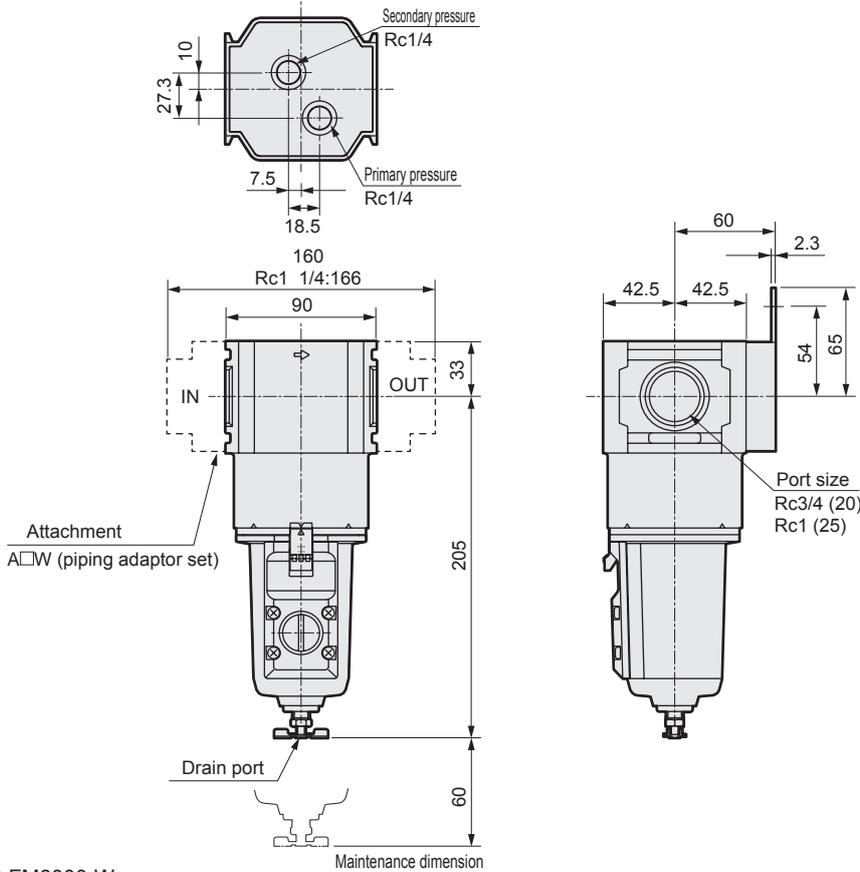
- Option dimensions
Automatic drain (F, F1)



Dimensions

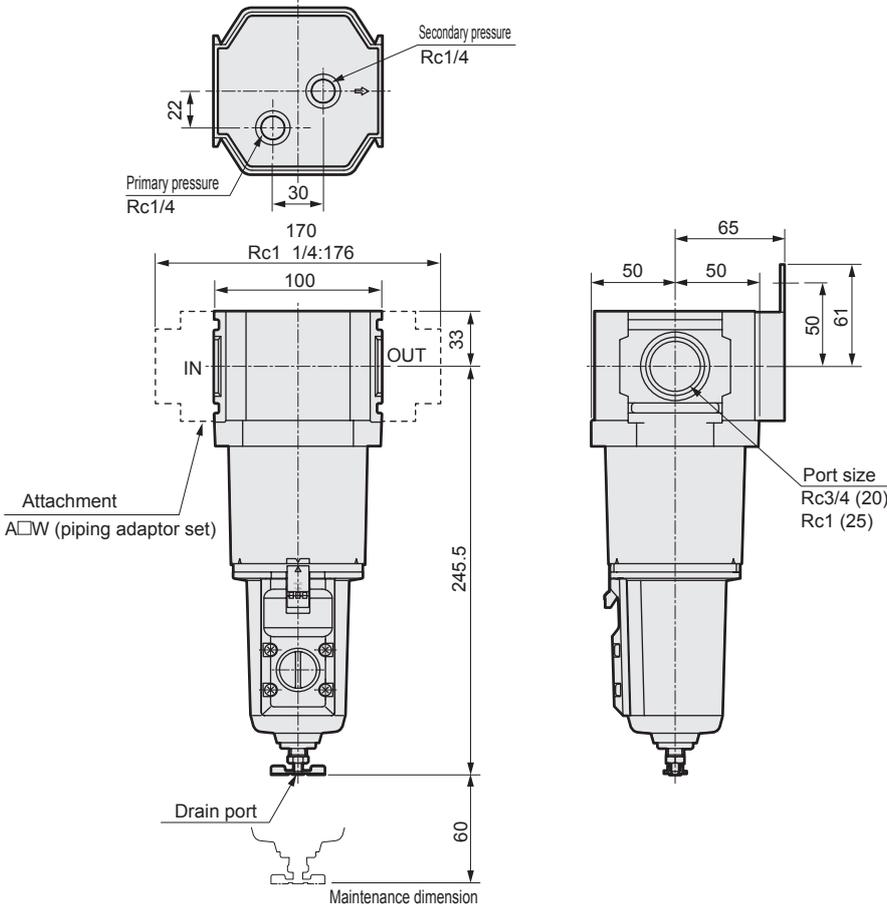
● FM6000-W

- Option dimensions
With differential pressure detection port (Q)

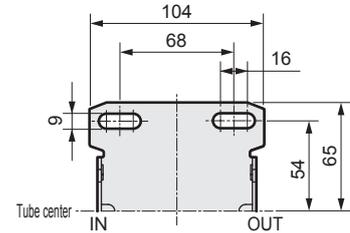


● FM8000-W

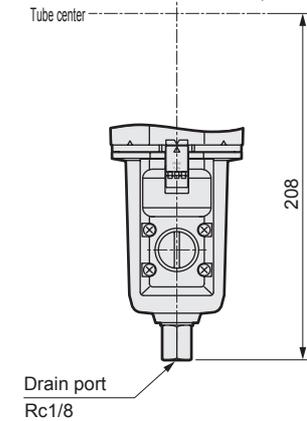
- Option dimensions
With differential pressure detection port (Q)



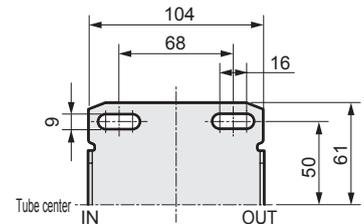
- Attachment
C type bracket (-BW)
Part model no.: B620



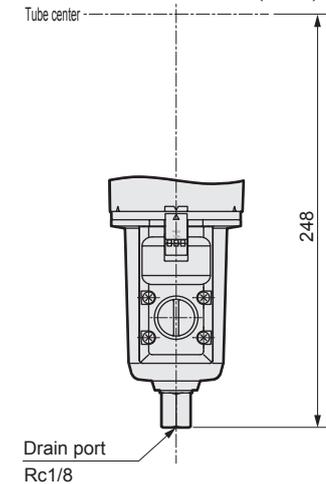
- Option dimensions
Automatic drain (F, F1)



- Attachment
C type bracket (-BW)
Part model no.: B820

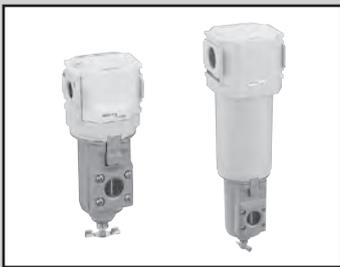


- Option dimensions
Automatic drain (F, F1)



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Medium pressure Series
F.R.L. Unit



