

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.

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

		Bowl			
		Polycarbonate bowl	Nylon bowl	Metal bowl	Metal bowl with manual drain cock
Drainage	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.

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.

L type bracket "B*30"
This bracket fixes parts using the panel mounting nut on the filter regulator or regulator.

Pressure gauge

Page 659

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

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.

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."

Filter/regulator

Distributor

Page 426

Piping adaptor

Page 428

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.

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 "D300-W"
The pipe branches in four directions.
* For 3000-W/4000-W Series.

Straight "A*00-W"
Using an adaptor, isolated devices are removed for maintenance instead of piping being removed.
The adaptor is convenient for changing the connection bore size of the isolated device.
L type "A*01-W"
The device's in and out ports are turned by 90° and piped from top or bottom.
* Consult with CKD for the vertical piping type.

Shut-off valve

Pages 408 to 413

Bowl and bowl guard

Lubricator L*000-W

Pressure switch

Pages 402 to 407, 1069

"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.

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.

P4000-W

PPD

PPX

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

270

CKD

Consult with CKD for other system upgrades.

CKD

271

It's NEW CONCEPT

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

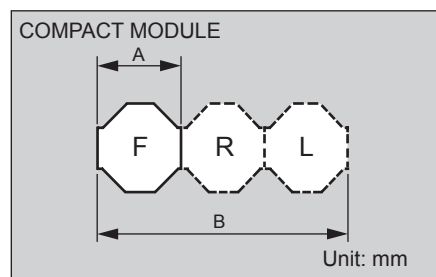
(Compressed air filter, regulator, lubricator and other component)

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

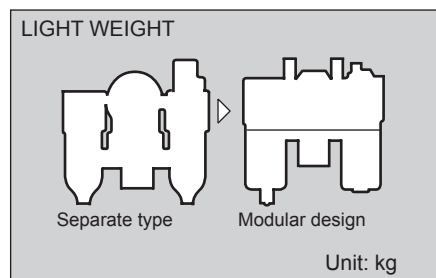
F.R.L. main dimensions (width and depth) are integrated into a compact module. Accurate assembly dimensions are obtained with simple calculation.



	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	40×3	50×2+63	63×2+50	63×3	80×3	90×2+100	100×3

● Light weight (1/2 (CKD comparison))

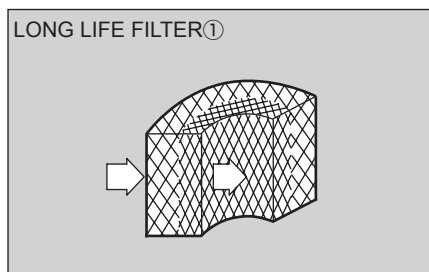
The hybrid material (body: aluminum die cast, cover: resin) provides strength, and reduces weight by 50% compared to the conventional type. (C4000 comparison)



	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

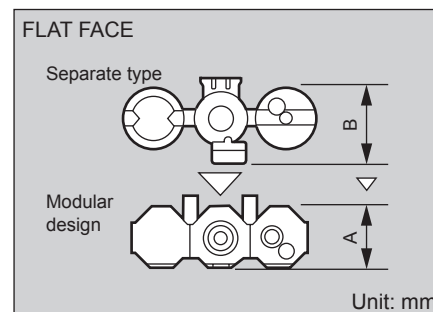
● Long-life element

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

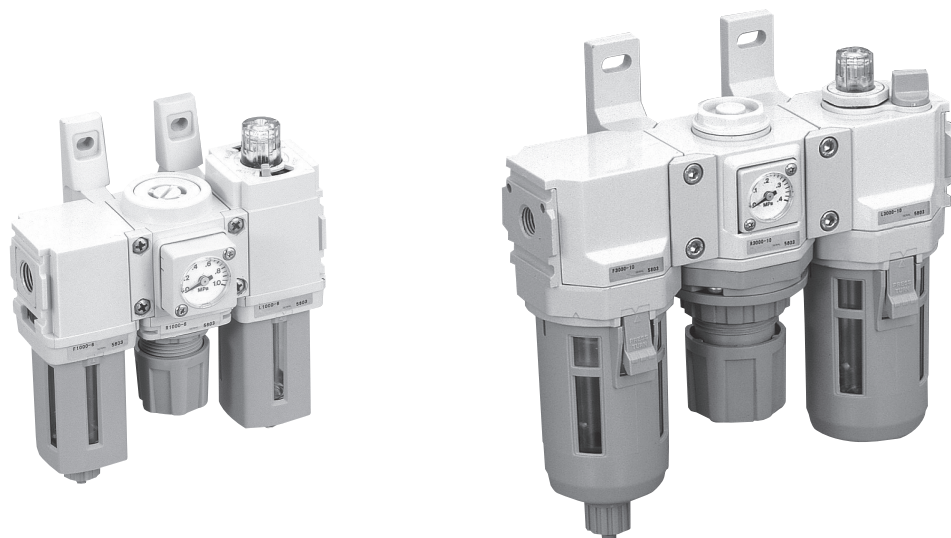
● Mechanism to prevent oil dripping during primary side pressure drop
Oil dripping caused by reverse flow when pressure is released with the shut-off valve, etc., is suppressed.

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

● Gauge plug

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

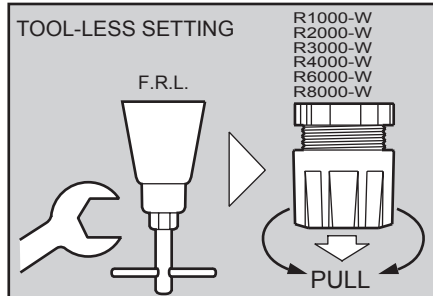
⚠ Read Precautions in the introduction and on page 276 to 283 before use.



OPERATIVE FEATURES

● Pressure adjustment without tool

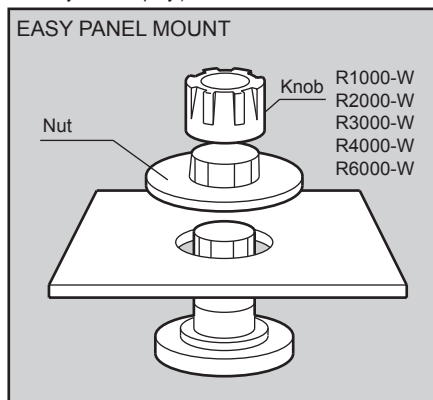
Pressure is adjusted with a hand. The knob is locked with a single push, and easily operated when setting pressure.



● Easily install in panels

when the panel mounting nut is loosed 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.

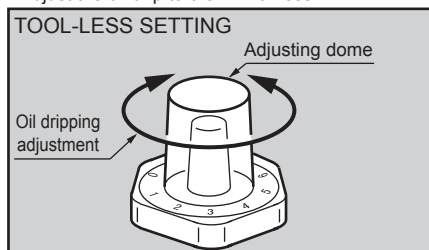


Note: Install the nut before installing the knob. (With the R2000-W, the nut is removed without removing the knob.)

● Oil drip adjustment knob with lock

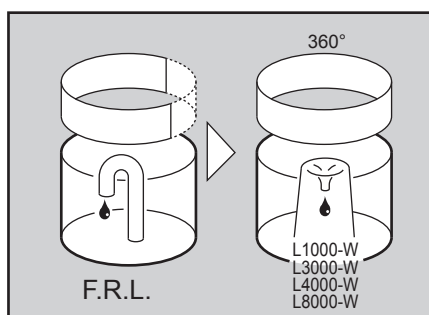
Oil drips are adjusted easily by hands without using tools. A stopper is provided in the opening direction to function as a lock, and increase safety. The number on the dial are used as a guide after adjusting dripping.

* 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

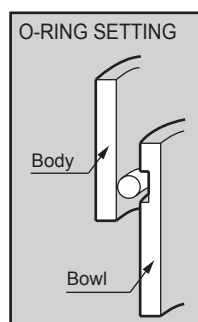
The integrated bowl and bowl guard are easily attached and removed by operating the latch (The 1000-W Series has no latch)

* 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.

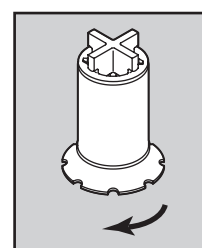
The O-ring does not fall off during maintenance, and safe and accurate seal is attained.



● 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
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Check valve / others
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Small flow controller
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Total air system
Total air system (Gamma)
Ending

F.R.L. unit

F.R.L. Combination

Option explanation


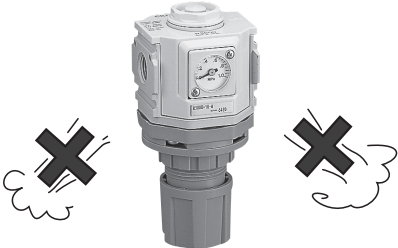




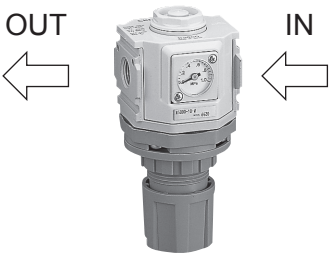
Combination lists of drainage and bowl material of filter (item model no. display (D))

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)
2500-W Series		Nylon	○ (symbol: Z)	○ (symbol: CZ)
3000-W Series	Metal bowl	Aluminum	○ (symbol: M)	○ (symbol: CM,CM1)
4000-W Series				
6000-W Series				
8000-W Series				

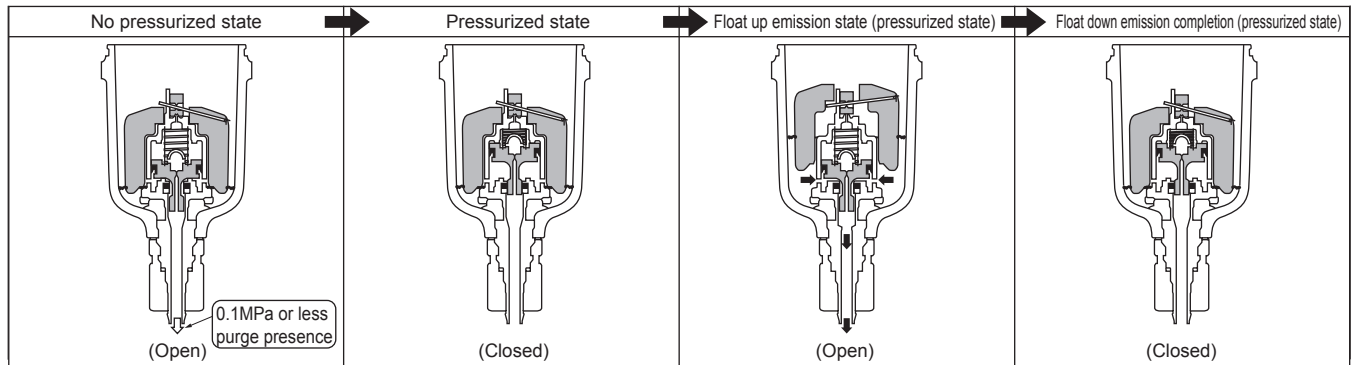
Option and explanation of symbol with pressure range, relief, pressure gauge, flow direction (item model no. display (D))

<p>Option symbol: L</p>  <ul style="list-style-type: none"> • Pressure display: 0 to 0.4MPa • Pressure range: 0 to 0.35MPa • Pressure gauge: G401-P04 	<p>Option symbol: N</p>  <ul style="list-style-type: none"> • Air is not relieved. 	<p>Option symbol: T</p>  <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.
<p>Option symbol: T8,T6</p>  <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. 	<p>Option symbol: R1,R2 (note)</p> <div>   </div> <ul style="list-style-type: none"> • Pressure switch with display PPD assembly • With digital pressure sensor PPX (Refer to page 1069 for the details.) 	<p>Option symbol: X1</p>  <ul style="list-style-type: none"> • The pressure gauge faces forward, with IN on the right side.

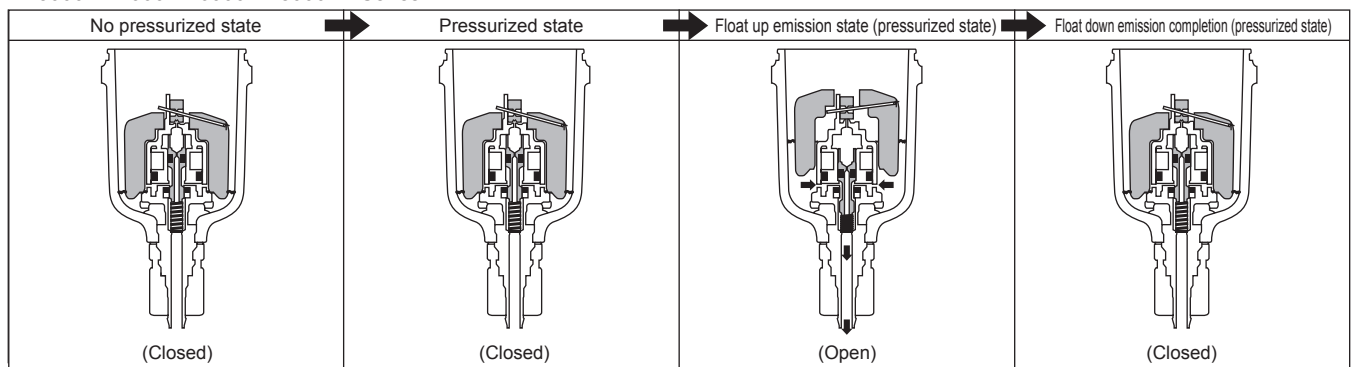
(Note) Option symbol "R1" is not used for the C*000-W Series or C*010-W Series.

Operational explanation of float type automatic drain

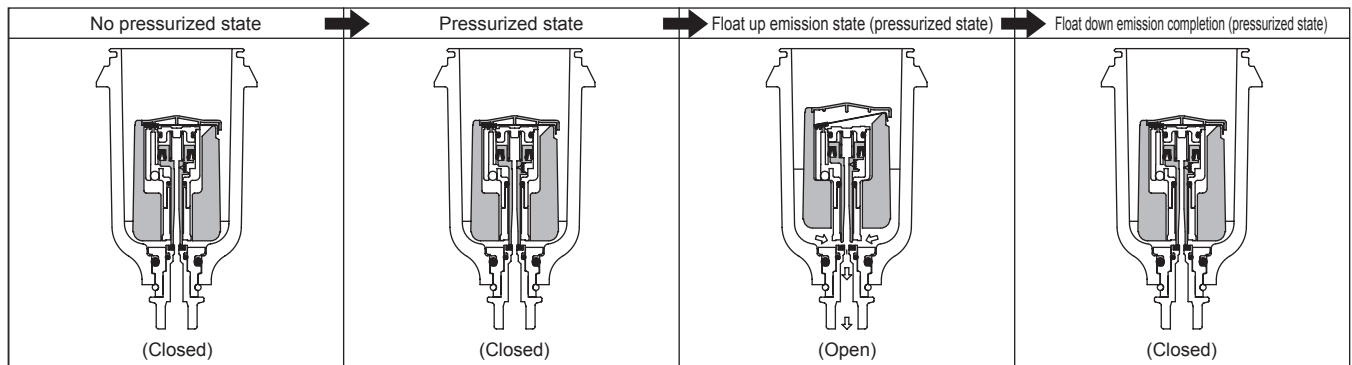
- NO type (F and FF)
3000-W/4000-W/6000-W/8000-W Series



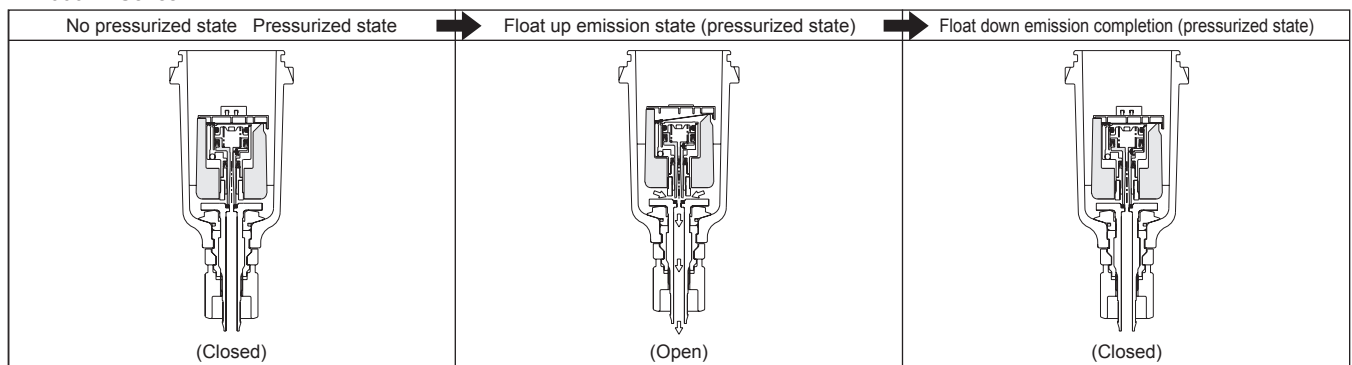
- NC type (F1, FF1)
3000-W/4000-W/6000-W/8000-W Series



- 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.).

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High polymer membrane type dryer
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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.

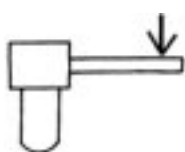
These parts are made of polycarbonate, and cannot be used in environments containing synthetic oil, organic solvents, chemicals, coolant, screw locking agent, leak detection solutions, or hot water, etc., or where these substances may come in contact with them.

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



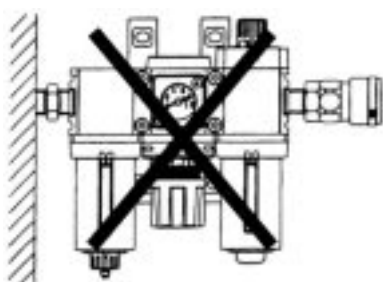
With the 1000-W Series, application of a torque of 30 N·m or more on piping is "hazardous" as the piping could be damaged. Use within the specified torque, even when using the piping adapter.

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 adapter.



⚠ 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.

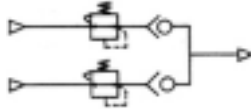
Use a regulator with a check valve when residual pressure must be processed.

■ 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

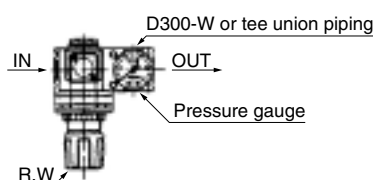
⚠ WARNING

- 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

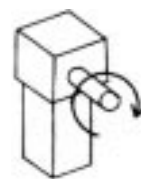
1. Set the regulator pressure setting to increase. After setting pressure, lock the handle. Check primary pressure carefully before setting pressure.
2. Check the arrow indicating the air inlet before connecting. A reverse connection could result in improper operation.
3. Install the air filter and the lubricator case downward vertical. Emission defective and dripping of drain could not be checked.
4. 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



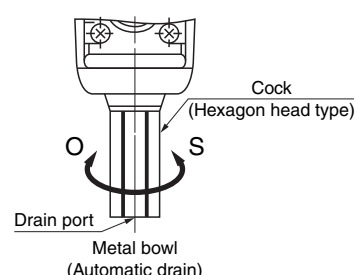
- Drain piping

- 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)

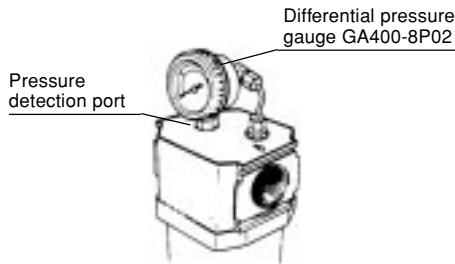
■ Piping the unit with pressure detection port

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

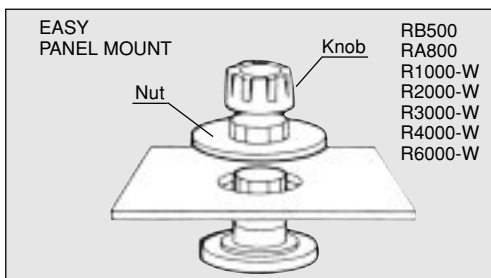
■ Regulator, filter regulator

- 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.



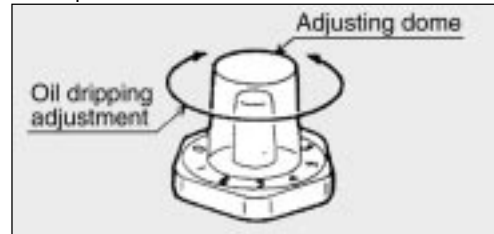
Note: Install the nut before installing the knob.
(With the R2000-W, the nut is removed without removing the knob.)

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.

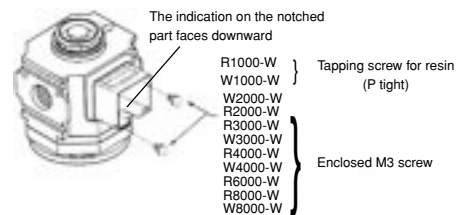


4. Pressure switch

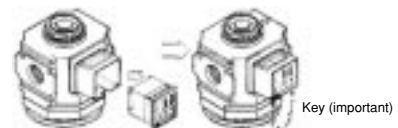
⚠ CAUTION

■ 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 ± 0.1 N·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 conf. 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)

F.R.L. unit (modular design)

Installation & Adjustment

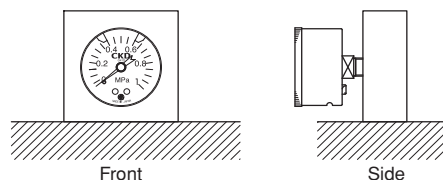
5. Pressure gauge

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

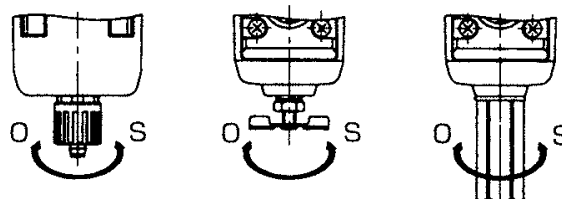
Before removing the bowl, the compressed air, discharge pressure in the bowl completely, and confirm that no residual pressure remains.

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

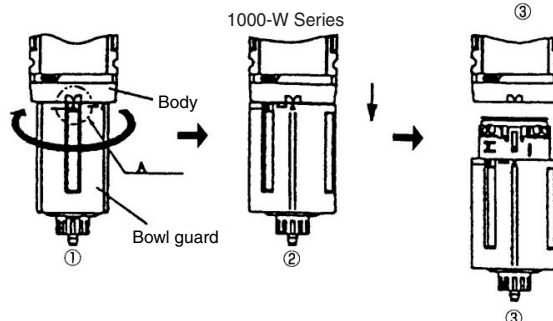
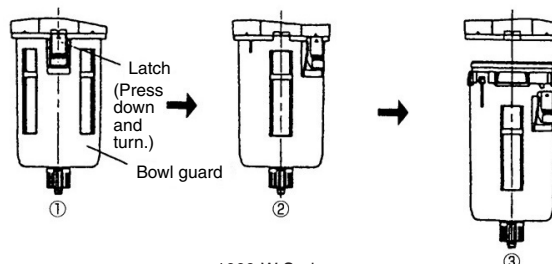


Plastic bowl Metal bowl (Manual cock) Metal bowl (Automatic drain)

- 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

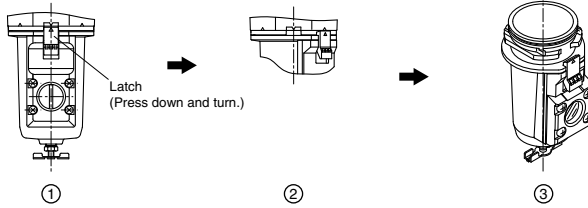
2000-W, 2500-W, 3000-W, 4000-W, 6000-W, 8000-W Series



F.R.L. unit (modular design)

Removing metal bowl

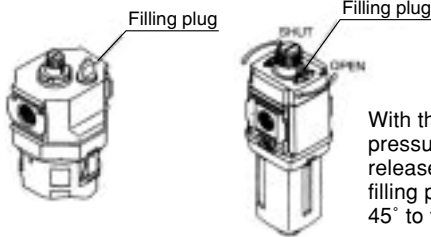
2000-W, 2000-W, 4000-W, 6000-W, 8000-W Series



Removing filling plug

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

1000-W Series



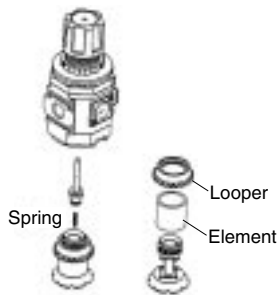
With the 1000 Series, pressure in the bowl is released by sliding the filling plug approximately 45° to the OPEN side.

- 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

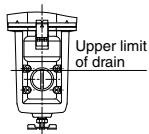
- Element of W1000-W to W8000-W
Inspect the valve assembly when it is removed during maintenance.
Do not lose springs, etc., during maintenance.



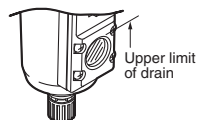
3. Filter

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 mantle (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
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Air filter
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Vacuum regulator
Suction plate
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Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. 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, benzonitrile, acetoxydine nitrile, etc.	Raw material for nitrile rubber	×	○	○

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

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Contact / close contact cont. SW
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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

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
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F.R.L. (Separate)
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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

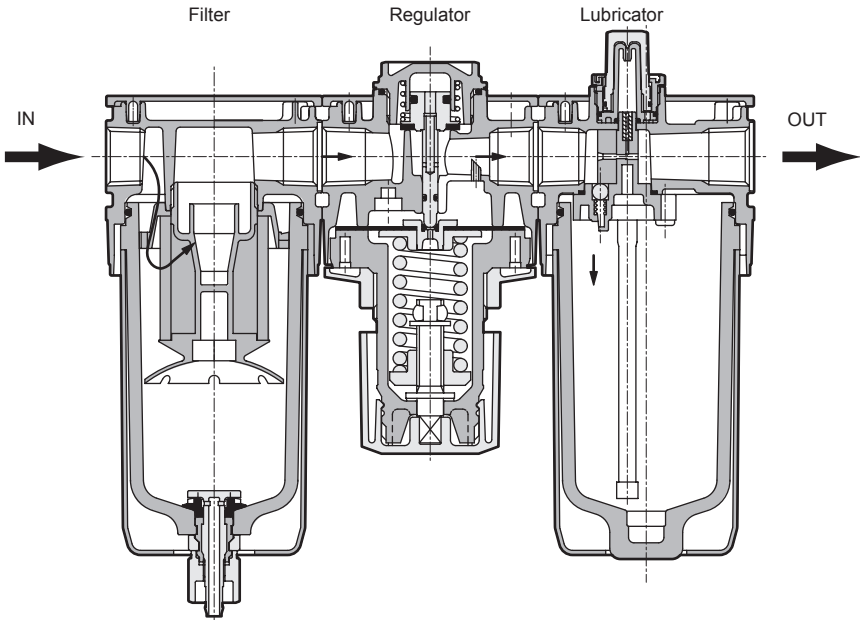


Specifications

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) m³/min. (ANR)		0.015	0.03	0.03	0.03	0.065	0.065	0.065
Relief		With relief mechanism						
Oil capacity cm³		20	85	85	85	170	170	170(MAX360)
Drain capacity cm³		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



How to order

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



A Model no.
Note 2

B Port size

C Port thread type

D Option

E Assembly attachment

F Display unit

G Piping adaptor set (attached)

⚠ 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)

Symbol		Model no. Note 1							Descriptions	
		C1000	C2000	C2500	C3000	C4000	C6000	C8000		
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			●	●	●	●		
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)	●	●	●	●	●	●		
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 8	●	●	●	●	●	●		
	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 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)	●	●	●	●	●		

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

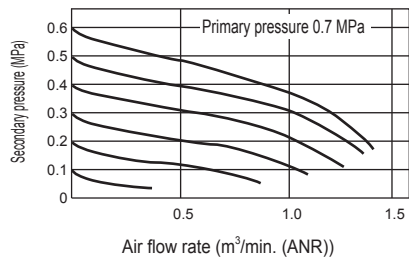
Standard series
F.R.L. unit

F.R.L. Combination

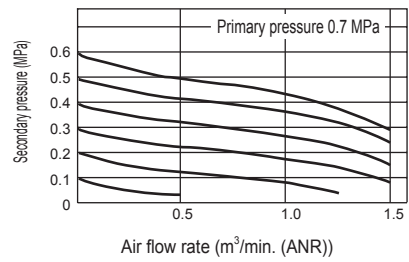
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

Flow characteristic

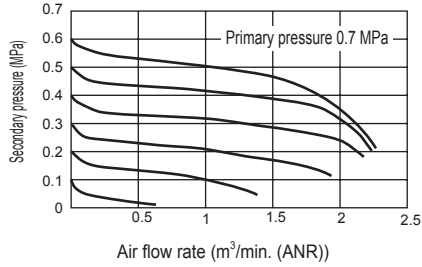
• C1000-6-W



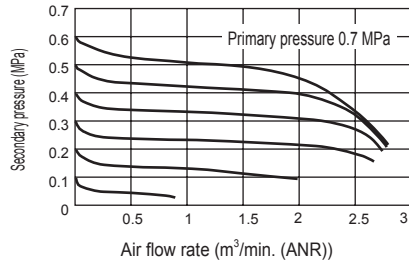
• C1000-8-W



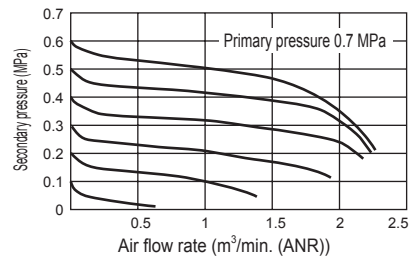
• C2000-8-W



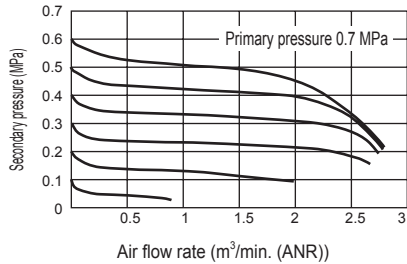
• C2000-10-W



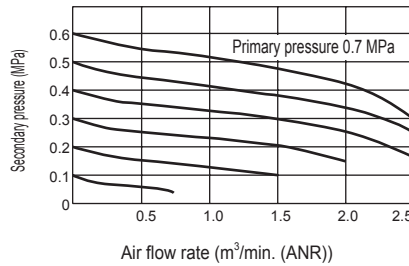
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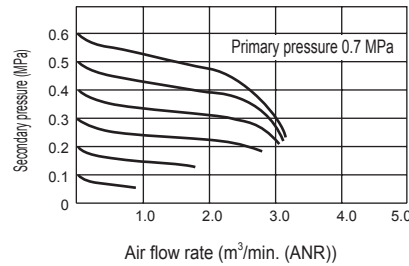
• C2500-10-W



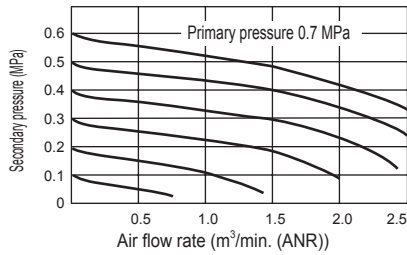
• C3000-8-W



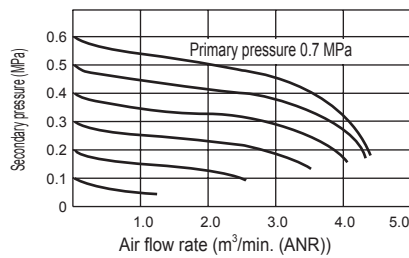
• C3000-10-W



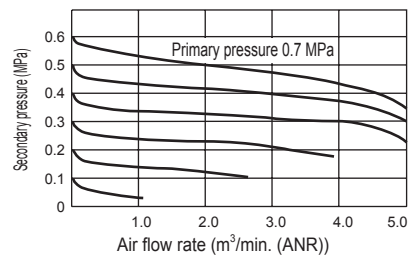
• C4000-8-W



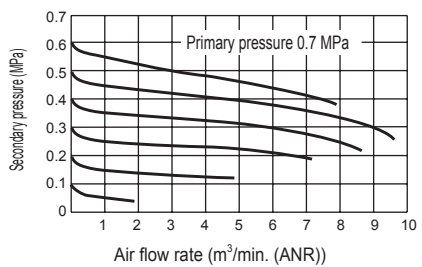
• C4000-10-W



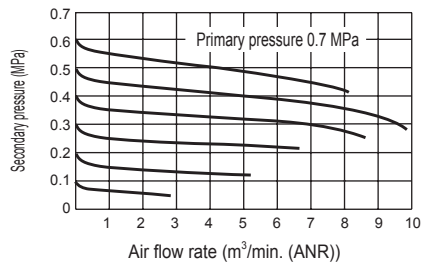
• C4000-15-W



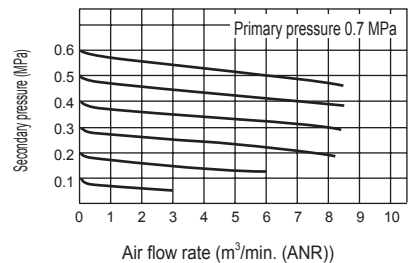
• C6500-20-W



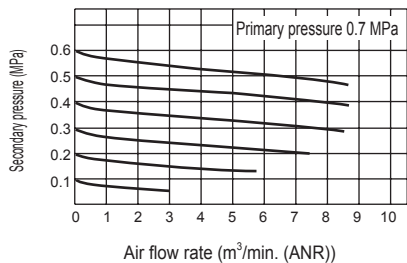
• C6500-25-W



• C8000-20-W



• C8000-25-W



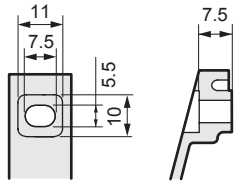
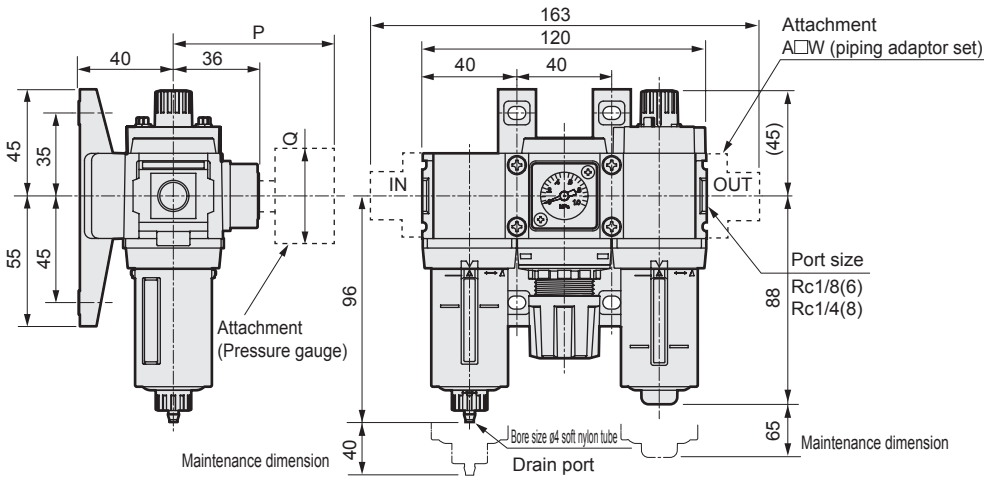
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

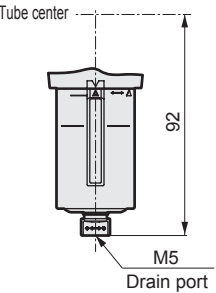
Dimensions

● C1000-W



Enlarged view of bracket section

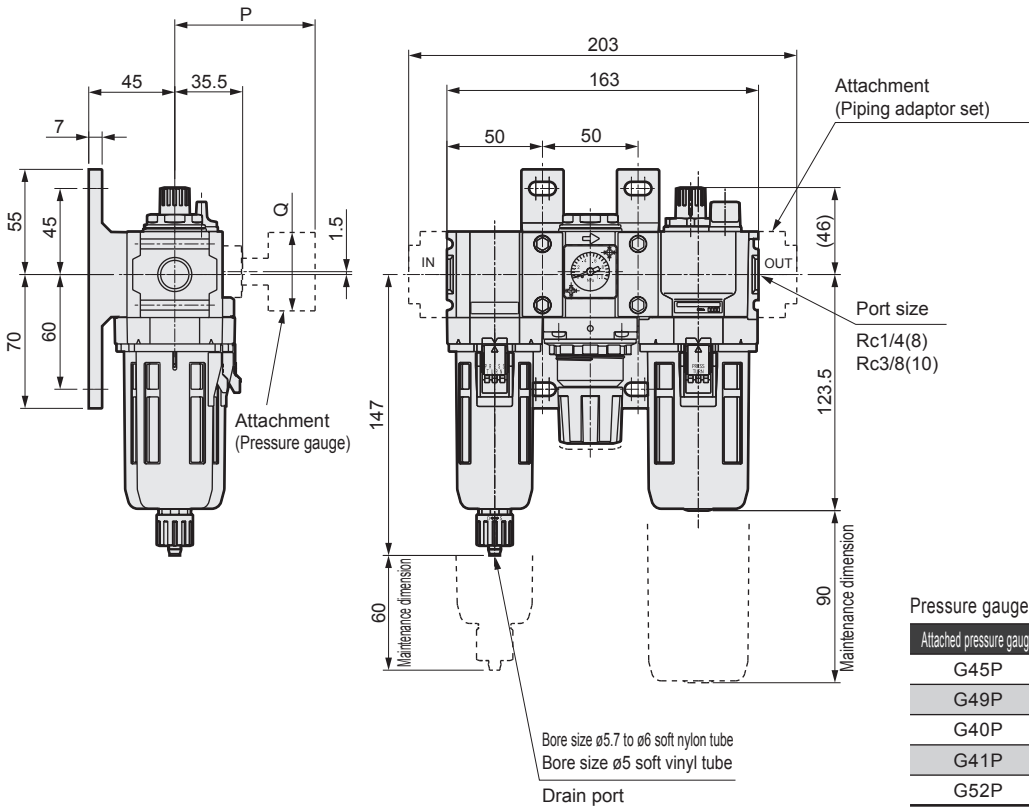
- Option dimensions
With automatic drain (F1)



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



Dimensions of bracket section

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

Enlarged view of bracket section

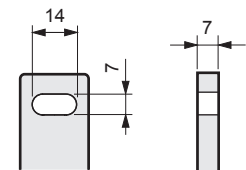
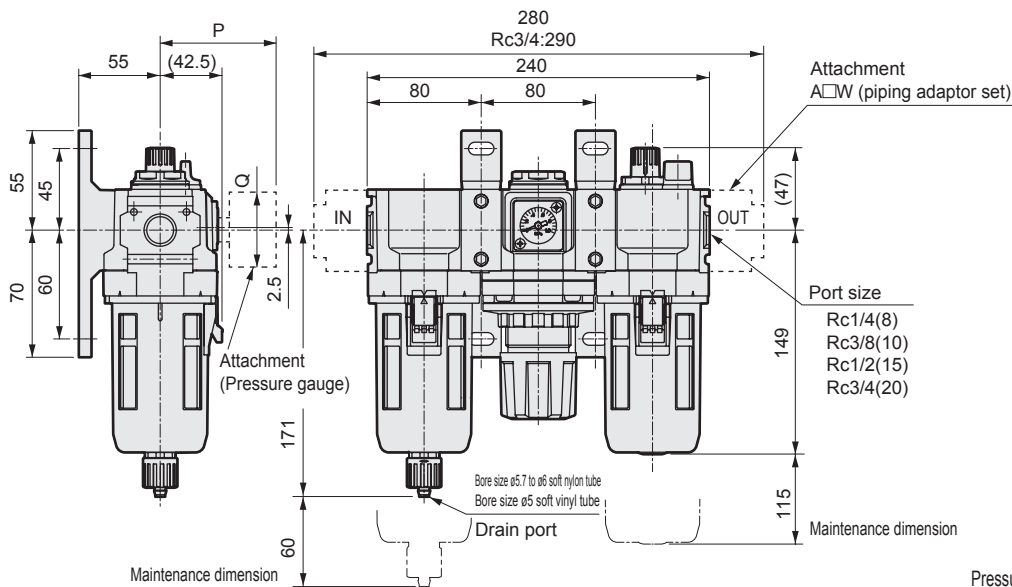
Attached pressure gauge	P	Q
G45P	(70)	ø39
G49P	(69.5)	ø43.5
G59P	(72)	ø52
G40P	(71.5)	ø42.5
G50P	(71.5)	ø52.5
G41P	(70)	ø42
G52P	(82)	ø52.5

Standard series
F.R.L. unit

F.R.L. Combination

Dimensions

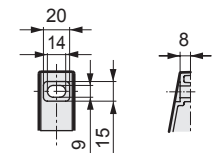
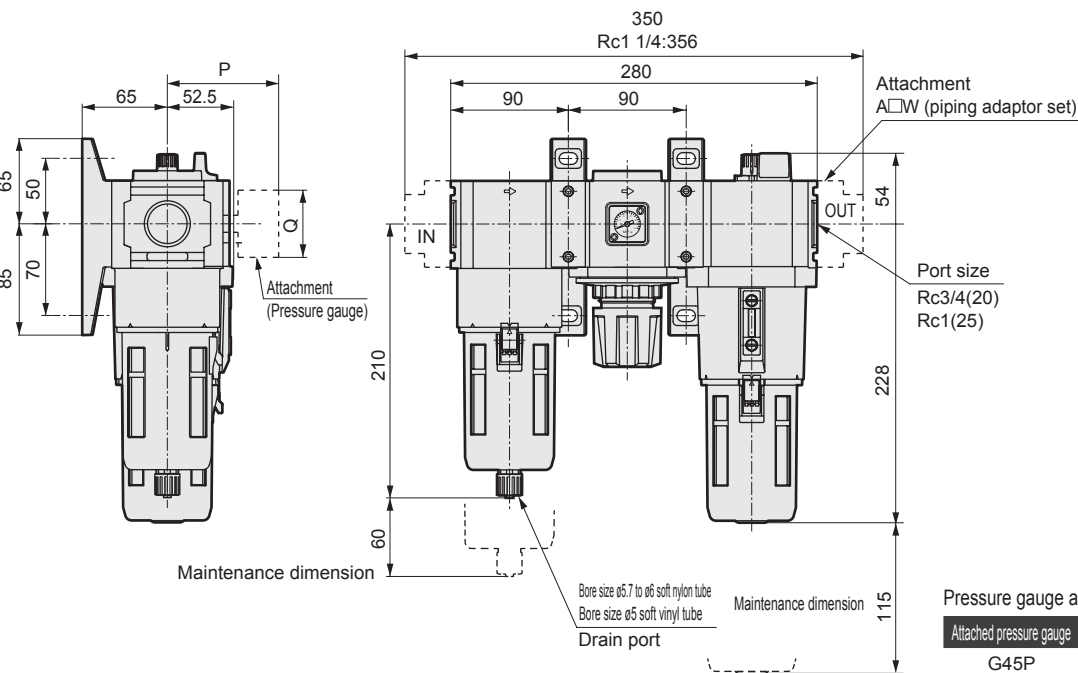
● C4000-W



Enlarged view of bracket section

■ 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	(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)	$\phi 52.5$

Pressure gauge attached optional dimensions table

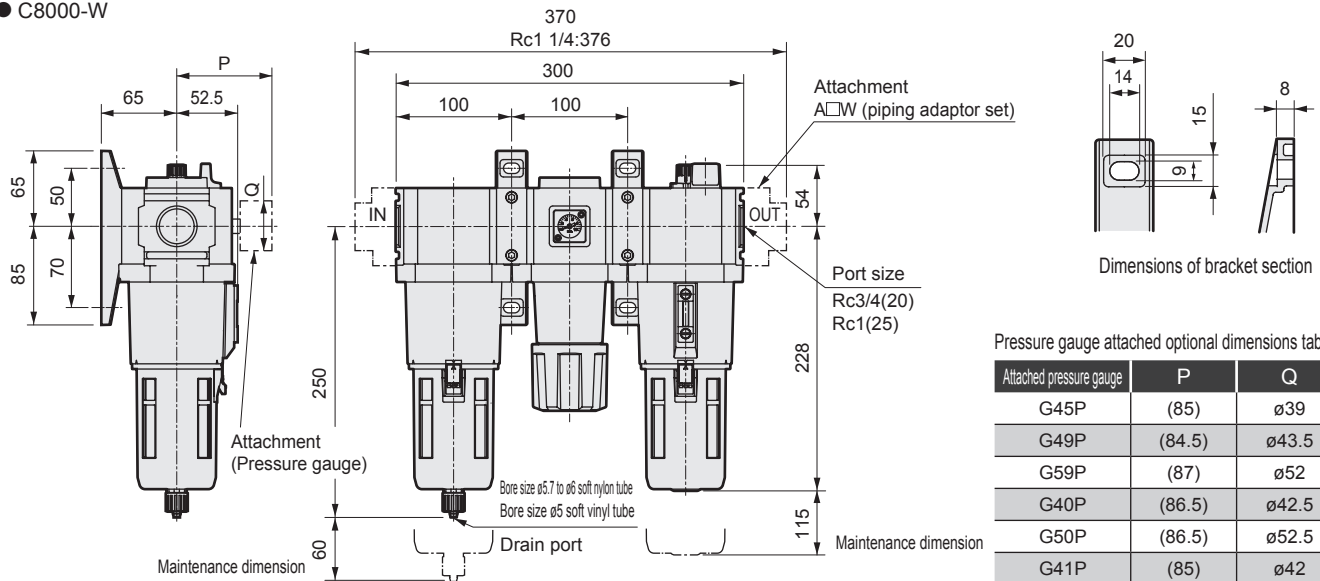
Attached pressure gauge	P	Q
G45P	(80)	$\phi 39$
G49P	(79.5)	$\phi 43.5$
G59P	(82)	$\phi 52$
G40P	(81.5)	$\phi 42.5$
G50P	(81.5)	$\phi 52.5$
G41P	(80)	$\phi 42$
G52P	(93)	$\phi 52.5$

F.R.L. Combination

Option assembly dimensions

Dimensions

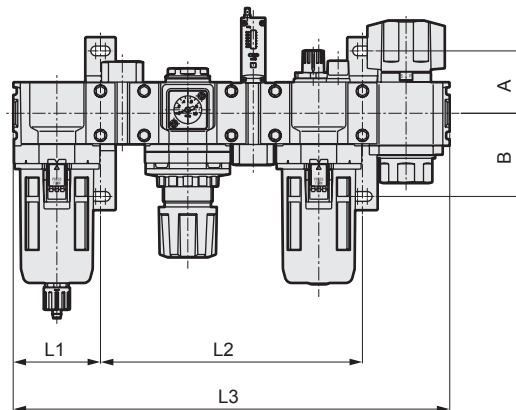
● C8000-W



- 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	D			S			P			V			K			DS			DP			DV			DK		
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
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	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
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	W1000-W	W2000-W	W3000-W	W4000-W	W8000-W
	Lubricator	L1000-W	L3000-W	L3000-W	L4000-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	0.065	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.

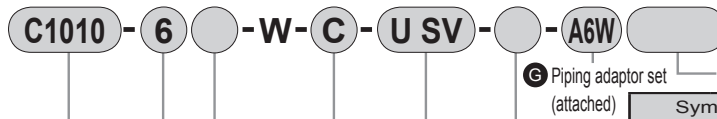
Note 4: The automatic drain's minimum operating pressure for "F" or "FF" with an automatic drain is 0.1 MPa. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

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.

Model no.				
C	C	C	C	C
1	2	3	4	8
0	0	0	0	0
1	1	1	1	1
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					Note 1
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	●	●	●	●
	Z	Nylon bowl	●	●	●	●
	M	Metal bowl			●	●
	M1	Metal bowl with manual drain cock Note 5			●	●

Bowl material	Blank	5μm	●	●	●	●
	Y	0.3μm (submicron) Note 6			●	●
Element	Blank	0.05 to 0.85MPa	●	●	●	●
	L	0.05 to 0.35MPa Note 7	●	●	●	●
Pressure Range	Blank	With relief mechanism	●	●	●	●
	N	Nonrelief type	●	●	●	●

Relief	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)	●	●	●	●
	Blank	Standard flow (left → right)	●	●	●	●
Flow Direction	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 8	●	●	●	●
	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)	●	●	●	●

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.

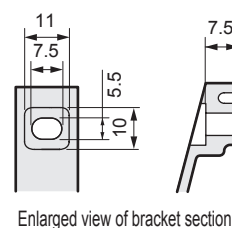
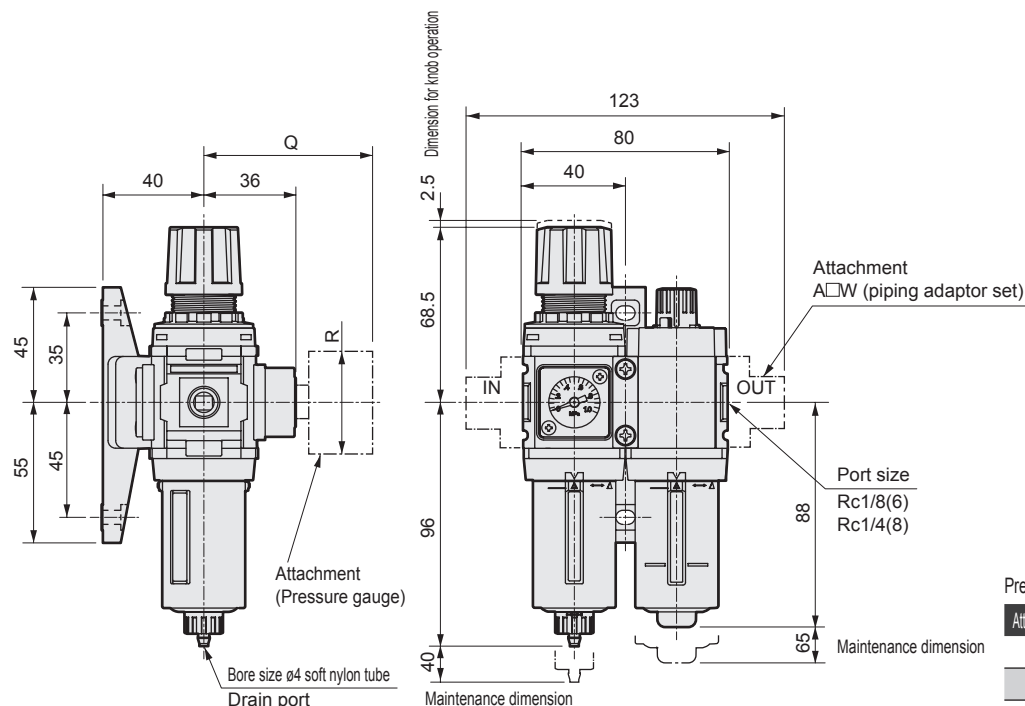
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

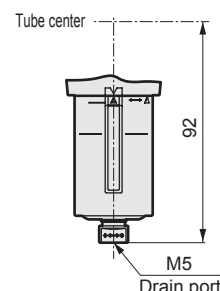
W.L. Combination

Dimensions

● C1010-W



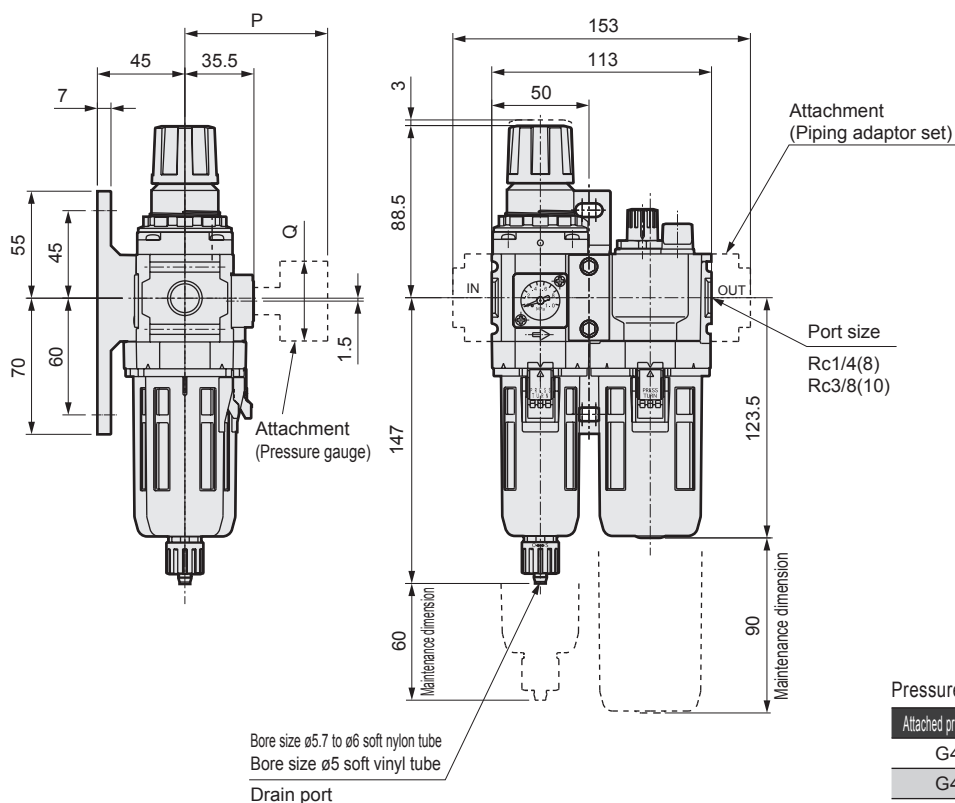
• Option dimensions With automatic drain (F1)



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

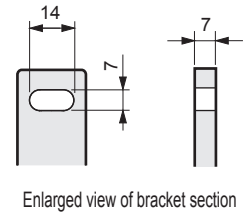
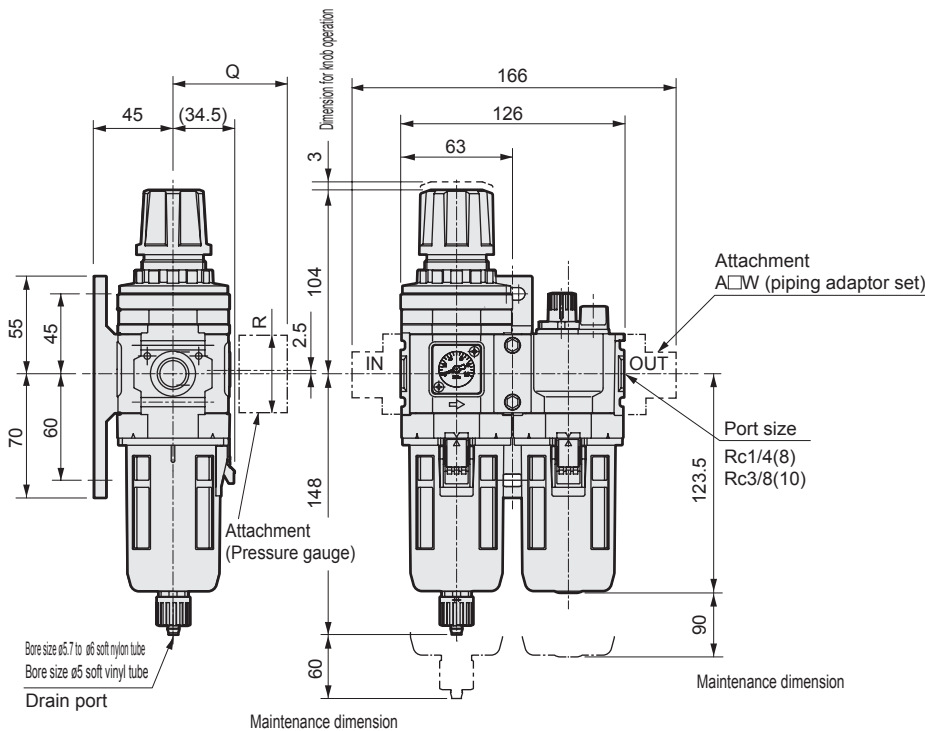


Pressure gauge attached optional dimensions table

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

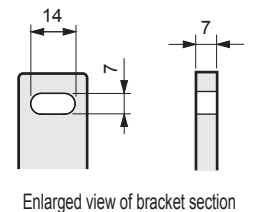
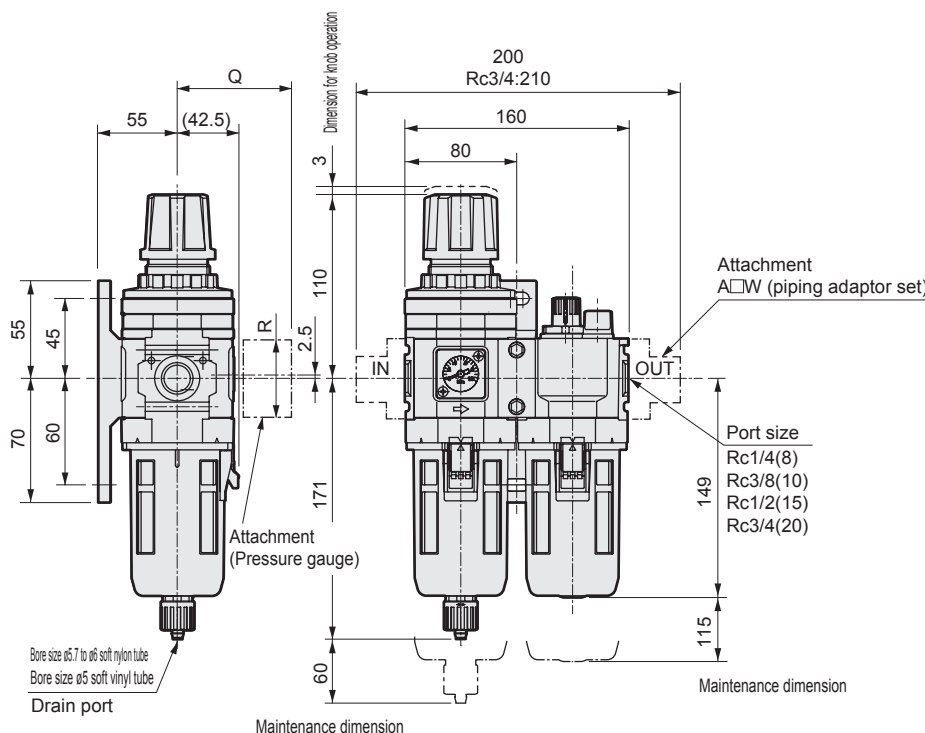


Pressure gauge attached optional dimensions table

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



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.

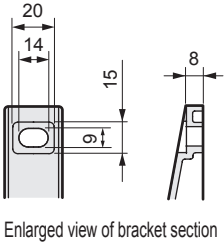
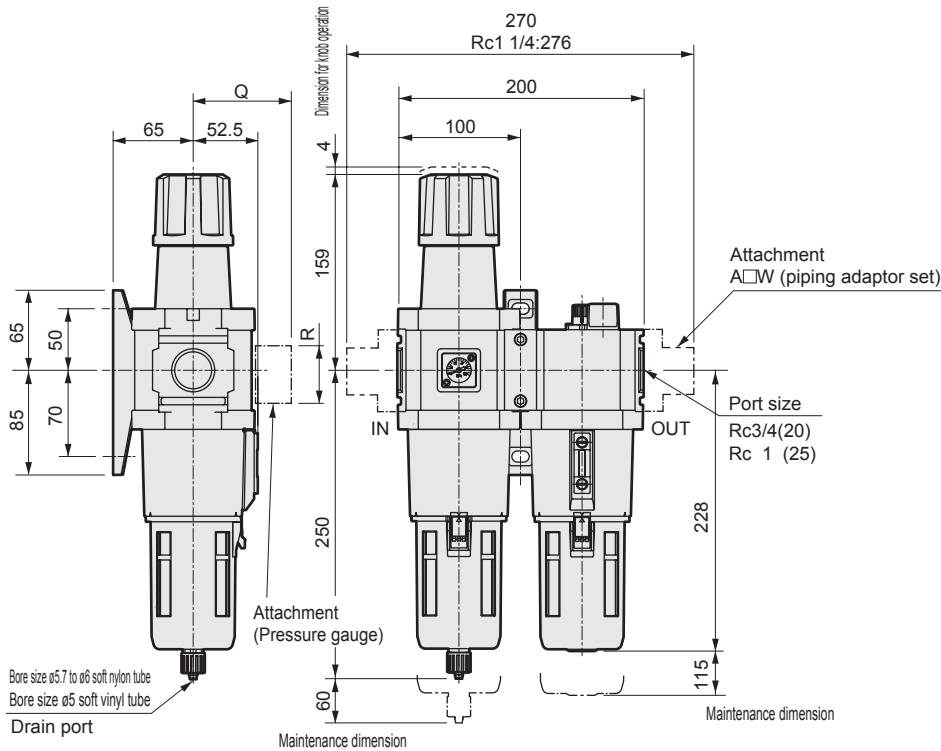
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. 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



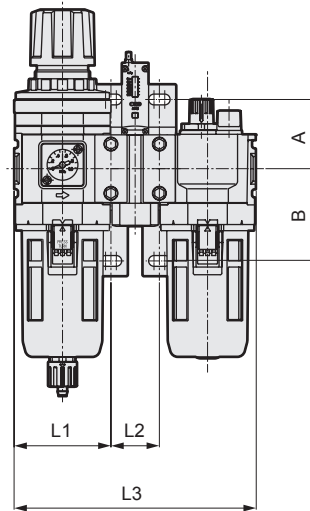
Pressure gauge attached optional dimensions table

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		
C8010-W	50	70

Assembled option	S			P			V			K			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
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	-	-	-	-	-	-

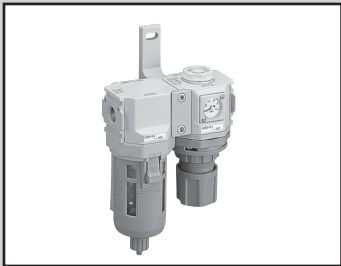
L1: Dimensions from the IN edge to center of the T-type bracket mounting hole
 L2: Spacing dimensions of the mounting hole from the first T-type bracket to the second T-type bracket
 L3: Dimensions from the IN edge to the OUT edge

* 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 conf. 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



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

JIS symbol



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: 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.

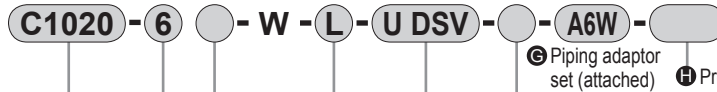
Note 4: The automatic drain's minimum operating pressure for "F" or "FF" with an automatic drain is 0.1 MPa. Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

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.)

