

Refrigerating type dryer
Desiccant type dryer
High polymer membrane 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



Filter/regulator standard white Series

W1000/W3000/W4000/W8000-W Series

New Series of 5 μm elements for dust removal, and 0.3 μm elements for tar removal.
Port size: 1/8 to 1

JIS symbol



Specifications

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

Note 1: Drainage accumulates up to 170 cm³ only with the manual drain cock.

Note 2: 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 426) 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: When "F1" 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 4: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15 MPa.

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

Ozone specifications (Ending 10)

W*000 P11

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

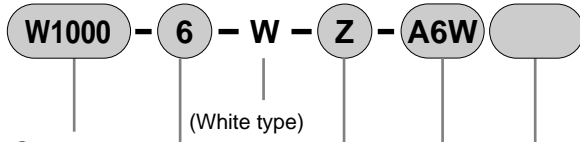
● Dust generation preventing structure for use in cleanrooms

W*000 P7*

Filter/Regulator series

How to order

How to order



A Model no.

(White type)

B Port size

C Option

D Piping adapter set (Attached)

E Attachment (Attached)

* Refer to page 244 for the explanation of the option.

A Model no.

| Symbol | | Descriptions | W1000 | W3000 | W4000 | W8000 |
|------------------------------------------------------------------------------------------|---------------------------------|------------------------------------------------------------------------------|-------|-------|-------|-------|
| B Port size | | | | | | |
| 6 | | Rc1/8 | ● | | | |
| 8 | | Rc1/4 | ● | ● | ● | |
| 10 | | Rc3/8 | | ● | ● | |
| 15 | | Rc1/2 | | | ● | |
| 20 | | Rc3/4 | | | | ● |
| 25 | | Rc1 | | | | ● |
| C Option | | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● |
| | F | Auto. drain with manual override (NO type: Exhaust w/o pressurized) | | ● | ● | ● |
| | F1 <small>Note 2</small> | 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 | | ● | ● | ● |
| Element | Blank | 5 μm | ● | ● | ● | ● |
| | Y | 0.3 μm (submicron) | | ● | ● | ● |
| Pressure range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401) | ● | ● | ● | ● |
| | T | Without pressure gauge (a gauge port is assembled with sealed) | ● | ● | ● | ● |
| | T8 | A pressure gauge attached port is assembled by open | ● | ● | ● | ● |
| Flow direction | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● |
| D Piping adapter set (attached) Pages 456, 457 | | | | | | |
| Blank | | Not attached | ● | ● | ● | ● |
| A6W | | Rc1/8 piping adapter set | ● | | | |
| A8W | | Rc1/4 piping adapter set | ● | ● | ● | |
| A10W | | Rc3/8 piping adapter set | ● | ● | ● | |
| A15W | | Rc1/2 piping adapter set | | ● | ● | |
| A20W | | Rc3/4 piping adapter set | | | ● | ● |
| A25W | | Rc1 piping adapter set | | | | ● |
| A32W | | Rc1 1/4 piping adapter set | | | | ● |
| E Attachment (attached) Pages 454, 687 | | | | | | |
| Blank | | Not attached | ● | ● | ● | ● |
| BW | | C type bracket | ● | ● | ● | ● |
| B3W | | L type bracket | ● | ● | ● | ● |
| 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 | ● | ● | ● | ● |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 white Series
F.R.L. unit

Note on model no. selection

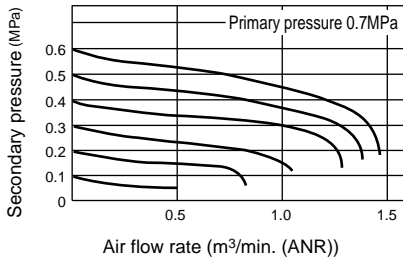
Note 1: R1 pressure switch with indicator is black.
Note 2: W1000-W-F1 is custom order.

Refer to F.R.L. unit Standard type on page 302, for internal structure and dimensions.

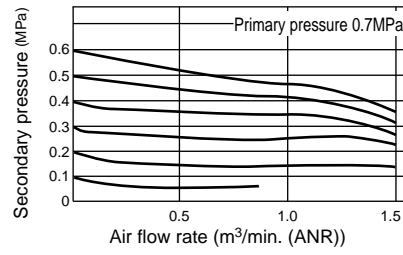
Filter/Regulator Series

Flow characteristic

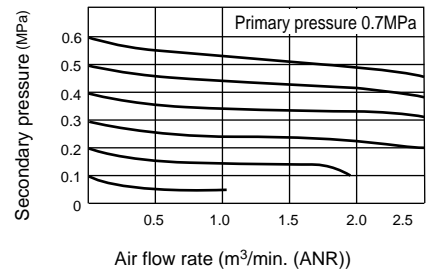
● W1000-6-W



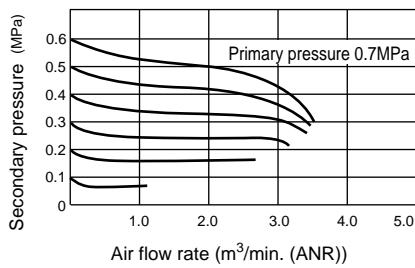
● W1000-8-W



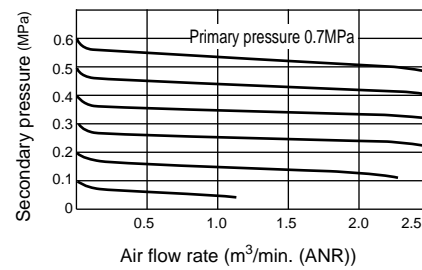
● W3000-8-W



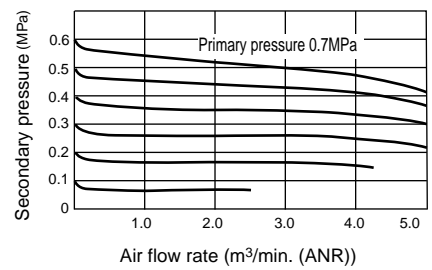
● W3000-10-W



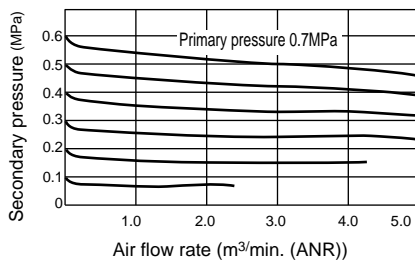
● W4000-8-W



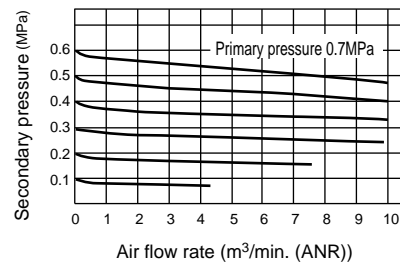
● W4000-10-W



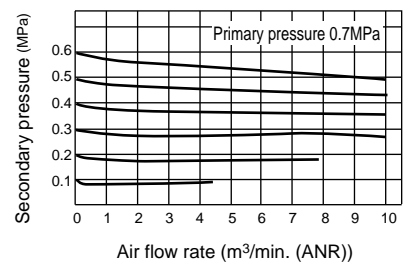
● W4000-15-W



● W8000-20-W

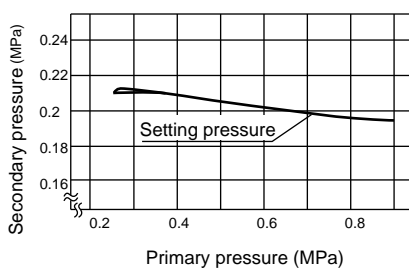


● W8000-25-W

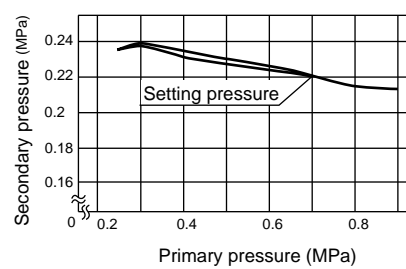


Pressure characteristic

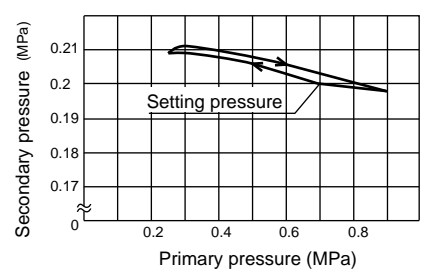
● W1000-W



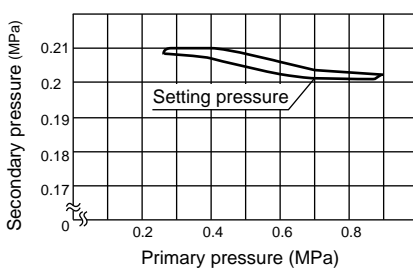
● W3000-W



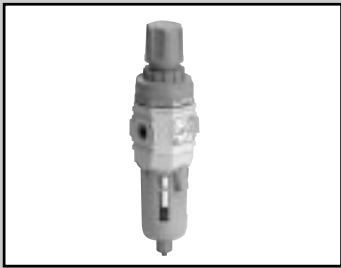
● W4000-W



● W8000-W




Refrigerating type dryer
Desiccant type dryer
High polymer membrane 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



Reverse filter/regulator standard white Series

W1100/W3100/W4100/W8100-W Series

Introducing the 5 μ m dust removing element and 0.3 μ m tar removing element, with back flow function, to the lineup. Port size: 1/8 to 1

JIS symbol 



Specifications

| Descriptions | W1100-W | W3100-W | W4100-W | W8100-W |
|---------------------------------|--------------------------------|--------------------------------|-------------------------------------|--------------------------------|
| Working fluid | Compressed air | | | |
| Max. working pressure MPa | 1.0 Note 4, 5, 6 | | | |
| Withstanding pressure MPa | 1.5 Note 6 | | | |
| Ambient temperature range °C | 5 to 60 Note 7 | | | |
| Filtration rating μ m | 5 | 5 or 0.3 | | |
| Set pressure range (Note 2) MPa | 0.05 to 0.85 Note 4 | 0.05 to 0.85 | | |
| Relief | With relief mechanism | | | |
| Drain capacity cm ³ | 12 | 45 | 80 | 80 (Note 3) |
| Port size Rc | 1/8, 1/4 (3/8 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8, 1/2 (3/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) |
| Product weight kg | 0.175 | 0.6 | 0.9 | 2.0 |
| Standard accessories | Pressure gauge and bowl guard | | | |

Note 1: Check that the primary pressure is at least 0.05 MPa or more than the secondary pressure.
 Note 2: Refer to the set pressure range for the back pressure given on page 422 when selecting the model.
 Note 3: Up to 170 m³ is stored only with the manual drain cock type.
 Note 4: 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 5: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15MPa.
 Note 6: When "F1" with an automatic drain is selected for the W1100-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 426) for the F1000-W-F1 automatic drain for the maximum working flow. Set the working flow to less than the maximum working flow.
 Note 7: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C .

Ozone specifications (Ending 11)

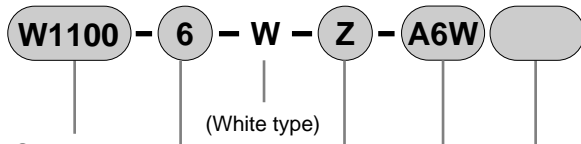
W*100 P11

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

● Dust generation preventing structure for use in cleanrooms

W*100 P7*

How to order



A Model no.

B Port size

C Option

D Piping adapter set (Attached)

E Attachment (Attached)

* Refer to page 244 for the explanation of the option.

| | | A Model no. | | | | |
|------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------------------|-------|-------|-------|---|
| | | W1100 | W3100 | W4100 | W8100 | |
| Symbol | Descriptions | | | | | |
| B Port size | | | | | | |
| 6 | Rc1/8 | ● | | | | |
| 8 | Rc1/4 | ● | ● | ● | | |
| 10 | Rc3/8 | | ● | ● | | |
| 15 | Rc1/2 | | | ● | | |
| 20 | Rc3/4 | | | | ● | |
| 25 | Rc1 | | | | ● | |
| C Option | | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● |
| | F | Automatic drain with manual override (NO type: Exhaust w/o pressurized) | | ● | ● | ● |
| | F1 <small>Note 2</small> | Automatic drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● |
| | FF | Large automatic drain with manual override (NO type: Exhaust w/o pressurized) | | | | ● |
| | FF1 | Large automatic drain with manual override (NC type: No exhaust w/o pressurized) | | | | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● |
| | M | Metal bowl | | ● | ● | ● |
| Element | Blank | 5 μm | ● | ● | ● | ● |
| | Y | 0.3 μm (submicron) | | ● | ● | ● |
| Pressure range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401) | ● | ● | ● | ● |
| | T | Without pressure gauge (a gauge port is assembled with sealed) | ● | ● | ● | ● |
| | T8 | A pressure gauge attached port is assembled by open | ● | ● | ● | ● |
| Flow direction | R1 <small>Note 1</small> | Pressure switch with display PPD assembly | ● | ● | ● | ● |
| | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● |
| D Piping adapter set (attached) Pages 456, 457 | | | | | | |
| | Blank | Not attached | ● | ● | ● | ● |
| | A6W | Rc1/8 piping adapter set | ● | | | |
| | A8W | Rc1/4 piping adapter set | ● | ● | ● | |
| | A10W | Rc3/8 piping adapter set | ● | ● | ● | |
| | A15W | Rc1/2 piping adapter set | | ● | ● | |
| | A20W | Rc3/4 piping adapter set | | | ● | ● |
| | A25W | Rc1 piping adapter set | | | | ● |
| | A32W | Rc1 1/4 piping adapter set | | | | ● |
| E Attachment (attached) Pages 454, 687 | | | | | | |
| | Blank | Not attached | ● | ● | ● | ● |
| | BW | C type bracket | ● | ● | ● | ● |
| | B3W | L type bracket | ● | ● | ● | |
| | 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 | ● | ● | ● | ● |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 white Series
F.R.L. unit

Note on model no. selection

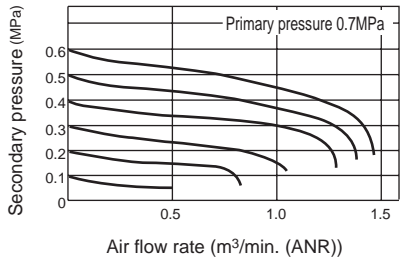
Note 1: R1 pressure switch with indicator is black.
Note 2: W1100-W-F1 is custom order.

Refer to F.R.L. unit Standard type on page 308, for internal structure and dimensions.

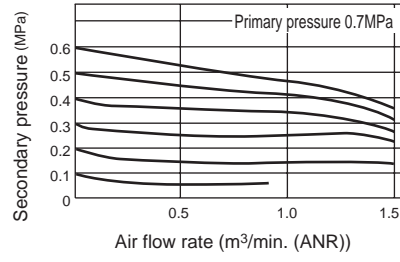
Filter/Regulator Series

Flow characteristic

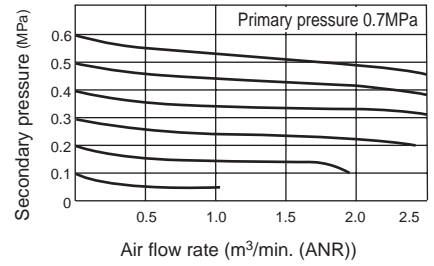
● W1100-6-W



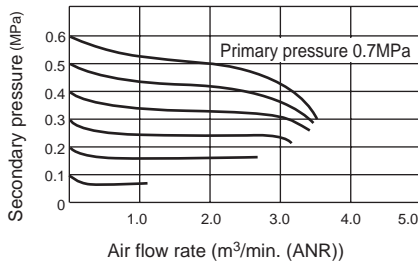
● W1100-8-W



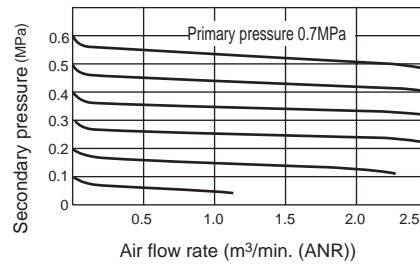
● W3100-8-W



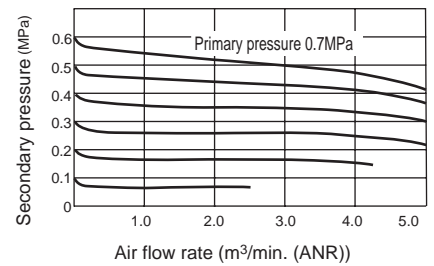
● W3100-10-W



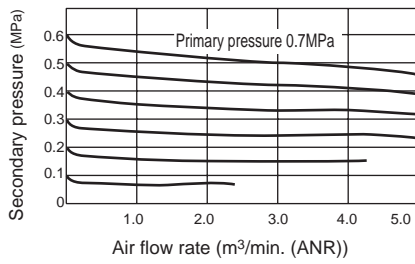
● W4100-8-W



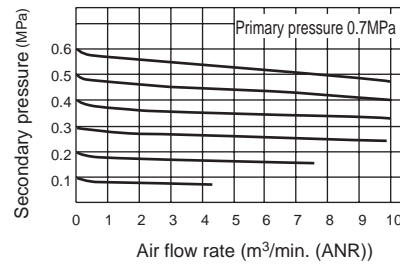
● W4100-10-W



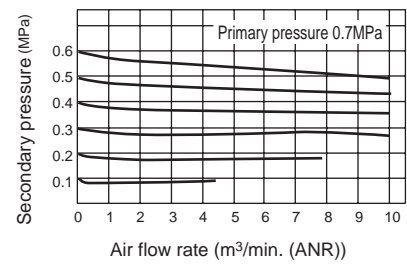
● W4100-15-W



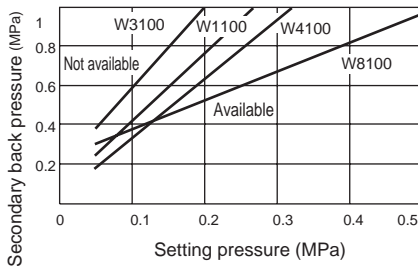
● W8100-20-W



● W8100-25-W



● Set pressure range to back pressure

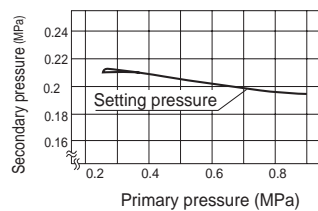


Note: The upper side of the graph is nonusable and the lower side usable.

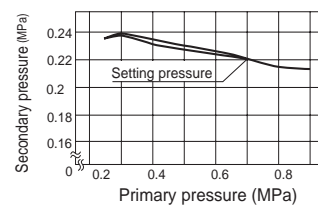
Example: If W4100 is set to set pressure 0.2 MPa and the secondary back pressure is 0.6 MPa or more, the secondary pressure will not be released to the primary side.

Pressure characteristic

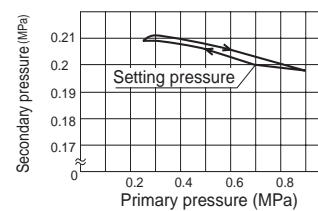
● W1100-W



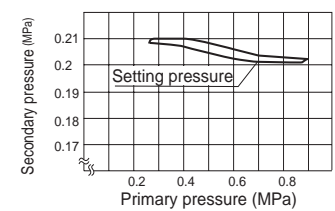
● W3100-W



● W4100-W



● W8100-W

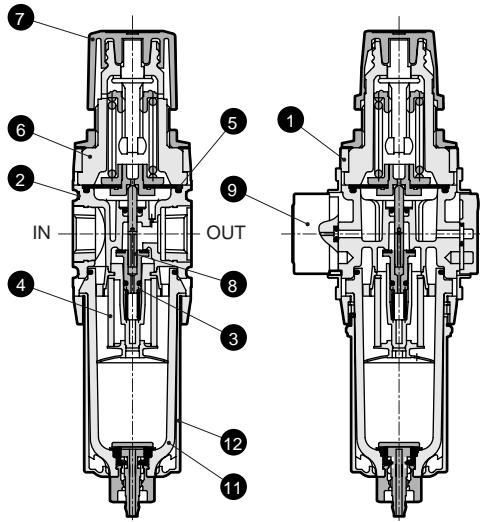


Filter/Regulator series

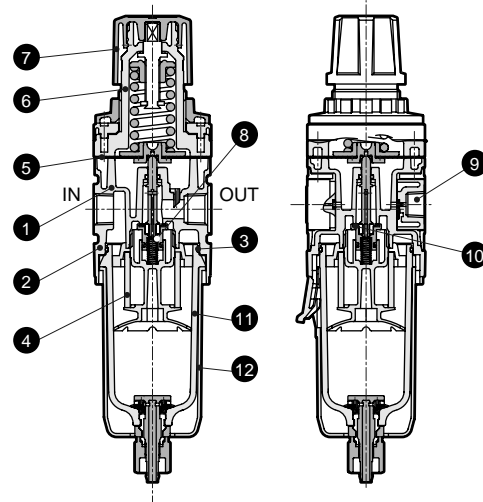
Internal structure and parts list

Internal structure and parts list

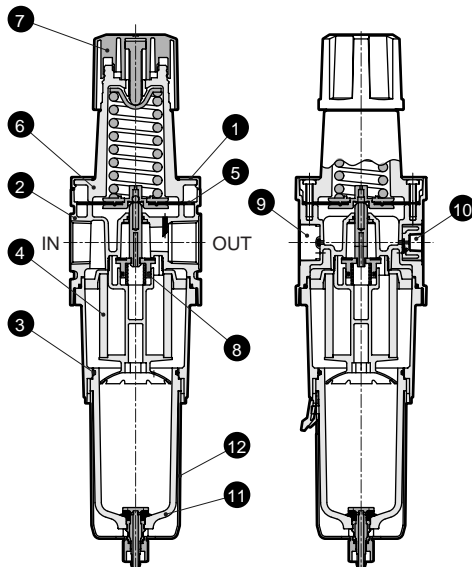
● W1000



● W3000 · W4000



● W8000



- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane 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

| No. | Parts name | Material | | | |
|-----|-------------------------|--------------------------------------------------------------------------------|----------------------------------------|----------------------------------------|-------|
| | | W1000 | W3000 | W4000 | W8000 |
| 1 | Palate cover | ABS resin | | | |
| 2 | Body | Polyamide resin, steel | Aluminium alloy die-casting | | |
| 3 | O ring | Note 2 | Special nitrile rubber | | |
| 4 | Element | Note 1 | Polypropylene | | |
| 5 | Diaphragm assembly | Polyacetal resin Polypropylene | Zinc alloy die-casting, nitrile rubber | | |
| 6 | Cover | Polyamide resin | PBT resin | Aluminium alloy die-casting | |
| 7 | Knob | Polyacetal resin | | | |
| 8 | Valve assembly | Brass, hydrogen nitrile rubber (polyacetal resin: W3000, W4000 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 is element assembly.

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

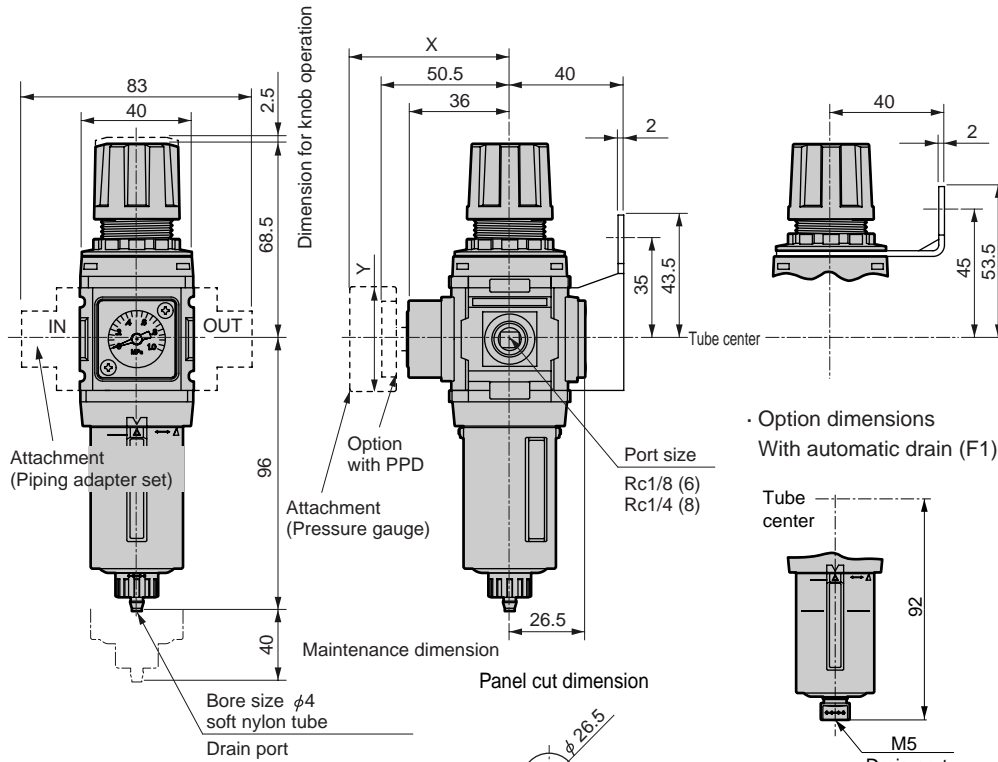
Standard Series
F.R.L. unit

Filter/Regulator Series

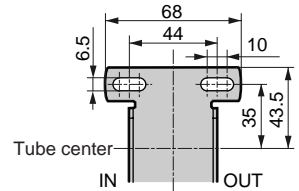
Dimensions



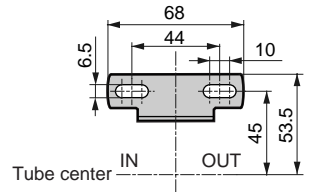
● W1000



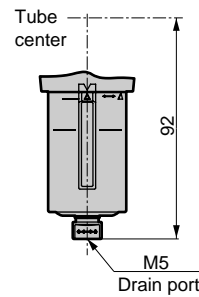
· Attachment
C type bracket (-B)
Part model no.: B120



L type bracket (-B3)
Part model no.: B130



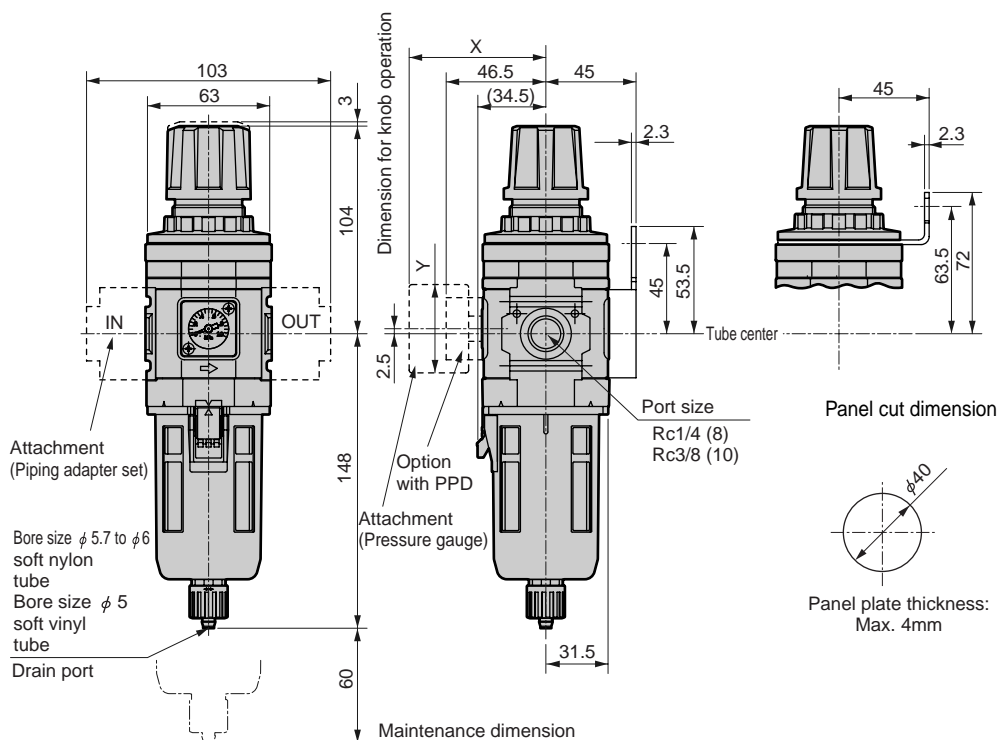
· Option dimensions
With automatic drain (F1)



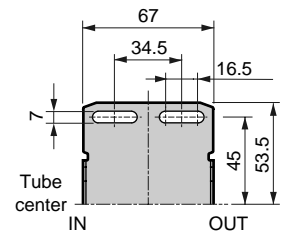
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (73.5) | φ 43.5 |
| G59P | (76) | φ 52 |
| G40P | (75.5) | φ 42.5 |
| G50P | (75.5) | φ 52.5 |
| G41P | (74) | φ 42 |
| G52P | (86) | φ 52.5 |

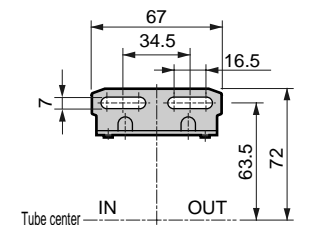
● W3000



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



L type bracket (-B3)
Part model no.: B330



Pressure gauge attached optional dimensions table

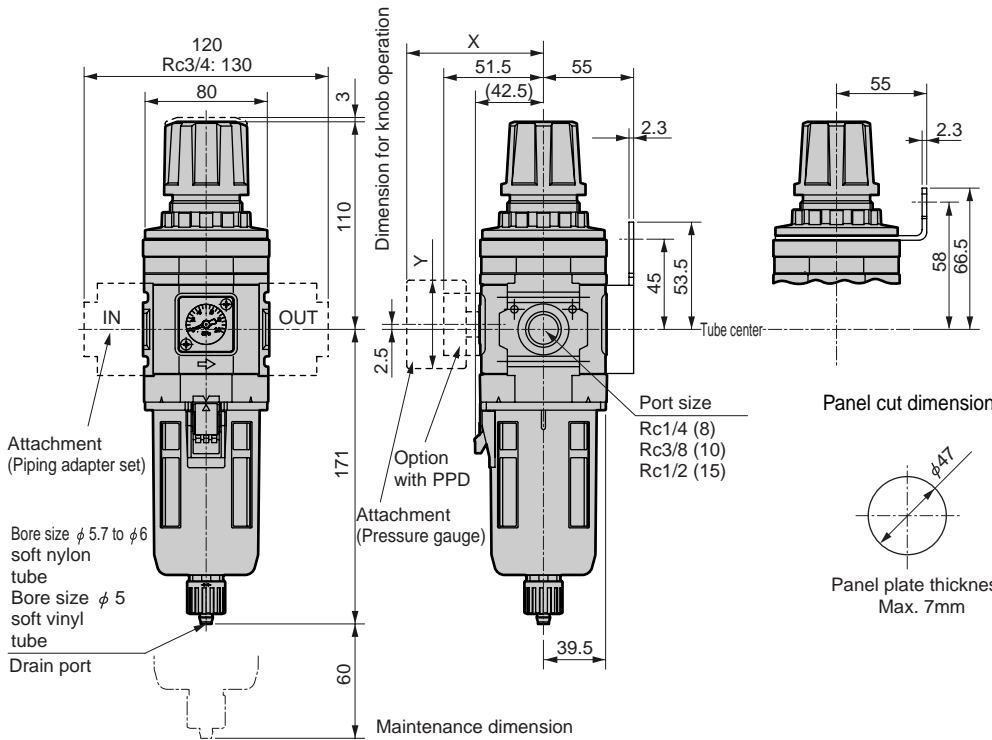
| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (69.5) | φ 43.5 |
| G59P | (72) | φ 52 |
| G40P | (71.5) | φ 42.5 |
| G50P | (71.5) | φ 52.5 |
| G41P | (70) | φ 42 |
| G52P | (82) | φ 52.5 |

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

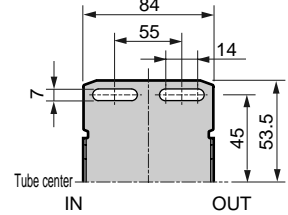
Dimensions



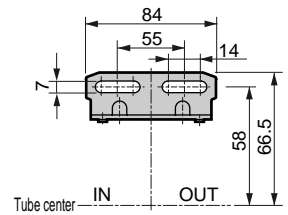
● W4000



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



L type bracket (-B3)
Part model no.: B430

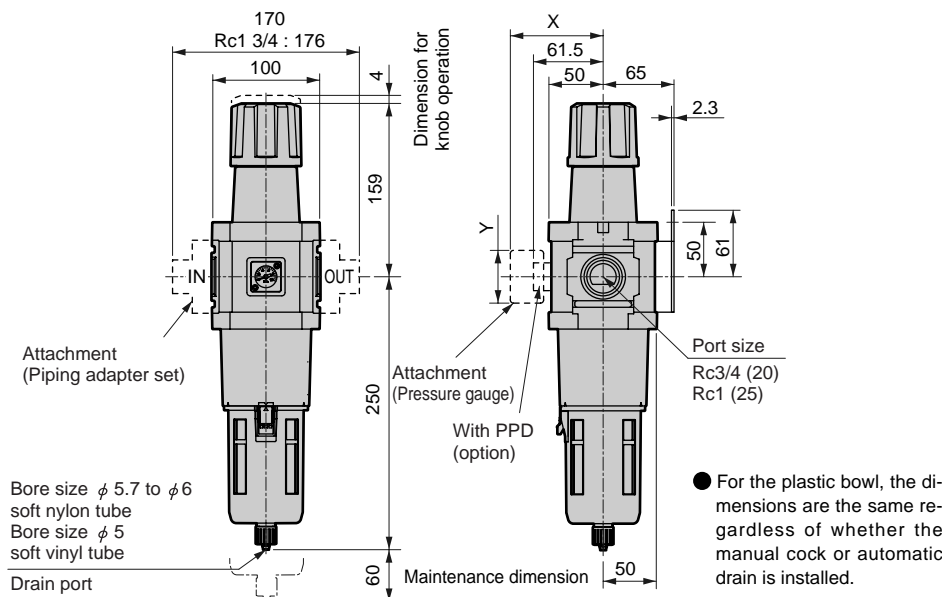


Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G49P | (74.5) | φ43.5 |
| G59P | (77) | φ52 |
| G40P | (76.5) | φ42.5 |
| G50P | (76.5) | φ52.5 |
| G41P | (75) | φ42 |
| G52P | (86) | φ52.5 |

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

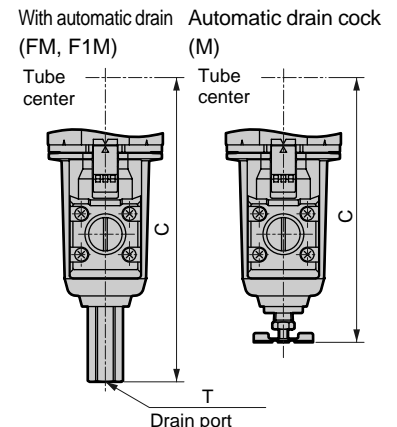
● W8000



Optional dimensions

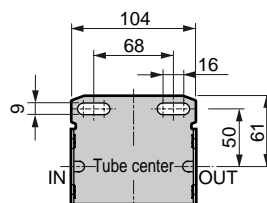


● Metal bowl (option) (W3000, 4000, 8000)



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

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



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------|
| G49P | (84.5) | φ43.5 |
| G59P | (87) | φ52 |
| G40P | (86.5) | φ42.5 |
| G50P | (86.5) | φ52.5 |
| G41P | (85) | φ42 |
| G52P | (98) | φ52.5 |

Dimensions

| Model no. | With automatic drain | | Manual cock |
|-----------|----------------------|-------|-------------|
| | C | T | |
| W3000 | 163.5 | Rc1/4 | 143.5 |
| W4000 | 187 | Rc1/4 | 166.5 |
| W8000 | 266 | Rc1/4 | 245.5 |

Refrigerating type dryer
Desiccant type dryer
High polymer membrane 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)

Standard Series
F.R.L. unit

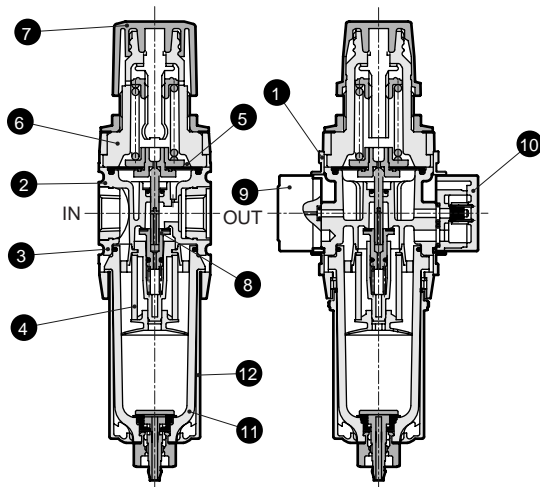
Filter/Regulator series

Internal structure and parts list

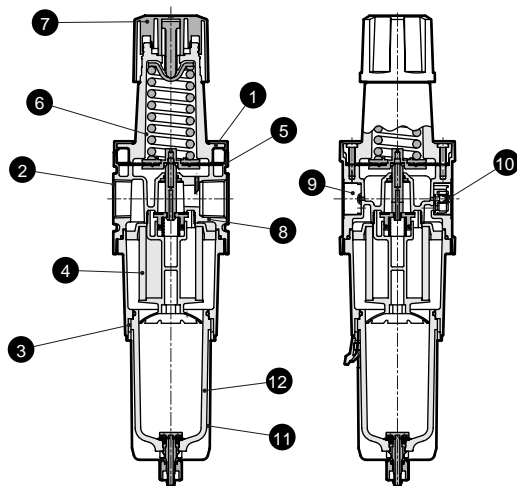
Internal structure and parts list

● W1100

● W3100 · W4100



● W8100



| No. | Parts name | Material | | | |
|-----|-------------------------------|--------------------------------------------------------------------------------|----------------------------------------|-----------------------------|-------|
| | | W1100 | W3100 | W4100 | W8100 |
| 1 | Plate cover | ABS resin | | | |
| 2 | Body | Polyamide resin, steel | Aluminium alloy die-casting | | |
| 3 | O ring <small>Note 2</small> | Special nitrile rubber | | | |
| 4 | Element <small>Note 1</small> | Polyacetal resin Polypropylene | Polypropylene | | |
| 5 | Diaphragm assembly | Polyacetal resin Nitrile rubber | Zinc alloy die-casting, nitrile rubber | | |
| 6 | Cover | Polyamide resin | PBT resin | Aluminium alloy die-casting | |
| 7 | Knob | Polyacetal resin | | | |
| 8 | Valve assembly | Brass, hydrogen nitrile rubber (polyacetal resin: W3100, 4100) | | | |
| 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 is element assembly.