Oil mist filter medium pressure type

MM3000-W/MM4000-W/MM6000-W/MM8000-W Series

M3000 to 8000 Series medium pressure specifications

Port size: 1/4 to 1

JIS symbol



Specifications

| Model no. | MM3000-W | MM4000-W | MM6000-W | MM8000-W |
|--------------------------------|-------------------|---------------|----------|----------|
| Appearance | | | | |
| Working fluid | Compressed air | | | |
| Max. working pressure MPa | 0.1 to 1.6 Note 2 | | | |
| Withstanding pressure MPa | 2.4 Note 2 | | | |
| Drain capacity cm ³ | 45 | 80 | 80 | 804 |
| Port size Rc, NPT, G | 1/4, 3/8 | 1/4, 3/8, 1/2 | 3/4, 1 | 3/4, 1 |
| Product weight kg | 0.35 | 0.55 | 1.0 | 1.48 |

| Mantle option name | Blank (M type) | S (S type) | X (X type) |
|--|--|--------------------|--------------------------------------|
| Treating flow rate | MM3000-*-W 490 | 610 | 610 |
| Note 1 <i>l</i> /min. (ANR) | MM4000-*-W 1130 | 1370 | 1370 |
| Primary pressure 1.4 MPa | MM6000-*-W 1740 | 1920 | 1920 |
| Pressure drop 0.01 MPa | MM8000-*-W 3560 | 3980 | 3980 |
| Ambient temperature °C | -5 to 60 (no freezing) Note 2 | | -5 to 30 (no freezing) Note 2 |
| Fluid temperature °C | 5 - 60 Note 2 | | 5 to 30 |
| Filtration rating μm | 0.01(nominal) | 0.3 | Suction by activated charcoal Note 3 |
| Secondary side oil concentration mg/m ³ | 0.01 or less Note 4, Note 5 | 0.5 or less Note 4 | 0.003 or less Note 4, Note 6 |
| Mantle (element) change | One year (6000 hours) or pressure drop 0.1 MPa | | - Note 7 |

Note 1: Use within the maximum processing flow rate.

If the maximum processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil or drainage, etc., could splatter to the secondary side and result in faults at the terminal.

Note 2: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15 MPa. The maximum working pressure is 1.5MPa, the guaranteed withstand pressure is 2.25MPa, the ambient temperature is -5 to 45°C, and the fluid temperature is 5 to 45°C.

Note 3: Activated charcoal particles could flow to the secondary side, so install an air filter (F Series) or oil mist filter (M Series M type or S type) on the secondary side.

Note 4: When primary side oil concentration 30mg/m³, inlet air temperature 21°C.

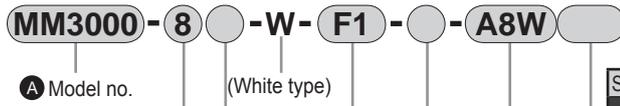
Note 5: Install an oil mist filter (S type) as a prefilter on the primary side to prevent early clogging.

Note 6: When an oil mist filter (M Series M type) is installed on the primary side.

Note 7: The mantle (element) replacement period differs with odor density in compressed air and thus cannot be clearly indicated.

Consider the total period from the initial installation to when the smell of oil can be confirmed as the effective deodorizing period, and regularly replace the mantle (element). Keep the primary air temperature at 30°C or less. The deodorizing effect will drop if temperature is high, so provide heat dissipation measures.

How to order



*Refer to page 274 for the explanation of the option.

A Model no.

| Model no. | MM3000 | MM4000 | MM6000 | MM8000 |
|----------------------------------|--------|--------|--------|--------|
| Refrigerating type dryer | | | | |
| Desiccant type dryer | | | | |
| High polymer membrane type dryer | | | | |
| Air filter | | | | |
| Auto, drain / others | | | | |
| F.R.L. (Module unit) | | | | |
| F.R.L. (Separate) | | | | |
| Compact F.R. | | | | |

| Symbol | Descriptions | MM3000 | MM4000 | MM6000 | MM8000 |
|--------------------|--------------|--------|--------|--------|--------|
| B Port size | | | | | |
| 8 | 1/4 | ● | ● | | |
| 10 | 3/8 | ● | ● | | |
| 15 | 1/2 | | ● | | |
| 20 | 3/4 | | | ● | ● |
| 25 | 1 | | | ● | ● |

| C Port thread type | | Note 1 | | | |
|--------------------|------------|--------|---|---|---|
| Blank | Rc thread | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● |

| D Option | | Note 2 | | | | |
|---------------------------------|-------|---|---|---|---|---|
| Drainage Note 3, Note 4 | Blank | With manual drain cock | ● | ● | ● | ● |
| | F1 | NC type automatic drain (no exhaust without pressurized) Drain port Rc1/8 Max. working pressure 1.5 MPa, Max. working temperature 45°C | ● | ● | ● | ● |
| | Blank | Metal bowl | ● | ● | ● | ● |
| Bowl material | Blank | M type (nominal 0.01µm; remaining oil 0.01mg/m ³) | ● | ● | ● | ● |
| Element | S | S type (0.3µm; remaining oil 0.5mg/m ³) | ● | ● | ● | ● |
| | X | X type (deodorization; remaining oil 0.003mg/m ³) Note 5 | ● | ● | ● | ● |
| Differential pressure detection | Blank | Without differential pressure detection port | ● | ● | ● | ● |
| | Q | With differential pressure detection port (Rc1/4) | | | ● | ● |
| Flow direction | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● |

| E Display unit | | | | | |
|----------------|---------------------------|---|---|---|---|
| Blank | MPa display, Rc thread | ● | ● | ● | ● |
| J1 | MPa display, NPT/G thread | ● | ● | ● | ● |

| F Attachment (attached) | | Note 6, Note 7 page 428 | | | |
|-------------------------|----------------------------|-------------------------|---|---|---|
| Blank | Not attached | ● | ● | ● | ● |
| A8*W | Rc1/4 piping adaptor set | ● | ● | | |
| A10*W | Rc3/8 piping adaptor set | ● | ● | | |
| A15*W | Rc1/2 piping adaptor set | ● | ● | | |
| A20*W | Rc3/4 piping adaptor set | | ● | ● | ● |
| A25*W | Rc1 piping adaptor set | | | ● | ● |
| A32*W | Rc1 1/4 piping adaptor set | | | ● | ● |

| *Adaptor screw type | | | | | |
|---------------------|------------|---|---|---|---|
| Blank | Rc thread | ● | ● | ● | ● |
| N | NPT thread | ● | ● | ● | ● |
| G | G thread | ● | ● | ● | ● |

| G Bracket (attached) | | page 425 | | | |
|----------------------|----------------|----------|---|---|---|
| Blank | Not attached | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● |

⚠ Note on model no. selection

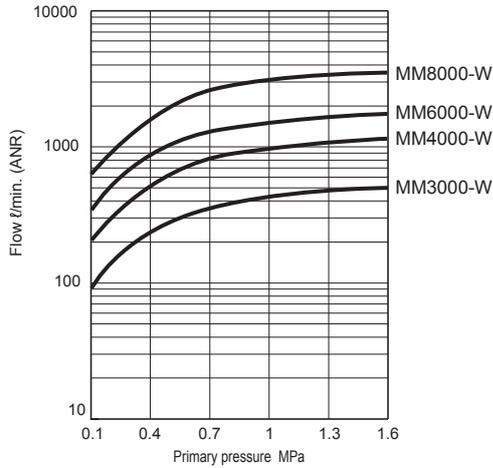
- Note 1: NPT and G threads are available for IN, OUT, and drain ports.
- Note 2: Select options based on drainage, bowl material, element, and differential pressure detection. When selecting options for several items, list options in order from the top.
- Note 3: NO type automatic drain is not selective.
- Note 4: Refer to page 276 for the automatic drain use conditions.
- Note 5: Combination with option F1 is not possible.
- Note 6: The piping adaptor set and C type bracket cannot be used together.
- Note 7: The joiner set is enclosed with the piping adaptor set.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

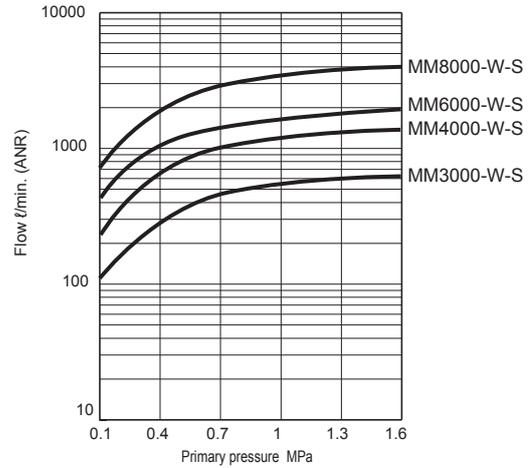
Oil Mist Filter Series

Flow characteristic (max. flow rate)