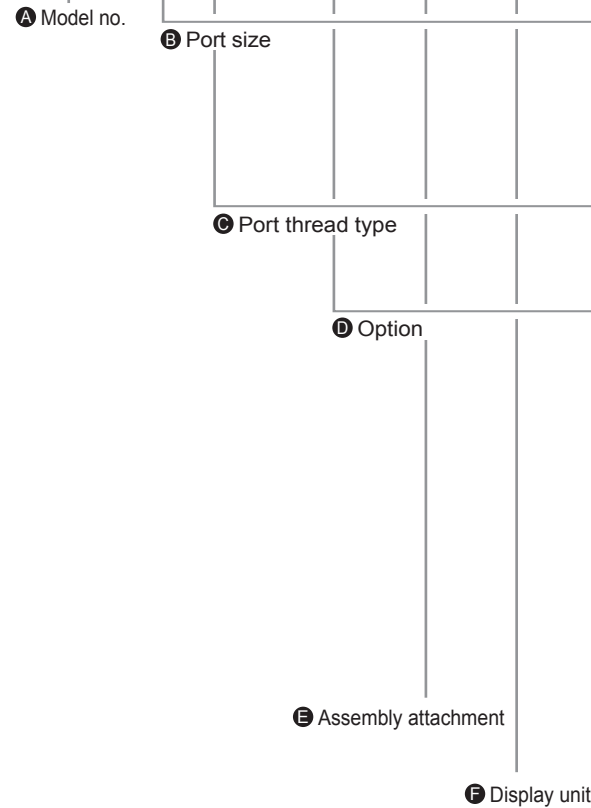
How to order



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

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

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



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 "V" 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 (Rc1/4) 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 or P	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.

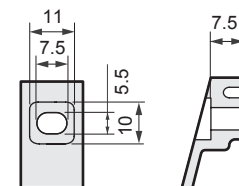
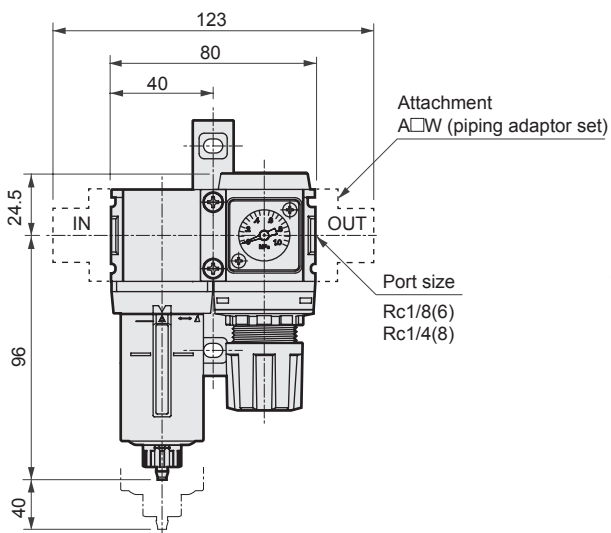
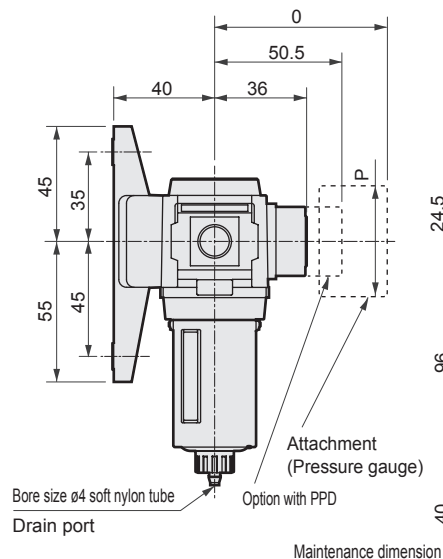
- Note 10: The joiner set is enclosed with the piping adaptor set.
- Note 11: If NPT is selected for the "C" piping thread, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

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	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)			●	●	●	●	●
Note 4		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		●	●	●	●	●
Flow direction	R1	Pressure switch with display PPD assembly	Note 8		●	●	●	●	●
	Blank	Standard flow (left → right)			●	●	●	●	●
	X1	IN/OUT reverse flow (right → left)			●	●	●	●	●
E Assembly attachment				Pages 402 to 413, 426, 427					
Assembled	Blank	Without assembly attachment type			●	●	●	●	●
	U	Assembly attachment type	Note 9		●	●	●	●	●
	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	Blank	Lockout valve (V3010-W, W6010-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 10					
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 11 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 9		Digital pressure sensor: PPX-R10N-6M			●	●	●	●	●

F.R. Combination

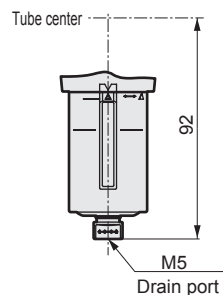
Dimensions

● C1020-W



Enlarged view of bracket section

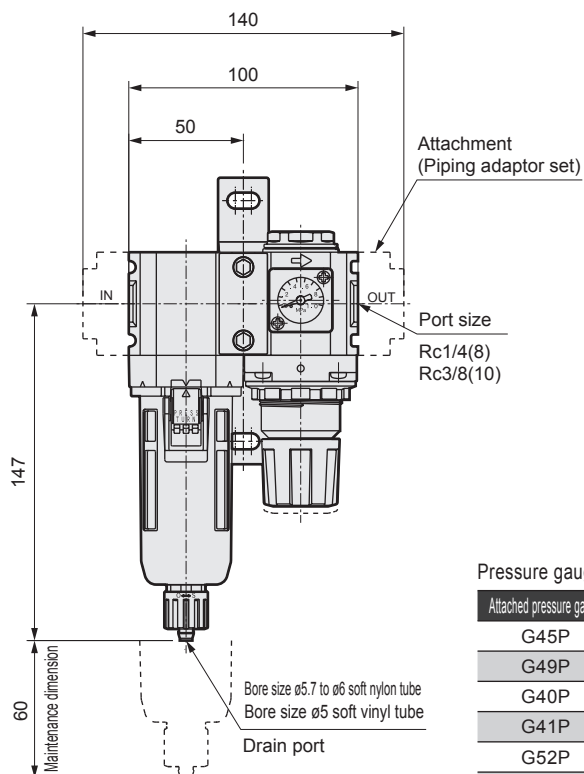
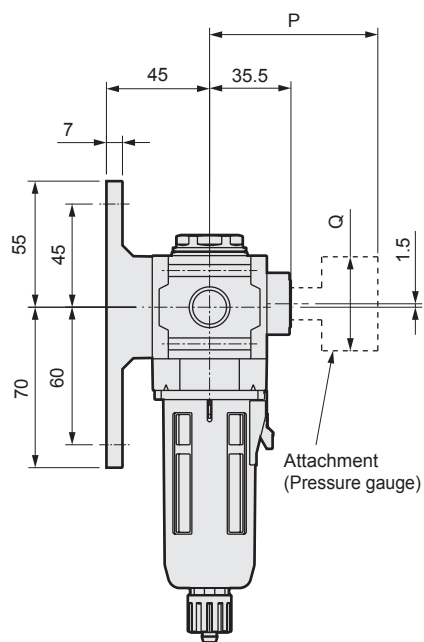
- Option dimensions
With automatic drain (F1)



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

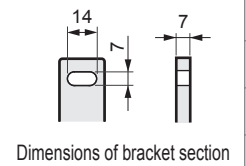
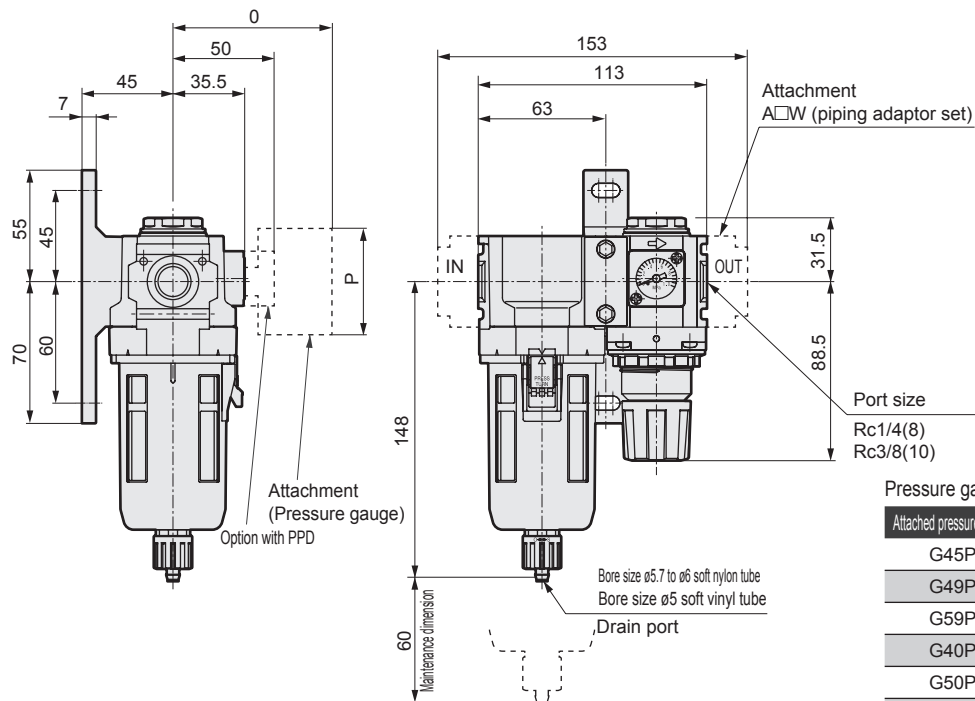


Pressure gauge attached optional dimensions table

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

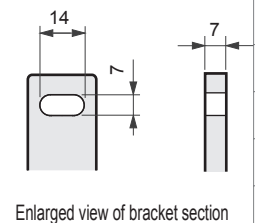
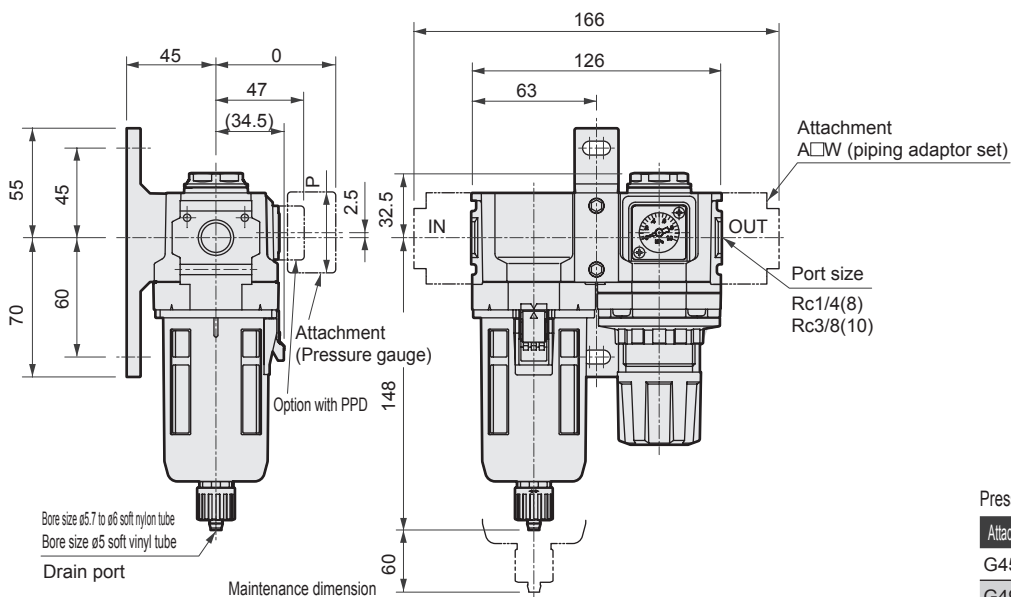
● C2520-W



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.

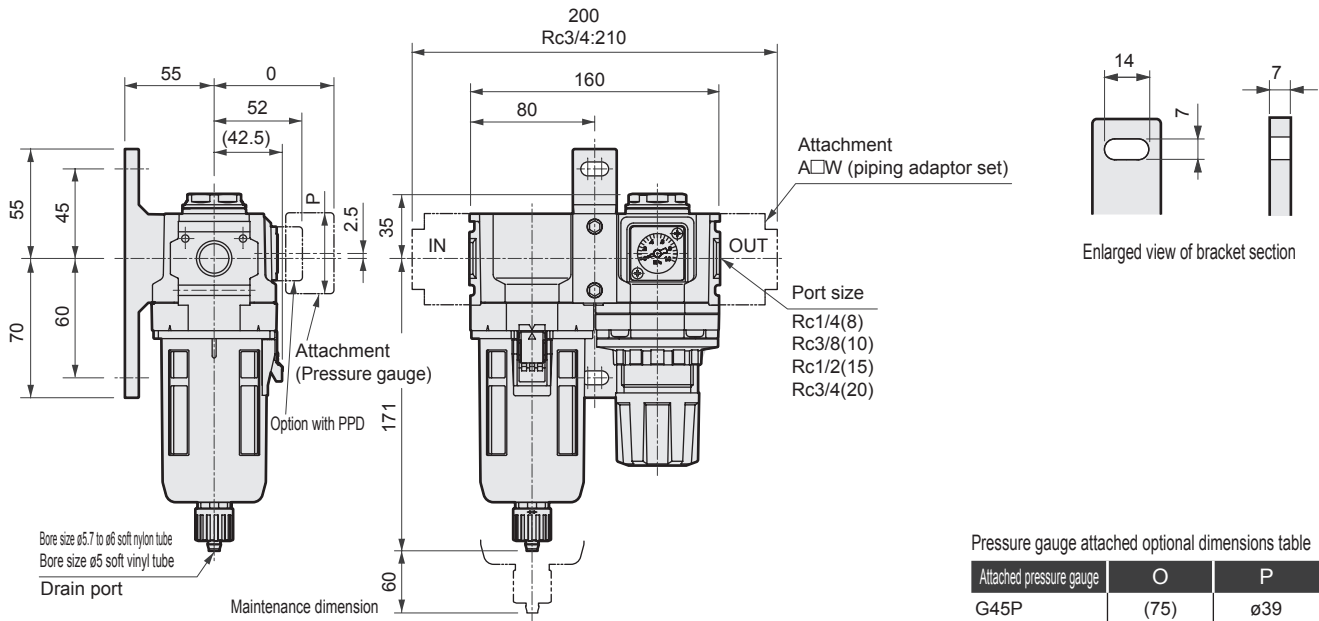
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. 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

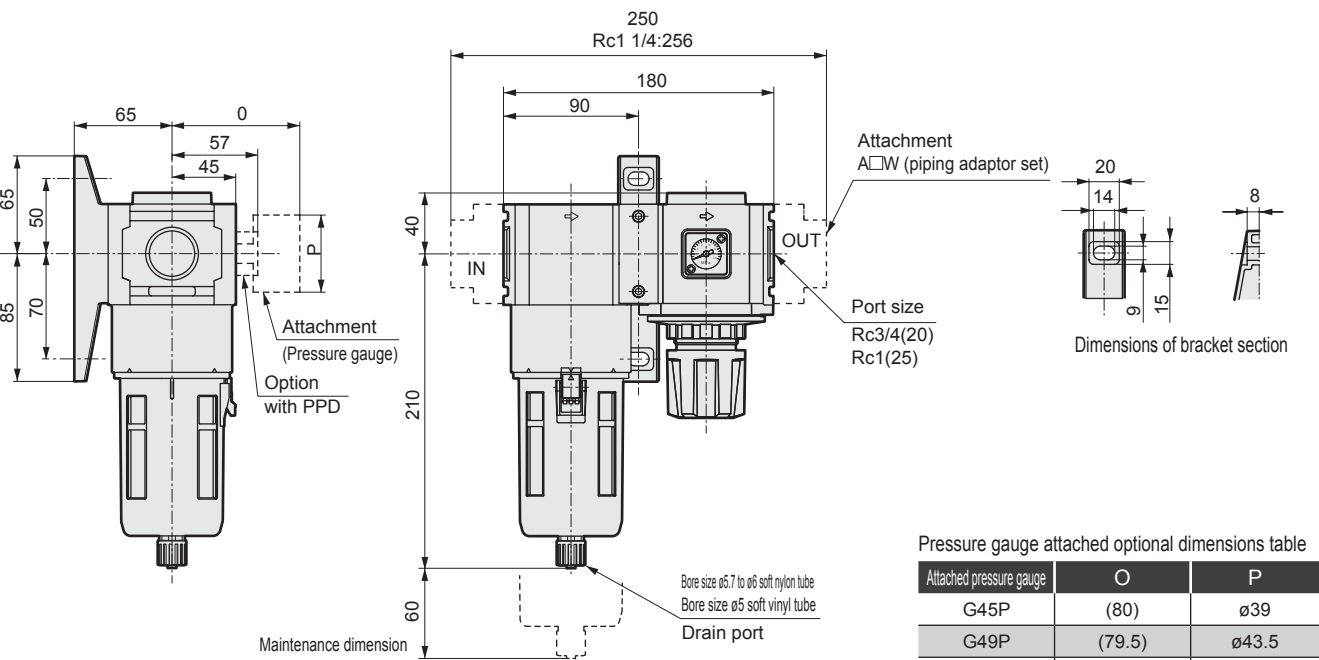


● Refer to page 357 for option dimensions of metal bowl.

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

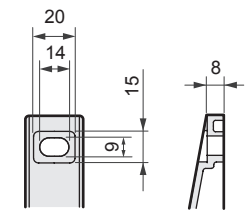
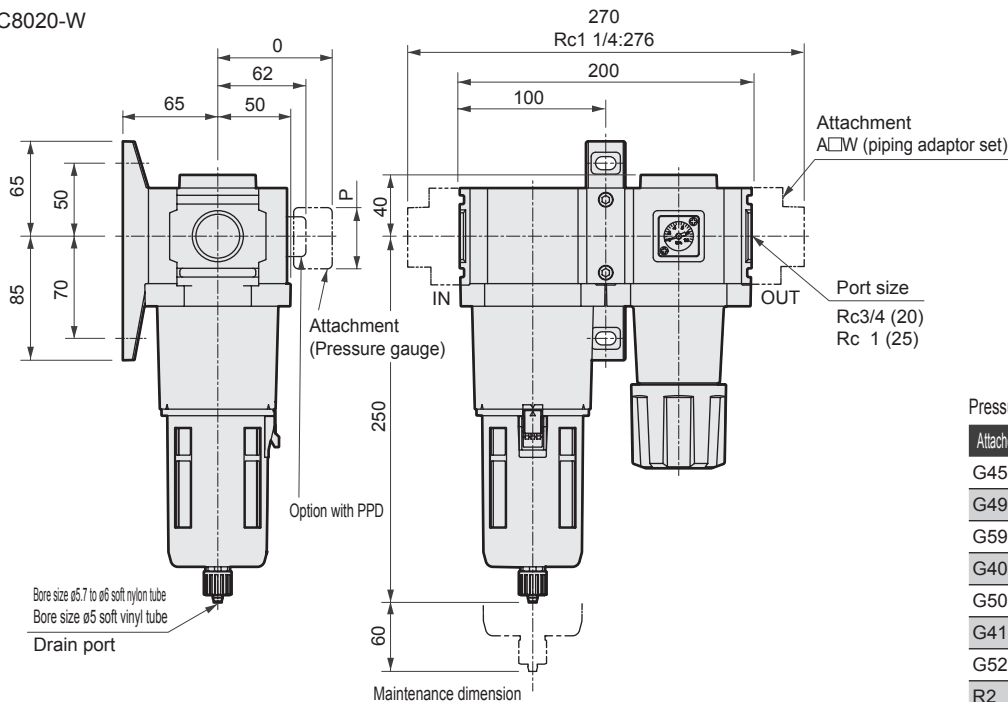
Attached pressure gauge	O	P
G45P	(80)	ø39
G49P	(79.5)	ø43.5
G59P	(82)	ø52
G40P	(81.5)	ø42.5
G50P	(81.5)	ø52.5
G41P	(80)	ø42
G52P	(93)	ø52.5
R2	(80)	□30

Option assembly dimensions

Dimensions



● C8020-W



Enlarged view of bracket section

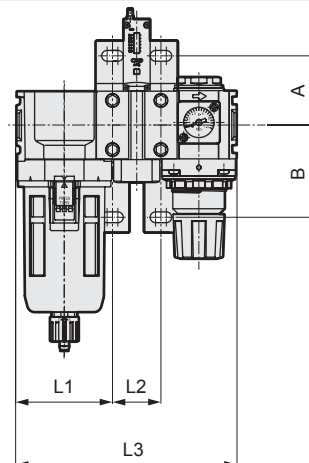
Pressure gauge attached optional dimensions table

Attached pressure gauge	O	P
G45P	(85)	ø39
G45P	(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 357 for option dimensions of metal bowl.

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		
C6020-W	50	70
C8020-W		

Assembled option	D			S (Note 1)			P			V			K			DS (Note 1)			DP			DV			DK		
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	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

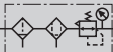
* Refer to page 425 for details on bracket mounting hole dimensions.

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 

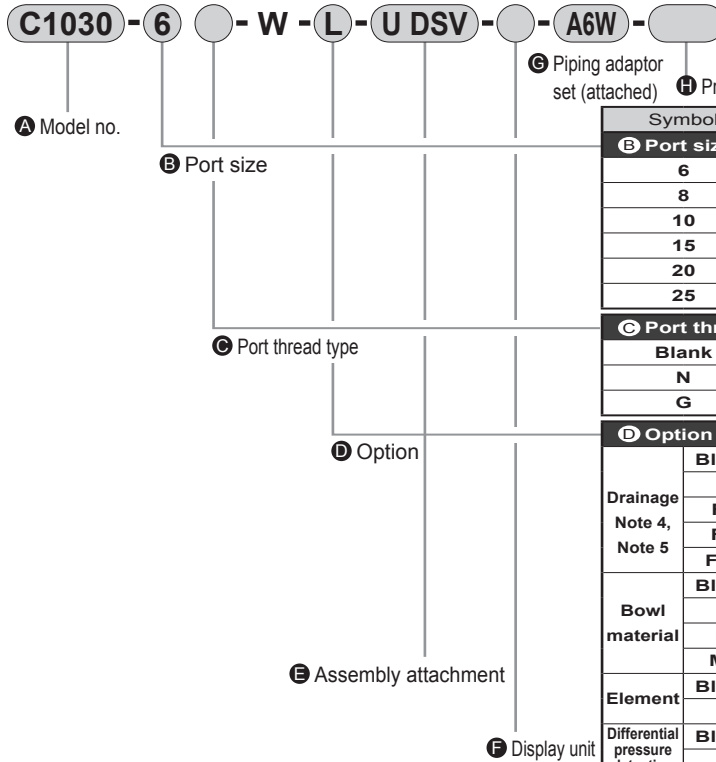


Specifications

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.

How to order



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

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

Symbol		Descriptions		A Model no.					
B Port size				C 1030	C 2030	C 2530	C 3030	C 4030	C 6030
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 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		●	●	●	●	●	●
	Blank	With standard pressure gauge (G401-W)		●	●	●	●	●	●
Pressure gauge	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		●	●	●	●	●	●
	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)		●	●	●	●	●	●
F Display unit	Blank	MPa display, Rc thread		●	●	●	●	●	●
	J1	MPa display, NPT, G thread		●	●	●	●	●	●
G Piping adaptor set (attached)				Page 428 Note 11					
H Pressure gauge option (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						●	●
*Adaptor screw type	Blank	Rc thread		●	●	●	●	●	●
	N	NPT thread		●	●	●	●	●	●
	G	G thread		●	●	●	●	●	●
H Pressure gauge option (attached)				Note 12 Page 659					
R2 Note 8	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)		●	●	●	●	●	●
	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

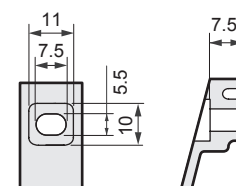
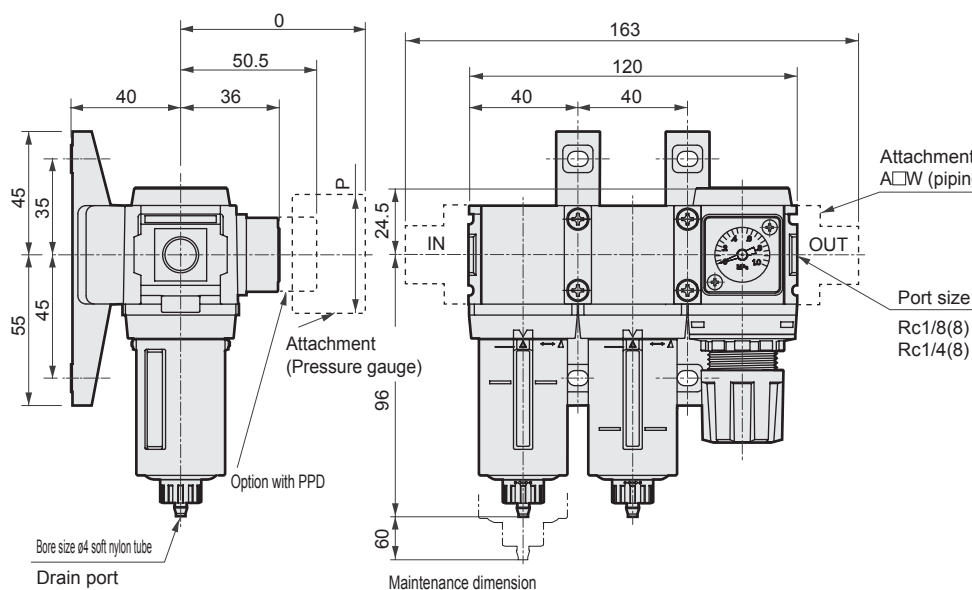
Standard series
F.R.L. unit

F.M.R. Combination

Dimensions



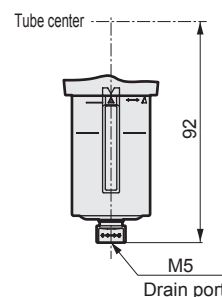
● C1030-W



Attachment
A□W (piping adaptor set)

Enlarged view of bracket section

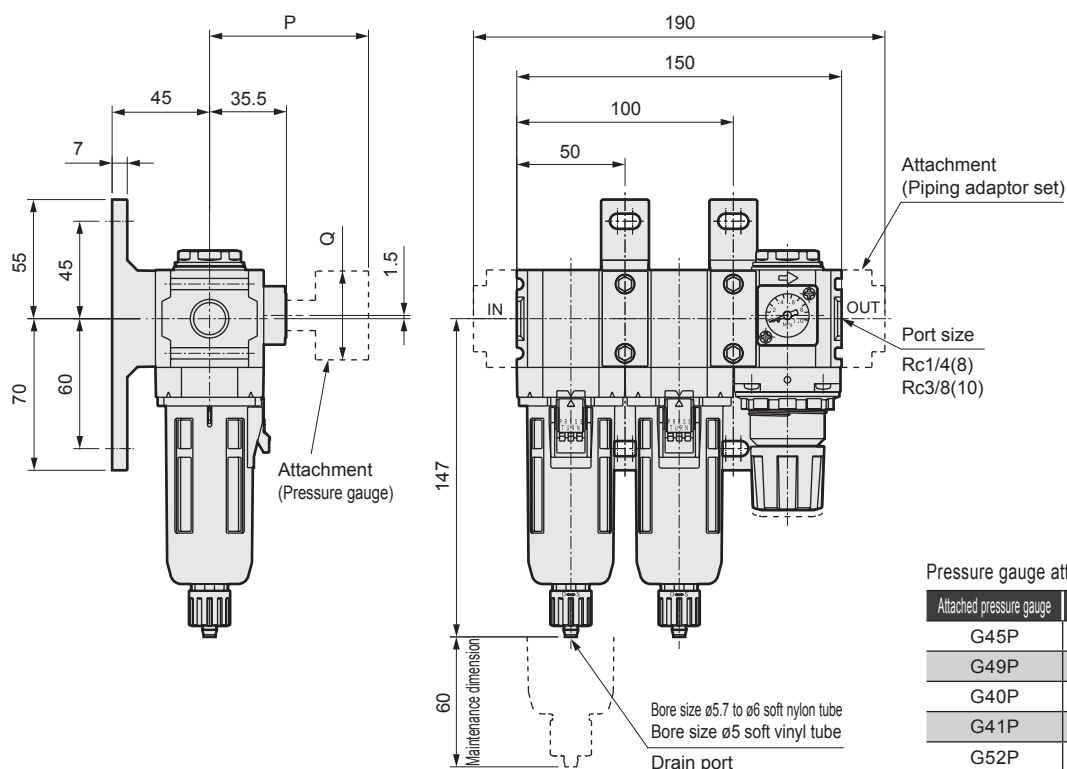
- Option dimensions
With automatic drain (F1)



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

● C2030-W

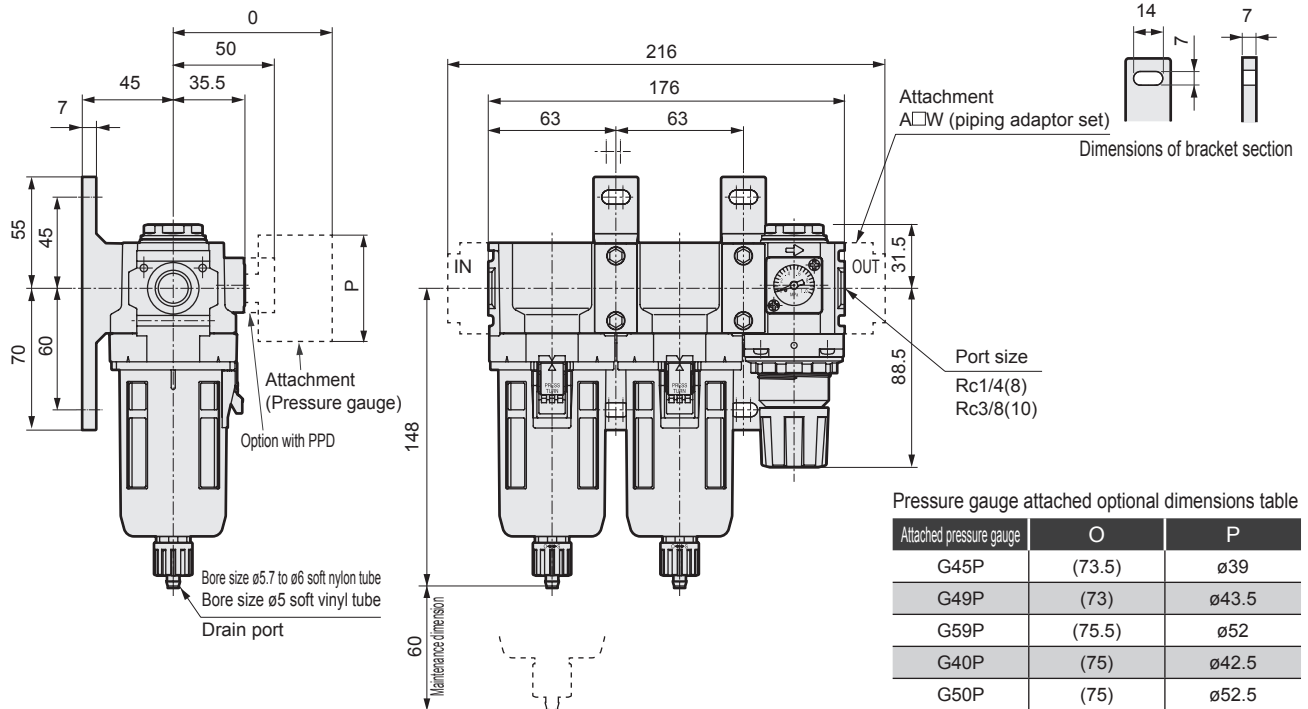


Pressure gauge attached optional dimensions table

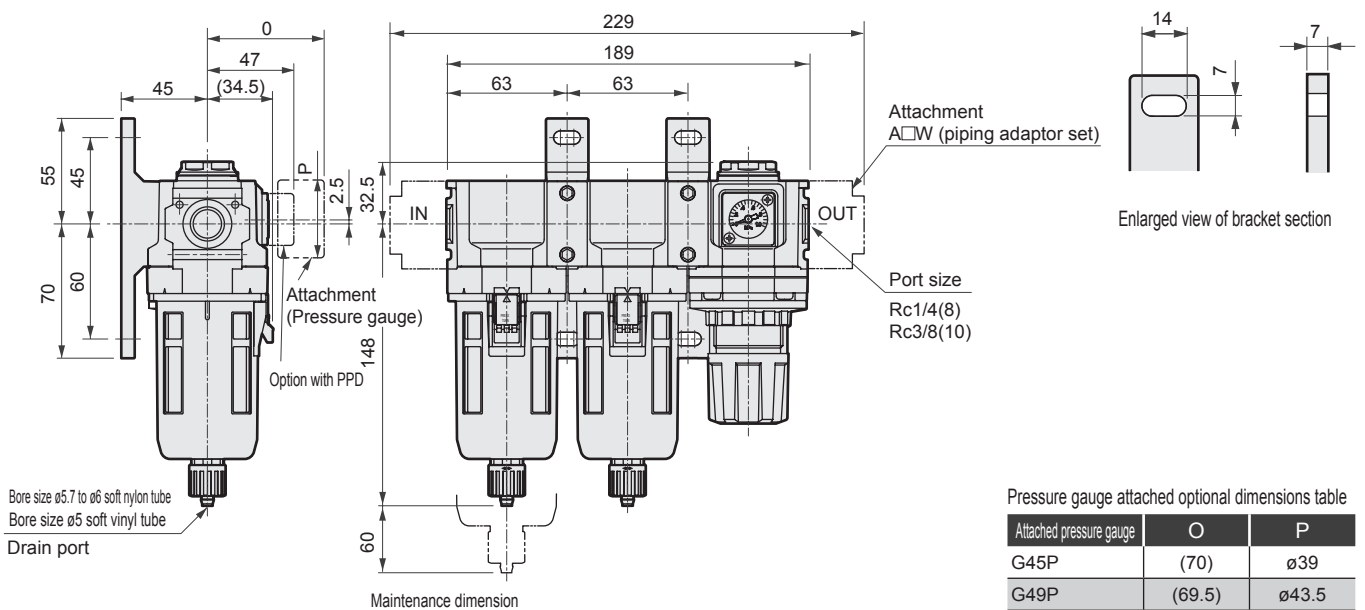
Attached pressure gauge	P	Q
G45P	(73.5)	ø39
G49P	(73)	ø43.5
G40P	(75)	ø42.5
G41P	(73.5)	ø42
G52P	(85.5)	ø52.5
R2	(73)	□30

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.

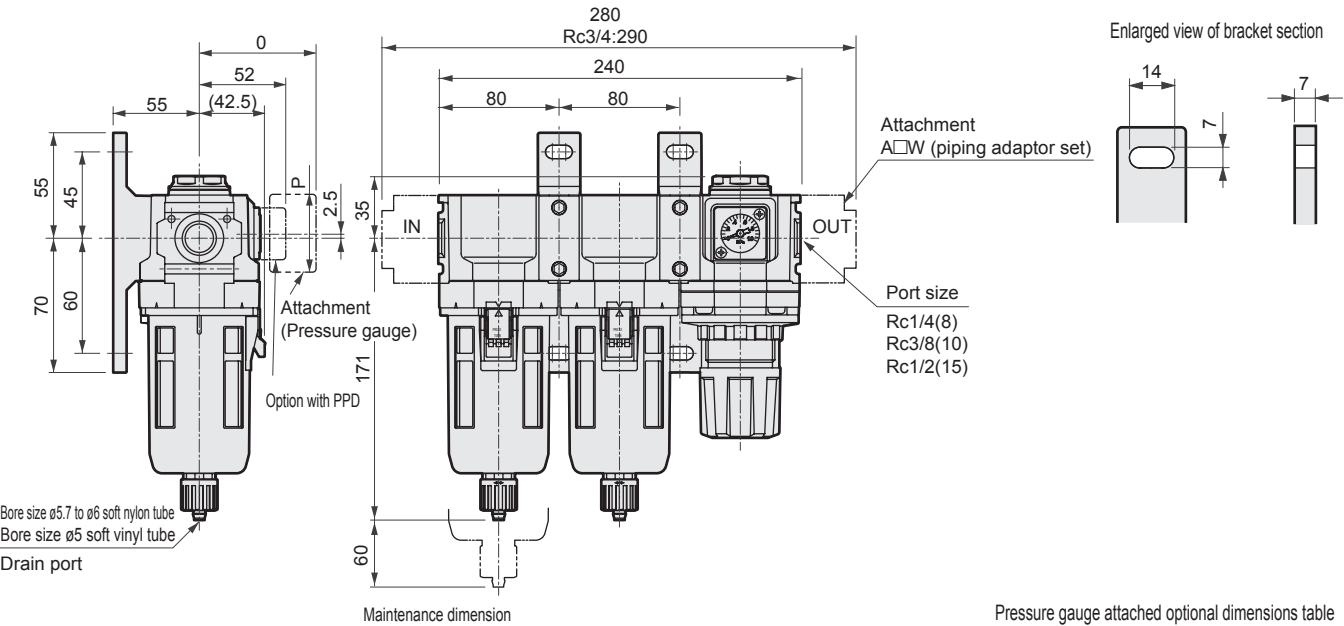
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. 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

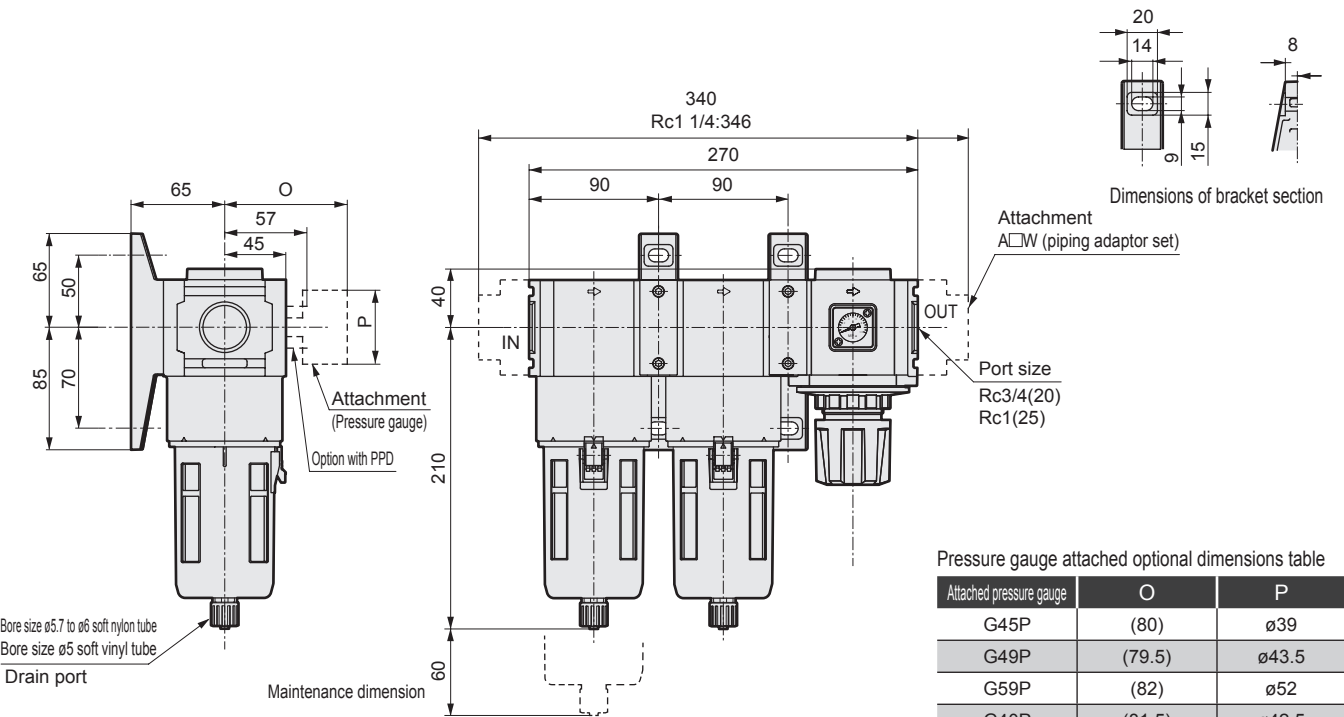


Pressure gauge attached optional dimensions table

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

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

● C6030-W

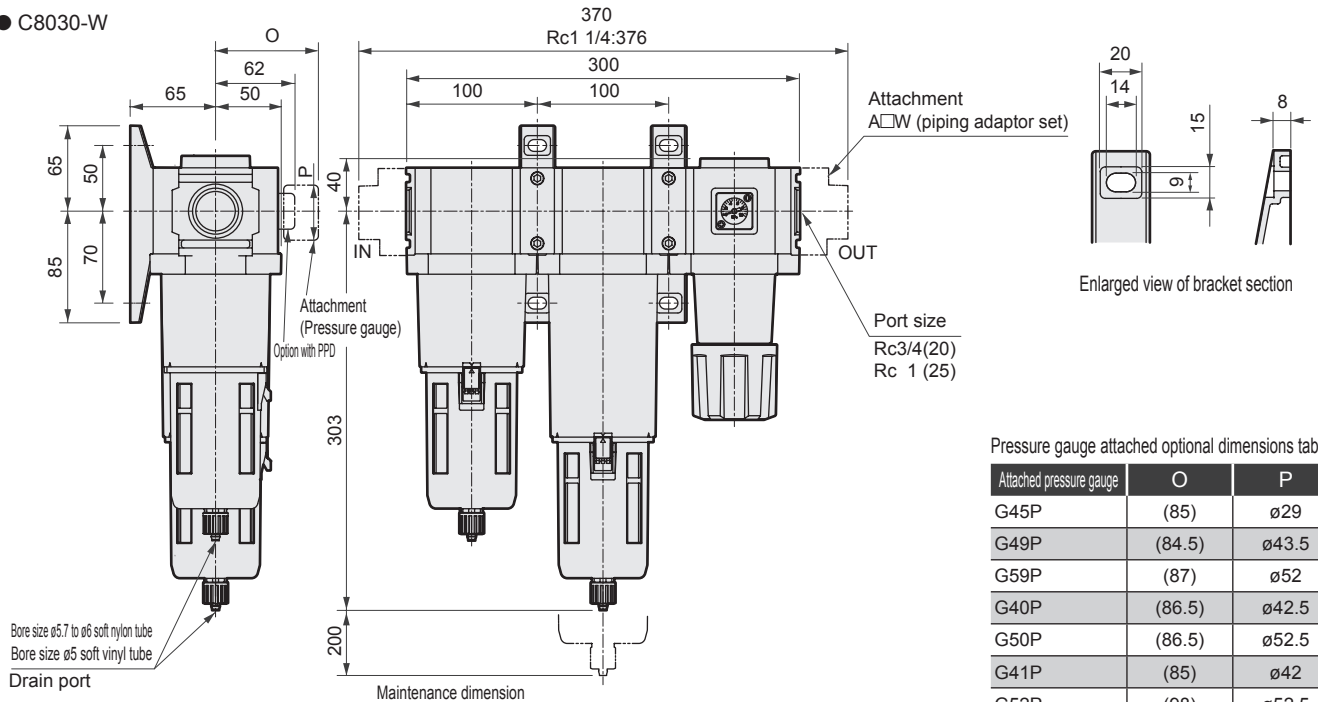


Pressure gauge attached optional dimensions table

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

Dimensions

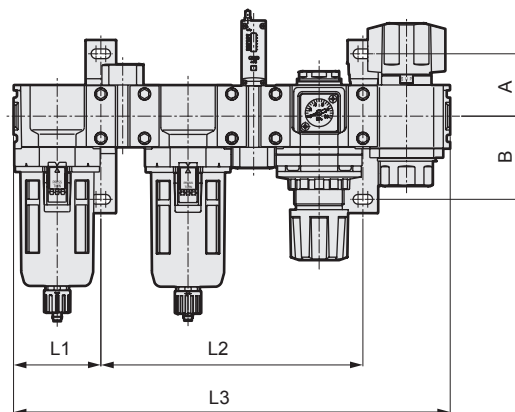
● C8030-W



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

Option assembly dimensions

● C1030-W to C8030-W



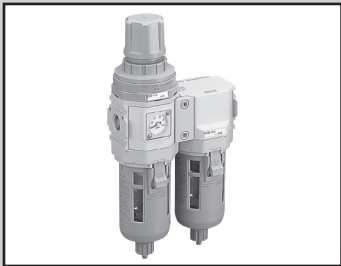
Model no.	A	B
C1030-W	35	45
C2030-W	45	60
C2530-W		
C3030-W		
C4030-W	50	70
C6030-W		
C8030-W		

Assembled option Model no.	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
C1030-W	40	68	148	40	80	169.5	-	-	-	40	80	160	-	-	-	40	108	197.5	-	-	-	40	108	188	-	-	-
C2030-W	50	94.5	181.5	50	113	201.5	50	113	230	50	113	213	50	113	213	50	144.5	233	50	144.5	261.5	50	144.5	244.5	50	144.5	244.5
C2530-W	63	94.5	207.5	63	113	227.5	63	113	256	63	113	239	63	113	239	63	144.5	259	63	144.5	287.5	63	144.5	270.5	63	144.5	270.5
C3030-W	63	94.5	220.5	63	126	240.5	63	126	269	63	126	252	63	126	252	63	157.5	272	63	157.5	300.5	63	157.5	283.5	63	157.5	283.5
C4030-W	80	111.5	271.5	80	160	291.5	80	160	320	80	160	303	80	160	303	80	191.5	323	80	191.5	351.5	80	191.5	334.5	80	191.5	334.5
C4030-20-W Note 1	100	111.5	311.5	100	160	311.5	100	160	360	100	160	343	100	160	343	100	191.5	343	100	191.5	391.5	100	191.5	374.5	100	191.5	374.5
C6030-W	90	140	320	90	180	355	-	-	-	-	-	-	90	180	360	90	230	405	-	-	-	-	-	-	90	230	410
C8030-W	100	150	350	100	200	385	-	-	-	-	-	-	100	200	390	100	250	435	-	-	-	-	-	-	100	250	440
Assembled option Model no.	DSV			DSK			DPV			DPK			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			
C1030-W	40	136	216	-	-	-	-	-	-	-	-	-	40	108	188.0	-	-	-	-	-	-	-	-	-			
C2030-W	50	176	276	50	176	276	50	225	325	50	225	325	50	144.5	244.5	50	144.5	244.5	50	193	293	50	193	293			
C2530-W	63	176	302	63	176	302	63	225	351	63	225	351	63	144.5	270.5	63	144.5	270.5	63	193	319	63	193	319			
C3030-W	63	189	315	63	189	315	63	238	364	63	238	364	63	157.5	283.5	63	157.5	283.5	63	206	332	63	206	332			
C4030-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			
C4030-20-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			
C6030-W	-	-	-	90	280	460	-	-	-	-	-	-	-	-	-	90	230	410	-	-	-	-	-	-			
C8030-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.




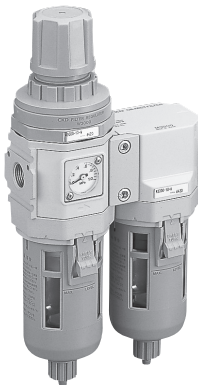

Note 1: The piping adaptor is assembled on the OUT side. Piping adaptor A400-20-W is attached on the both ends of C4030-20-W.



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 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

C1040 - **6** - **W** - **F1** - **U SV** - **A6W** - **H**

A Model no.

B Port size

C Port thread type

D Option

E Assembly attachment

F Display unit

G Piping adaptor set (attached)

* 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 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.

Note10: 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.

Symbol		A Model no.				
		C1040	C2040	C3040	C4040	C8040
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 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)	●	●	●	●
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	●	●	●	●

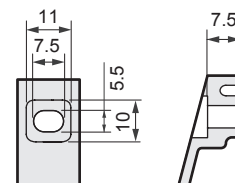
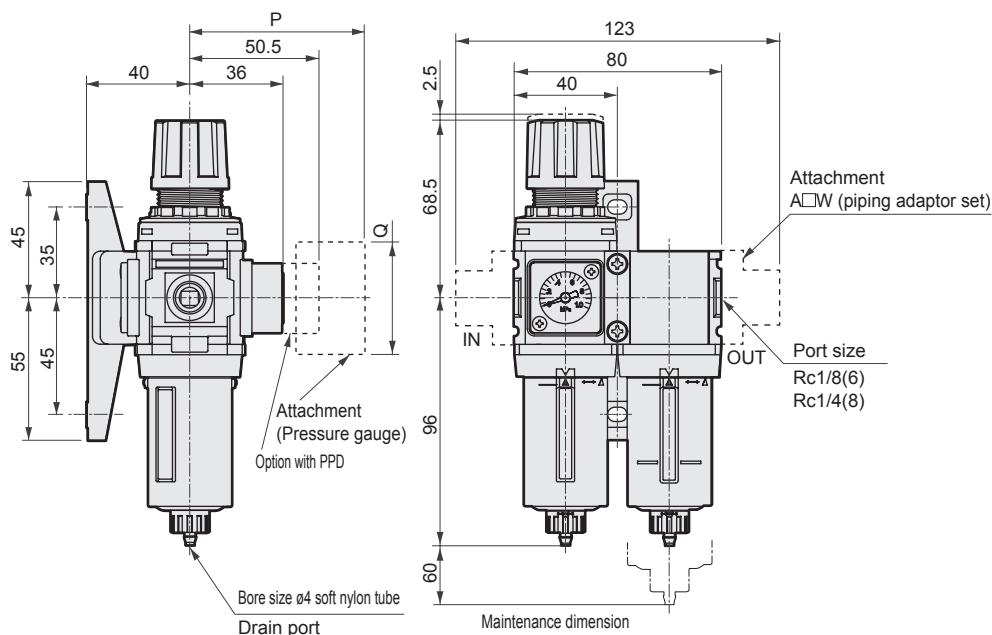
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

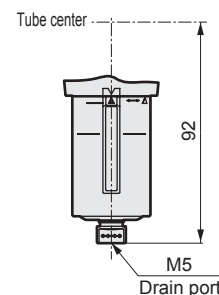
Dimensions

● C1040-W



Enlarged view of bracket section

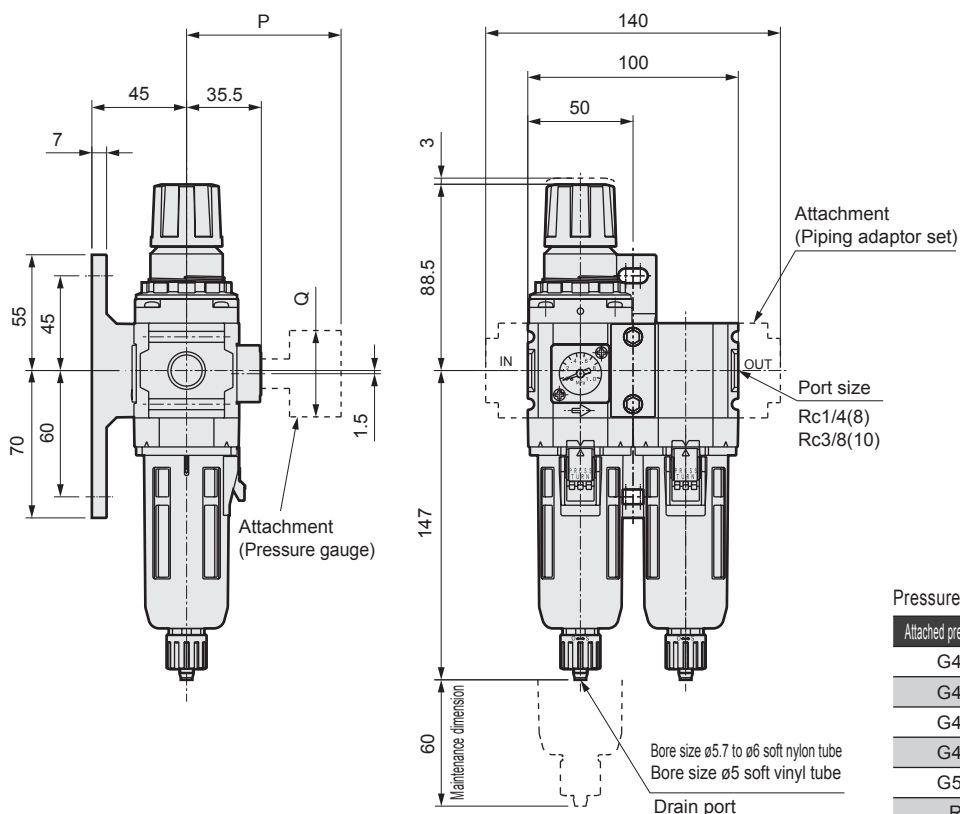
• Option dimensions With automatic drain (F1)



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
R2	(74)	□30

● C2040-W

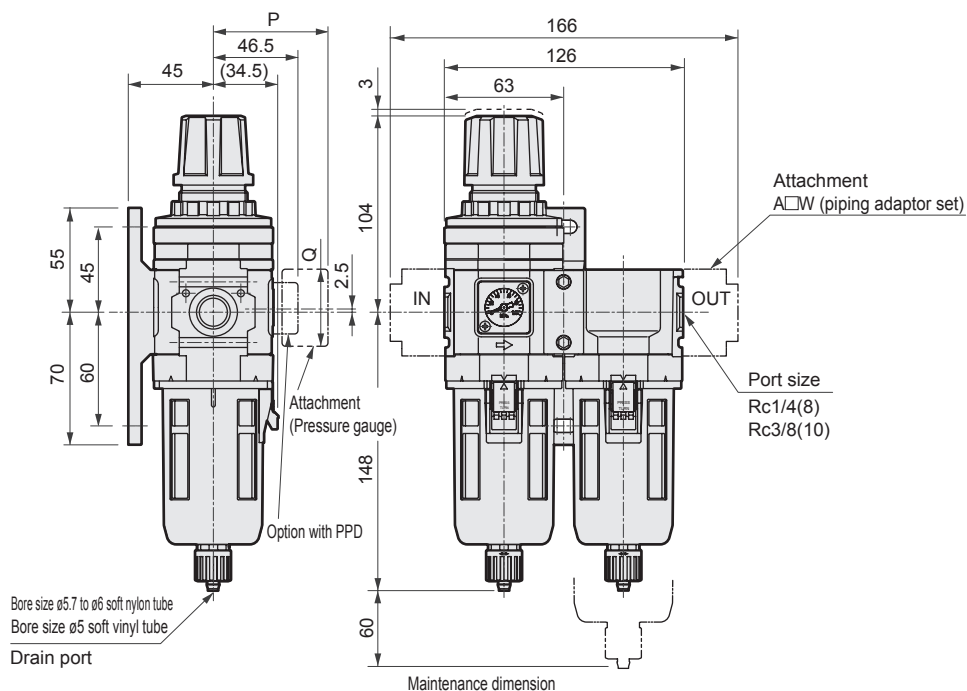


Pressure gauge attached optional dimensions table

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

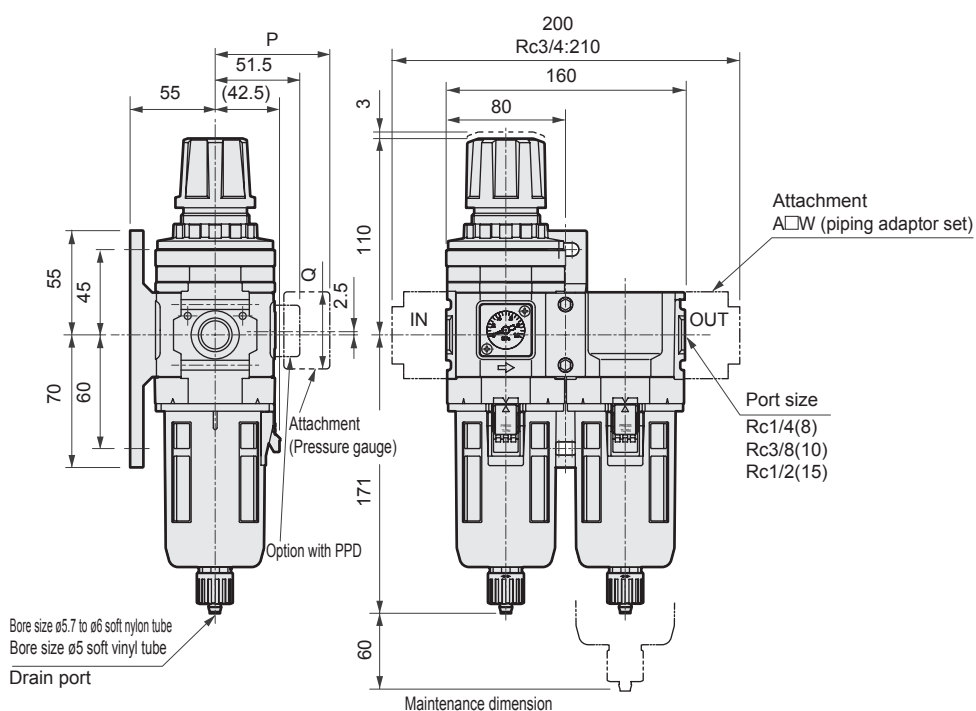
Dimensions

● C3040-W

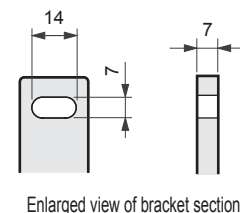


- Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 367 for the oil mist filter.

● C4040-W



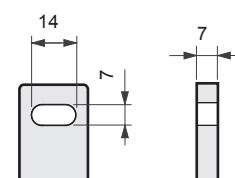
- Refer to page 340 for the dimensions of the metal bowl option filter/regulator and page 367 for the oil mist filter.



Enlarged view of bracket section

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



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
R2	(75)	□30

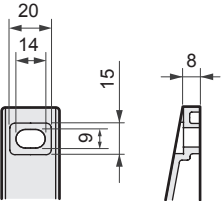
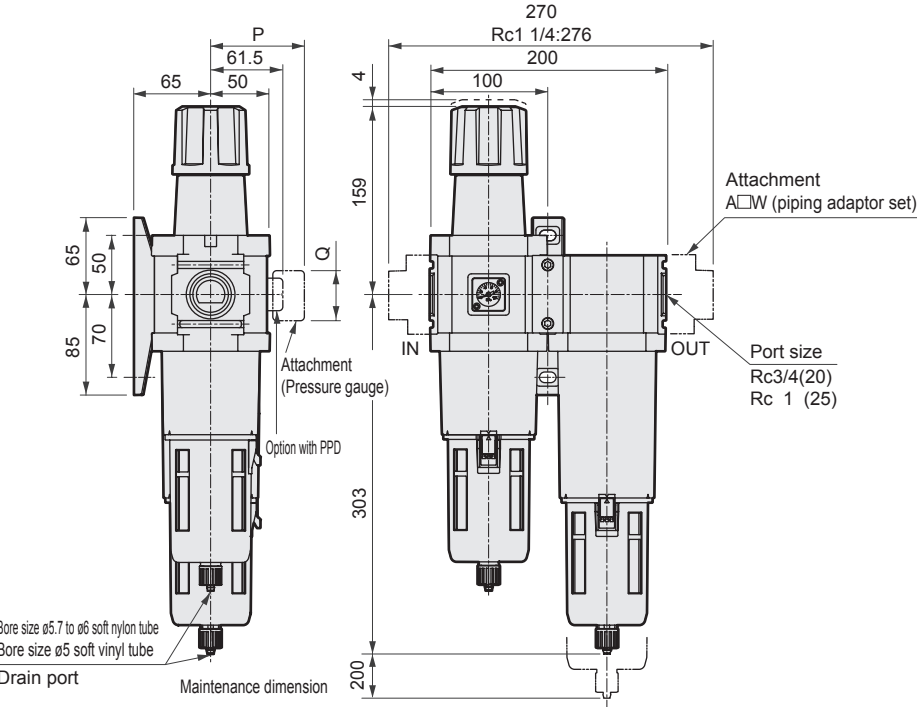
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

W.M. Combination

Dimensions

● C8040-W



Enlarged view of bracket section

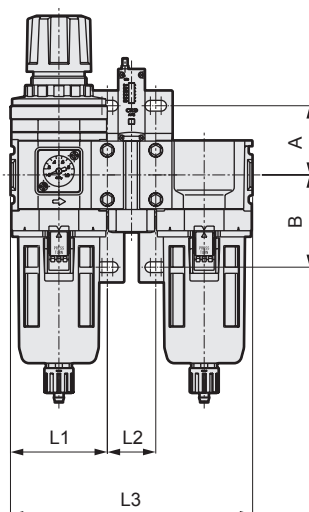
Pressure gauge attached optional dimensions table

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	S			P			V			K			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
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

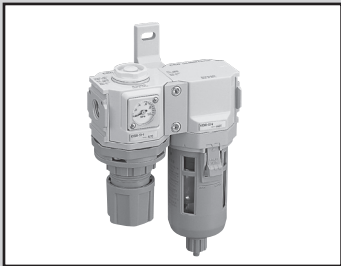
* Refer to page 425 for details on bracket mounting hole dimensions.

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 conf. 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 oilmist filter integrated.
Port size: 1/8 to 1
JIS symbol

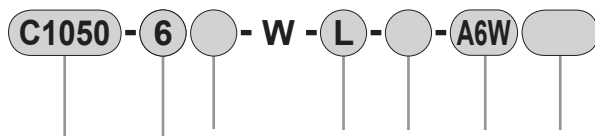


Specifications

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 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.

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)

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.