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

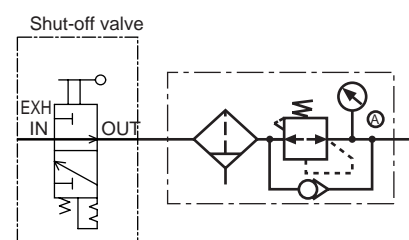
Note 3: Refer to page 314 for repair kits model No.

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 310)

● Circuit diagram



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

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

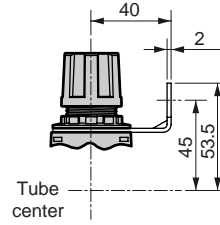
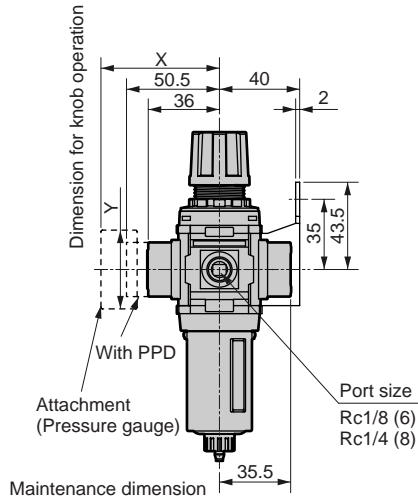
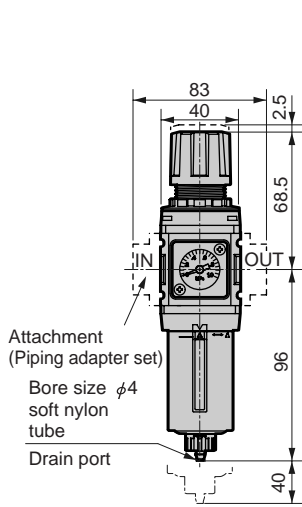
Standard Series
F.R.L. unit

Filter/Regulator Series

Dimensions



● W1100

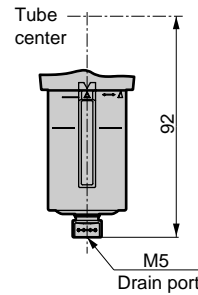


Panel cut dimension



Panel plate thickness:
Max. 6mm

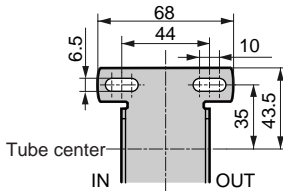
Option dimensions
With automatic drain (F1)



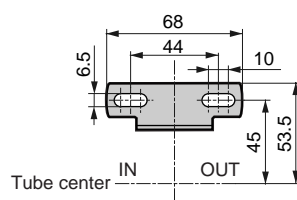
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (73.5) | φ 43.5 |
| G59P | (76) | φ 52 |
| G40P | (75.5) | φ 42.5 |
| G50P | (75.5) | φ 52.5 |
| G41P | (74) | φ 42 |
| G52P | (86) | φ 52.5 |

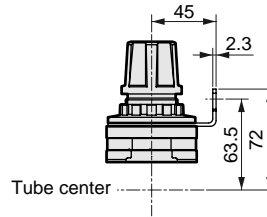
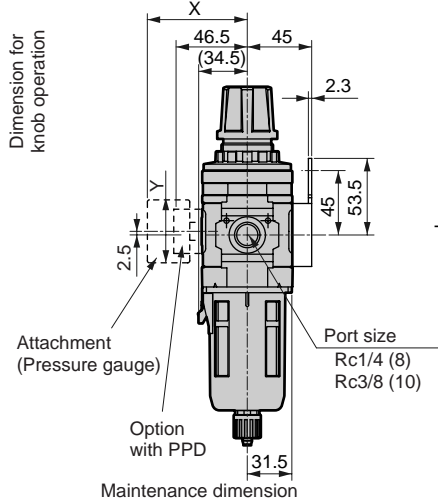
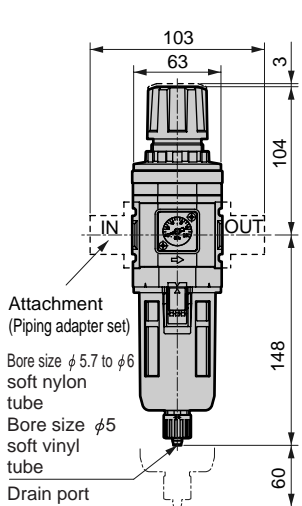
Attachment
C type bracket (-B)
Part model no.: B120



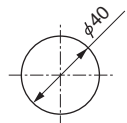
L type bracket (-B3)
Part model no.: B130



● W3100

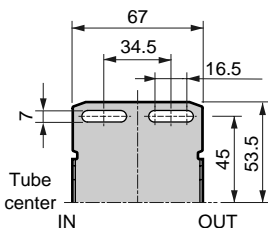


Panel cut dimension

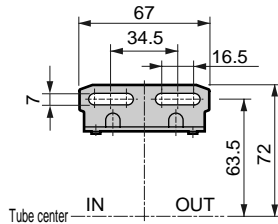


Panel plate thickness:

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



L type bracket (-B3)
Part model no.: B330



Pressure gauge attached optional dimensions table

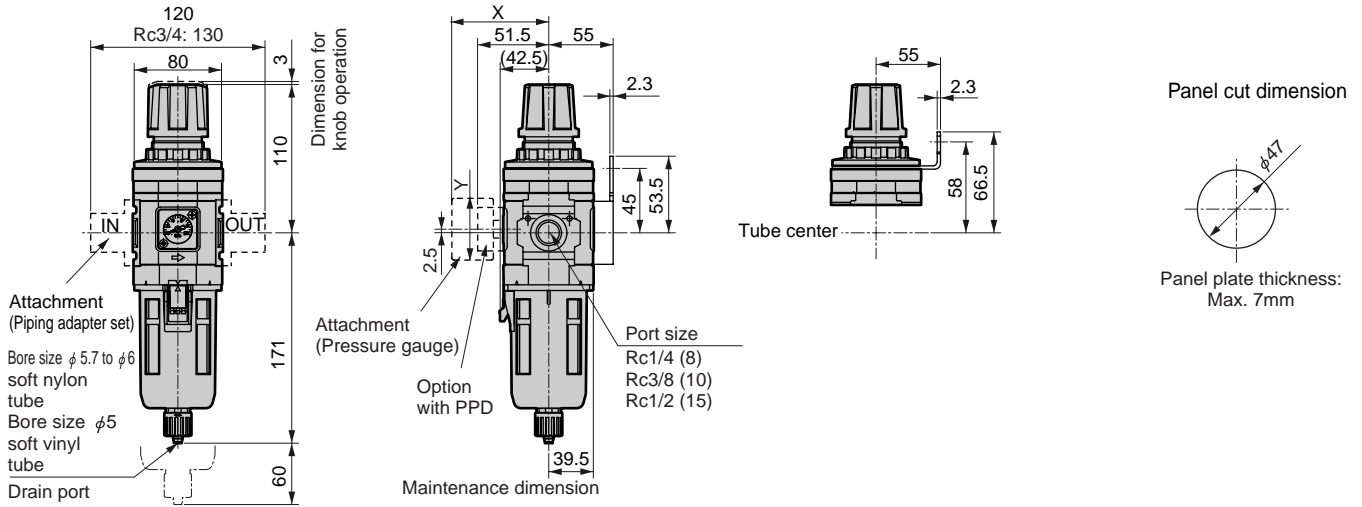
| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (69.5) | φ 43.5 |
| G59P | (72) | φ 52 |
| G40P | (71.5) | φ 42.5 |
| G50P | (71.5) | φ 52.5 |
| G41P | (70) | φ 42 |
| G52P | (82) | φ 52.5 |

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

Dimensions

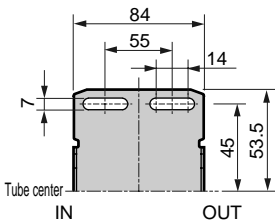


● W4100

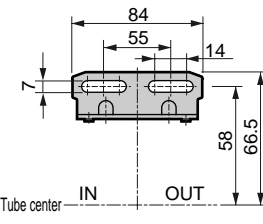


| |
|-----------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro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

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



L type bracket (-B3)
Part model no.: B430

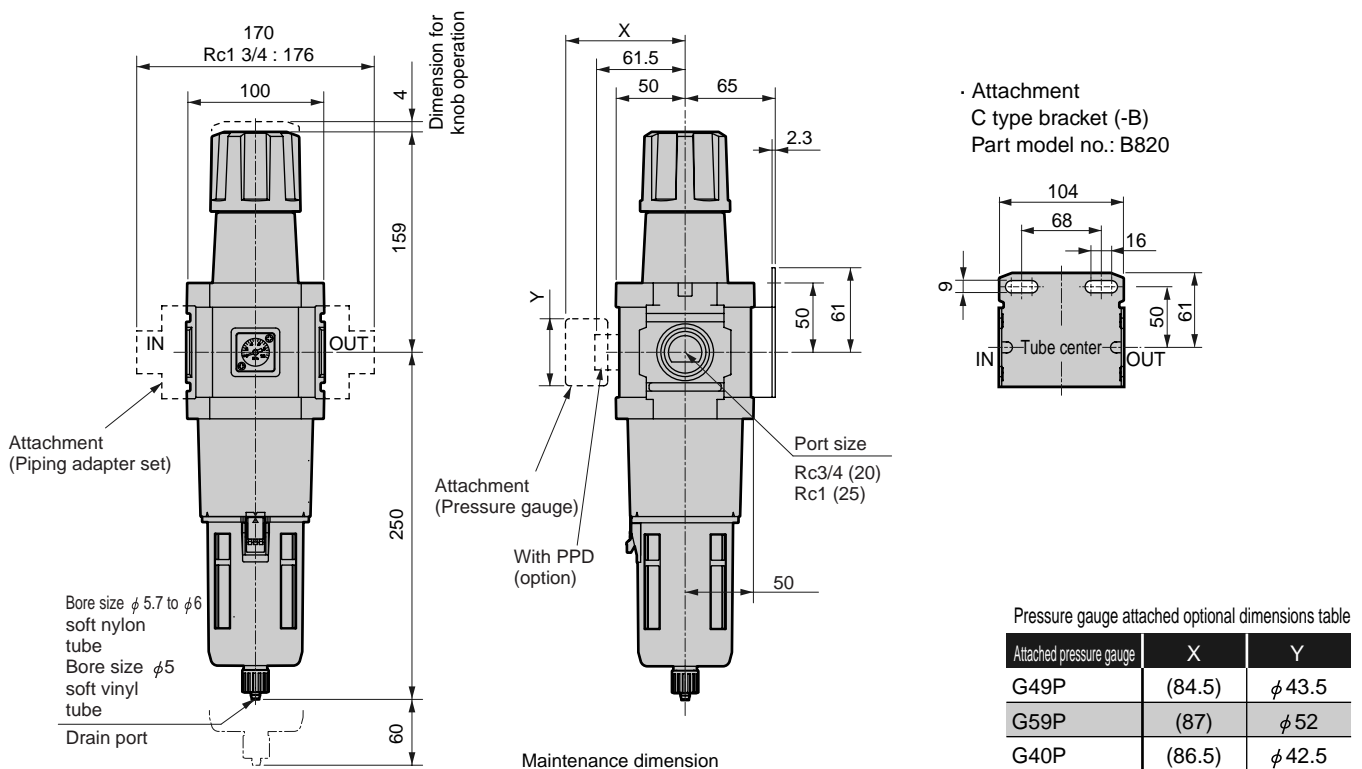


Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------------|
| G49P | (74.5) | ϕ 43.5 |
| G59P | (77) | ϕ 52 |
| G40P | (76.5) | ϕ 42.5 |
| G50P | (76.5) | ϕ 52.5 |
| G41P | (75) | ϕ 42 |
| G52P | (86) | ϕ 52.5 |

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

● W8100



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|-------------|
| G49P | (84.5) | ϕ 43.5 |
| G59P | (87) | ϕ 52 |
| G40P | (86.5) | ϕ 42.5 |
| G50P | (86.5) | ϕ 52.5 |
| G41P | (85) | ϕ 42 |
| G52P | (98) | ϕ 52.5 |

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

| |
|----------------------------------|
| 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/F3000/F4000 F6000/F8000-W Series

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

JIS symbol



Specifications

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

Note 1: Up to 170 m³ is stored only with the manual drain cock type.

Note 2: When "F1" with an automatic drain is selected for the F1000-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 426) 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: When "F1" 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 4: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15 MPa.

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

- Dust generation preventing structure for use in cleanrooms

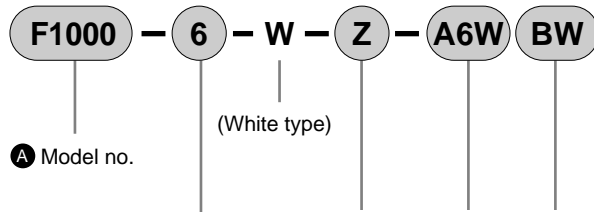
F*000 P7*

- Max. usage rate with F1000-W-F1 automatic drain

(m³/min. (ANR))

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

How to order



* Refer to page 244 for the explanation of the option.

| A Model no. | | | | |
|-------------|-------|-------|--------|-------|
| F1000 | F3000 | F4000 | F6000 | F8000 |
| | | | Note 2 | |

| Symbol | Descriptions | | | | | |
|--------------------|--------------|---|---|---|---|---|
| B Port size | | | | | | |
| 6 | Rc1/8 | ● | | | | |
| 8 | Rc1/4 | ● | ● | | | |
| 10 | Rc3/8 | | ● | ● | | |
| 15 | Rc1/2 | | | ● | | |
| 20 | Rc3/4 | | | | ● | ● |
| 25 | Rc1 | | | | ● | ● |

| C Option | | | | | | |
|---------------------------------|----------------------|------------------------------------------------------------------------------|---|---|---|---|
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● |
| | F | Automatic drain with manual override (NO type: Exhaust w/o pressurized) | | ● | ● | ● |
| | F1 ^{Note 1} | Automatic 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 | | ● | ● | ● |
| Element | Blank | 5 μm | ● | ● | ● | ● |
| | Y | 0.3 μm (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) | ● | ● | ● | ● |

| D Piping adapter set (attached) | | Pages 456, 457 | | | | |
|---------------------------------|----------------------------|----------------|---|---|---|---|
| Blank | Not attached | ● | ● | ● | ● | ● |
| A6W | Rc1/8 piping adapter set | ● | | | | |
| A8W | Rc1/4 piping adapter set | ● | ● | ● | | |
| A10W | Rc3/8 piping adapter set | ● | ● | ● | | |
| A15W | Rc1/2 piping adapter set | | ● | ● | | |
| A20W | Rc3/4 piping adapter set | | | ● | ● | ● |
| A25W | Rc1 piping adapter set | | | | ● | ● |
| A32W | Rc1 1/4 piping adapter set | | | | ● | ● |

| E Bracket (attached) | | Page 454 | | | | |
|----------------------|----------------|----------|---|---|---|---|
| Blank | Not attached | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● |

⚠ Note on model no. selection

Note 1: F1000-W-F1 is custom order.
 Note 2: F6000-W is custom order.

Refer to F.R.L. unit Standard type on page 316, for internal structure and dimensions.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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) |

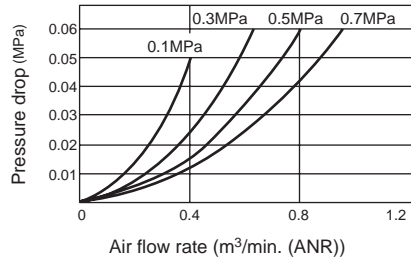
Standard white Series
F.R.L. unit

Ending

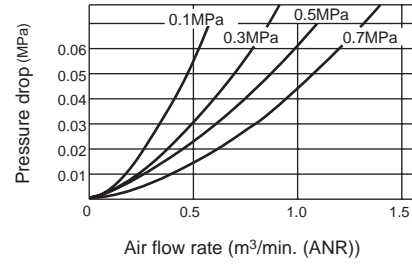
Air Filter Series

Flow characteristic

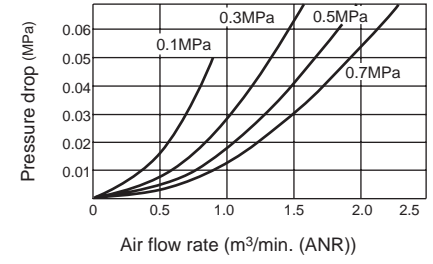
● F1000-6-W



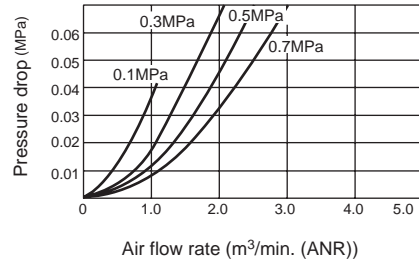
● F1000-8-W



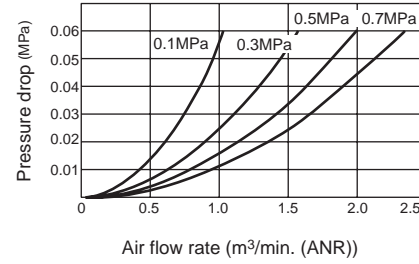
● F3000-8-W



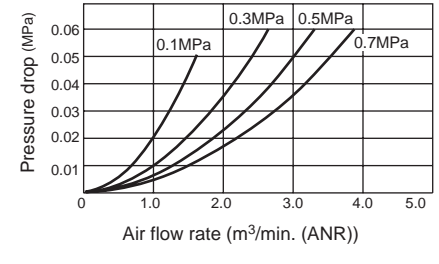
● F3000-10-W



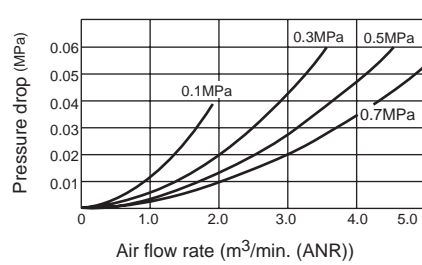
● F4000-8-W



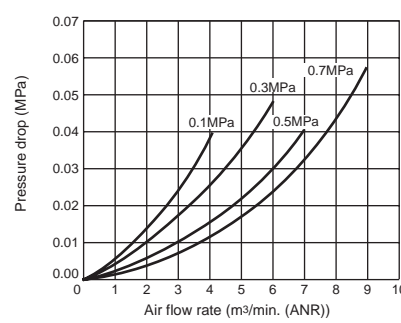
● F4000-10-W



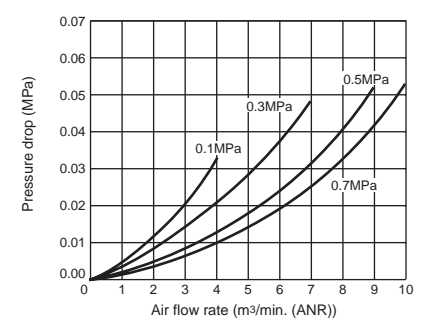
● F4000-15-W



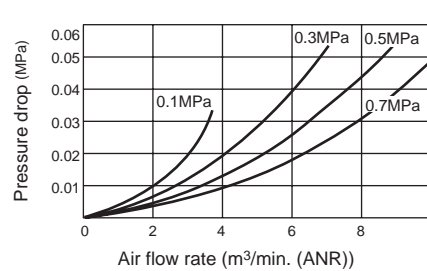
● F6000-20-W



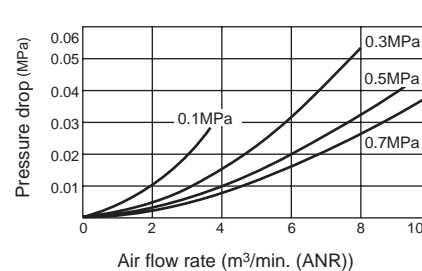
● F6000-25-W



● F8000-20-W



● F8000-25-W



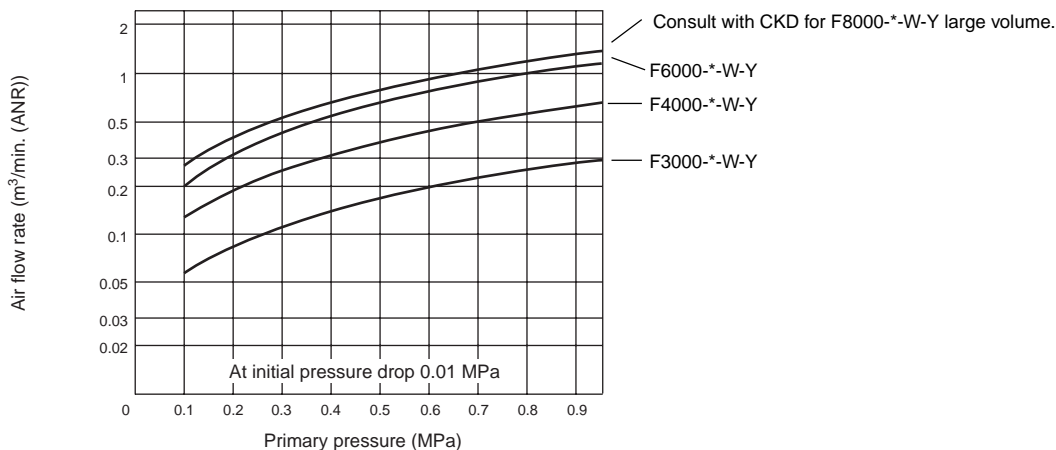
F3000

● F4000.*-W-Y (0.3 μ m element)

F6000

F8000

(Maximum flow rate)

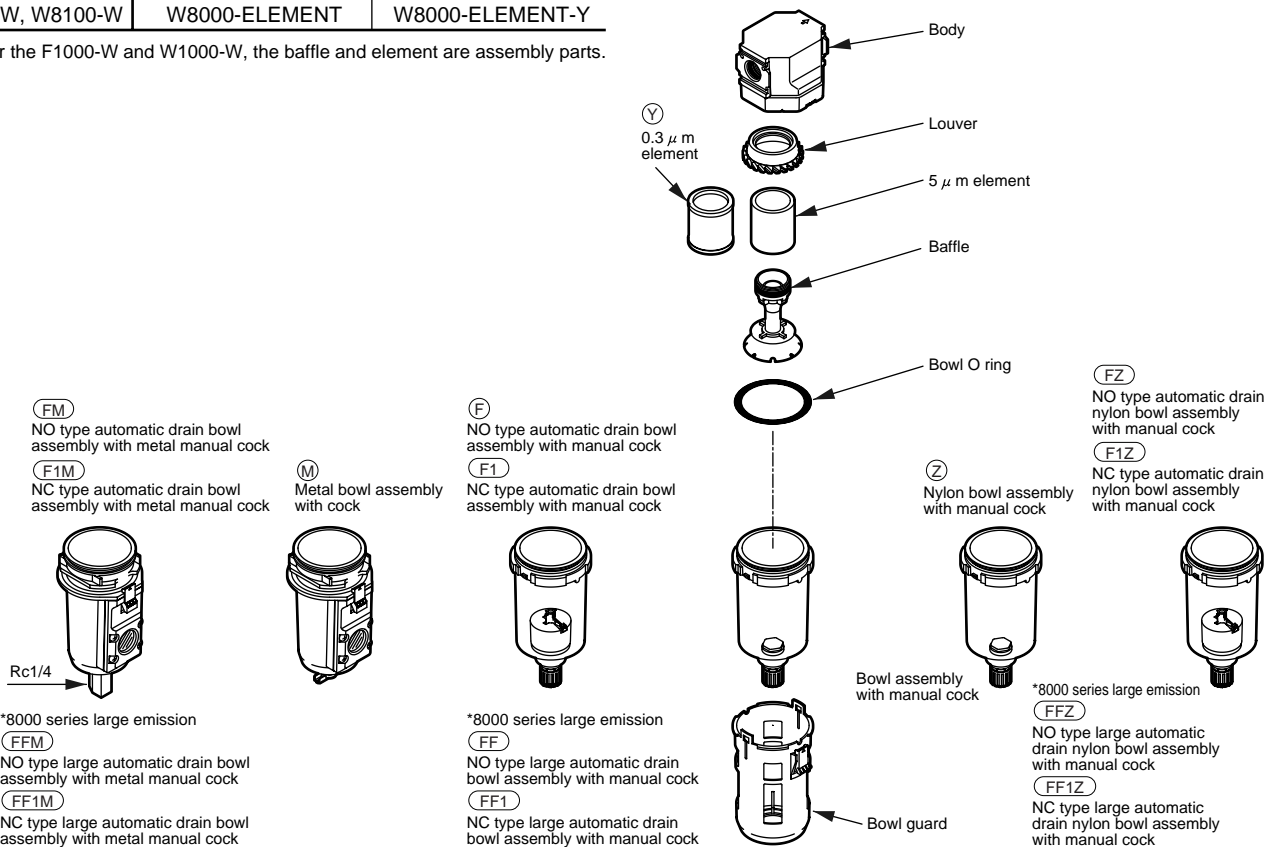


Optional parts diagram

Element

| Element model no. | 5 μ m element | 0.3 μ m element (Y) |
|-------------------|--------------------|---------------------|
| Model | | |
| F1000-W | F1000-ELEMENT-ASSY | - |
| W1000-W, W1100-W | W1000-ELEMENT-ASSY | - |
| F3000-W | F3000-ELEMENT | F3000-ELEMENT-Y |
| W3000-W, W3100-W | W3000-ELEMENT | W3000-ELEMENT-Y |
| F4000-W | F4000-ELEMENT | F4000-ELEMENT-Y |
| W4000-W, W4100-W | W4000-ELEMENT | W4000-ELEMENT-Y |
| F6000-W | F6000-ELEMENT | F6000-ELEMENT-Y |
| F8000-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.



Repair kits

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

| Repair kits model no. | 5 μ m element | 0.3 μ m element (Y) |
|-----------------------|---------------|---------------------|
| Model | | |
| F1000-W Note 1 | F1000-KIT | - |
| F3000-W | F3000-KIT | F3000-KIT-Y |
| F4000-W | F4000-KIT | F4000-KIT-Y |
| F6000-W | F6000-KIT | F6000-KIT-Y |
| F8000-W Note 2 | F8000-KIT | F8000-KIT-Y |

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

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

Bowl guard

| Bowl guard model no. | Polycarbonate bowl | Nylon bowl |
|----------------------------------------------------------------------------------------------|---------------------|-----------------------|
| Model | | |
| F1000-W, W1000-W, W1100-W | F1000-W-BOWL-GUARD | F1000-W-BOWL-GUARD-Z |
| L1000-W | L1000-W-BOWL-GUARD | L1000-W-BOWL-GUARD-Z |
| M1000-W | M1000-W-BOWL-GUARD | M1000-W-BOWL-GUARD-Z |
| 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".

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 white Series F.R.L. unit

Air Filter Series

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

| | Bowl assembly | PC bowl assembly with manual cock | PA bowl assembly with manual cock | Metal bowl assembly with manual cock | NO type automatic drain PC bowl assembly with manual cock | NC type automatic drain PC bowl assembly with manual cock | NO type automatic drain PA bowl assembly with manual cock | NC type automatic drain PA bowl assembly with manual cock | NO type automatic drain metal bowl assembly with metal manual cock | NC type automatic drain metal bowl assembly with metal manual cock |
|-----------------------------|---------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| | Model | | | | | | | | | |
| Refrigerating type dryer | F1000-W, W1000-W | F1000-W-BOWL | F1000-W-BOWL-Z | - | - | F1000-W-BOWL-BOWL-GUARD-F1 <small>Note 3</small> | - | F1000-W-BOWL-BOWL-GUARD-F1Z <small>Note 3</small> | - | - |
| Desiccant type dryer | M1000-W, W1100-W | | | | | | | | | |
| High polymer membrane dryer | F3000-W, W3000-W | F3000-W-BOWL | F3000-W-BOWL-Z | F3000-W-BOWL-M | *F3000-W-BOWL-F | M3000-W-BOWL-F1 | *F3000-W-BOWL-FZ | M3000-W-BOWL-F1Z | *F3000-W-BOWL-FM | M3000-W-BOWL-F1M |
| Air filter | *M3000-W, W3100-W | | | | | | | | | |
| Auto. drain / others | F4000-W, F6000-W, F8000-W, W4000-W | F4000-W-BOWL | F4000-W-BOWL-Z | F4000-W-BOWL-M | *F4000-W-BOWL-F | M4000-W-BOWL-F1 | *F4000-W-BOWL-FZ | M4000-W-BOWL-F1Z | *F4000-W-BOWL-FM | M4000-W-BOWL-F1M |
| F.R.L. (Module unit) | W8000-W, W4100-W, W8100-W, *M4000-W, *M6000-W, *M8000-W | | | | | | | | | |
| F.R.L. (Separate) | | | | | | | | | | |
| Compact F.R. | | | | | | | | | | |
| Precise regulator | | | | | | | | | | |
| F.R.L. (Related products) | | | | | | | | | | |
| Clean F.R. | | NO type large automatic drain PC bowl assembly with manual cock | NC type large automatic drain PC bowl assembly with manual cock | NO type large automatic drain PA bowl assembly with manual cock | NC type large automatic drain PA bowl assembly with manual cock | | NO type large automatic drain metal bowl assembly with metal manual cock | NC type large automatic drain metal bowl assembly with metal manual cock | | |
| Electro pneumatic regulator | | | | | | | | | | |
| Air booster | *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 | | |

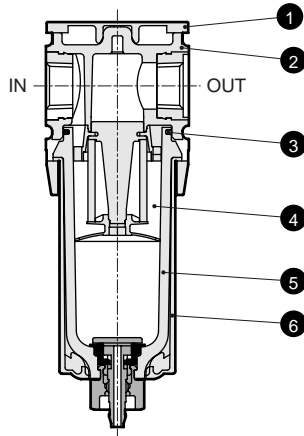
Note 1: The NO automatic drain cannot be selected for the oil mist filter M1000-W, M3000-W, M4000-W, M6000-W, or M-8000W.