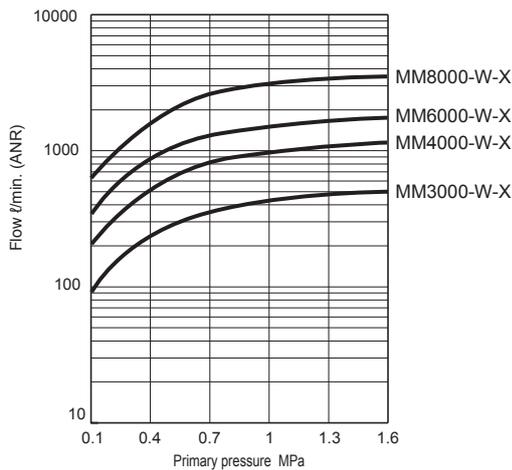
● MM*000-W



● MM*000-W-S



● MM*000-W-X



Oil mist filter: Using optional mantle

Major recommended circuit

◆ S type



Applications

- General industrial air
- Air tool
 - air drill, air screw driver
 - air grinder
 - Labor saving device and components
 - Pneumatic jigs and tools
 - Air chuck
 - Air vice
 - Precision part cleaning air blow

◆ M type



Oil free air

- Instrumentation
- Measurement
- Logic control movable element, pure fluid element
- Luxury painting
- Precise industry

◆ X type



Deodorization air

- Food industry
- Pharmaceutical industry
- Agitation
- Transportation
- Dry
- Package
- Air for brewing

Option symbol of mantle and shape

| Option symbol | Appearance |
|----------------|---|
| Blank (M type) | End plate Black Plastic form Red |
| S (S type) | End plate Green Plastic form Red |
| X (X type) | End plate Black Punching metal |

Note: Changes for product upgrades may be made without prior notice.
When placing an order, confirm the option symbol for the part model given here.

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

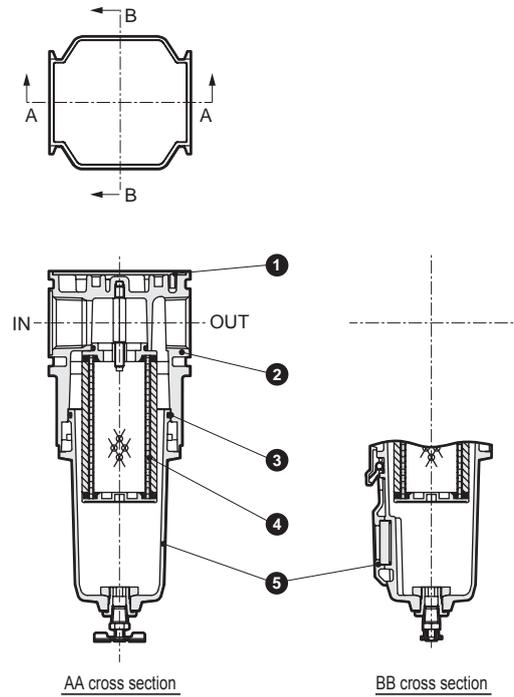
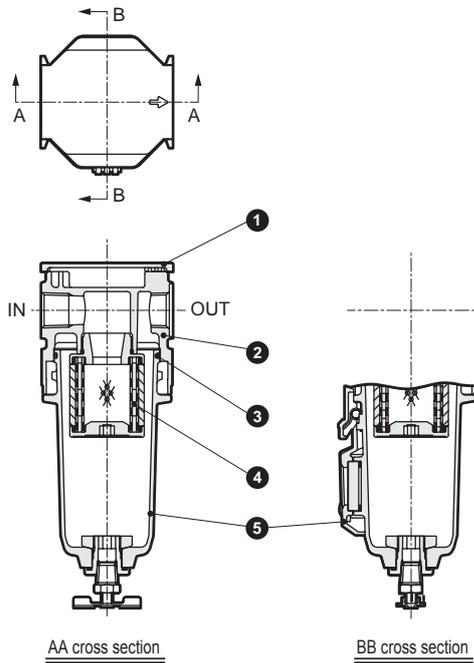
Oil Mist Filter Series

Internal structure and parts list

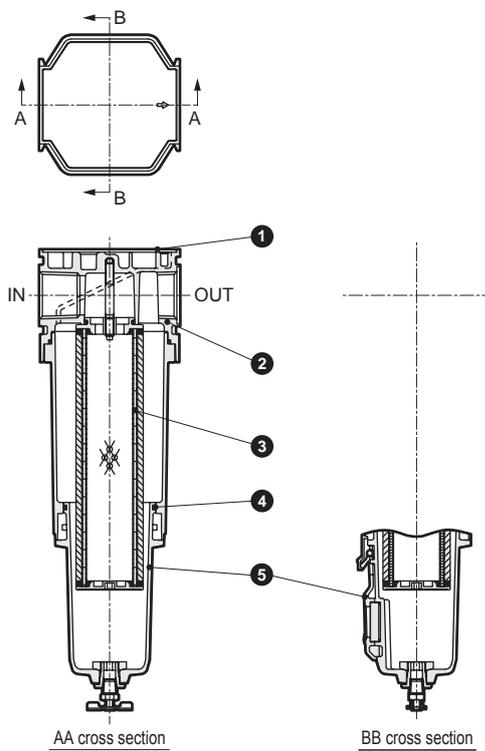
Internal structure and parts list

● MM3000-W/MM4000-W

● MM6000-W



● MM8000-W



| No. | Parts name | Material |
|-----|---------------------|--|
| (1) | Plate cover | ABS resin |
| (2) | Body | Aluminum alloy die-casting |
| (3) | O ring | Special nitrile rubber |
| (4) | Mantle assembly | - |
| (5) | Metal bowl assembly | Aluminum alloy die-casting, brass, glass, nitrile rubber, steel, stainless steel |

Note 1: Repair mantle and repair kit are common for M*000-W. Refer to repair parts on page 367.

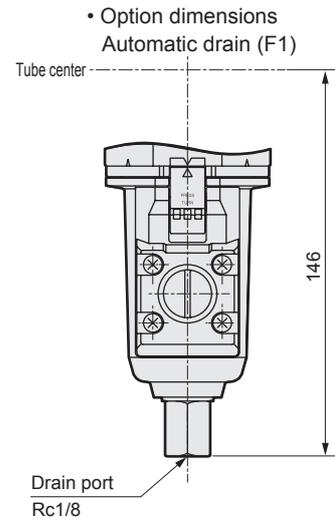
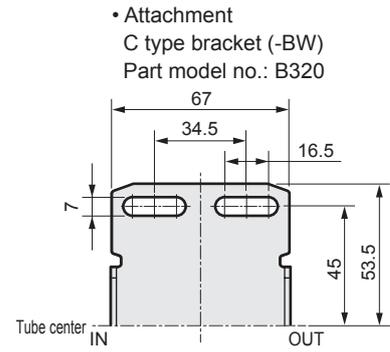
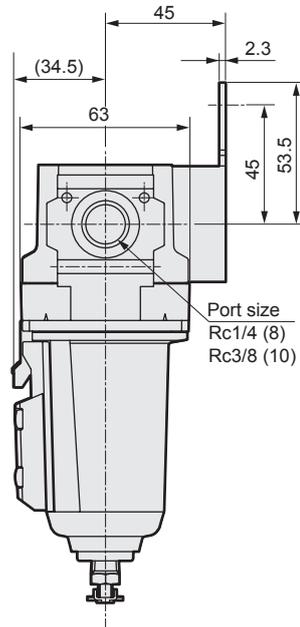
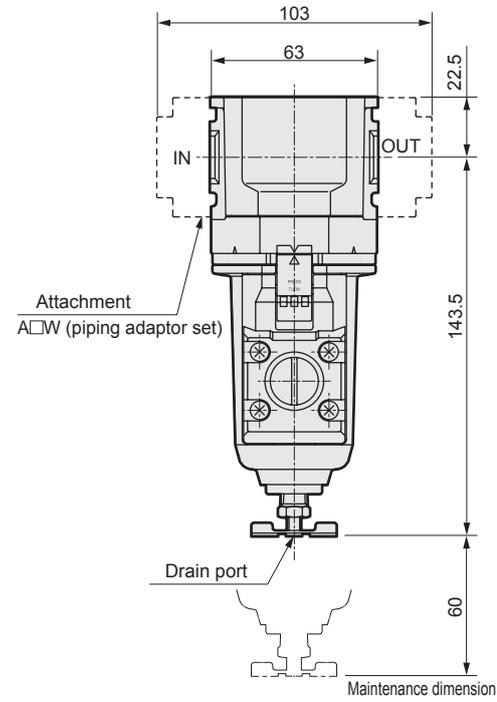
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto, drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Medium pressure Series
F.R.L Unit