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

Symbol		Descriptions		A Model no.					
B Port size				C 1050	C 2050	C 2550	C 3050	C 4050	C 6050
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 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)				Page 428 Note 8					
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)				Note 9 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 6		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

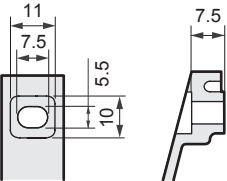
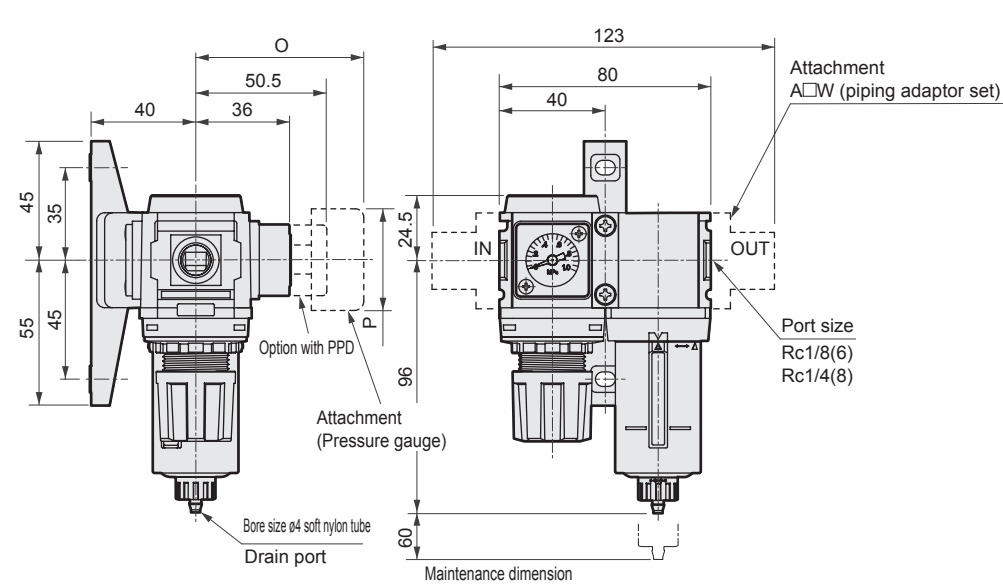
Standard series

F.R.L. unit

R.M. Combination

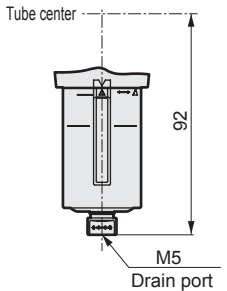
Dimensions

● C1050-W



Enlarged view of bracket section

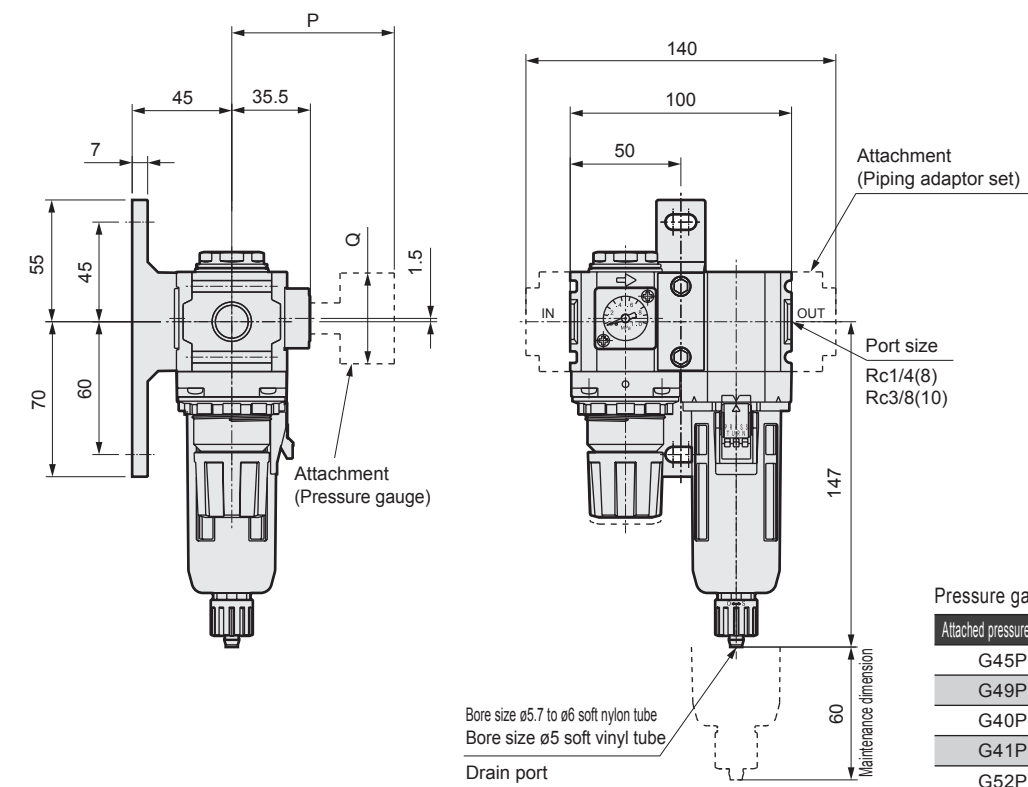
• Option dimensions
With automatic drain (F1)



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

● C2050-W

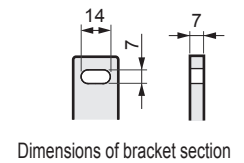


Pressure gauge attached optional dimensions table

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



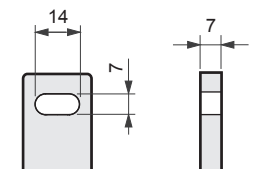
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster



Dimensions of bracket section

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

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 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)



Enlarged view of bracket section

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

Standard series
F.R.L. unit

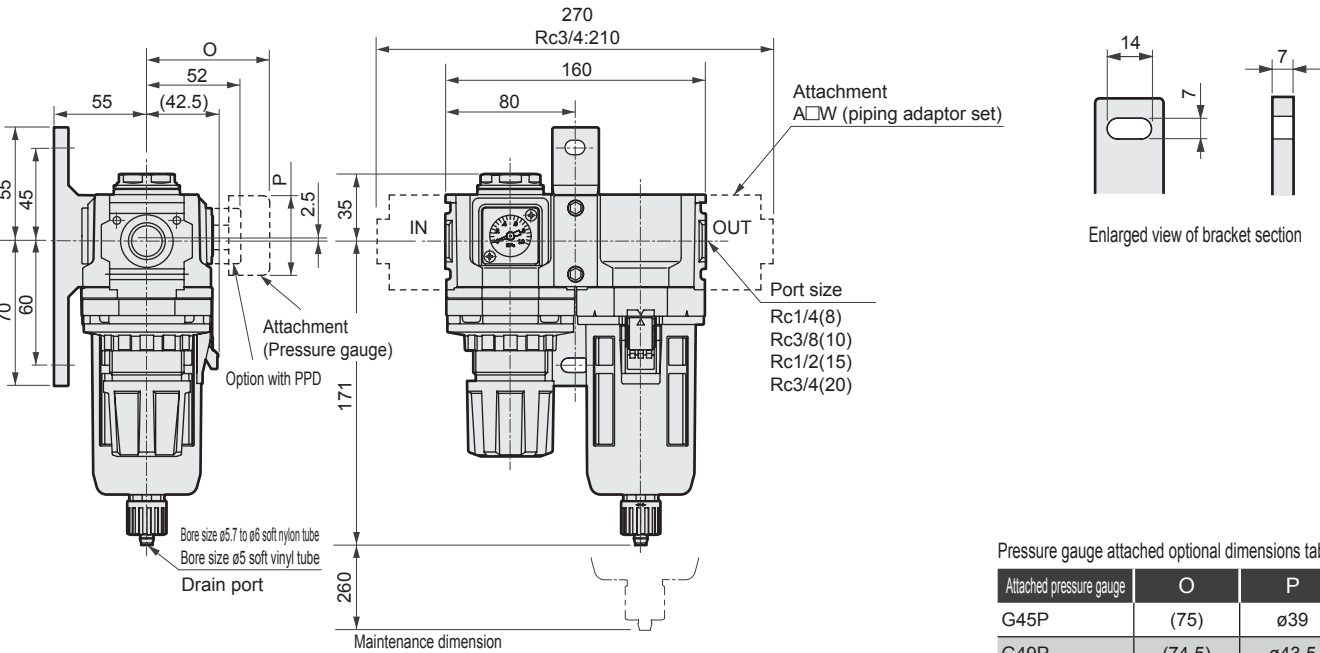
CKD

R.M. Combination

Dimensions



● C4050-W

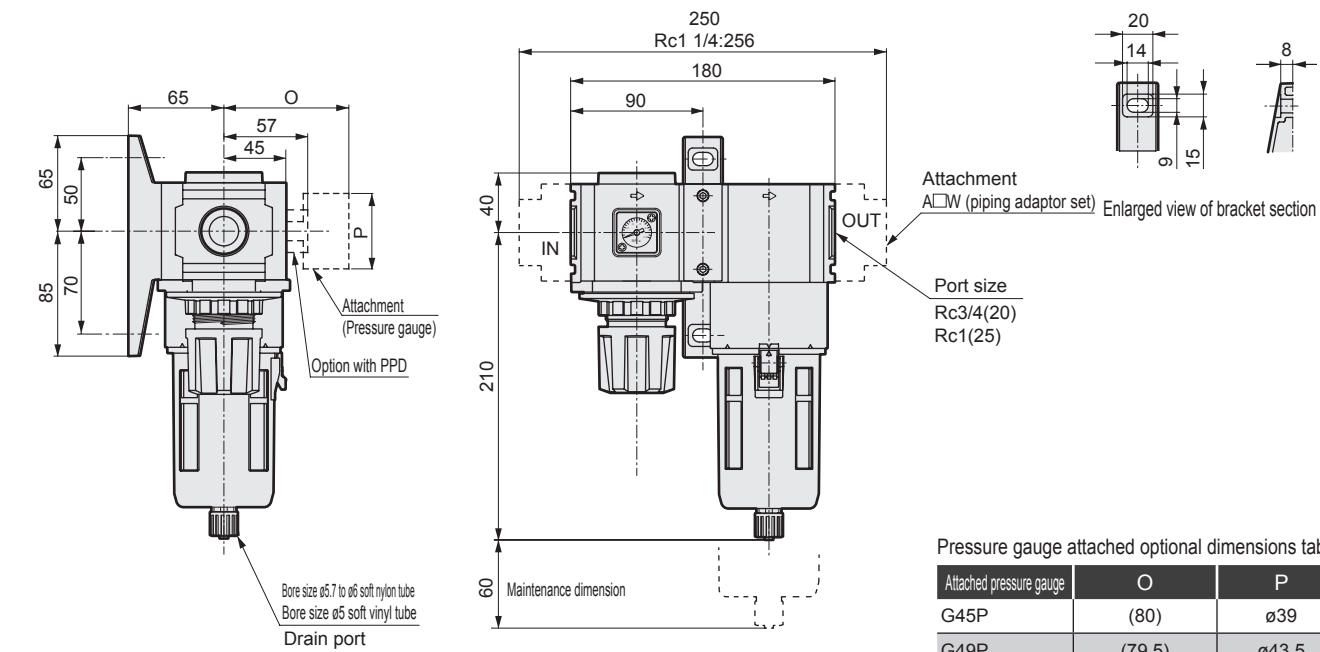


Pressure gauge attached optional dimensions table

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

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

● C6050-W



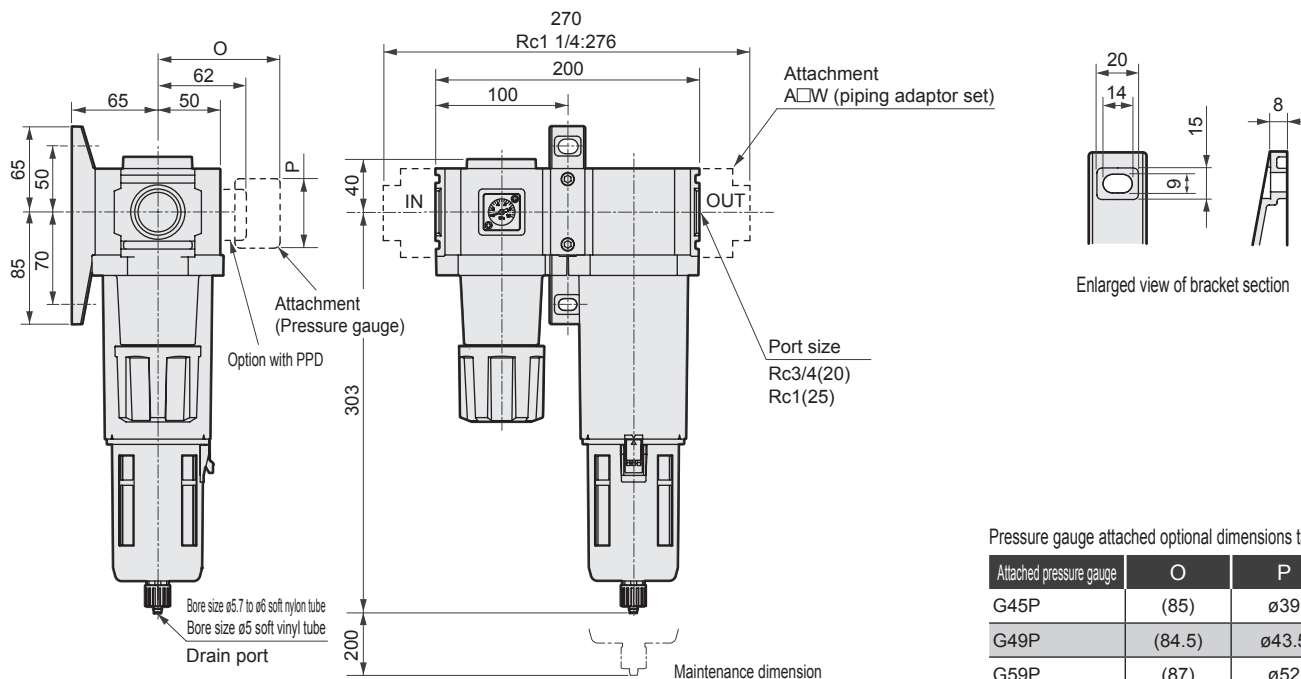
Pressure gauge attached optional dimensions table

Attached pressure gauge	O	P
G45P	(80)	ø39
G49P	(79.5)	ø43.5
G59P	(82)	ø52
G40P	(81.5)	ø42.5
G50P	(81.5)	ø2.5
G42P	(80)	ø42
G52P	(93)	ø52.5
R2	(80)	□30

Dimensions



● C8050-W



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

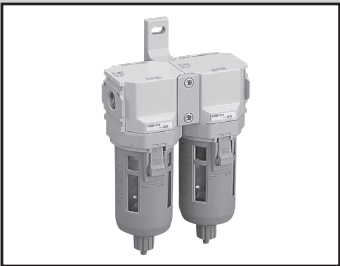
Pressure gauge attached optional dimensions table

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 conf. 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



F.M. combination standard white Series

**C1060/C2060/C3060/
C4060/C6060/C8060-W Series**

Filter and oilmist 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.

How to order

A Model no. **C1060** - **B** Port size **6** - **C** Port thread type **W** - **D** Option **Z** - **E** Display unit **F** Piping adaptor set (attached) **A6W**

* 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 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

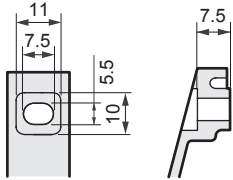
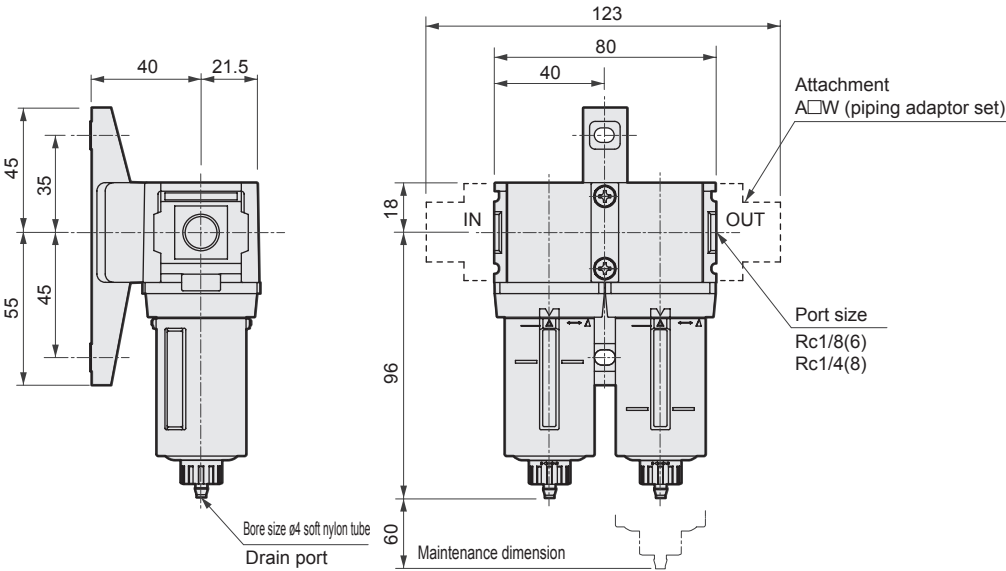
Standard series
F.R.L. unit

F.M. Combination

Dimensions

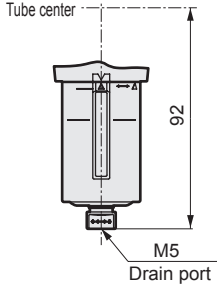


● C1060-W

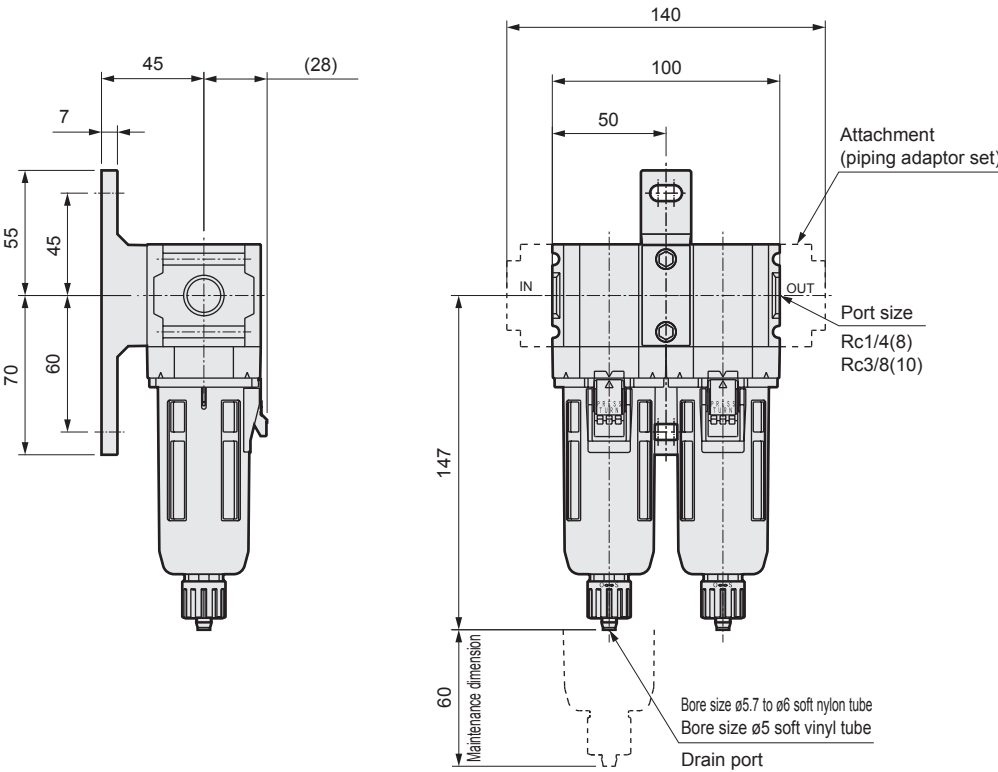


Enlarged view of bracket section

● Option dimensions With automatic drain (F1)



● C2060-W





Enlarged view of bracket section

-
- Enlarged view of bracket section

- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|----------------------|----------------------------------|------------|----------------------|---------------------------------|------------------------------|--------------|-------------------|--------------------------------------|-------------------|-----------------------------|--------------------|---------------------|----------|----------------------|--------------|---------------|------------------|---------------|------------------------|------------------------|------------------------|----------------------------|------------|-------------------------|-------------------|-----------------------|---------------------|-----------------------|------------------|--------------------------|--------|
| 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 | Joins / tube | Vacuum filter | Vacuum regulator | Suction plate | Magnetic spring buffer | Mechanical pressure SW | Electronic pressure SW | Contact / close contact 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 |
|--------------------------|----------------------|----------------------------------|------------|----------------------|---------------------------------|------------------------------|--------------|-------------------|--------------------------------------|-------------------|-----------------------------|--------------------|---------------------|----------|----------------------|--------------|---------------|------------------|---------------|------------------------|------------------------|------------------------|----------------------------|------------|-------------------------|-------------------|-----------------------|---------------------|-----------------------|------------------|--------------------------|--------|

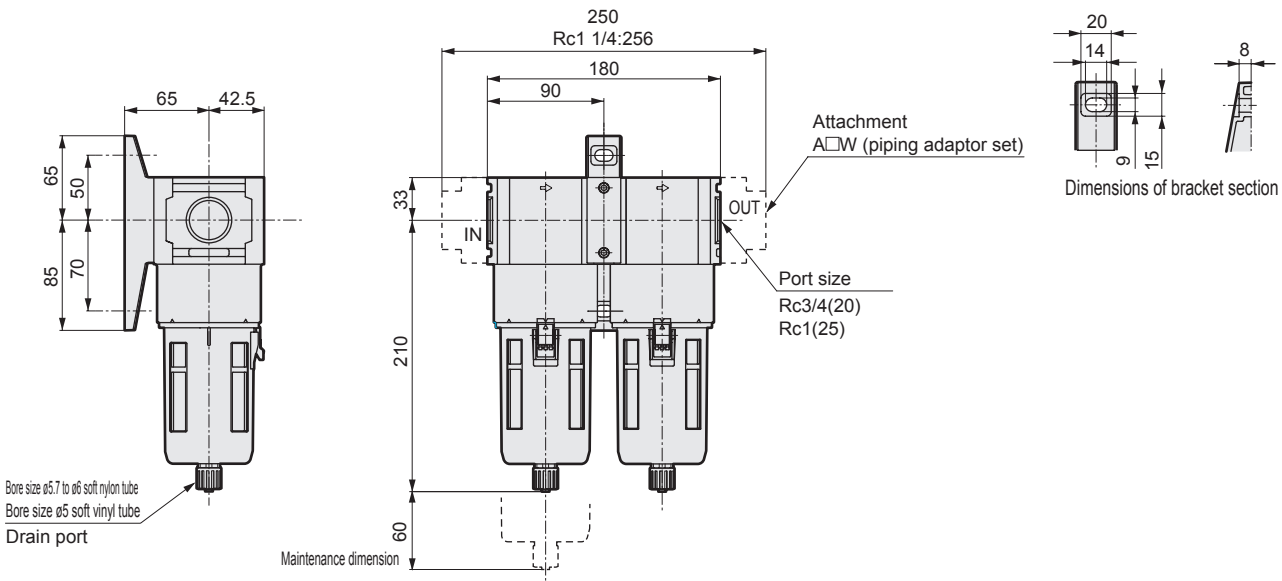
Standard series
F.R.L. unit

F.M. Combination

Dimensions

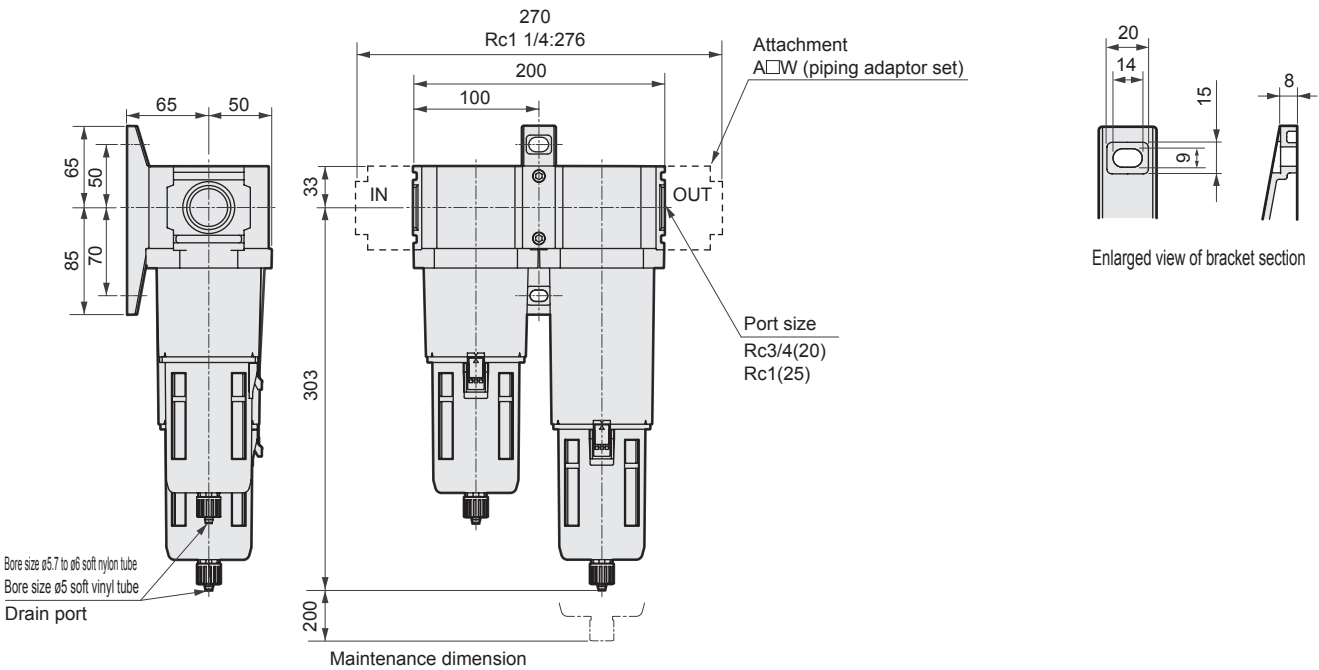


● C6060-W



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

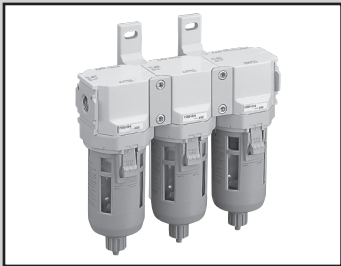
● C8060-W



● 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
	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					
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)			●
Note 4,	FF1	Large auto. drain with manual override (NC type: No exhaust w/o pressurized)			●
Note 5					
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)					
Page 428 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		●	●	●
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.

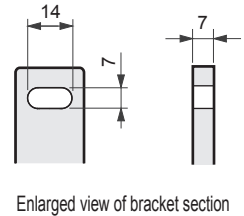
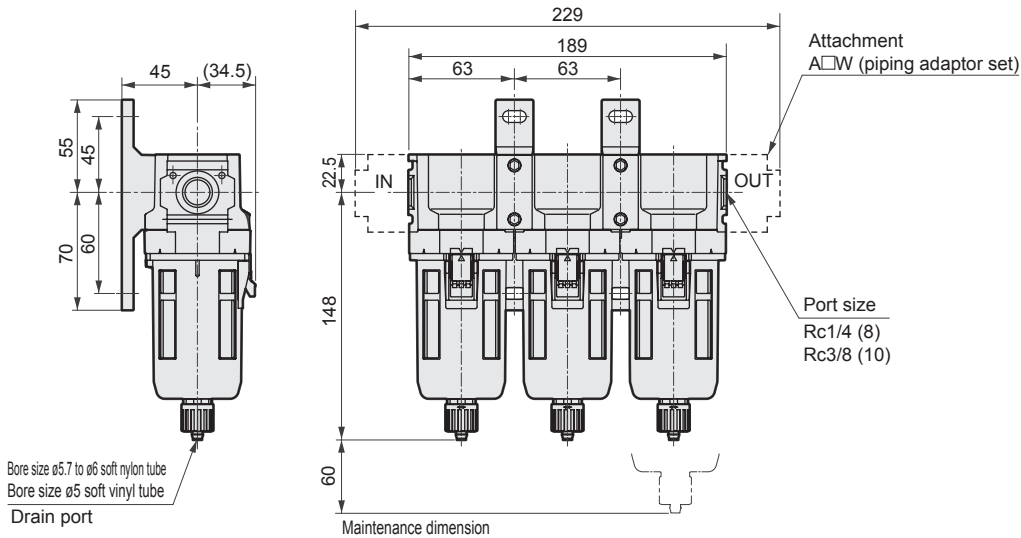
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. 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

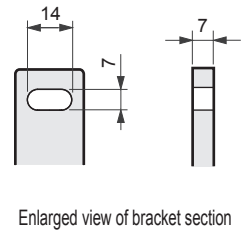
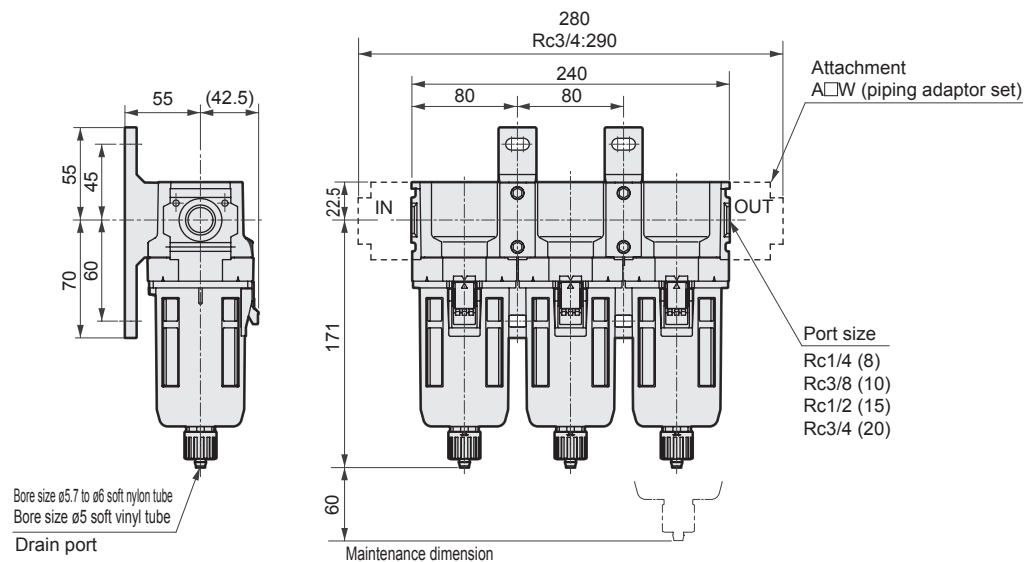


● C3070-W



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

● C4070-W

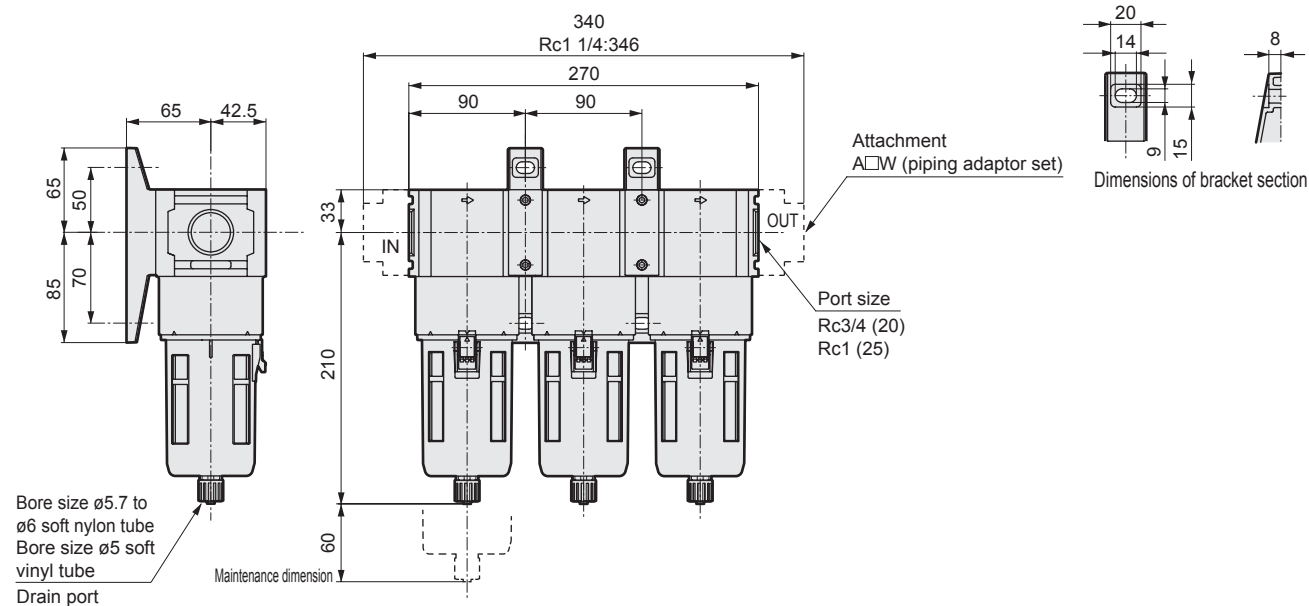


- Refer to page 357 for the dimensions of the metal bowl option filter and page 367 for the oil mist filter.

Dimensions

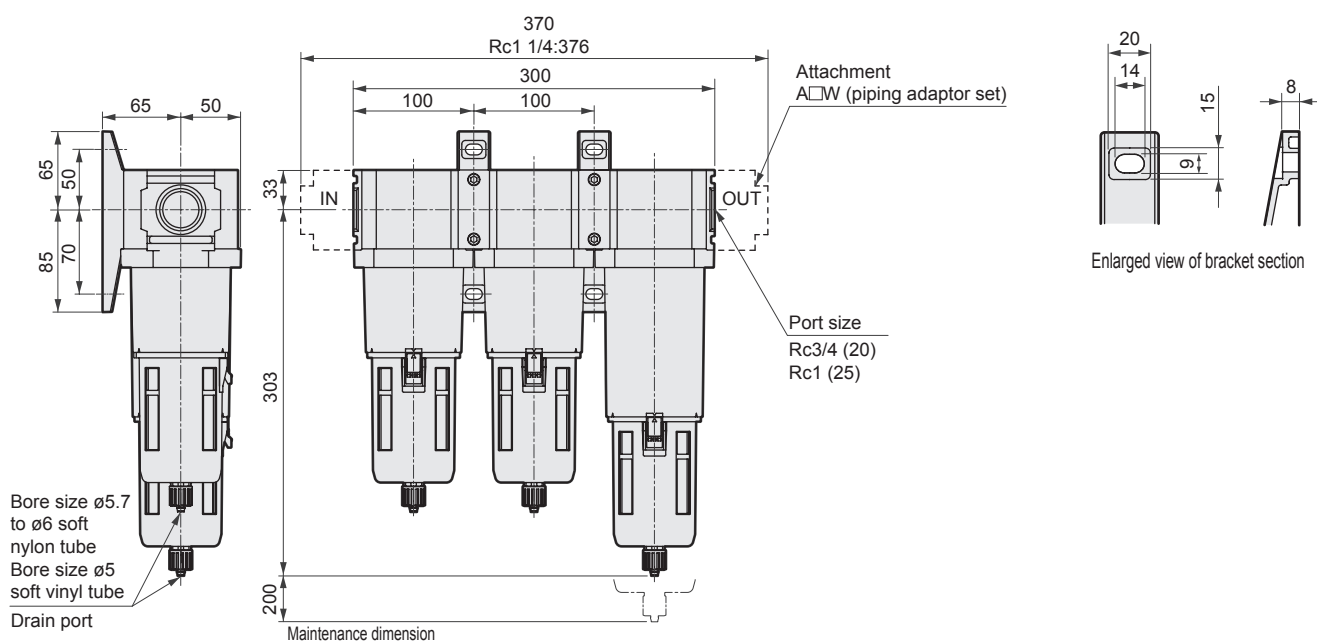


● C6070-W



- 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)

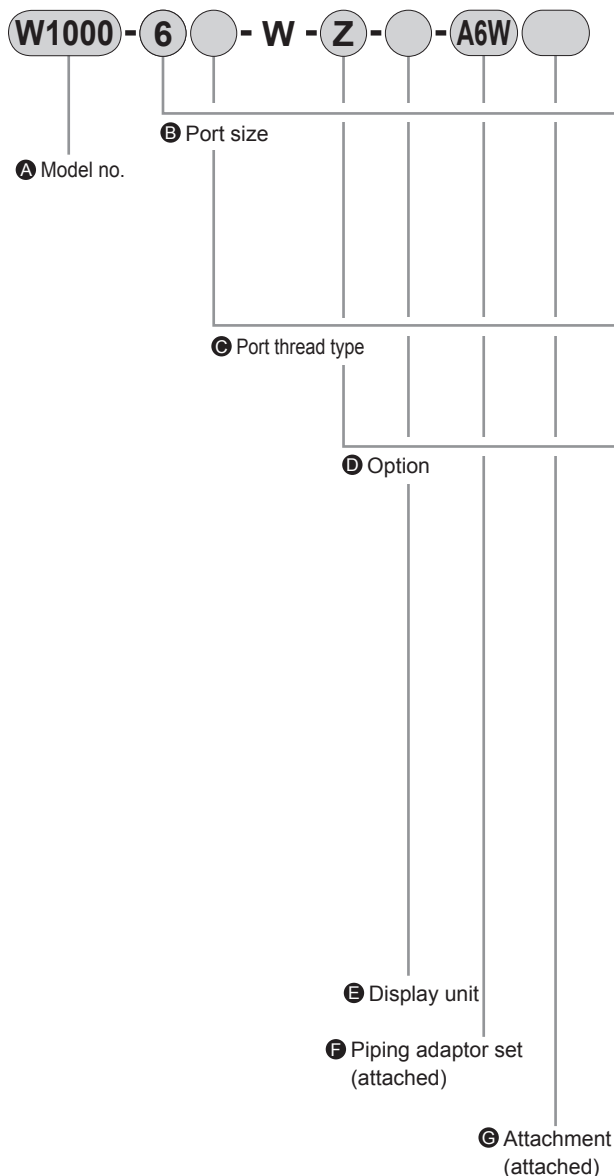
- Structured for use in secondary battery manufacturing processes

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.				
W	W	W	W	W
1	2	3	4	8
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

Symbol	Descriptions	0	0	0	0	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						
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)				●
Note 3	FF1	Large auto. drain with manual override (NC type: No exhaust w/o pressurized)				●
	Blank	Polycarbonate bowl	●	●	●	●
	Z	Nylon bowl	●	●	●	●
	M	Metal bowl				●
Bowl material	M1	Metal bowl with manual drain cock		●	●	●
	Blank	5μm	●	●	●	●
Element	Y	0.3μm (submicron)			●	●
	Blank	0.05 to 0.85MPa	●	●	●	●
Pressure Range	L	0.05 to 0.35MPa			●	●
	Blank	With relief mechanism	●	●	●	●
Relief	N	Nonrelief type	●	●	●	●
	Blank	With standard pressure gauge (G401-W)	●	●	●	●
Pressure gauge	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						
Note 4						
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 Attachment (attached)						
Note 10 Page 425, page 659						
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	●	●	●	●	●

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

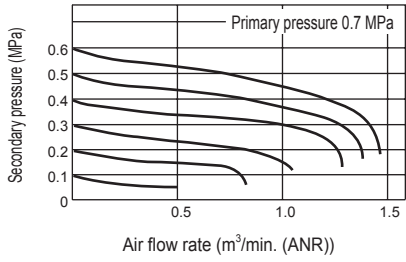
Standard series
F.R.L. unit

Filter/Regulator series

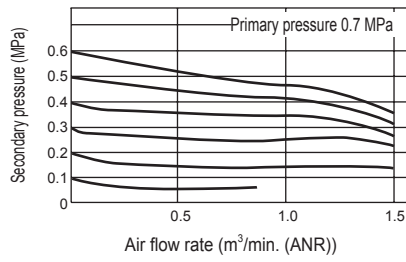
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

Flow characteristic

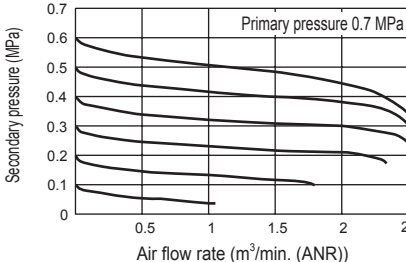
● W1000-6-W



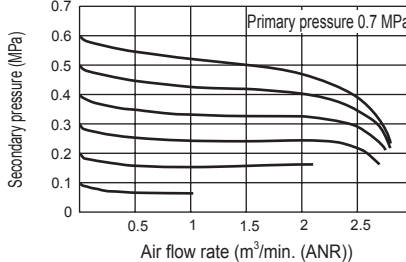
● W1000-8-W



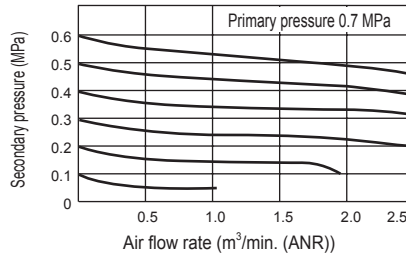
● W2000-8-W



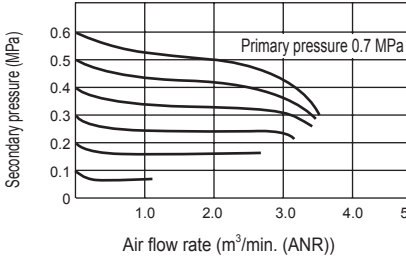
● W2000-10-W



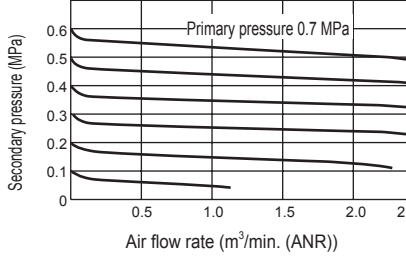
● W3000-8-W



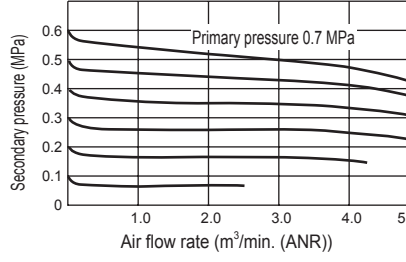
● W3000-10-W



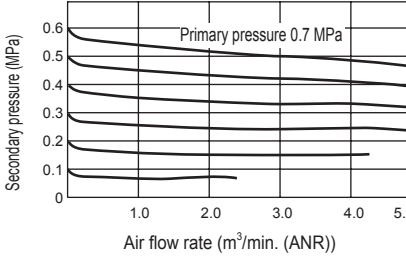
● W4000-8-W



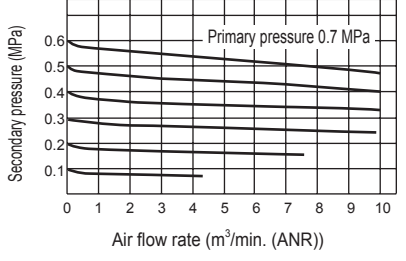
● W4000-10-W



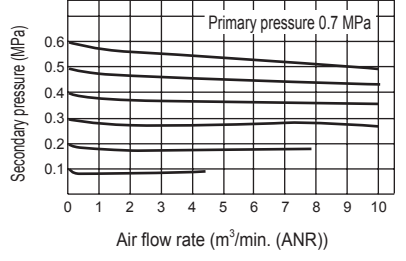
● W4000-15-W



● W8000-20-W

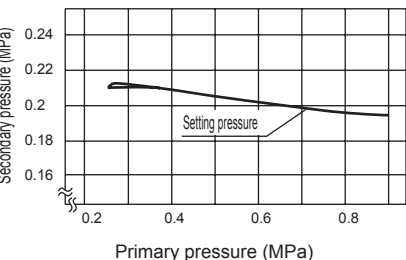


● W8000-25-W

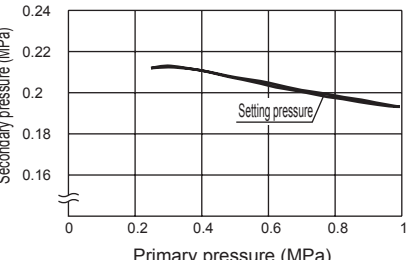


Pressure characteristic

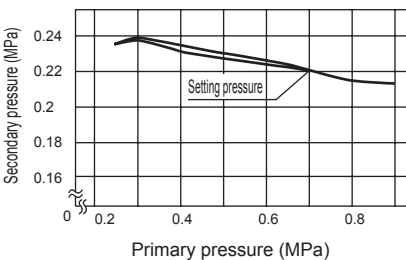
● W1000-W



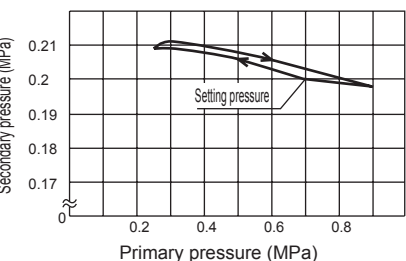
● W2000-W



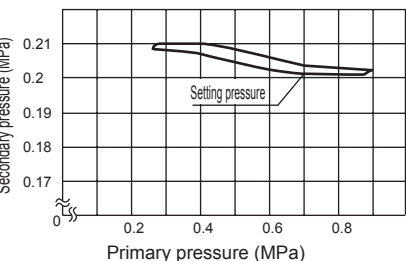
● W3000-W



● W4000-W



● W8000-W

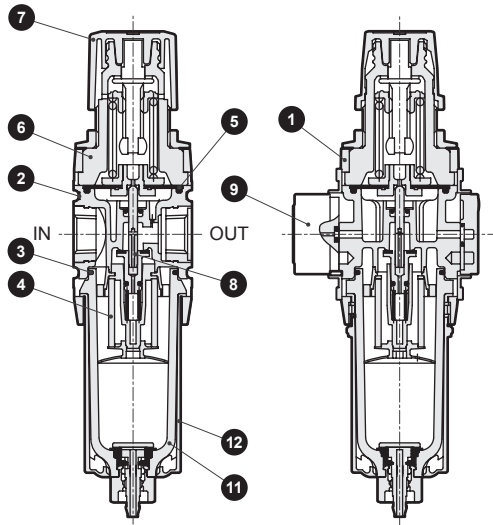


Filter/Regulator series

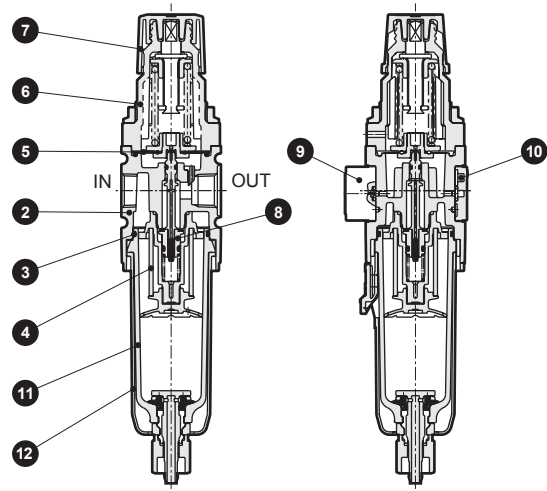
Internal structure and parts list

Internal structure and parts list

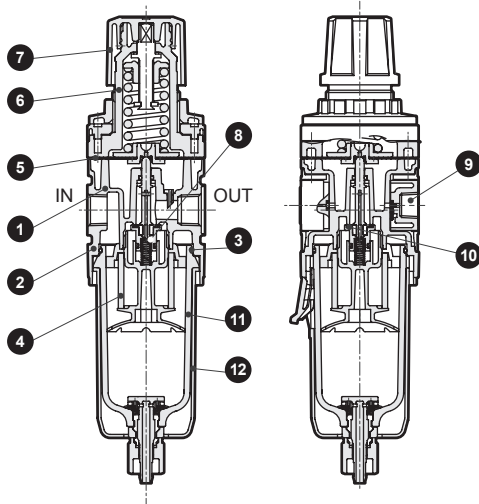
● W1000-W



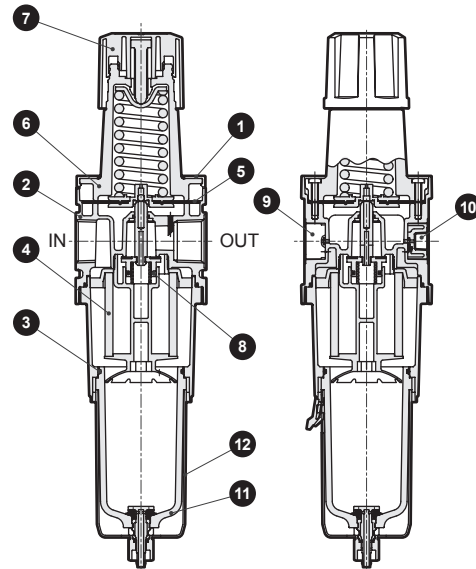
● W2000-W



● 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	Note 2	Special nitrile rubber				
4	Element	Note 1	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

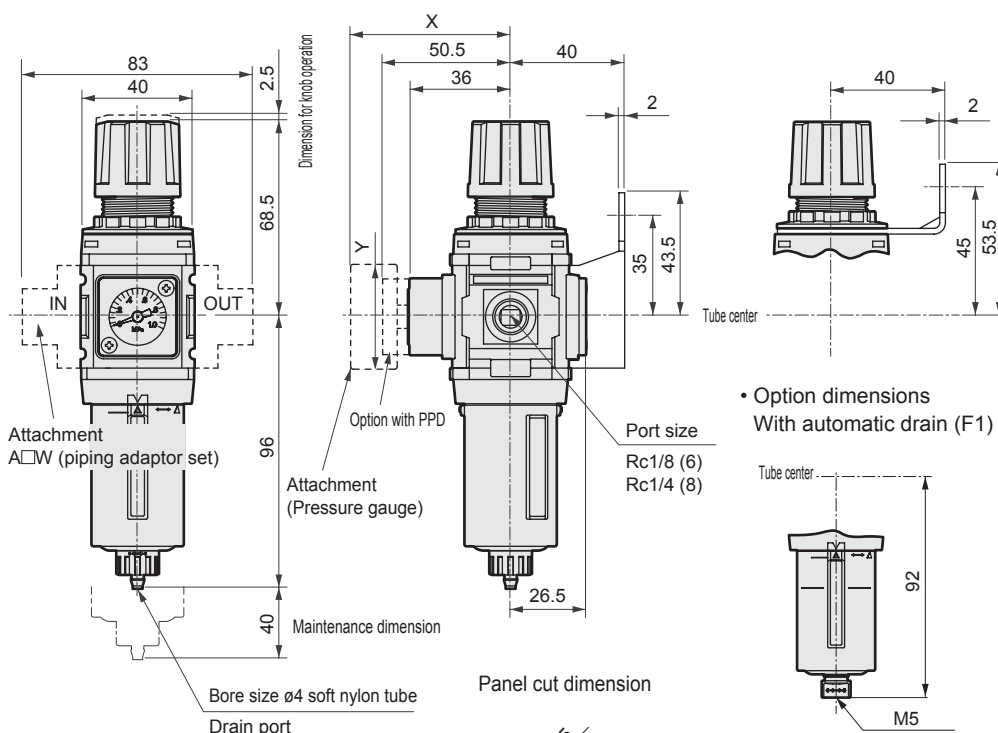
Standard series
F.R.L. unit

Filter/Regulator series

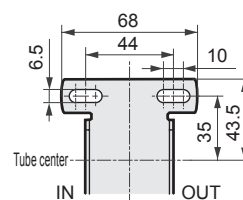
Dimensions



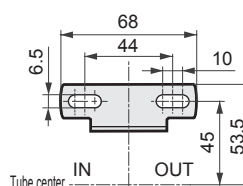
W1000-W



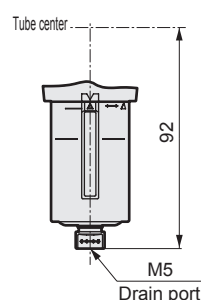
• Attachment
C type bracket (-BW)
Part model no.: B120



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



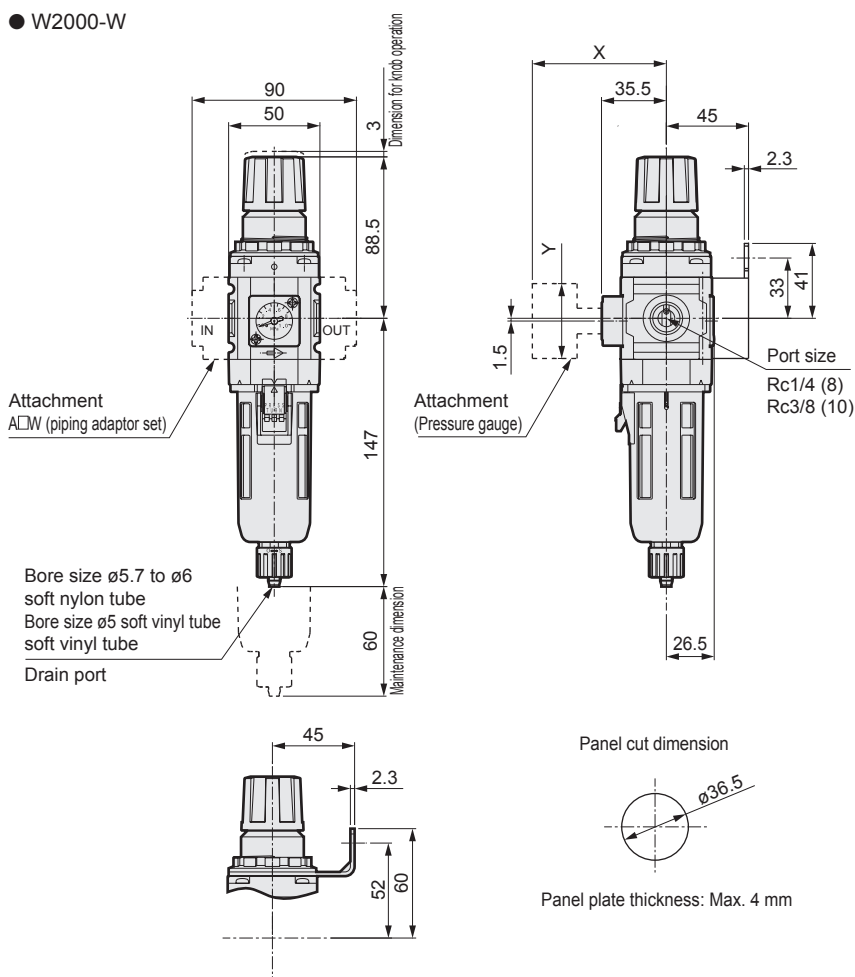
• Option dimensions
With automatic drain (F1)



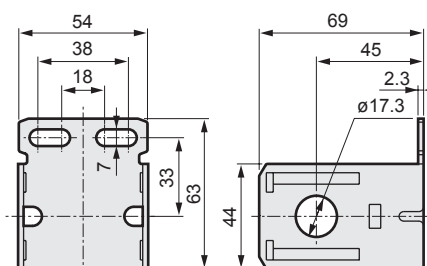
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
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

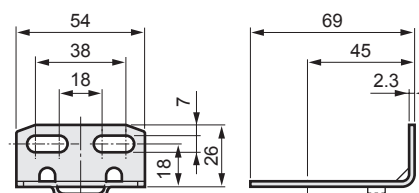
W2000-W



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



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



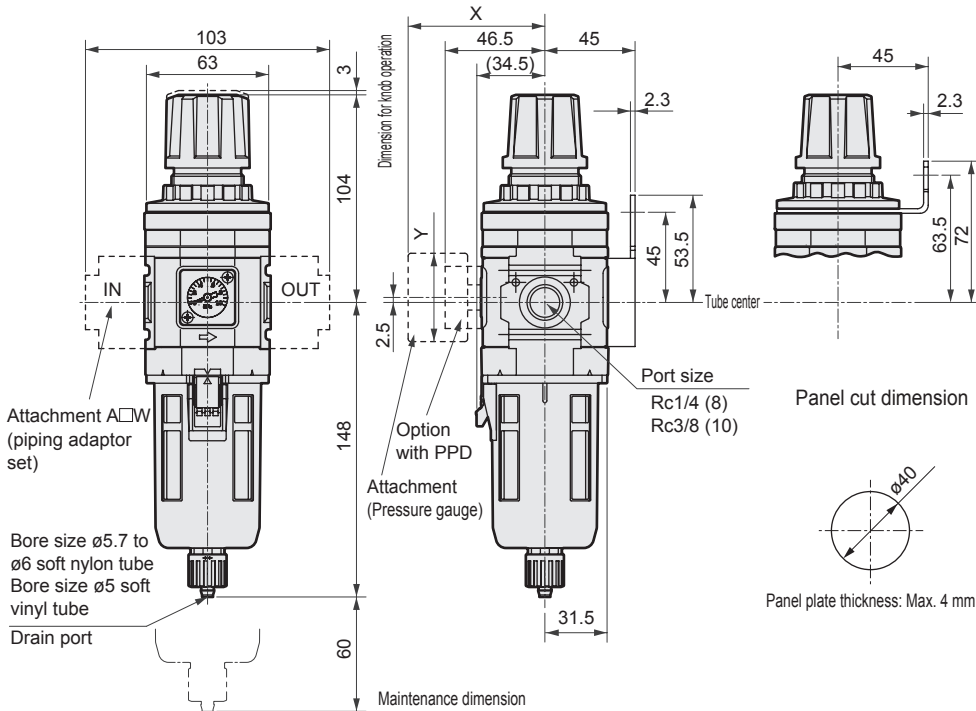
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
G45P	(73.5)	ø39
G49P	(73)	ø43.5
G40P	(75)	ø42.5
G41P	(73.5)	ø42
G52P	(85.5)	ø52.5
R2	(73)	□30

Dimensions

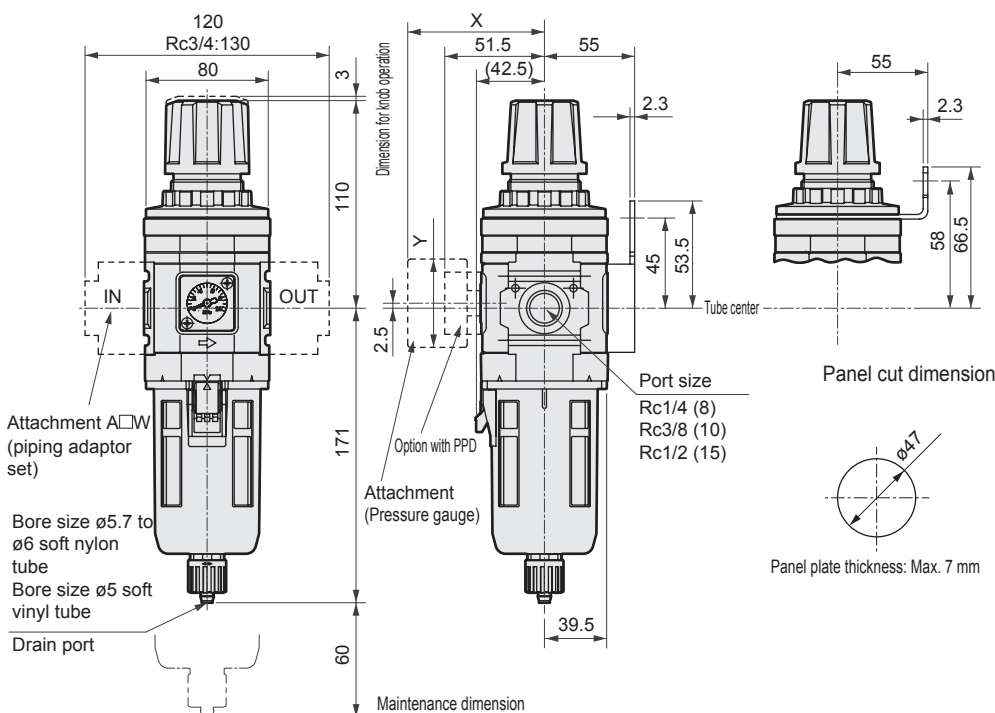


● W3000-W



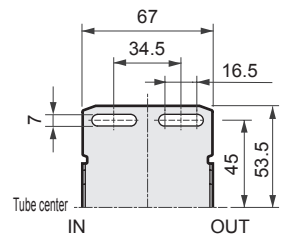
● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

● W4000-W

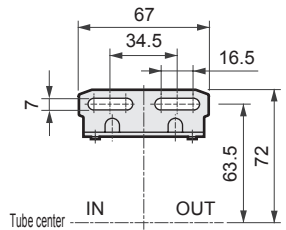


● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

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



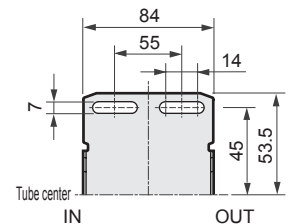
L type bracket (-B3W)
Part model no.: B330



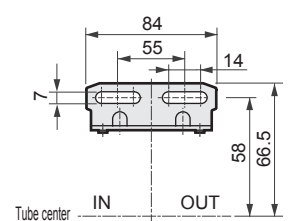
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
G45P	(70)	$\phi 39$
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)	$\square 30$

• 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)	$\phi 39$
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)	$\square 30$

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

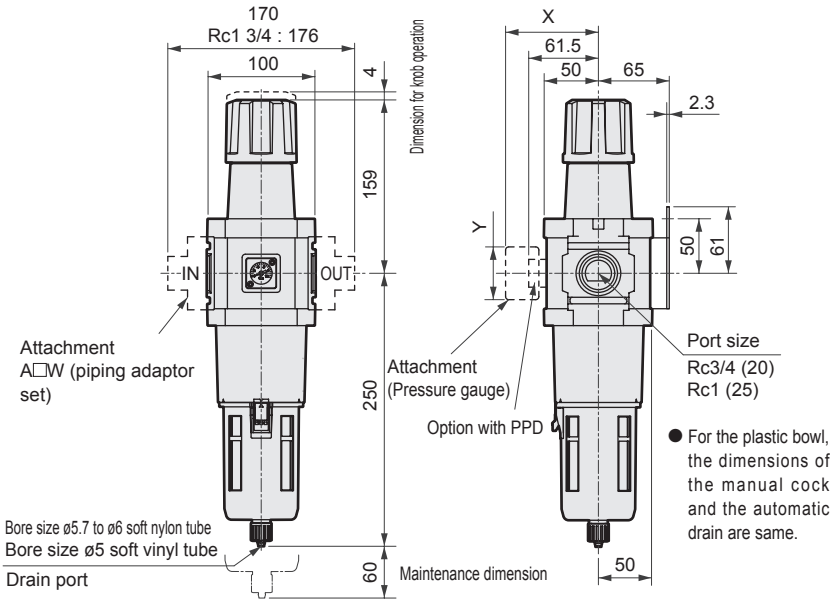
Filter/Regulator Series

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

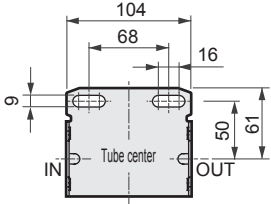
Dimensions



W8000-W



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



Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
G45P	(85)	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

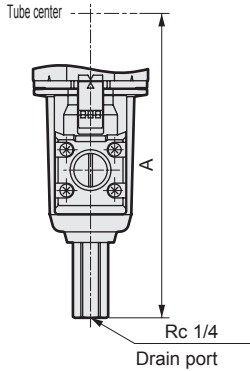
• For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

Optional dimensions

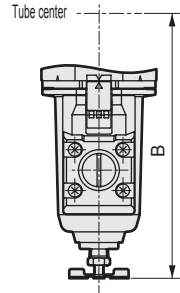


Metal bowl (option)
[W2000-W, 3000-W, 4000-W, 8000-W]

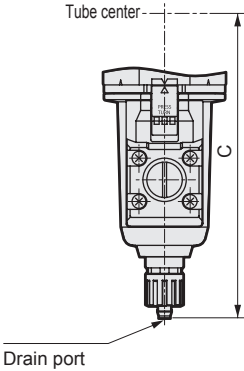
With automatic drain (FM, F1M)



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 <small>Note 1</small>	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



A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Piping adaptor set (attached)

G Attachment (attached)

⚠ 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.				
		W	W	W	W	W
		1	2	3	4	8
		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	●	●	●	●
	Z	Nylon bowl	●	●	●	●
	M	Metal bowl	●	●	●	●
Bowl material	M1	Metal bowl with manual drain cock	●	●	●	●
	Blank	5μm	●	●	●	●
	Y	0.3μm (submicron) Note 5	●	●	●	●
	Blank	0.05 to 0.85MPa	●	●	●	●
Pressure Range	L	0.05 to 0.35MPa Note 6	●	●	●	●
	Blank	With relief mechanism	●	●	●	●
	N	Nonrelief type	●	●	●	●
	Blank	With standard pressure gauge (G401-W)	●	●	●	●
Pressure gauge	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	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

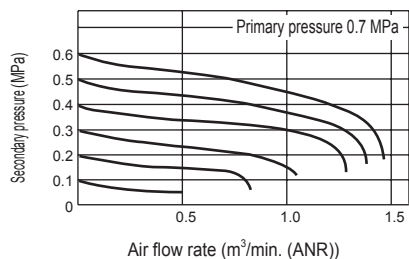
F.R.L. unit

Filter/Regulator series

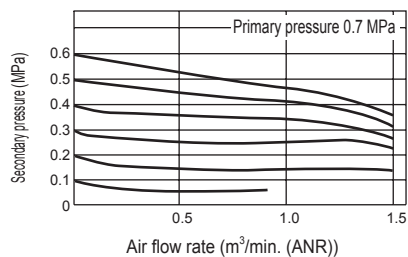
Flow characteristic



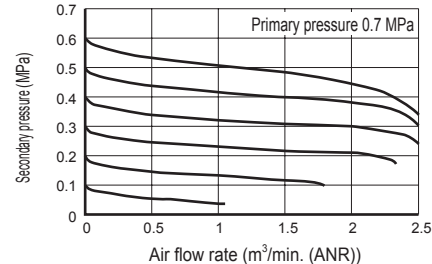
W1100-6-W



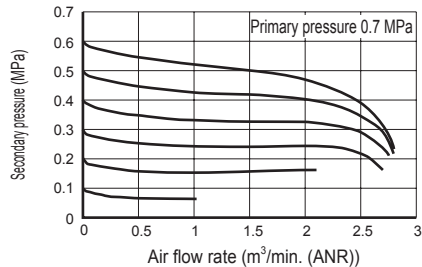
W1100-8-W



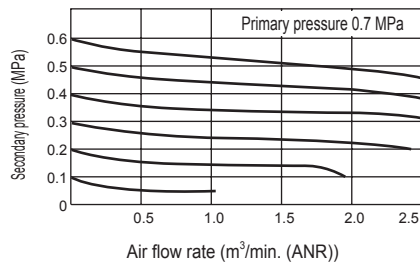
W2100-8-W



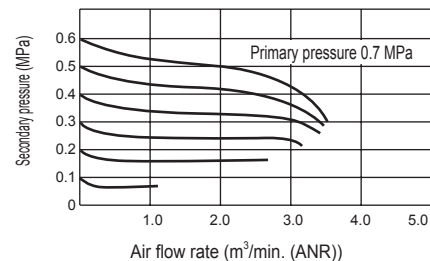
W2100-10-W



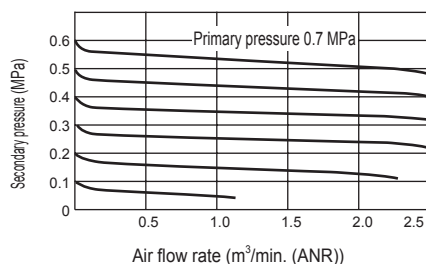
W3100-8-W



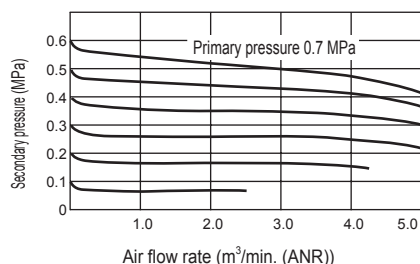
W3100-10-W



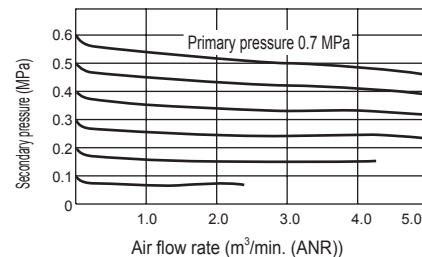
W4100-8-W



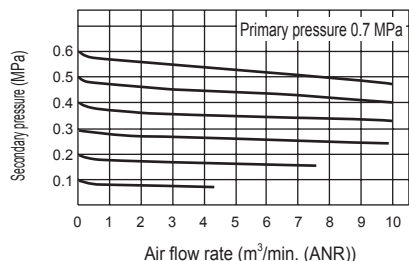
W4100-10-W



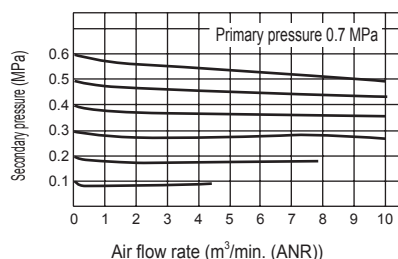
W4100-15-W



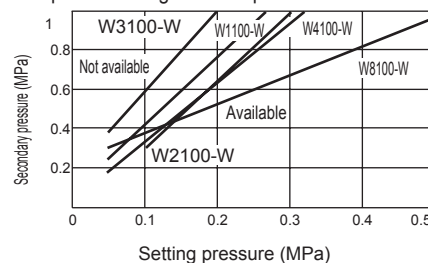
W8100-20-W



W8100-25-W



Set pressure range to back pressure

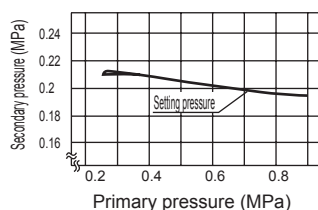


Note: The upper side of the graph is nonusable and the lower side usable.