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

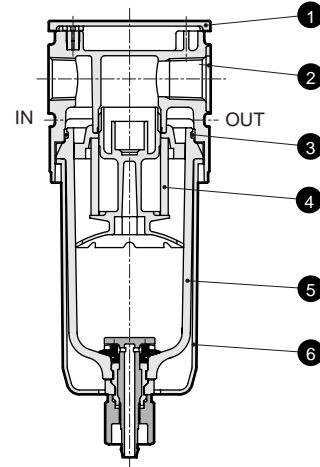
Note 3: The bowl assembly for the 1000 Series F1 is sold as a set with the bowl guard.

Internal structure and parts list

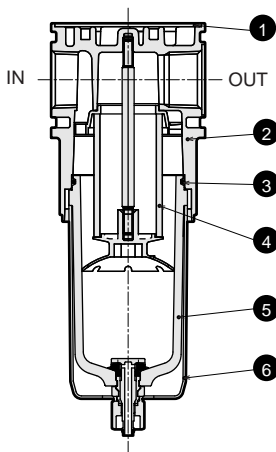
● F1000



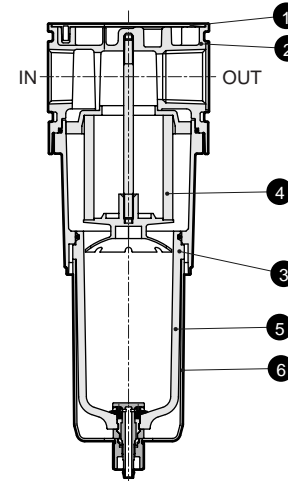
● F3000/F4000



● F6000



● F8000



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

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

Note 2: F1000 is element assembly.

Note 3: Refer to page 324 for repair kits.

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

Standard Series
F.R.L. unit

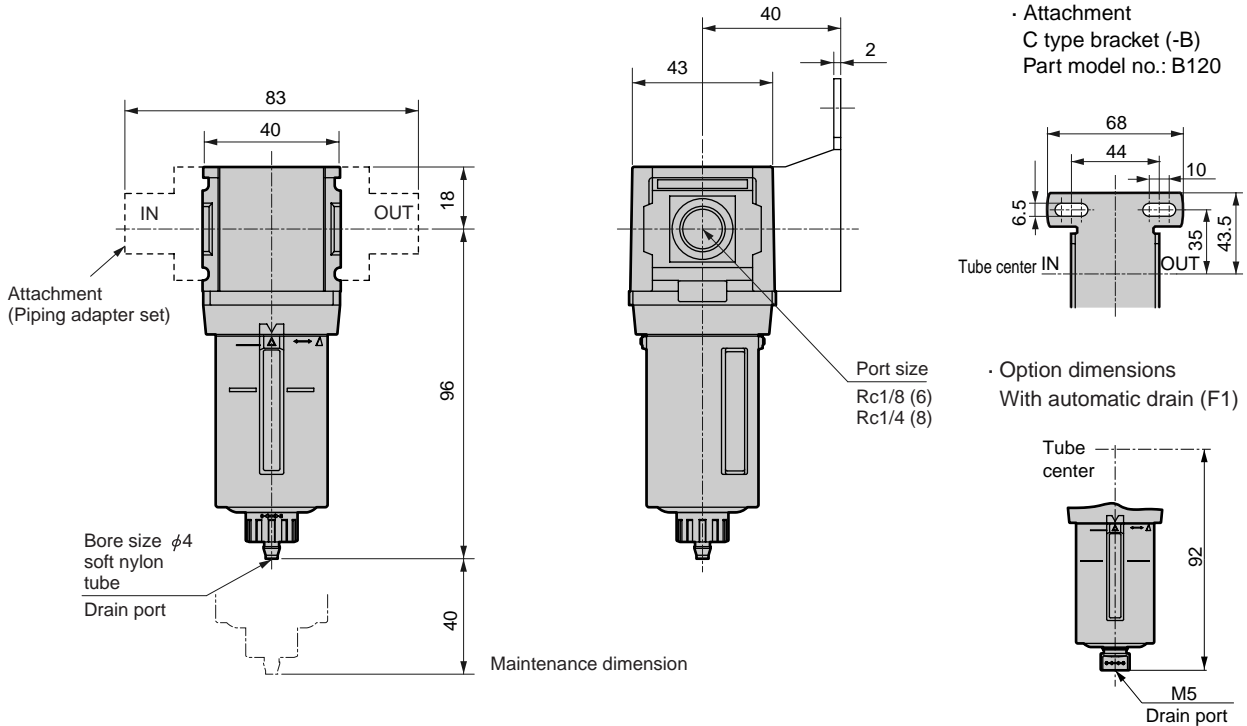
Air Filter Series

Dimensions

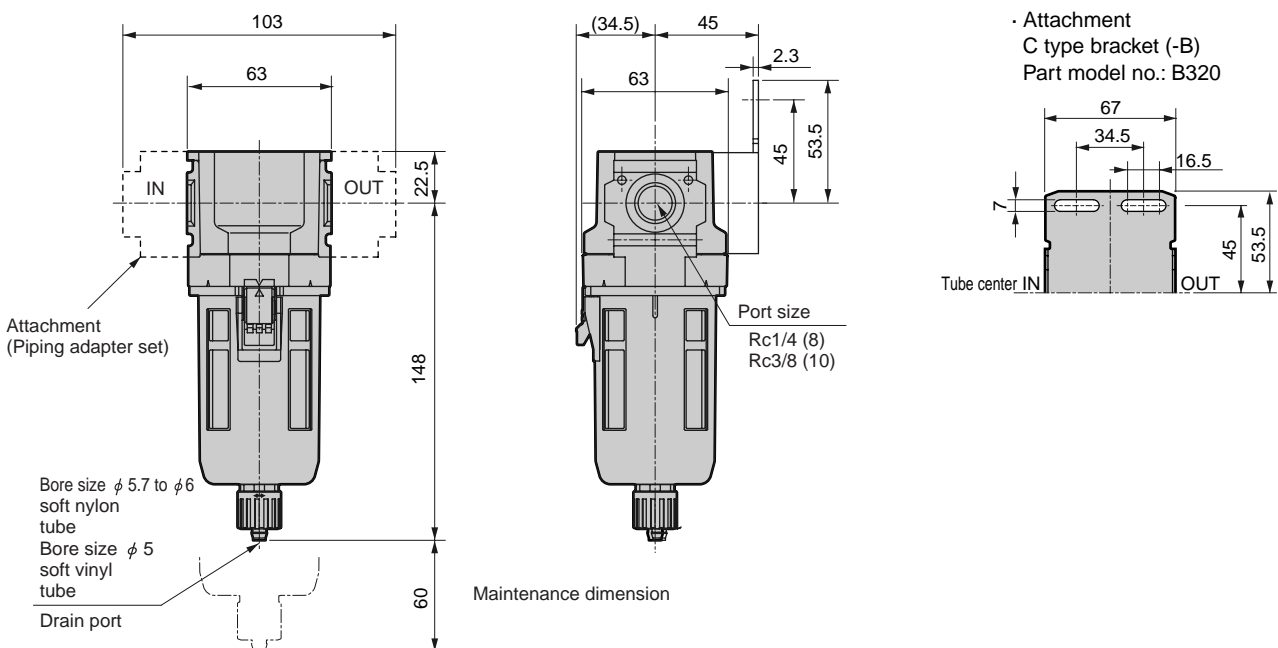


| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro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

● F1000



● F3000



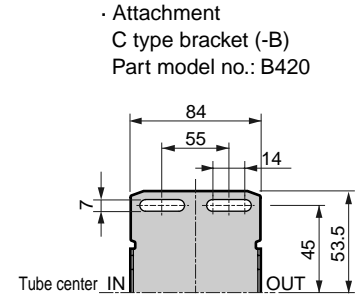
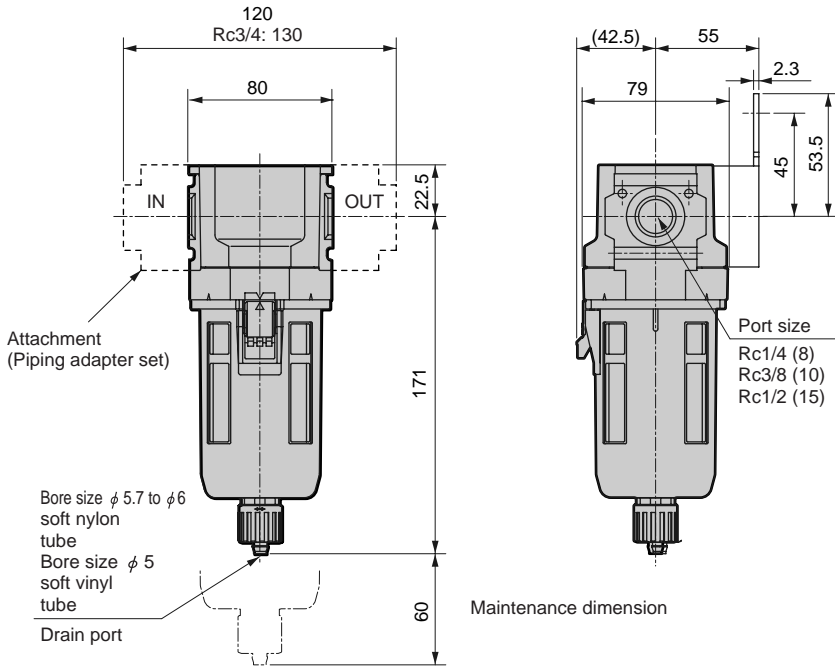
● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or automatic drain is installed.

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

Dimensions

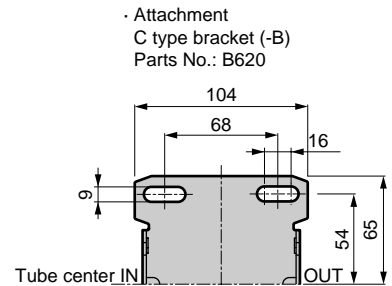
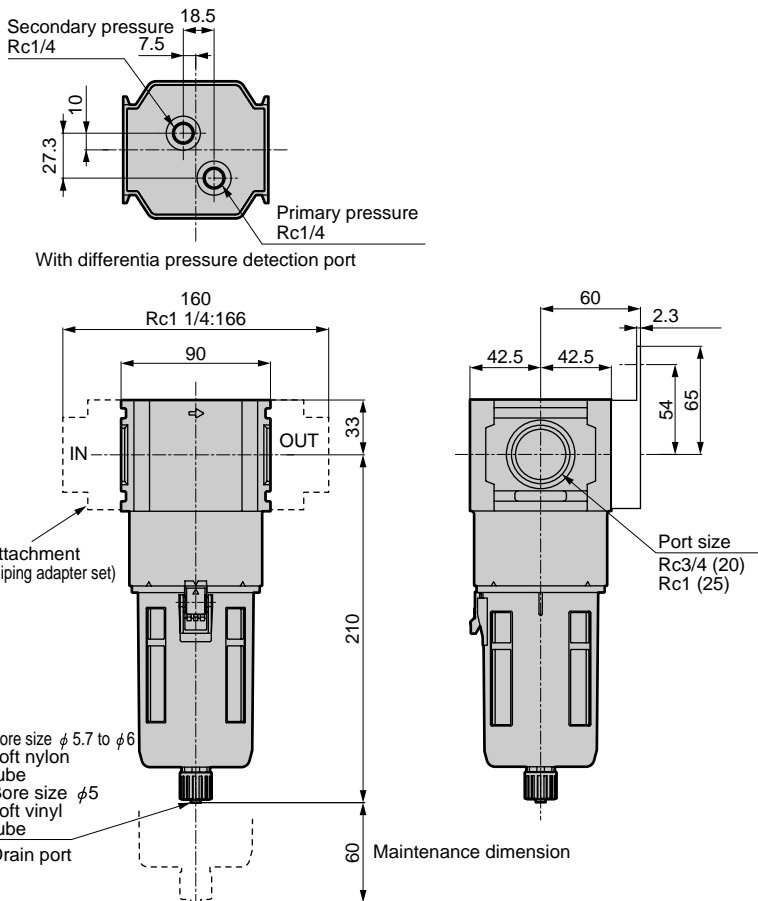


● F4000



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

● F6000



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

Ending

Standard Series
F.R.L. unit

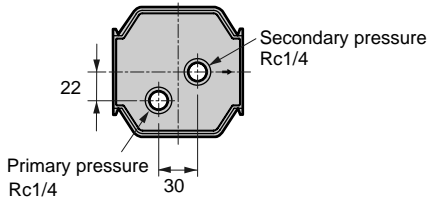
Air Filter Series

Dimensions

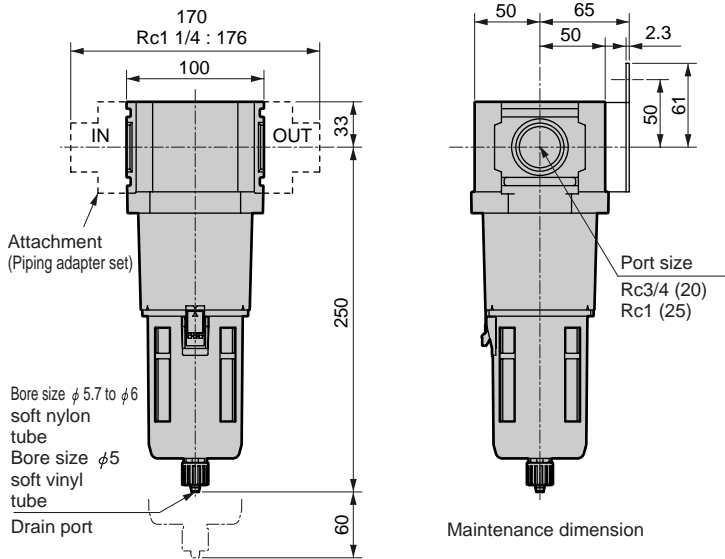
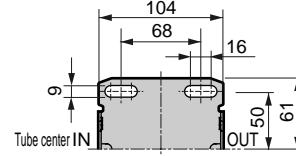


● F8000

With differential pressure detection port (Q)



· Attachment
C type bracket (-B)
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 adapter set attachments cannot be used at the same time.

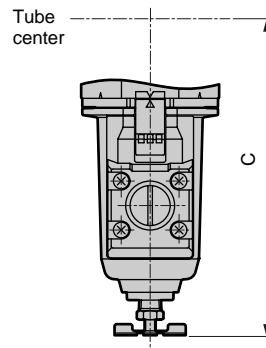
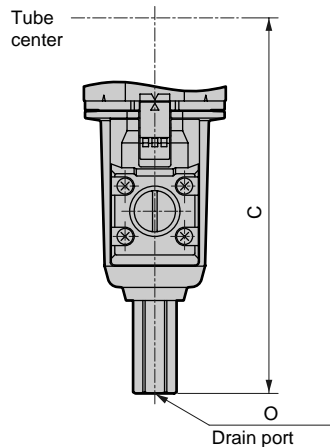
Optional dimensions



● Metal bowl F3000/F4000/F6000/F8000 (option)

With automatic drain (FM, F1M)

Manual drain cock (M)



Dimensions

| | With automatic drain | | Manual cock |
|-------|----------------------|-------|-------------|
| | C | O | C |
| F3000 | 164 | Rc1/4 | 143.5 |
| F4000 | 187 | Rc1/4 | 166.5 |
| F6000 | 226 | Rc1/4 | 205 |
| F8000 | 266 | Rc1/4 | 245.5 |

Refrigerating type dryer
Desiccant type dryer
High polymer membrane 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




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 |
|-----------------------------------------------------|------------------------------------------------------------|--------------------------------|-------------------------------------|--------------------------------|
| Working fluid | Compressed air | | | |
| Max. working pressure MPa | 1.0 | | | |
| Withstanding pressure MPa | 1.5 | | | |
| Working temperature °C | 5 to 60 | | | |
| Minimum drip flow Note 1 m ³ /min. (ANR) | 0.015 | 0.03 | 0.065 | 0.065 |
| Oil capacity cm ³ | 20 | 85 | 170 | 170 (MAX360) |
| Use oil | Turbine oil Class 1 ISO VG32 (spindle oil can not be used) | | | |
| Port size Rc | 1/8, 1/4 (3/8 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8, 1/2 (3/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) |
| 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

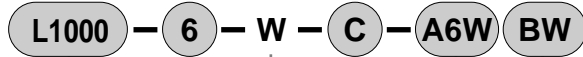
| Descriptions | |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Control point | 1 point |
| Operation | Switch turns off when float rises (oil level detected), and turns on when float lowers (no oil level detected) |
| Max. use voltage | 240 VAC, 200 VDC |
| Max. contact capacitance | 50 VA or 50 W, whichever is smaller |
| Max. open / close current | 0.5A |
| Withstanding pressure between contacts | 400 VDC for one minute and leak current 1mA or less |
| Contact resistance | 220m Ω or less (between terminal sections) |
| Insulation resistance | 100M Ω 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

* Refer to page 244 for the explanation of the option.

A Model no.

| Model no. | L1000 | L3000 | L4000 | L8000 |
|----------------------------------|-------|-------|-------|-------|
| Refrigerating type dryer | | | | |
| Desiccant type dryer | | | | |
| High polymer membrane 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 | | | | |



A Model no.

B Port size

C Option

D Piping adapter set (Attached)

E Bracket (Attached)

| Symbol | Descriptions | L1000 | L3000 | L4000 | L8000 | |
|------------------------------------------------------------------------------------------|--------------------------|------------------------------|-------|-------|-------|---|
| B Port size | | | | | | |
| 6 | Rc1/8 | ● | | | | |
| 8 | Rc1/4 | ● | ● | ● | | |
| 10 | Rc3/8 | | ● | ● | | |
| 15 | Rc1/2 | | | ● | | |
| 20 | Rc3/4 | | | | ● | |
| 25 | Rc1 | | | | ● | |
| C Option | | | | | | |
| Drainage | Blank | Without manual cock | ● | ● | ● | ● |
| | C | with manual cock | ● | ● | ● | ● |
| | LL ^{Note 1} | With float switch | | ● | ● | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● |
| | M | Metal bowl | | ● | ● | ● |
| Flow direction | Blank | Standard flow (left → right) | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● |
| D Piping adapter set (attached) Pages 456, 457 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | |
| A6W | 1/8 piping adapter set | ● | | | | |
| A8W | 1/4 piping adapter set | ● | ● | ● | | |
| A10W | 3/8 piping adapter set | ● | ● | ● | | |
| A15W | 1/2 piping adapter set | | ● | ● | | |
| A20W | 3/4 piping adapter set | | | ● | ● | |
| A25W | 1 piping adapter set | | | | ● | |
| A32W | 1 1/4 piping adapter set | | | | ● | |
| E Bracket (attached) Page 454 | | | | | | |
| Blank | Not attached | ● | ● | ● | ● | |
| BW | C type bracket | ● | ● | ● | ● | |

Drainage and bowl material combination (Item "C" in How to Order)

Option ● With float switch

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

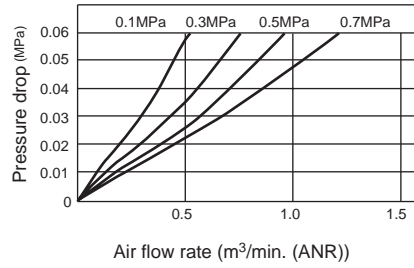
Refer to F.R.L. unit Standard type on page 360, for internal structure and dimensions.

Lubricator Series

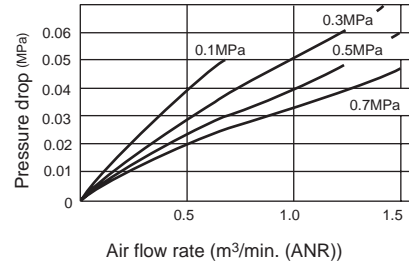
Flow characteristic

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

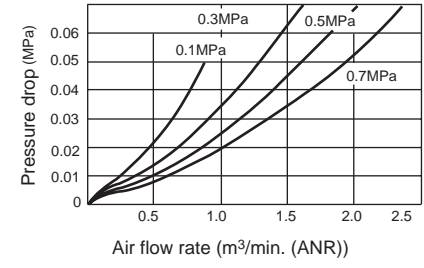
● L1000-6-W



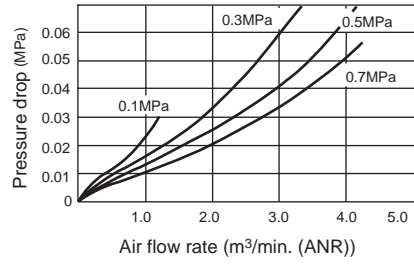
● L1000-8-W



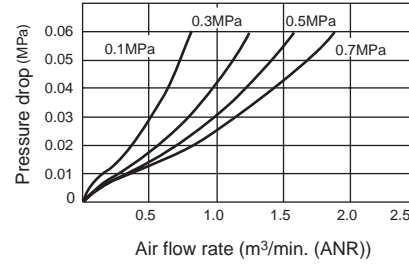
● L3000-8-W



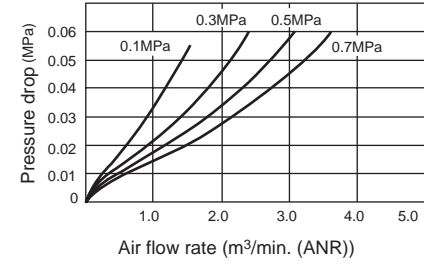
● L3000-10-W



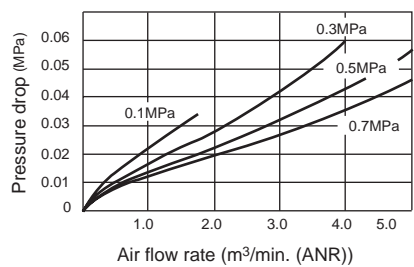
● L4000-8-W



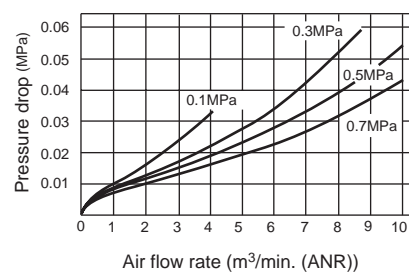
● L4000-10-W



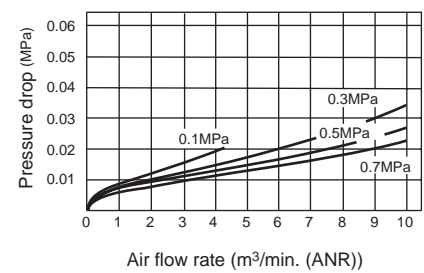
● L4000-15-W



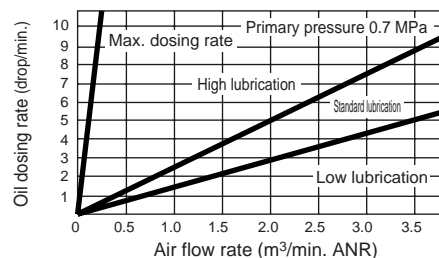
● L8000-20-W



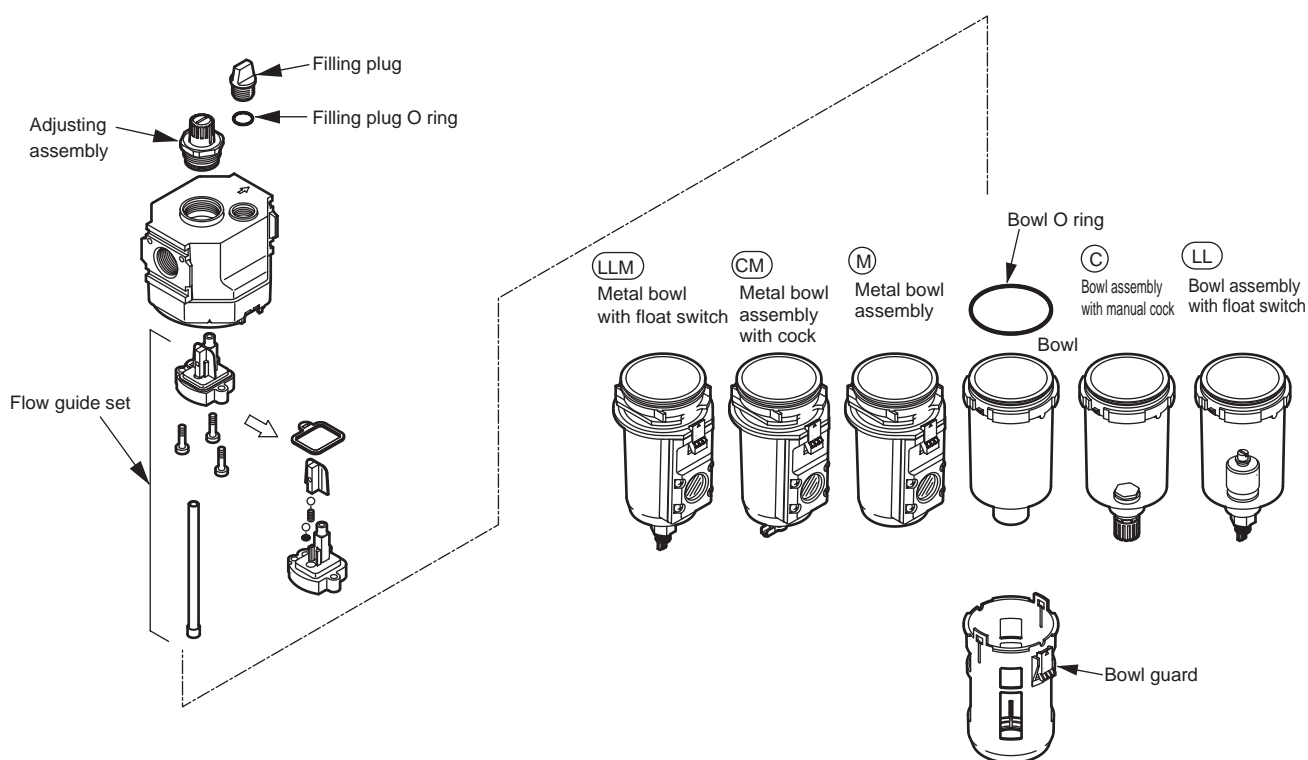
● L8000-25-W



Oil dosing rate



Optional parts diagram



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

| Model no. | Repair kits model no. |
|-----------|-----------------------|
| L3000-W | L3000-W-KIT |
| L4000-W | L4000-W-KIT |
| L8000-W | L8000-W-KIT |

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

| Bowl assembly model no. | Polycarbonate bowl without cock (blank) | Nylon bowl without cock (Z) | Metal bowl without cock (M) | Polycarbonate bowl with cock (C) | Nylon bowl with cock (CZ) | Metal bowl with cock (CM) | Polycarbonate bowl with float switch (LL) | Nylon bowl with float switch (LLZ) | Metal bowl with float switch (LLM) |
|-------------------------|-----------------------------------------|-----------------------------|-----------------------------|----------------------------------|---------------------------|---------------------------|-------------------------------------------|------------------------------------|------------------------------------|
| Model no. | | | | | | | | | |
| 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. |
|---------------------------|------------------------------|
| L3000-W, L4000-W, L8000-W | L3000-W-AJ-KIT |

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 |

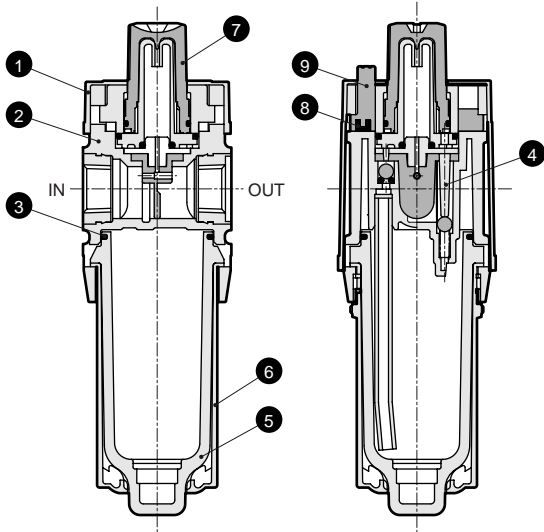
Filling plug set (set of filling plug and filling plug O ring)

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

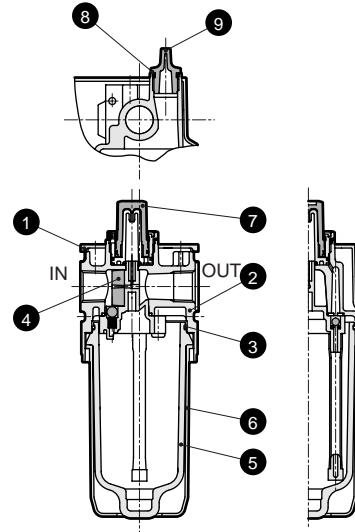
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro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

Internal structure and parts list

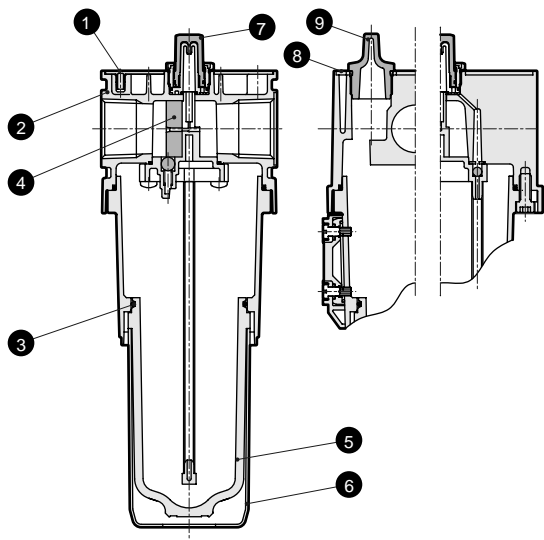
● L1000



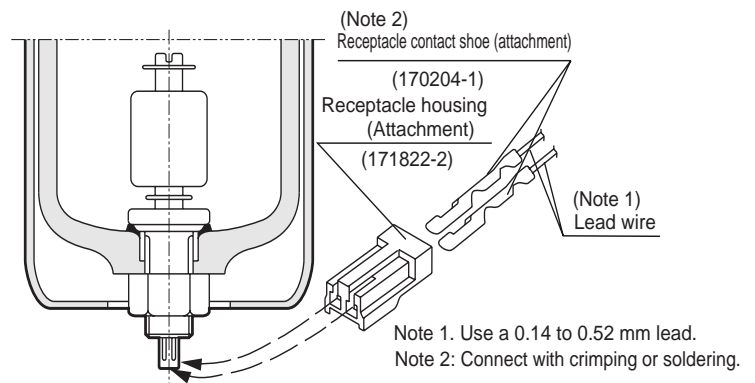
● L3000/L4000



● L8000



● 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 | L3000 | L4000 | L8000 |
| 1 | Plate cover | ABS resin | | | |
| 2 | Body | Polyamide resin, steel | Aluminium 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 | Transparent nylon | | | |
| 8 | O ring | Nitrile rubber | | | |
| 9 | Filling plug | Polyacetal resin | | | |

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

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane 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)

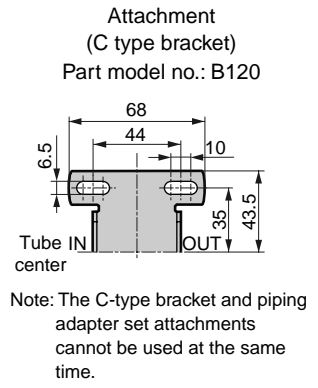
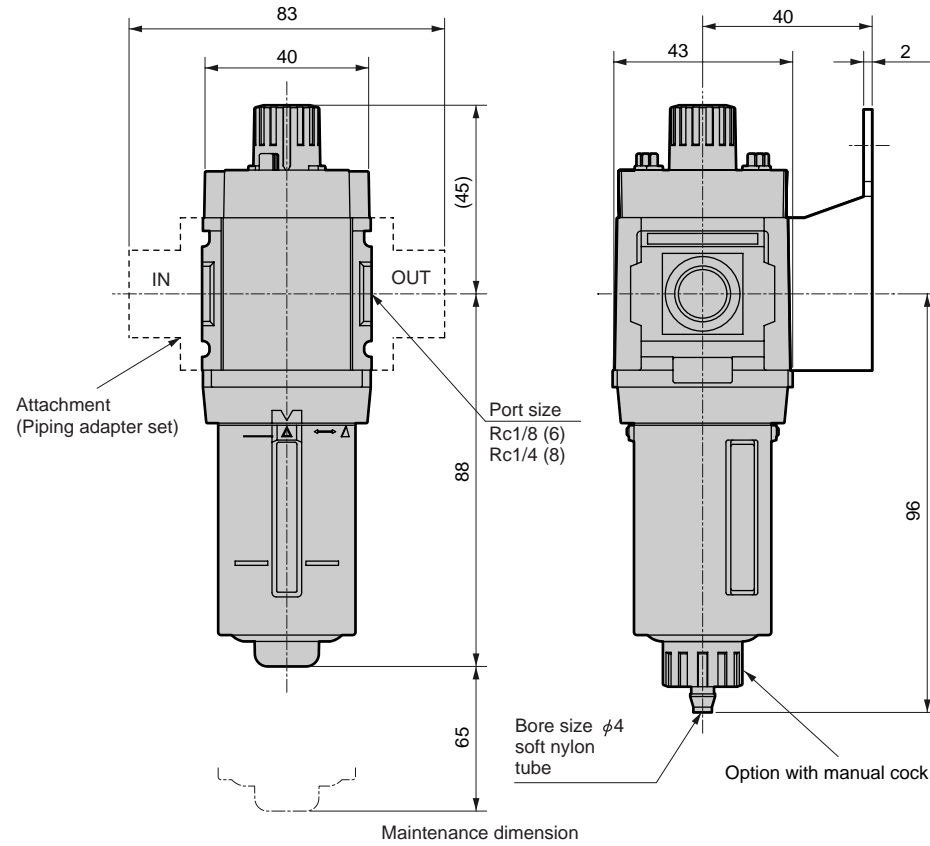
Standard Series
F.R.L. unit