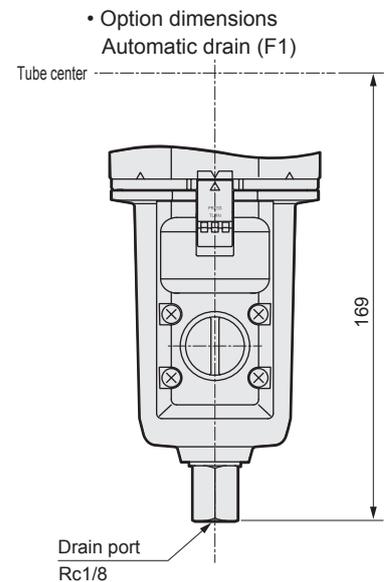
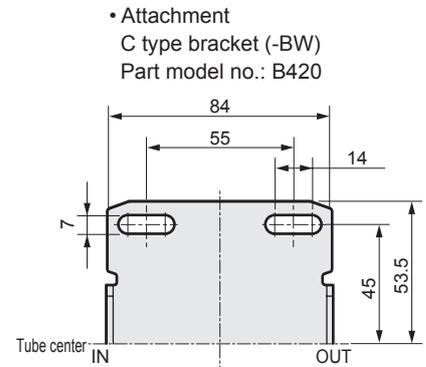
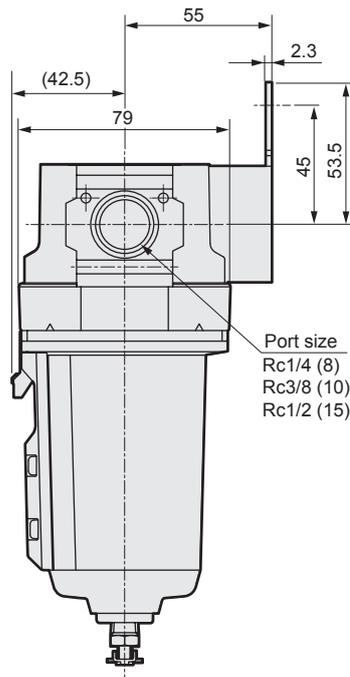
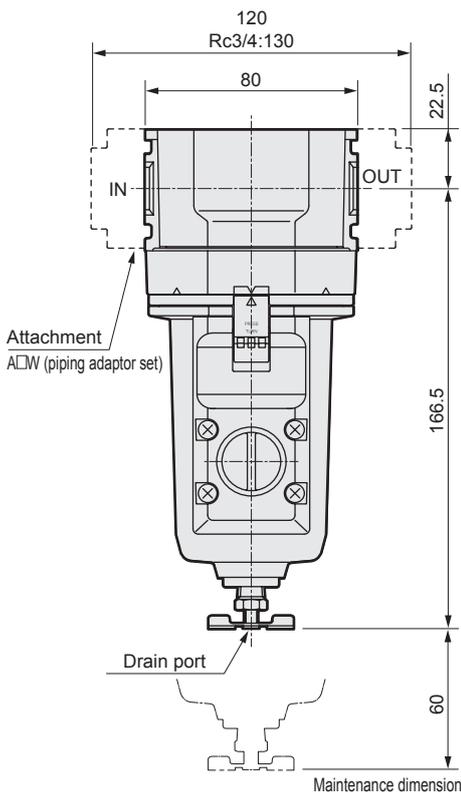
Oil Mist Filter Series

Dimensions

● MM3000-W



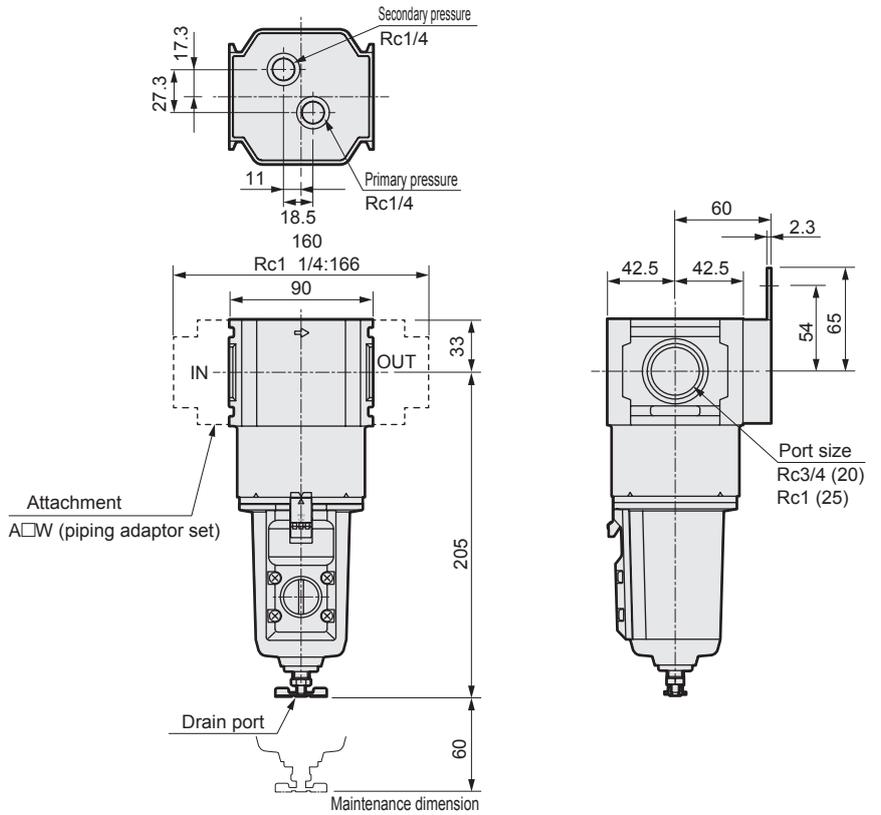
● MM4000-W



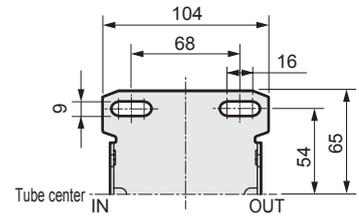
Dimensions

● MM6000-W

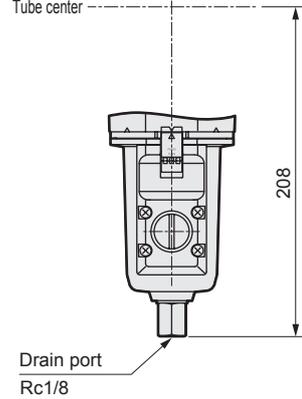
- Option dimensions
- With differential pressure detection port (Q)