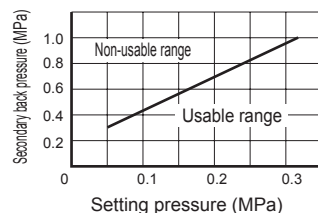
Example: If W4100-W is set to set pressure 0.2 MPa and the secondary back pressure is 0.6 MPa or more, the secondary pressure will not be released to the primary side.

Pressure characteristic

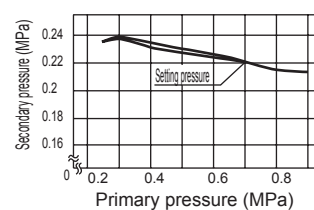
W1100-W



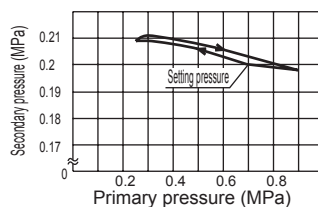
W2100-W



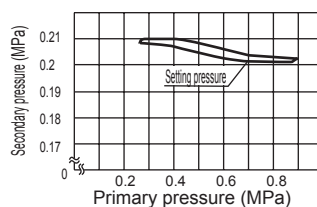
W3100-W



W4100-W



W8100-W

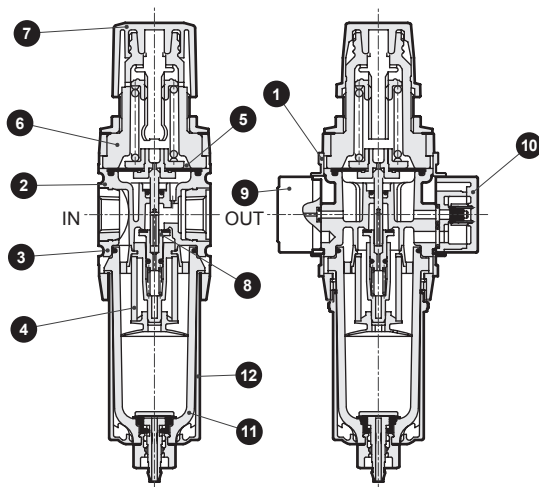


Filter/Regulator series

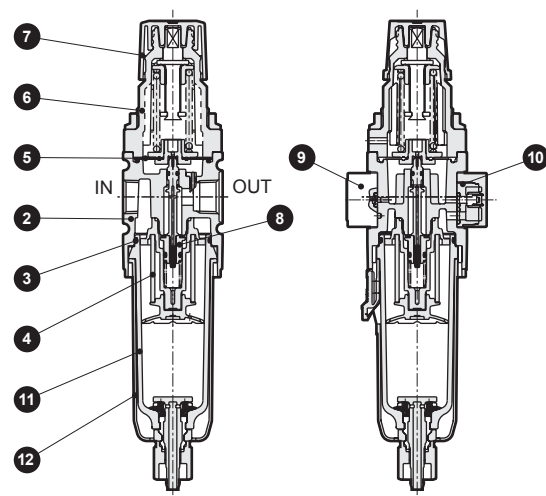
Internal structure and parts list

Internal structure and parts list

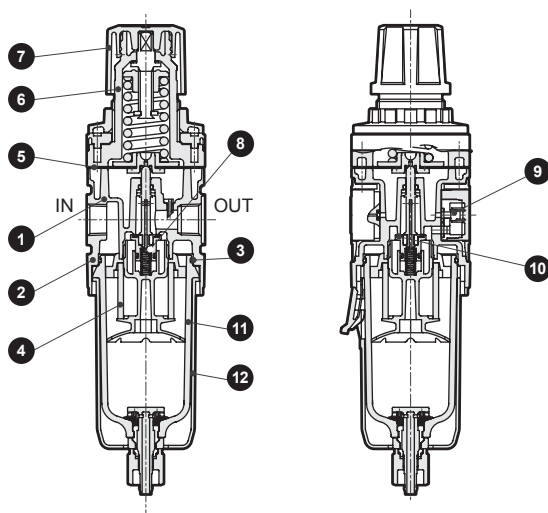
● W1100-W



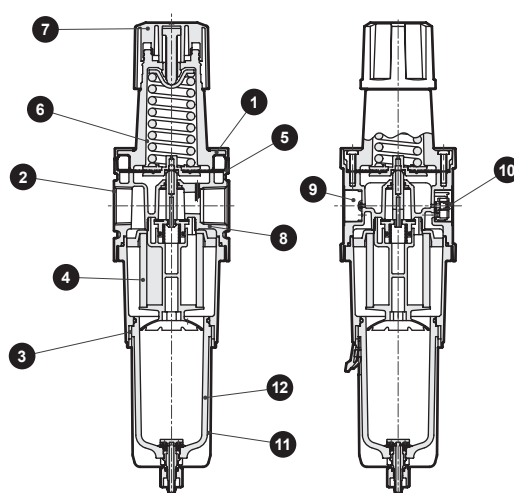
● W2100-W



● 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.

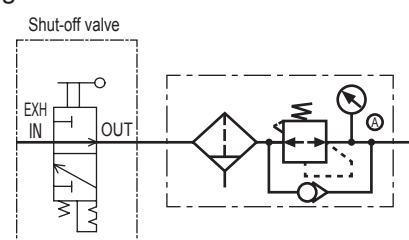
Note 3: Refer to page 349 for repair kits model No.

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

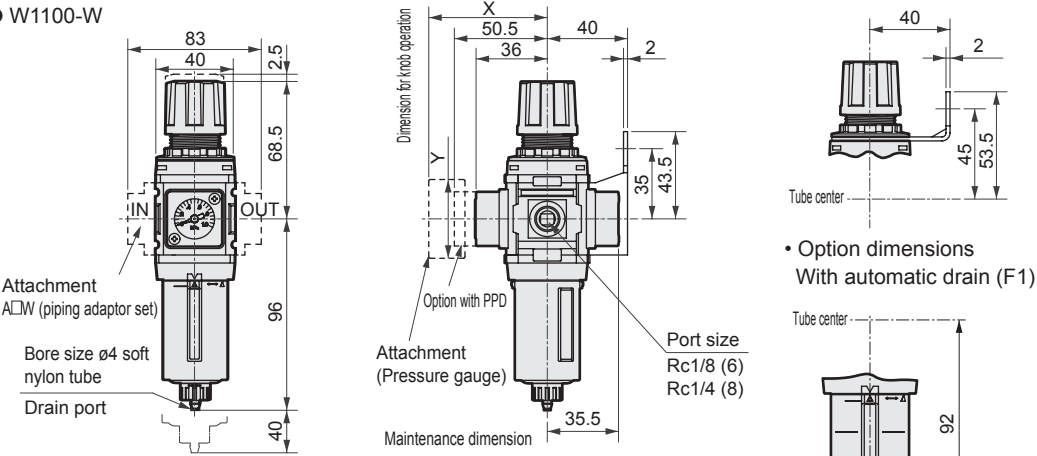
Standard series
F.R.L. unit

Filter/Regulator series

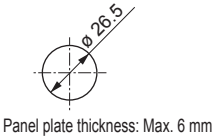
Dimensions



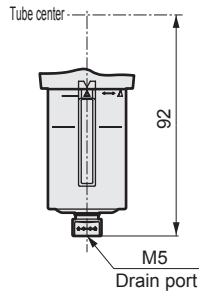
W1100-W



Panel cut dimension



Option dimensions
With automatic drain (F1)

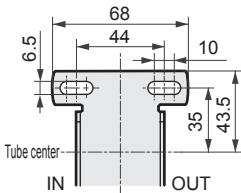


Pressure gauge attached optional dimensions table

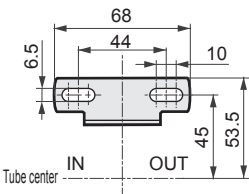
Attached pressure gauge	X	Y
G45P	(74)	ø39
G49P	(73.5)	ø43.5
G59P	(76)	ø52
G40P	(75.5)	ø42.5
G50P	(75.5)	ø52.5
G41P	(74)	ø42
G52P	(86)	ø52.5
R2	(74)	□30

Attachment

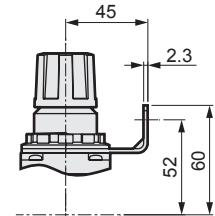
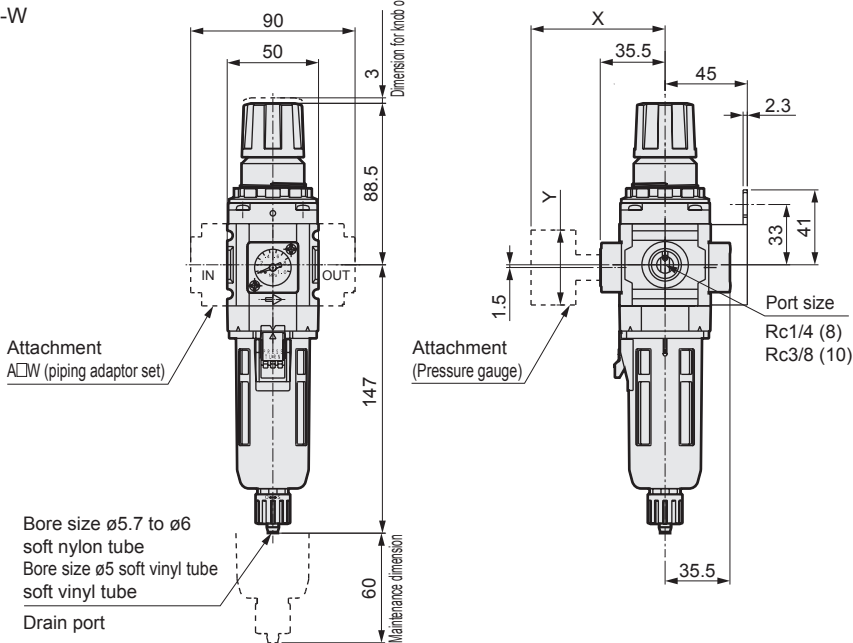
C type bracket (-BW)
Part model no.: B120



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



W2100-W

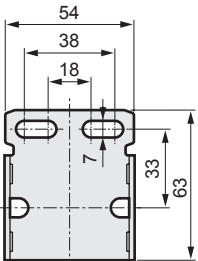


Panel cut dimension

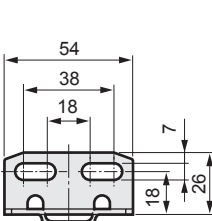
Panel plate thickness: Max. 4 mm

Attachment

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



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



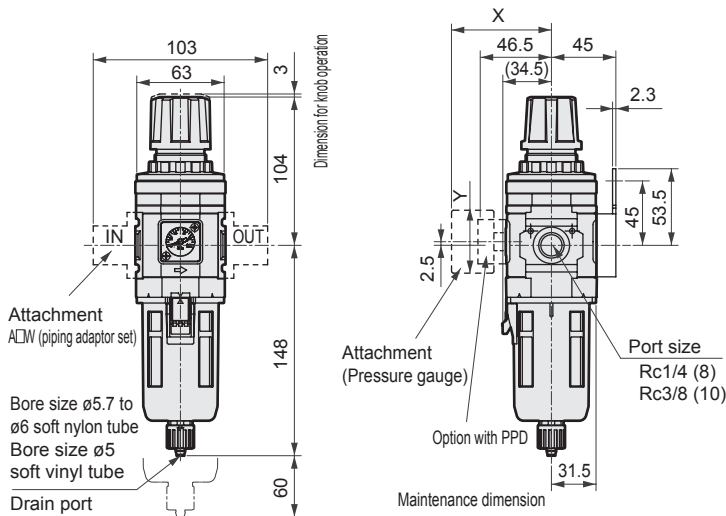
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
G45P	(73.5)	ø39
G49P	(73)	ø43.5
G40P	(75)	ø42.5
G41P	(73.5)	ø42
G52P	(85.5)	ø52.5
R2	(73)	□30

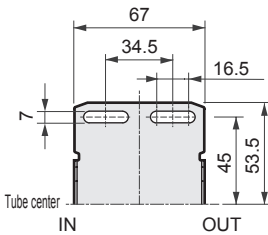
Dimensions



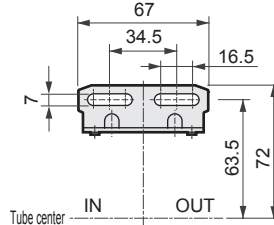
● W3100-W



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

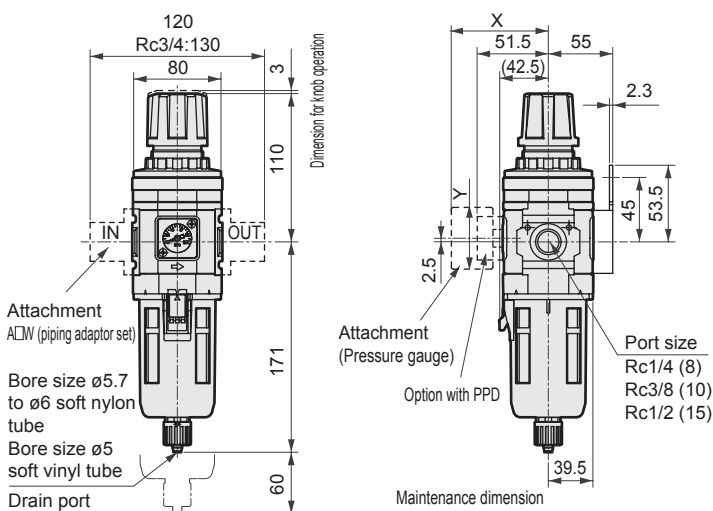


- L type bracket (-B3W)
Part model no.: B330

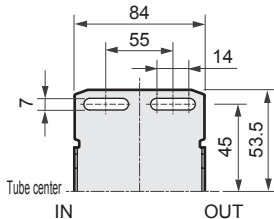


● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

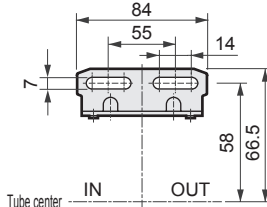
● W4100-W



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



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



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

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)	$\square 30$

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)	$\square 30$

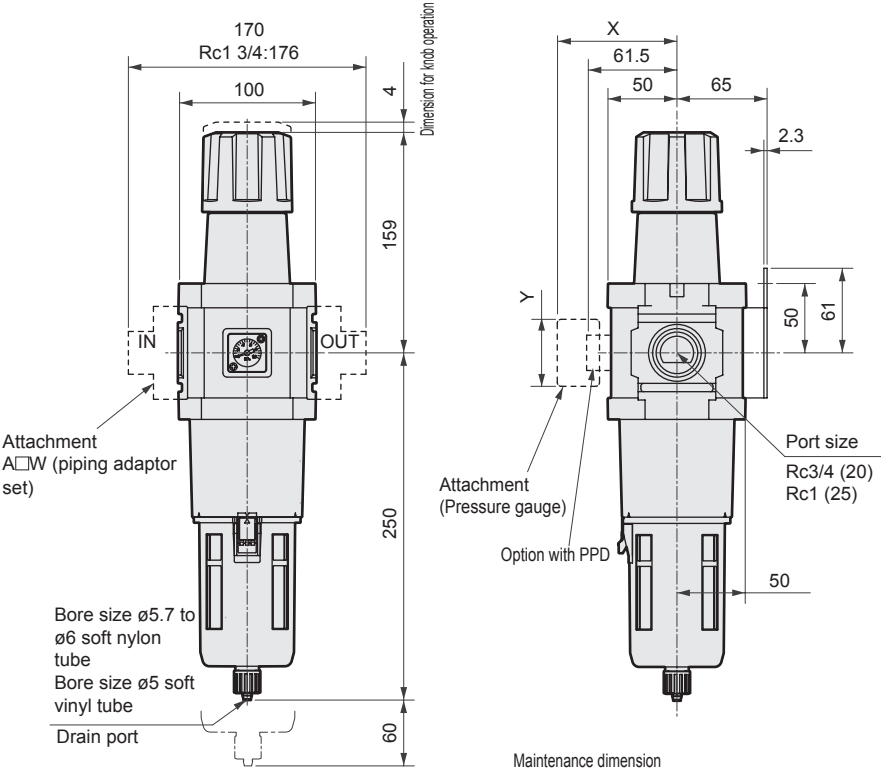
Standard series
F.R.L. unit

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

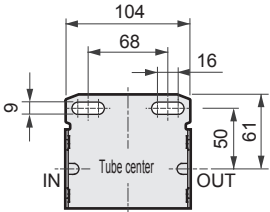
Filter/Regulator Series

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)	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

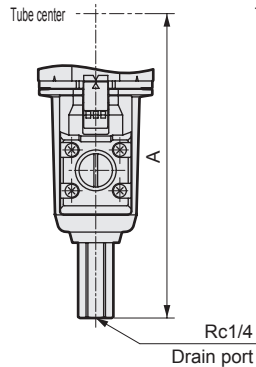
● For the plastic bowl, the dimensions of the manual cock and the automatic drain are same.

Optional dimensions

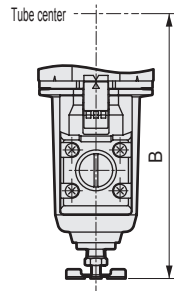


- Metal bowl W2100-W/W3100-W/W4100-W/W8100-W (option)

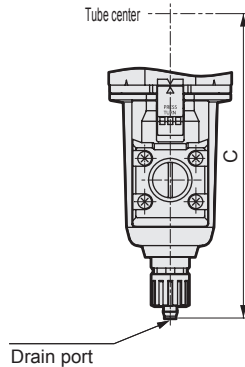
With automatic drain (FM, F1M)



Automatic drain cock (M)



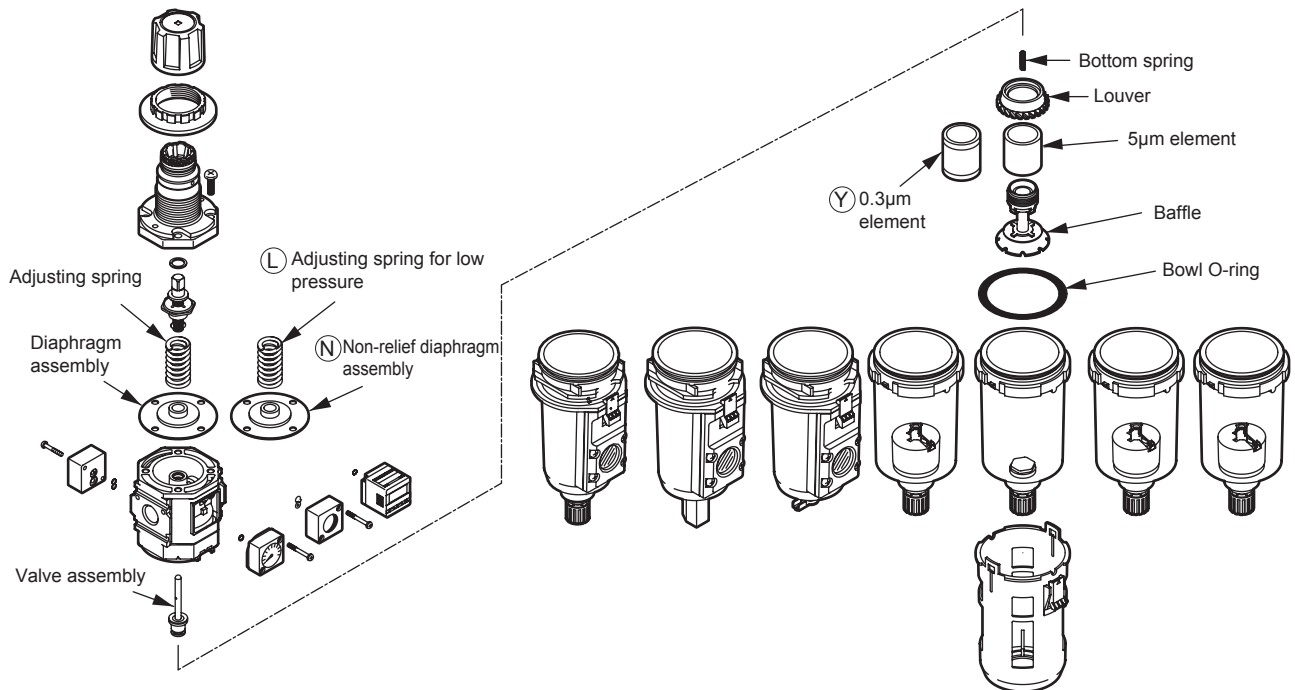
Standard manual drain cock (M1)



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

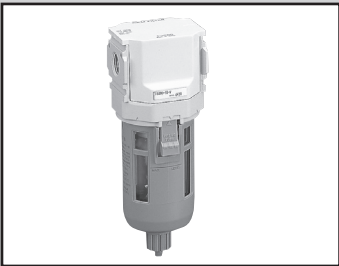
Note: With the W1000-W and W1100-W, the element and baffle are assembly parts, and the louver is assembled onto the body. These parts are excluded from consumables.

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	0.2	0.3	0.4	0.5	0.6	0.7
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

F1000 - **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.					
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	0	0	0	0	0	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							
		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.

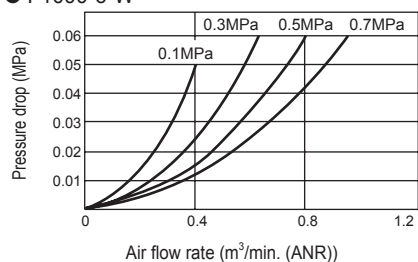
Note 5: The joiner set is enclosed with the piping adaptor set.

Ⓔ Bracket (Attached)

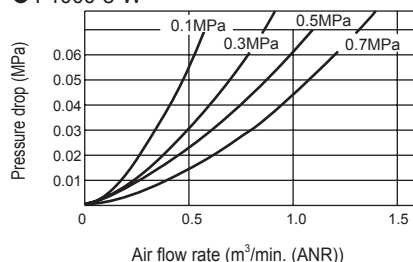
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

Flow characteristic

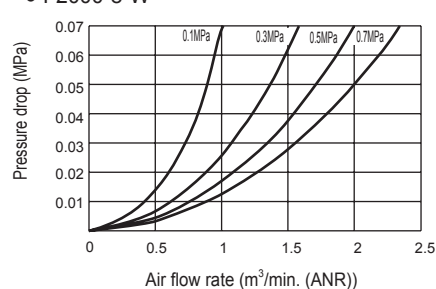
● F1000-6-W



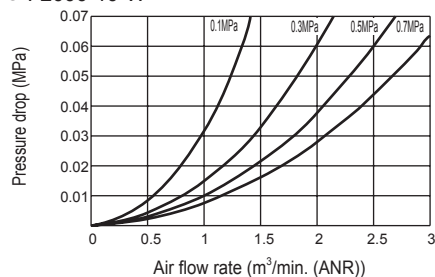
● F1000-8-W



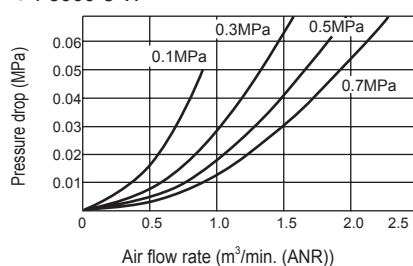
● F2000-8-W



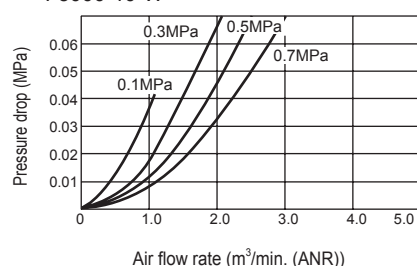
● F2000-10-W



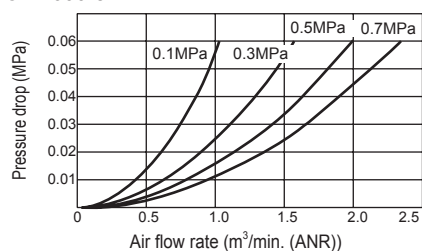
● F3000-8-W



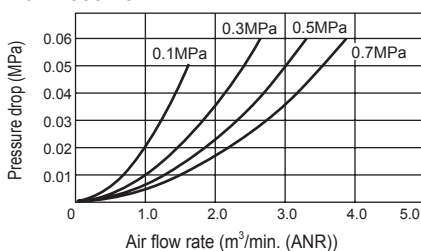
● F3000-10-W



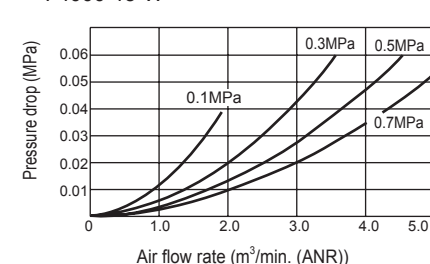
● F4000-8-W



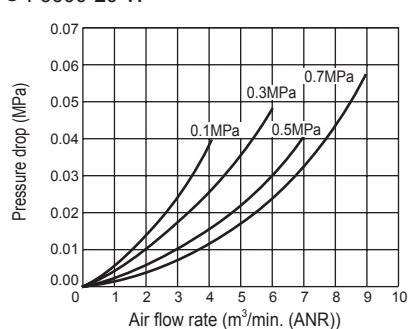
● F4000-10-W



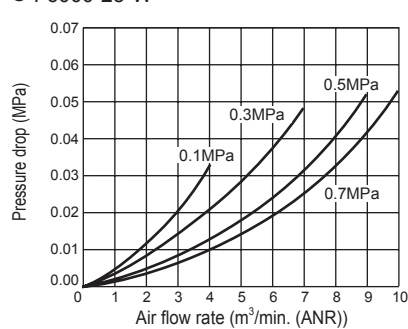
● F4000-15-W



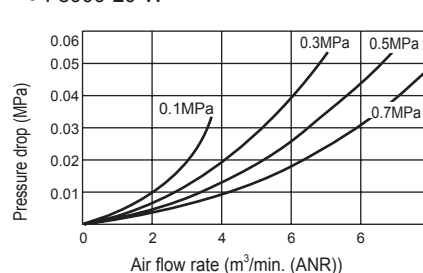
● F6000-20-W



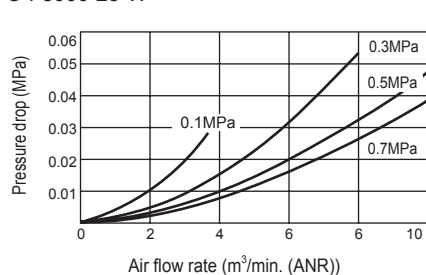
● F6000-25-W



● F8000-20-W



● F8000-25-W



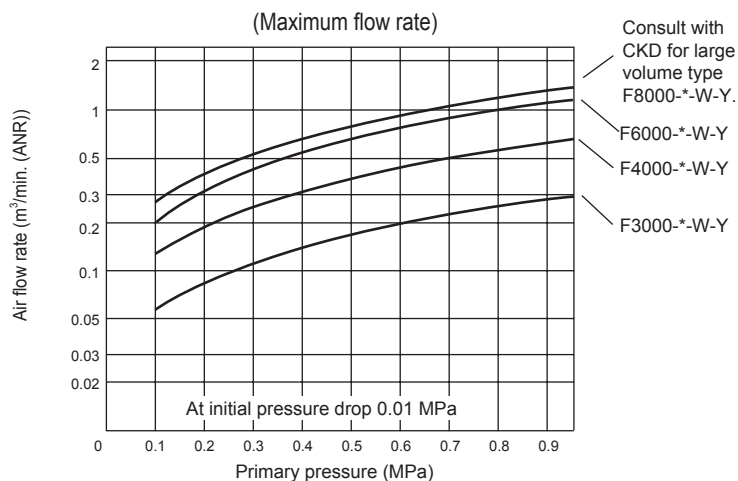
F3000

F4000

F6000

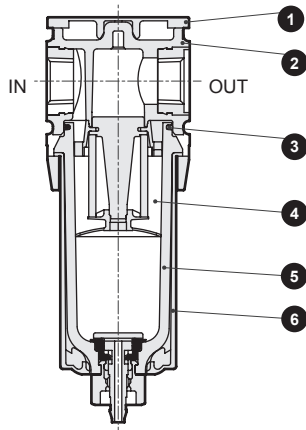
F8000

-*-W-Y (0.3μm element)

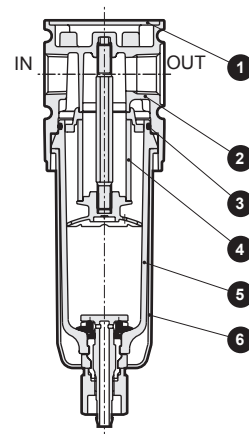


Internal structure and parts list

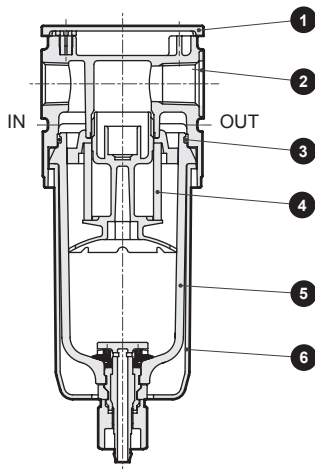
● F1000-W



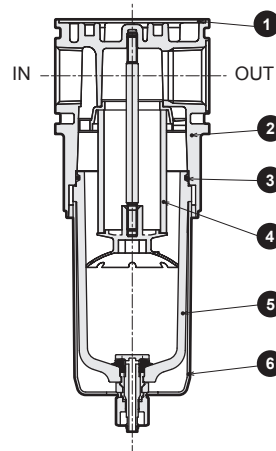
● F2000-W



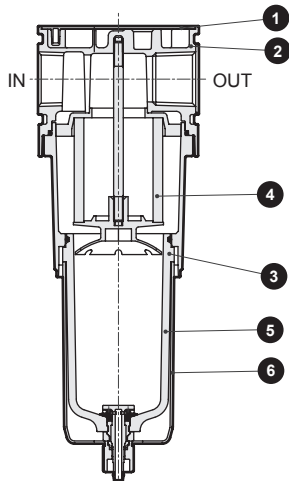
● F3000-W / F4000-W



● F6000-W



● F8000-W



No.	Parts name		Material				
			F1000-W	F2000-W	F3000-W	F4000-W	F6000-W
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	Polyacetal resin Polypropylene	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.

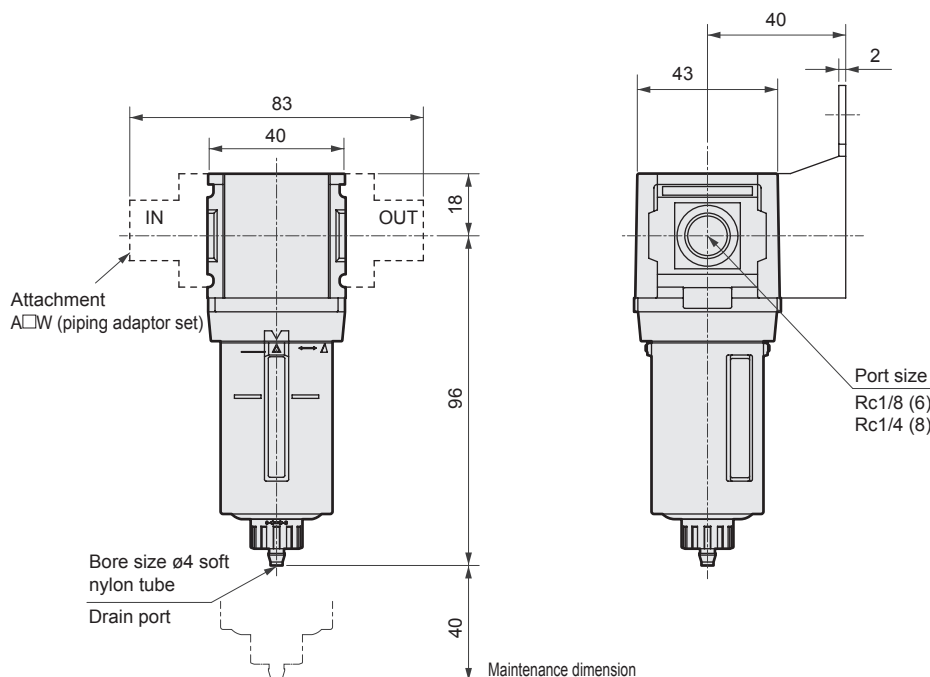
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

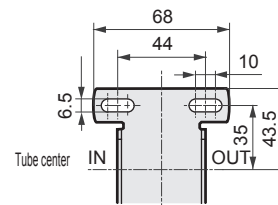
Dimensions



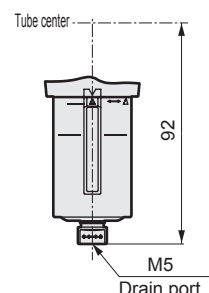
● F1000-W



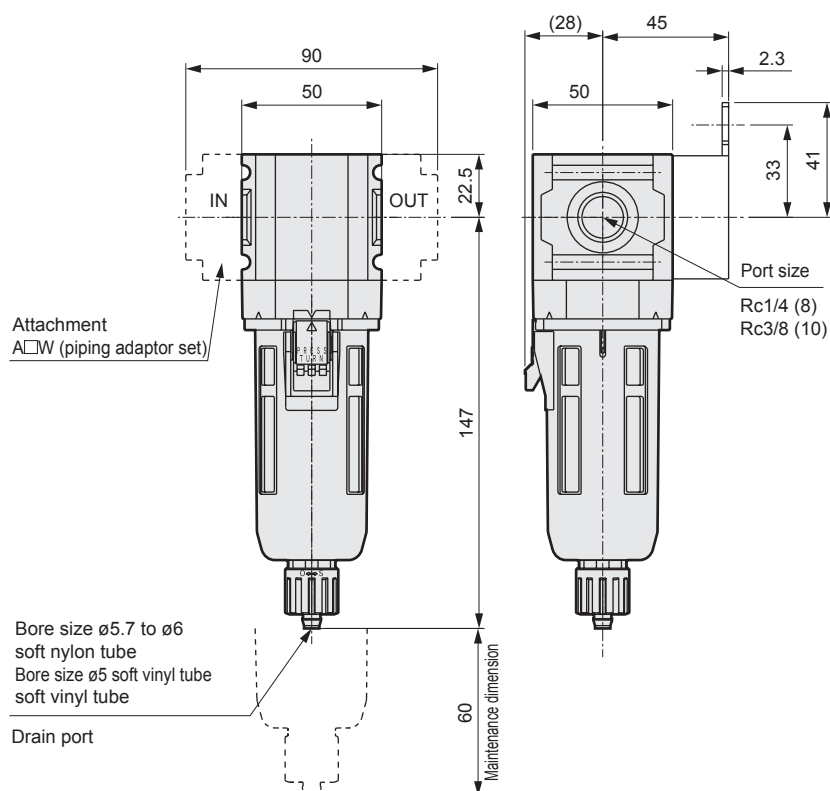
- Attachment
C type bracket (-BW)
Part model no.: B120



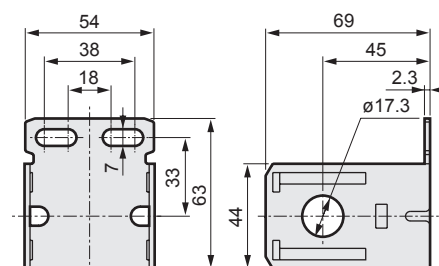
- Option dimensions
With automatic drain (F1)



● F2000-W



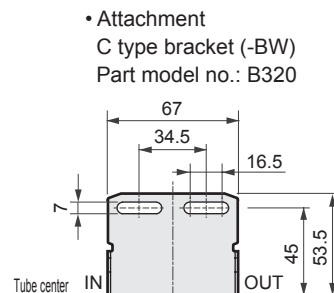
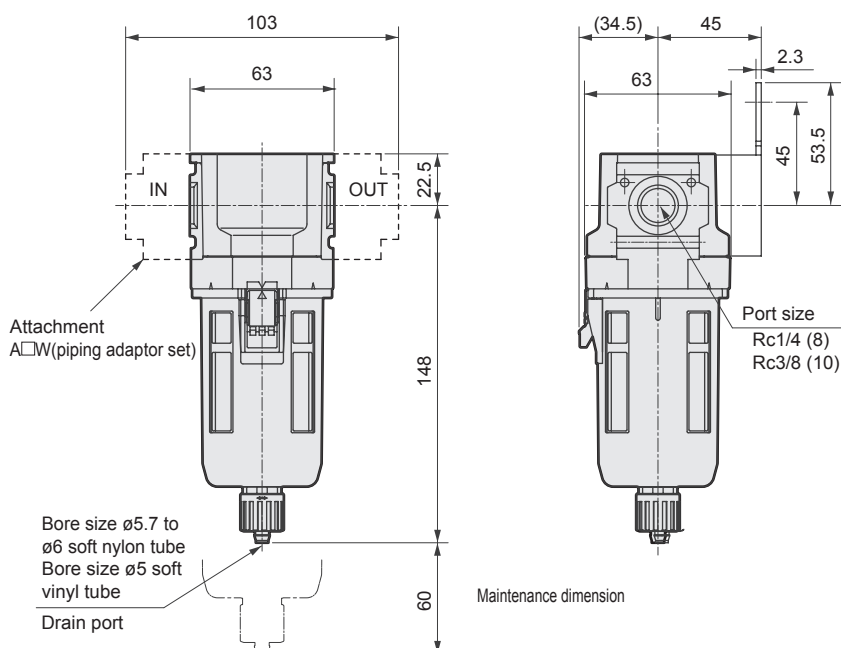
- Attachment
C type bracket (-BW)
Part model no.: B220



Dimensions



● F3000-W

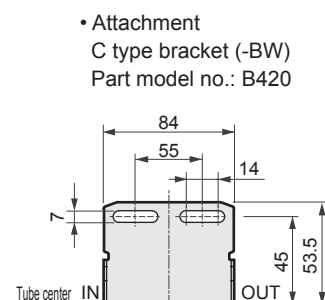
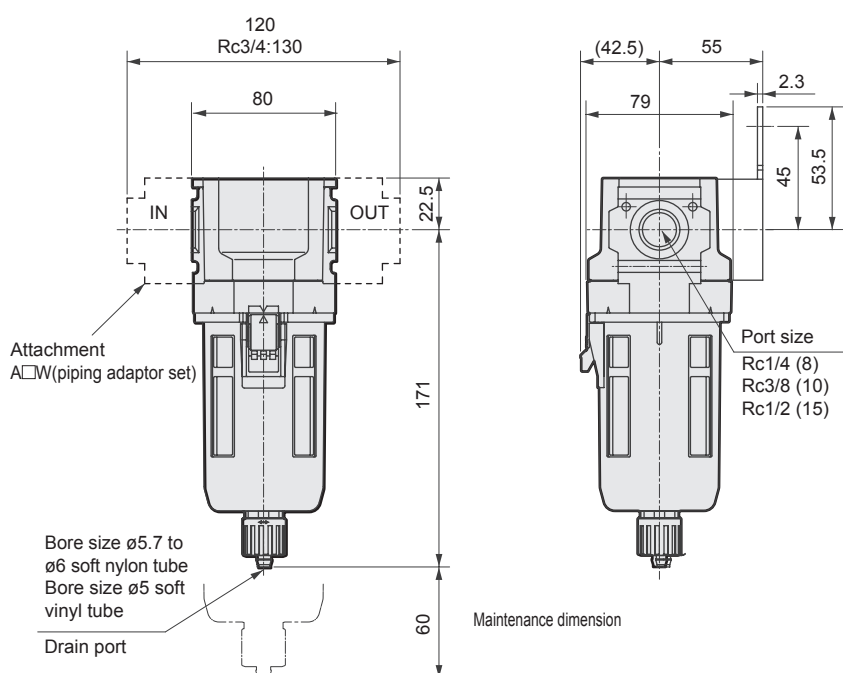


• Attachment
C type bracket (-BW)
Part model no.: B320

● 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



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

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

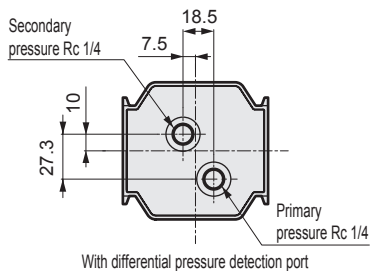
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

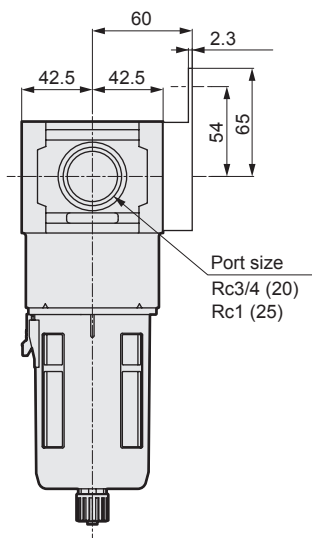
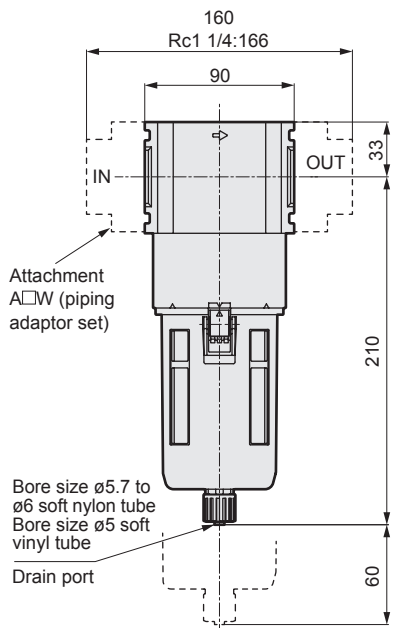
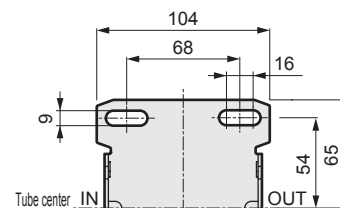
Dimensions



● F6000-W

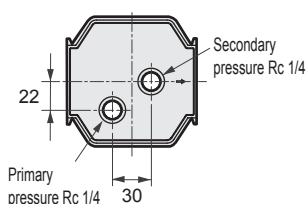


- Attachment
C type bracket (-BW)
Part model no.: B620

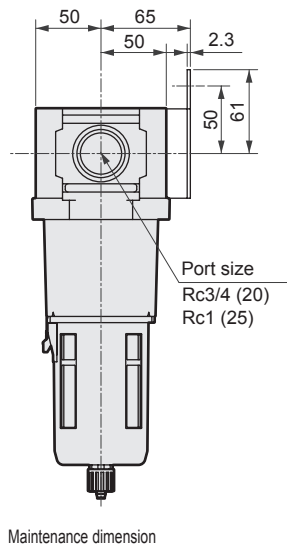
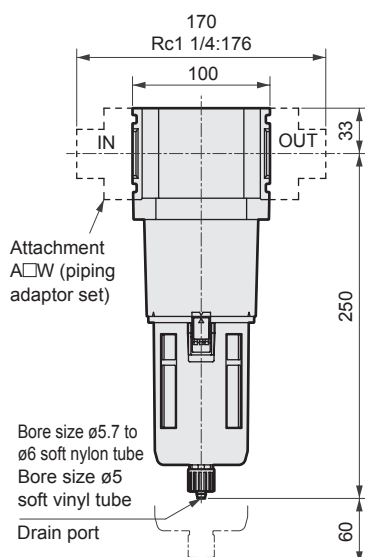
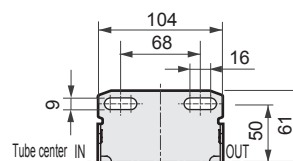


● F8000-W

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.

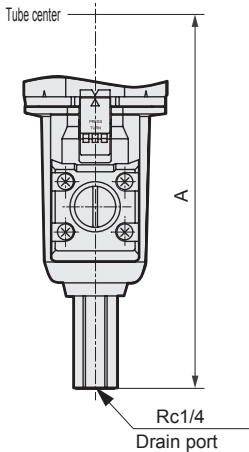
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Optional dimensions

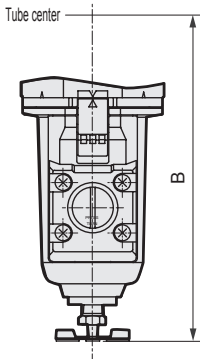
CAD

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

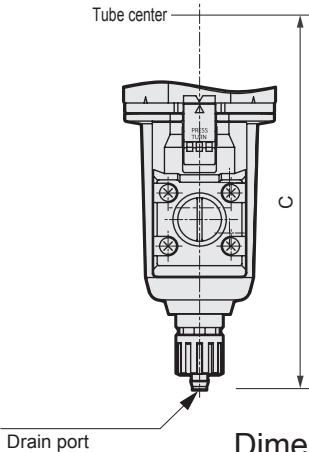
Metal manual cock with automatic drain (F1M)



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

Optional parts diagram

Element

Element model no. Model	5µm Element	0.3µm Element (Y)
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



Rc1/4

*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



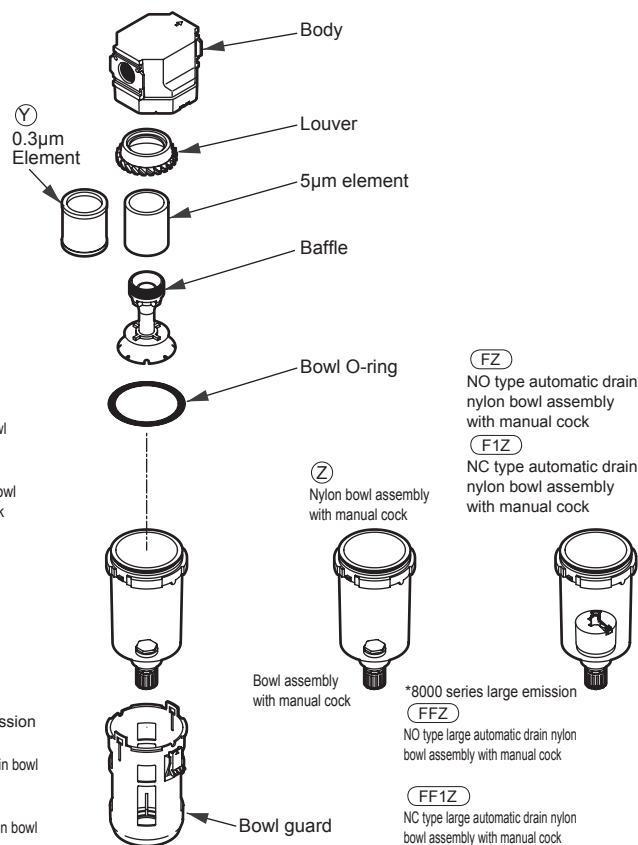
*8000 series large emission

(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. Model	5µm Element	0.3µm Element (Y)
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. Model	Polycarbonate bowl	Nylon bowl
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	With manual cock	With manual cock	With manual cock	With standard manual cock	With manual cock	With manual cock
Model	PC bowl assembly	PA bowl assembly	Metal bowl assembly	Metal bowl assembly	NO type Automatic drain PC bowl assembly Note 1	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	With manual cock	With manual cock	With metal manual cock	With standard manual cock	With metal manual cock	With standard manual cock
Model	NO type Automatic drain PA bowl assembly Note 1	NC type Automatic drain PA bowl assembly	NO type Automatic drain Metal bowl assembly Note 1	NO type Automatic drain Metal bowl assembly	NC type Automatic drain Metal bowl assembly	NC type Automatic drain Metal 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	-	-	-	-	-	-
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	-	-	-	-	-	-
Bowl assembly	With manual cock	With manual cock	With manual cock	With manual cock	With metal manual cock	With metal manual cock
Model	NO type Large automatic drain PC bowl assembly	NC type Large automatic drain PC bowl assembly	NO type Large automatic drain PA bowl assembly	NC type Large automatic drain PA bowl assembly	NO type Large automatic drain Metal bowl assembly	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

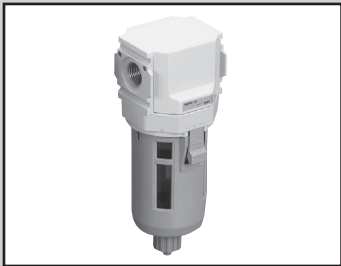
Note 1: The NO automatic drain cannot be selected for the oil Mist filter M1000-W, M3000-W, M4000-W, M6000-W, or M-8000W and oil Mist filter for Medium pressure MM3000-W, MM4000-W, MM6000-W, MM8000-W.

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)	150 Note 2	150 Note 2	150
Primary pressure 0.7 MPa	250	310	310
Pressure drop 0.01 MPa	360	450	450
	825	1000	1000
	1270	1400	1400
	2600	2900	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)	Secondary battery compatible specifications (catalog No. CC-947)
● Dust generation preventing structure for use in cleanrooms	● Structured for use in secondary battery manufacturing processes

M*000 - - **P7*** M*000 - - **P4***

How to order

M1000 - **6** - **W** - **S** - **A6W** -

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.

⚠ 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.

Symbol		A Model no.					
		M1000	M2000	M3000	M4000	M6000	M8000
		000	000	000	000	000	000
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		Note 2					
Blank	Rc thread	●	●	●	●	●	●
N	NPT thread	●	●	●	●	●	●
G	G thread	●	●	●	●	●	●
D Option		Note 3					
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 8, 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					

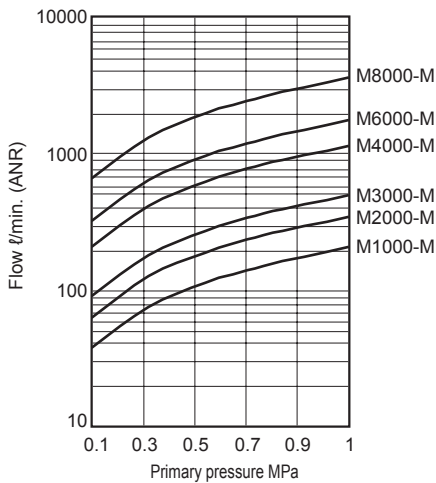
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

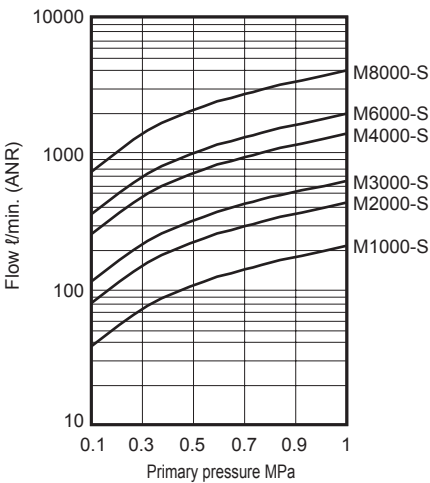
Oil Mist Filter Series

Flow characteristic (maximum flow rate)

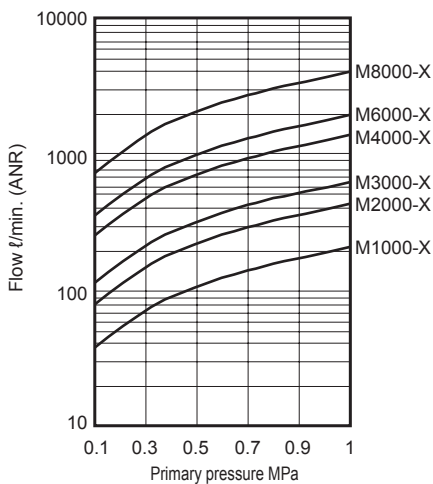
● M*000-W-M



● M*000-W-S

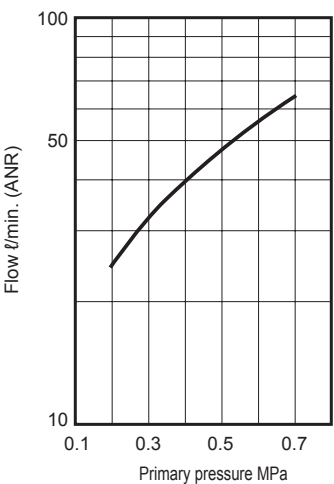


● M*000-W-X



● 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

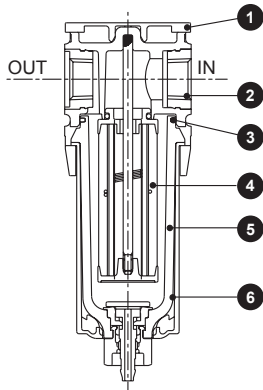
Option symbol of mantle and shape

Option symbol	Appearance
Blank (M type)	
S (S type)	
X (X type)	

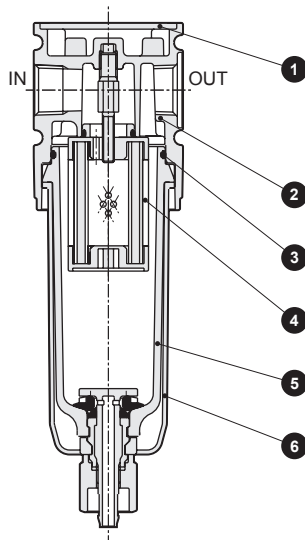
NOTE: Changes for product upgrades may be made without prior notice.
When placing an order, confirm the option symbol for the part model given here.