Lubricator Series

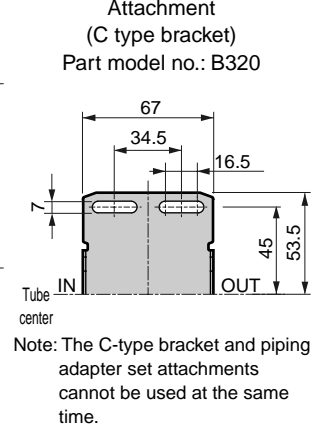
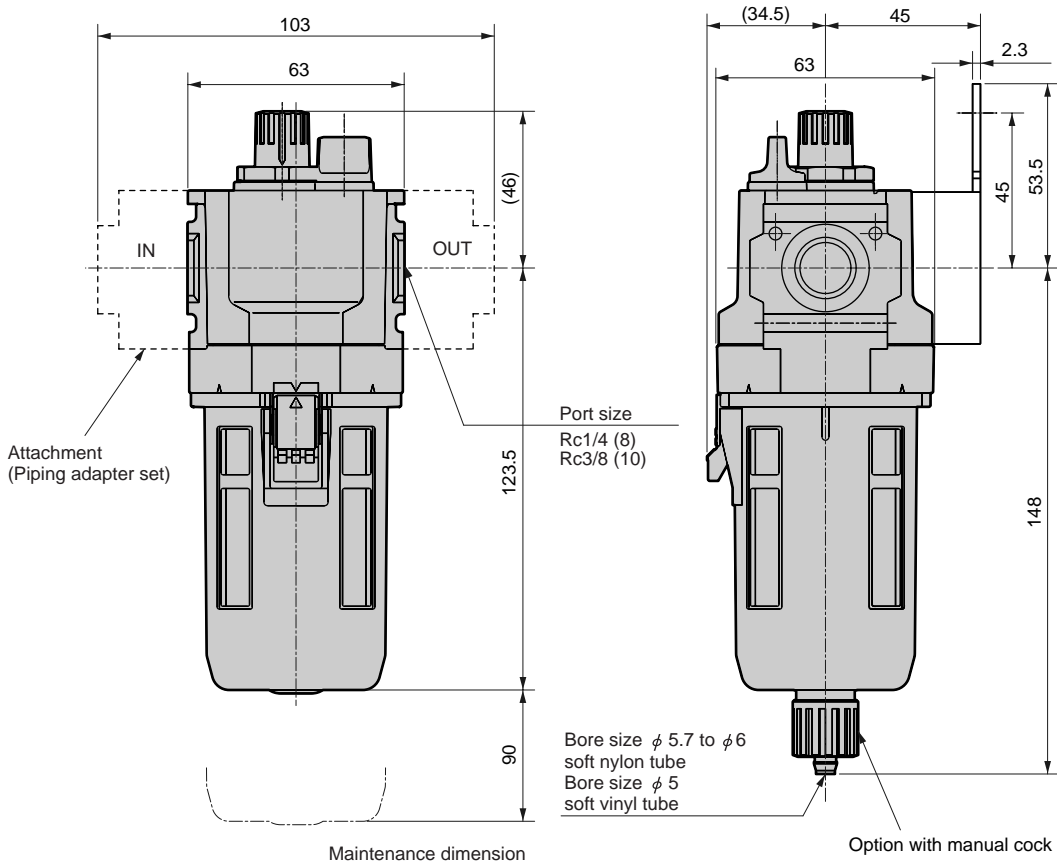
Dimensions



● L1000



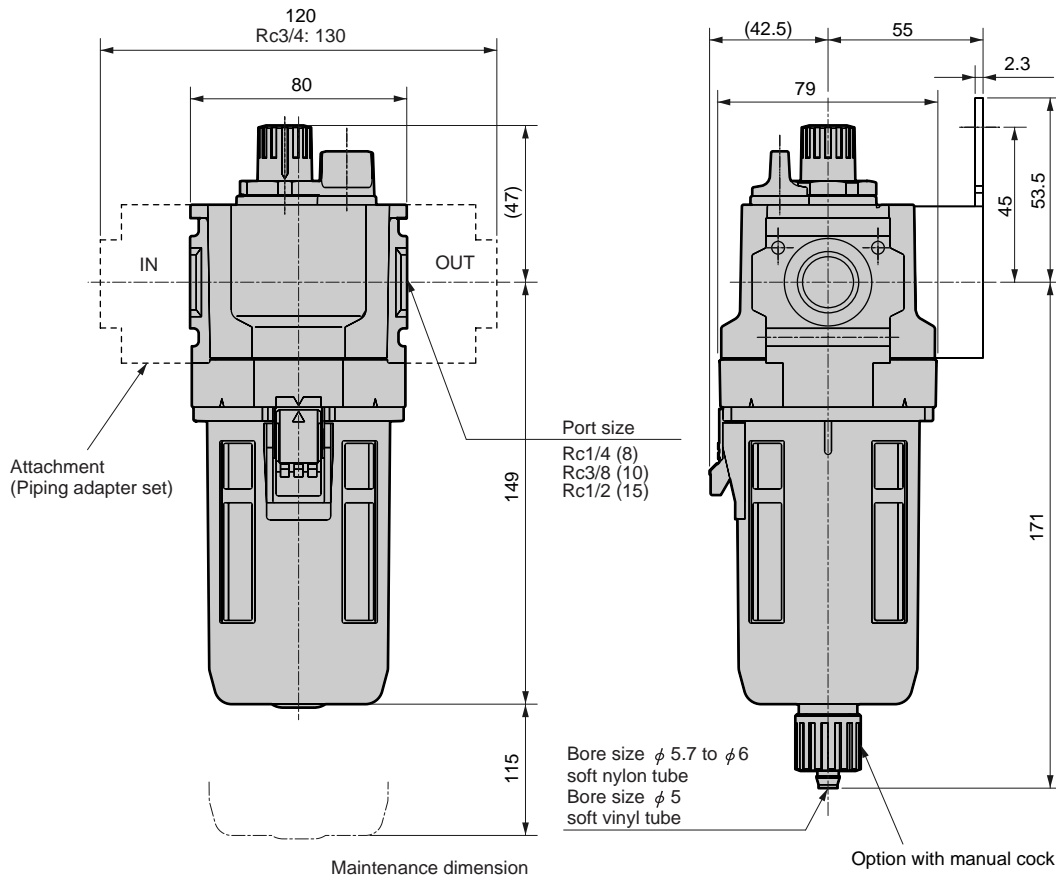
● L3000



Dimensions

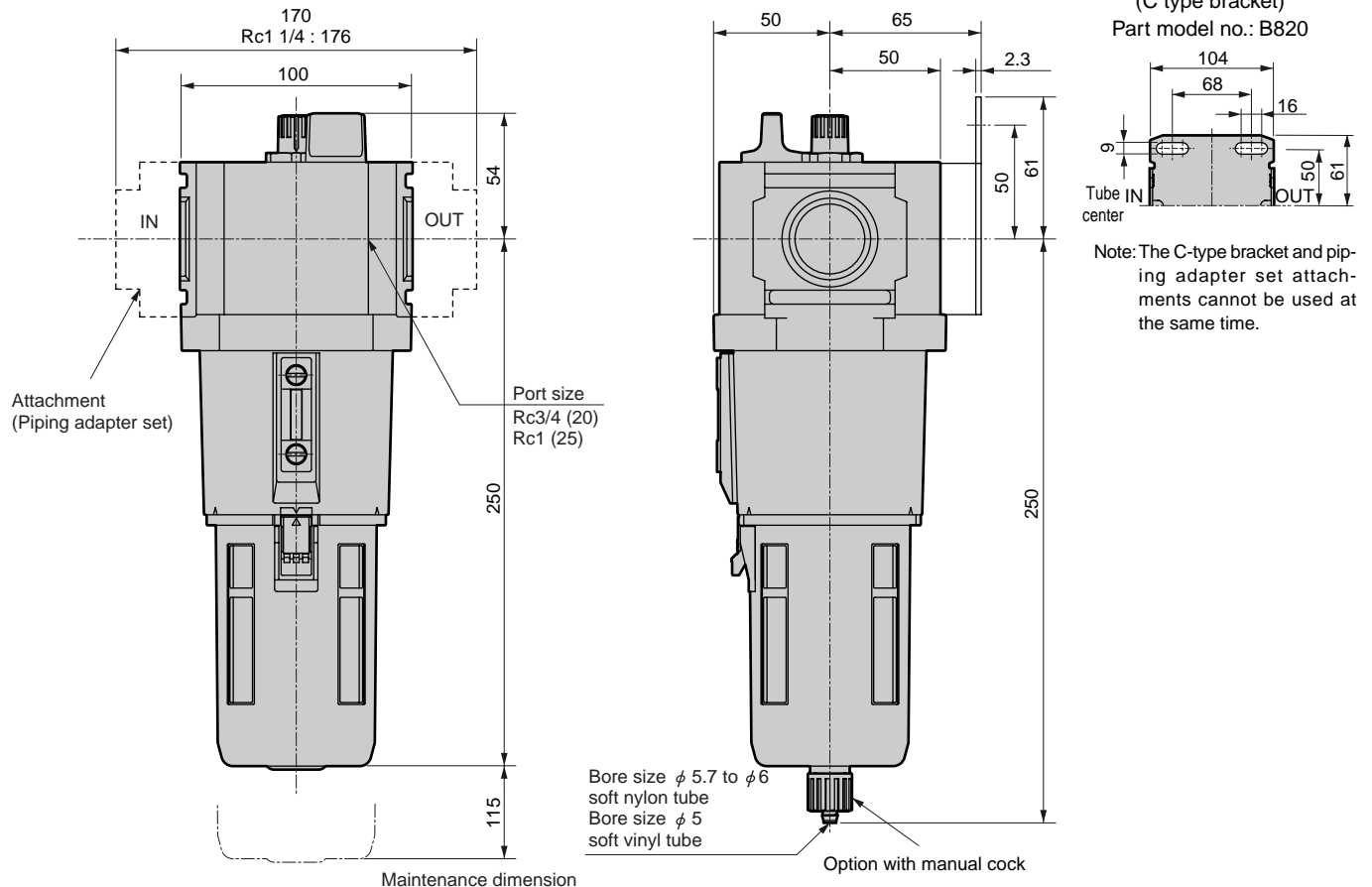


● L4000



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

● L8000



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R.L. |
| 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

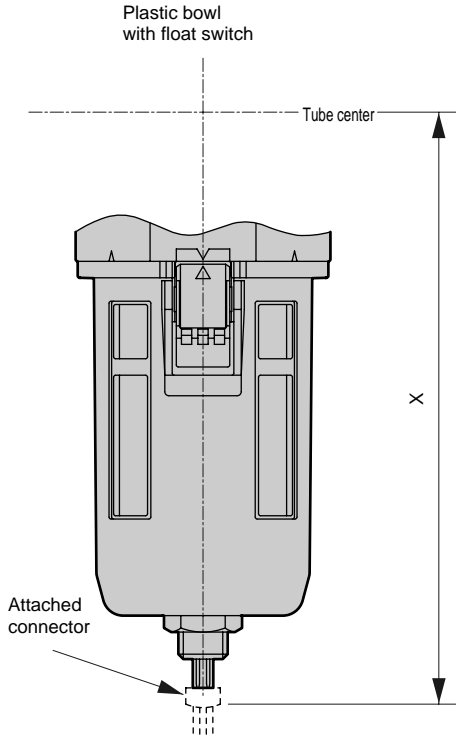
Lubricator Series

Optional dimensions

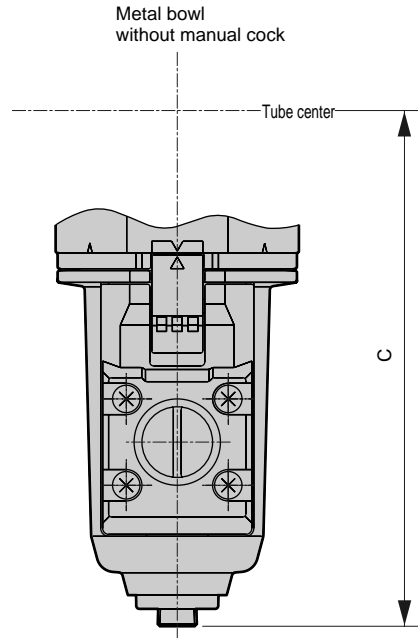


Other options (L3000, 4000, 8000)

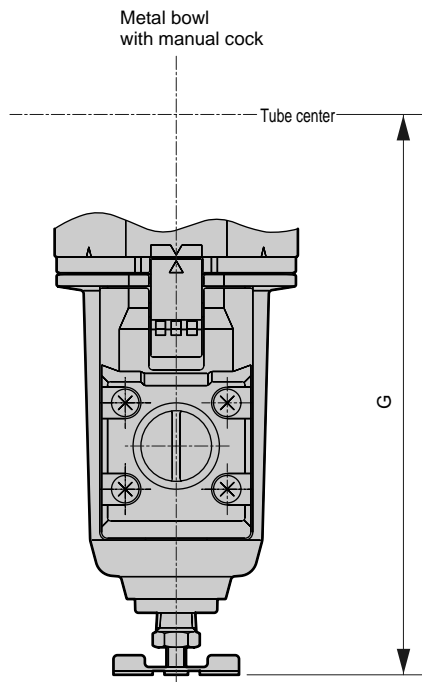
● Plastic bowl



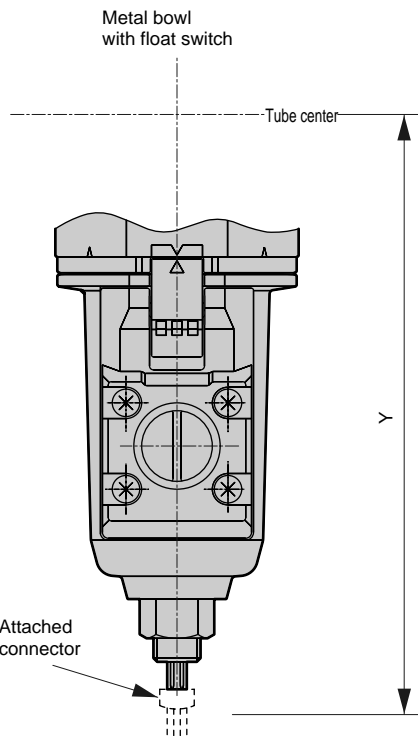
● Metal bowl without manual cock



● Metal bowl with manual cock



● Metal bowl with float switch



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

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |



Oil mist filter standard white Series M1000/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 | M3000-W | M4000-W | M6000-W | M8000-W |
|--------------------------------|-----------------------------------|-----------------------------------|----------------------------------------|-----------------------------------|-----------------------------------|
| Working fluid | Compressed air | | | | |
| Working pressure range MPa | 0.1 to 1.0 Note 7, 8 | | | | |
| Withstanding pressure MPa | 1.5 Note 8 | | | | |
| Drain capacity cm ³ | 3 | 45 | 80 | 80 | 80 |
| Port size Rc | 1/8, 1/4 (3/8 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8, 1/2 (3/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) |
| Product weight kg | 0.096 | 0.28 | 0.52 | 0.95 | 1.35 |
| Standard accessories | Bowl guard | | | | |

| Mantle option name | Blank (M type) | S (S type) | X (X type) |
|------------------------------------------------------|----------------------------------------------|-------------------------------|-------------------------------------------------|
| Maximum flow rate ^{Note 1} ℓ /min. (ANR) | M1000-*W 150 Note 7 M3000-*W 360 | S 150 Note 7 | X 150 |
| Primary pressure 0.7 MPa | M4000-*W 825 | 1000 | 1000 |
| Pressure drop 0.01 MPa | M6000-*W 1270 M8000-*W 2600 | 1400 2900 | 1400 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 2, Note 3} | 0.5 or less ^{Note 2} | 0.003 or less ^{Note 5} |
| Mantle (element) change | 1 year (6000 hours) or pressure drop 0.1 MPa | | - ^{Note 6} |

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

Note 3: Install an oil mist filter (S type) as a prefilter on the primary side to prevent early clogging.

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: When an oil mist filter (M Series M type) is installed on the primary side.

Note 6: 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.

Note 7: 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 432) for the maximum working flow.

Note 8: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15MPa.

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

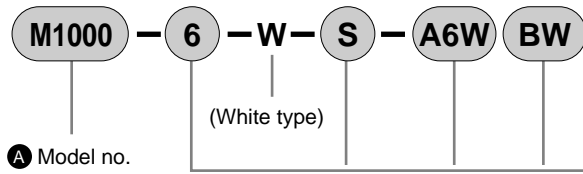
- Dust generation preventing structure for use in cleanrooms

M*000 P7*

Oil Mist Filter Series

How to order

How to order



* Refer to page 244 for the explanation of the option.

| A Model no. | | | | |
|-------------|-------|-------|-------|-------|
| M1000 | M3000 | M4000 | M6000 | M8000 |

| Symbol | Descriptions | M1000 | M3000 | M4000 | M6000 | M8000 |
|--------------------|--------------|-------|-------|-------|-------|-------|
| B Port size | | | | | | |
| 6 | Rc1/8 | ● | | | | |
| 8 | Rc1/4 | ● | ● | ● | | |
| 10 | Rc3/8 | | ● | ● | | |
| 15 | Rc1/2 | | | ● | | |
| 20 | Rc3/4 | | | | ● | ● |
| 25 | Rc1 | | | | ● | ● |

| C Option | | | | | | |
|---------------------------------|--------------------------|------------------------------------------------------------------------|---|---|---|---|
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● |
| | F1 <small>Note 1</small> | Auto. drain with manual override (NC type: No exhaust w/o pressurized) | ● | ● | ● | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● |
| | M | Metal bowl | | ● | ● | ● |
| Mantle (Element) | Blank | M type (nominal 0.01 μm; remaining oil 0.1mg/m ³) | ● | ● | ● | ● |
| | S | S type (0.3 μm; remaining oil 1.0mg/m ³) | ● | ● | ● | ● |
| | X | X type (deodorization; remaining oil 0.03mg/m ³) | ● | ● | ● | ● |
| 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) | ● | ● | ● | ● |

| D Piping adapter set (attached) | | Pages 456, 457 | | | | |
|----------------------------------------|----------------------------|----------------|---|---|---|---|
| Blank | Not attached | ● | ● | ● | ● | ● |
| A6W | Rc1/8 piping adapter set | ● | | | | |
| A8W | Rc1/4 piping adapter set | ● | ● | ● | | |
| A10W | Rc3/8 piping adapter set | ● | ● | ● | | |
| A15W | Rc1/2 piping adapter set | | ● | ● | | |
| A20W | Rc3/4 piping adapter set | | | ● | ● | ● |
| A25W | Rc1 piping adapter set | | | | ● | ● |
| A32W | Rc1 1/4 piping adapter set | | | | ● | ● |

| E Bracket (attached) | | Page 454 | | | | |
|-----------------------------|----------------|----------|---|---|---|---|
| Blank | Not attached | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● |

A Model no.

B Port size

C Option

D Piping adapter set (Attached)

E Bracket (Attached)

⚠ Note on model no. selection

Note 1: M1000-W-F1 is custom order.
 Note 2: M6000-W is custom order.

Refer to F.R.L. unit Standard type on page 326, for internal structure and dimensions.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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) |

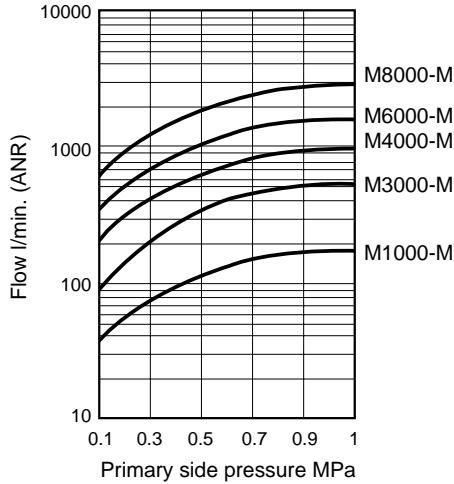
Ending

Standard white Series
F.R.L. unit

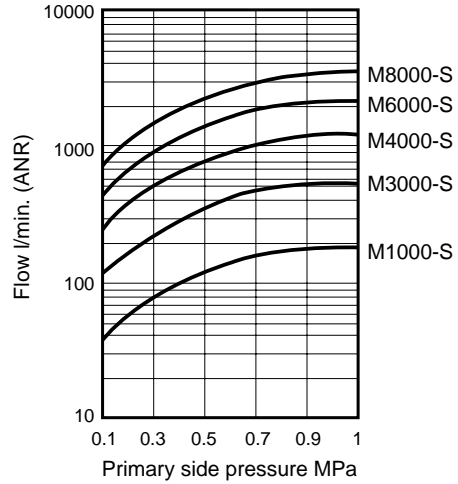
Oil Mist Filter Series

Flow characteristic (max. flow rate)

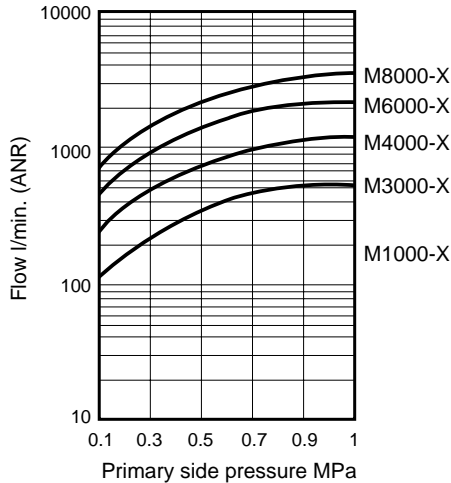
● M*00-W-M



● M*00-W-S

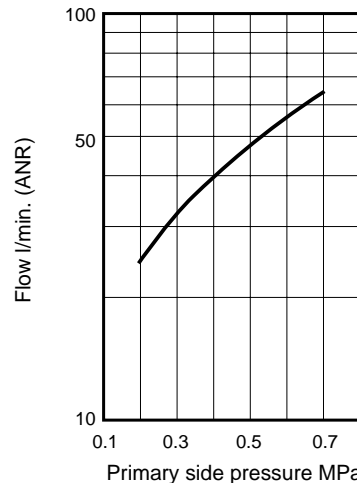


● M*00-W-X



● M1000-W-F1

With automatic drain (M type, S type)



Oil mist filter: Using optional mantle

Major recommended circuit

Applications

* S type



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

* M type



- Oil free air
- Instrumentation
 - Measurement
 - Logic control
 - movable element,
 - pure fluid element
 - Luxury painting
 - Precise industry

* X type



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

Option symbol of mantle and shape

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

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.

Oil indicator

Use the oil indicator for measuring oil content density.

Oil indicator model no.

With needle valve 6509

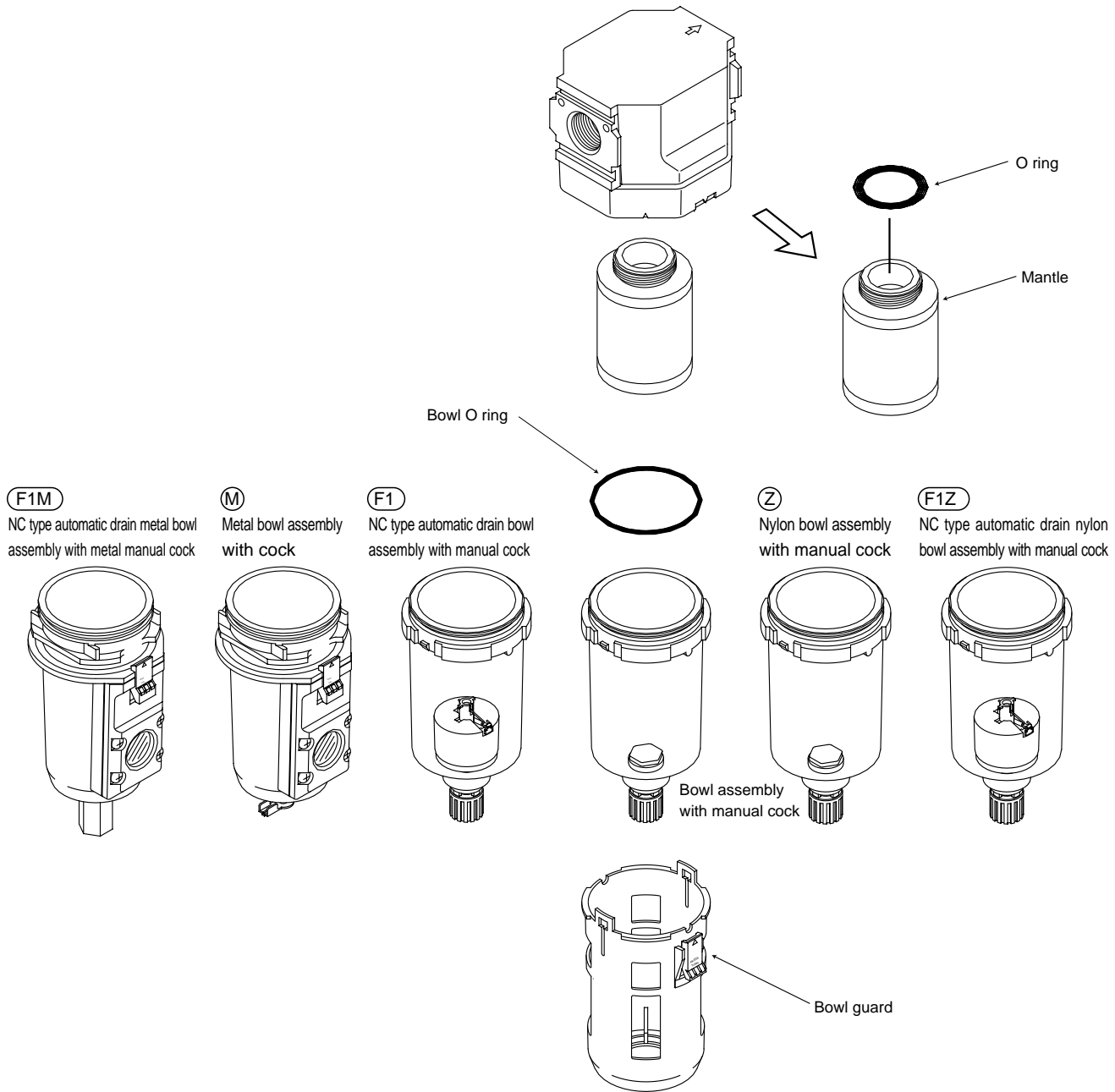
Without needle valve 6510



Note: Consult with CKD for details.

Optional parts table-oil mist filter

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |



Repair kits model no. (Set consisting 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 | - |
| M3000-W | M3000-KIT | M3000-KIT-S | M3000-KIT-X |
| M4000-W | M4000-KIT | M4000-KIT-S | M4000-KIT-X |
| M6000-W | M6000-KIT | M6000-KIT-S | M6000-KIT-X |
| M8000-W | M8000-KIT | M8000-KIT-S | M8000-KIT-X |

Repair kits model no. (Set consisting 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 | - |
| M3000-W | M3000-MANTLE-ASSY | M3000-MANTLE-ASSY-S | M3000-MANTLE-ASSY-X |
| M4000-W | M4000-MANTLE-ASSY | M4000-MANTLE-ASSY-S | M4000-MANTLE-ASSY-X |
| M6000-W | M6000-MANTLE-ASSY | M6000-MANTLE-ASSY-S | M6000-MANTLE-ASSY-X |
| M8000-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.

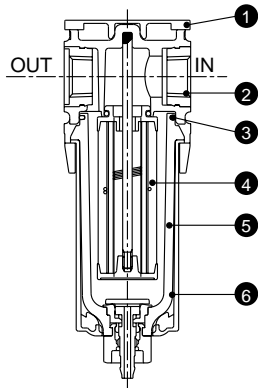
* Refer to the air filter options and parts table for details on the bowl assembly and bowl guard.

Oil Mist Filter Series

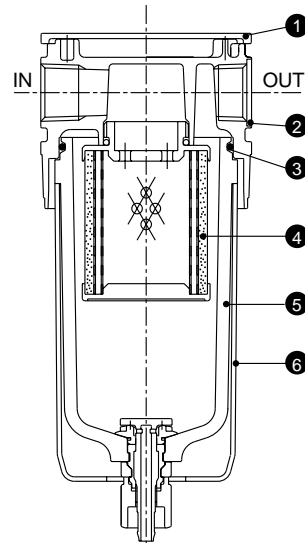
Internal structure and parts list

Internal structure and parts list

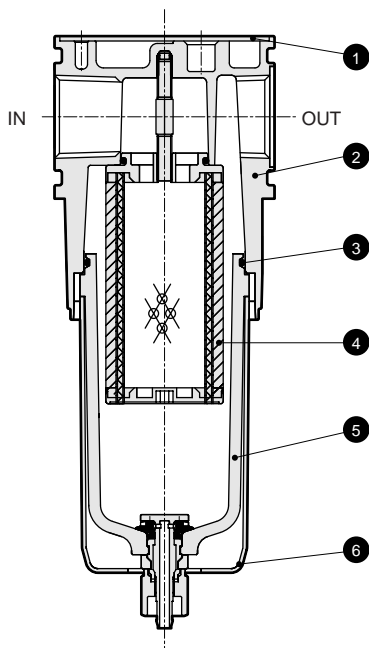
● M1000



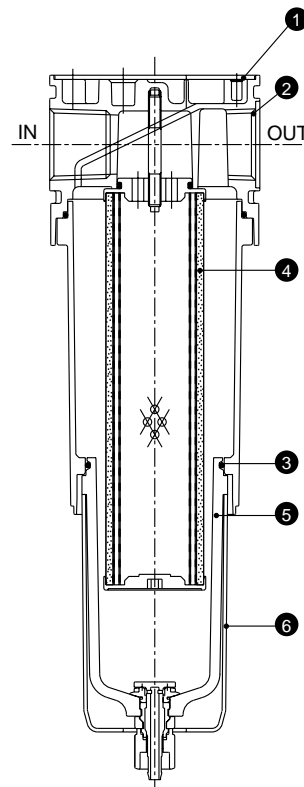
● M3000/M4000



● M6000



● M8000



| No. | Parts name | Material | | | | |
|-----|------------------------------|-------------------------------------------------------|-----------------------------|-------|-------|-------|
| | | M1000 | M3000 | M4000 | M6000 | M8000 |
| 1 | Plate cover | ABS resin | | | | |
| 2 | Body | Polyamide resin | Aluminium alloy die-casting | | | |
| 3 | O ring <small>Note 1</small> | 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 is special shaped.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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

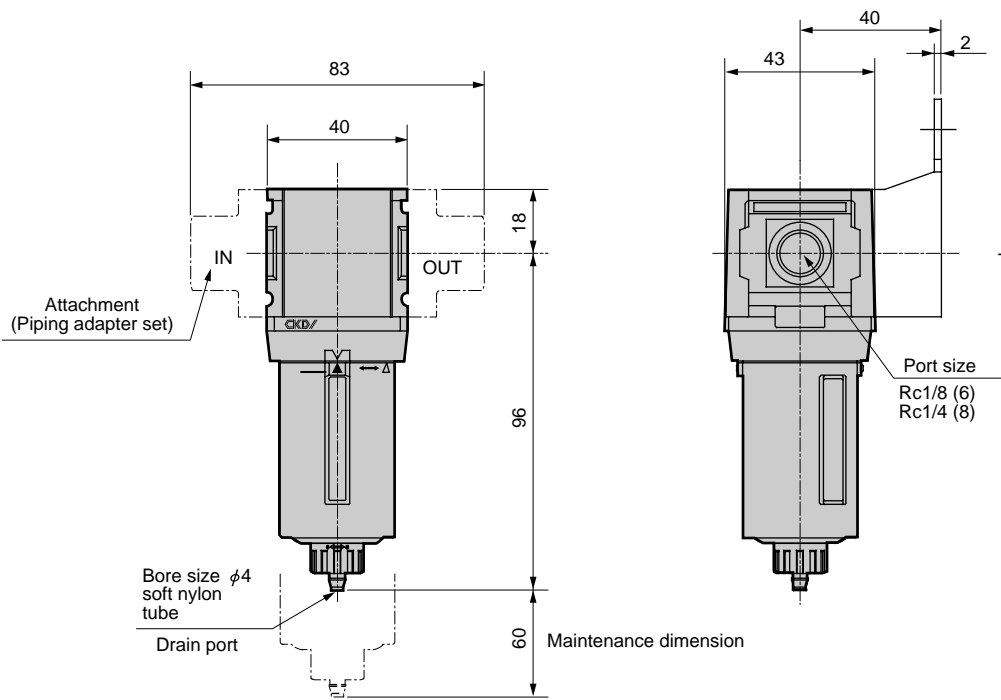
Oil Mist Filter Series

Dimensions

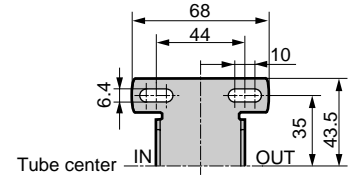


| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro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