- Attachment
- C type bracket (-BW)
- Part model no.: B620

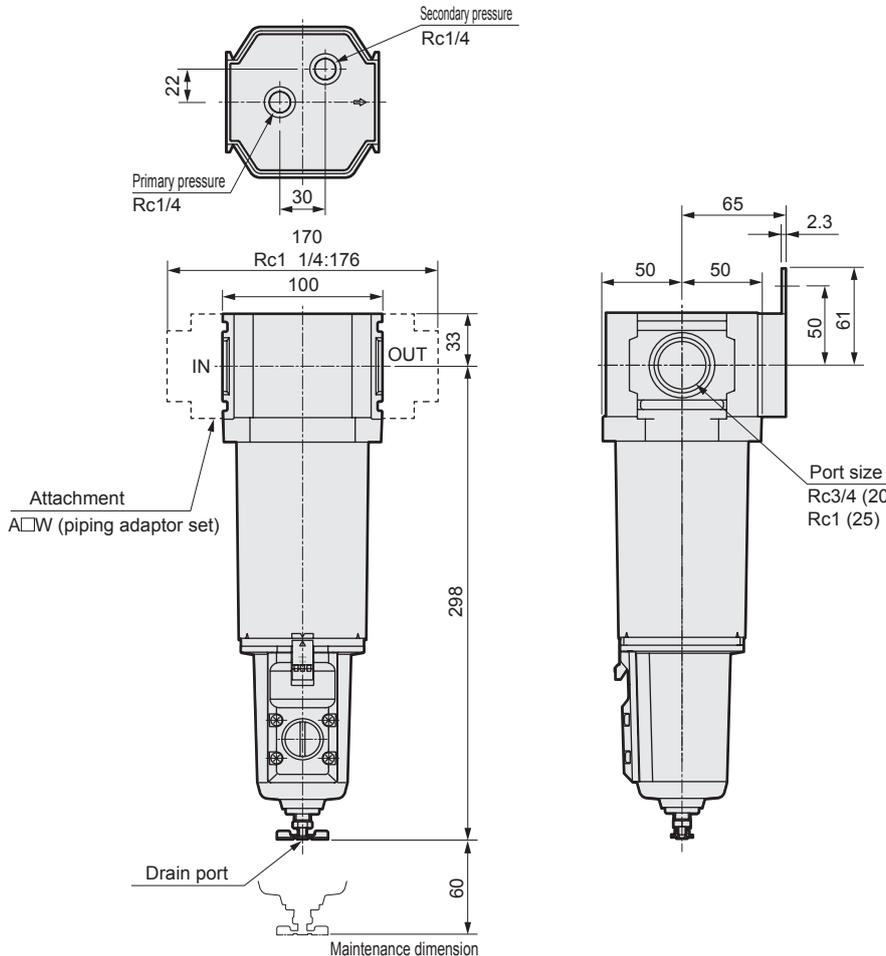


- Option dimensions
- Automatic drain (F1)

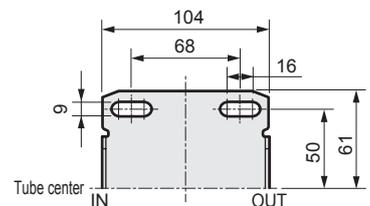


● MM8000-W

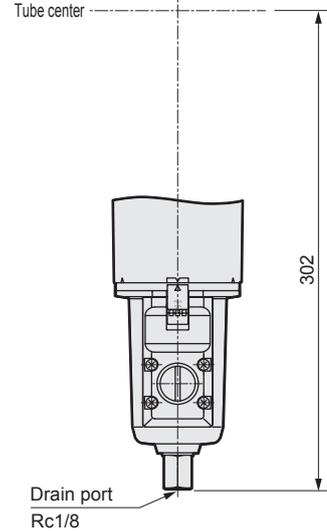
- Option dimensions
- With differential pressure detection port (Q)



- Attachment
- C type bracket (-BW)
- Part model no.: B820



- Option dimensions
- Automatic drain (F1)



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane type dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro pneumatic regulator |
| Air booster |
| Speed control valve |
| Silencer |
| Check valve / others |
| Joint / tube |
| Vacuum filter |
| Vacuum regulator |
| Suction plate |
| Magnetic spring buffer |
| Mechanical pressure SW |
| Electronic pressure SW |
| Contact / close contact cont. SW |
| Air sensor |
| Pressure SW for coolant |
| Small flow sensor |
| Small flow controller |
| Flow sensor for air |
| Flow sensor for water |
| Total air system |
| Total air system (Gamma) |
| Ending |

Medium pressure Series
F.R.L. Unit



Regulator medium pressure type

RM3000-W/RM4000-W Series

R3000-W/R4000-W Series medium specifications

Port size: 1/4 to 1/2

JIS symbol



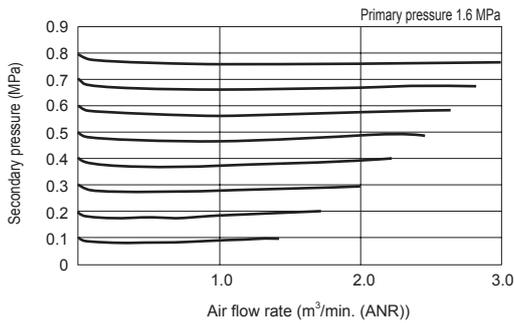
Specifications

| Descriptions | RM3000-W | RM4000-W |
|------------------------------|-------------------------------------|-------------------------------------|
| Working fluid | Compressed air | |
| Max. working pressure MPa | 1.6 | |
| Withstanding pressure MPa | 2.4 | |
| Ambient temperature range °C | -5 to 60 (no freezing) Note 1 | |
| Set pressure range MPa | 0.05 to 0.85 | |
| Relief | With relief mechanism | |
| Port size Rc, NPT, G | 1/4, 3/8 (1/2 uses an adaptor) | 1/4, 3/8, 1/2 (3/4 uses an adaptor) |
| Product weight g | 0.45 | 0.7 |
| Standard accessories | Pressure gauge, nut for panel mount | |

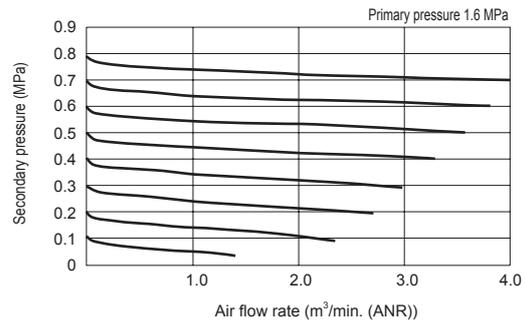
Note 1: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C .

Flow characteristic

● RM3000-10-W

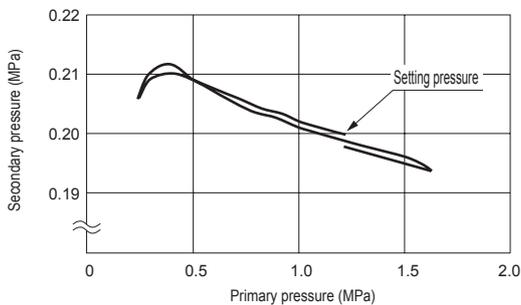


● RM4000-15-W

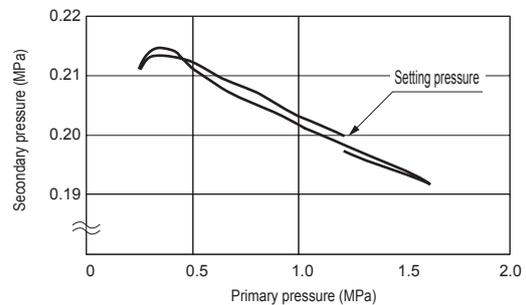


Pressure characteristic

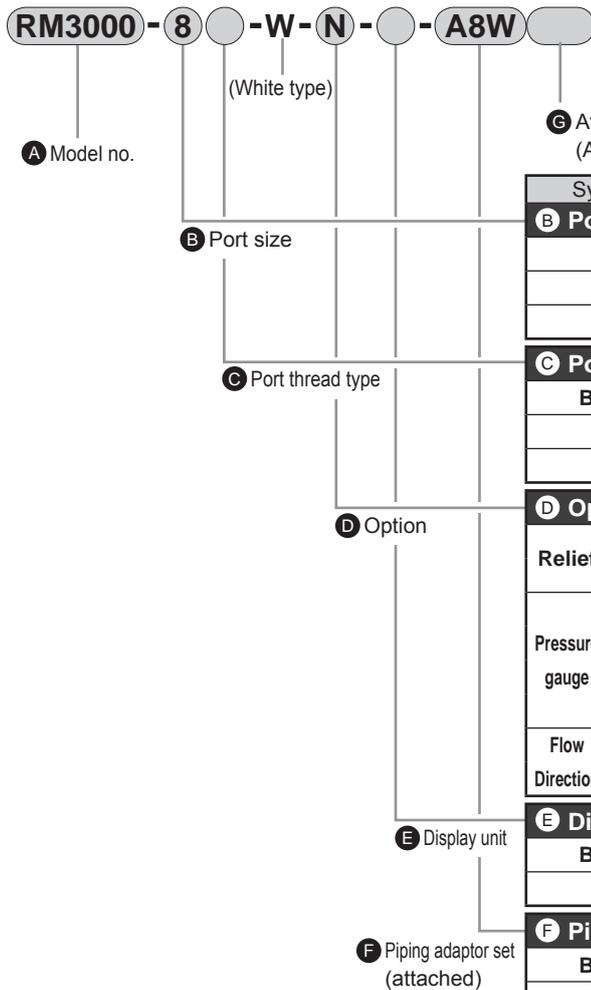
● RM3000-W



● RM4000-W



How to order



*Refer to page 274 for the explanation of the option.