Internal structure and parts list

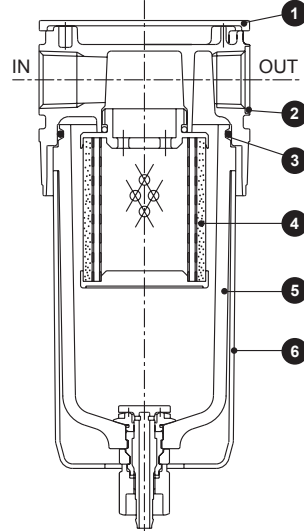
● M1000-W



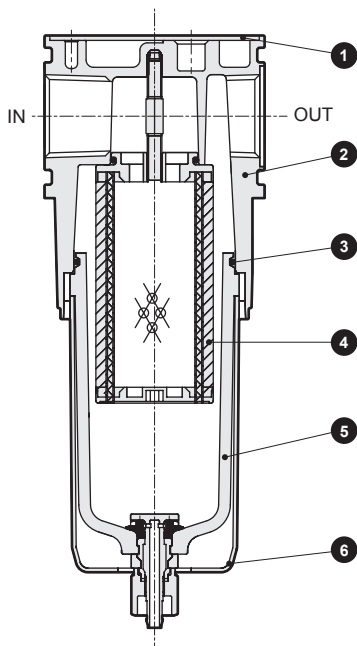
● M2000-W



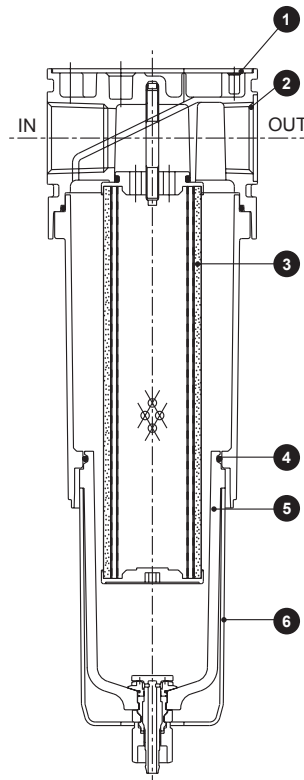
● M3000-W/M4000-W



● 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

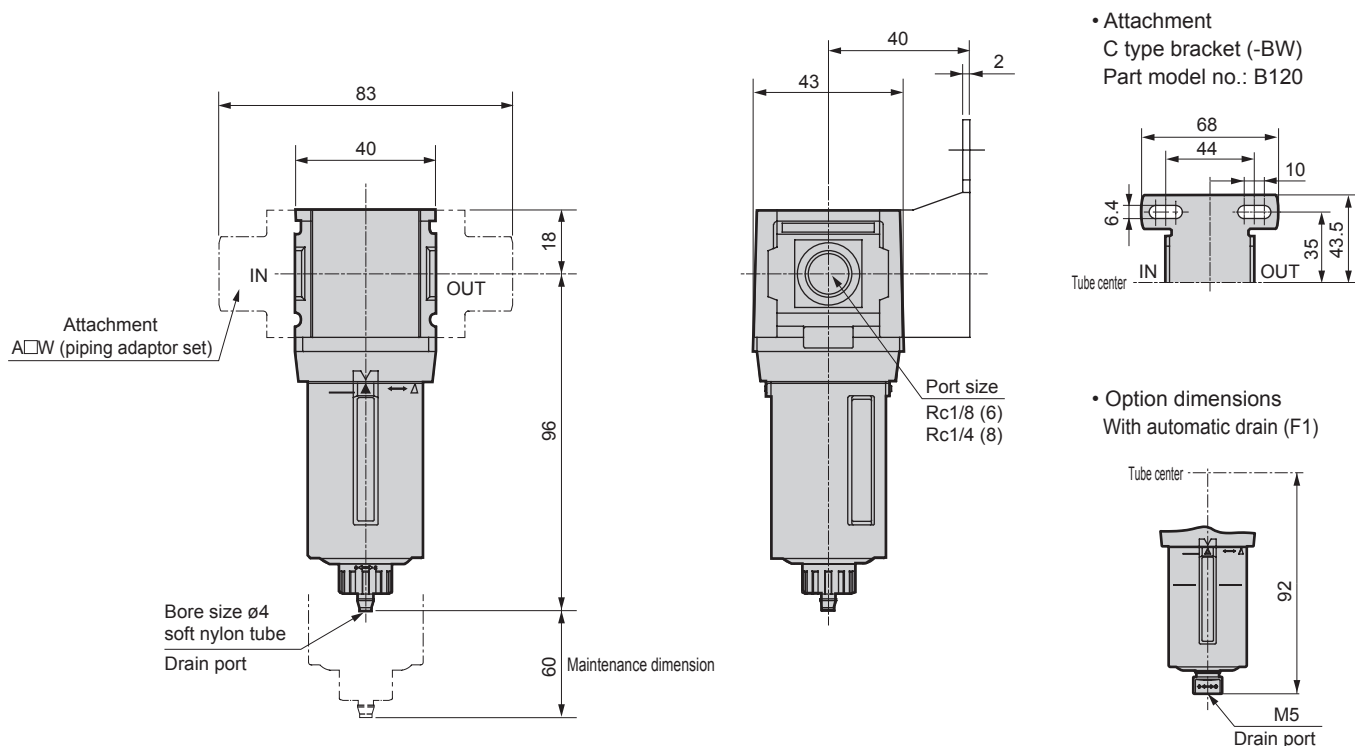
Standard series
F.R.L. unit

Oil Mist Filter Series

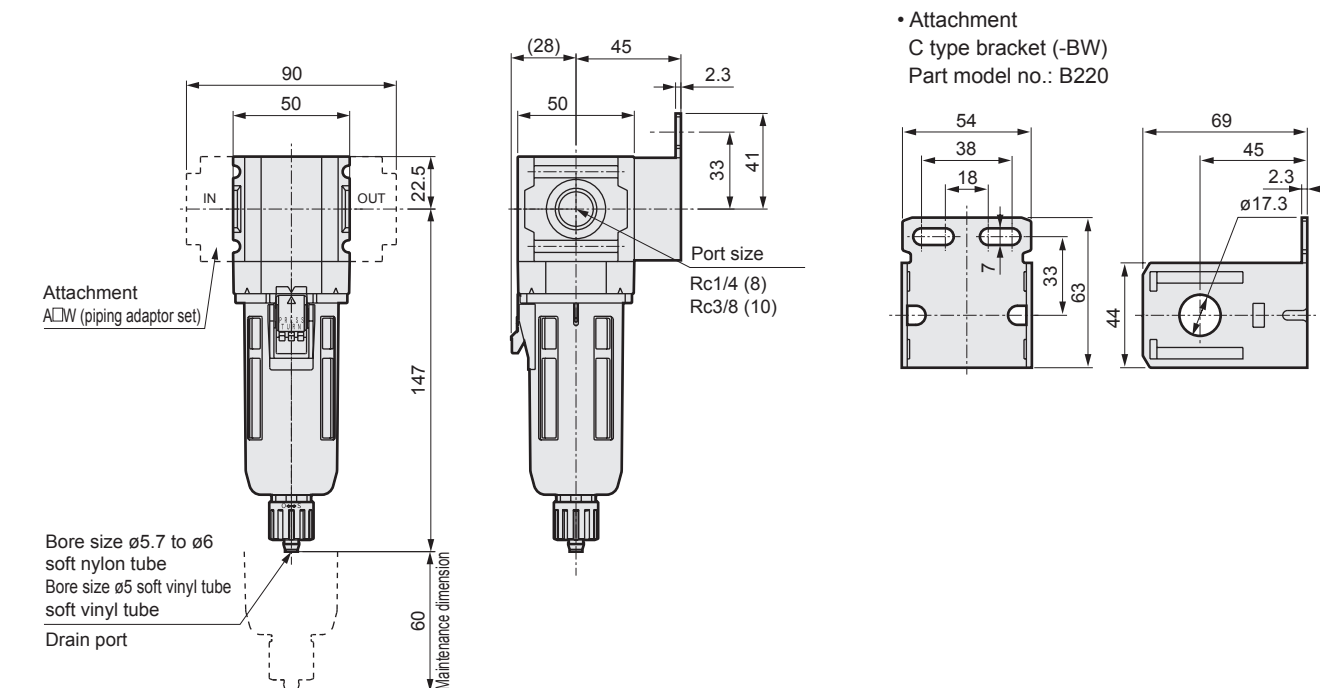
Dimensions



● M1000-W



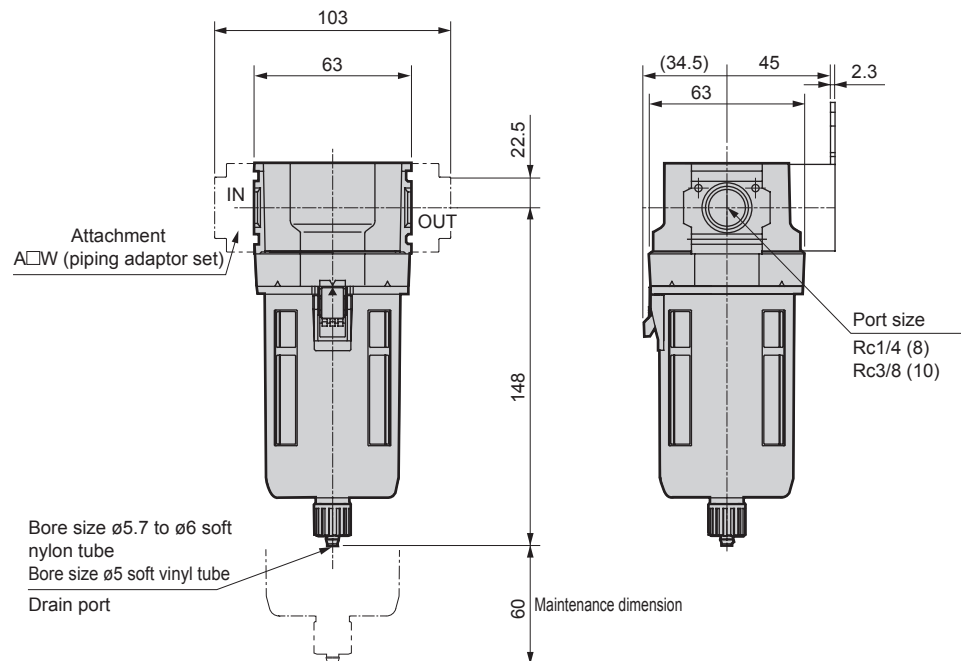
● M2000-W



Dimensions

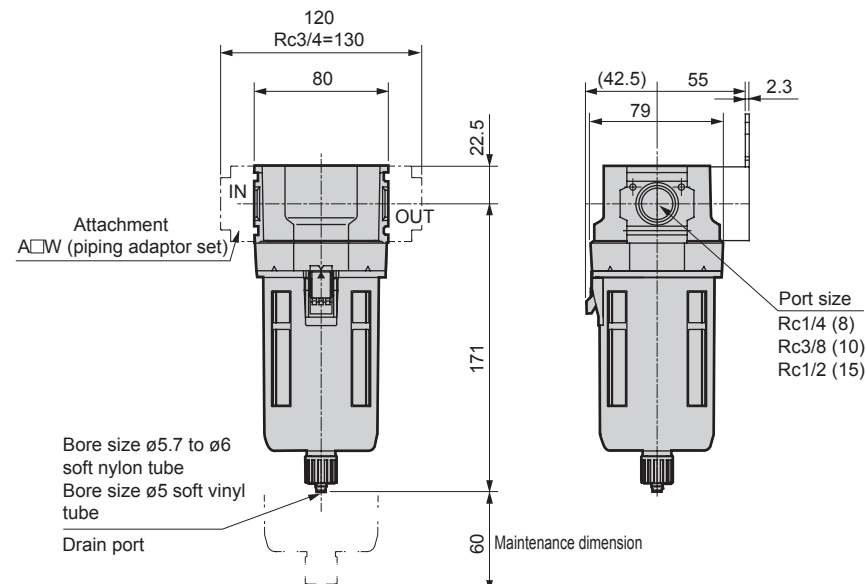


● M3000-W



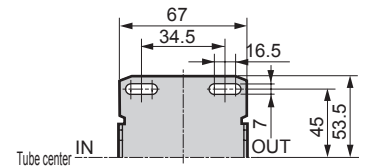
- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

● M4000-W

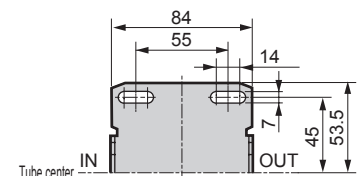


- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

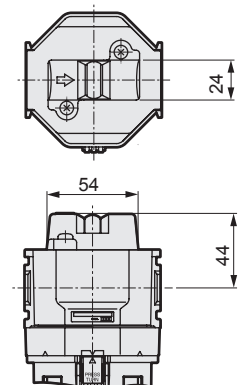
- Attachment
C type bracket (-BW)
Part model no.: B320



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



- Option dimensions
with differential pressure indicator (Q1)



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

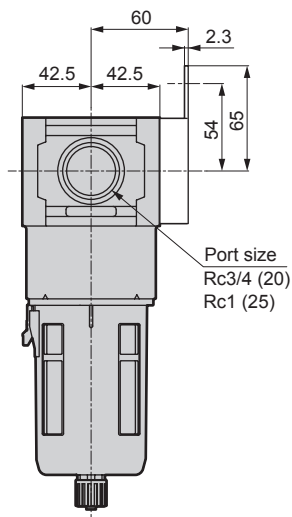
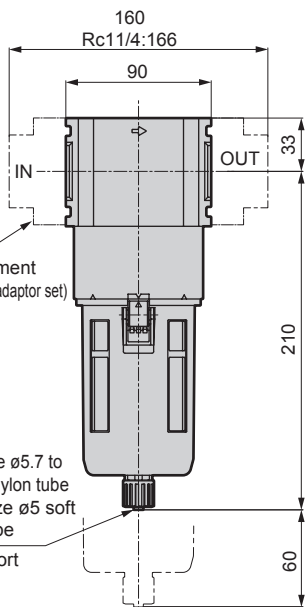
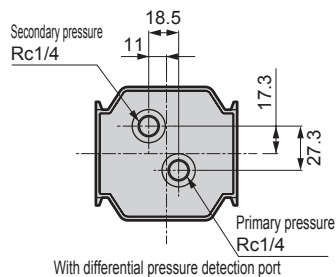
Standard series
F.R.L. unit

Oil Mist Filter Series

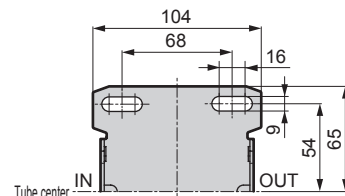
Dimensions



● M6000-W

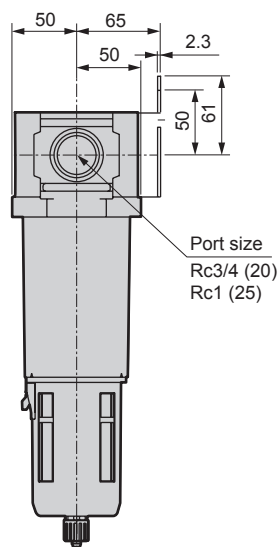
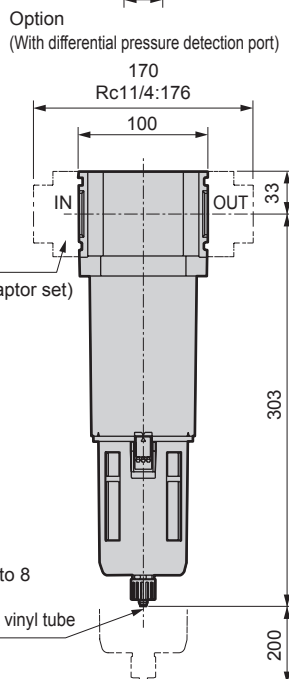
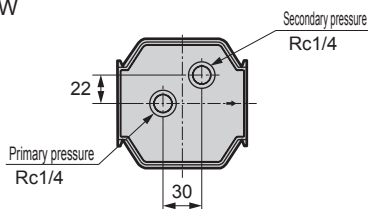


- Attachment
C type bracket (-BW)
Part model no.: B620

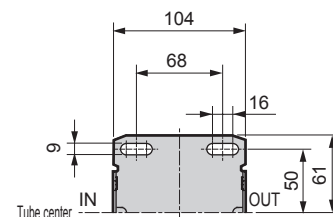


- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

● M8000-W



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

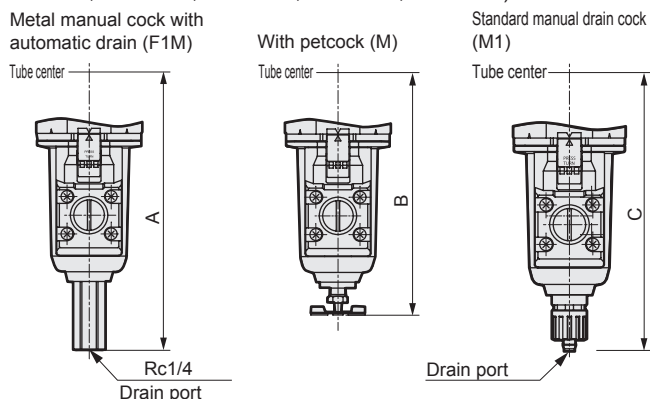


- For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

Optional dimensions



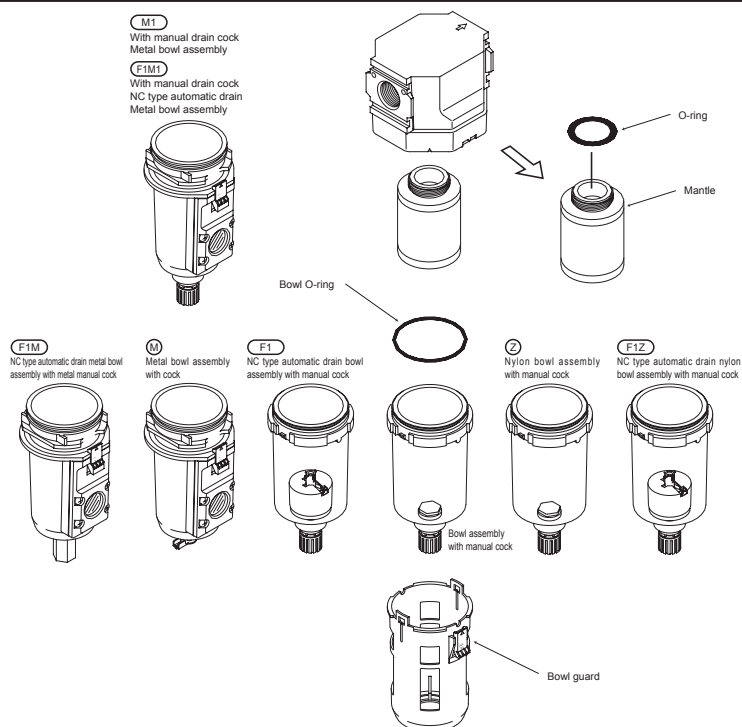
● Metal bowl (option) (M2000-W, M3000-W, M4000-W, M6000-W, M8000-W)



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)

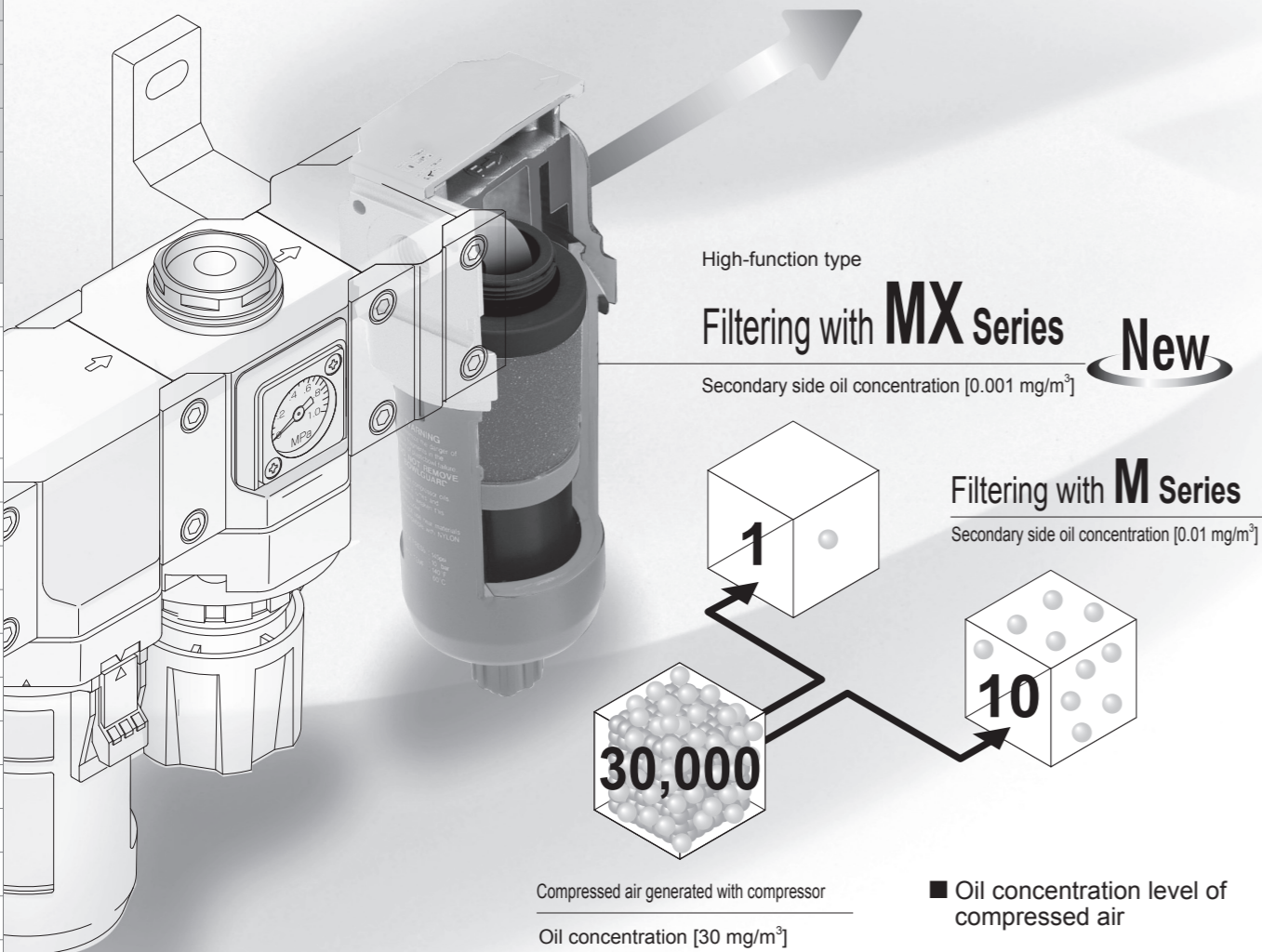
Model	M type	S type	X type
M1000-W	M1000-MANTLE-ASSY	M1000-MANTLE-ASSY-S	M1000-MANTLE-ASSY-X
M1000-W-F1	M1000-MANTLE-ASSY-F1	M1000-MANTLE-ASSY-F1S	-
M2000-W	M2000-MANTLE-ASSY	M2000-MANTLE-ASSY-S	M2000-MANTLE-ASSY-X
M3000-W, MM3000-W	M3000-MANTLE-ASSY	M3000-MANTLE-ASSY-S	M3000-MANTLE-ASSY-X
M4000-W, MM4000-W	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.

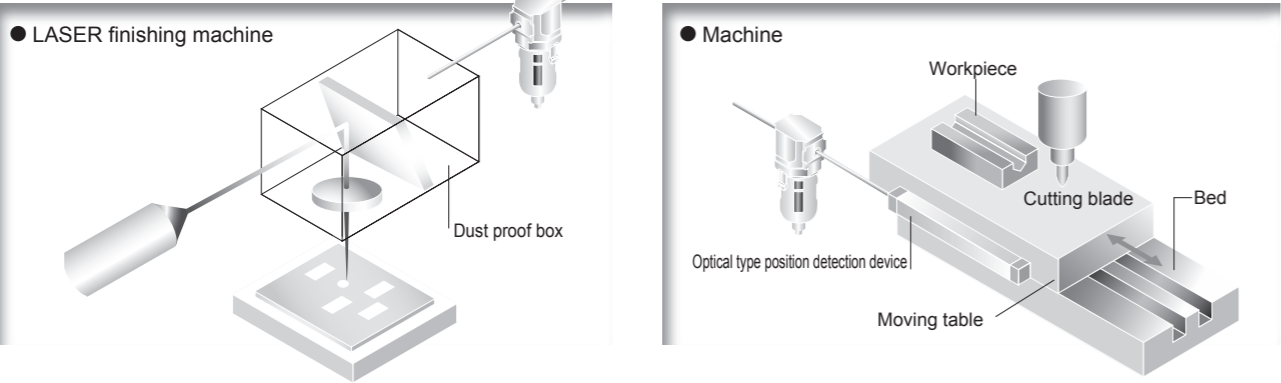
High-performance with x10 oil removal.

Highly efficient oil removing mantle removes oil up to a secondary oil concentration 0.001mg/m³. 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/m³ or less

The highly efficient oil removing mantle removes oil up to the secondary oil concentration of 0.001 mg/m³ at 21°C. This series is compatible with the JIS Standards Oil Class 1---1.

High accuracy filtration

Impurities up to 0.01μm 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

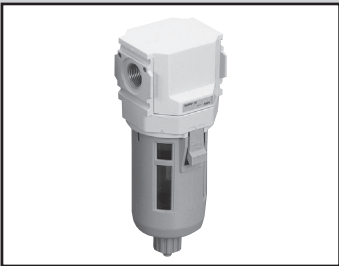
The P70 Series is available. (3000, 4000 and 6000 Series are available)

High performance oil mist filter MX Series variations

High performance oil mist filter			Treating flow rate ℓ/min					Ambient temperature range °C		
MX Series variations			Filtration rating μm	Secondary side oil concentration mg/m³(21°C)	1000 Series	3000 Series	4000 Series	6000 Series	8000 Series	
<div>MX Series</div> 			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




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.

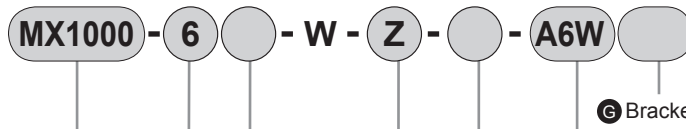
Note 5: Install an oil mist filter (S type) as a prefilter on the primary side to prevent early clogging.

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

- Dust generation preventing structure for use in cleanrooms

MX*000 - - P7*

How to order



A Model no.

B Port size

C Port thread type

D Port thread type

E Display unit

F Piping adaptor set (attached)

*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

G Bracket (attached)

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	●	●	●	●
	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

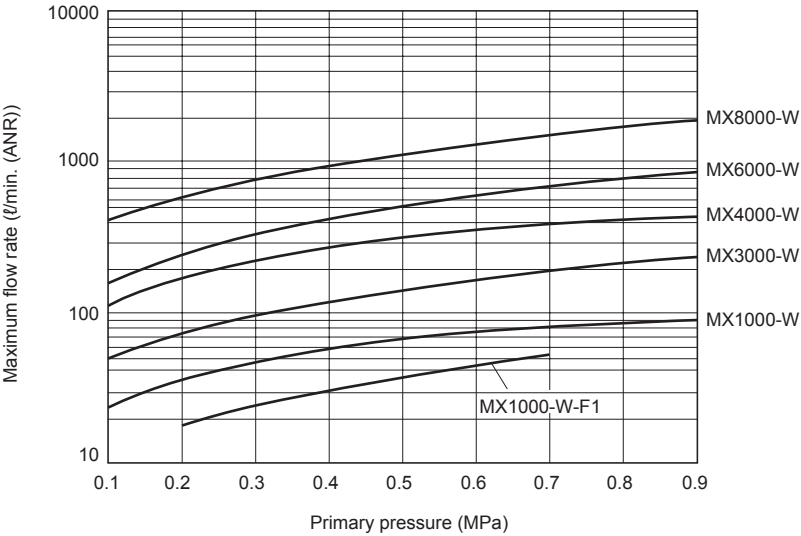
Standard series

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
M*000-W	S (S type)	End plate Green
	X (X type)	End plate Black
MX*000-W		Black End plate Green

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.

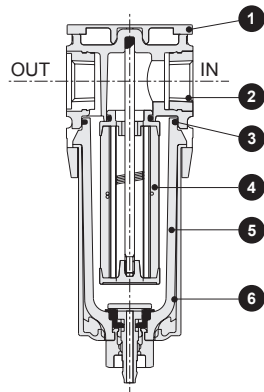
NOTE: The secondary oil density is the value when the primary oil density is 30 mg/m³, the inlet air temperature is 21°C and before the oil is saturated.

Super Oil Mist Filter Series

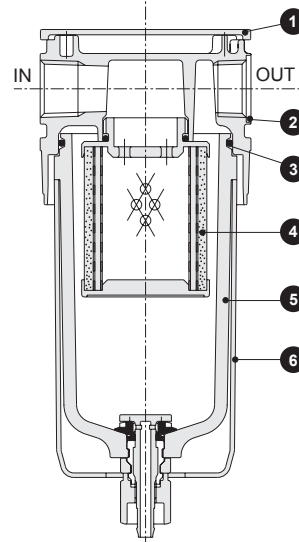
Internal structure and parts list

Internal structure and parts list

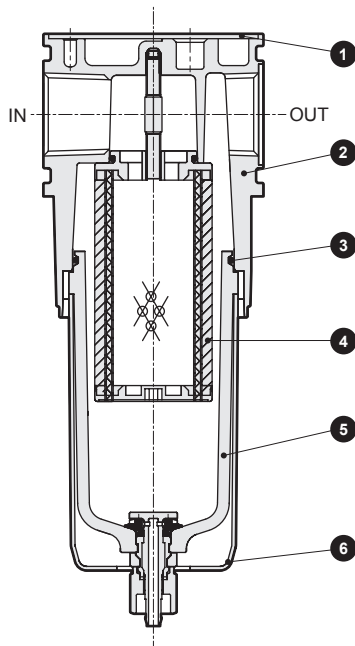
● MX1000-W



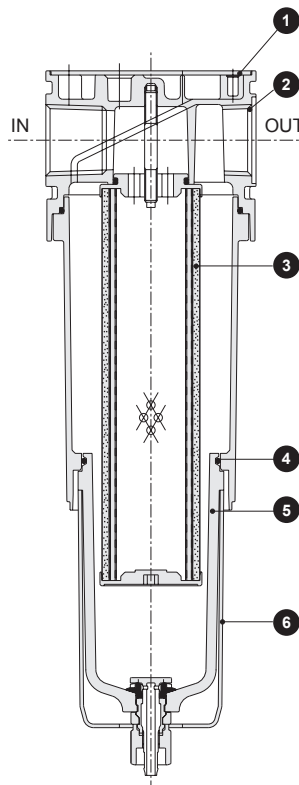
● MX3000-W/MX4000-W



● 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.

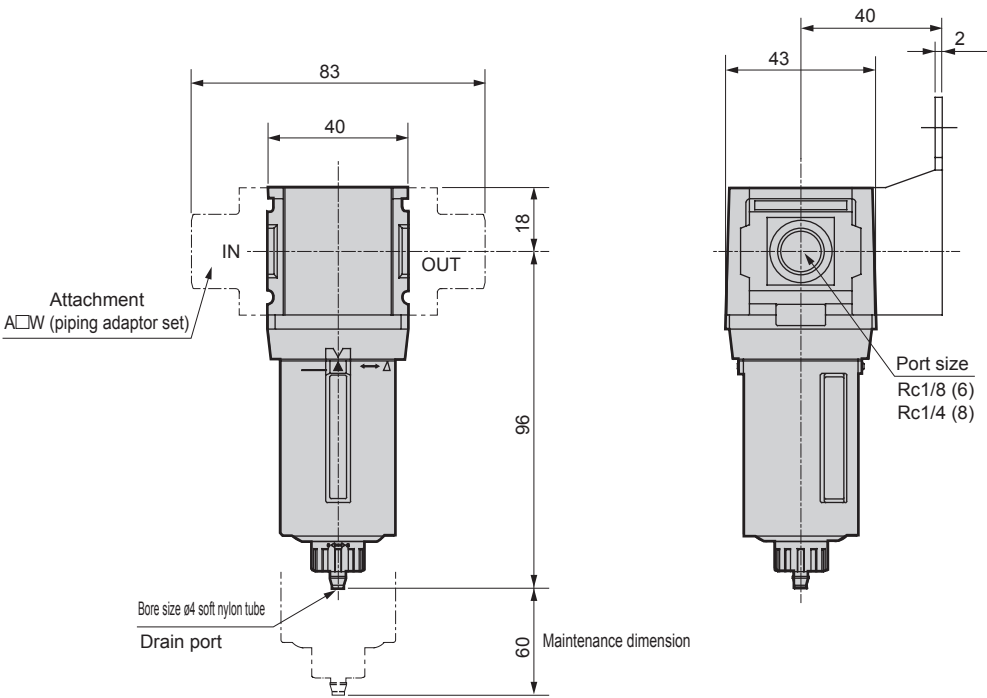
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

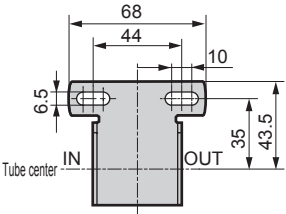
Super Oil Mist Filter Series

Dimensions

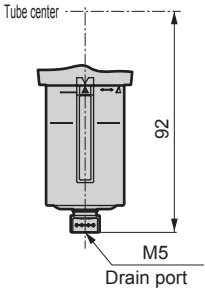
● MX1000-W



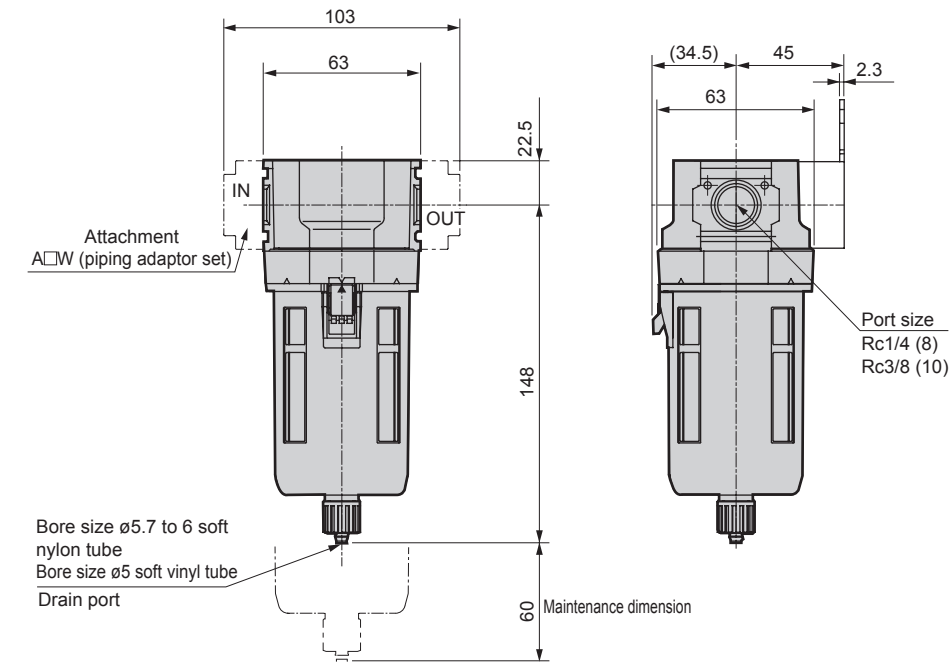
- Attachment
C type bracket (-BW)
Part model no.: B120



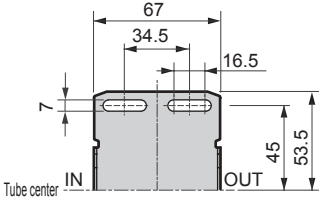
- Option dimensions
with automatic drain (F1)



● MX3000-W



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

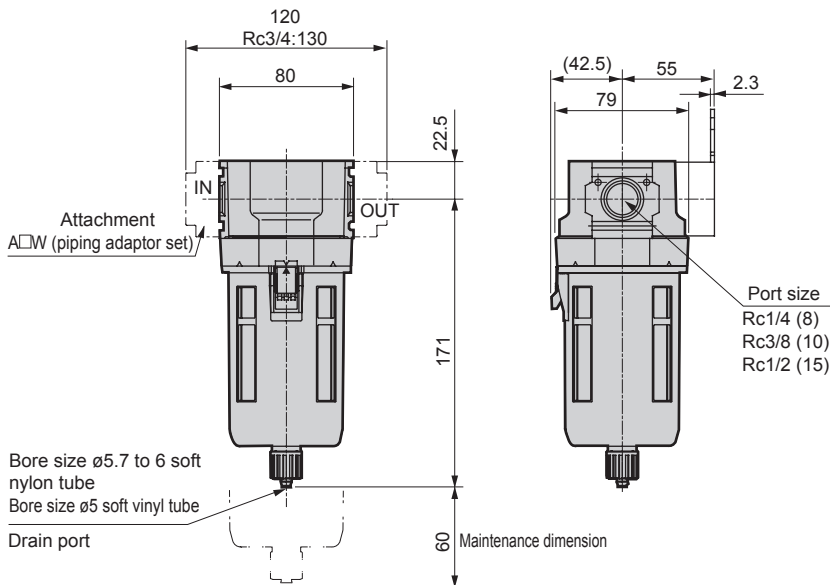


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Dimensions

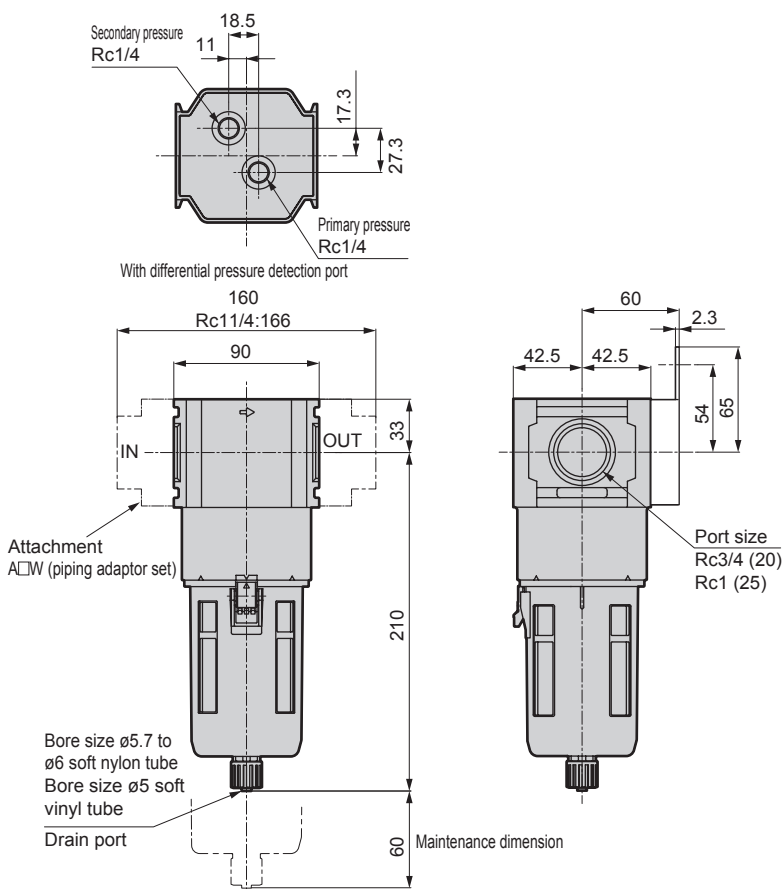


● MX4000-W



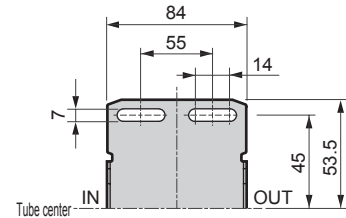
● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

● MX6000-W

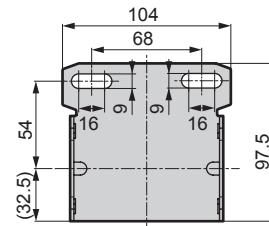


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.
Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

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



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



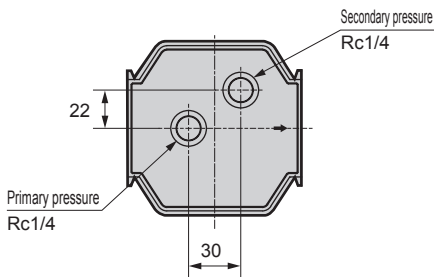
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

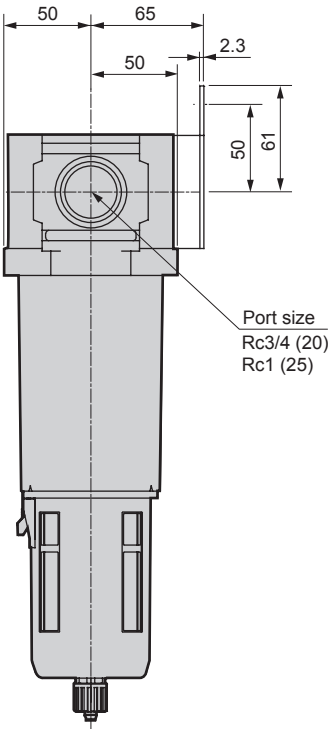
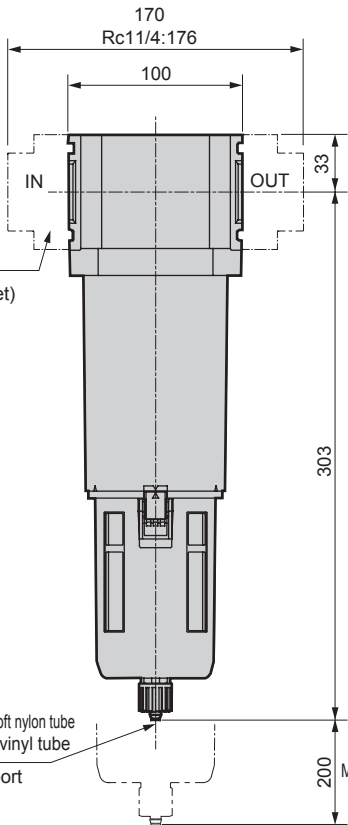
Super Oil Mist Filter Series

Dimensions

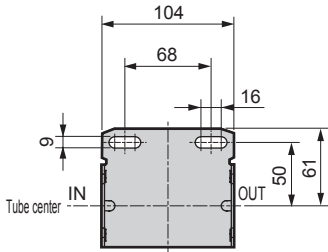
● MX8000-W



Option
(With differential pressure detection port)



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

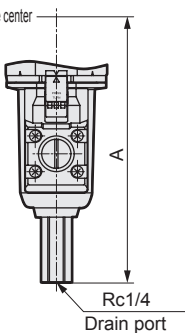


Bore size $\phi 5.7$ to $\phi 8$ soft nylon tube
Bore size $\phi 5$ soft vinyl tube
Drain port
Maintenance dimension

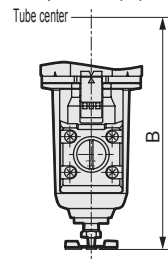
● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

● Metal bowl (option) (MX3000-W, MX4000-W, MX6000-W, MX8000-W)

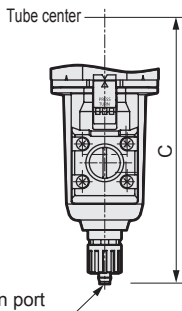
Metal manual cock
With automatic drain (F1M)



With petcock (M)



Standard manual drain cock
(M1)



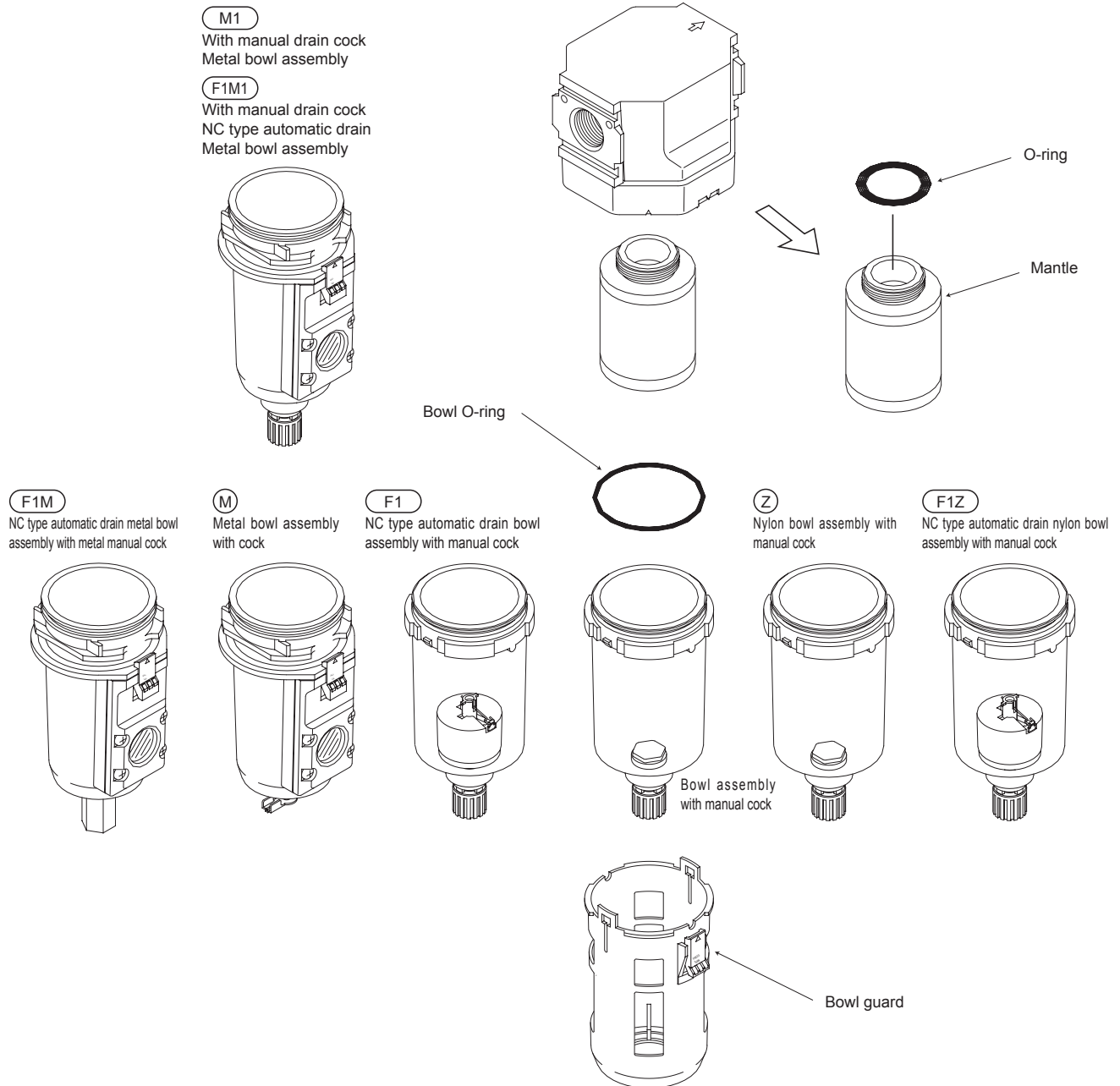
Dimensions

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



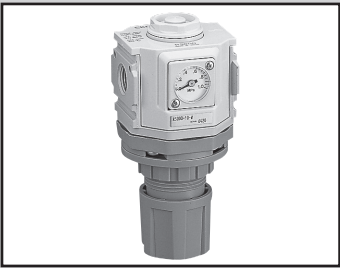
Repair kits model no. (Set of O-ring, mantle, bowl O-ring)

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
JIS symbol



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					
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.

R1000 - **6** - **-W-** **L** - **-** **A6W**

A Model no.

B Port size

C Port thread type

D Option

E Display unit

G Attachment (attached)

F Piping adaptor set (attached)

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

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							
Pressure	Blank	0.05 to 0.85MPa	●	●	●	●	●
	Range	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)

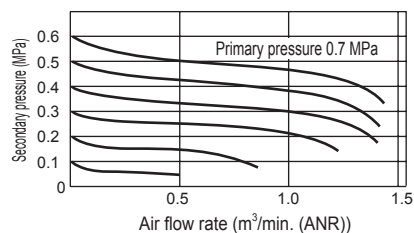
Ending

Standard series

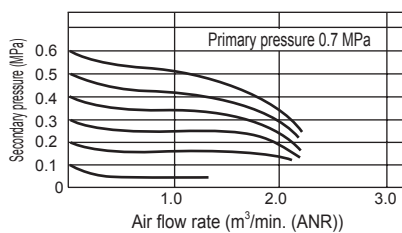
F.R.L. unit

Flow characteristic

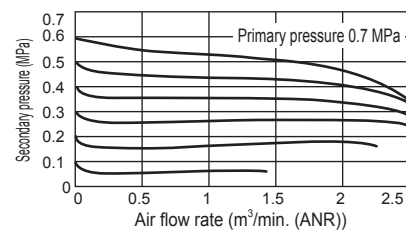
● R1000-6-W



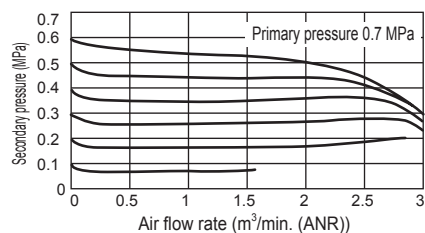
● R1000-8-W



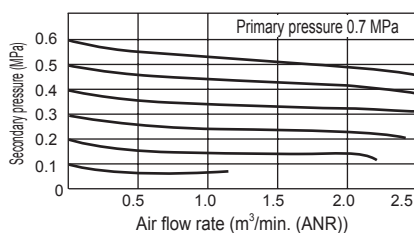
● R2000-8-W



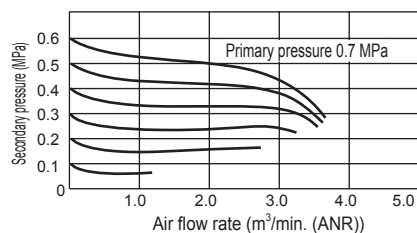
● R2000-10-W



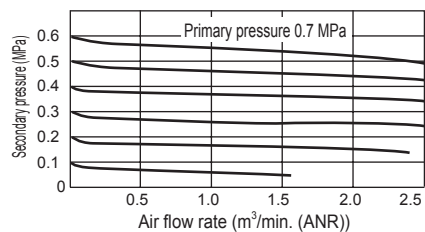
● R3000-8-W



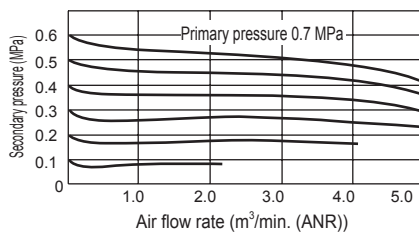
● R3000-10-W



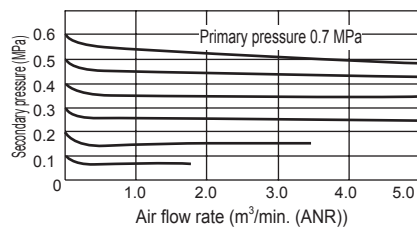
● R4000-8-W



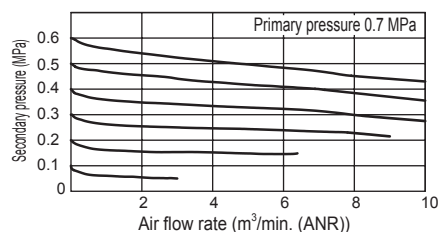
● R4000-10-W



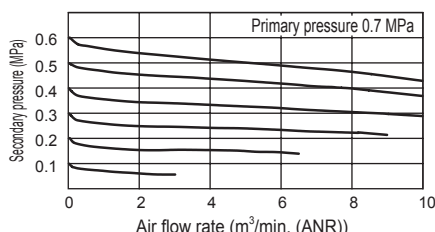
● R4000-15-W



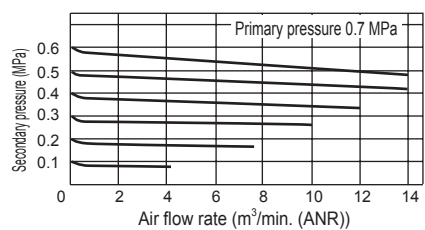
● R6000-20-W



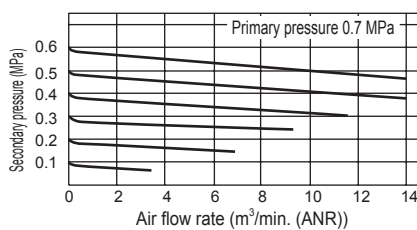
● R6000-25-W



● R8000-20-W

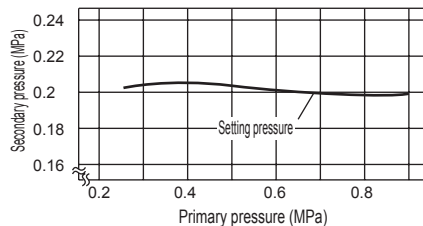


● R8000-25-W

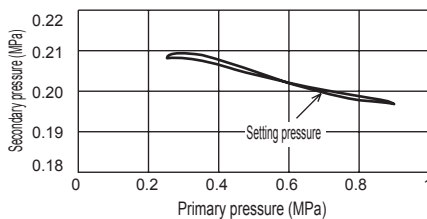


Pressure characteristic

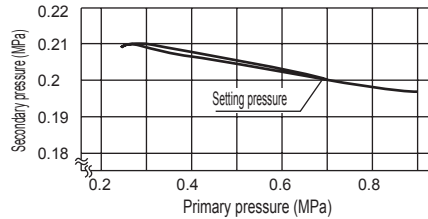
● R1000-W



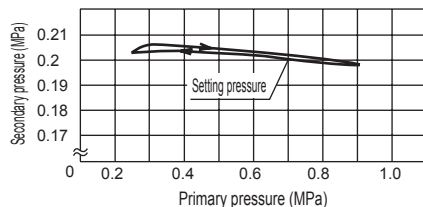
● R2000-W



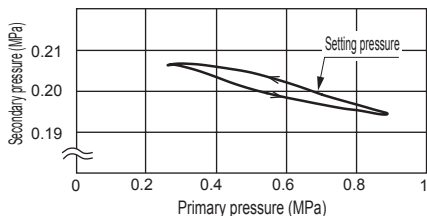
● R3000-W



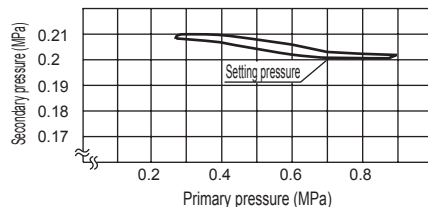
● R4000-W



● R6000-W

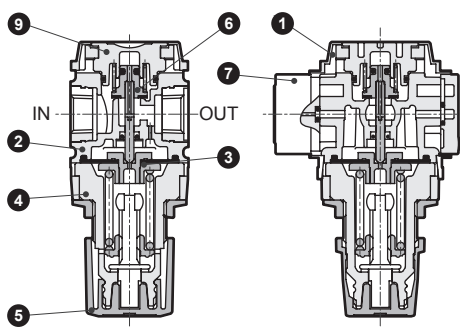


● R8000-W

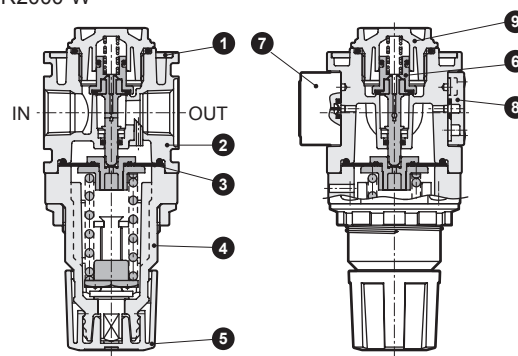


Internal structure and parts list

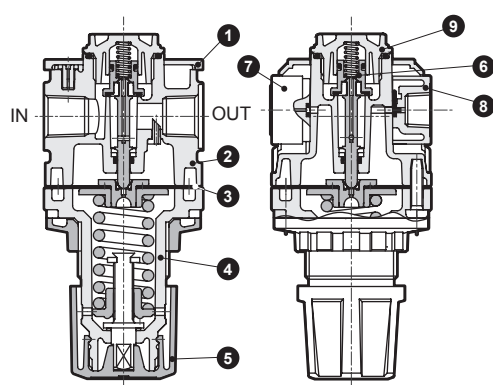
● R1000-W



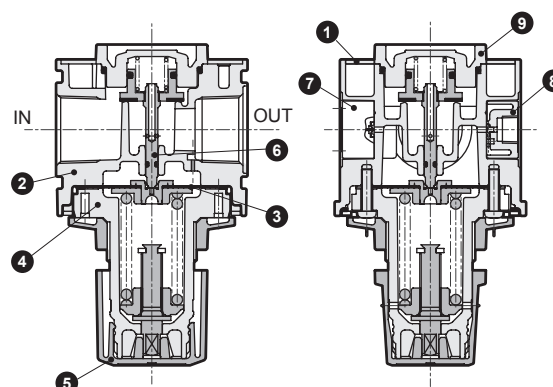
● R2000-W



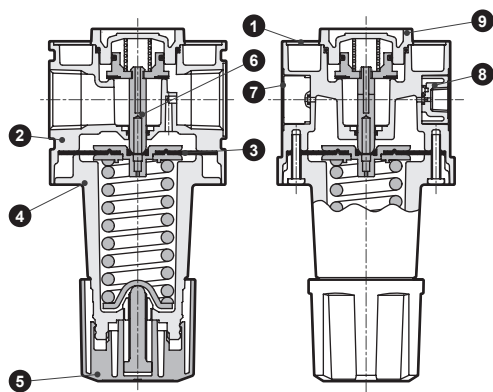
● R3000-W / R4000-W



● 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

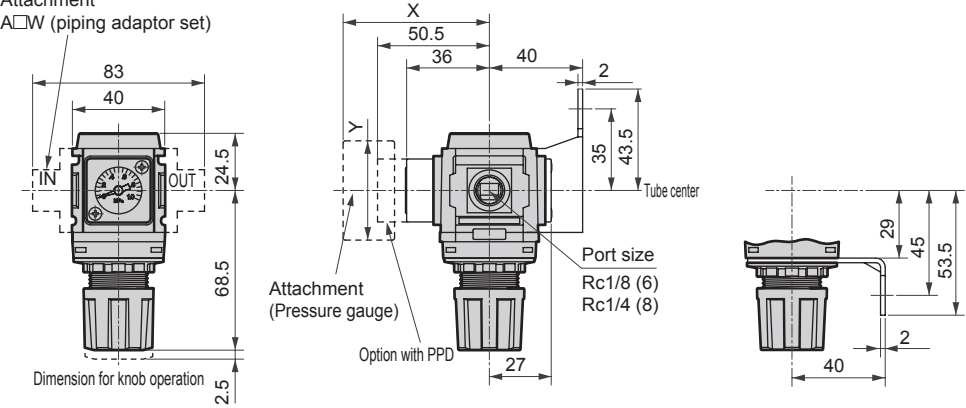
Regulator Series

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

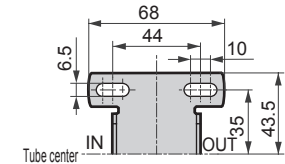
Dimensions 

● R1000-W

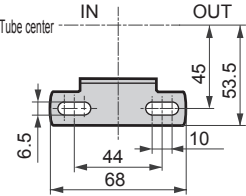
Attachment
A□W (piping adaptor set)



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



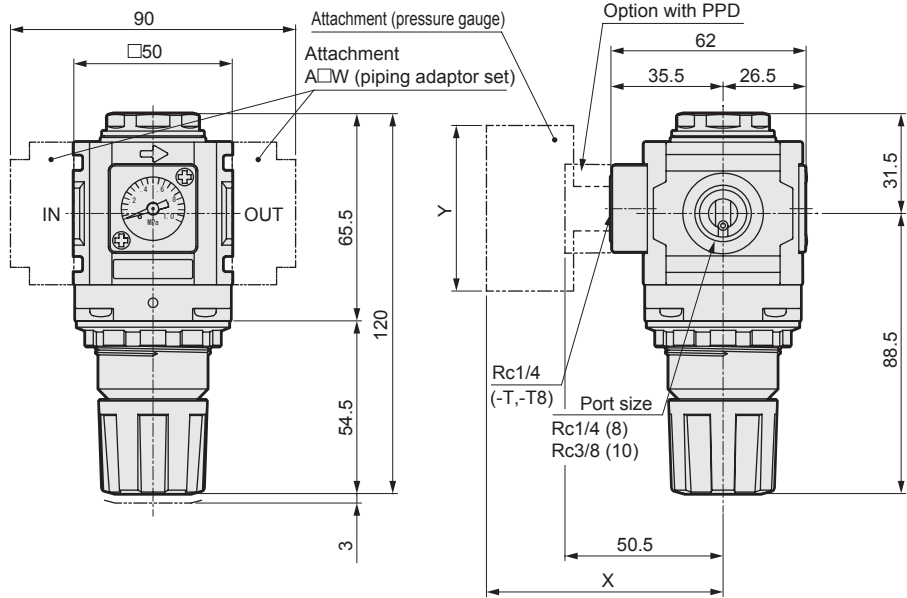
L type bracket (-B3W)
Part model no.: B130



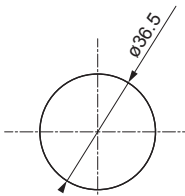
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
G45P	(74)	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

● R2000-W



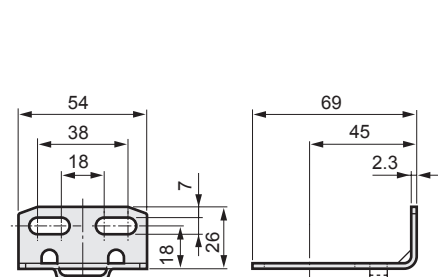
Panel cut dimension



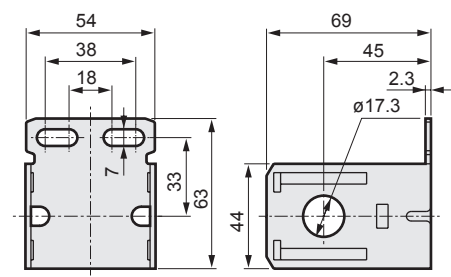
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
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

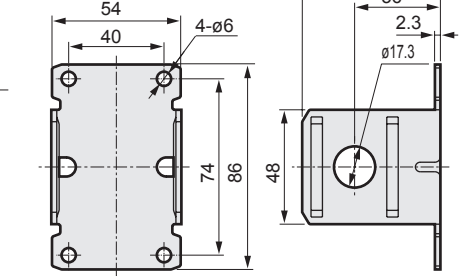
● L type bracket (-B3W)
Part model no.: B230



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



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

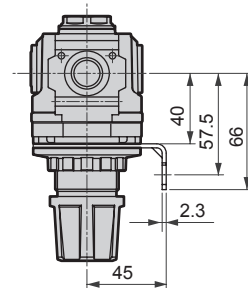
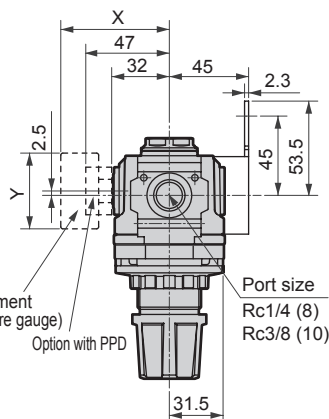
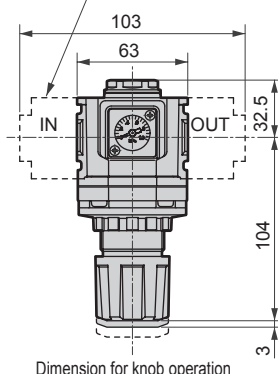


Dimensions

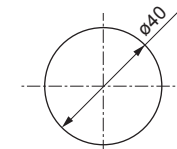


● R3000-W

Attachment
A□W (piping adaptor set)



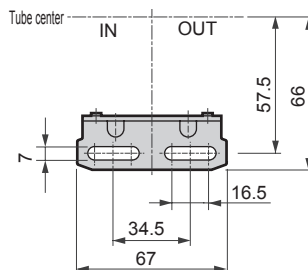
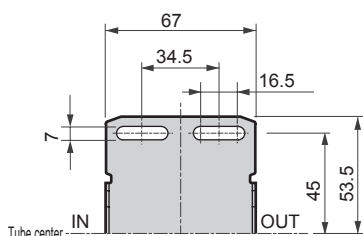
Panel cut dimension



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

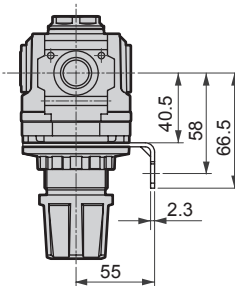
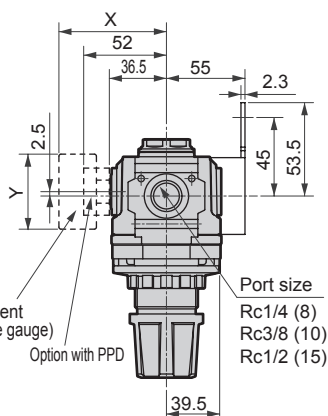
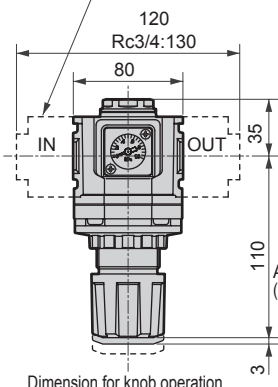


Pressure gauge attached optional dimensions table

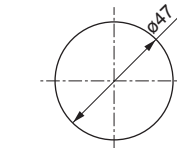
Attached pressure gauge	X	Y
G45P	(70)	ø39
G49P	(69.5)	ø43.5
G59P	(72)	ø52
G40P	(71.5)	ø42.5
G50P	(71.5)	ø52.5
G41P	(70)	ø42
G52P	(82)	ø52.5
R2	(69.5)	□30

● R4000-W

Attachment
A□W (piping adaptor set)



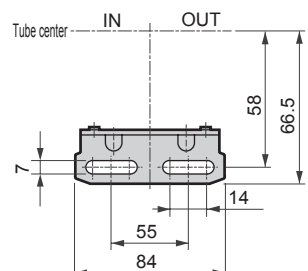
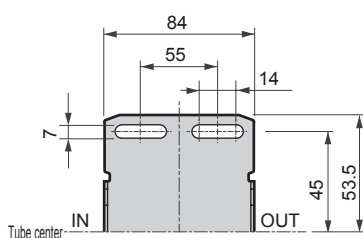
Panel cut dimension



Panel plate thickness: Max. 7 mm

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

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



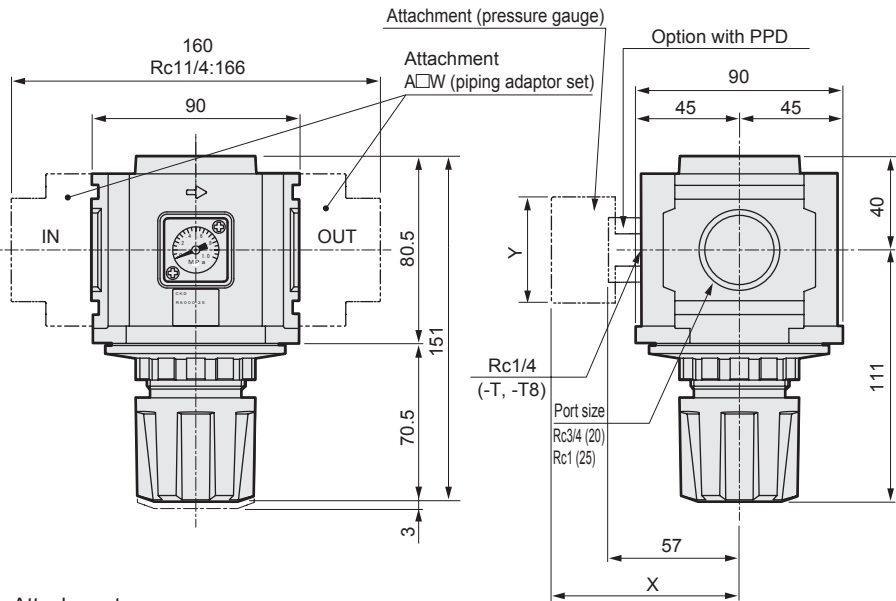
Pressure gauge attached optional dimensions table

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

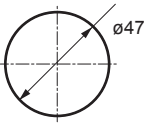
Regulator Series

Dimensions

● R6000-W



Panel cut dimension

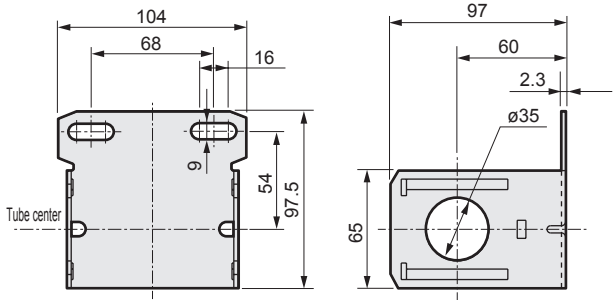


Pressure gauge attached optional dimensions table

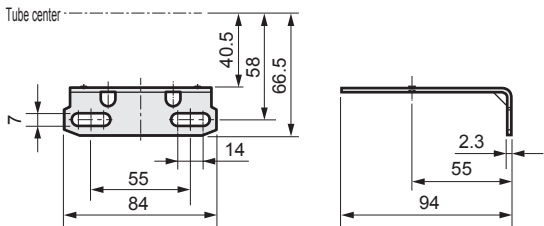
Attached pressure gauge	X	Y
G45P	(80)	ø39
G49P	(79.5)	ø43.5
G59P	(82)	ø52
G40P	(81.5)	ø42.5
G50P	(87.5)	ø52.5
G41P	(80)	ø42
G52P	(93)	ø52.5
R2	(80)	□30

• Attachment

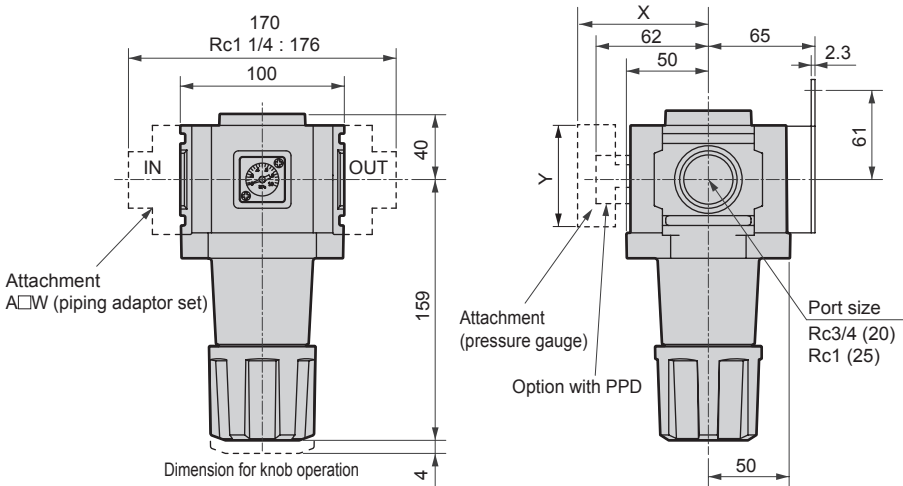
C type bracket (-BW)
Part model no.: B620



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



● R8000-W

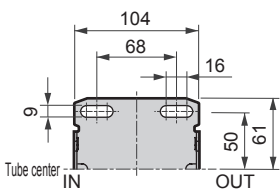


Pressure gauge attached optional dimensions table

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

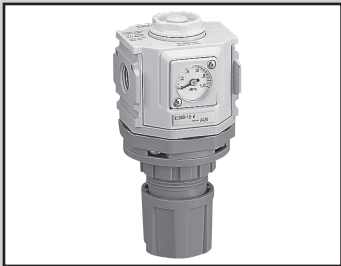
• Attachment

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



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
JIS symbol



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					
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*

How to order

R1100 - **6** - **W** - **L** - **A6W**

A Model no.