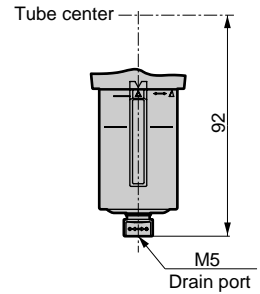
● M1000



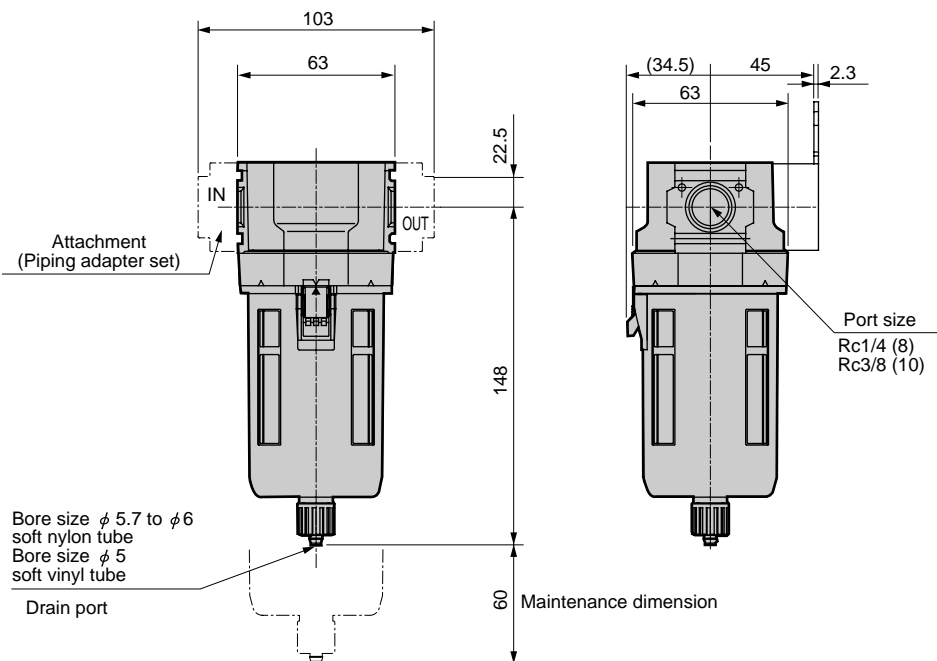
· Attachment
C type bracket (-B)
Part model no.: B120



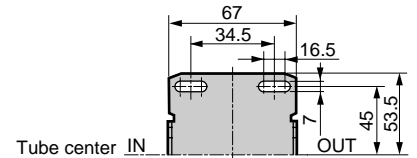
· Option dimensions
With automatic drain (F1)



● M3000



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



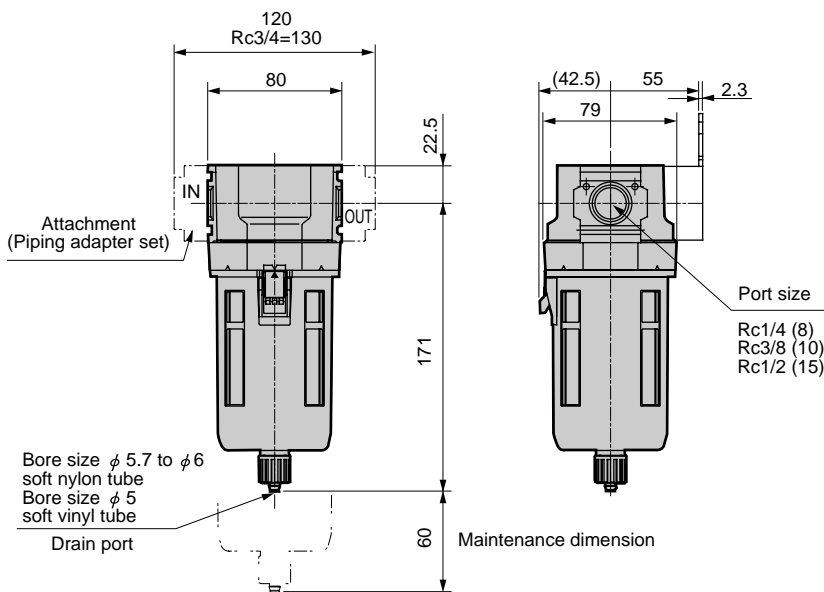
● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

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

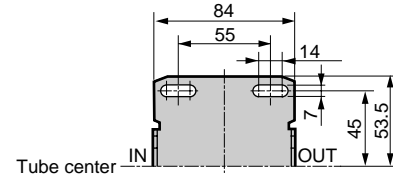
Dimensions



● M4000

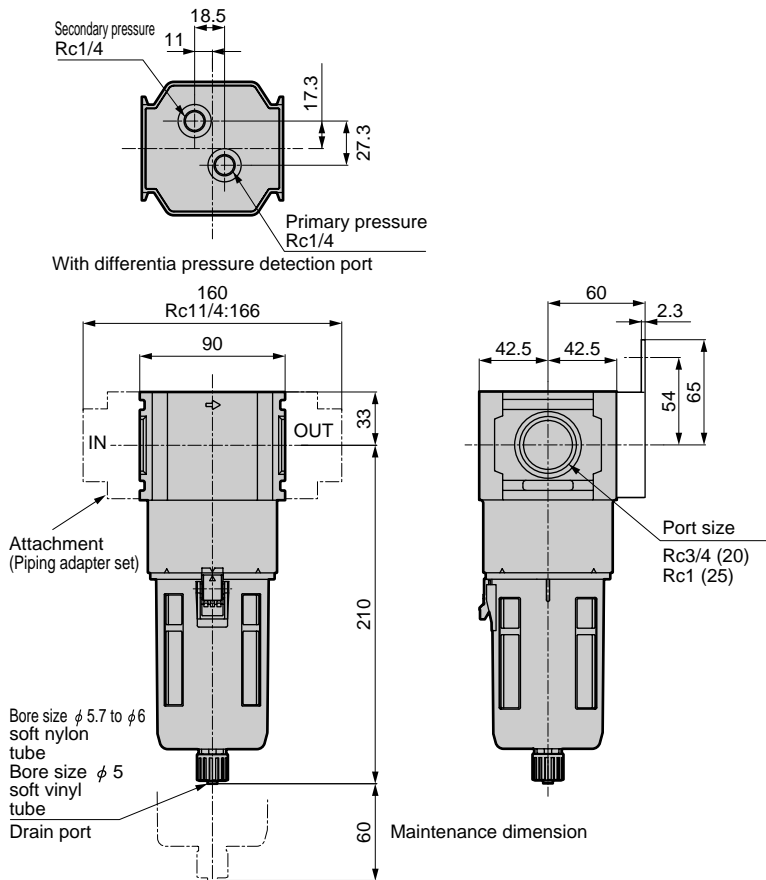


· Attachment
C type bracket (-B)
Part model no.: B420

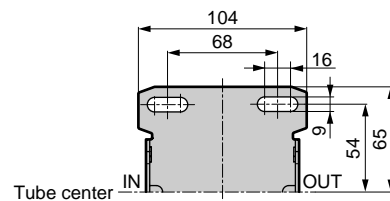


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or automatic drain is installed.

● M6000



· Attachment
C type bracket (-B)
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 adapter set attachments cannot be used at the same time.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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

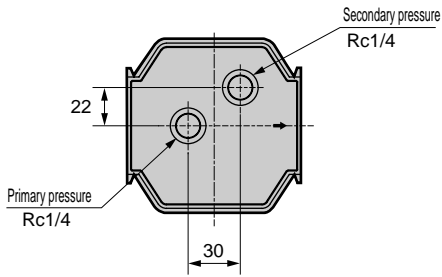
Standard Series
F.R.L. unit

Oil Mist Filter Series

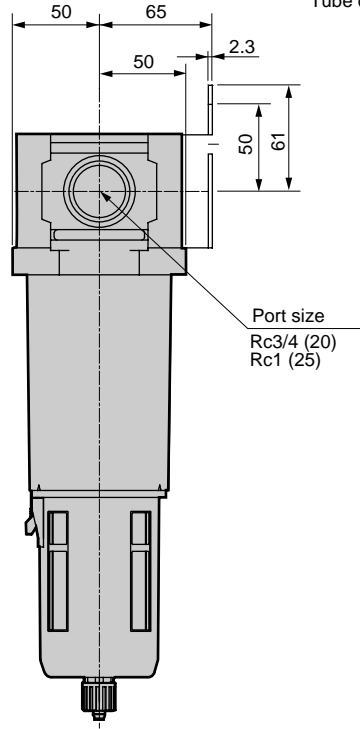
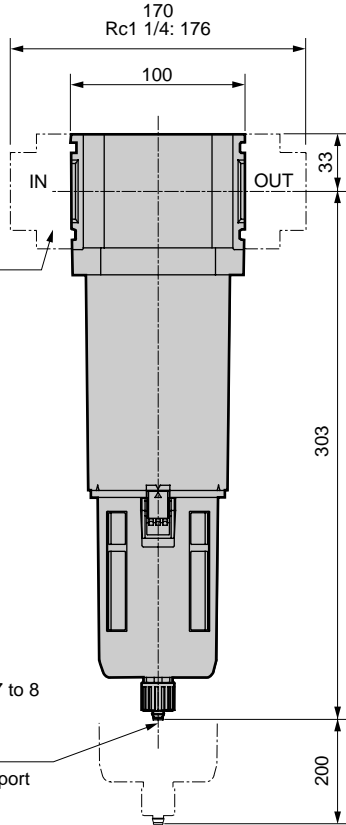
Dimensions



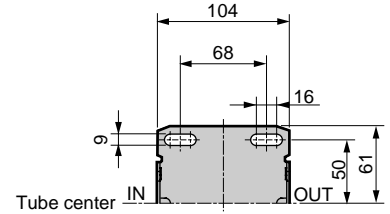
● M8000



Option
(With differential pressure detection port)



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

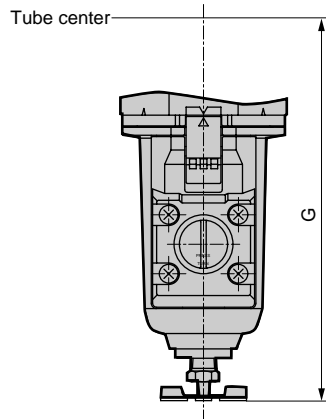
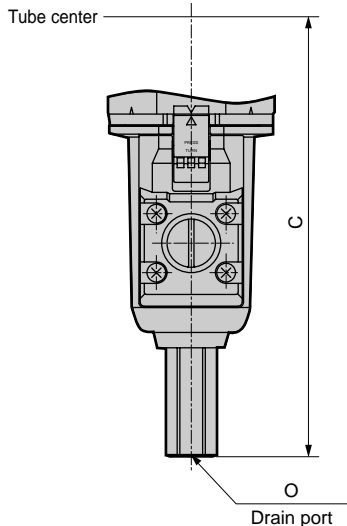


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

● Metal bowl (option) (M3000, M4000, M6000, M8000)

Metal manual cock
With automatic drain (F1M)

With petcock (M)



Dimensions

| Model no. | With metal manual cock and automatic drain | | With petcock |
|-----------|--------------------------------------------|-------|--------------|
| | C | O | G |
| M3000 | 164 | Rc1/4 | 143.5 |
| M4000 | 187 | | 166.5 |
| M6000 | 226 | | 205 |
| M8000 | 319 | | 298 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

Refrigerating type dryer
 Desiccant type dryer
 High polymer membrane 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



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 |
|----------------------------------------------------|----------------------------------------------|-----------------------------------|----------------------------------------|-----------------------------------|-----------------------------------|
| Working fluid | Compressed air | | | | |
| Working pressure range MPa | 0.1 to 1.0 Note 5, 6 | | | | |
| Withstanding pressure MPa | 1.5 Note 6 | | | | |
| 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 | 1/8, 1/4 (3/8 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8, 1/2 (3/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) |
| 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 or drainage, etc., could splatter to the secondary side and result in faults at the terminal.

Note 2: 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 3: Install an oil mist filter (S type) as a prefilter on the primary side to prevent early clogging.

Note 4: Refer to the maximum flow rate graph (page 436) for the flow rate of MX1000-W-F1 with automatic drain.

Note 5: When "F1" with an automatic drain is selected, minimum operation pressure must be 0.15 MPa.

Note 6: When "F1" with an automatic drain for MX1000-W is selected, minimum operation pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa, and withstanding pressure is 1.05 MPa

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

- Dust generation preventing structure for use in cleanrooms

MX*000 **P7***

Super Oil Mist Filter Series

How to order

How to order

MX1000 - **6** - **W** - **Z** - **A6W** **BW**

A Model no.

(White type)

B Port size

C Option

D Piping adapter set (Attached)

E Bracket (Attached)

* Refer to page 244 for the explanation of the option.

A Model no.

| Symbol | Descriptions | MX1000 | MX3000 | MX4000 | MX6000 | MX8000 |
|------------------------------------------------------------------------------------------|---------------------------------|----------------------------------------------------------------------------|--------|--------|--------|--------|
| B Port size | | | | | | |
| 6 | Rc1/8 | ● | | | | |
| 8 | Rc1/4 | ● | ● | ● | | |
| 10 | Rc3/8 | | ● | ● | | |
| 15 | Rc1/2 | | | ● | | |
| 20 | Rc3/4 | | | | ● | ● |
| 25 | Rc1 | | | | ● | ● |
| C Option | | | | | | |
| Drainage | Blank | With manual drain cock | ● | ● | ● | ● |
| | F1 <small>Note 1</small> | Automatic drain with manual override (NC type. No exhaust w/o pressurized) | ● | ● | ● | ● |
| Bowl material | Blank | Polycarbonate bowl | ● | ● | ● | ● |
| | Z | Nylon bowl | ● | ● | ● | ● |
| | M | Metal bowl | | ● | ● | ● |
| 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) | ● | ● | ● | ● |
| D Piping adapter set (attached) Pages 456, 457 | | | | | | |
| | Blank | Not attached | ● | ● | ● | ● |
| | A6W | Rc1/8 piping adapter set | ● | | | |
| | A8W | Rc1/4 piping adapter set | ● | ● | | |
| | A10W | Rc3/8 piping adapter set | ● | ● | | |
| | A15W | Rc1/2 piping adapter set | | ● | | |
| | A20W | Rc3/4 piping adapter set | | | ● | ● |
| | A25W | Rc1 piping adapter set | | | | ● |
| | A32W | Rc1 1/4 piping adapter set | | | | ● |
| E Bracket (attached) Page 454 | | | | | | |
| | Blank | Not attached | ● | ● | ● | ● |
| | BW | C type bracket | ● | ● | ● | ● |

⚠ Note on model no. selection

Note 1: MX1000-W-F1 is custom order.

Note 2: MX6000-W is custom order.

Refer to F.R.L. unit Standard type on page 334, for internal structure and dimensions.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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) |

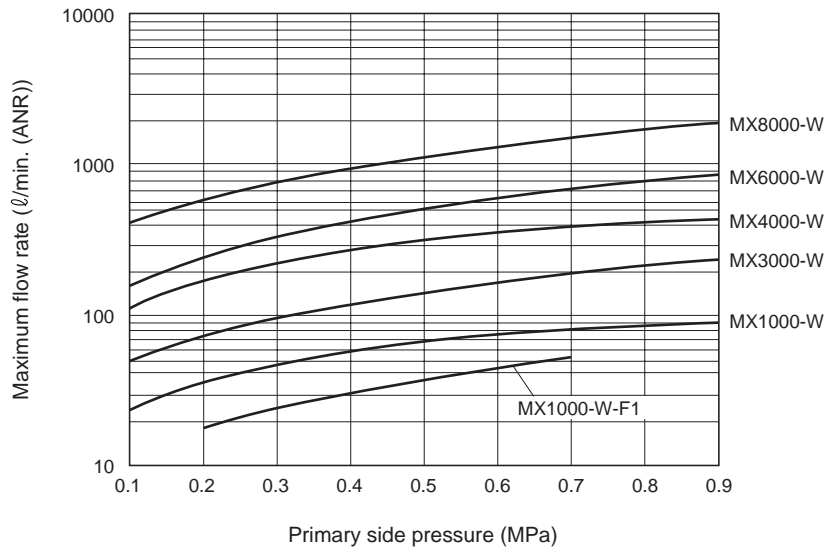
Ending

Standard white Series
F.R.L. unit

Super Oil Mist Filter Series

Flow characteristic (max. 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
 - 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

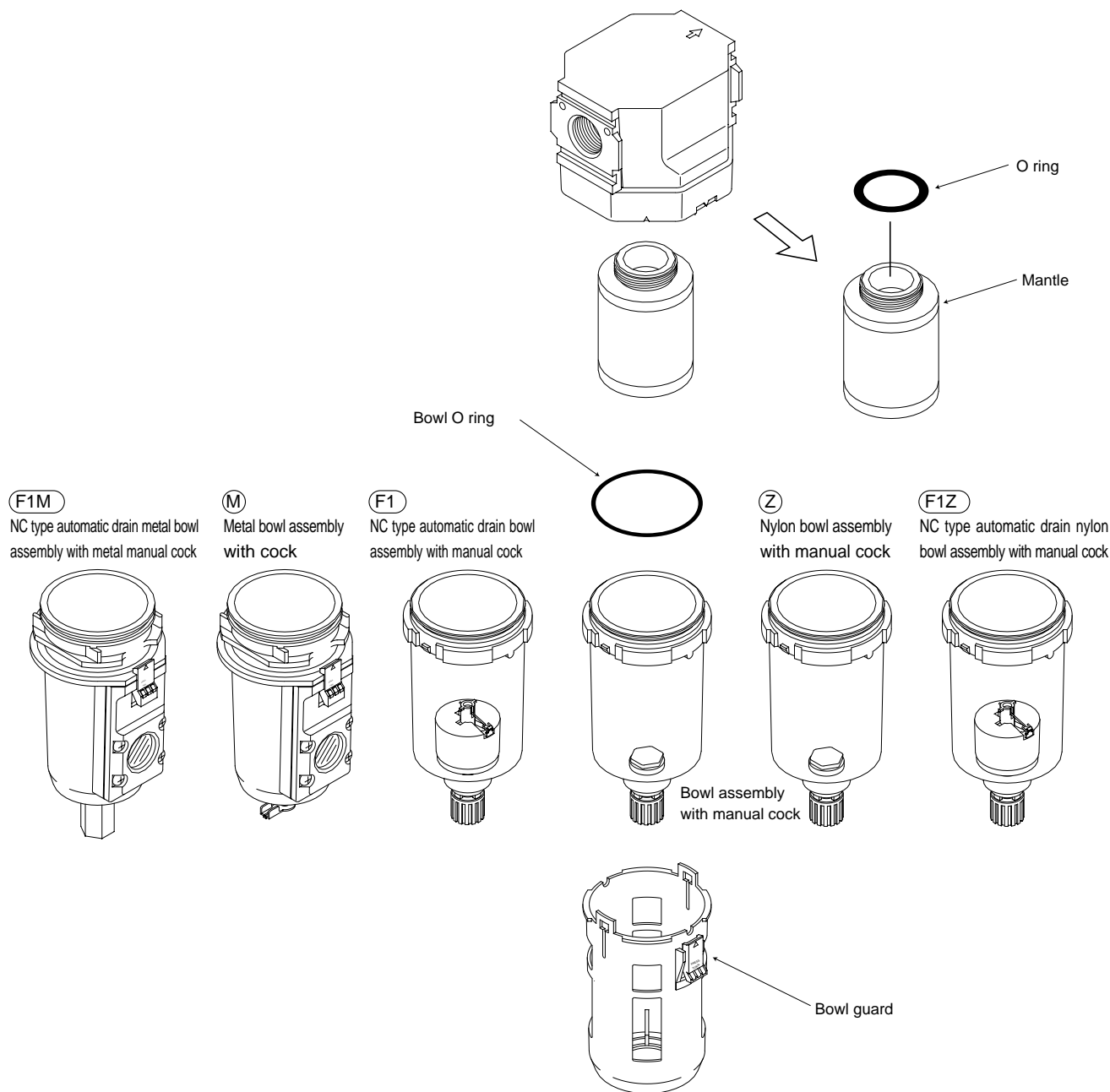
NOTE: The secondary oil density is the value when the primary oil density is 30 mg/m³, the inlet air temperature is 21 °C and before the oil is saturated.

Option symbol of mantle and shape

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

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

Optional parts table - Oil mist filter



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

| Model | 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 consisting of O ring, mantle)

| Model | 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 page 427 for the bowl assembly and bowl guard.

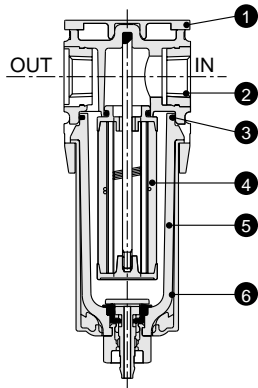
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro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

Super Oil Mist Filter Series

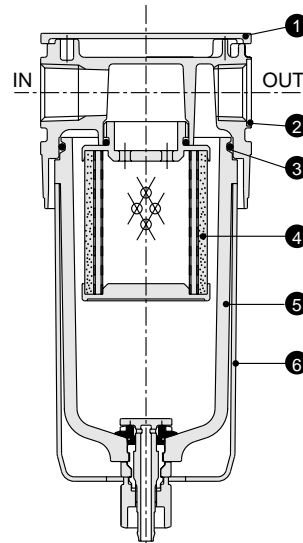
Internal structure and parts list

Internal structure and parts list

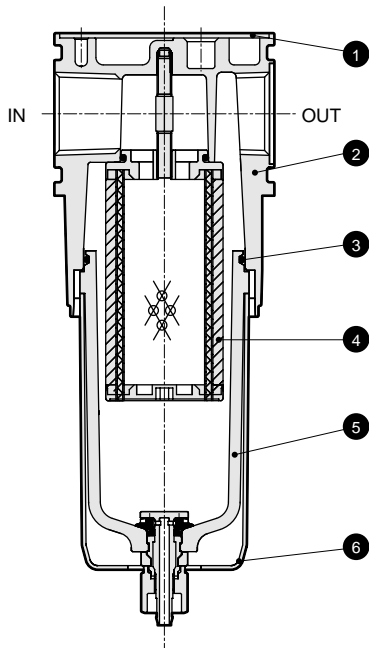
● MX1000



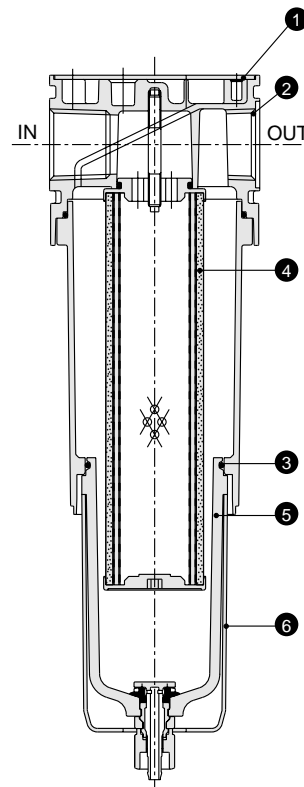
● MX3000/MX4000



● MX6000



● MX8000



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

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

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

Ending

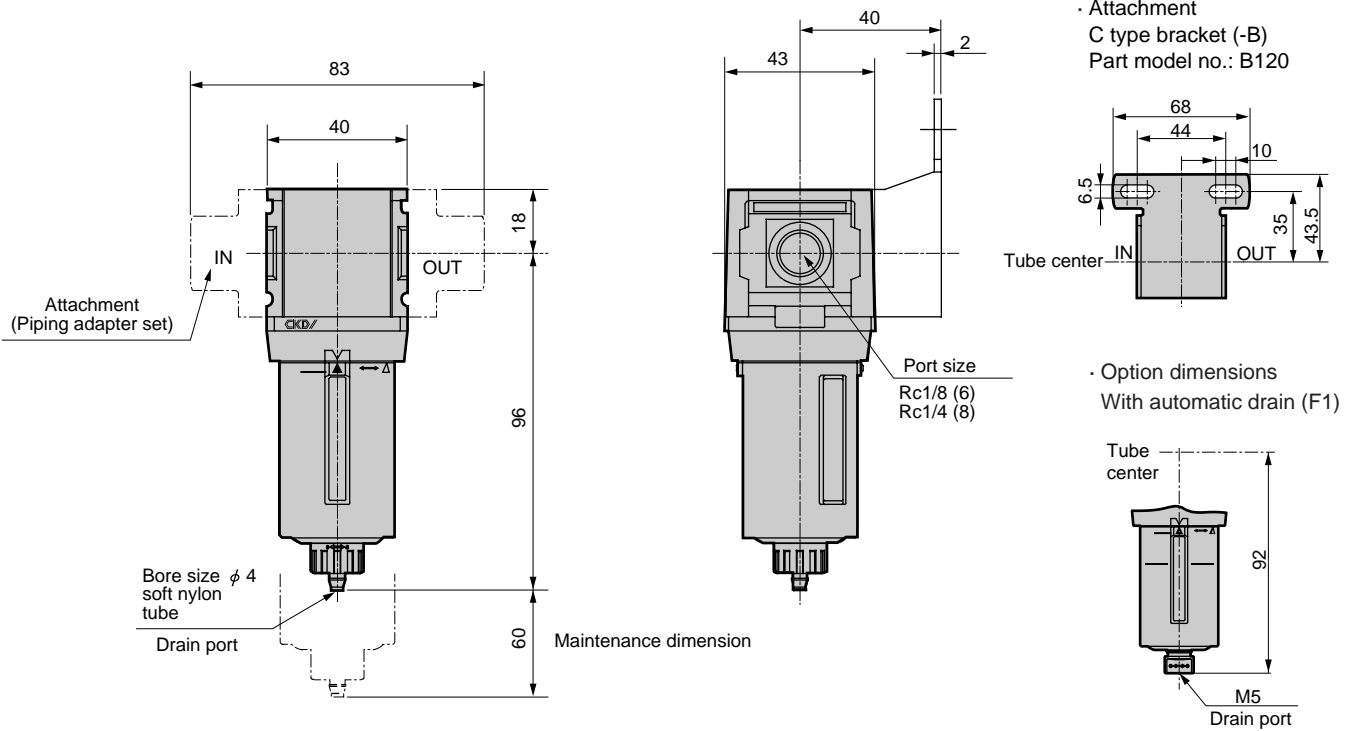
Standard Series
F.R.L. unit

Super Oil Mist Filter Series

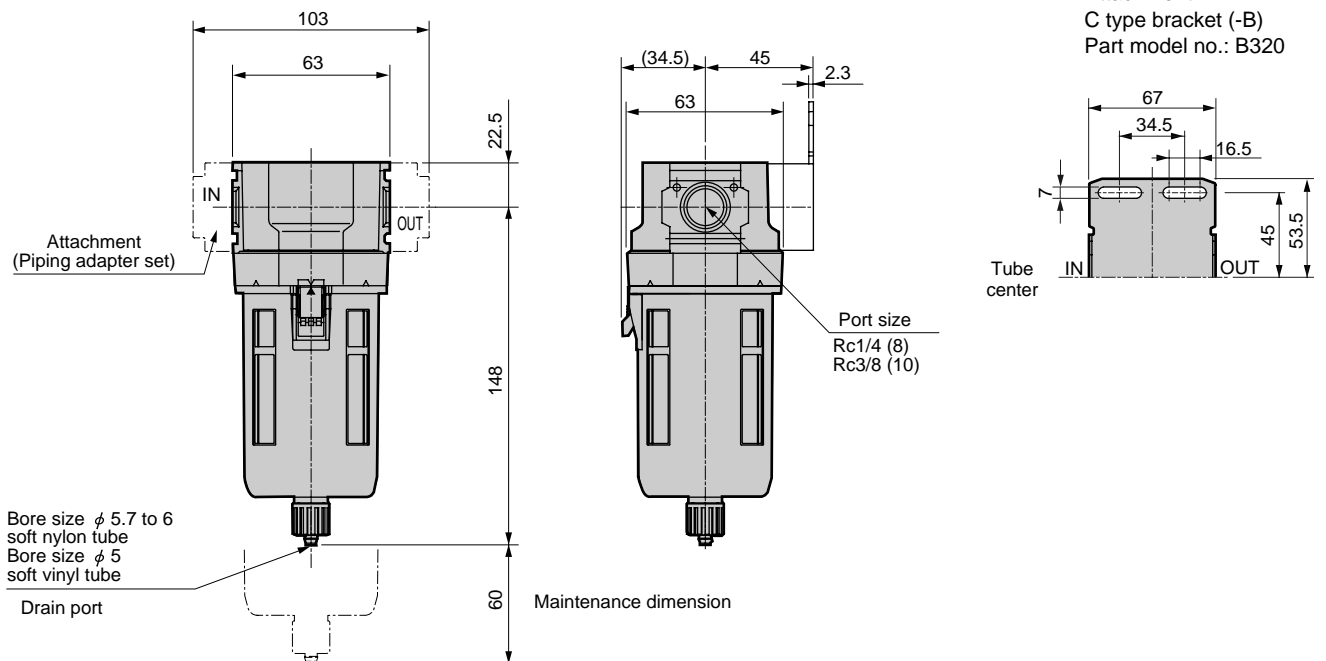
Dimensions

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

● MX1000



● MX3000

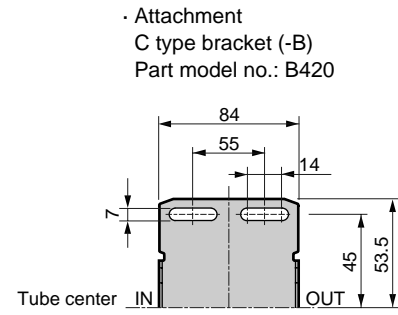
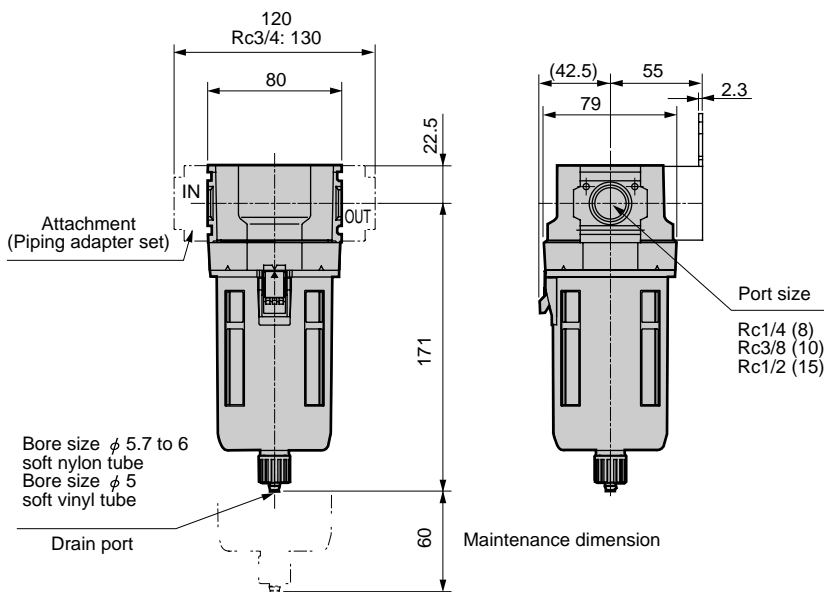


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

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

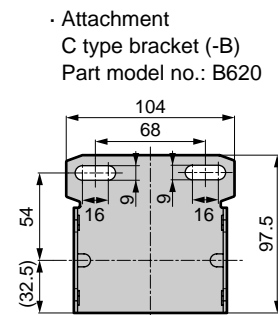
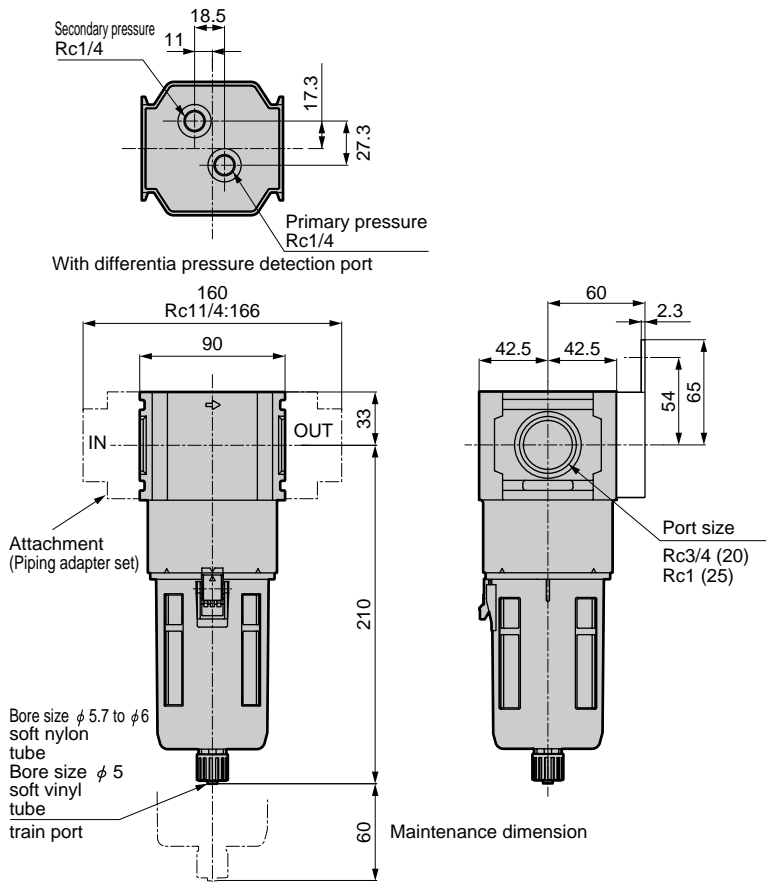
Dimensions

● MX4000



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

● MX6000



● 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 adapter set attachments cannot be used at the same time.