| Symbol | | Descriptions | | A Model no. | |
|--|-----------------------------|---|---------------|--------------------------------------|--------|
| B Port size | | | | RM3000 | RM4000 |
| 8 | 1/4 | | | ● | ● |
| 10 | 3/8 | | | ● | ● |
| 15 | 1/2 | | | | ● |
| C Port thread type | | | | Note 1 | |
| Blank | Rc thread | | | ● | ● |
| N | NPT thread | | | ● | ● |
| G | G thread | | | ● | ● |
| D Option | | | | Note 2 | |
| Relief | Blank | With relief mechanism | | ● | ● |
| | N | Nonrelief type | | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401) | | ● | ● |
| | T Note 3 | Without pressure gauge (a pressure gauge port Rc1/4 is assembled with sealed) | | ● | ● |
| | T8 | Pressure gauge attached (a pressure gauge port Rc1/4 is assembled by open) | | ● | ● |
| Flow Direction | R1 | Pressure switch with display PPD assembly | Note 4 | ● | ● |
| | Blank | Standard flow (left → right) | | ● | ● |
| X1 | Reverse flow (right → left) | | | ● | ● |
| E Display unit | | | | | |
| Blank | MPa display, Rc thread | | | ● | ● |
| J1 | MPa display, NPT/G thread | | | ● | ● |
| F Piping adaptor set (attached) | | | | Note 5, Note 6 | |
| Blank | Not attached | | | ● | ● |
| A8*W | Rc1/4 piping adaptor set | | | ● | ● |
| A10*W | Rc3/8 piping adaptor set | | | ● | ● |
| A15*W | Rc1/2 piping adaptor set | | | ● | ● |
| A20*W | Rc3/4 piping adaptor set | | | | ● |
| *Adaptor screw type | | | | | |
| Blank | Rc thread | | | ● | ● |
| N | NPT thread | | | ● | ● |
| G | G thread | | | ● | ● |
| G Attachment (attached) | | | | Note 7, Note 8 pages 152, 183 | |
| Blank | Not attached | | | ● | ● |
| BW | C type bracket | | | ● | ● |
| B3W | L type bracket | | Note 9 | ● | ● |
| G45P | Pressure gauge: G45D-8-P10 | | | ● | ● |
| G49P | Pressure gauge: G49D-8-P10 | | | ● | ● |
| G59P | Pressure gauge: G59D-8-P10 | | | ● | ● |
| G40P | Pressure gauge: G40D-8-P10 | | | ● | ● |
| G50P | Pressure gauge: G50D-8-P10 | | | ● | ● |
| G41P | Pressure gauge: G41D-8-P10 | | | ● | ● |

⚠ Note on model no. selection

- Note 1: When G threads or NPT threads are selected, the IN, OUT and gauge port are the target
- Note 2: When selecting options for several items, list options in order from the top.
- Note 3: For "T", a gauge plug is assembled instead of a pressure gauge.
- Note 4: Refer to page 1140 for details on "R1".
- Note 5: The joiner set is enclosed with the piping adaptor set.
- Note 6: The piping adaptor set A*00-**-W (refer to page 428 for related devices) is enclosed.
- Note 7: Refer to the related devices for details on the attachments.
The piping adaptor set and C type bracket cannot be used at the same time.
- Note 8: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.
- Note 9: Refer to Safety precautions for the F.R.L. unit for details on mounting the L-type bracket.

- The internal structure and parts list are common for R*-000-W. Refer to page 381.
- Refer to page 393 for optional parts drawing.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

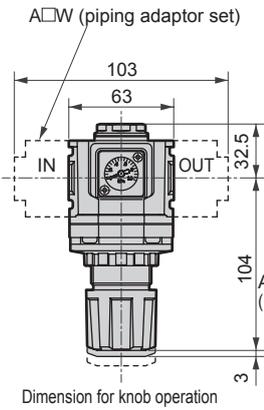
Medium pressure Series
F.R.L. Unit

Regulator series

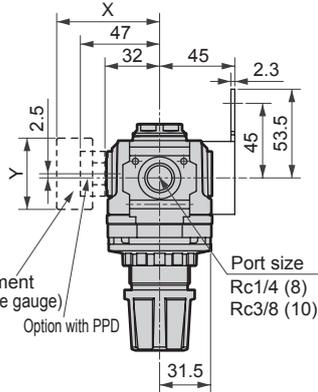
Dimensions

● RM3000-W

Attachment
A□W (piping adaptor set)

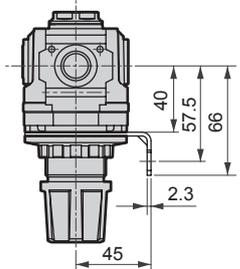


Dimension for knob operation

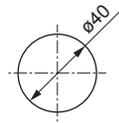


Attachment
(Pressure gauge)
Option with PPD

Port size
Rc1/4 (8)
Rc3/8 (10)



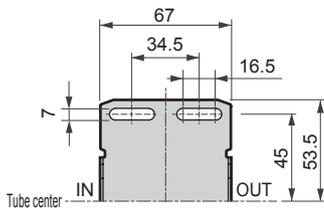
Panel cut dimension



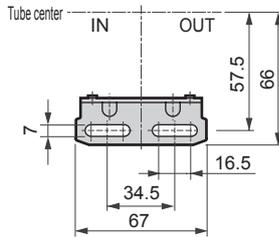
Panel plate thickness: Max. 7 mm

• Attachment (C type bracket)

C type bracket (-BW)
Part model no.: B320



L type bracket (-B3W)
Part model no.: B330

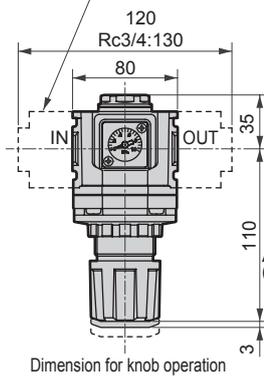


Pressure gauge attached optional dimensions table

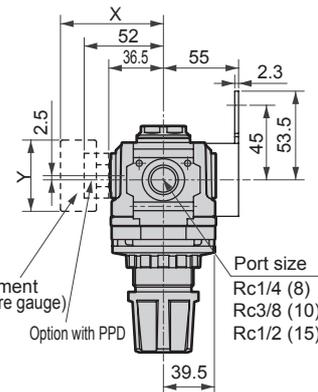
| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (70) | ø39 |
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |

● RM4000-W

Attachment
A□W (piping adaptor set)

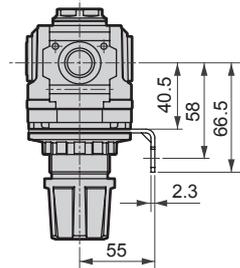


Dimension for knob operation

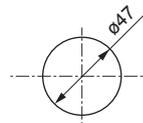


Attachment
(Pressure gauge)
Option with PPD

Port size
Rc1/4 (8)
Rc3/8 (10)
Rc1/2 (15)



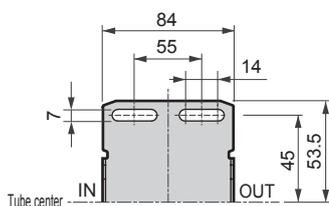
Panel cut dimension



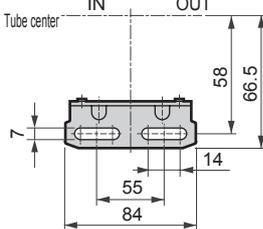
Panel plate thickness: Max. 7 mm

• Attachment

C type bracket (-BW)
Part model no.: B420



L type bracket (-B3W)
Part model no.: B430



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G45P | (75) | ø39 |
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |

C1000 series custom combination specifications

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / /

Issue / /
Your company name _____
Contact _____
Purchase order No. _____

• Model no. **C1000-UN-** -

| Flow direction | |
|----------------|------------|
| Blank | Left→Right |
| X1 | Right→Left |

Technical confirmation No. _____

For products with an asterisk (*), indicate up/down.