B Port size

C Port thread type

D Option

E Display unit

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

G Attachment (attached)

F Piping adaptor set (attached)

		A Model no.					
		R1100	R2100	R3100	R4100	R6100	R8100
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, Note 3					
Pressure Range	Blank	0.05 to 0.85MPa	●	●	●	●	●
	L	0.05 to 0.35MPa Note 4	●	●	●	●	●
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 5	●	●	●	●	●
	R1	Pressure switch with display PPD assembly 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)		Note 7, Note 8 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 9 pages 425, 659					
Blank		Not attached	●	●	●	●	●
BW		C type bracket	●	●	●	●	●
B3W		L type bracket Note 10	●	●	●	●	●
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 5		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: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:The pressure gauge's indication range is 0 to 0.4MPa for option "L".

Note 5: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 6:The output type is NPN transistor output. Consult with CKD when the PNP transistor output is required.

Note 7:The C-type bracket and piping adaptor set attachments cannot be used at the same time.

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.

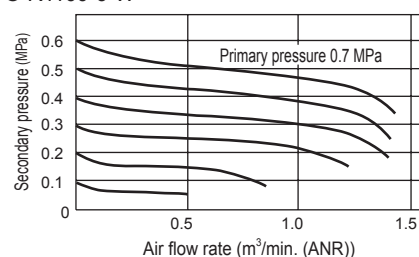
Note 10:Refer to Section (2. Regulator), in "⚠ PRECAUTIONS for Installation and Adjustment " (page 279) for details on mounting the L-type bracket.

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

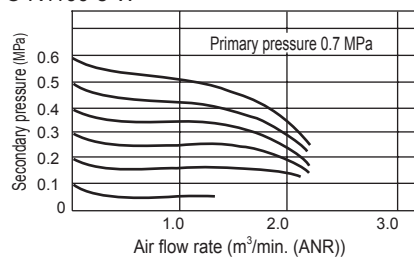
Standard series
F.R.L. unit

Flow characteristic

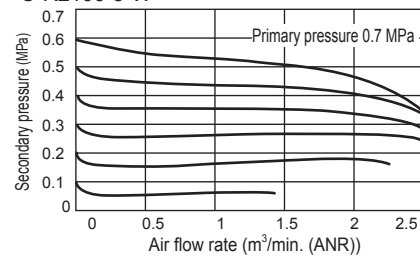
● R1100-6-W



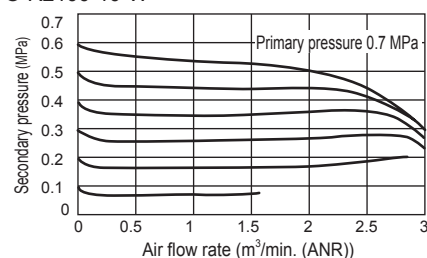
● R1100-8-W



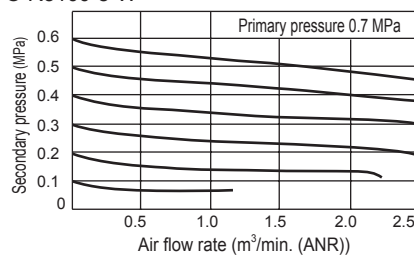
● R2100-8-W



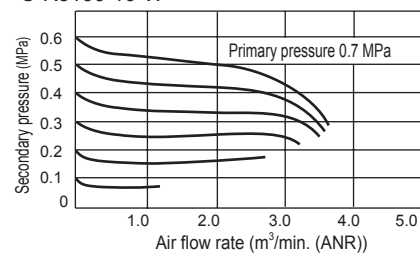
● R2100-10-W



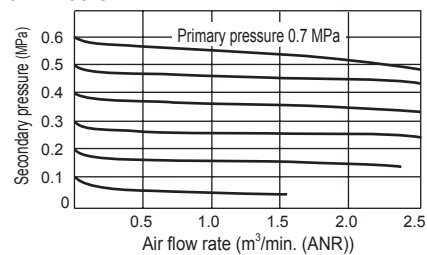
● R3100-8-W



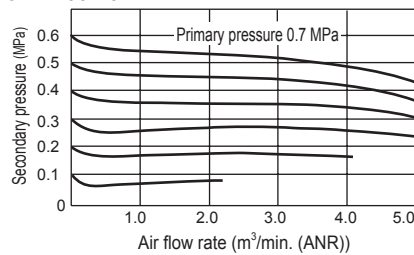
● R3100-10-W



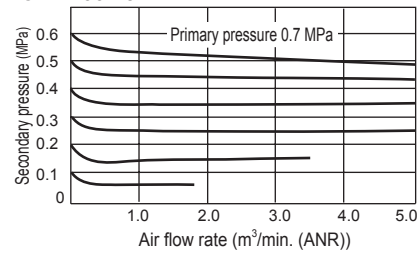
● R4100-8-W



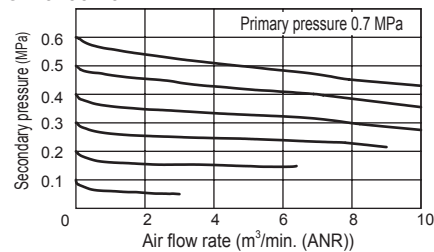
● R4100-10-W



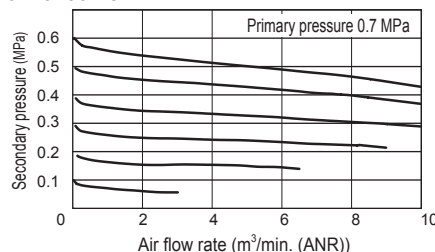
● R4100-15-W



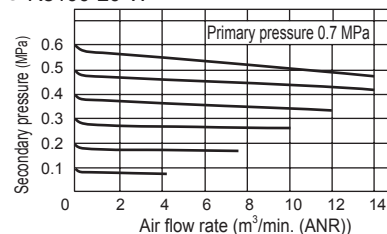
● R6100-20-W



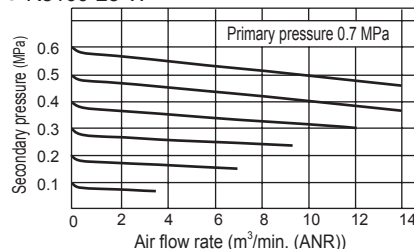
● R6100-25-W



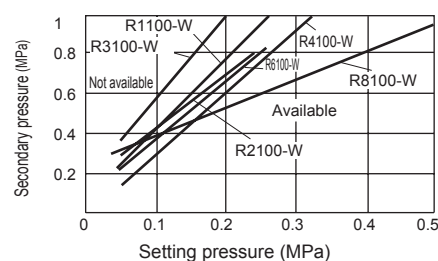
● R8100-20-W



● R8100-25-W



● Set pressure range to back pressure

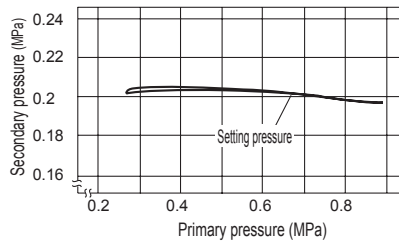


Note: The upper side of the graph is nonusable and the lower side usable.

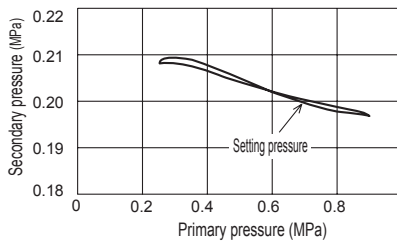
Example: If R4100-W is set to set pressure 0.2 MPa and the secondary back pressure is 0.6 MPa or more, the secondary pressure will not be released to the primary side.

Pressure characteristic

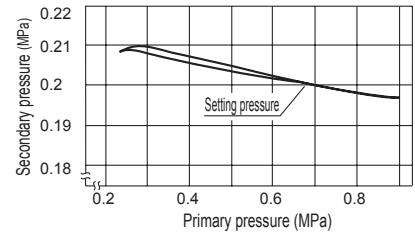
● R1100-W



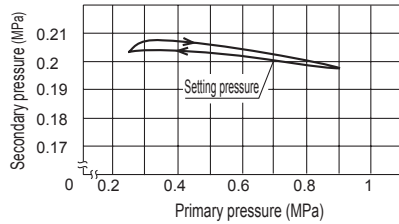
● R2100-W



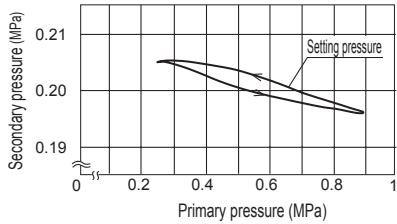
● R3100-W



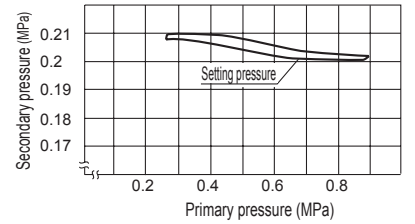
● R4100-W



● R6100-W

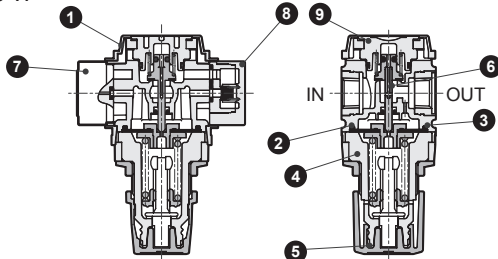


● R8100-W

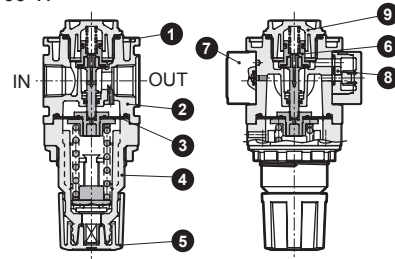


Internal structure and parts list

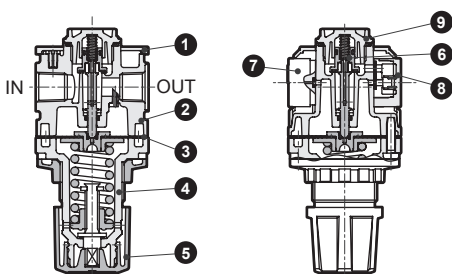
● R1100-W



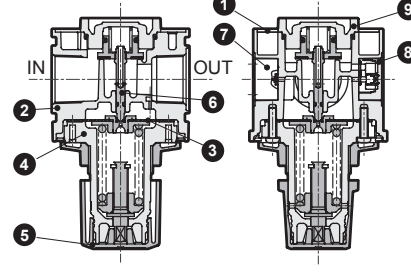
● R2100-W



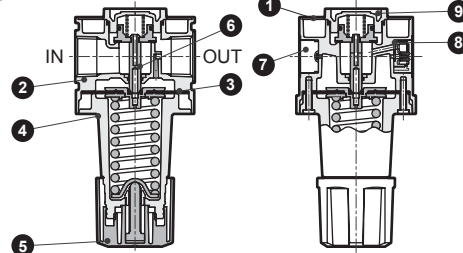
● R3100-W / R4100-W



● 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.

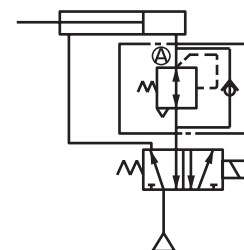
Note 2: Aluminum is added for the R6000-W low-pressure type.

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

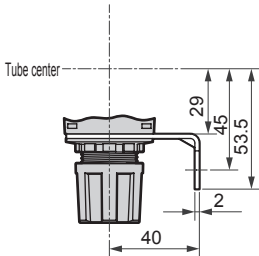
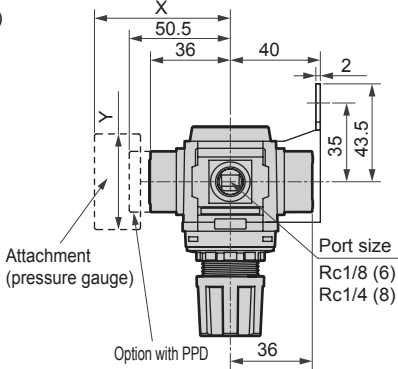
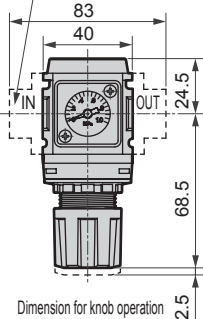
Standard series
F.R.L. unit

Regulator Series

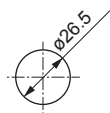
Dimensions

● R1100-W

Attachment
A□W (piping adaptor set)



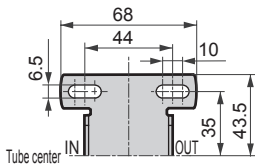
Panel cut dimension



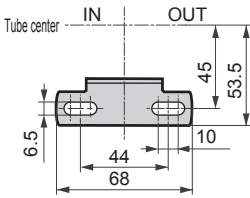
Panel plate thickness: Max. 6 mm

● Attachment

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



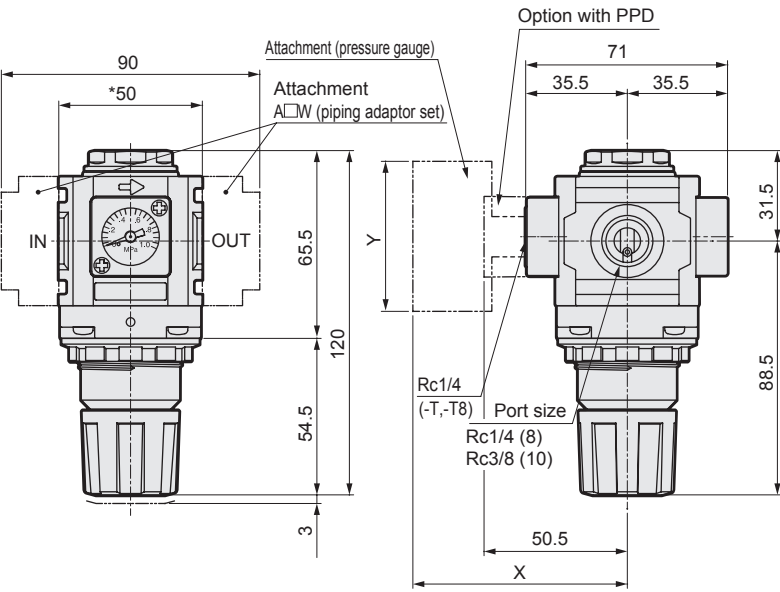
L type bracket (-B3W)
Part model no.: B130



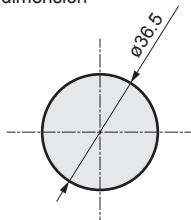
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
G45P	(74)	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

● R2100-W



Panel cut dimension

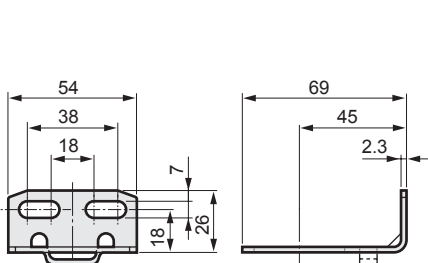


Panel plate thickness: Max. 4 mm

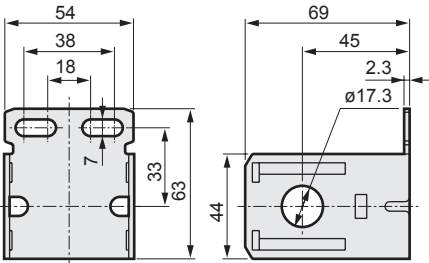
Pressure gauge attached optional dimensions table

Attached pressure gauge	X	Y
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

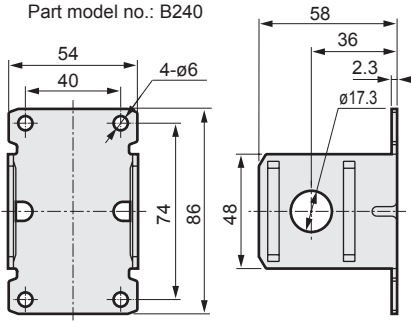
● L type bracket (-B3W)
Part model no.: B230



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

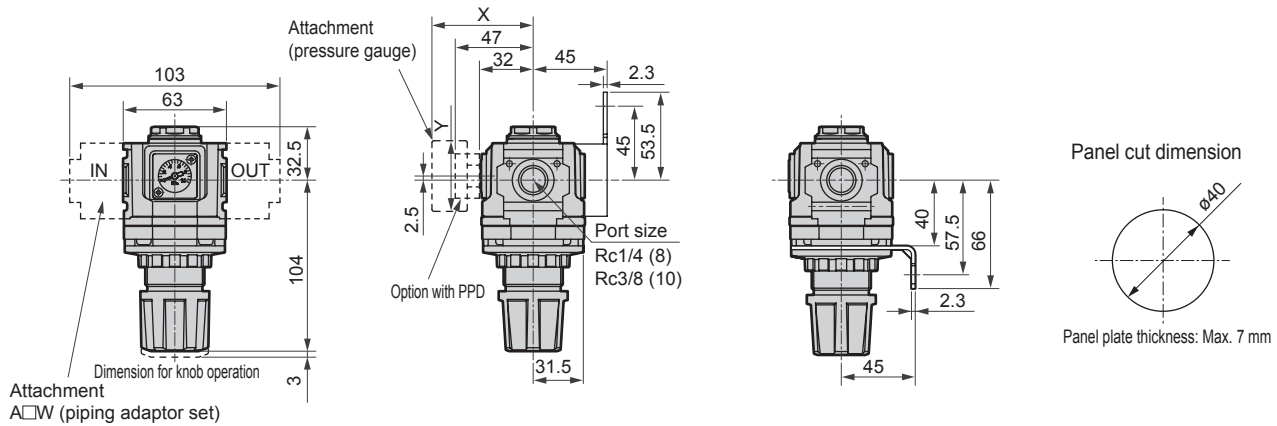


● B type bracket (-B4W)
Part model no.: B240

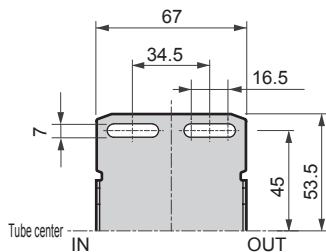


Dimensions

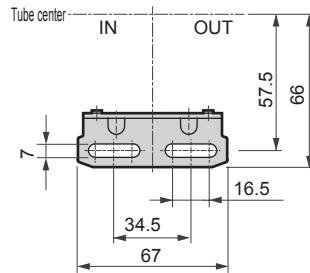
● R3100-W



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



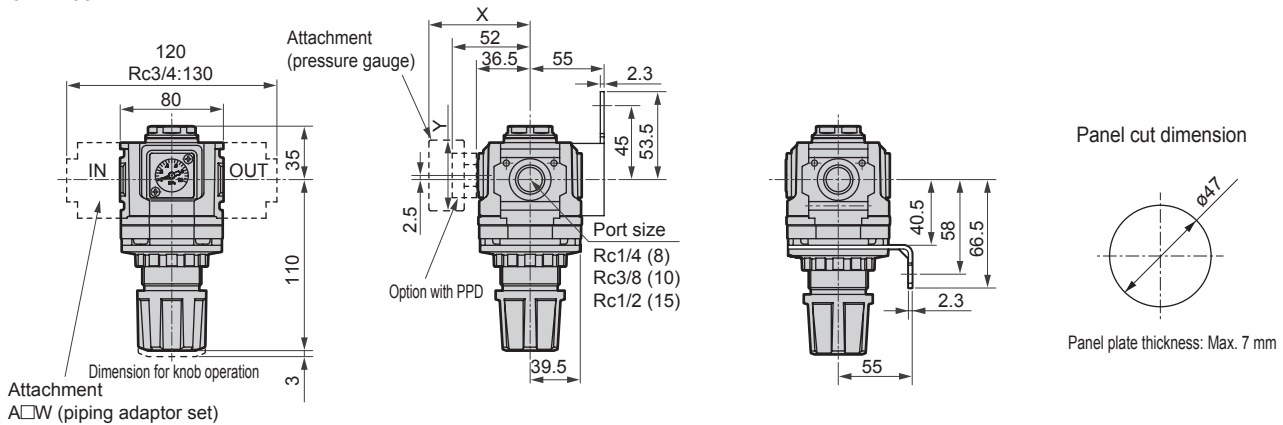
- L type bracket (-B3W)
Part model no.: B330



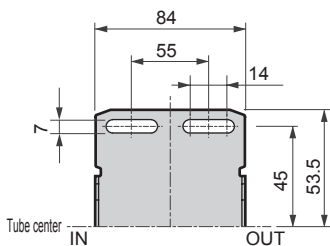
Pressure gauge attached optional dimensions table

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

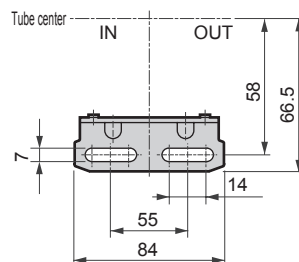
● R4100-W



- 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

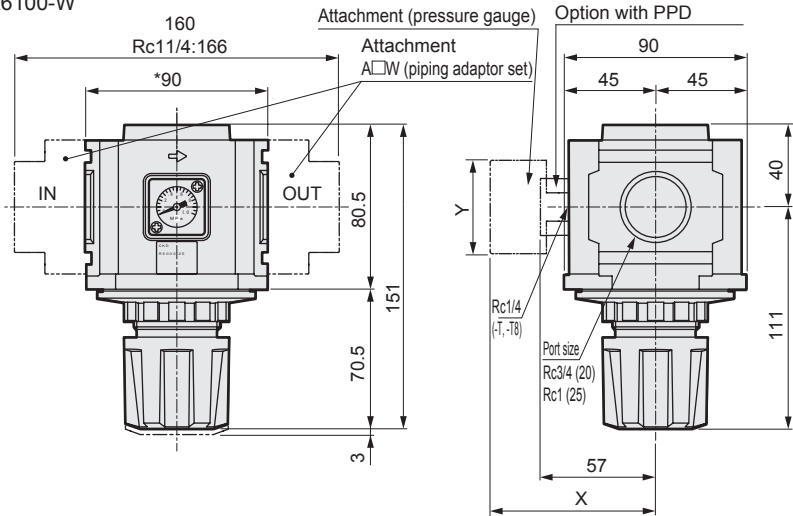
Standard series
F.R.L. unit

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

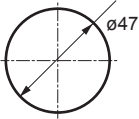
Regulator Series

Dimensions 

● R6100-W



Panel cut dimension



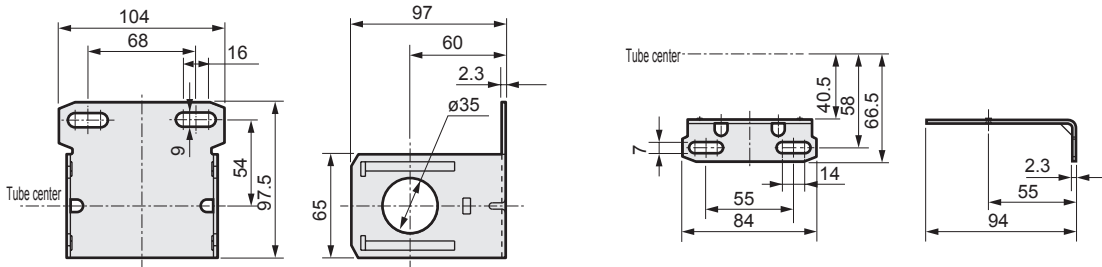
Pressure gauge optional dimensions table

Attached pressure gauge	X	Y
G45P	(80)	$\varnothing 39$
G49P	(79.5)	$\varnothing 43.5$
G59P	(82)	$\varnothing 52$
G40P	(81.5)	$\varnothing 42.5$
G50P	(81.5)	$\varnothing 52.5$
G41P	(80)	$\varnothing 42$
G52P	(93)	$\varnothing 52.5$
R2	(80)	$\square 30$

• Attachment

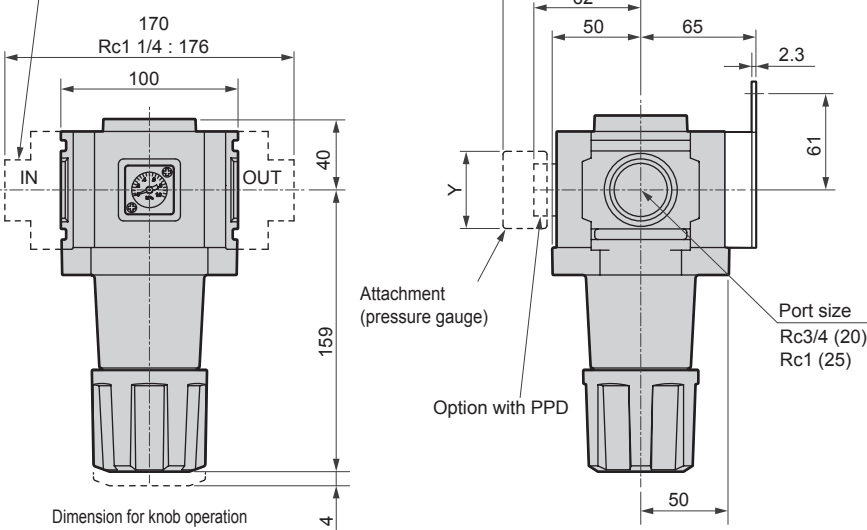
C type bracket (-BW)
Part model no.: B620

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



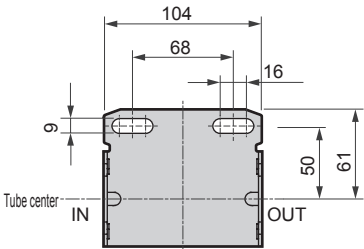
● R8100-W

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)	$\varnothing 39$
G49P	(84.5)	$\varnothing 43.5$
G59P	(87)	$\varnothing 52$
G40P	(86.5)	$\varnothing 42.5$
G50P	(86.5)	$\varnothing 52.5$
G41P	(85)	$\varnothing 42$
G52P	(98)	$\varnothing 52.5$
R2	(85)	$\square 30$

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

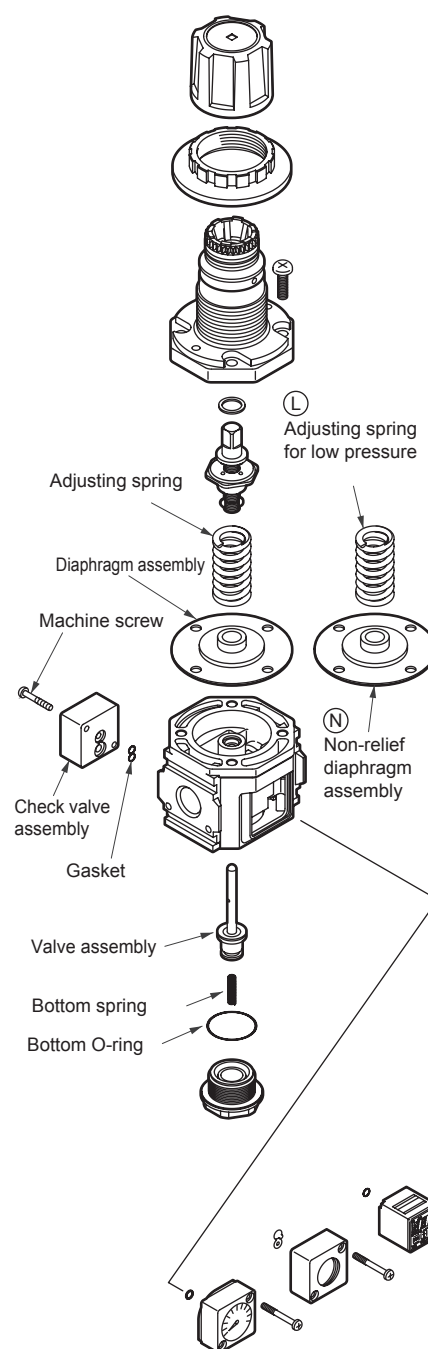
Model	Check valve assembly model no.
R1000-W, R1100-W	R1100-W-CHECK-VALVE-ASSY
R2100-W	R3100-W-CHECK-VALVE-ASSY
R3100-W, RM3000-W, W3100-W R4100-W, RM4000-W, W4100-W R6100-W, R8100-W W8100-W	R3100-W-CHECK-VALVE-ASSY

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

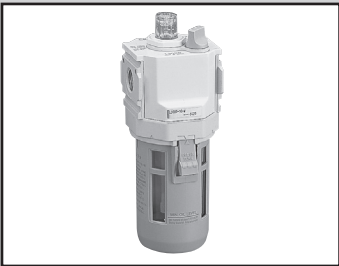
Diaphragm assembly (only diaphragm assembly)

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 m³/min. (ANR)	0.015	0.03	0.065	0.065
Oil capacity cm³	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

A Model no. L1000 - **B Port size** 6 - **C Port thread type** W - **D Option** C - **E Display unit** - **F Piping adaptor set (attached)** A6W

G Bracket (attached)

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

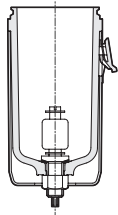
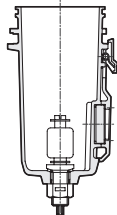
Symbol		Descriptions			
B Port size					
6	1/8				
8	1/4				
10	3/8				
15	1/2				
20	3/4				
25	1				
C Port thread type		Note 1			
Blank	Rc thread				
N	NPT thread				
G	G thread				
D Option		Note 2			
Drainage	Blank	Without manual cock			
	C	With manual cock			
	LL	With float switch			
Bowl material	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					
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				

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			
Shape			
Material	Plastic bowl		Metal bowl
	Polycarbonate	Nylon	Aluminum
Lubricator L*000-W	LL	LLZ	LLM

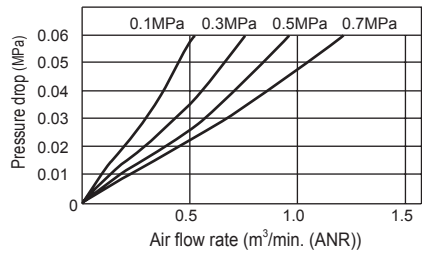
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

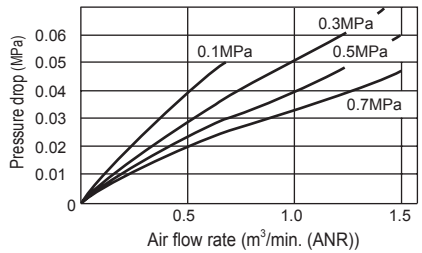
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

Flow characteristic

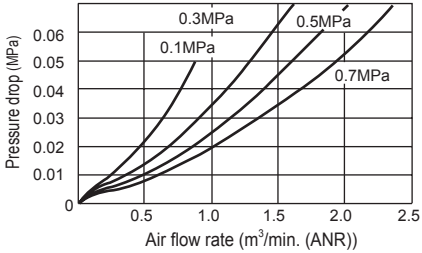
● L1000-6-W



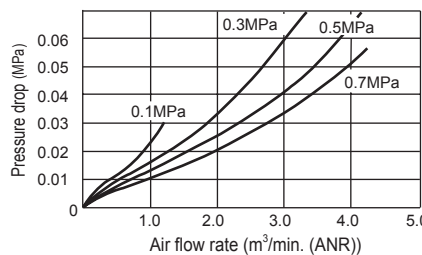
● L1000-8-W



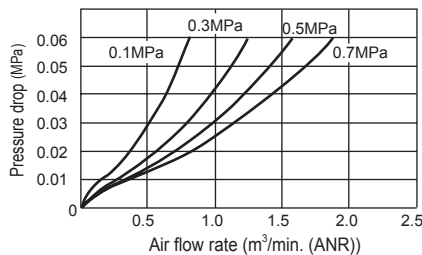
● L3000-8-W



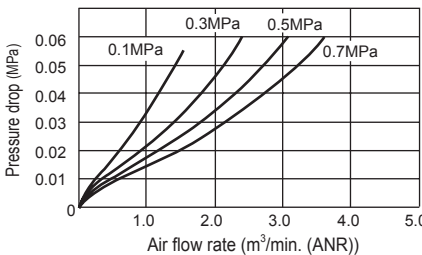
● L3000-10-W



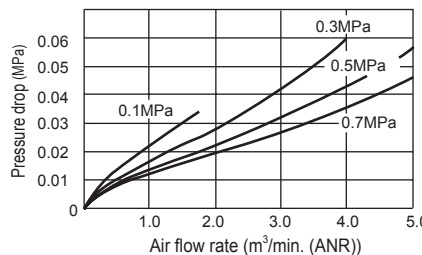
● L4000-8-W



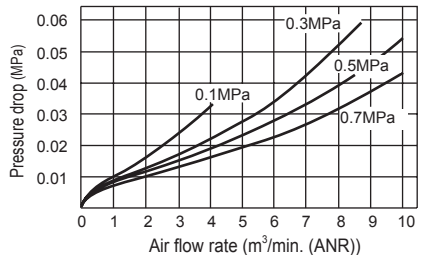
● L4000-10-W



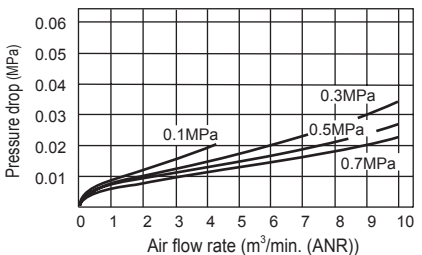
● L4000-15-W



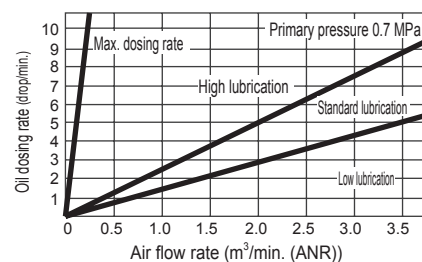
● L8000-20-W



● L8000-25-W

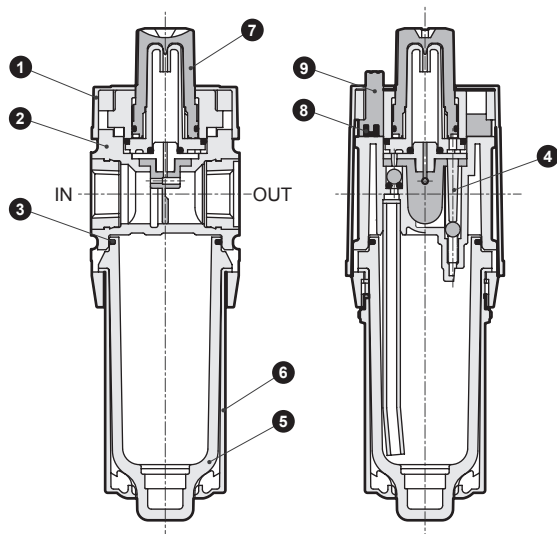


Oil dosing rate

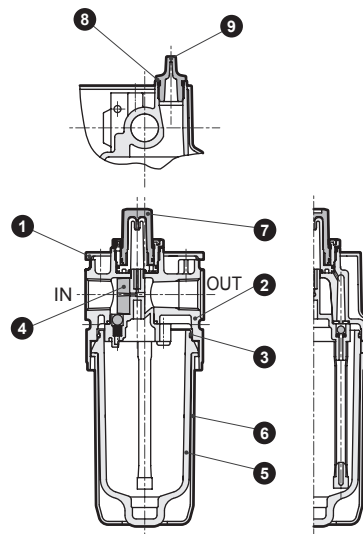


Internal structure and parts list

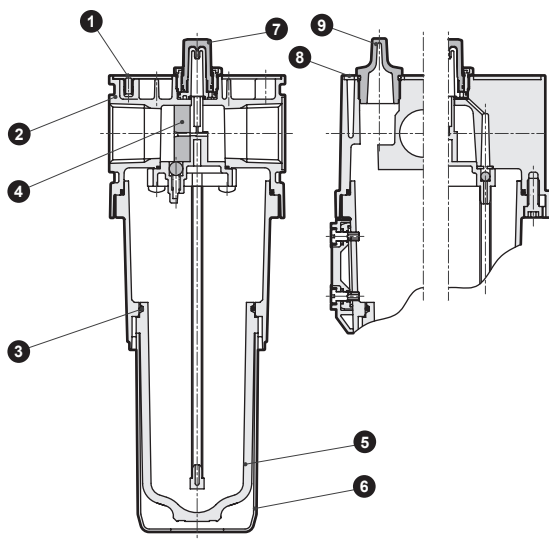
● L1000-W



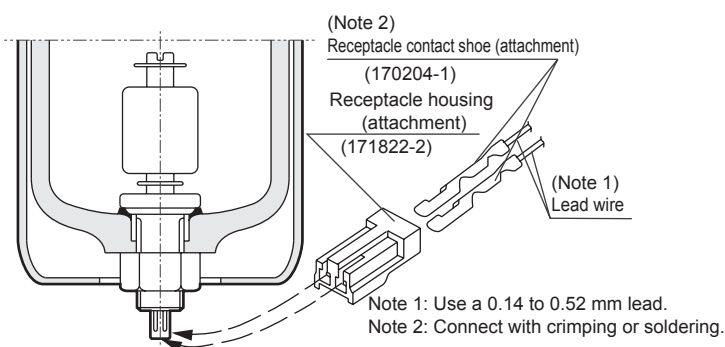
● L3000-W / L4000-W



● 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.

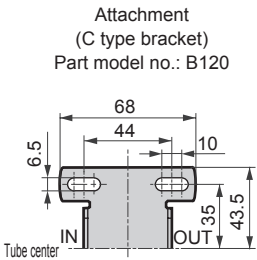
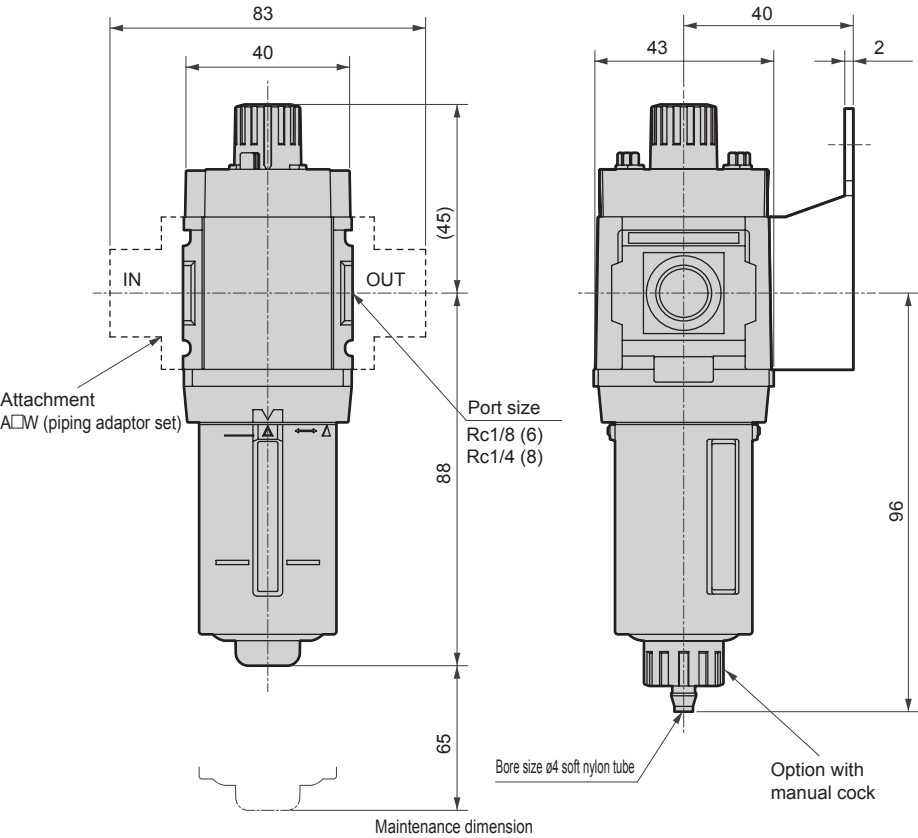
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

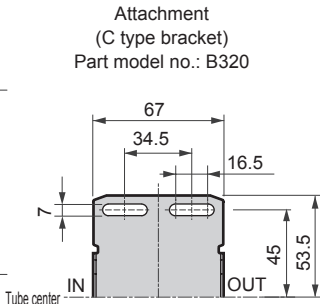
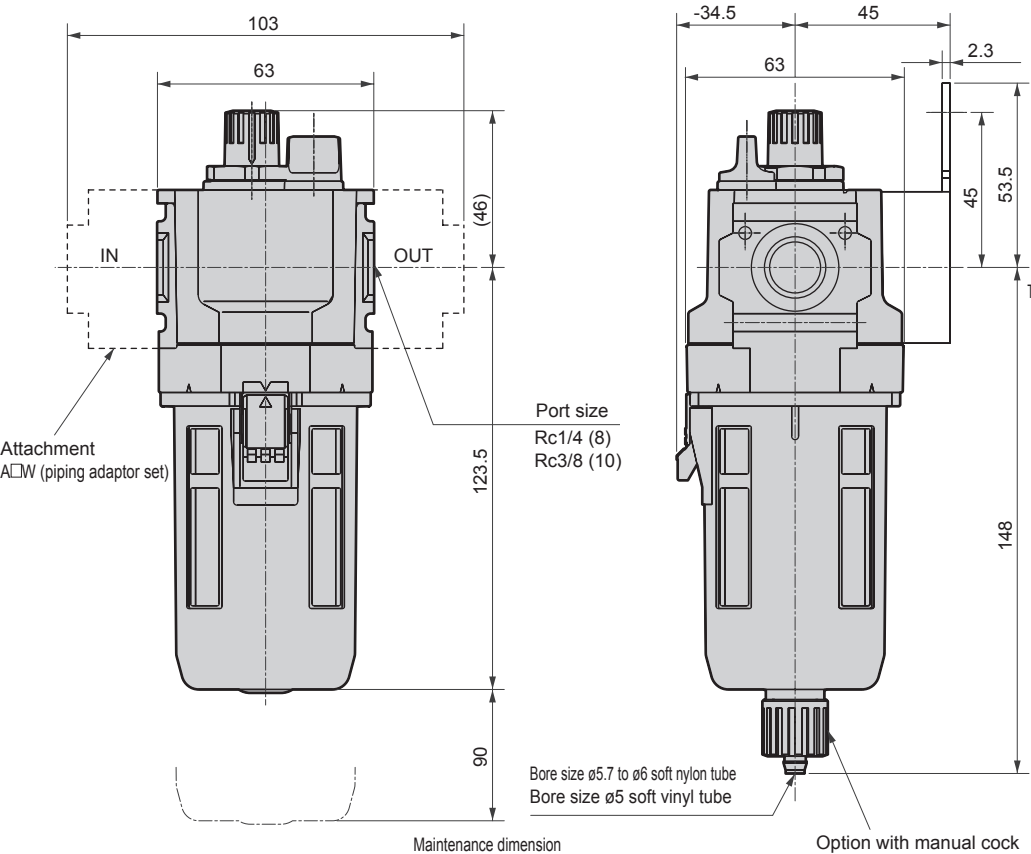
Dimensions

● L1000-W



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

● L3000-W

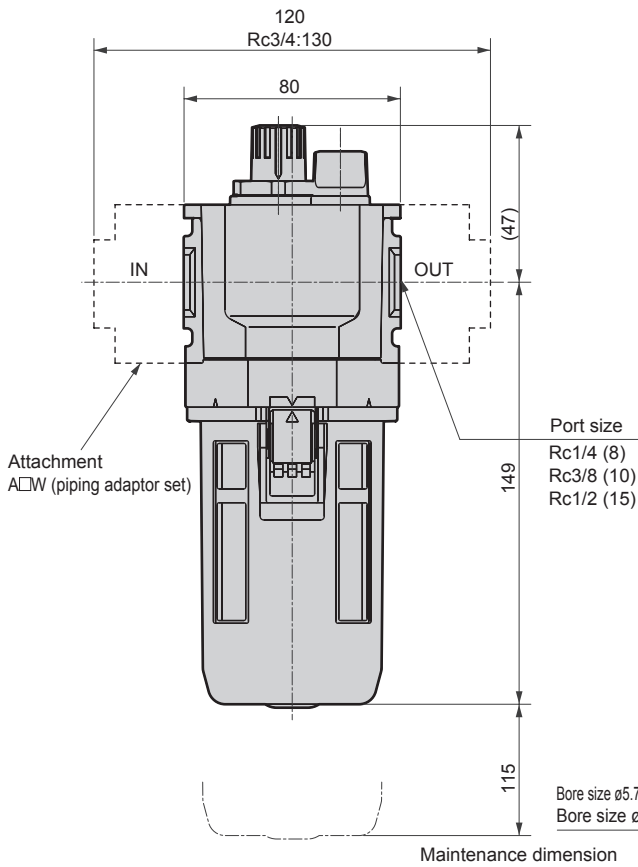


Note: The C-type bracket and piping adaptor set attachments cannot be used at the same time.

Dimensions

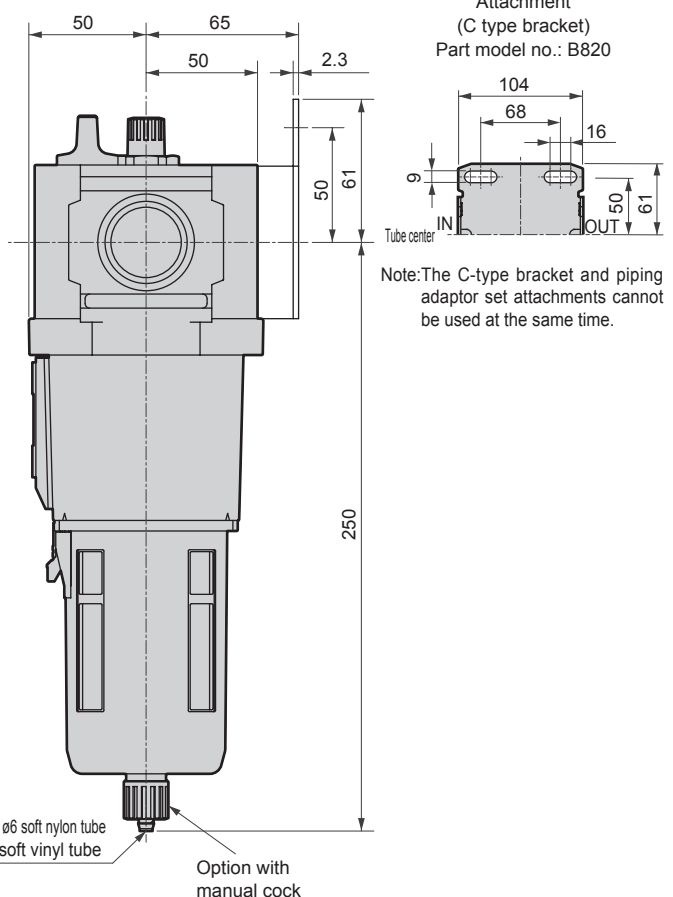
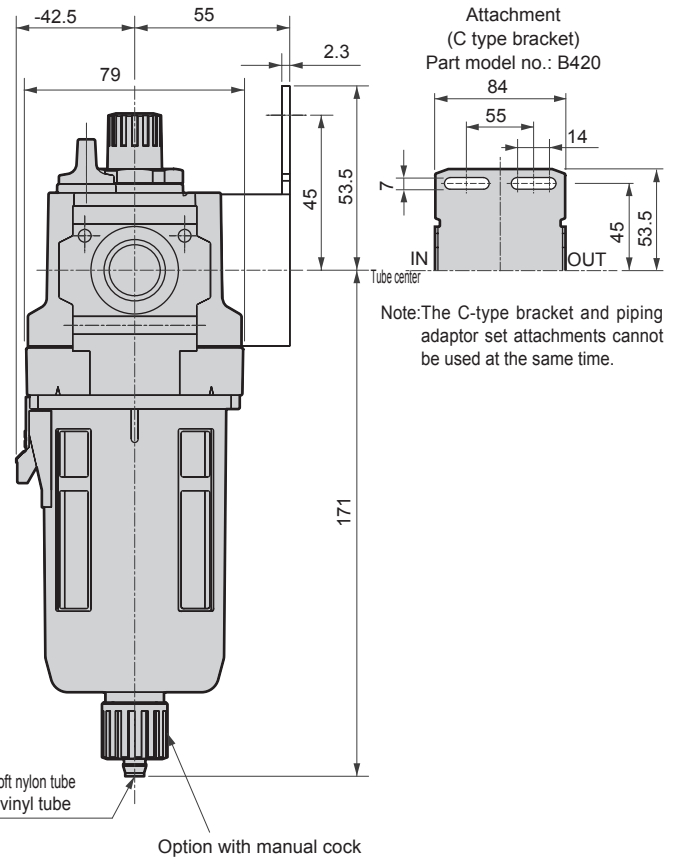
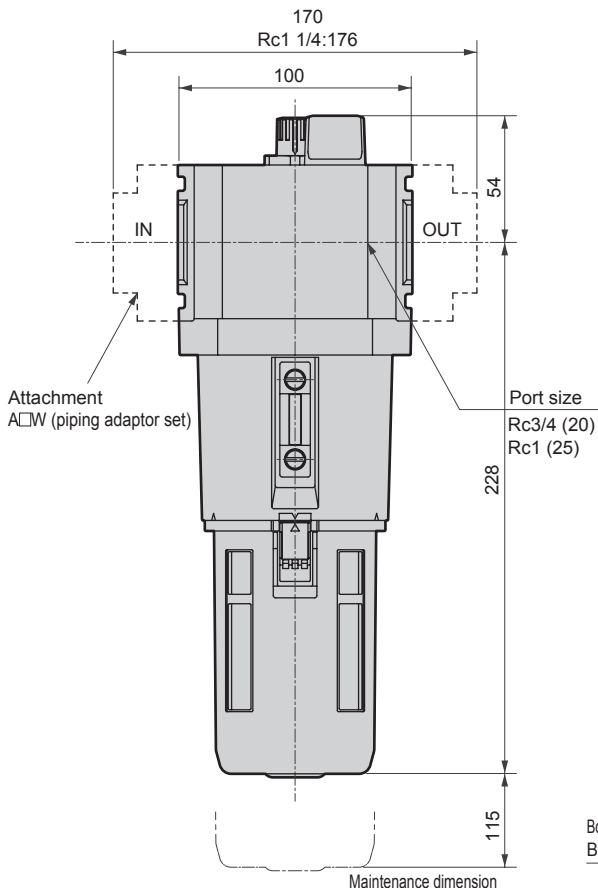


● L4000-W



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

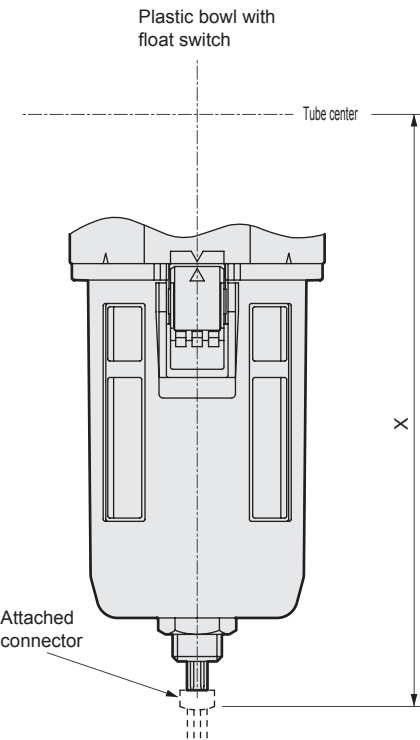
Lubricator Series



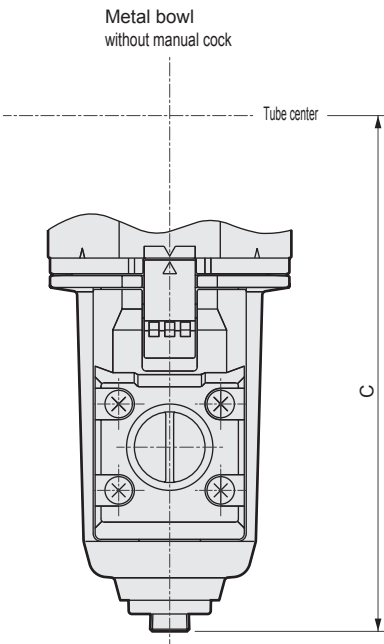
Optional dimensions

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

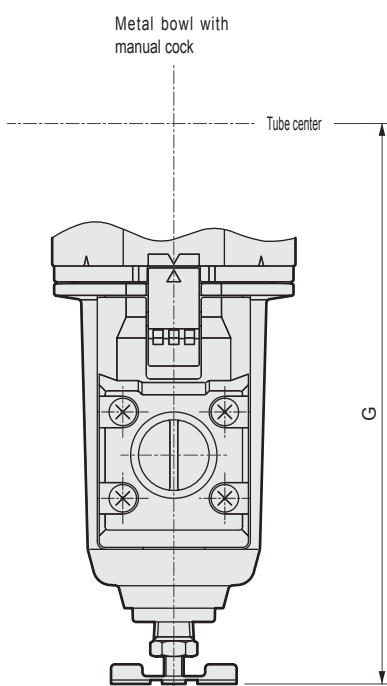
● Plastic bowl (blank)



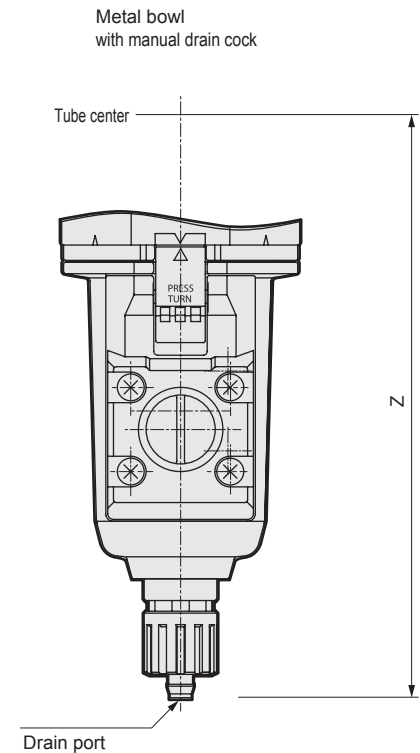
● Metal bowl without manual cock (M)



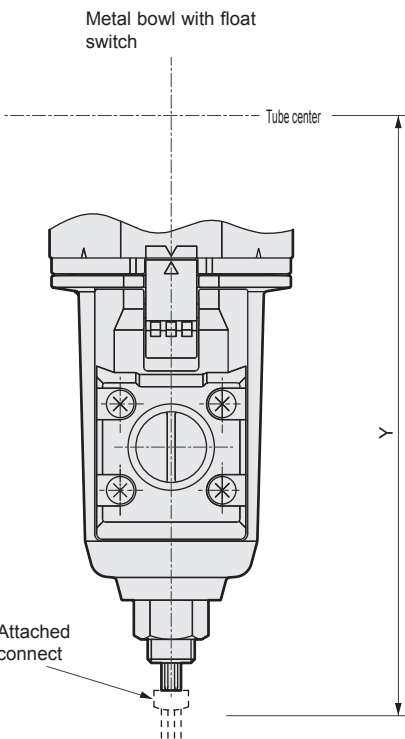
● Metal bowl with manual cock (CM)



● Metal bowl with manual cock (CM1)

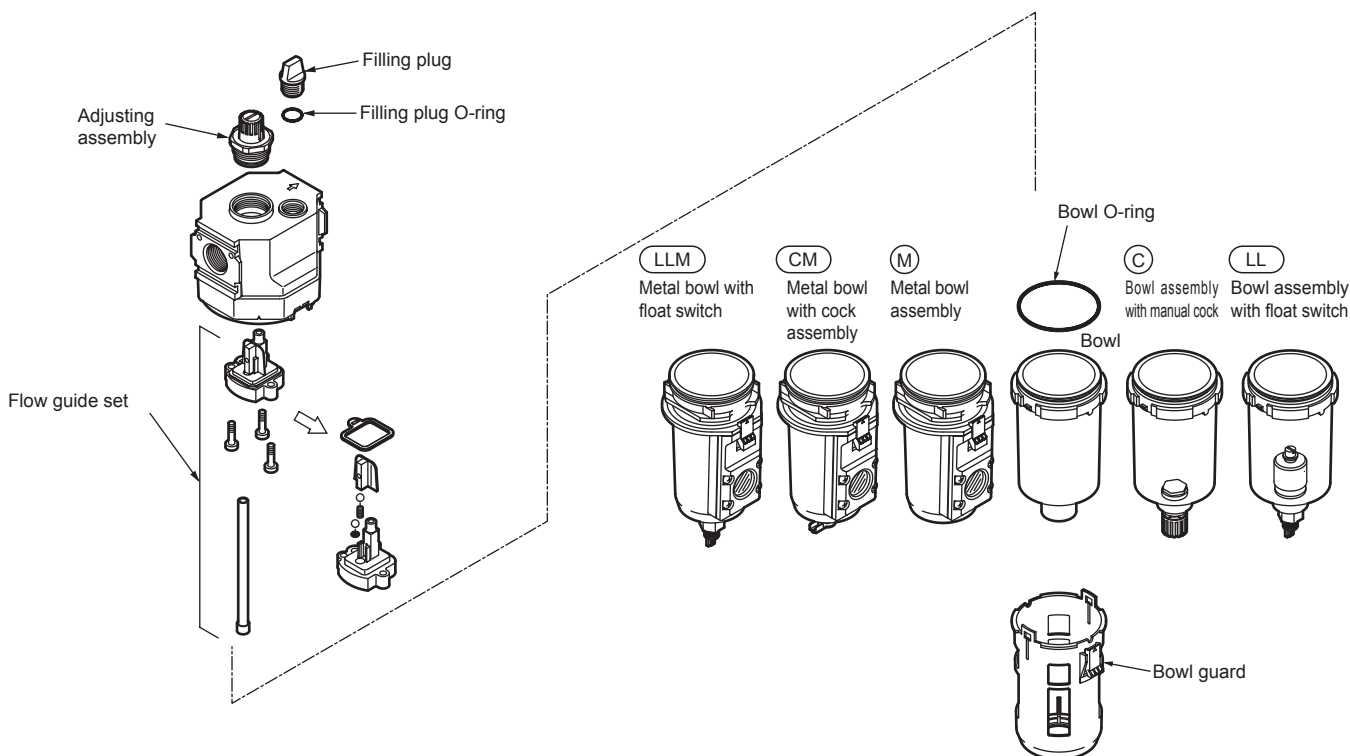


● Metal bowl with float switch (LLM)



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

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

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



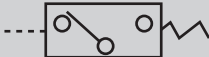
Mechanical pressure switch standard white series

P4000-W Series

Wide pressure setting range covers 0.1 to 0.8 MPa.