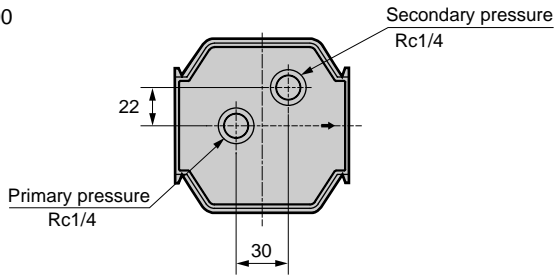
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro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

Standard Series
F.R.L. unit

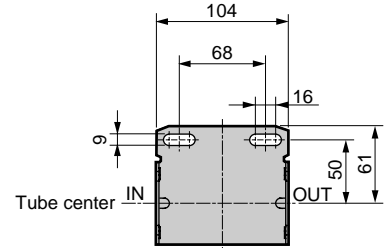
Super Oil Mist Filter Series

Dimensions

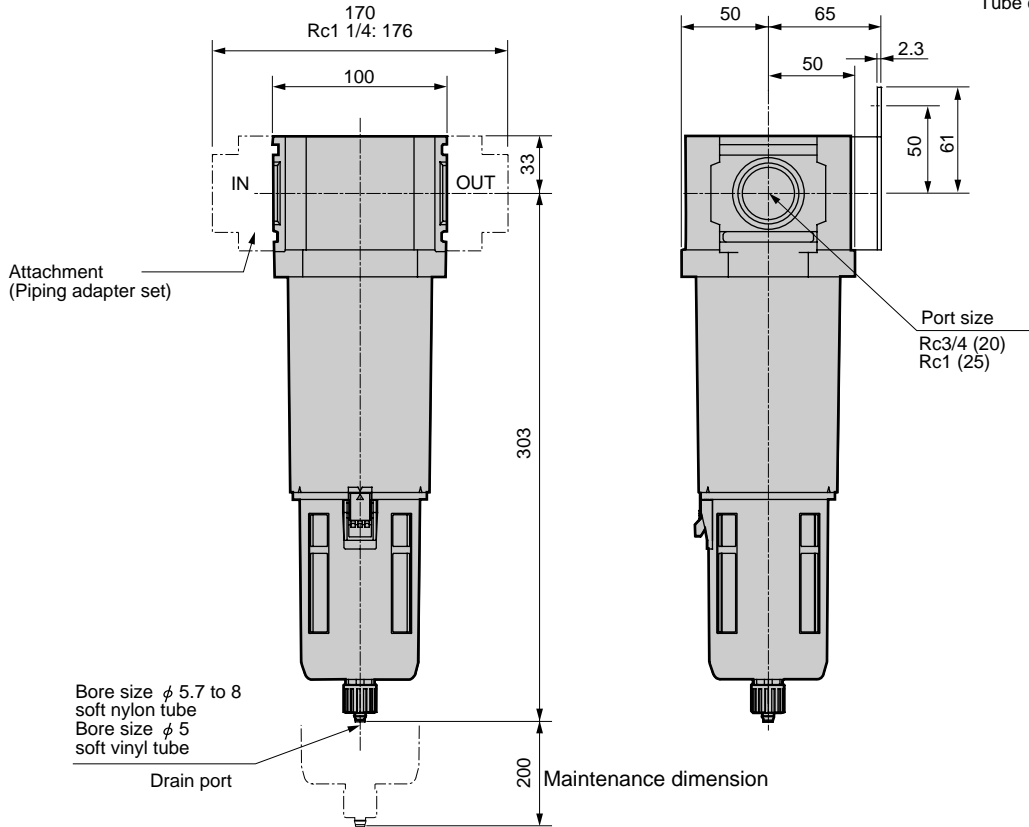
● MX8000



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



Option (With differential pressure detection port)

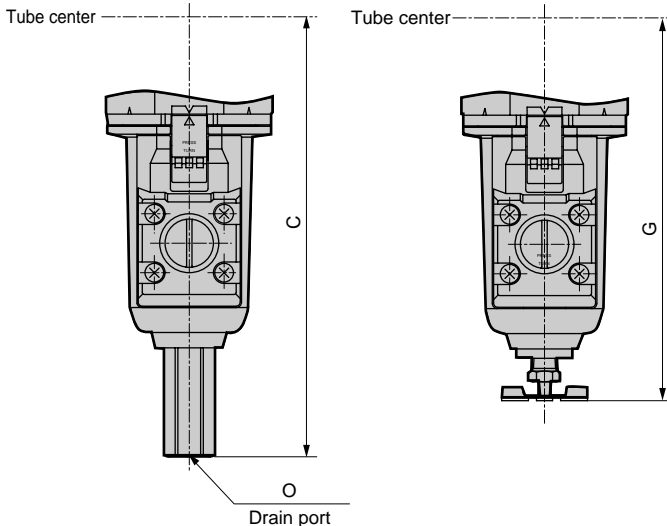


● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or with automatic drain.

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

Metal manual cock With automatic drain (F1M)

With petcock (M)



Dimensions

| Model no. | With metal manual cock and automatic drain | | With petcock |
|-----------|--------------------------------------------|-------|--------------|
| | C | O | |
| MX3000 | 164 | Rc1/4 | 143.5 |
| MX4000 | 187 | | 166.5 |
| MX6000 | 226 | | 205 |
| MX8000 | 319 | | 298 |



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 |
|------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|----------------------------------------|-----------------------------------|-----------------------------------|
| 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 MPa | 0.05 to 0.85 | | | | | |
| Relief | With relief mechanism | | | | | |
| Port size Rc | 1/8, 1/4 (3/8 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8, 1/2 (3/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) |
| Product weight kg | 0.16 | 0.29 | 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)

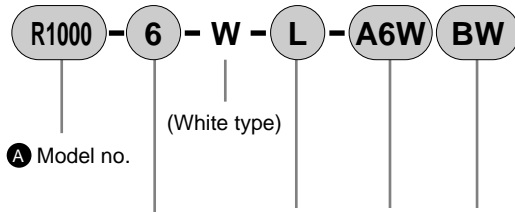
R*000 P11

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

● Dust generation preventing structure for use in cleanrooms

R*000 P7*

How to order



* Refer to page 244 for the explanation of the option.

| | | A Model no. | | | | | |
|----------------------------------------|----------------------------|---------------------------------------------------------------------------------|-------|-------|-------|--------|-------|
| | | R1000 | R2000 | R3000 | R4000 | R6000 | R8000 |
| Symbol | Descriptions | | | | | Note 1 | |
| B Port size | | | | | | | |
| 6 | Rc1/8 | ● | | | | | |
| 8 | Rc1/4 | ● | ● | | | | |
| 10 | Rc3/8 | | ● | ● | | | |
| 15 | Rc1/2 | | | | ● | | |
| 20 | Rc3/4 | | | | | ● | ● |
| 25 | Rc1 | | | | | ● | ● |
| C Option | | | | | | | |
| Pressure range | Blank | 0.05 to 0.85MPa | | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa | | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | | ● | ● | ● | ● |
| | N | Nonrelief type | | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401) | | ● | ● | ● | ● |
| | T | Without pressure gauge (gauge port is assembled with sealed) | | ● | ● | ● | ● |
| | T8 | Round shaped pressure gauge attached (pressure gauge port is assembled by open) | | ● | ● | ● | ● |
| | R1 Note 2 | Pressure switch with display PPD assembly | | ● | ● | ● | ● |
| Flow direction | Blank | Standard flow (left → right) | | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | | ● | ● | ● | ● |
| D Piping adapter set (attached) | | | | | | | |
| | | Pages 456, 457 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| A6W | Rc1/8 piping adapter set | ● | | | | | |
| A8W | Rc1/4 piping adapter set | ● | ● | ● | ● | | |
| A10W | Rc3/8 piping adapter set | ● | ● | ● | ● | | |
| A15W | Rc1/2 piping adapter set | | ● | ● | ● | | |
| A20W | Rc3/4 piping adapter set | | | | ● | ● | ● |
| A25W | Rc1 piping adapter set | | | | | ● | ● |
| A32W | Rc1 1/4 piping adapter set | | | | | ● | ● |
| E Attachment (attached) | | | | | | | |
| | | Pages 454, 687 | | | | | |
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● | ● |
| B3W | L type bracket | ● | ● | ● | ● | | |
| B4W | B type bracket | | ● | | | | |
| 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: R6000-W is custom order.
 Note 2: R1 pressure switch with indicator is black.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

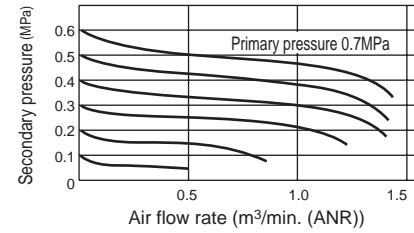
Refer to F.R.L. unit Standard type on page 344, for internal structure and dimensions (except R2000).

Standard white Series
F.R.L. unit

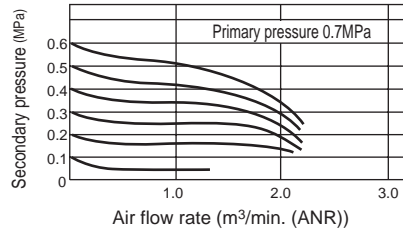
Regulator series

Flow characteristic

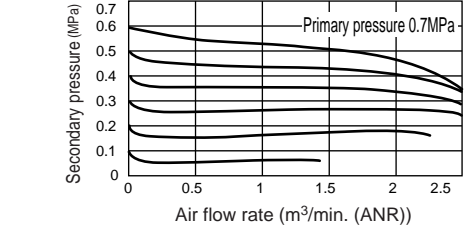
● R1000-6-W



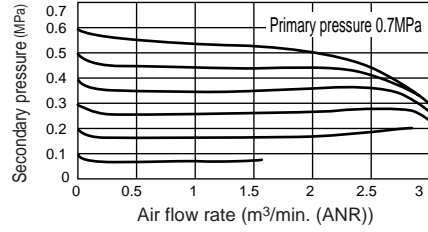
● R1000-8-W



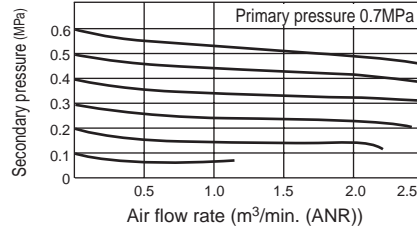
● R2000-8-W



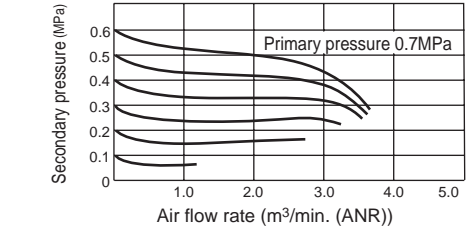
● R2000-10-W



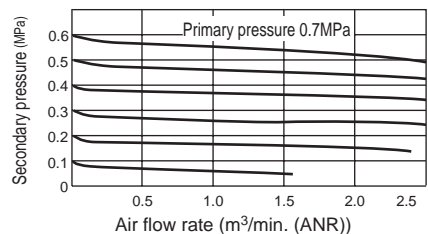
● R3000-8-W



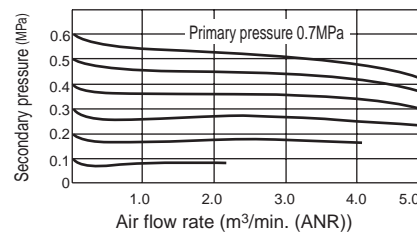
● R3000-10-W



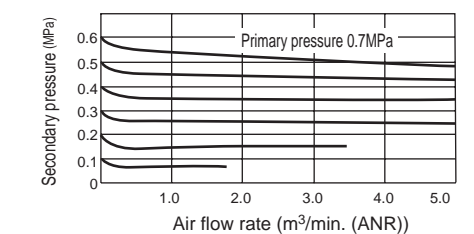
● R4000-8-W



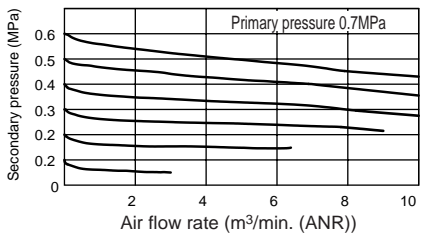
● R4000-10-W



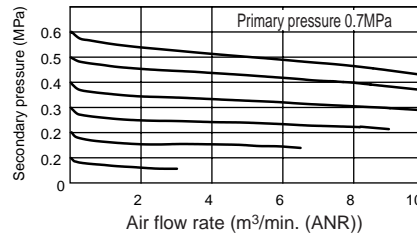
● R4000-15-W



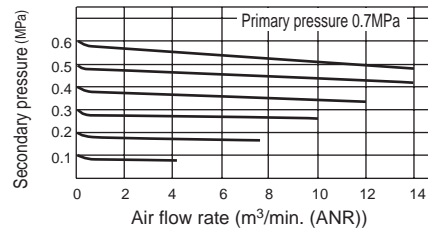
● R6000-20-W



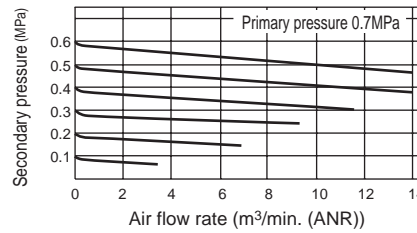
● R6000-25-W



● R8000-20-W

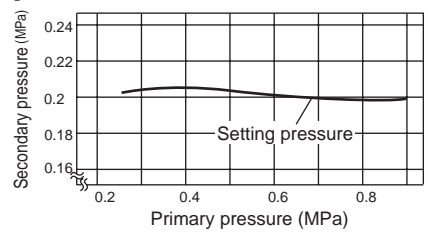


● R8000-25-W

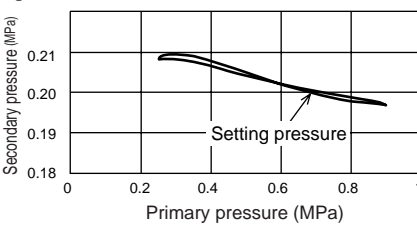


Pressure characteristic

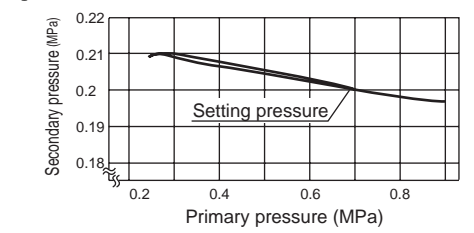
● R1000-W



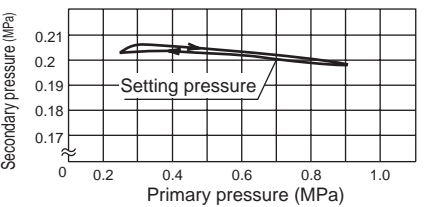
● R2000-W



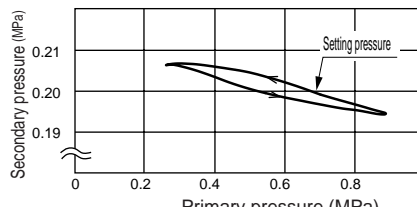
● R3000-W



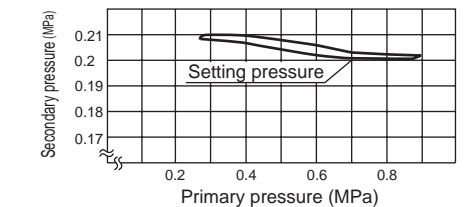
● R4000-W



● R6000-W



● R8000-W



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |



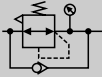
Reverse regulator standard white Series

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 |
|---------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|----------------------------------------|-----------------------------------|-----------------------------------|
| Working fluid | Compressed air | | | | | |
| Max. working pressure MPa | 1.0 | | | | | |
| Withstanding pressure MPa | 1.5 | | | | | |
| Ambient temperature range °C | 5 to 60 | | | | | Note 3 |
| Set pressure range (Note 2) MPa | 0.05 to 0.85 | | | | | |
| Relief | With relief mechanism | | | | | |
| Port size Rc | 1/8, 1/4 (3/8 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8 (1/2 uses an adapter) | 1/4, 3/8, 1/2 (3/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) | 3/4, 1 (1 1/4 uses an adapter) |
| Product weight kg | 0.16 | 0.29 | 0.45 | 0.7 | 1.0 | 1.6 |
| Standard accessories | Pressure gauge, nut for panel mount | | | | | Pressure gauge |

Note 1: Check that the primary pressure is at least 0.05 MPa or more than the secondary pressure.

Note 2: Refer to the set pressure range for the back pressure given on page 444 when selecting the model.

Note 3: The working temperature range of the pressure switch with indicator PPD assembly "R1" is 5 to 50°C.

Ozone specifications

(Ending 13)

R*100 P11

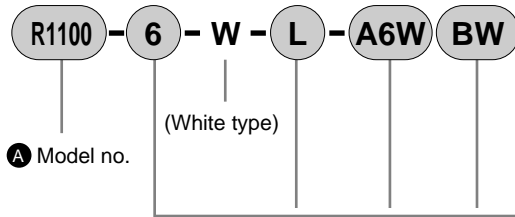
Clean room specifications

(catalog No. CB-033SA)

● Dust generation preventing structure for use in cleanrooms

R*100 P7*

How to order



* Refer to page 244 for the explanation of the option.

| A Model no. | | | | | |
|-------------|-------|-------|-------|-------|-------|
| R1100 | R2100 | R3100 | R4100 | R6100 | R8100 |

| Symbol | Descriptions | A Model no. | | | | | |
|--------------------|--------------|-------------|---|---|---|---|---|
| B Port size | | | | | | | |
| 6 | Rc1/8 | ● | | | | | |
| 8 | Rc1/4 | ● | ● | | | | |
| 10 | Rc3/8 | | ● | ● | | | |
| 15 | Rc1/2 | | | | ● | | |
| 20 | Rc3/4 | | | | | ● | ● |
| 25 | Rc1 | | | | | ● | ● |

| C Option | | A Model no. | | | | | | |
|-----------------|-----------|---------------------------------------------------------------------------------|---|---|---|---|---|---|
| Pressure range | Blank | 0.05 to 0.85MPa | ● | ● | ● | ● | ● | ● |
| | L | 0.05 to 0.35MPa | ● | ● | ● | ● | ● | ● |
| Relief | Blank | With relief mechanism | ● | ● | ● | ● | ● | ● |
| | N | Nonrelief type | ● | ● | ● | ● | ● | ● |
| Pressure gauge | Blank | With standard pressure gauge (G401) | ● | ● | ● | ● | ● | ● |
| | T | Without pressure gauge (gauge port is assembled with sealed) | ● | ● | ● | ● | ● | ● |
| | T8 | Round shaped pressure gauge attached (pressure gauge port is assembled by open) | ● | ● | ● | ● | ● | ● |
| | R1 Note 2 | Pressure switch with display PPD assembly | ● | ● | ● | ● | ● | ● |
| Flow direction | Blank | Standard flow (left → right) | ● | ● | ● | ● | ● | ● |
| | X1 | Reverse flow (right → left) | ● | ● | ● | ● | ● | ● |

| D Piping adapter set (attached) | | Pages 456, 457 | | | | | |
|----------------------------------------|----------------------------|----------------|---|---|---|---|---|
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| A6W | Rc1/8 piping adapter set | ● | | | | | |
| A8W | Rc1/4 piping adapter set | ● | ● | ● | ● | | |
| A10W | Rc3/8 piping adapter set | ● | ● | ● | ● | | |
| A15W | Rc1/2 piping adapter set | | ● | ● | ● | | |
| A20W | Rc3/4 piping adapter set | | | | ● | ● | ● |
| A25W | Rc1 piping adapter set | | | | | ● | ● |
| A32W | Rc1 1/4 piping adapter set | | | | | ● | ● |

| E Attachment (attached) | | Pages 454, 687 | | | | | |
|--------------------------------|----------------------------|----------------|---|---|---|---|---|
| Blank | Not attached | ● | ● | ● | ● | ● | ● |
| BW | C type bracket | ● | ● | ● | ● | ● | ● |
| B3W | L type bracket | ● | ● | ● | ● | | |
| B4W | B type bracket | | ● | | | | |
| 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: R6100-W is custom order.
 Note 2: R1 pressure switch with indicator is black.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

Refer to F.R.L. unit Standard type on page 352, for internal structure and dimensions (except R2100).

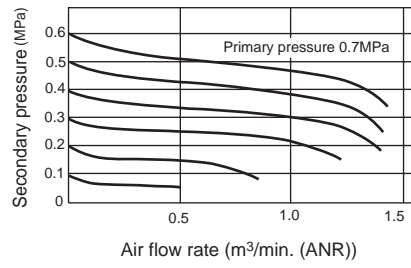
Standard white Series
F.R.L. unit

Regulator series

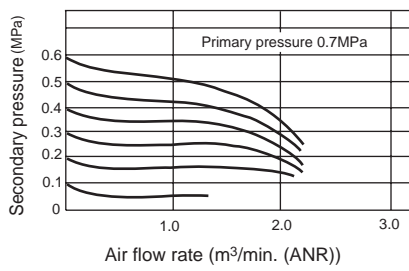
Flow characteristic

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

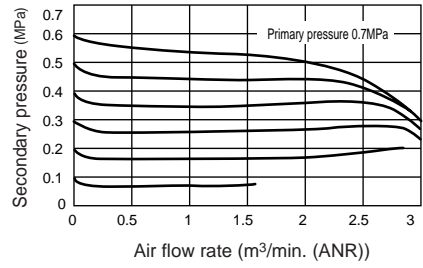
● R1100-6-W



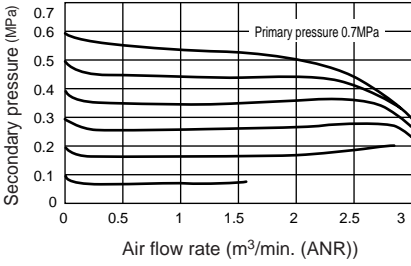
● R1100-8-W



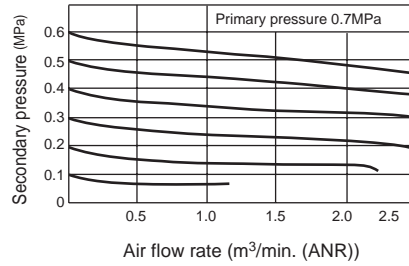
● R2100-8-W



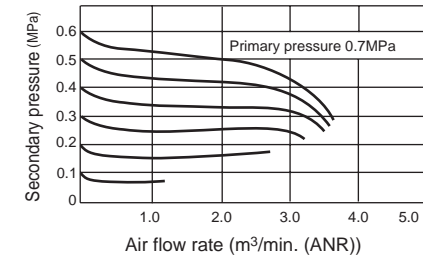
● R2100-10-W



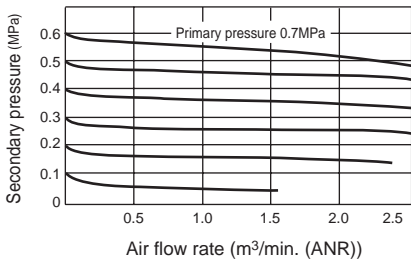
● R3100-8-W



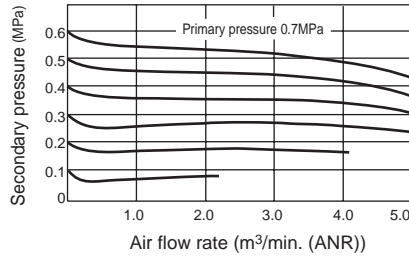
● R3100-10-W



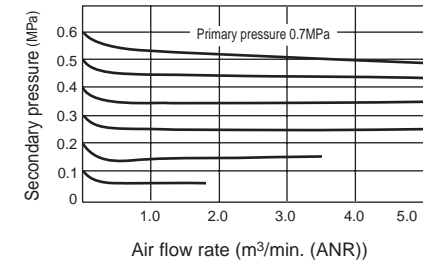
● R4100-8-W



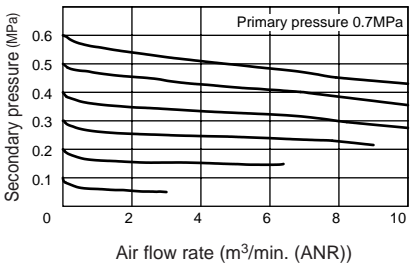
● R4100-10-W



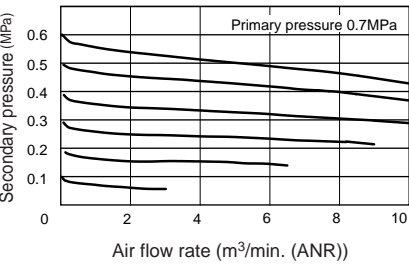
● R4100-15-W



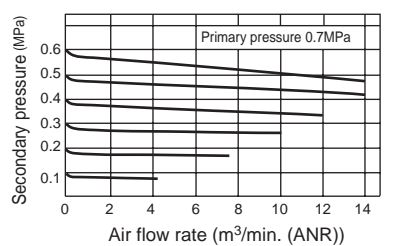
● R6100-20-W



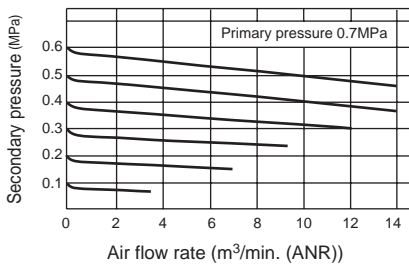
● R6100-25-W



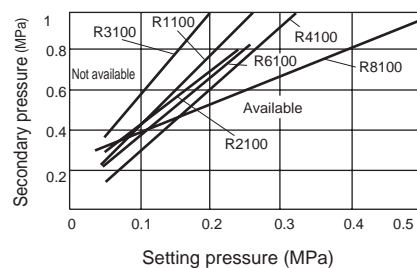
● R8100-20-W



● R8100-25-W



● Set pressure range to back pressure

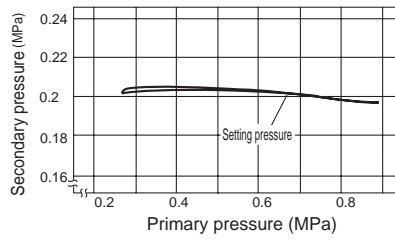


Note: The upper side of the graph is nonusable and the lower side usable.

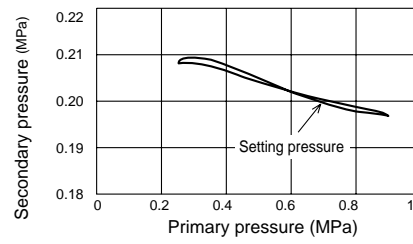
Example: If W4100-W is set to set pressure 0.2 MPa and the secondary back pressure is 0.6 MPa or more, the secondary pressure will not be released to the primary side.

Pressure characteristic

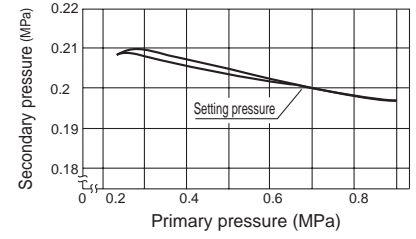
● R1100-W



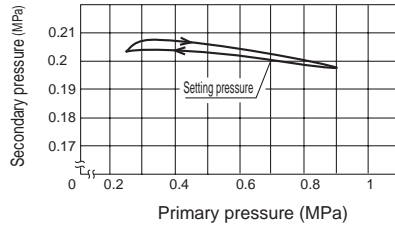
● R2100-W



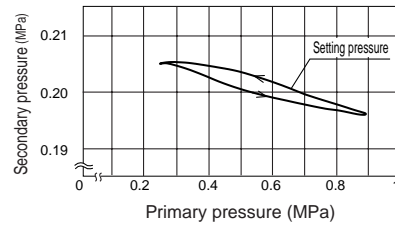
● R3100-W



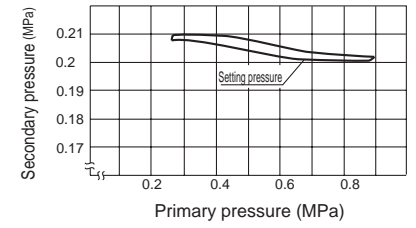
● R4100-W



● R6100-W



● R8100-W



| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 white Series
F.R.L. unit

Optional parts diagram

Repair kits (Set consisting of diaphragm assembly, valve assembly, bottom spring, bottom O ring)

| Repair kits model no. | Relief type diaphragm | Nonrelief type diaphragm |
|-----------------------|-----------------------------------------------|--------------------------------------------------|
| Model | | |
| R1000-W, R1100-W | R1000-KIT | R1000-KIT-N |
| R2000-W, R2100-W | R2000-KIT | R2000-KIT-N |
| R3000-W, R3100-W | R3000-KIT | R3000-KIT-N |
| R4000-W, R4100-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-N |

Valve assembly (Set consisting 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 | R3000-VALVE-ASSY |
| R4000-W, R4100-W | R4000-VALVE-ASSY |
| R6000-W, R6100-W | R6000-VALVE-ASSY |
| R8000-W, R8100-W | R8000-VALVE-ASSY |

* Refer to page 648 for the gauge plug assembly.

Check valve assembly for reverse regulator

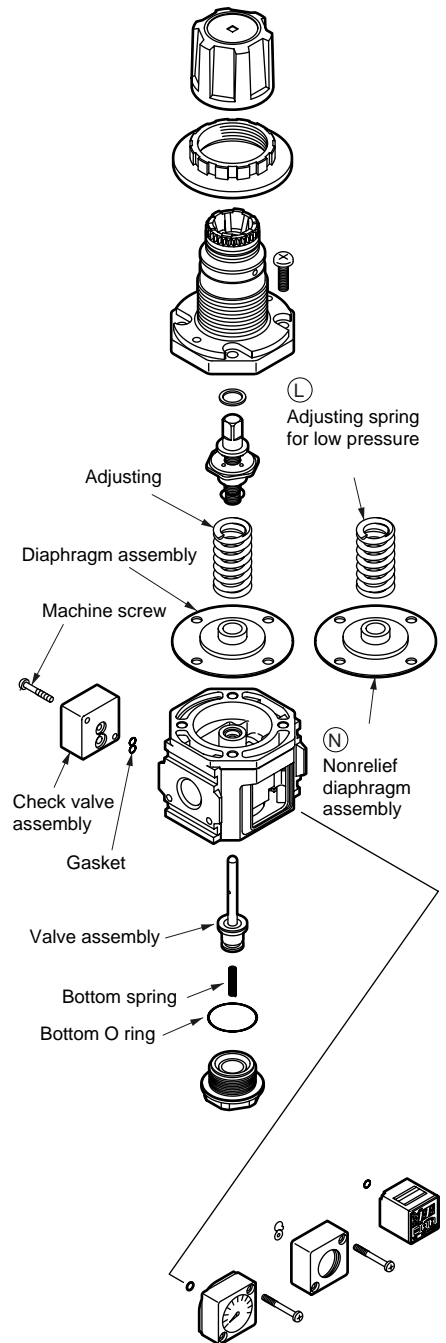
| Model | Check valve assembly model no. |
|------------------------------------------------------------------------------|--------------------------------|
| R1100-W, W1100-W | R1100-W-CHECK-VALVE-ASSY |
| R2100-W, R3100-W R4100-W, R6100-W R8100-W, W3100-W W4100-W, W8100-W | R3100-W-CHECK-VALVE-ASSY |

Adjusting spring

| Adjusting spring model no. | Standard spring (0.05 to 0.85 MPa) | Spring for low pressure (0.05 to 0.35 MPa) |
|--------------------------------------|---------------------------------------|-----------------------------------------------|
| Model | | |
| 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 W3000-W, W3100-W | R3000-SPRING | R3000-SPRING-L |
| R4000-W, R4100-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 |

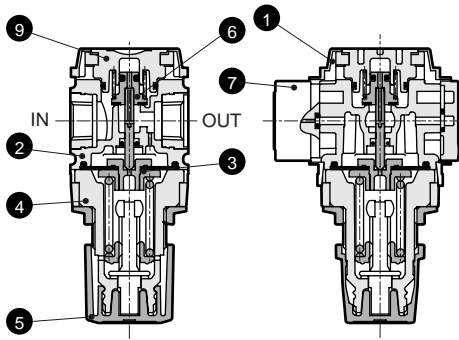
Diaphragm assembly (only diaphragm assembly)

| Diaphragm assembly model no. | Relief type diaphragm | Nonrelief type diaphragm |
|--------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------|
| Model | | |
| 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 W3000-W, W3100-W | R3000-DIAPHRAGM-ASSY | R3000-DIAPHRAGM-ASSY-N |
| R4000-W, R4100-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 |

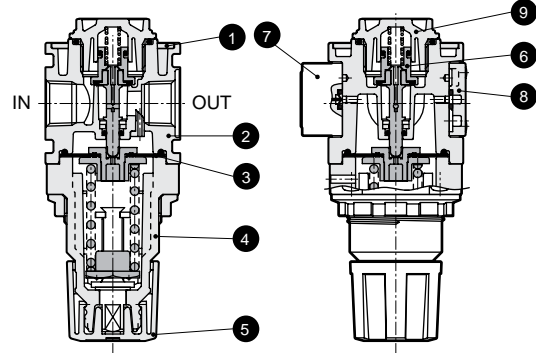


Internal structure and parts list

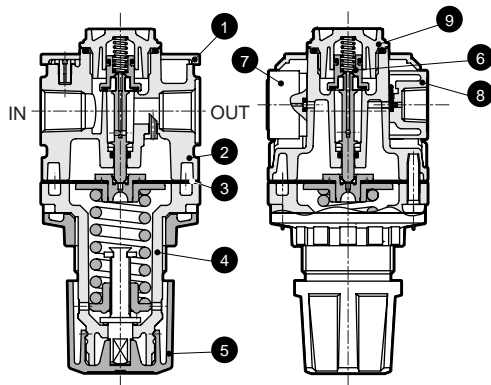
● R1000



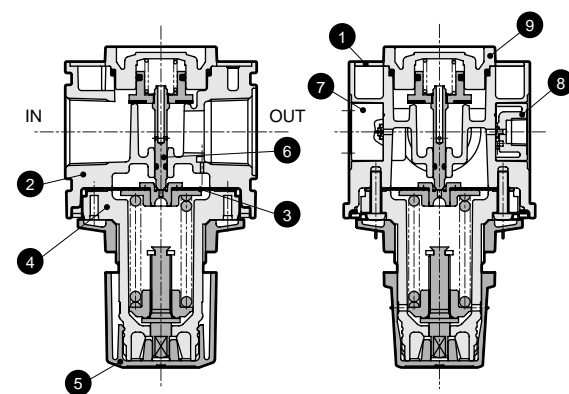
● R2000-W



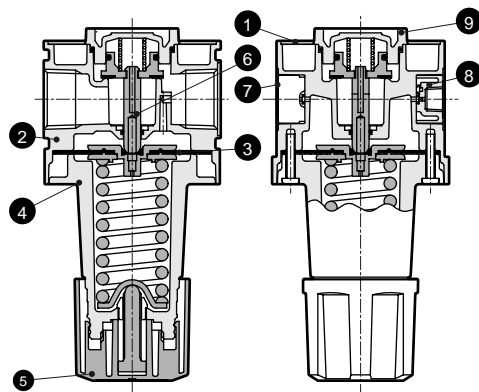
● R3000/R4000



● R6000



● R8000



| No. | Parts name | Material | | | | | |
|-----|-------------------------------|--------------------------------------------------------------------------------|-----------------------------|----------------------------------------|-----------------------------|-------|-----------------------------|
| | | R1000 | R2000 | R3000 | R4000 | R6000 | R8000 |
| 1 | Palate cover | ABS resin | | | | | |
| 2 | Body | Polyamide resin, steel | Aluminium alloy die-casting | Aluminium alloy die-casting | | | |
| 3 | Diaphragm assembly | Polyacetal resin, nitrile rubber | | Zinc alloy die-casting, nitrile rubber | | | Note 3 |
| 4 | Cover | Polyamide resin | PBT resin | | | | Aluminium 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 | | | Aluminium alloy die-casting | | |

Note 1: A blank plug is enclosed with the R1000 standard type. If a gauge plug assembly type is required instead of a blanking plug, indicate R1000*-T1-*

Note 2: Refer to page 359 for repair parts.