Indicate up or down for the regulator's knob direction, and the port up/down for other components.

Indicate the installation position in order from the left as seen from the front.

| Part name | Face to face dimensions | Model no. | Direction | Installation position | | | | | | | | | | Field for Engineers | | | |
|------------------------|-------------------------|-----------------|-----------|-----------------------|--|--|--|--|--|--|--|--|--|---------------------|--|--|--|
| Piping adaptor | 21.5 | A100-UN- -W | | | | | | | | | | | | | | | |
| Air filter | 40 | F1000- -W | | | | | | | | | | | | | | | |
| Filter/regulator | 40 | W1000- -W | | | | | | | | | | | | | | | |
| | | W1100- -W | | | | | | | | | | | | | | | |
| Regulator* | 40 | R1000- -W | | | | | | | | | | | | | | | |
| | | R1100- -W | | | | | | | | | | | | | | | |
| Oil mist filter | 40 | M1000- -W | | | | | | | | | | | | | | | |
| Lubricator | 40 | L1000- -W | | | | | | | | | | | | | | | |
| Distributor* | 28 | D101-UN-00- -W | | | | | | | | | | | | | | | |
| Pressure switch | 28 | P1100-UN- -W | | | | | | | | | | | | | | | |
| Shut-off valve | 40 | V1000- -W | | | | | | | | | | | | | | | |
| L type piping adaptor* | 28 | A101-UN- -W | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| T type bracket | *1 | B110-UN-W | | | | | | | | | | | | | | | |
| Joiner set | | C1000-J100-UN-W | | | | | | | | | | | | | | | |

Cautions

"UN" in the model indicates an isolated part, which does not include a joiner set, etc.
"UN" may also be indicated for the T-type bracket set and joiner set. In this case, this is the model dedicated to custom combination.

Using pressure switch P*100-UN-W at the end of the combination requires that piping adaptor A*00-UN-W be used at the end. (The horizontal port does not have threads.)

*1: The distance from pipe center to fixing face is 40 mm.

Technical confirmation No.:

| Approval | Inspector | Contact |
|----------|-----------|---------|
| | | |

| Engineer Comment Field | | |
|------------------------|--|--|
| | | |

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto, drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Custom combination F.R.L. unit

C2000 series custom combination specifications

Contact _____ Quantity _____ Set _____ Issue _____ / _____ / _____
 Slip No. _____ Request date _____ / _____ / _____ Your company name _____
 Contact _____
 Purchase order No. _____

• Model no. **C2000-UN-** -

| Flow direction | |
|----------------|------------|
| Blank | Left→Right |
| X1 | Right→Left |

Technical confirmation No. _____

For products with an asterisk (*), indicate up/down.

Indicate up or down for the regulator's knob direction, and the port up/down for other components.

Indicate the installation position in order from the left as seen from the front.

| Part name | Face to face dimensions | Model no. | Direction | Installation position | | | | | Field for Engineers |
|------------------------|-------------------------|-----------------|-----------|-----------------------|--|--|--|--|---------------------|
| Piping adaptor | 20 | A400-UN- -W | | | | | | | |
| Air filter | 50 | F2000- -W | | | | | | | |
| | 63 | F3000- -W | | | | | | | |
| Filter/regulator | 50 | W2000- -W | | | | | | | |
| | | W2100- -W | | | | | | | |
| Regulator * | 50 | R2000- -W | | | | | | | |
| | | R2100- -W | | | | | | | |
| Oil mist filter | 50 | M2000- -W | | | | | | | |
| | 63 | M3000- -W | | | | | | | |
| Lubricator | 63 | L3000- -W | | | | | | | |
| Distributor* | 31.5 | D401-UN-00- -W | | | | | | | |
| Distributor | 42 | D300- -W | | | | | | | |
| Pressure switch | 31.5 | P4100-UN- -W | | | | | | | |
| | 80 | P4000- -W | | | | | | | |
| Shut-off valve | 63 | V3000- -W | | | | | | | |
| L type piping adaptor* | 31.5 | A401-UN- -W | | | | | | | |
| T type bracket | *1 | B310-UN-W | | | | | | | |
| Joiner set | | C4000-J400-UN-W | | | | | | | |

Cautions

"UN" in the model indicates an isolated part, which does not include a joiner set, etc.
 "UN" may also be indicated for the T-type bracket set and joiner set. In this case, this is the model dedicated to custom combination.

Using pressure switch P*100-UN-W at the end of the combination requires that piping adaptor A*00-UN-W be used at the end. (The horizontal port does not have threads.)

Select the reverse regulator R2100-W or reverse filter regulator W2100-W when installing the shut-off valve V3000-W and lockout valve V3010-W onto the primary side of the regulator or filter regulator.

*1: The distance from pipe center to fixing face is 45 mm.

Technical confirmation No.: _____

| Approval | Inspector | Contact |
|----------|-----------|---------|
| | | |

Engineer Comment Field

| | | |
|------------------------|--|--|
| Engineer Comment Field | | |
| | | |

C2500 series custom combination specifications

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / /

Issue / /
Your company name _____
Contact _____
Purchase order No. _____

• Model no. **C2500-UN-** -

| Flow direction | |
|----------------|------------|
| Blank | Left→Right |
| X1 | Right→Left |

Technical confirmation No.

For products with an asterisk (*), indicate up/down.

Indicate up or down for the regulator's knob direction, and the port up/down for other components.

Indicate the installation position in order from the left as seen from the front.

| Part name | Face to face dimensions | Model no. | Direction | Installation position | | | | | | Field for Engineers |
|------------------------|-------------------------|-----------------|-----------|-----------------------|--|--|--|--|--|---------------------|
| Piping adaptor | 20 | A400-UN- -W | | | | | | | | |
| Air filter | 63 | F3000- -W | | | | | | | | |
| Filter/regulator | 63 | W3000- -W | | | | | | | | |
| | | W3100- -W | | | | | | | | |
| Regulator * | 50 | R2000- -W | | | | | | | | |
| | | R2100- -W | | | | | | | | |
| Oil mist filter | 63 | M3000- -W | | | | | | | | |
| Lubricator | 63 | L3000- -W | | | | | | | | |
| Distributor* | 31.5 | D401-UN-00- -W | | | | | | | | |
| Distributor | 42 | D300- -W | | | | | | | | |
| Pressure switch | 31.5 | P4100-UN- -W | | | | | | | | |
| | 80 | P4000- -W | | | | | | | | |
| Shut-off valve | 63 | V3000- -W | | | | | | | | |
| L type piping adaptor* | 31.5 | A401-UN- -W | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| T type bracket | *1 | B310-UN-W | | | | | | | | |
| Joiner set | | C4000-J400-UN-W | | | | | | | | |

Cautions

"UN" in the model indicates an isolated part, which does not include a joiner set, etc.

"UN" may also be indicated for the T-type bracket set and joiner set. In this case, this is the model dedicated to custom combination.

Using pressure switch P*100-UN-W at the end of the combination requires that piping adaptor A*00-UN-W be used at the end. (The horizontal port does not have threads.)

*1: The distance from pipe center to fixing face is 45 mm.

Technical confirmation No.:

| Approval | Inspector | Contact |
|----------|-----------|---------|
| | | |

| Engineer Comment Field | | |
|------------------------|--|--|
| | | |

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Custom combination
F.R.L. unit

C4000 series custom combination specifications

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / /

Issue / /
Your company name _____
Contact _____
Purchase order No. _____

• Model no. **C4000-UN-** -

*1:20 mm for port size 8, 10 and 15, while 25 mm for 20.