● Port size: 1/4 to 1/2

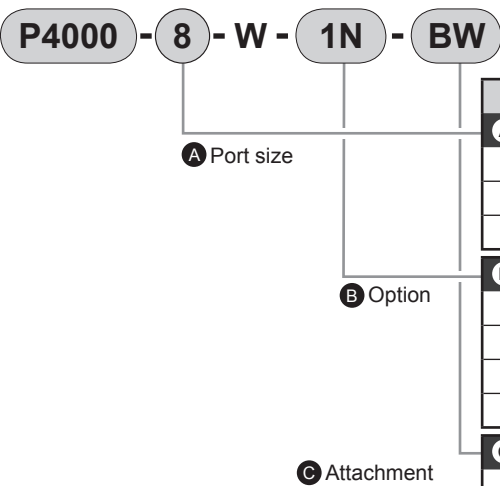
JIS symbol



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

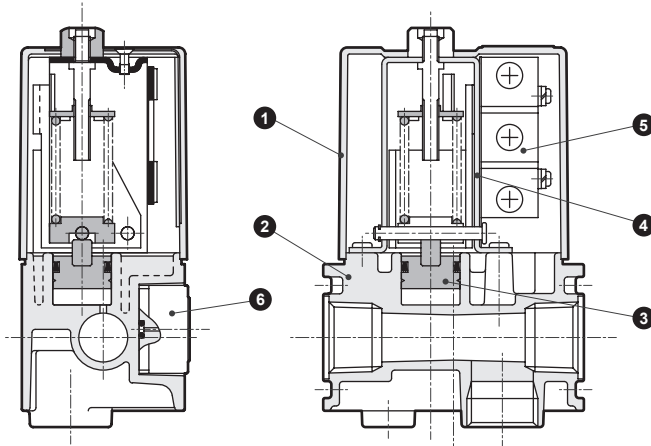
⚠ Note on model no. selection

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.

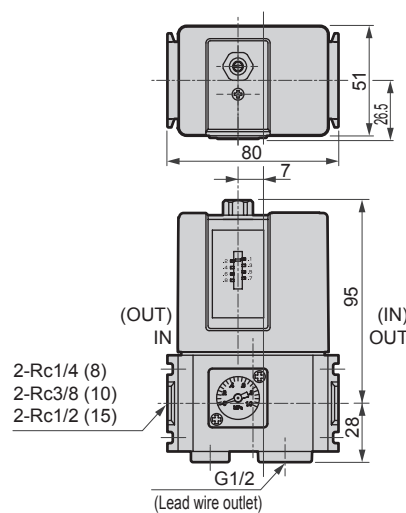
6 Use the pressure absorbing nipple (6556) to detect sudden changes in pressure such as when confirming air cylinder pressure.

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.

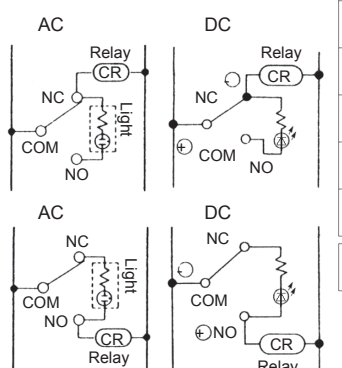
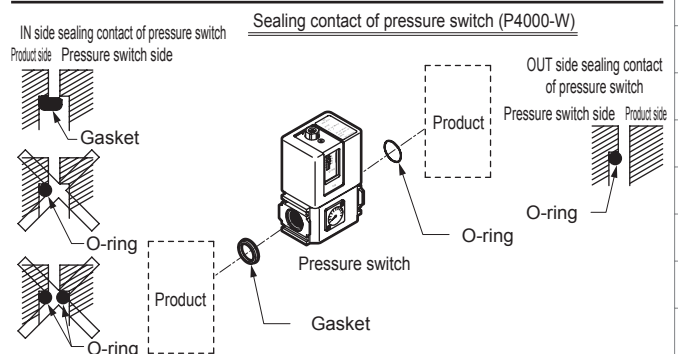
9 The scale plate is for reference. (Scale error within ± 0.05 MPa)

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 conf. 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	

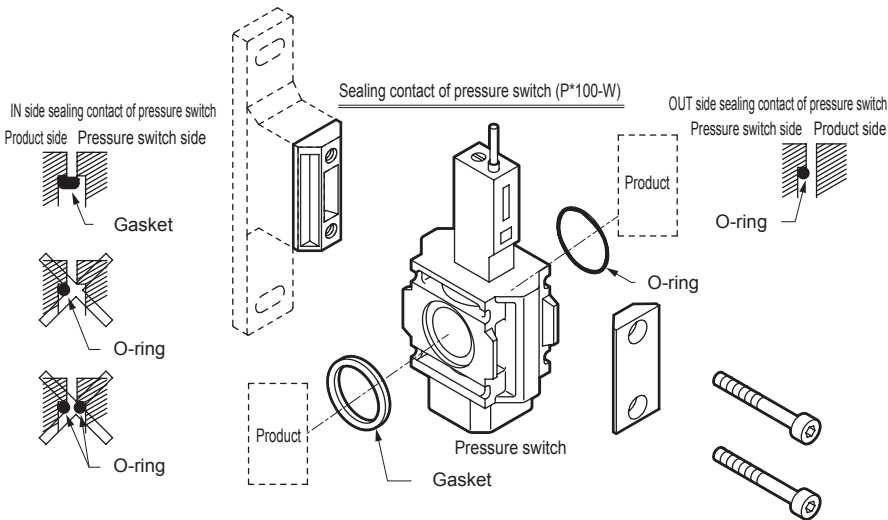
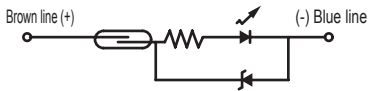
Note 1: The contact turns on if air pressure exceeding the scale setting pressure is applied.

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)

P **1100** - **6** **L** - **W** - **B11W** - **3** - **(White type)**

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

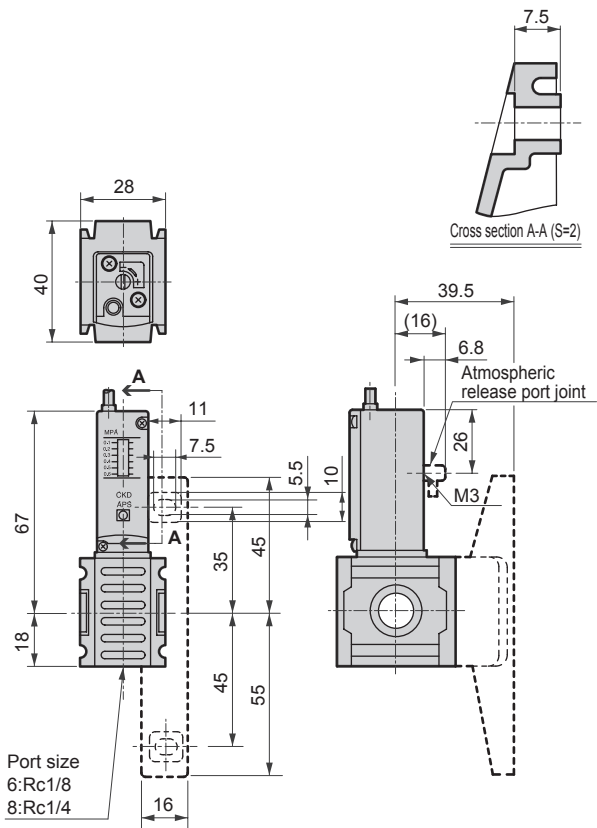
P*100-W Series

Dimensions

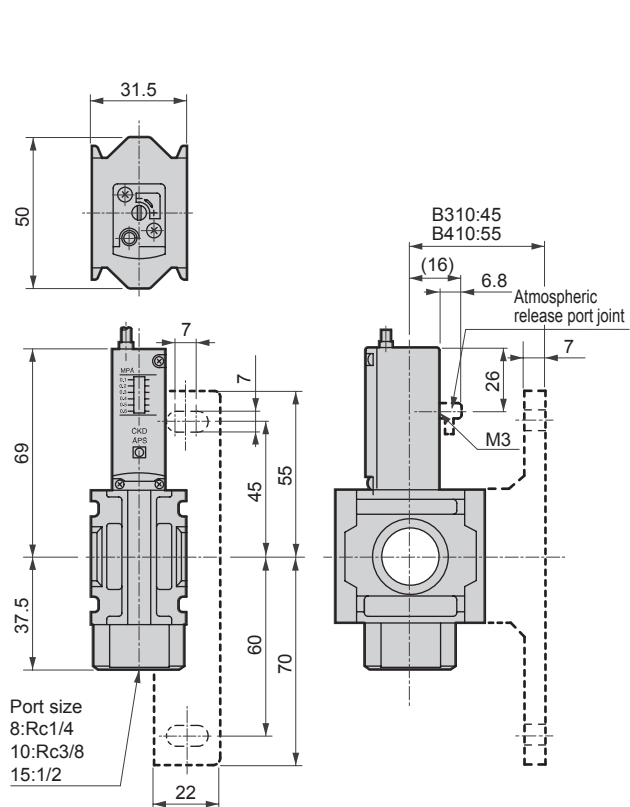


● P1100-W

● P4100-W

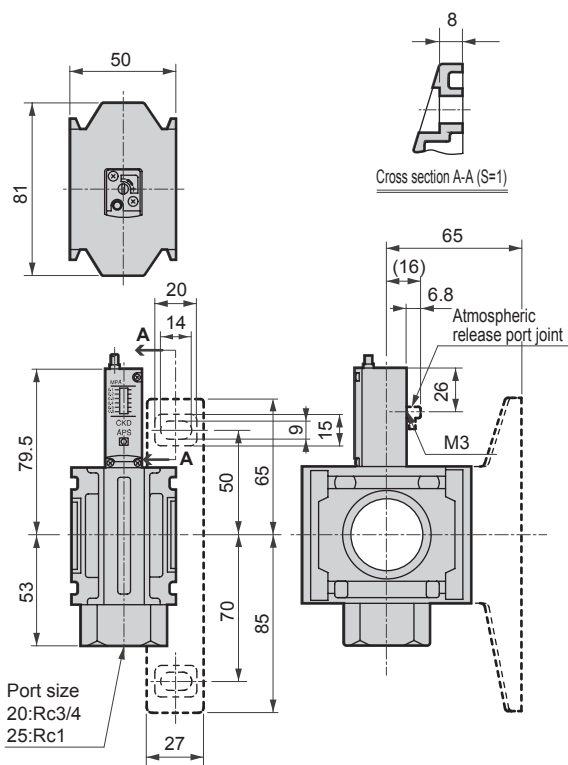


Weight 126g



Weight 190g

● P8100-W



Weight 467g

⚠ Safety precautions

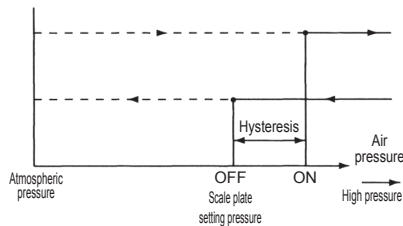
■ Installation & Adjustment

⚠ Caution

1 Setting pressure

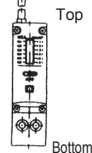
- Pressure displayed on the scale plate is used as the reference. When setting pressure, refer to the separate pressure gauge.
- Pressure displayed on the scale plate is the value when the contact is off. To set the scale plate to a value smaller than that from which hysteresis has been subtracted. Refer 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.
- P*100 Series
If there is drainage in pneumatic piping, install so that the pressure switch is higher than the drain.
- Do not pressurize the atmospheric release port or blow it with compressed air. Product performance could drop or the product could be damaged.



3

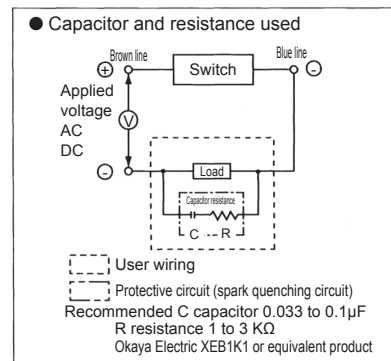
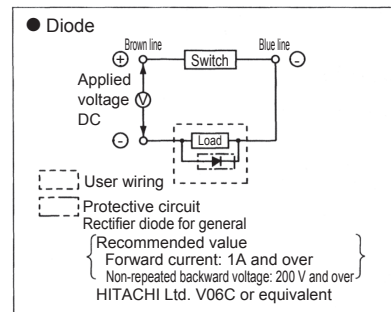
- Connecting the lead
 - (1) **Do not connect the lead directly to the power supply. Connect the load serially. Failure to do so could result in lamp blowing or contact melting.**
 - (2) When using for DC, connect the brown wire to the + side and the blue wire to the - side. The lamp will not light if 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.

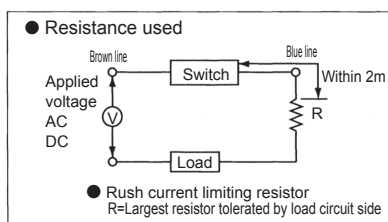
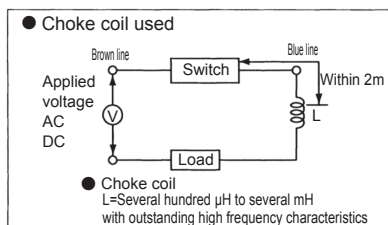
● Contact protection

- (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
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Air sensor
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Flow sensor for air
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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
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Electronic pressure SW
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Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

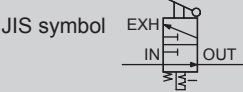


Shut-off valve standard white Series



V1000-W/V3000-W Series

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

Port size: 1/8 to 1/2

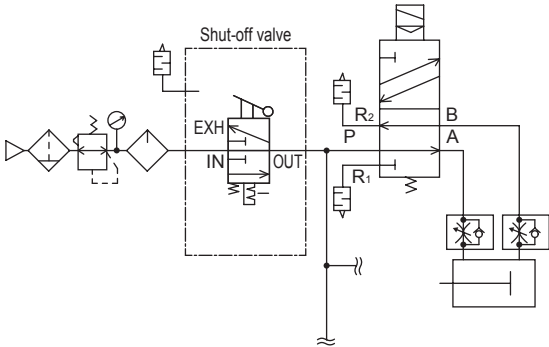


Specifications

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 cm³/min. (ANR)		10				
External leakage cm³/min. (ANR)		10				
Port size (Rc, NPT, G)	IN-OUT	1/8	1/4	1/4	3/8	1/2
	EXH	1/8		3/8		
Product weight kg		0.17		0.25		
Effective sectional area {mm²}	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

V1000 - **6** - **W** - **A6W**
(White type)

● F.R.L.3000, 4000 Series

V3000 - **8** - **W** - **A6W**
(White type)

A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Attachment

Symbol	Descriptions		
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.

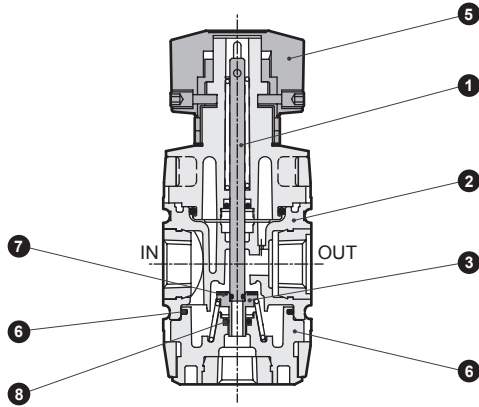
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. 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.

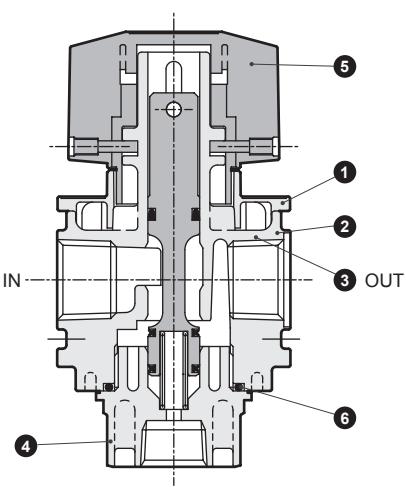
Internal structure and parts list

● 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



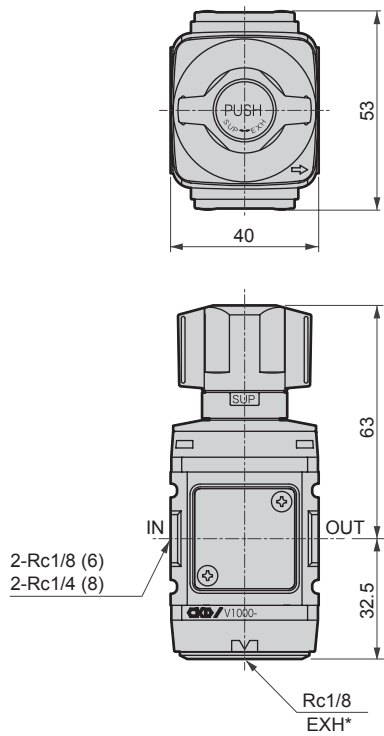
No.	Parts name	Material
1	Plate cover	ABS resin
2	Body	Aluminum alloy die-casting
3	Spool assembly	Aluminum alloy urethane rubber resin
4	Bottom plug	PBT resin Note 1
5	Knob	Polyacetal resin
6	O-ring	Nitrile rubber

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

Dimensions

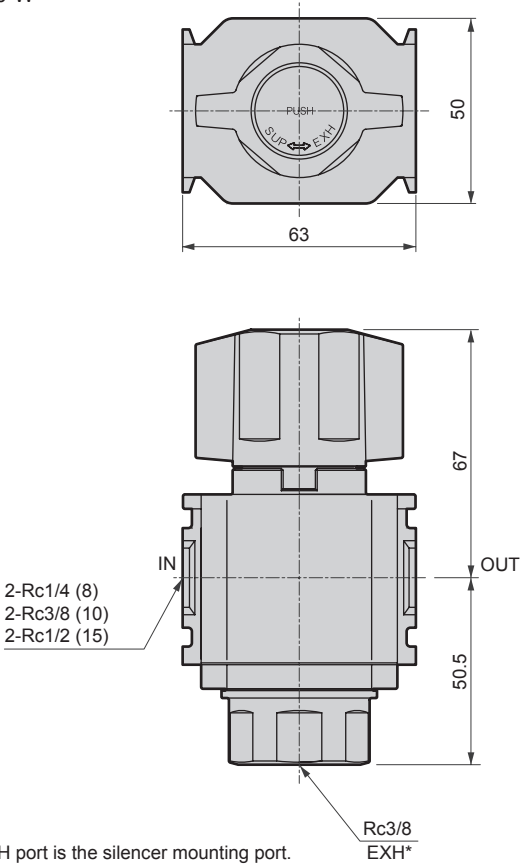


● V1000-W



* The EXH port is the silencer mounting port.

● V3000-W



* The EXH port is the silencer mounting port.

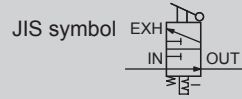


Lockout valve (OSHA compliant) standard white series

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 cm³/min. (ANR)		10 or less				
External leakage cm³/min. (ANR)		10 or less				
Port size	IN-OUT	1/4	3/8	1/2	Rc 3/4	Rc1
	(Rc, NPT, G) EXH	3/8		Rc1/2		
Product weight kg		0.3			0.8	
Effective sectional area (mm²)	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

V3010 - **8** - **W** - **A8W**

- SELEX F.R.L.6000, 8000 Series

V6010 - **20** - **W** - **A20W**
(White type)

A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Attachment

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***

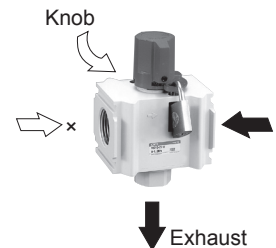
How to use

- Regular use



- During maintenance work

A lock is set where residual pressure is released.



A Model no.

V 3 0 1 0
V 6 0 1 0

Symbol	Descriptions	V 3 0 1 0	V 6 0 1 0
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

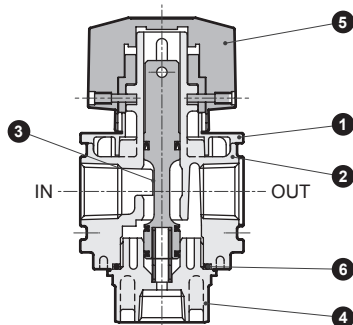
Standard series

F.R.L. unit

V*010-W Series

Internal structure and parts list

● V3010-W

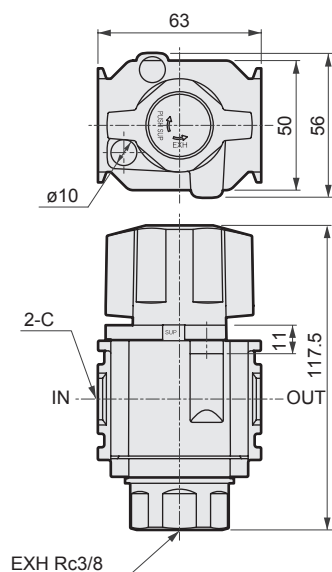


No.	Parts name	Material
1	Plate cover	ABS resin (Note 2)
2	Body	Aluminum alloy die-casting
3	Spool assembly	Aluminum alloy urethane rubber resin
4	Bottom plug	PBT resin (Note 1) (Note 2)
5	Knob	Aluminum alloy die-casting
6	O-ring	Nitrile rubber

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

Note 2: Flame resistance resin equivalent to UL94 Standard V-O

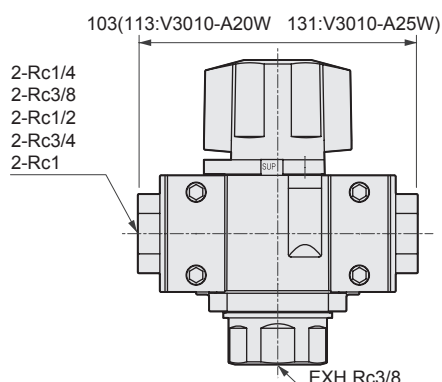
Dimensions (V3010-W)



* The EXH port is the silencer mounting port.

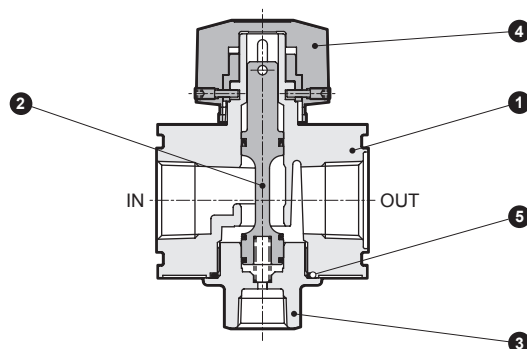
Descriptions	C
V3010-8-W	Rc1/4
V3010-10-W	Rc3/8
V3010-15-W	Rc1/2

● Adaptor attachment



The piping adaptor set is attached at shipment.

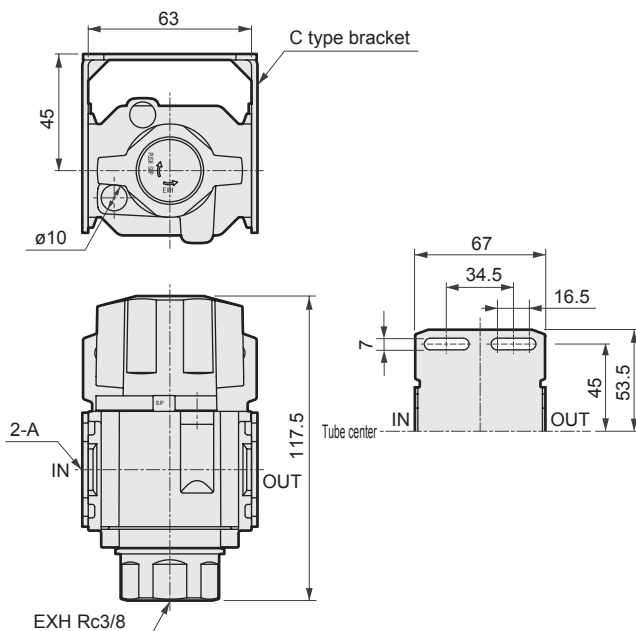
● V6010-W



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

● C type bracket (-BW)

Part model no.: B320

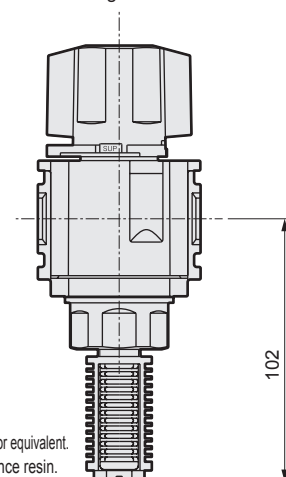


The C type bracket is attached at shipment.

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

● Silencer (-S)

Part model no.: SLW-10A

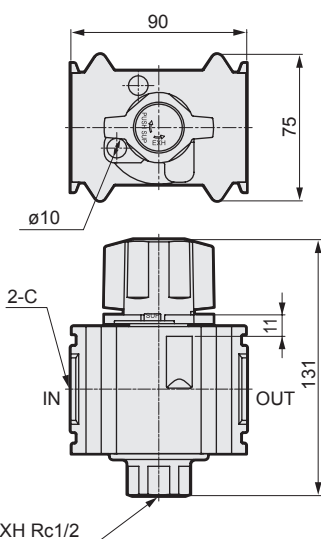


The silencer is attached at shipment.

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.

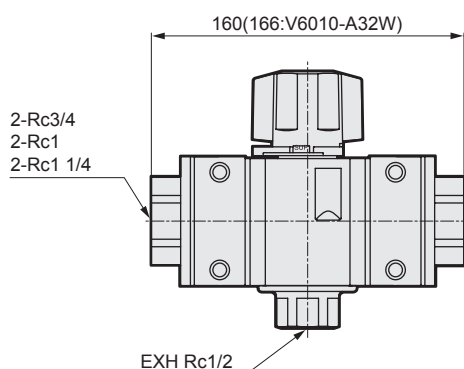
Dimensions (V6010-W)



* The EXH port is the silencer mounting port.

Descriptions	C
V6010-20-W	Rc3/4
V6010-25-W	Rc1

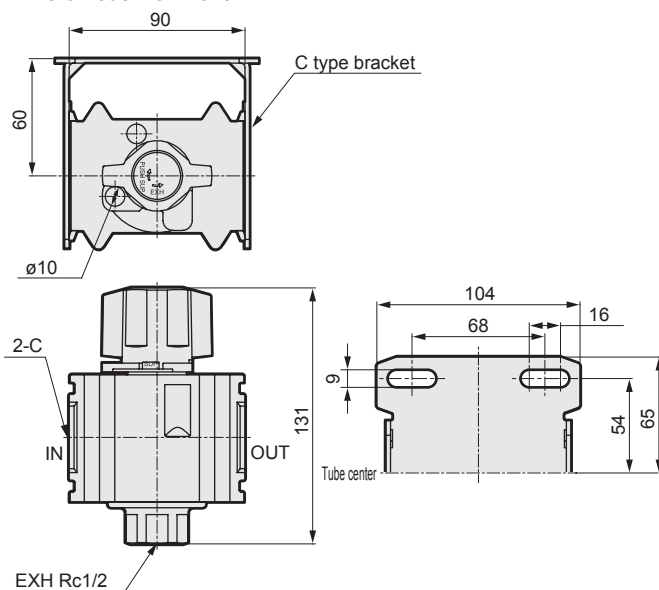
● Adaptor attachment



The piping adaptor set is enclosed with the shipment.

● C type bracket (-BW)

Part model no.: B620

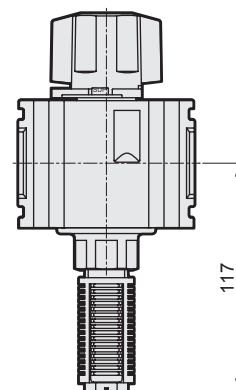


The C type bracket is attached at shipment.

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

● Silencer (-S)

Part model no.: SLW-15A

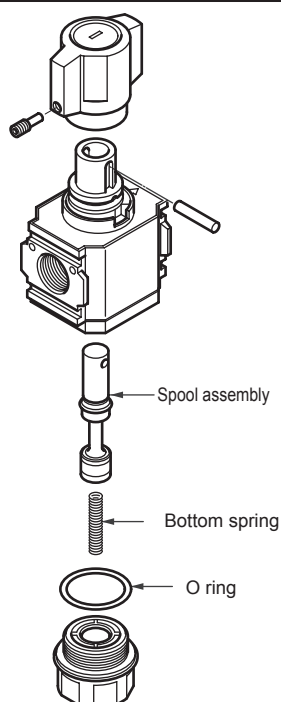


The silencer is attached at shipment.

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

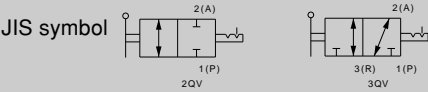
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. 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



Quick exhaust valve

2QV/3QV Series

- Port size: Push-in joint ø4, ø6, ø8, ø10, ø12, R1/8 to R1/2



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

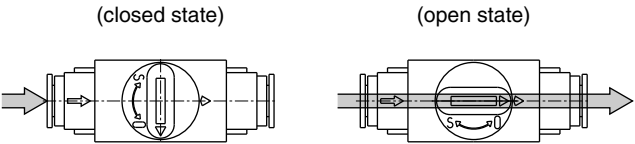
Descriptions	2QV/3QV
Working fluid	Air
Max. working pressure MPa	1
Min. working pressure kPa	-100 (Note 1)
Withstanding pressure MPa	1.5
Fluid temperature °C	0 to 60
Ambient temperature °C	0 to 60
Switching angle °	90
Applicable tube	Soft nylon tube (tube F-15**) Urethane tube (tube U-95**,NU-**)
Mounting attitude	Any

Note 1: When using urethane tube (U-95**, NU-**) at vacuum, use an insert ring.

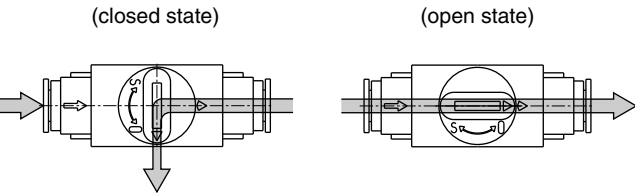
Note 2: Lubricant is used, so oil-prohibited specification are not available.

Operational explanation

- 2 port valve (2QV Series)

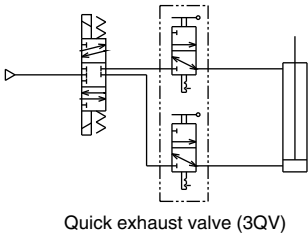


- 3 port valve (3QV Series)

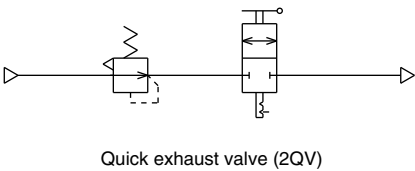


Applications

- Shut-off valve in air cylinder circuit



- Stop valve in air blow circuit



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)

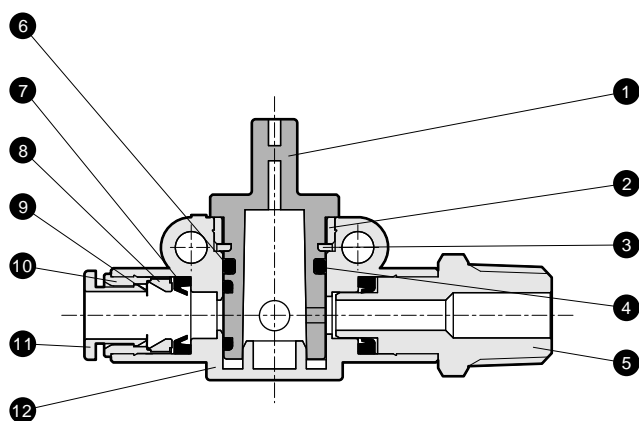
Symbol		Descriptions		
A Valve type				
2		2 way valve		
3		3 way valve		
B Port size (P port) - (A port)				
		IN side	OUT side	Bracket *
Standard	04-04	Push-in joint ø4	Push-in joint ø4	2QV-P1
	06-06	Push-in joint ø6	Push-in joint ø6	
	08S-08S	Push-in joint ø8	Push-in joint ø8	
	08-08	Push-in joint ø8	Push-in joint ø8	2QV-P2
	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

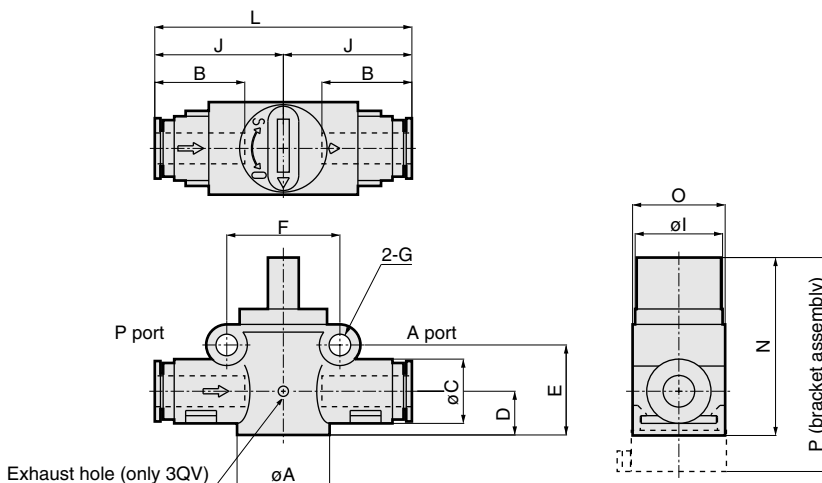
2QV/3QV Series

Dimensions



● Port size

- P port (push-in joint), A port (push-in joint)

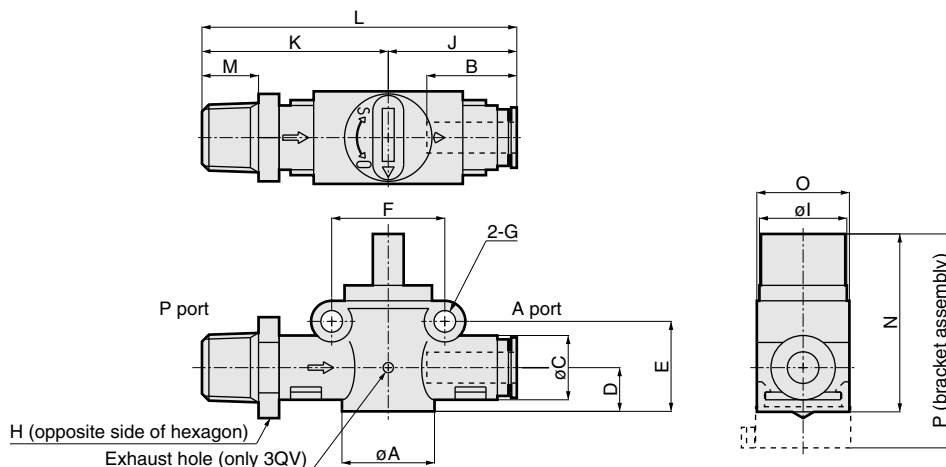


Applicable tube O.D. (mm)		Model no.	A	B	C	D	E	F	G	I	J	L	N	O	P	Weight (g)	Effective sectional area (mm ²)	
P port	A port																P→A	A→R
ø4	ø4	² / ₃ QV-04-04	18	16	12.5	8.5	17.5	22	4.2	17	25	50	34.5	18	41.5	20	4.2	1.8
ø6	ø6	² / ₃ QV-06-06		17.5												21	9.3	
ø8	ø8	² / ₃ QV-08S-08S		19	14.5											23	10.2	
ø8	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	ø10	² / ₃ QV-10-10		21.5												35	22.5	
ø12	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 port	A port																			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		32									9.3								
1/4	ø6	² / ₃ QV-8A-06		35						9.3											
1/4	ø8	² / ₃ QV-8A-08S		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		19						63			21.4								
1/2	ø10	² / ₃ QV-15A-10		22						47.5		79	76	21.4							
1/2	ø12	² / ₃ QV-15A-12		23						82		85	21.4								

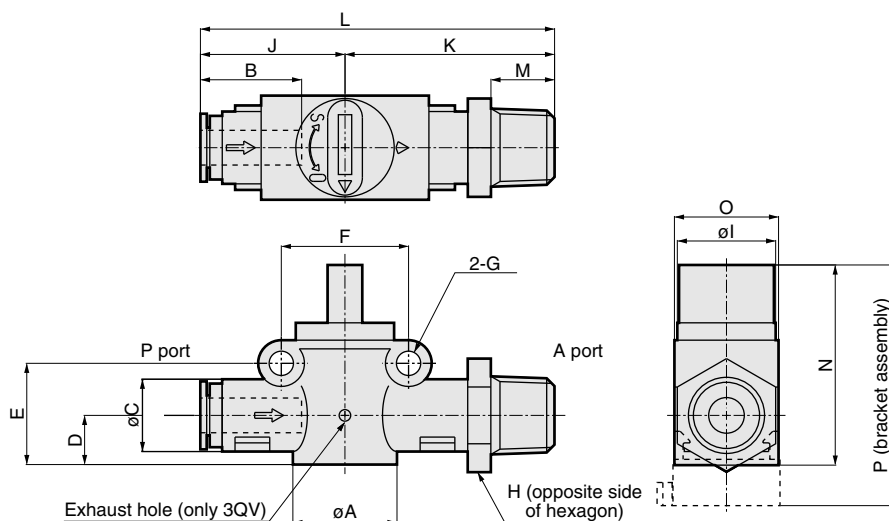
* Tolerance of effective sectional area is ±10%.

Dimensions



● Port size

- P port (push-in joint), A port (male thread)

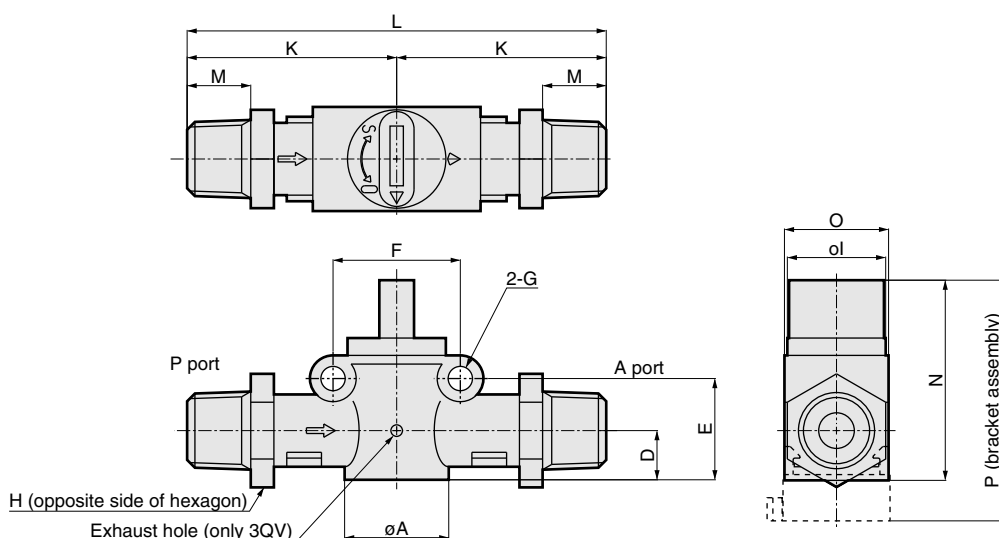


Applicable tube O.D.(mm)		Port thread R	Model no.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight (g)	Effective sectional area (mm ²)	
P port	A port																				P→A	A→R
ø4	1/8	$\frac{2}{3}$	QV-04-6A	18	16	12.5	8.5	17.5	22	4.2	14	17	25	33.5	58.5	8	34.5	18	41.5	26	3.5	1.8
ø6	1/8	$\frac{2}{3}$	QV-06-6A		17.5																32	9.3
ø6	1/4	$\frac{2}{3}$	QV-06-8A		19																35	9.3
ø8	1/4	$\frac{2}{3}$	QV-08S-8A	22	19	14.5	10.7	22.8	26.5	4.2	17	17	26.5	38	63	11	39.8	22	46.8	40	10.2	4.0
ø8	3/8	$\frac{2}{3}$	QV-08-10A		17.5																57	15.8
ø10	3/8	$\frac{2}{3}$	QV-10-10A		21.5																63	21.4
ø10	1/2	$\frac{2}{3}$	QV-10-15A	23	20.0						19	22	31.5	47.5	79	15				76	21.4	
ø12	1/2	$\frac{2}{3}$	QV-12-15A																		85	21.4

* Tolerance of effective sectional area is $\pm 10\%$.

● 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 (mm²)	
P port	A port																P→A	A→R
1/8	1/8	$\frac{2}{3}$ 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
1/4	1/4	$\frac{2}{3}$ QV-8A-8A						17		38	76	11				48	9.5	
3/8	3/8	$\frac{2}{3}$ 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
1/2	1/2	$\frac{2}{3}$ QV-15A-15A						22		47.5	95	15				116	21.4	

* Tolerance of effective sectional area is $\pm 10\%$.

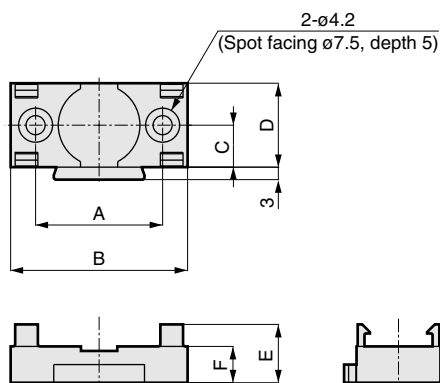
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

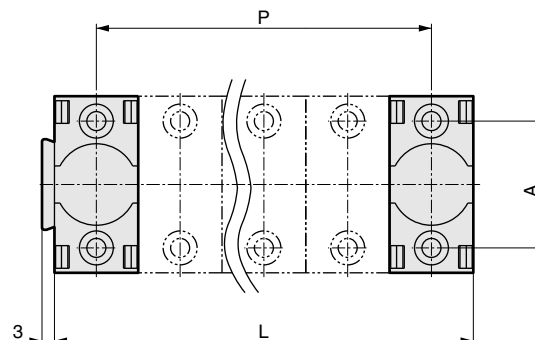
Dimensions



● 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.

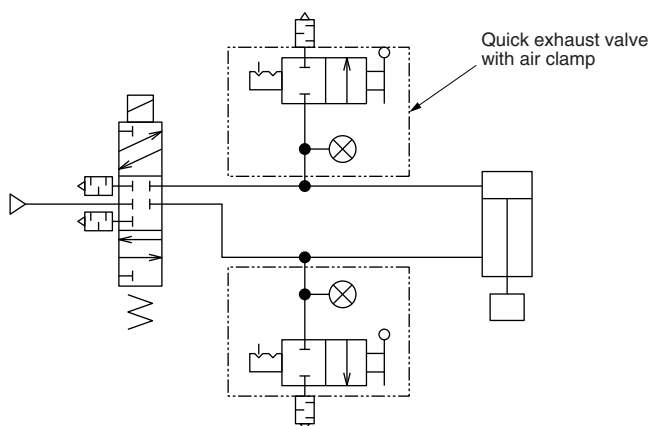
Note: Note that the ø12 diameter type is not available.

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

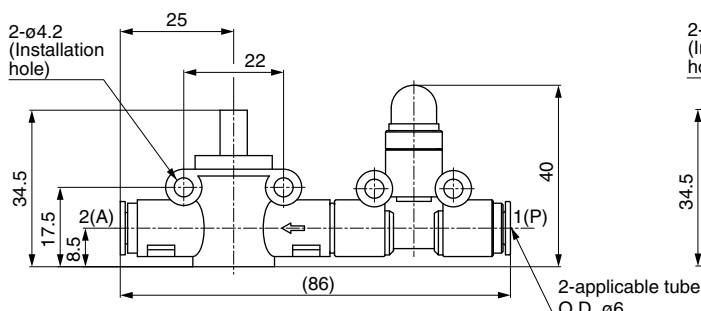
Application

- Cylinder residual pressure exhaust

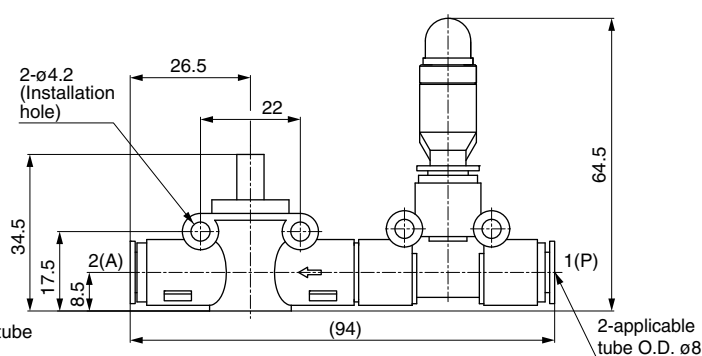


Example of assembly

● 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.

Quick exhaust valve 2QV/3QV Series

Design & Selection

⚠ WARNING

- Use the product within specifications.
Using this product with fluid other than compressed air or at a pressure or temperature exceeding the specifications could result in rupture, the tube coming off, or leakage.
- Avoid installing this product outdoors or where it is exposed to direct sunlight.

⚠ CAUTION

- Confirm that the product will withstand the working environment.
 - This product cannot be used in environments where functional obstacles could occur.
Such environments include high temperatures, a chemical atmosphere, or where chemicals, vibration, moisture, water drip, or gas are present; or where ozone is generated. Outdoors or where the product could be subject to direct sunlight; or where cutting oil, coolant, or spatter could occur or where static electricity could pose a problem.
- Confirm that PTFE can be used.
 - The sealant contains PTFE (polytetrafluoroethylene resin) powder. Check that this poses no problem during use.
- Contact CKD if ozone could occur in supply air. (An ozone-resistant series is available.)
- Avoid using this product in hot or humid places, outdoors, or where it could be subject to direct sunlight.

Installation & Adjustment

⚠ WARNING

- Securely insert the tube until it contacts the joint's tube end, and check that it does not come off the joint.
- Stop air and confirm that there is no residual pressure before replacing the tube.

Piping

⚠ CAUTION

- Observe the following precautions when using nylon tubes or urethane tubes for piping material.
 - Use the designated tube and CKD plastic plug (GWP Series). Do not use metal plugs.
Tube outer diameter precision
 - Polyamide tube : Within ± 0.1 mm
 - Polyurethane tube
 - (up to $\phi 6$) : Within ± 0.1 mm
 - ($\phi 8$ to) : Within ± 0.1 mm
- Use a tube with a hardness of 92° or more. If a tube that does not satisfy diameter accuracy or hardness is used, chucking force may drop or the tube may come off or be difficult to insert.
- Consult with CKD when using a nondesignated tube or plug.
- Cut the tube with a dedicated cutter, and cut at a right angle.
 - Do not use a worn or damaged tube that could be crushed or rupture.
 - Do not reuse a tube that could be deteriorated and deformed.
 - Do not let the tube directly contact other surfaces, it could wear and break.

- Do not use this product for applications that constantly rotate, vibrate or which have a tube that moves vigorously.
- Use tubing within the minimum bending radius but long enough to avoid sudden bends.
 - Consider changes in tubing length caused by pressure when tubing is connected, and provide sufficient length within the minimum tube bending radius.
- Always flush just before piping pneumatic component.
 - Any foreign matter that has entered during piping must be removed so it does not enter the pneumatic component. Remove all swarf and foreign debris generated during piping and tube insertion before starting use.
- When supplying compressed air for the first time after connecting pipes, do not apply high pressure suddenly.
 - The pipe connection could dislocate causing the pipe tube to bounce and result in accidents.
- After connecting piping, check pipe connections for air leaks before supplying compressed air.
 - Apply a leakage detection agent on pipe connections with a brush, and check for air leaks.
- Handling push-in joints and tubes
 - Refer to cautions of joint and tube, and "Safety Precautions" (pages 918 to 921) for handling push-in joints and tubes.

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

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.

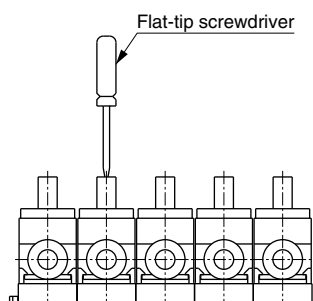
- Control of actuator speed will be disabled if piping on the exhaust side of the pneumatic circuit is disengaged.
- When using the chuck holding mechanism, the chuck will be released creating a hazardous state.
- Confirm that the tube has been inserted properly, and make sure that there is no tension 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.

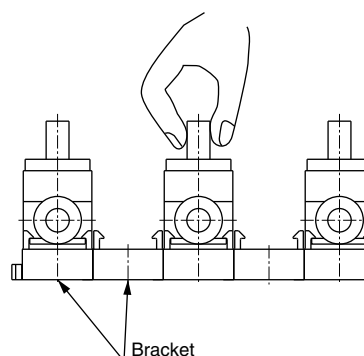
■ Do not tighten while pressure is applied.

■ 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.



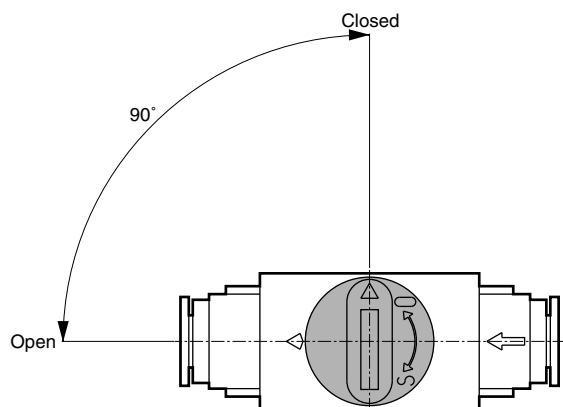
■ If manifolds are installed with a priority on manual operation, valves are operated easily by installing them every other space.



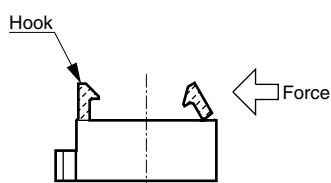
During use & Maintenance

⚠ CAUTION

- Operation angle of this product is 90°
Do not turn the product more than 90°.

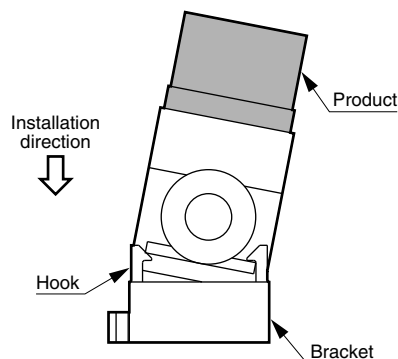


- The dedicated bracket's hooks can be damaged by external force. Use brackets correctly.

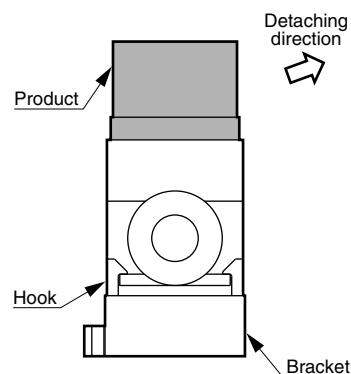


■ How to use bracket

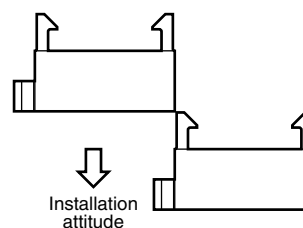
- (1) Fix the bracket before starting use. To mount, insert the product at a slant into the bracket, and then fit into hooks.



- (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
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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

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Flow sensor for water
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Total air system (Gamma)
Ending



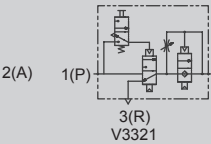
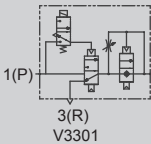
Slow start valve standard white Series

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

- Solenoid valve type **V3301** - **08** - **W** - **1** - **BW**
(White type)
- Manual type **V3321** - **08** - **W** - **BW**

A Port size

B Manual operation

C Electric connection

D Voltage

- ⚠ 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	

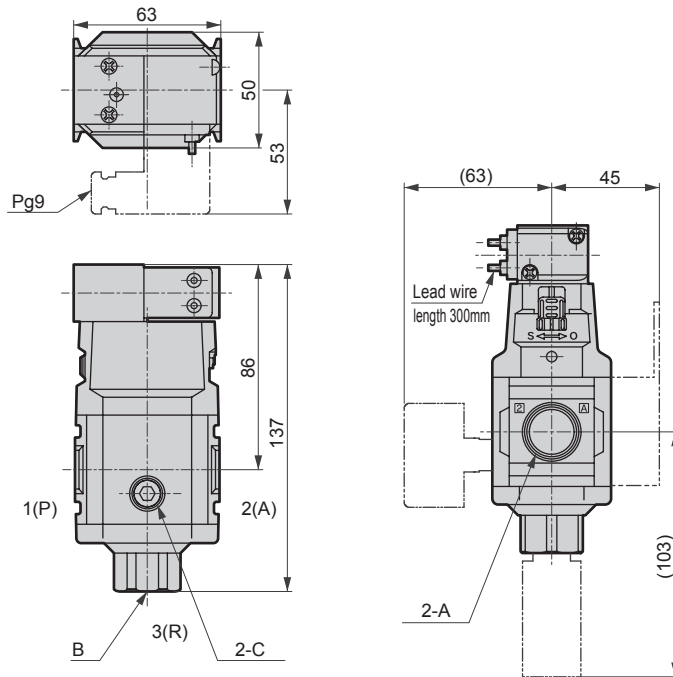
E Attachment (attached)

V3301-W/V3321-W Series

Dimensions

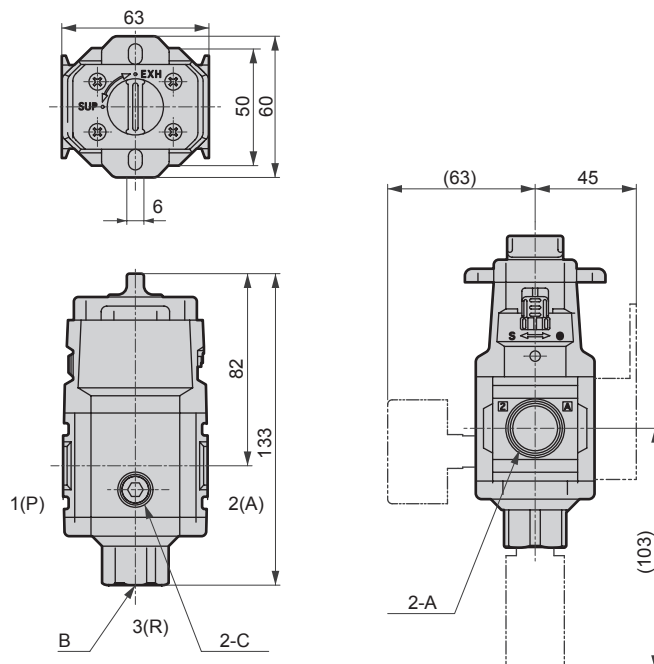
Dimensions

● V3301-W



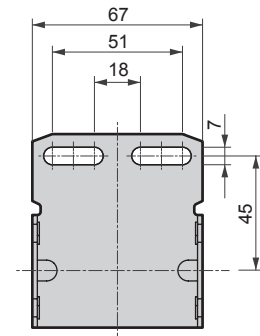
	A	B	C
V3301-08-W	Rc1/4	Rc3/8	Rc1/4
V3301-10-W	Rc3/8		
V3301-15-W	Rc1/2		

● V3321-W

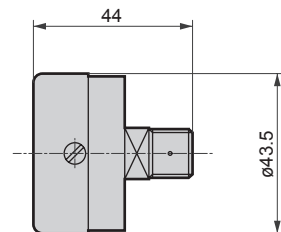


	A	B	C
V3321-08-W	Rc1/4	Rc3/8	Rc1/4
V3321-10-W	Rc3/8		
V3321-15-W	Rc1/2		

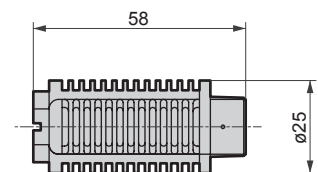
● Bracket: B320



● Pressure gauge: G49D-8-P10



● 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)
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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

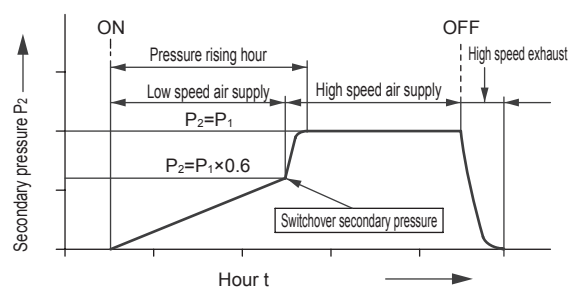
Standard series
F.R.L. unit

Operational explanation (refer to the operation characteristics)

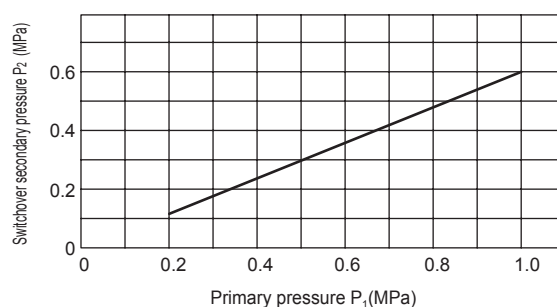
The slow start valve turns ON when the solenoid valve is energized or the manual section is set to SUP. The valve turns OFF when the solenoid valve is deenergized or the manual section is set to EXH.

- (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



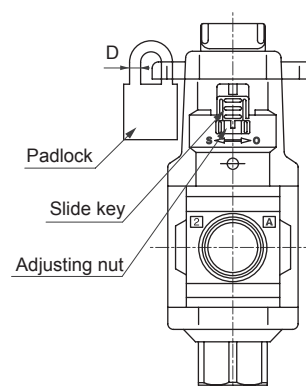
● Switchover secondary pressure



Adjustment method of slow start (refer to the side view)

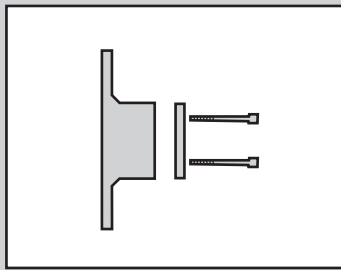
- (1) Press up the slide key and release the adjusting nut lock.
- (2) Turn the main unit ON, and confirm cylinder operation speed and secondary pressure rise time. Turn the main unit OFF.
- (3) Turn the adjusting nuts explained below, and adjust the state.
Cylinder pops out → Turn to the S side
Low 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

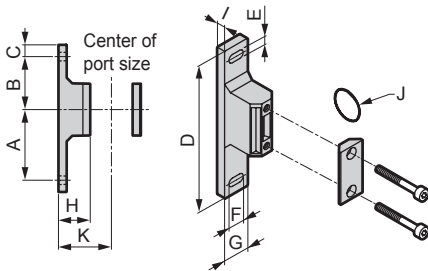
T type bracket set

- 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.