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

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

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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) |

Standard Series
F.R.L. unit

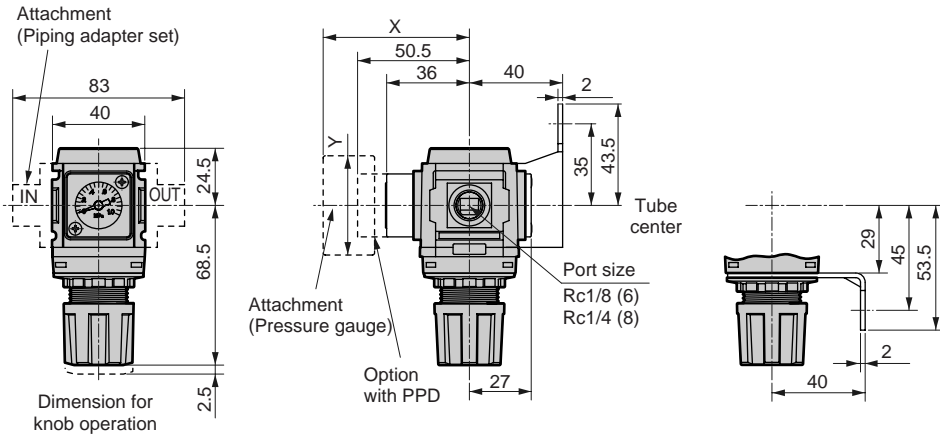
Ending

Regulator series

Dimensions

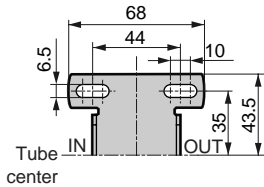


● R1000

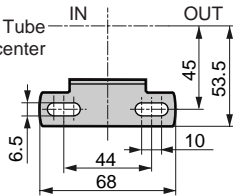


• Attachment

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



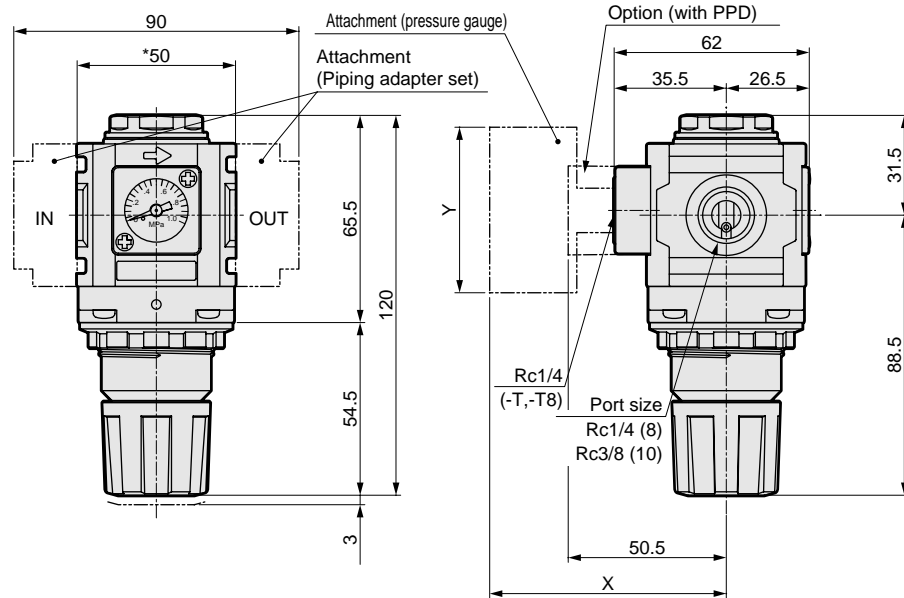
L type bracket (-B3)
Part model no.: B130



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (73.5) | φ 43.5 |
| G59P | (76) | φ 52 |
| G40P | (75.5) | φ 42.5 |
| G50P | (75.5) | φ 52.5 |
| G41P | (74) | φ 42 |
| G52P | (86) | φ 52.5 |

● R2000-W

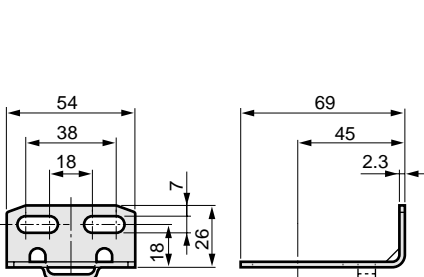


Pressure gauge optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (73) | φ 43.5 |
| G59P | (75.5) | φ 52 |
| G40P | (75) | φ 42.5 |
| G50P | (75) | φ 52.5 |
| G41P | (73.5) | φ 42 |
| G52P | (85.5) | φ 52.5 |

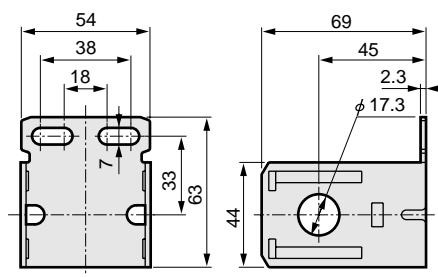
● L type bracket (-B3W)

Part model no.: B230-W



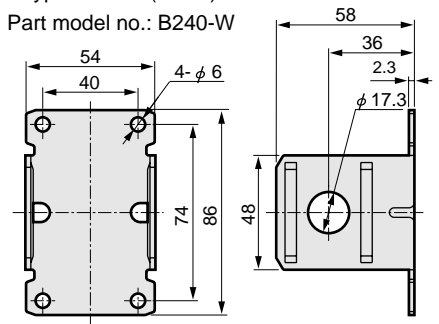
● C type bracket (-BW)

Part model no.: B220-W



● B type bracket (-B4W)

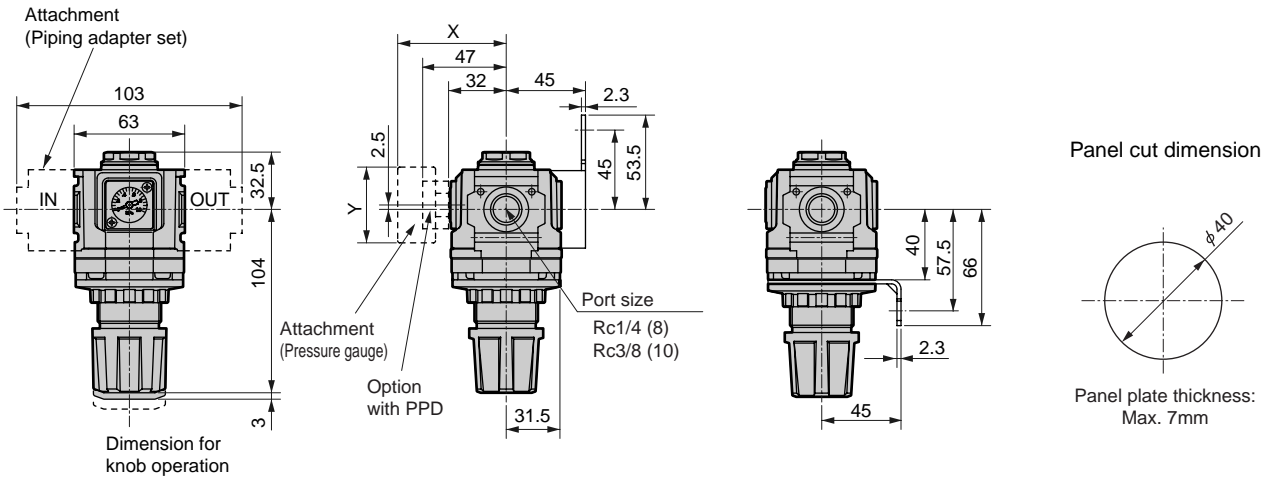
Part model no.: B240-W



Dimensions

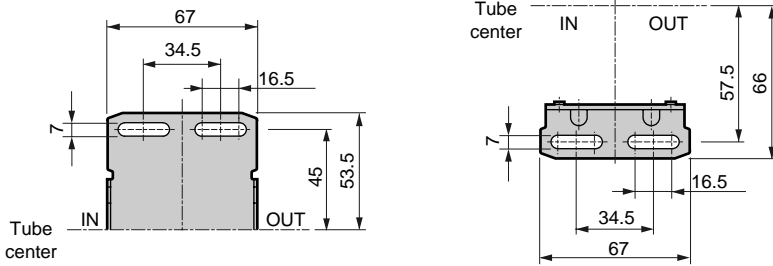


● R3000



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

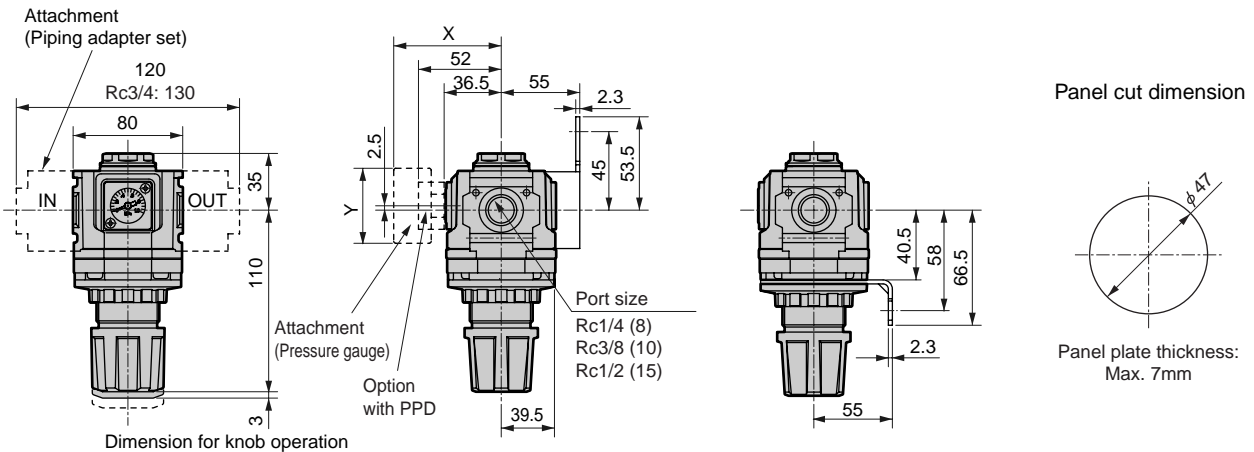
L type bracket (-B3)
Part model no.: B330



Pressure gauge attached optional dimensions table

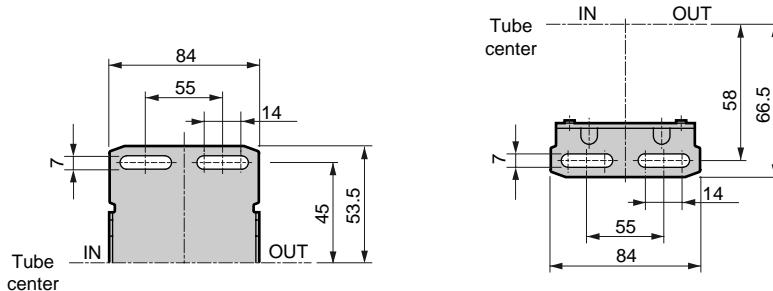
| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (69.5) | φ 43.5 |
| G59P | (72) | φ 52 |
| G40P | (71.5) | φ 42.5 |
| G50P | (71.5) | φ 52.5 |
| G41P | (70) | φ 42 |
| G52P | (82) | φ 52.5 |

● R4000



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

L type bracket (-B3)
Part model no.: B430



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (74.5) | φ 43.5 |
| G59P | (77) | φ 52 |
| G40P | (76.5) | φ 42.5 |
| G50P | (76.5) | φ 52.5 |
| G41P | (75) | φ 42 |
| G52P | (86) | φ 52.5 |

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

Ending

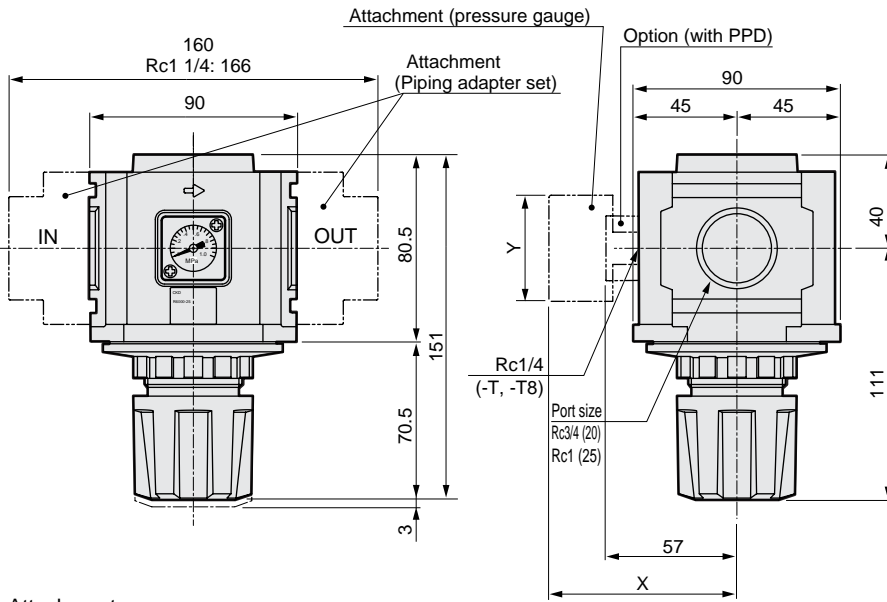
Standard Series
F.R.L. unit

Regulator Series

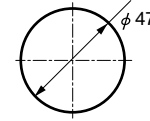
Dimensions



● R6000



Panel cut dimension

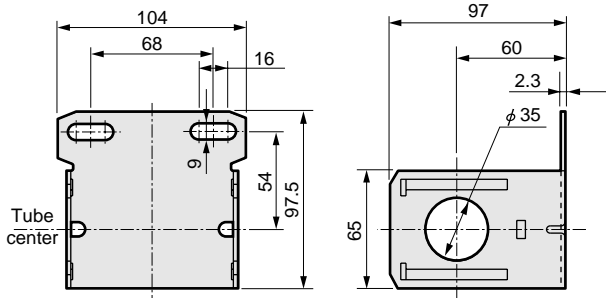


Pressure gauge attached optional dimensions table

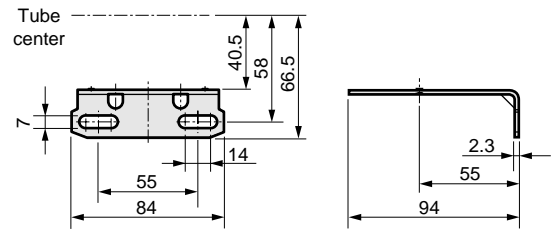
| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (79.5) | φ 43.5 |
| G59P | (82) | φ 52 |
| G40P | (81.5) | φ 42.5 |
| G50P | (81.5) | φ 52.5 |
| G41P | (80) | φ 42 |
| G52P | (93) | φ 52.5 |

• Attachment

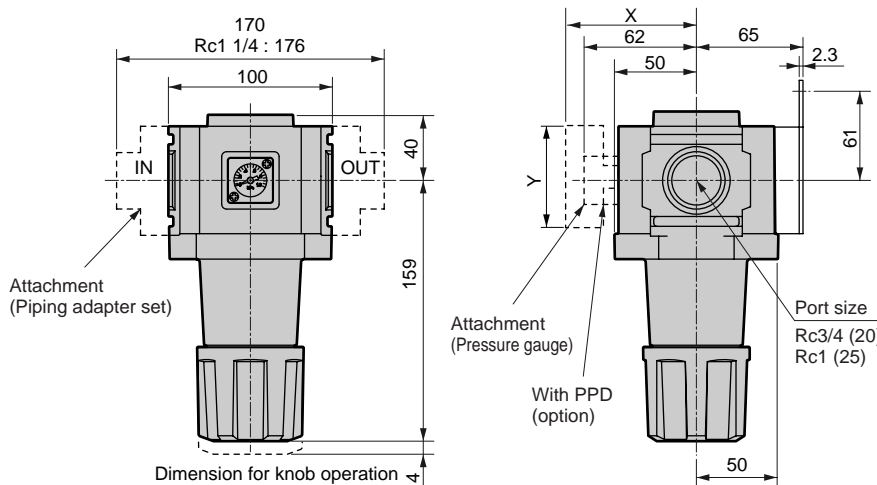
C type bracket (-B)
Part model no.: B620



L type bracket (-B3)
Part model no.: B430

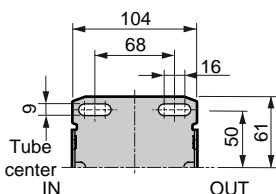


● R8000



• Attachment

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

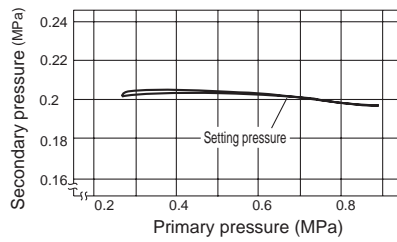


Pressure gauge attached optional dimensions table

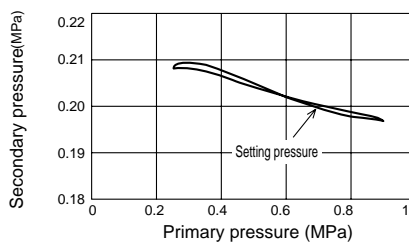
| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (84.5) | φ 43.5 |
| G59P | (87) | φ 52 |
| G40P | (86.5) | φ 42.5 |
| G50P | (86.5) | φ 52.5 |
| G41P | (85) | φ 42 |
| G52P | (90) | φ 52.5 |

Pressure characteristics

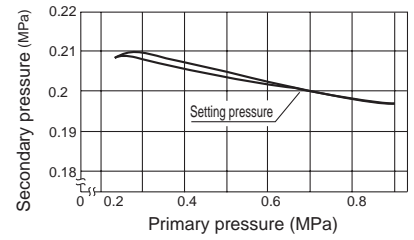
● R1100



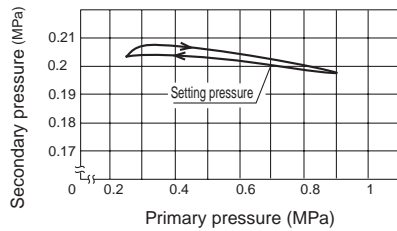
● R2100-W



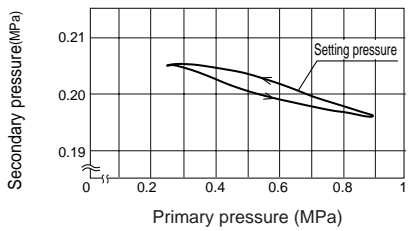
● R3100



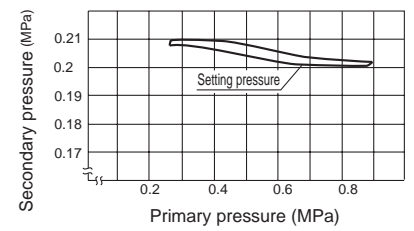
● R4100



● R6100

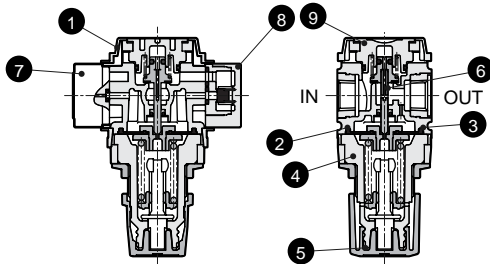


● R8100

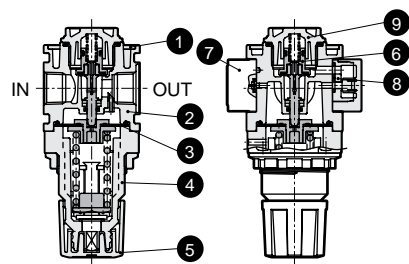


Internal structure and parts list

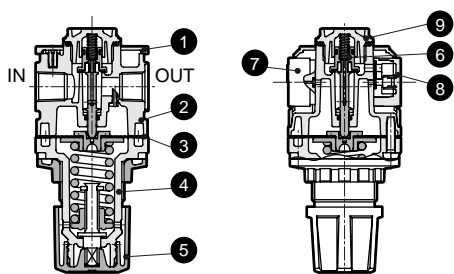
● R1100



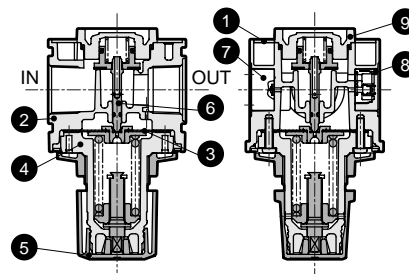
● R2100-W



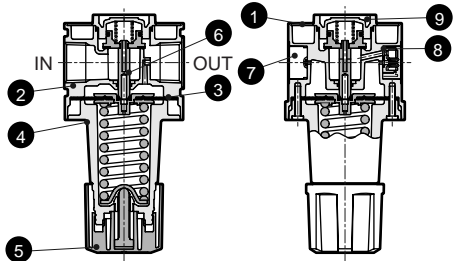
● R3100/R4100



● R6100



● R8100

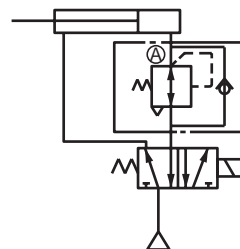


Functional explanation

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.

| No. | Parts name | Material | | | | | |
|-----|----------------------------|--------------------------------------------------------------------------------|-------|-----------------------------------------------|-----------|-----------------------------|-----------------------------|
| | | R1100 | R2100 | R3100 | R4100 | R6100 | R8100 |
| 1 | Plate cover | ABS resin | | | | | |
| 2 | Body | Polyamide resin, steel | | Aluminium alloy die-casting | | | |
| 3 | Diaphragm assembly | Polyacetal resin Nitrile rubber | | Zinc alloy die-casting, nitrile rubber Note 2 | | | |
| 4 | Cover | Polyamide resin | | | PBT resin | | Aluminium alloy die-casting |
| 5 | Knob | Polyacetal resin | | | | | |
| 6 | Valve assembly | Brass, hydrogen nitrile rubber (polyacetal resin: R2100, 3100, 4100, 8100) | | | | | |
| 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 | | | | Aluminium alloy die-casting | |

Note 1: Refer to page 359 for repair kits.

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

Refrigerating type dryer
Desiccant type dryer
High polymer membrane 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

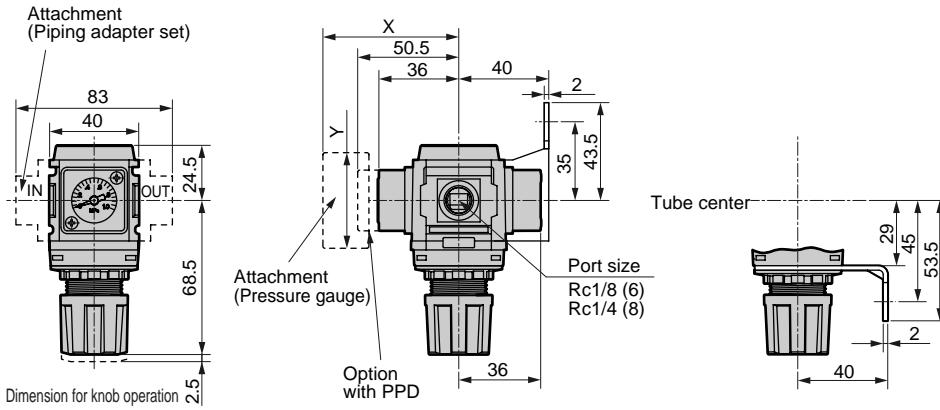
Standard Series
F.R.L. unit

Regulator Series

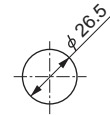
Dimensions



● R1100



Panel cut dimension

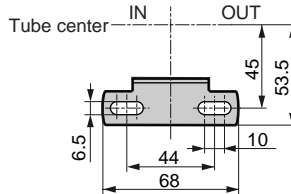
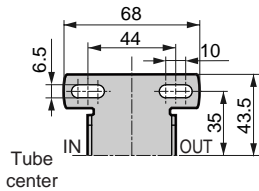


Panel plate thickness:
Max. 6mm

Attachment

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

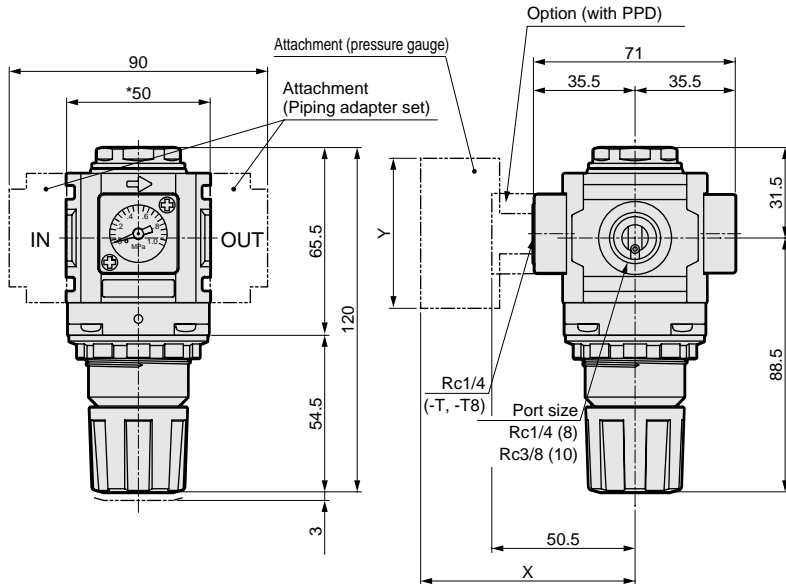
L type bracket (-B3)
Part model no.: B130



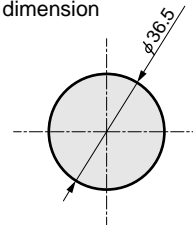
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (73.5) | φ 43.5 |
| G59P | (76) | φ 52 |
| G40P | (75.5) | φ 42.5 |
| G50P | (75.5) | φ 52.5 |
| G41P | (74) | φ 42 |
| G52P | (86) | φ 52.5 |

● R2100-W



Panel cut dimension



Panel plate thickness:
MAX. 4mm

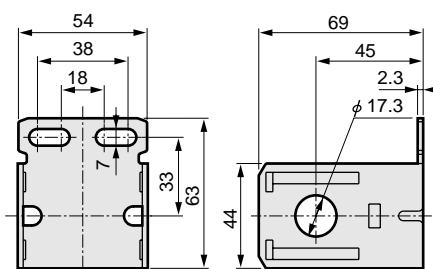
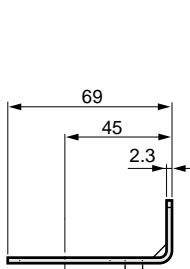
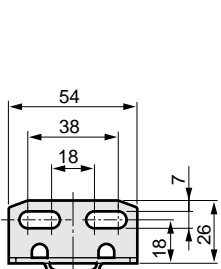
Pressure gauge optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (73) | φ 43.5 |
| G59P | (75.5) | φ 52 |
| G40P | (75) | φ 42.5 |
| G50P | (75) | φ 52.5 |
| G41P | (73.5) | φ 42 |
| G52P | (85.5) | φ 52.5 |

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

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

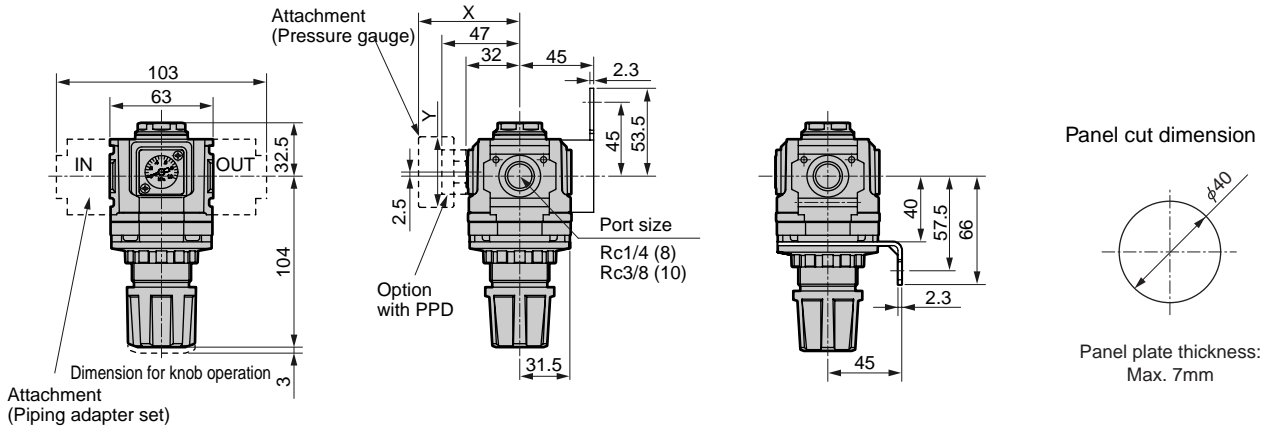
● B type bracket (-B4W)
Part model no.: B240-W



Dimensions

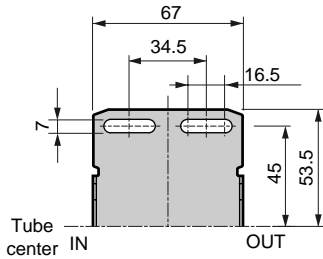


● R3100

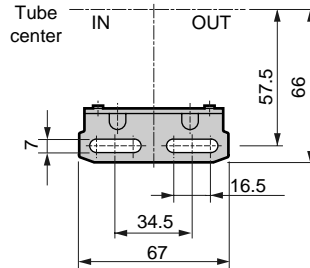


· Attachment

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



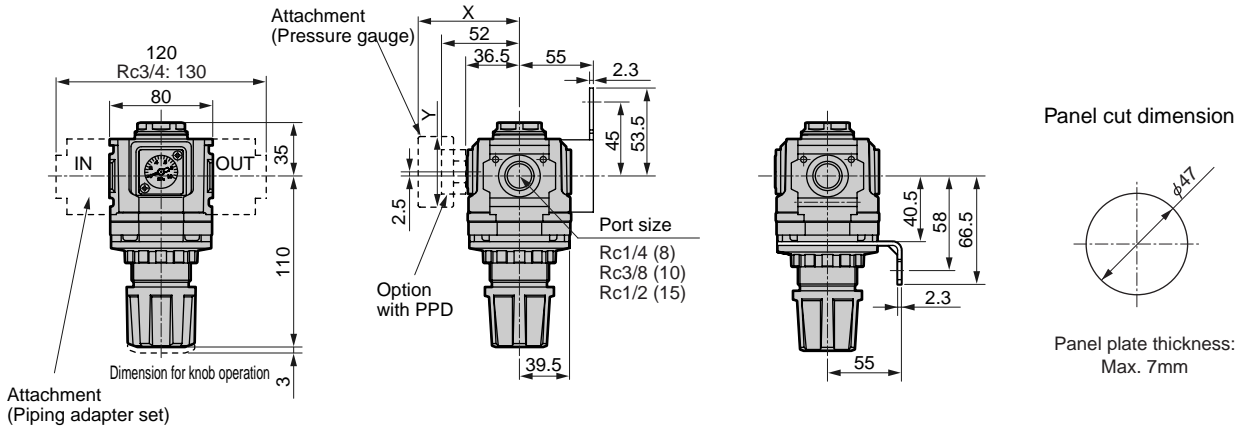
L type bracket (-B3)
Part model no.: B330



Pressure gauge attached optional dimensions table

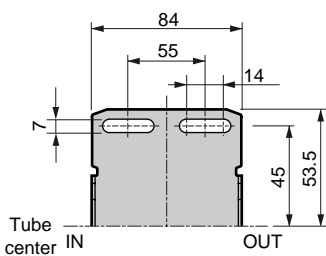
| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (69.5) | φ 43.5 |
| G59P | (72) | φ 52 |
| G40P | (71.5) | φ 42.5 |
| G50P | (71.5) | φ 52.5 |
| G41P | (70) | φ 42 |
| G52P | (82) | φ 52.5 |

● R4100

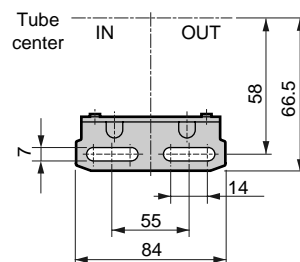


· Attachment

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



L type bracket (-B3)
Part model no.: B430



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (74.5) | φ 43.5 |
| G59P | (77) | φ 52 |
| G40P | (76.5) | φ 42.5 |
| G50P | (76.5) | φ 52.5 |
| G41P | (75) | φ 42 |
| G52P | (86) | φ 52.5 |