*2:The distance from pipe center to fixing face is 55 mm.

| Flow direction | |
|----------------|------------|
| Blank | Left→Right |
| X1 | Right→Left |

Technical confirmation No. _____

For products with an asterisk (*), indicate up/down.

Indicate up or down for the regulator's knob direction, and the port up/down for other components.

Indicate the installation position in order from the left as seen from the front.

| Part name | Face to face dimensions | Model no. | Direction | Installation position | | | | | | | | | | Field for Engineers | |
|------------------------|-------------------------|-----------------|-----------|-----------------------|---|---|---|---|---|---|---|---|----|---------------------|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| Piping adaptor | *1 | A400-UN- -W | | | | | | | | | | | | | |
| Air filter | 63 | F3000- -W | | | | | | | | | | | | | |
| | 80 | F4000- -W | | | | | | | | | | | | | |
| Filter/regulator | 63 | W3000- -W | | | | | | | | | | | | | |
| | | W3100- -W | | | | | | | | | | | | | |
| | 80 | W4000- -W | | | | | | | | | | | | | |
| | | W4100- -W | | | | | | | | | | | | | |
| Regulator* | 63 | R3000- -W | | | | | | | | | | | | | |
| | | R3100- -W | | | | | | | | | | | | | |
| | 80 | R4000- -W | | | | | | | | | | | | | |
| | | R4100- -W | | | | | | | | | | | | | |
| Oil mist filter | 63 | M3000- -W | | | | | | | | | | | | | |
| | 80 | M4000- -W | | | | | | | | | | | | | |
| Lubricator | 63 | L3000- -W | | | | | | | | | | | | | |
| | 80 | L4000- -W | | | | | | | | | | | | | |
| Distributor* | 31.5 | D401-UN-00- -W | | | | | | | | | | | | | |
| Distributor | 42 | D300- -W | | | | | | | | | | | | | |
| Pressure switch | 31.5 | P4100-UN- -W | | | | | | | | | | | | | |
| | 80 | P4000- -W | | | | | | | | | | | | | |
| Shut-off valve | 63 | V3000- -W | | | | | | | | | | | | | |
| L type piping adaptor* | 31.5 | A401-UN- -W | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| T type bracket | *2 | B410-UN-W | | | | | | | | | | | | | |
| Joiner set | | C4000-J400-UN-W | | | | | | | | | | | | | |

Cautions

"UN" in the model indicates an isolated part, which does not include a joiner set, etc.

"UN" may also be indicated for the T-type bracket set and joiner set. In this case, this is the model dedicated to custom combination.

Using pressure switch P*100-UN-W at the end of the combination requires that piping adaptor A*00-UN-W be used at the end. (The horizontal port does not have threads.)

Technical confirmation No.:

| Approval | Inspector | Contact |
|----------|-----------|---------|
| | | |

| Engineer Comment Field | | |
|------------------------|--|--|
| | | |

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto, drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Custom combination
F.R.L. unit

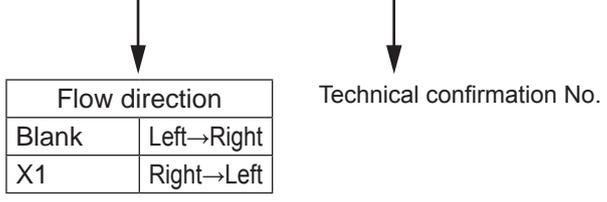
C6000 series custom combination specifications

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / / _____

Issue / / _____
Your company name _____
Contact _____
Purchase order No. _____

• Model no. **C6000-UN-** -



For products with an asterisk (*), indicate up/down.
Indicate up or down for the regulator's knob direction, and the port up/down for other components. Indicate the installation position in order from the left as seen from the front.

| Part name | Face to face dimensions | Model no. | Direction | Installation position | | | | | | Field for Engineers |
|------------------------|-------------------------|-----------------|-----------|-----------------------|--|--|--|--|--|---------------------|
| Piping adaptor | *1 | A800-UN- -W | | | | | | | | |
| Air filter | 90 | F6000- -W | | | | | | | | |
| | 100 | F8000- -W | | | | | | | | |
| Filter/regulator | 100 | W8000- -W | | | | | | | | |
| | | W8100- -W | | | | | | | | |
| Regulato* | 90 | R6000- -W | | | | | | | | |
| | | R6100- -W | | | | | | | | |
| | 100 | R8000- -W | | | | | | | | |
| R8100- -W | | | | | | | | | | |
| Oil mist filter | 90 | M6000- -W | | | | | | | | |
| | 100 | M8000- -W | | | | | | | | |
| Lubricator | 100 | L8000- -W | | | | | | | | |
| Distributor* | 50 | D801-UN-00- -W | | | | | | | | |
| Pressure switch | 50 | P8100-UN- -W | | | | | | | | |
| L type piping adaptor* | 50 | A801-UN- -W | | | | | | | | |
| T type bracket | *2 | B810-UN-W | | | | | | | | |
| Joiner set | | C8000-J800-UN-W | | | | | | | | |

Cautions

"UN" in the model indicates an isolated part, which does not include a joiner set, etc.
"UN" may also be indicated for the T-type bracket set and joiner set. In this case, this is the model dedicated to custom combination.

Using pressure switch P*100-UN-W at the end of the combination requires that piping adaptor A*00-UN-W be used at the end. (The horizontal port does not have threads.)

*1:Port size 20, 25 is 35mm, 32 is 38mm.
*2:The distance from pipe center to fixing face is 65mm.

Technical confirmation No.: _____

| Approval | Inspector | Contact |
|----------|-----------|---------|
| | | |

| Engineer Comment Field | | |
|------------------------|--|--|
| | | |

C8000 series custom combination specifications

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / /

Issue / /
Your company name _____
Contact _____
Purchase order No. _____

• Model no. **C8000-UN-** -

| Flow direction | |
|----------------|------------|
| Blank | Left→Right |
| X1 | Right→Left |

Technical confirmation No.

*1:35 mm for port size 20 and 25, while 38 mm for 32.

*2:The distance from pipe center to fixing face is 65 mm.

For products with an asterisk (*), indicate up/down.

Indicate up or down for the regulator's knob direction, and the port up/down for other components.

Indicate the installation position in order from the left as seen from the front.

| Part name | Face to face dimensions | Model no. | Direction | Installation position | | | | | | | | | | Field for Engineers | |
|------------------------|-------------------------|-----------------|-----------|-----------------------|---|---|---|---|---|---|---|---|----|---------------------|--|
| | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| Piping adaptor | *1 | A800-UN- -W | | | | | | | | | | | | | |
| Air filter | 100 | F8000- -W | | | | | | | | | | | | | |
| Filter/regulator | 100 | W8000- -W | | | | | | | | | | | | | |
| | | W8100- -W | | | | | | | | | | | | | |
| Regulator* | 100 | R8000- -W | | | | | | | | | | | | | |
| | | R8100- -W | | | | | | | | | | | | | |
| Oil mist filter | 100 | M8000- -W | | | | | | | | | | | | | |
| Lubricator | 100 | L8000- -W | | | | | | | | | | | | | |
| Distributor* | 50 | D801-UN-00- -W | | | | | | | | | | | | | |
| Pressure switch | 50 | P8100-UN- -W | | | | | | | | | | | | | |
| L type piping adaptor* | 50 | A801-UN- -W | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| T type bracket | *2 | B810-UN-W | | | | | | | | | | | | | |
| Joiner set | | C8000-J800-UN-W | | | | | | | | | | | | | |

Cautions

"UN" in the model indicates an isolated part, which does not include a joiner set, etc.

"UN" may also be indicated for the T-type bracket set and joiner set. In this case, this is the model dedicated to custom combination.

Using pressure switch P*100-UN-W at the end of the combination requires that piping adaptor A*00-UN-W be used at the end. (The horizontal port does not have threads.)

Technical confirmation No.:

| Approval | Inspector | Contact |
|----------|-----------|---------|
| | | |

| Engineer Comment Field | | |
|------------------------|--|--|
| | | |

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto, drain / others
- F.R.L. (Module unit)**
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Custom combination F.R.L. unit