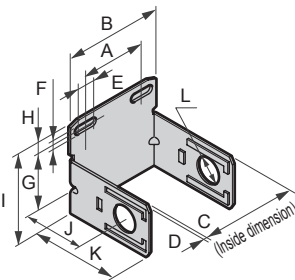


Model no.	Applicable model	A	B	C	D	E	F	G	H	I	J	K
B110-W	1000 Series	45	35	10	100	5.5	7.5	16	25	7.5	JASO-2013	40
B310-W	2000 Series	60	45	10	125	7	14	22	27	7	JISB2401-P21	45
	3000 Series											
B410-W	4000 Series	60	45	10	125	7	14	22	37	7	JISB2401-P21	55
B810-W	6000 Series	70	50	15	150	9	14	27	37	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

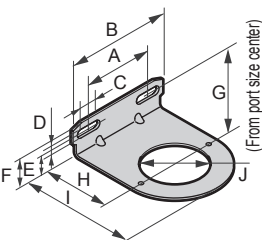
L type bracket

- 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



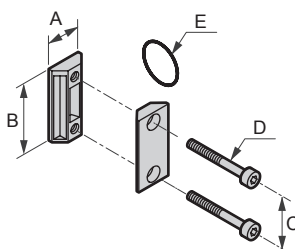
Model no.	Applicable model	A	B	C	D	E	F	G	H	I	J	Other
B130	1000 Series	44	68	10	6.5	16	24.5	45	40	59	ø26.5	
B230	2000 Series	28	54	10	7	18	26	52	45	69	38	
B330	3000 Series	34.5	67	16.5	7	17.5	26	58 (63.5)	45	76	ø40	Dimensions in () are for W3000/3100
B430	4000 Series 6000 Series	55	84	14	7	17.5	26	58	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

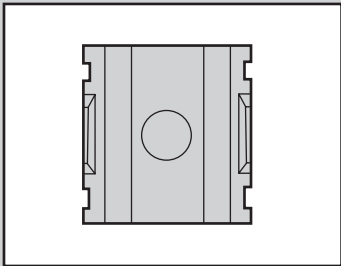
Flow sensor for water

Total air system

Total air system (Gamma)

Ending

Standard series
F.R.L. unit

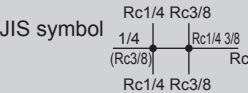


Distributor standard white Series

D101/D401/D801/D300-W Series

Applicable for pipe branching.

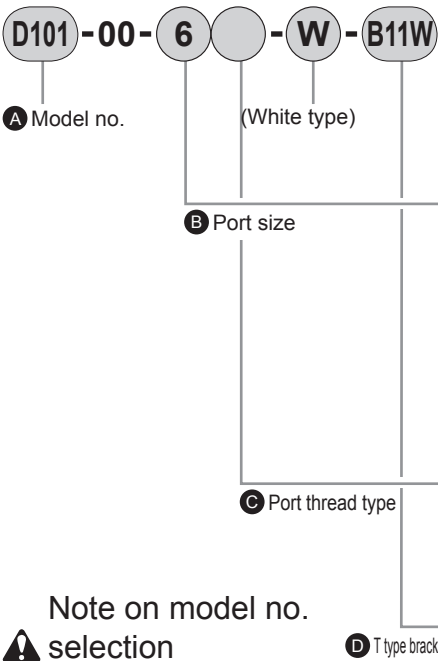
Port size: 1/8 to 1



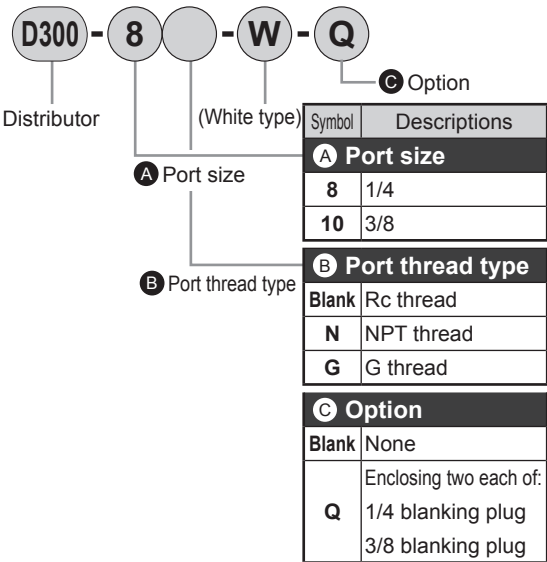
Specifications

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 ● ● ●
B41W	4000 series ● ● ●
B81W series	6000 series ● ● ●
	8000 series ● ● ●



Note on model no. selection

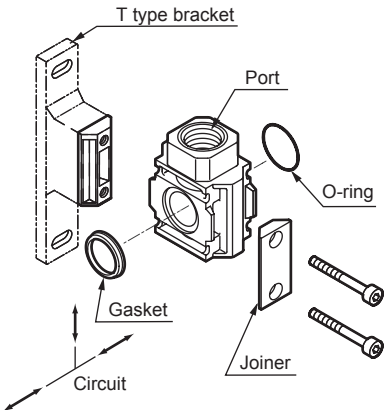
- Note 1:** The joiner set (joiner, bolt, O-ring) and one gasket are enclosed as a standard.
- Note 2:** Contact CKD for 2 way branch.
- Note 3:** D401-W can be connected to both 3000-W Series and 4000-W Series.

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)

(Application (D101-00-W/D401-00-W/D801-00-W))

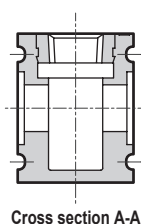
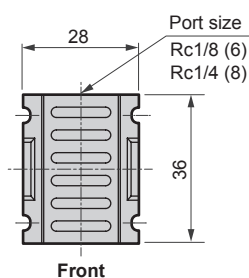
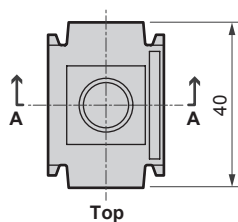


- Note 1:**When installing at the primary side, insert an O-ring, while installing at the secondary side, insert a gasket.
- Note 2:**When inserting O-ring and gasket to assemble, O-ring and gasket must not be folded.

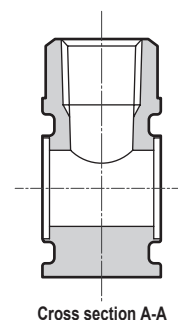
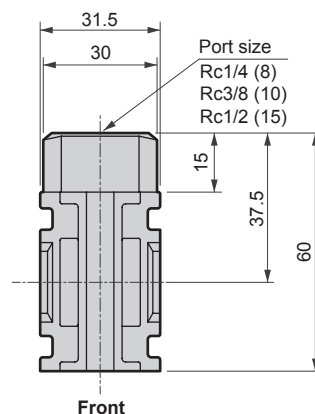
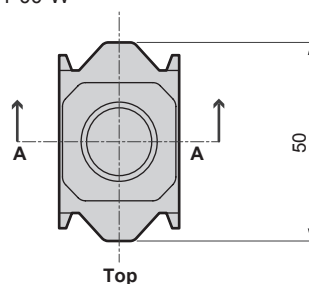


Dimensions

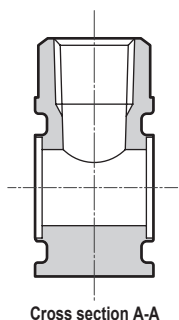
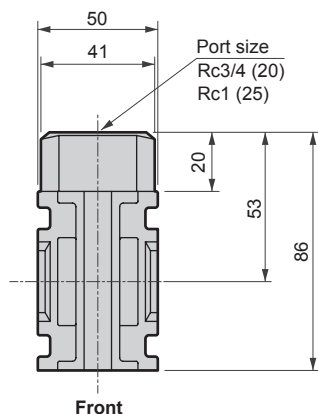
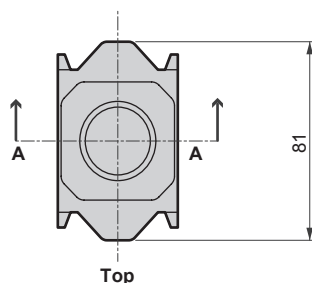
● D101-00-W



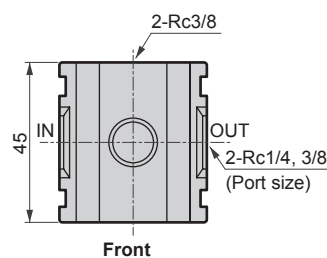
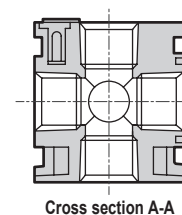
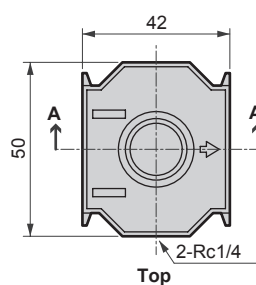
● D401-00-W



● D801-00-W

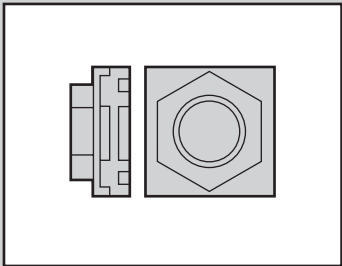


● D300-W



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

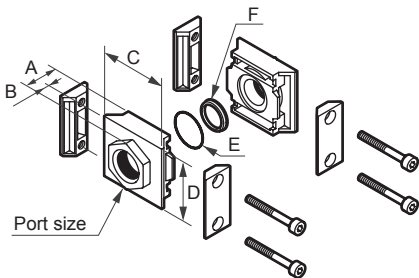
Port size: 1/8 to 1



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

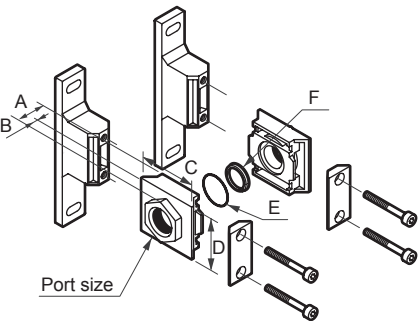


Model no.	Port size	Applicable model	A	B	C	D	E (O-ring)	F (gasket)	Other
A100-6*-W	1/8	1000 Series	21.5	13.5	40	36	JASO-2013 1 pc.	1 pc.	-
A100-8*-W	1/4								
A100-10*-W	3/8								
A400-8*-W	1/4	2000 3000 Series ----- 4000 Series	20 (25) {34}	6 (11) {20}	50	45	JISB2401 P21 1 pc.	1 pc.	Numbers in () 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)

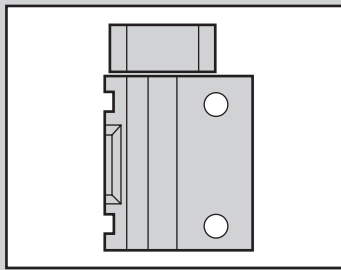


● Application



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	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-B41W	3/8								
A400-15*-W-B41W	1/2								
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

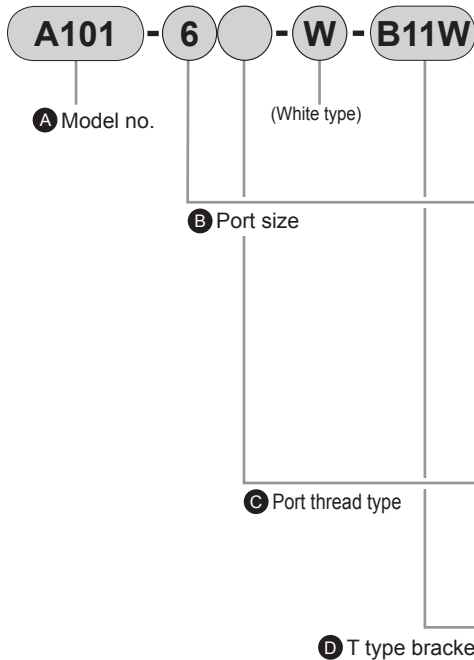


Specifications

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



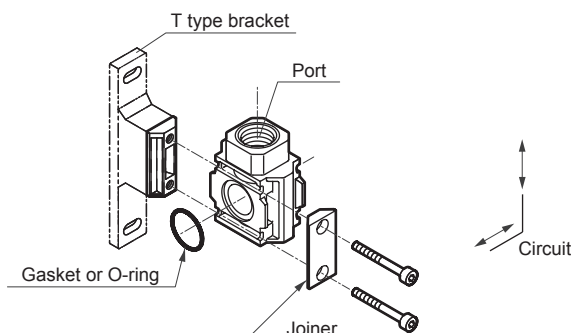
Symbol		Descriptions		
A Model no.				
A101		L type piping adaptor		
A401		L type piping adaptor		
A801		L type piping adaptor		
B Port size				
		A101	A401	A801
6	1/8	●		
8	1/4	●	●	
10	3/8		●	
15	1/2		●	
20	3/4			●
25	1			●
C Port thread type				
Blank		Rc thread		
N		NPT thread		
G		G thread		
D T type bracket Note 1				
Blank	None	●	●	●
B11W	1000 series	●		
B31W	2000 series 3000 series		●	
B41W	4000 series		●	
B81W	6000 series 8000 series			●

⚠ Note on model no. selection

Note 1: The joiner set (joiner, bolt, O-ring) and one gasket are enclosed as a standard.

- 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

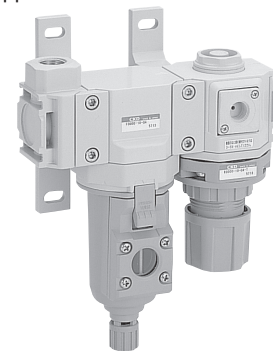
L type piping adaptor



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

● Application



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

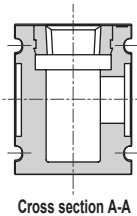
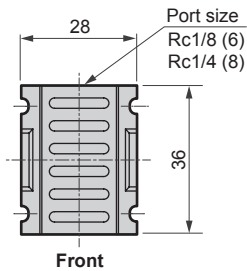
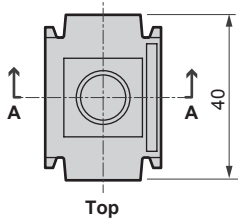
Standard series
F.R.L. unit

Piping adaptor

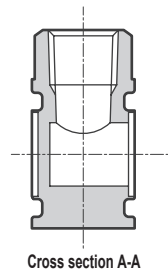
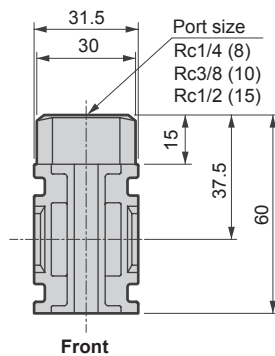
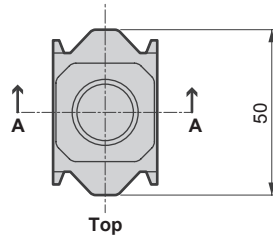
Dimensions

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

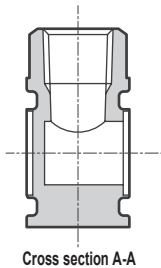
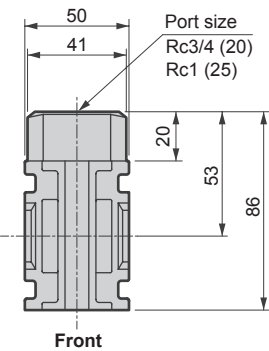
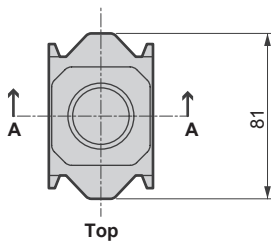
● A101-W



● 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



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

FM3000 - **8** - **W** - **F** - **A8W**

A Model no.

B Port size

(White type)

C Port thread type

D Option

E Display unit

F Attachment (attached)

G Bracket (attached)

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

A Model no.

FM3000 **FM4000** **FM6000** **FM8000**

Symbol **Descriptions**

B Port size

8	10	15	20	25
1/4	3/8	1/2	3/4	1

C Port thread type **Note 1**

Blank	Rc thread	N	NPT thread	G	G thread
-------	-----------	---	------------	---	----------

D Option **Note 2**

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.

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)

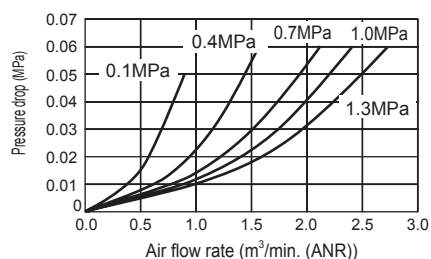
Ending

Medium pressure Series

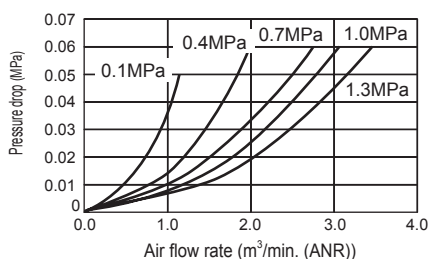
F.R.L unit

Flow characteristic

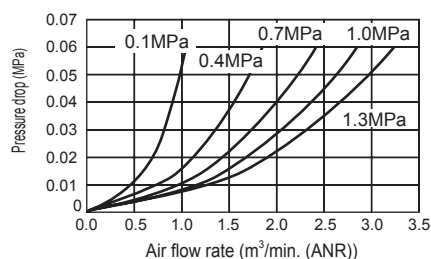
● FM3000-8-W



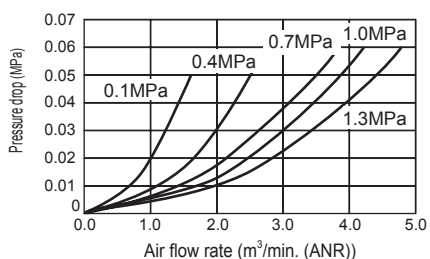
● FM3000-10-W



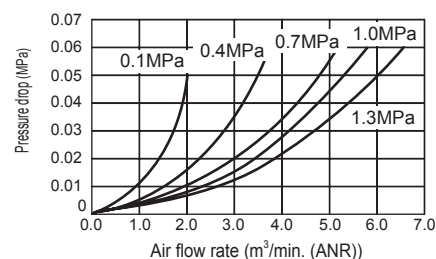
● FM4000-8-W



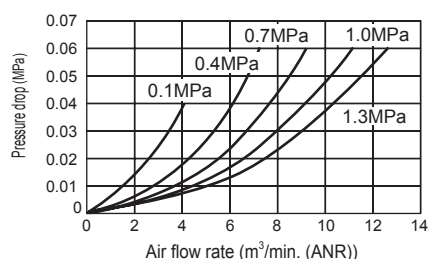
● FM4000-10-W



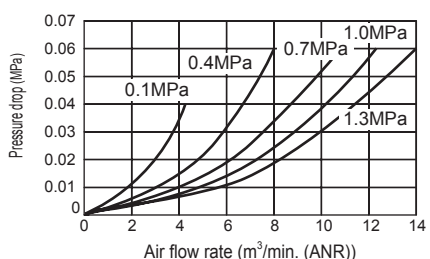
● FM4000-15-W



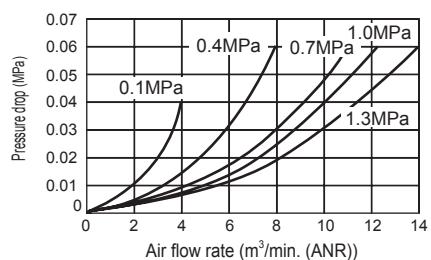
● FM6000-20-W



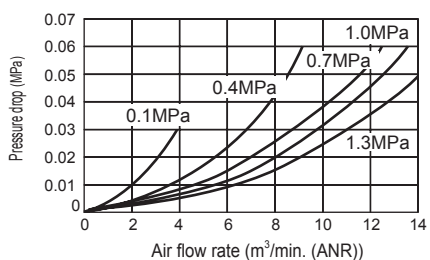
● FM6000-25-W



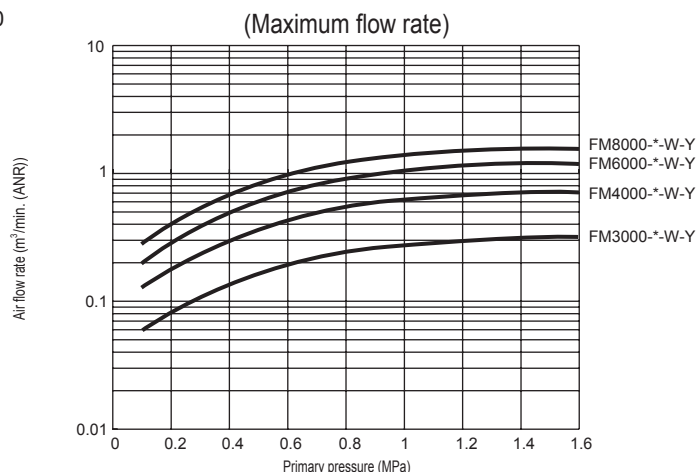
● FM8000-20-W



● FM8000-25-W

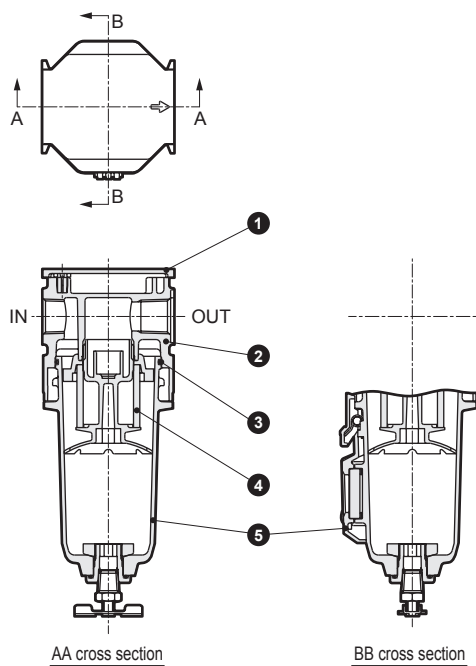


- FM3000
- FM4000-*-W-Y(0.3μm element)
- FM6000
- FM8000

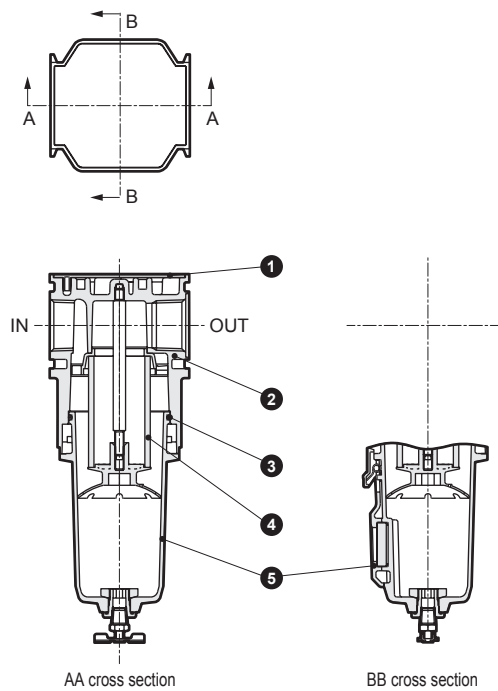


Internal structure and parts list

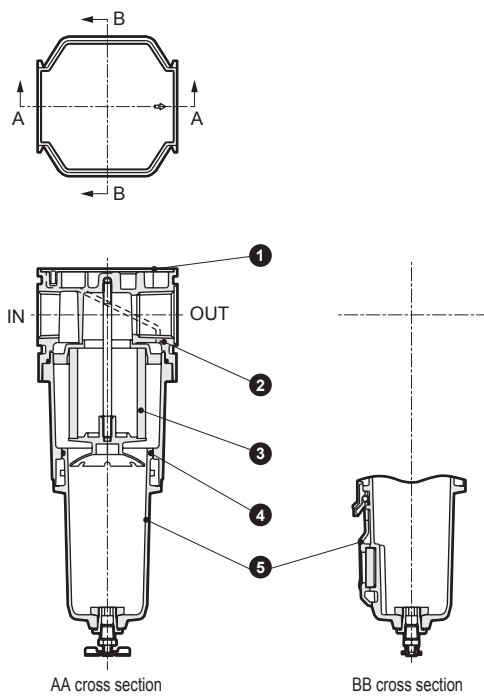
● FM3000-W/FM4000-W



● FM6000-W



● FM8000-W



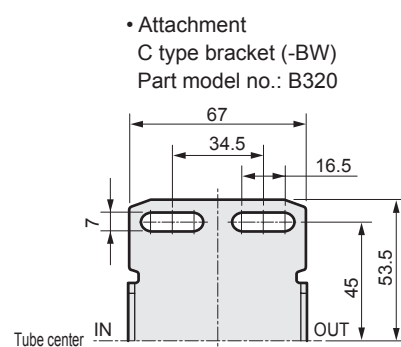
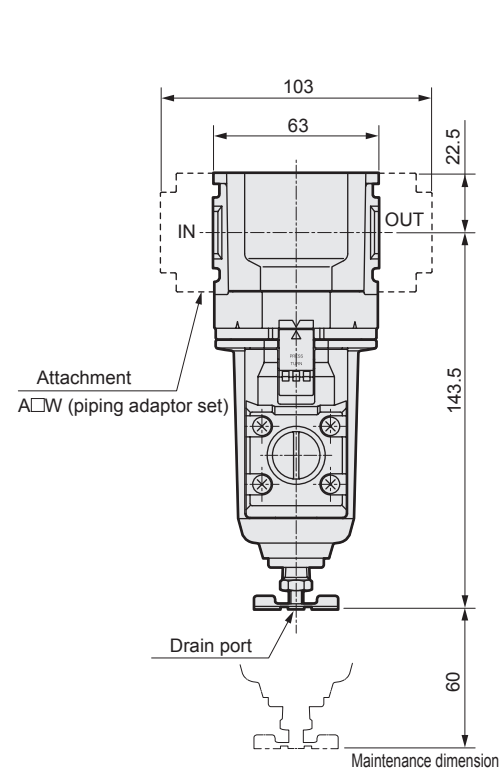
No.	Parts name	Material
(1)	Plate cover	ABS resin
(2)	Body	Aluminum alloy die-casting
(3)	O-ring	Special nitrile rubber
(4)	Element (5μm)	Polypropylene
(4)	Element (0.3μm)	-
(5)	Metal bowl assembly	Aluminum alloy die-casting, brass, glass, nitrile rubber, steel, stainless steel

Note 1: Refer to pages 358 to 359 for repair parts element, repair kit or bowl assembly.

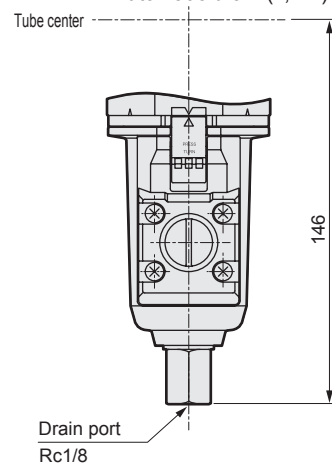
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

Dimensions

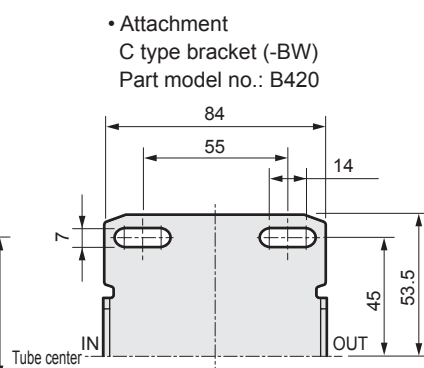
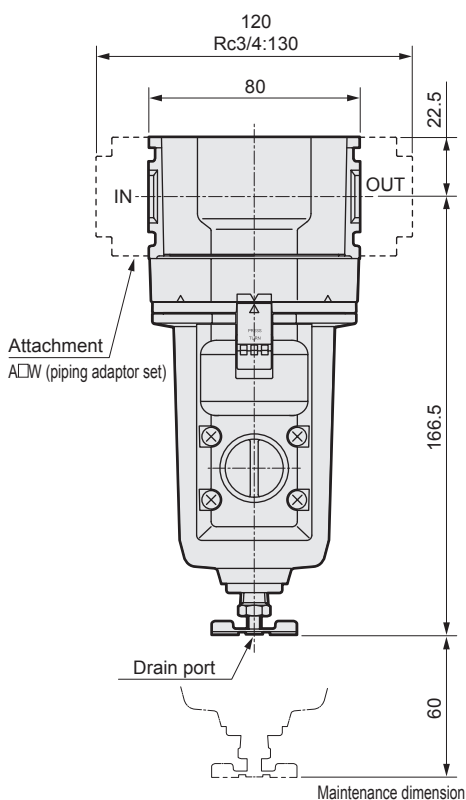
● FM3000-W



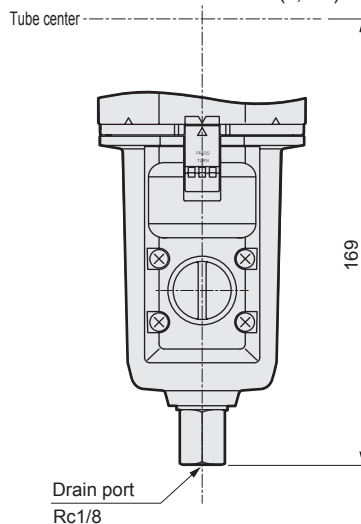
• Option dimensions Automatic drain (F, F1)



● FM4000-W



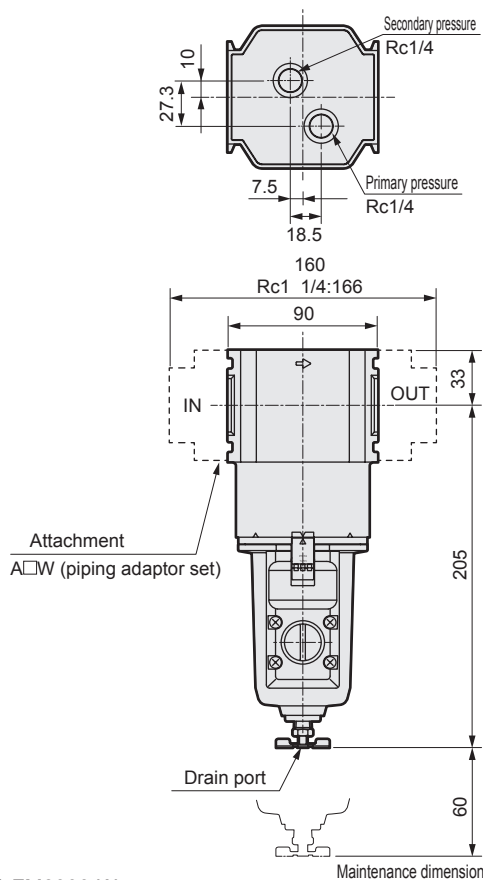
• Option dimensions Automatic drain (F, F1)



Dimensions

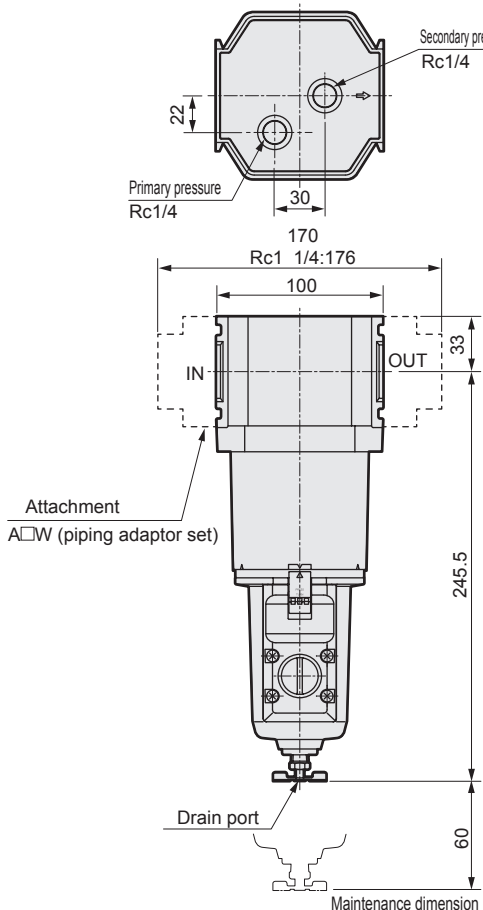
● FM6000-W

- Option dimensions
- With differential pressure detection port (Q)

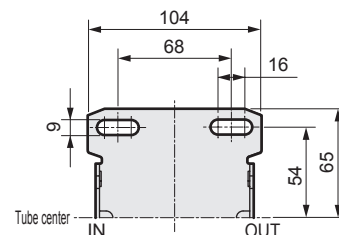


● FM8000-W

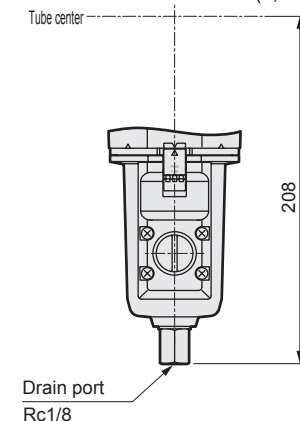
- Option dimensions
- With differential pressure detection port (Q)



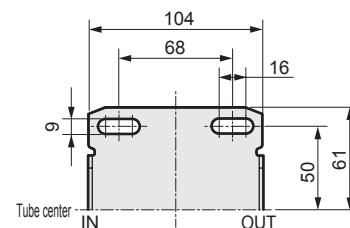
- Attachment
- C type bracket (-BW)
- Part model no.: B620



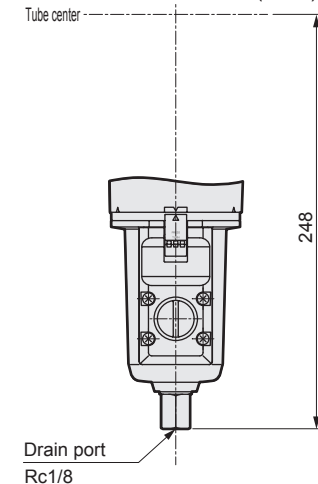
- Option dimensions
- Automatic drain (F, F1)



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

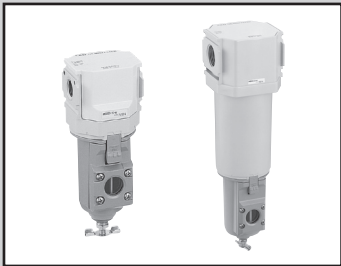


- Option dimensions
- Automatic drain (F, F1)



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 l/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 mantel (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 mantel (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

MM3000 - **8** - **W** - **F1** - **A8W**

A Model no.

B Port size

C Port thread type

D Option

E Display unit

F Attachment (attached)

G Bracket (attached)

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

A Model no.

MM3000	MM4000	MM6000	MM8000
--------	--------	--------	--------

Symbol	Descriptions
--------	--------------

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

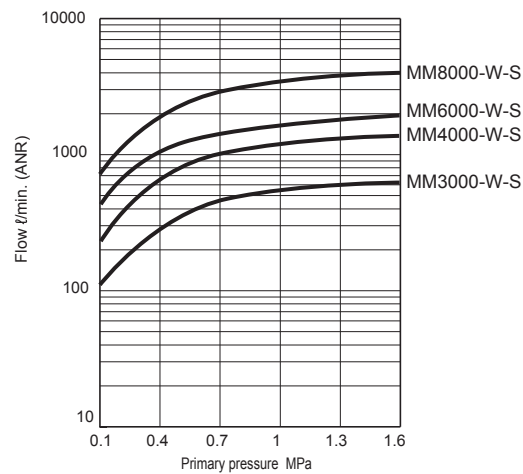
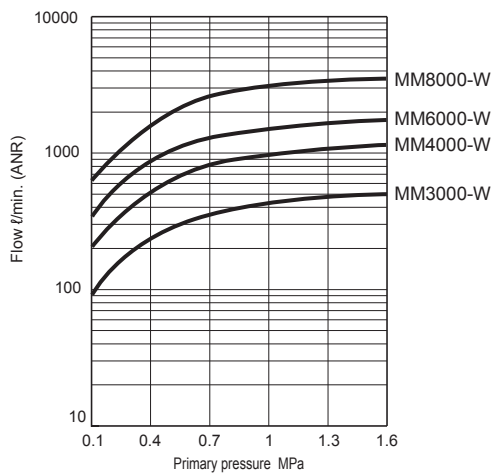
Medium pressure Series
F.R.L. unit

Oil Mist Filter Series

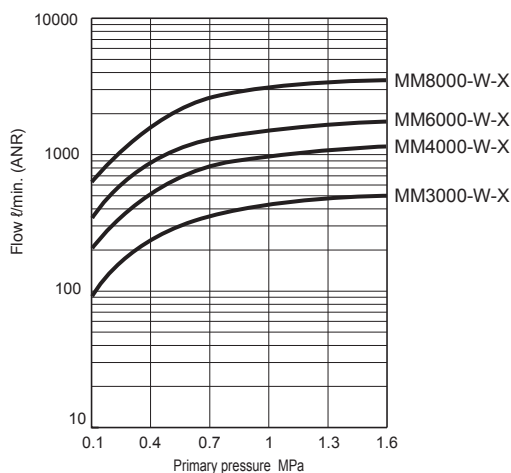
Flow characteristic (max. flow rate)

● 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

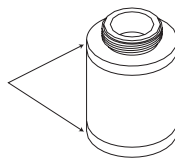
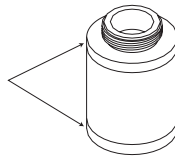
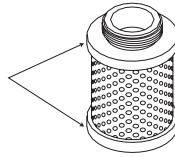
◆X type



Deodorization air

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

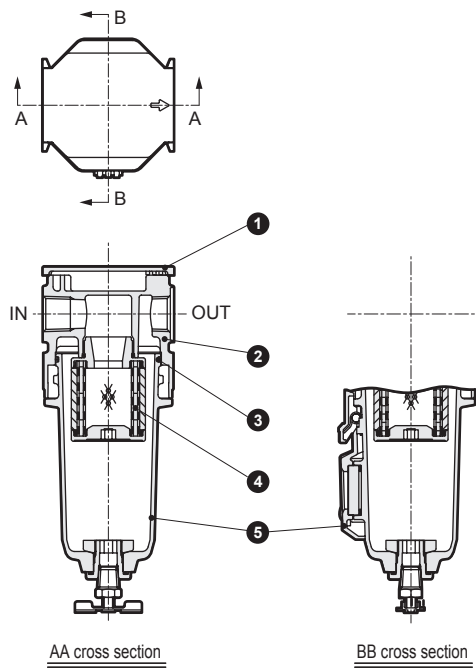
Option symbol of mantle and shape

Option symbol	Appearance
Blank (M type)	
S (S type)	
X (X type)	

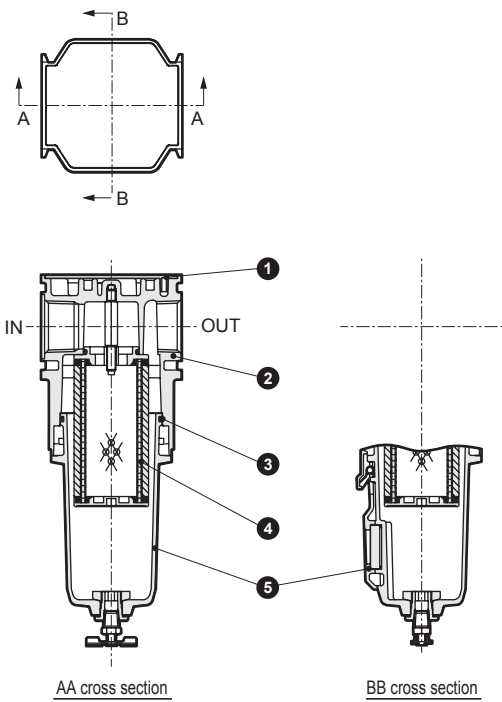
Note: Changes for product upgrades may be made without prior notice.
When placing an order, confirm the option symbol for the part model given here.

Internal structure and parts list

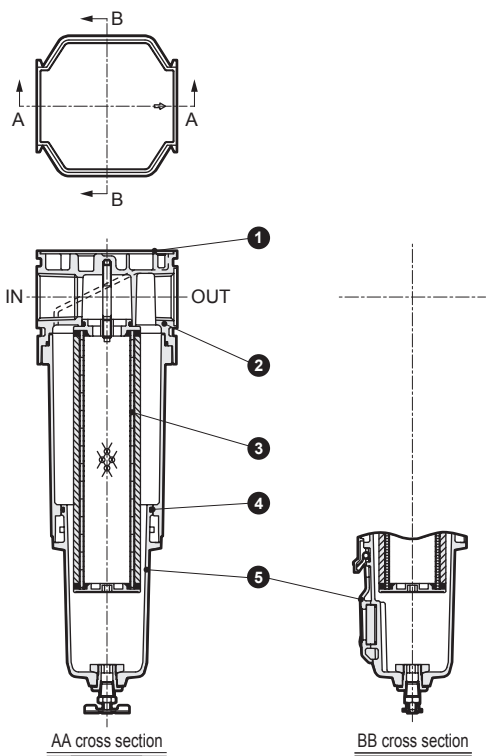
● MM3000-W/MM4000-W



● 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.

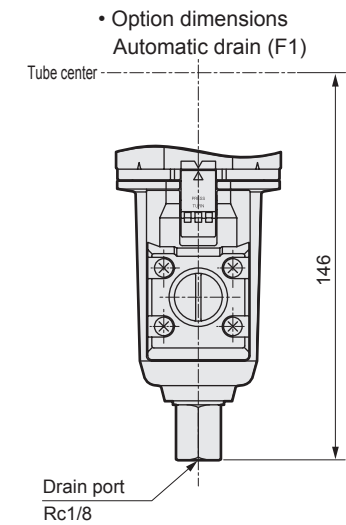
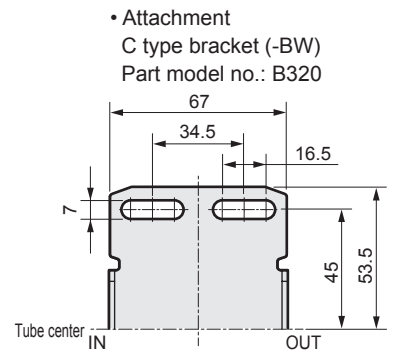
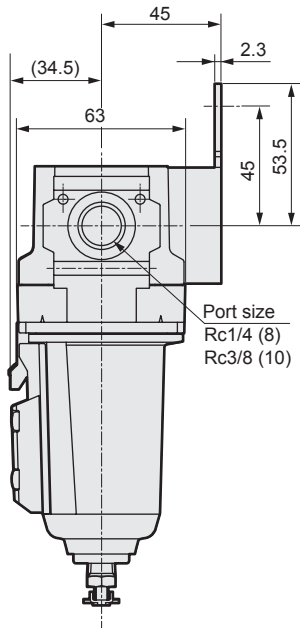
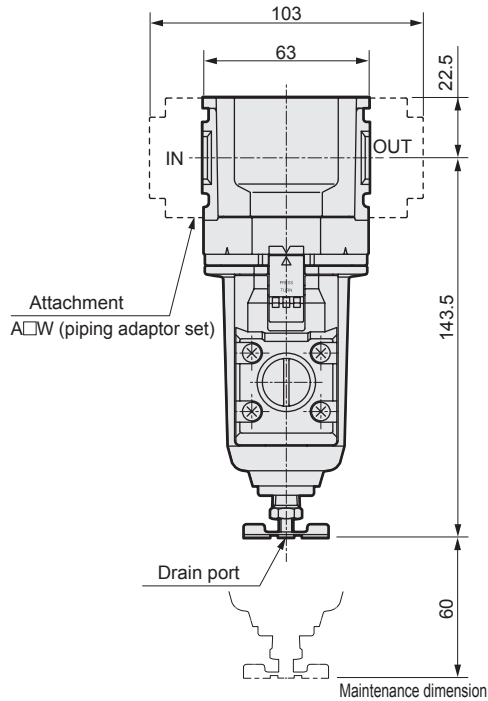
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

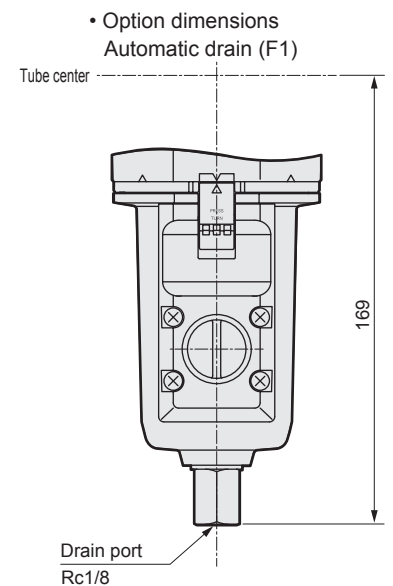
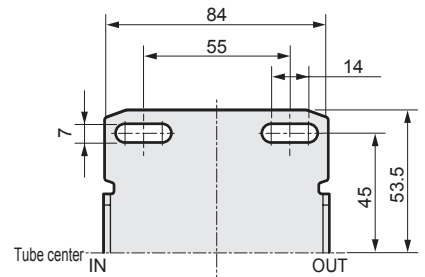
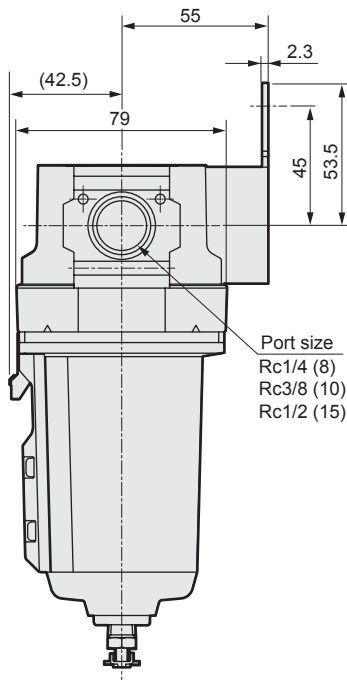
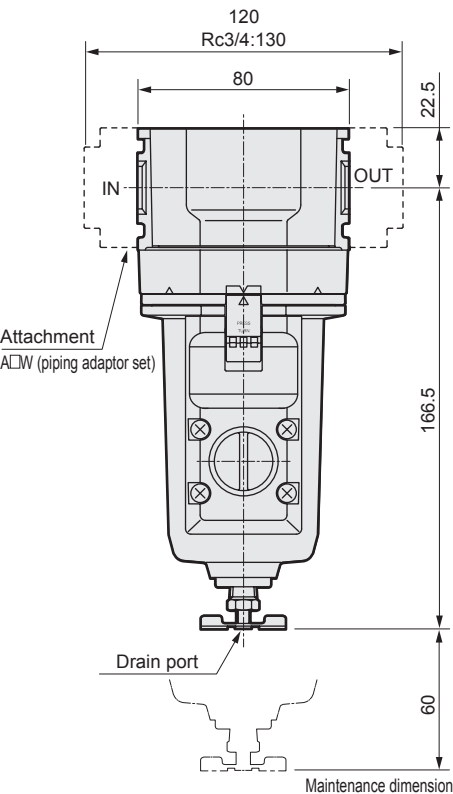
Oil Mist Filter Series

Dimensions

● MM3000-W



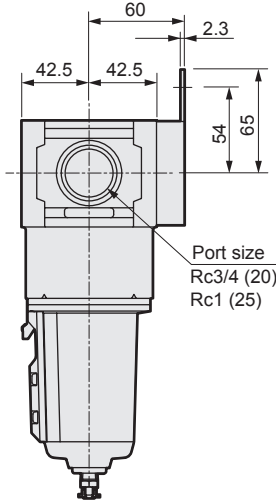
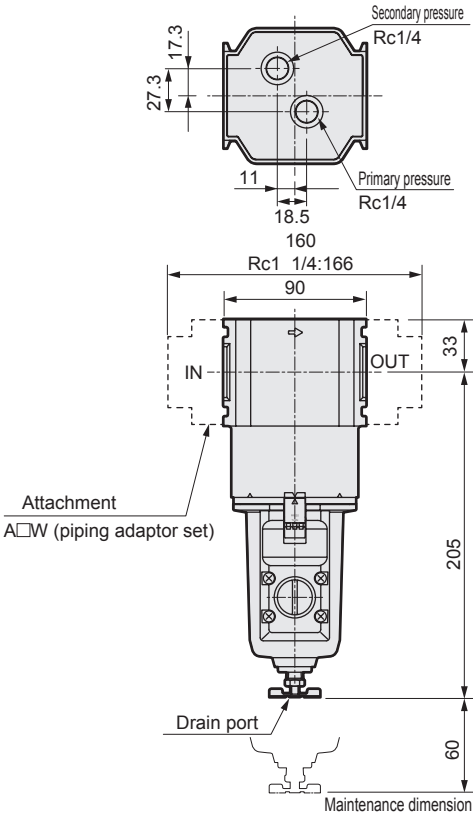
● MM4000-W



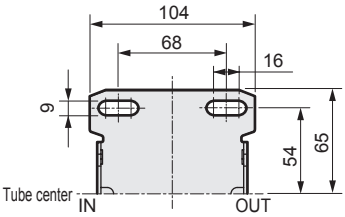
Dimensions

● MM6000-W

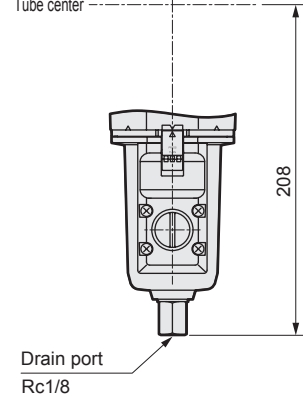
- Option dimensions
With differential pressure detection port (Q)



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

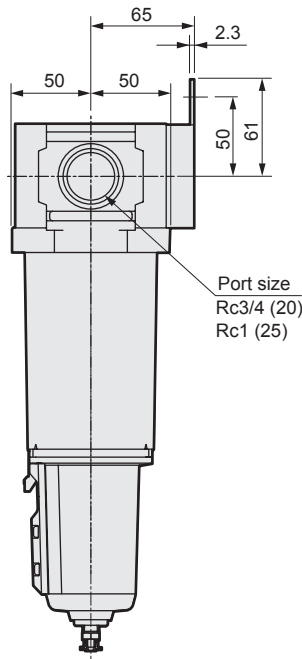
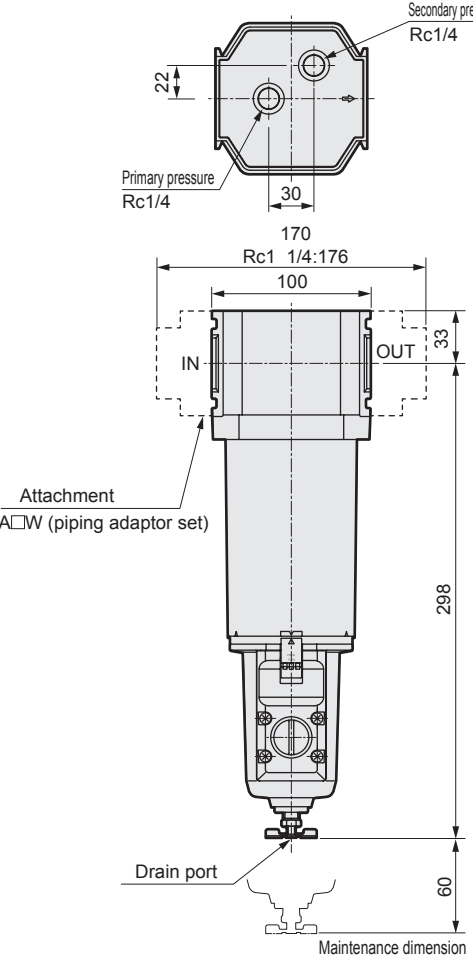


- Option dimensions
Automatic drain (F1)

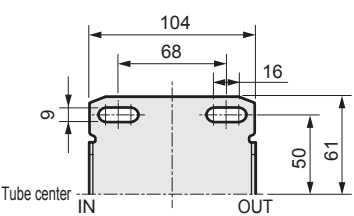


● MM8000-W

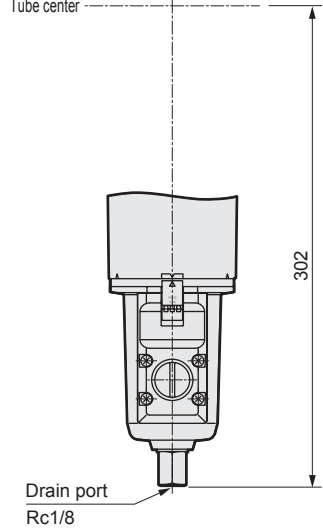
- Option dimensions
With differential pressure detection port (Q)



- 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 conf. 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

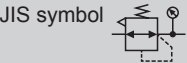


Regulator medium pressure type

RM3000-W/RM4000-W Series

R3000-W/R4000-W Series medium specifications

Port size: 1/4 to 1/2



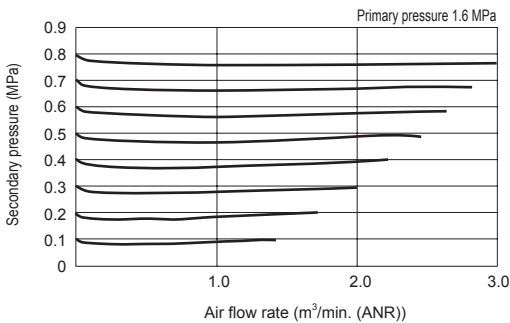
Specifications

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	

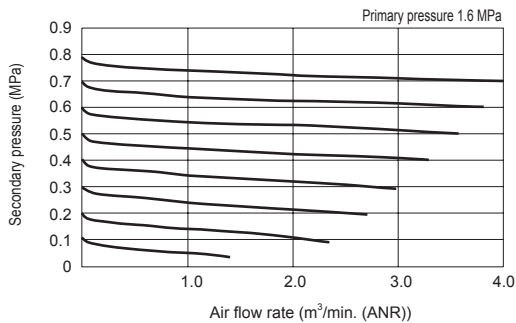
Note 1: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C .

Flow characteristic

● RM3000-10-W

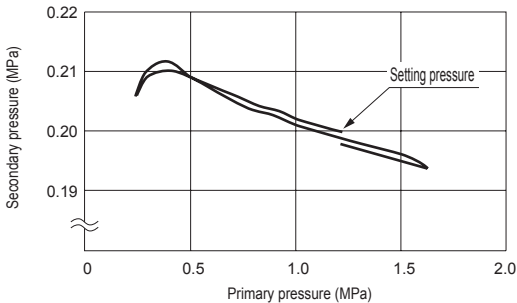


● RM4000-15-W

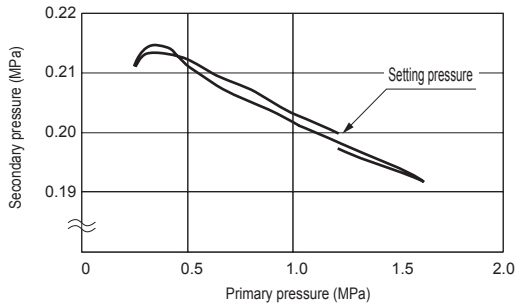


Pressure characteristic

● RM3000-W



● RM4000-W



How to order

RM3000 - **8** - **-W-** **N** - **-** **A8W**

A Model no.

(White type)

G Attachment
(Attached)

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.

RM3000 **RM4000**

Symbol	Descriptions		
B Port size			
8	1/4	●	●
10	3/8	●	●
15	1/2	●	●
C Port thread type			
Blank	Rc thread	●	●
N	NPT thread	●	●
G	G thread	●	●
D Option			
Relief	Blank	With relief mechanism	●
	N	Nonrelief type	●
Pressure gauge	Blank	With standard pressure gauge (G401)	●
	T	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)	●
	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)			
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)			
Blank	Not attached	●	●
BW	C type bracket	●	●
B3W	L type bracket	●	●
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.

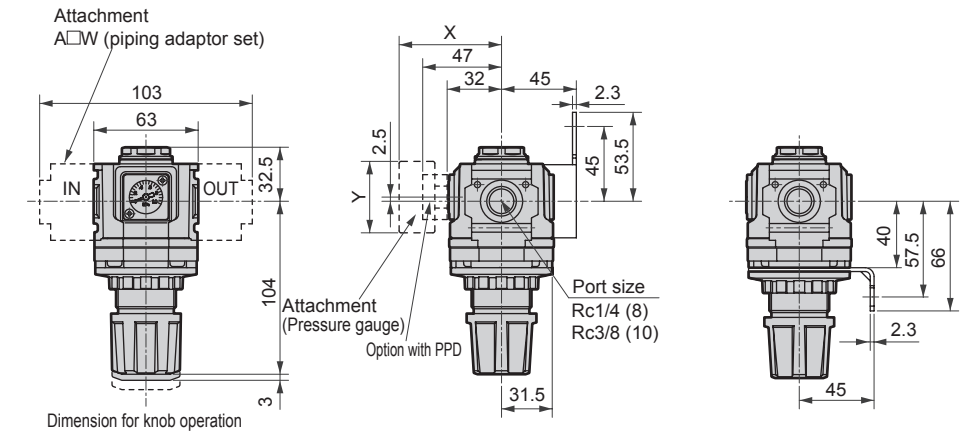
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto, drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve /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

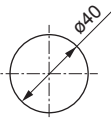
Regulator series

Dimensions

● RM3000-W

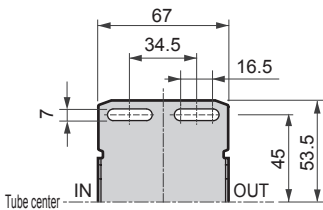


Panel cut dimension

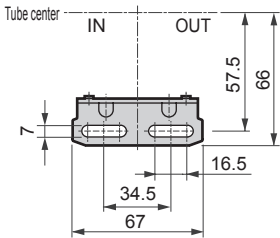


Panel plate thickness: Max. 7 mm

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



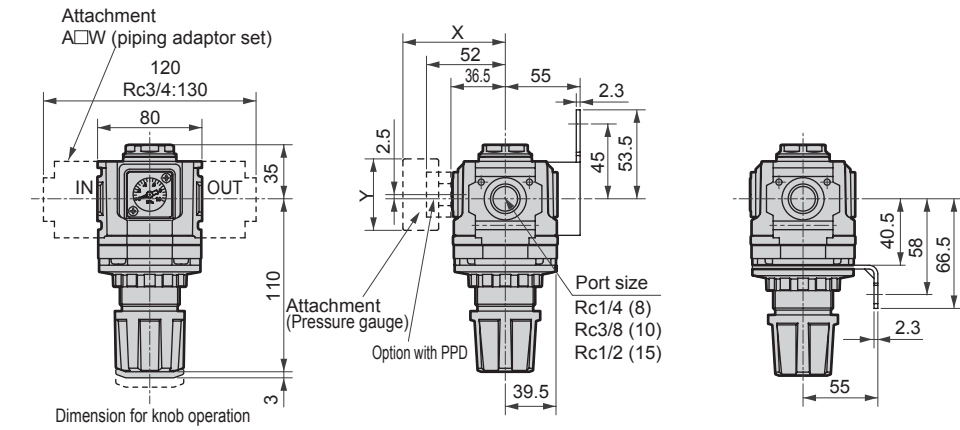
L type bracket (-B3W)
Part model no.: B330



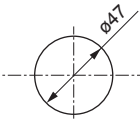
Pressure gauge attached optional dimensions table

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

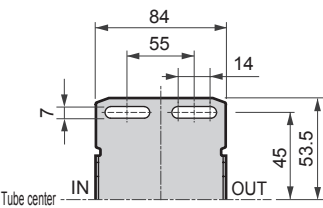


Panel cut dimension

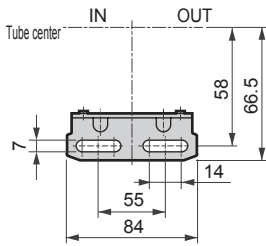


Panel plate thickness: Max. 7 mm

• 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

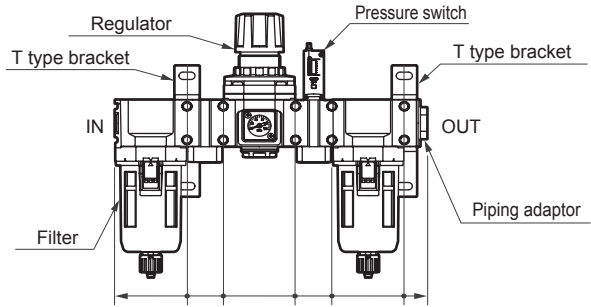
Custom combination specifications

Overview

Custom combination is a customer oriented product meeting various combination needs for each user.
Complete the following specifications sheet before placing an order.

How to complete custom combination specifications sheet

- Refer to each section in this catalog per configuration for "How to order" and descriptions, etc.
- Combinations of 3000 and 4000 Series are available for products other than pressure switches.
Use the specifications for C4000 in this case.



Dimensions are calculated by totaling the face to face dimensions of each component. The bracket mounting position is also calculated.

C3000 series custom combination specifications

Contact Slip No. _____ Quantity Request date / / Set

Issue / /
Your company name
Contact
Purchase order No. _____

● Model no. **C3000-UN-** -

CKD Sales have the factory check indicated specifications, and indicate the number if OK.

Designate the direction of compressed air flow as seen from the front.
Leave blank when selecting "blank".

Flow direction	
Blank	Left→Right
X1	Right→Left

Technical confirmation No. _____

One piping adaptor is enclosed.
A two-piece set is not used, so indicate required fields.

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-10-W												
Air filter	63	F3000-8-W												
Filter/regulator	63	W3000-W												
		W3100-W												
Regulator*	63	R3000-8-W	Up											
		R3100-W												
Oil mist filter	63	M3000-8-W												
Lubricator	63	L3000-W												
Distributor*	31.5	D401-UN-00-8-W	Down											
Distributor	42	D300-W												
Pressure switch	31.5	P4100-UN-8-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												

Sample for completing form for above product.

Use this field when using products with different options and port sizes, etc.

*1: The distance from pipe center to fixing face is 45 mm.

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.

Technical confirmation No.: _____

Approval	Inspector	Contact

CKD Sales have the factory check indicated specifications, and indicate the number if OK.

A confirmation mark is pressed by CKD.

Engineer Comment Field

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 conf. 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

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

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / /

Issue / /
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		

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

C3000 series custom combination specifications

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

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / /

Issue / /
Your company name _____
Contact _____
Purchase order No. _____

● Model no. **C3000-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*	63	R3000- -W										
		R3100- -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		

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
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

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

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

Contact _____
Slip No. _____

Quantity _____ Set _____
Request date / /

Issue / /
Your company name _____
Contact _____
Purchase order No. _____

● Model no. **C6000-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	*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-** -

*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.

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	*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 conf.
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