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

Ending

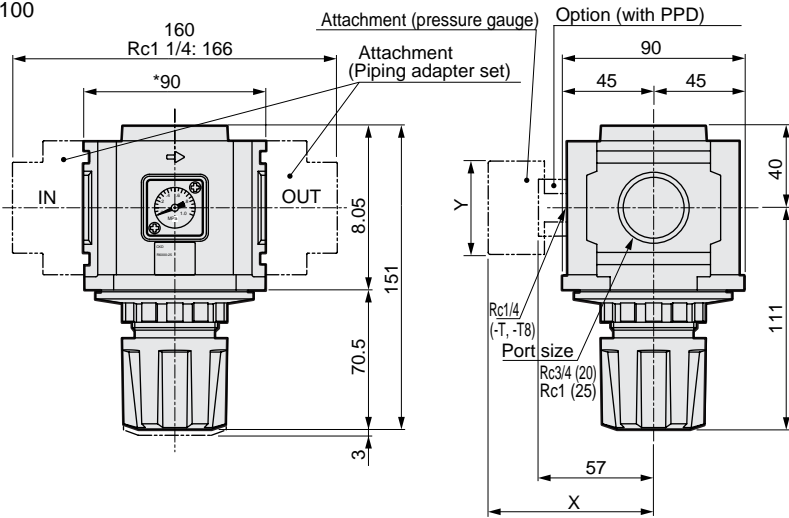
Standard Series
F.R.L. unit

Regulator series

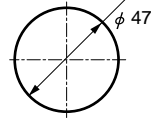
Dimensions



● R6100



Panel cut dimension

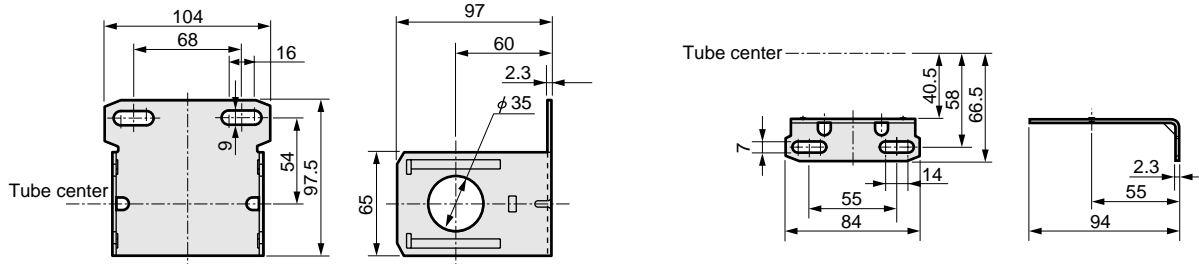


Pressure gauge optional dimensions table

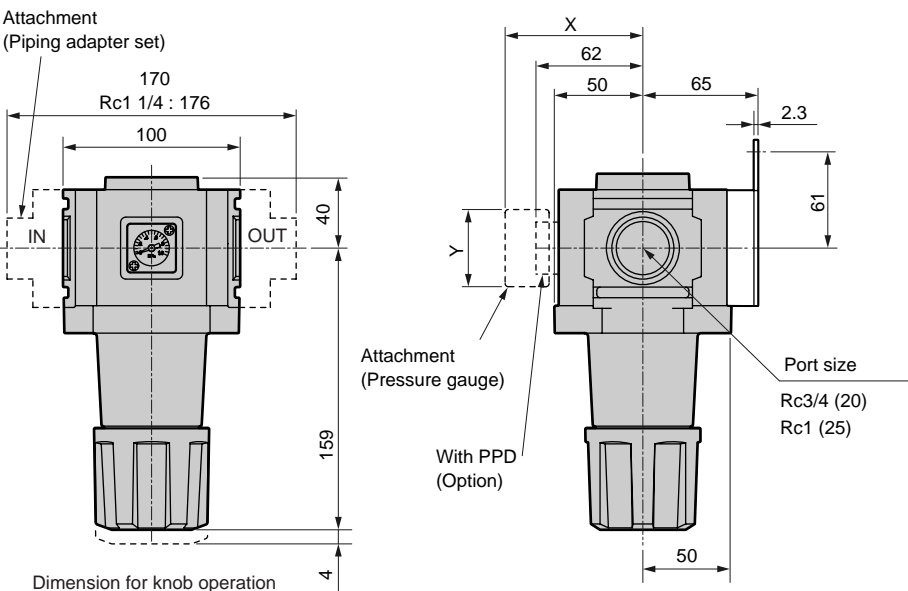
| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (79.5) | φ 43.5 |
| G59P | (82) | φ 52 |
| G40P | (81.5) | φ 42.5 |
| G50P | (81.5) | φ 52.5 |
| G41P | (80) | φ 42 |
| G52P | (93) | φ 52.5 |

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

L type bracket (-B3)
Part model no.: B430



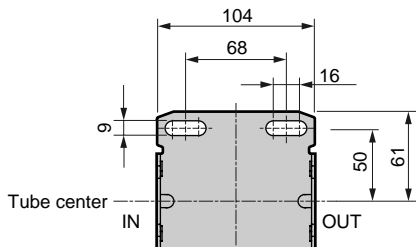
● R8100



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

Pressure gauge attached optional dimensions table

| Attached pressure gauge | X | Y |
|-------------------------|--------|--------|
| G49P | (84.5) | φ 43.5 |
| G59P | (87) | φ 52 |
| G40P | (86.5) | φ 42.5 |
| G50P | (86.5) | φ 52.5 |
| G41P | (85) | φ 42 |
| G52P | (98) | φ 52.5 |





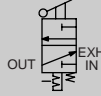
Shut-off valve standard white Series

V3000-W Series

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

Port size: Rc1/4 to Rc1/2

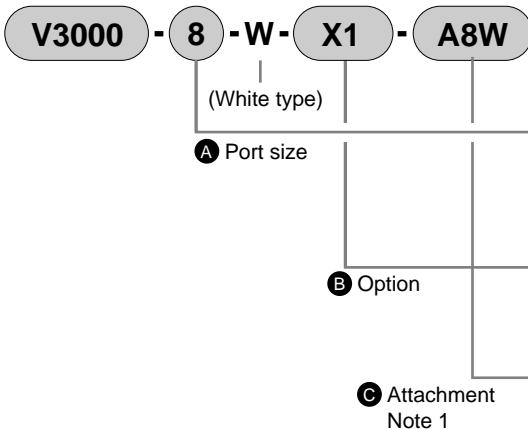
JIS symbol



Specifications

| Descriptions | | 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 | 80 | | |
| | Torque | 2 | | |
| Valve section leakage | cm ³ /min. (ANR) | 10 | | |
| External leakage | cm ³ /min. (ANR) | 10 | | |
| Port size | IN-OUT | Rc1/4 | Rc3/8 | Rc1/2 |
| | EXH | Rc3/8 | | |
| Product weight | kg | 0.25 | | |
| Effective sectional area (mm ²) | IN/OUT | 40 | 70 | 85 |
| | OUT/EXH | 40 | 50 | 50 |

How to order



| Symbol | Descriptions |
|--------------------------------|------------------------------------|
| A Port size | |
| 8 | Rc1/4 |
| 10 | Rc3/8 |
| 15 | Rc1/2 |
| B Option | |
| Blank | None |
| X1 | IN/OUT reverse flow (right → left) |
| C Attachment (attached) | |
| Blank | Not attached |
| A8W | Rc1/4 piping adapter set |
| A10W | Rc3/8 piping adapter set |
| A15W | Rc1/2 piping adapter set |
| A20W | Rc3/4 piping adapter set |
| BW | C type bracket |
| S | Silencer |

⚠ Note on model no. selection

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

Refer to F.R.L. unit Standard type on page 374, for internal structure and dimensions.

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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) |

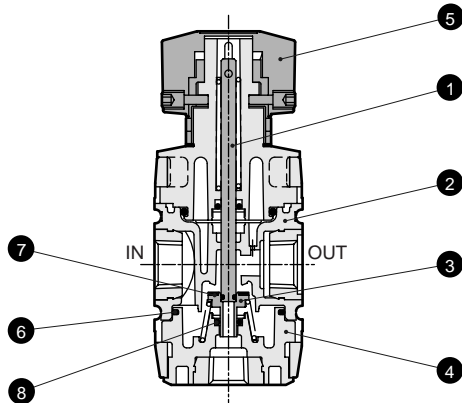
Ending

Standard white Series
F.R.L. unit

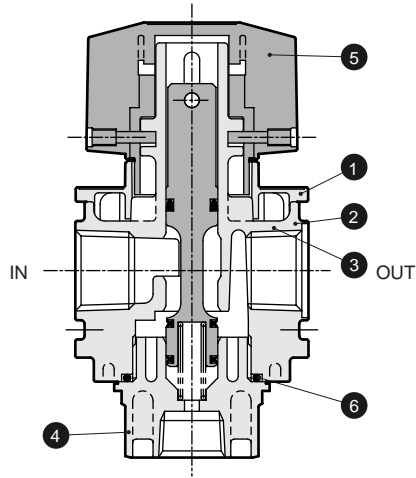
Internal structure and parts list

| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane 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 |

● V1000



● V3000



| 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 |

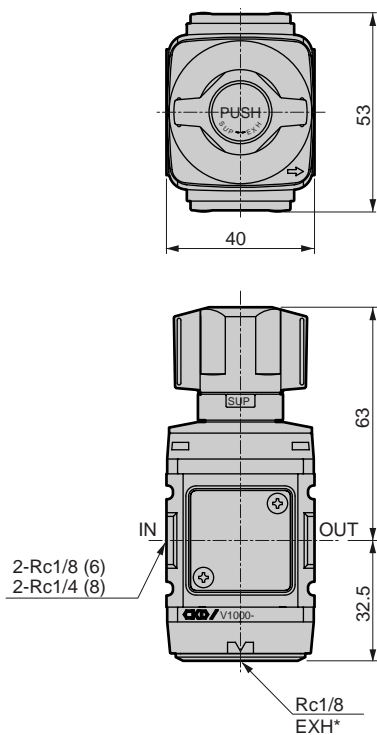
| No. | Parts name | Material |
|-----|----------------|--------------------------------------|
| 1 | Plate cover | ABS resin |
| 2 | Body | Aluminium alloy die-casting |
| 3 | Spool assembly | Aluminum alloy urethane rubber resin |
| 4 | Bottom plug | PBT resin Note 1 |
| 5 | Knob | Polyacetal resin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

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

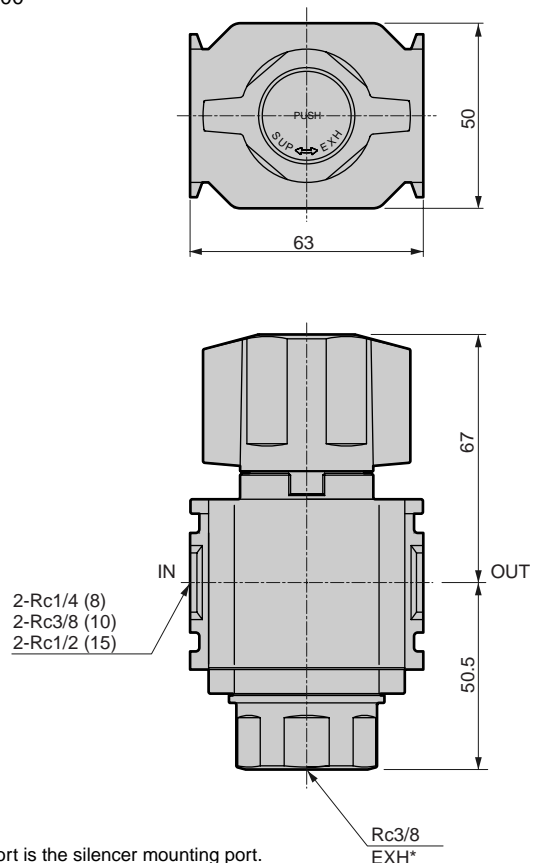
Dimensions



● V1000



● V3000



* The EXH port is the silencer mounting port.

* The EXH port is the silencer mounting port.



Precision regulator

RP1000 Series

● Port size: Rc 1/4

JIS symbol



Specifications

| Descriptions | RP1000-8-02 | RP1000-8-04 | RP1000-8-07 |
|-------------------------------------------|---------------------------------------------------------------------|--------------|--------------|
| Working fluid | Clean compressed air (refer to recommended air circuit on page 672) | | |
| Max. working pressure Mpa | 1.0 | | |
| Min. working pressure Mpa | Setting pressure + 0.1 Note 1 | | |
| Withstanding pressure Mpa | 1.5 | | |
| Ambient temperature, fluid temperature °C | -5 to 60 (no freezing) Note 3 | | |
| Set pressure range Mpa | 0.003 to 0.2 | 0.005 to 0.4 | 0.005 to 0.7 |
| Sensitivity | Within 0.1% of full scale | | |
| Repeatability | Within ±0.5% of full scale | | |
| Air consumption Note 2 l/min. (ANR) | 1.3 or less | | 3.4 or less |
| Port size | Rc1/4 | | |
| Pressure gauge port size | Rc1/8 | | |
| Weight g | 250 | | |

Note 1. Flow rate of the secondary side is to be zero. If the set pressure is 0.3MPa and over, increase +0.2MPa in the set pressure.

Note 2. The primary pressure is to be 0.7MPa. Air is released to atmosphere normally.

Note 3. The range is -5 to 50°C when a digital pressure sensor is used.

How to order



Model
RP1000: Precision regulator

| A Port size | | B Setting pressure range | | C Attachment (attached) | |
|-------------|-------|--------------------------|-------------|-------------------------|---------------------------|
| 8 | Rc1/4 | 02 | MAX. 0.2MPa | Blank | Without attachment |
| | | 04 | MAX. 0.4MPa | G49P | Pressure gauge (G49D-6-*) |
| | | 07 | MAX. 0.7MPa | B3 | L type bracket |
| | | | | R2 | Digital pressure sensor |

Note 1: A pressure gauge and a bracket are attached.

Note 2: A pressure gauge as same pressure range as the regulator is attached.

Note 3: One R1/8 plug is attached to the product.

Discrete attachment model no.

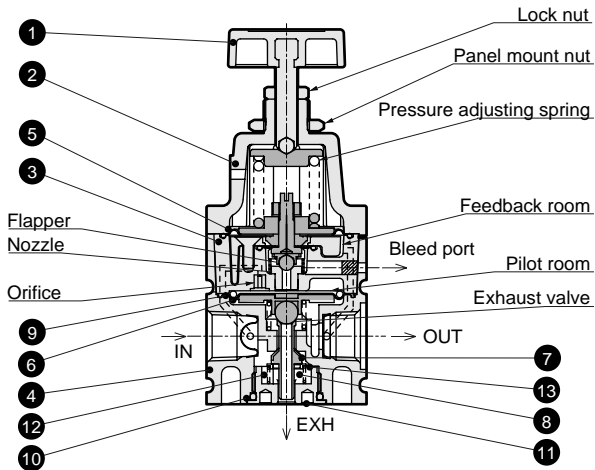
| Model | Discrete attachment model no. |
|-------------------------------------------------------------|-------------------------------|
| RP1000-8-02-G49P | G49D-6-P02 |
| RP1000-8-04-G49P | G49D-6-P04 |
| RP1000-8-07-G49P | G49D-6-P10 |
| RP1000-8- ⁰² / ₀₄ / ₀₇ -B3 | B131 |
| RP1000-8- ⁰² / ₀₄ / ₀₇ -R2 | PPX-R10N-6M |

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

● Dust generation preventing structure for use in cleanrooms

RP1000 - - P70

Internal structure and parts list



| No. | Parts name | Material |
|-----|--------------------------|------------------------------------------|
| 1 | Pressure adjustment knob | Polyacetal resin, stainless steel |
| 2 | Cover | Aluminum alloy die-casting |
| 3 | Pilot body assembly | Aluminum alloy die-casting, etc. |
| 4 | Body | Aluminum alloy die-casting |
| 5 | Pilot diaphragm | Hydrogen nitrile rubber |
| 6 | Main diaphragm | Hydrogen nitrile rubber |
| 7 | Valve | Hydrogen nitrile rubber, stainless steel |
| 8 | Bottom rubber | Silicon rubber |
| 9 | O ring | Nitrile rubber |
| 10 | O ring | Hydrogen nitrile rubber |
| 11 | Bottom plug | Brass, electroless nickel plating |
| 12 | Spring | Stainless steel |
| 13 | Valve adaptor | Aluminum alloy |

Part No. 12 and 13 cannot be used for 0.2 or 0.4 MPa.

Operational explanation

Air supplied from IN side is stopped its flow to OUT side by the 7 valve. Some supplied air passes through the orifice to flow into the pilot room. If the 1 pressure adjustment knob is rotated, the pressure adjustment spring is compressed, and the 5 pilot diaphragm and the flapper are pushed down to close the nozzle.

If the pressure in the pilot room rises, 6 main diaphragm is forced lower to open 7 valve, and to supply air to OUT side. The entered air is flowed into the feedback room, and functions to the 5 pilot diaphragm. If the diaphragm is forced upward until reach the pressure of regulator spring, the 5 pilot diaphragm and flapper is forced upward to open the nozzle, and extremely small air is released to the atmosphere to reduce pressure in the pilot room. At the same time, OUT side pressure functions to the 6 main diaphragm to force upward, the 7 valve is closed and set pressure is maintained. Air is consumed and the pressure drops in OUT side, the pressure in feedback room also drops. The 5 pilot diaphragm and the flapper are forced lower to close the nozzle.

If the pressure in the pilot room rises, and the pressure functions to the 6 main diaphragm to open the 7 valve. This compensates pressure drops. If OUT side pressure increases higher than the set pressure, the pressure in feedback room also increases. The 5 pilot diaphragm and the flapper are forced upward to open the nozzle. This allows the pressure in the pilot room to decrease, and the 6 main diaphragm is forced upward to open the exhaust valve, and the surplus pressure is exhausted from EXH port in OUT side to the atmosphere.

This pilot pressure control method with precise pressure control enables precise pressure control following extremely small pressure deviation.

Repair parts list

0.2, 0.4MPa

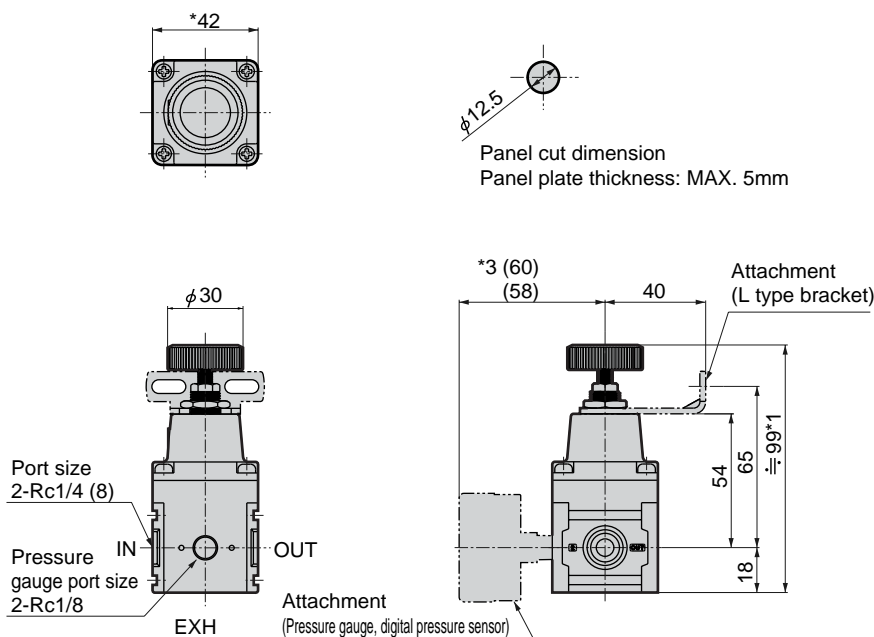
| Model no. | No. |
|-----------------------|--------|
| RP1000-PILOT-ASSY | 3 5 |
| RP1000-DIAPHRAGM-ASSY | 6 9 |
| RP1000-VALVE-ASSY | 7 8 10 |

0.7MPa

| Model no. | No. |
|--------------------------|--------|
| RP1000-PILOT-ASSY-07 | 3 5 |
| RP1000-DIAPHRAGM-ASSY-07 | 6 9 |
| RP1000-VALVE-ASSY | 7 8 10 |

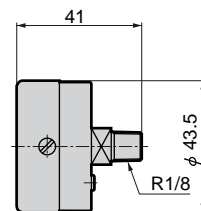
The RP1000-VALVE-ASSY is common to 0.2 and 0.4 MPa models.

Dimensions

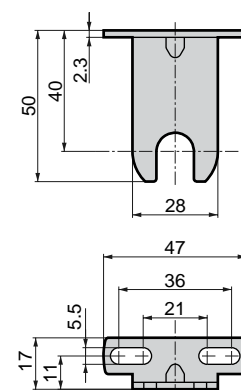


- *1: Dimension at setting pressure 0MPa
- *2: Pressure gauge, digital pressure sensor and bracket are optional.
- *3: Dimension when digital pressure sensor assembled.

Pressure gauge
P02
- G49D-6- P04
P10



L type bracket
- B131



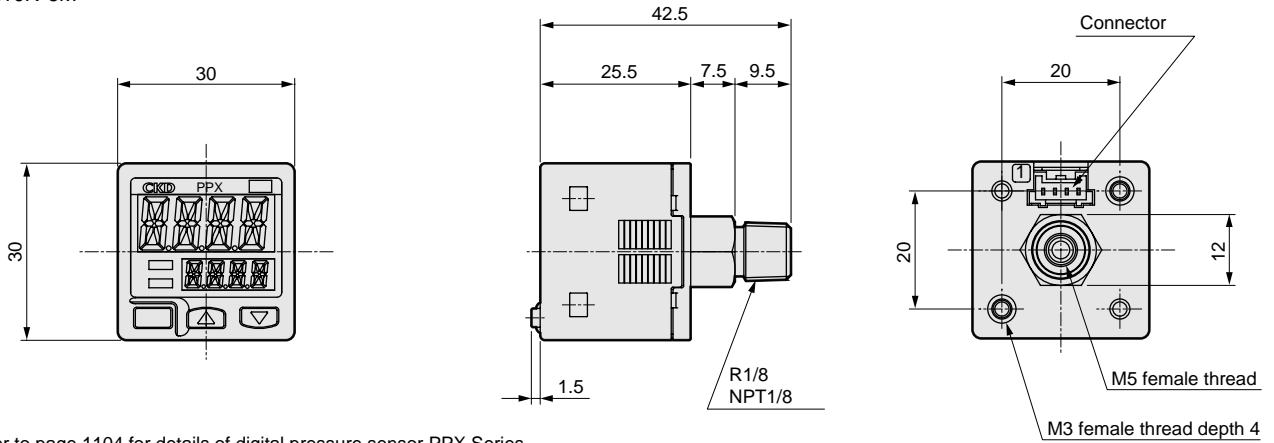
| |
|----------------------------------|
| Refrigerating type dryer |
| Desiccant type dryer |
| High polymer membrane dryer |
| Air filter |
| Auto. drain / others |
| F.R.L. (Module unit) |
| F.R.L. (Separate) |
| Compact F.R. |
| Precise regulator |
| F.R.L. (Related products) |
| Clean F.R. |
| Electro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

Precision regulator
F.R.L. unit

Dimensions

● PPX-R10N-6M



Note: Refer to page 1104 for details of digital pressure sensor PPX Series.

Flow characteristics

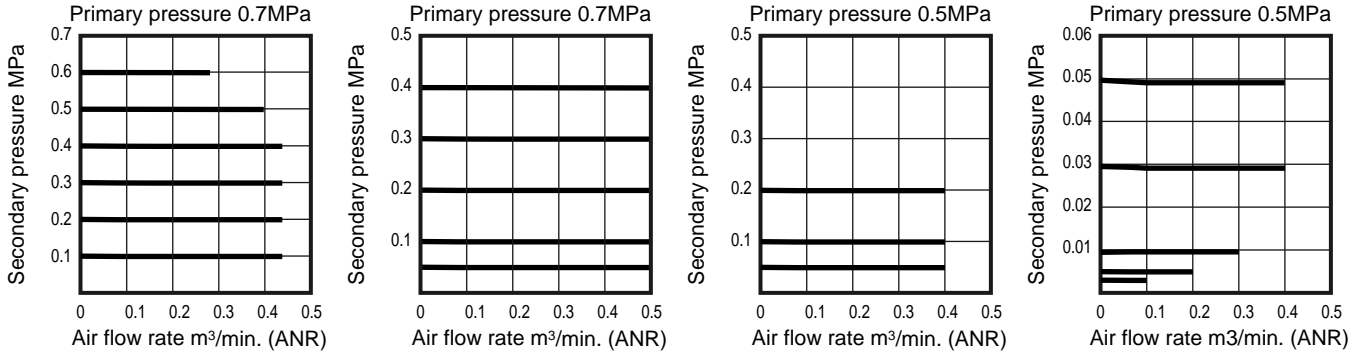
● RP1000-8-07

● RP1000-8-04

● RP1000-8-02

● RP1000-8-02

(Flow characteristics at low pressure)

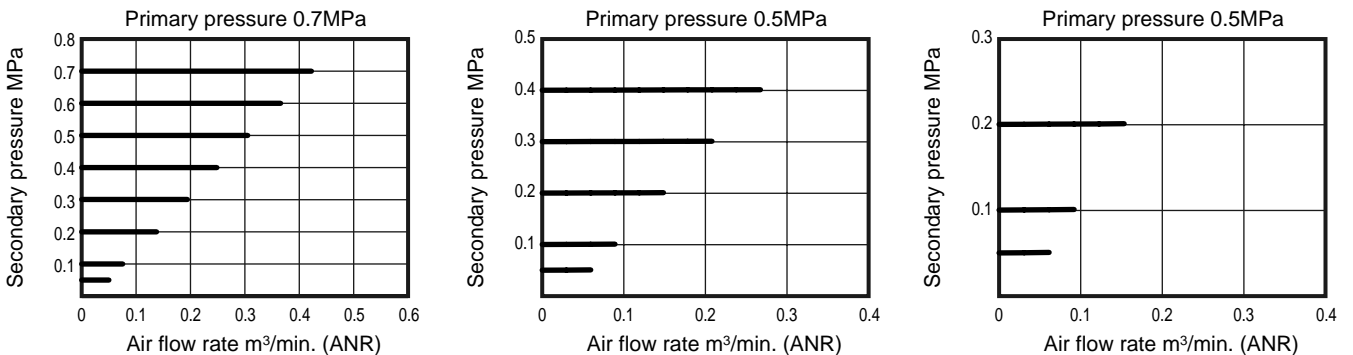


Relief flow characteristics

● RP1000-8-07

● RP1000-8-04

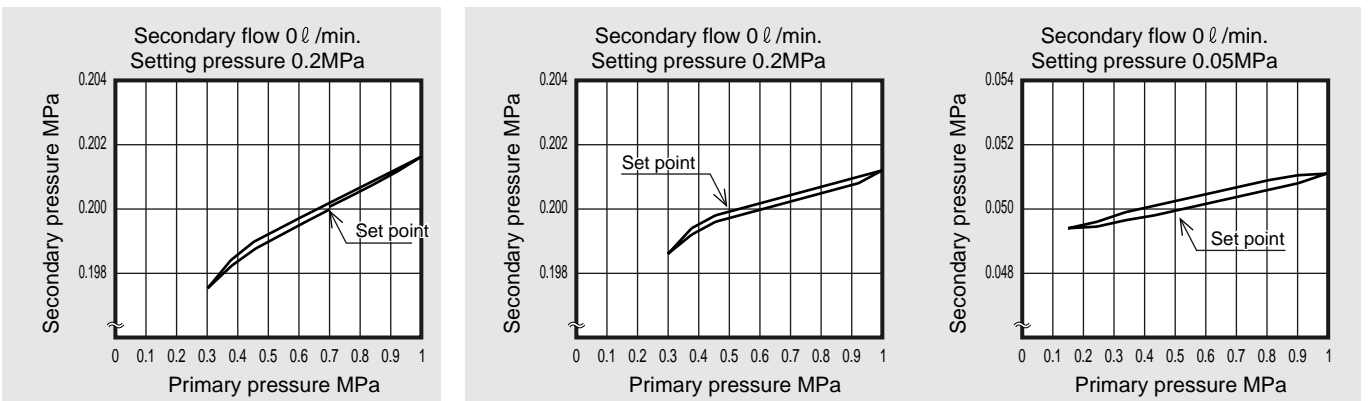
● RP1000-8-02



Pressure characteristics

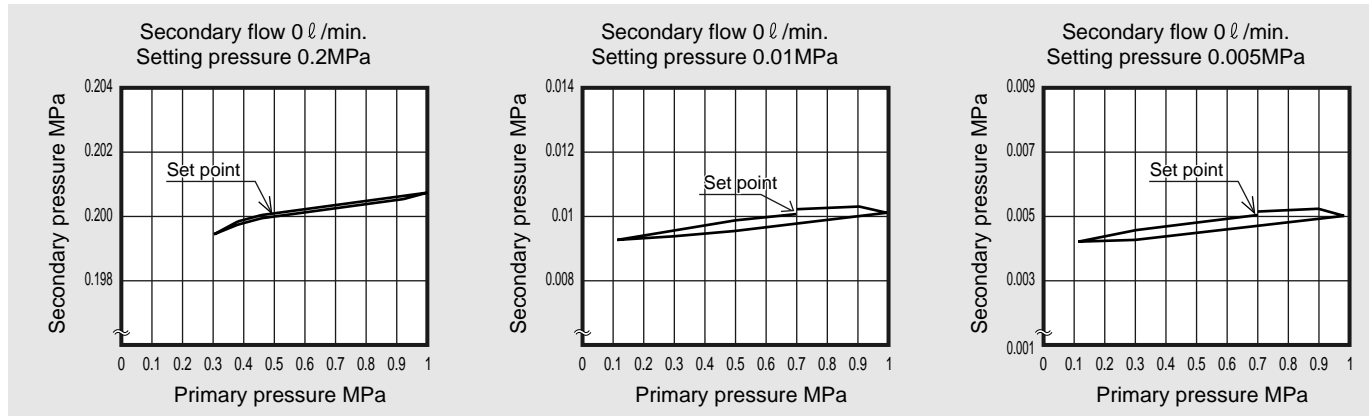
● RP1000-8-07

● RP1000-8-04

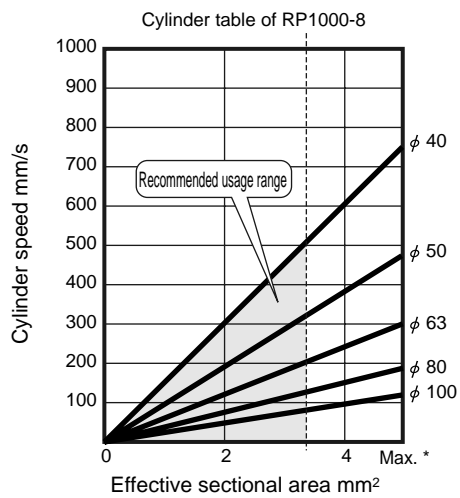


Pressure characteristics

● RP1000-8-02



Cylinder speed range of RP1000



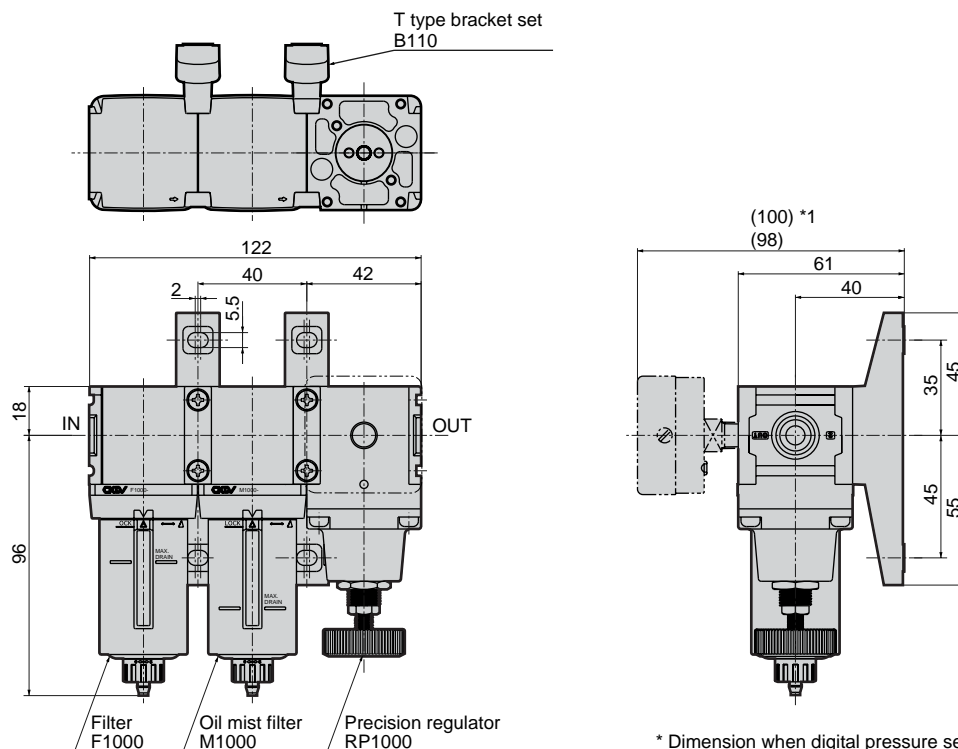
This cylinder table shows available range according to air supply / exhaust flow rate of precision regulator and required consumption flow rate at cylinder PUSH/PULL.

----- Recommended cylinder line (70% of maximum flow rate is recommended)

* Max. cylinder line (Cylinder directly installed)

Note: Using at a speed higher than maximum could cause relief faults.

Example of precise pressure control system

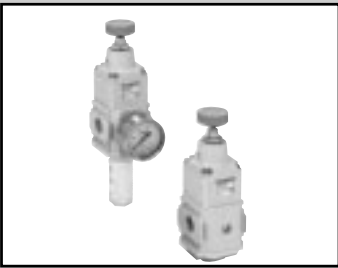


* Dimension when digital pressure sensor assembled.

* Consult with CKD if required for assembly.

| Applicable model | Filter | Oil mist filter | Precision regulator | T type bracket set |
|------------------|--------|-----------------|---------------------|--------------------|
| Model | F1000 | M1000 | RP1000 | B110 (2 pcs.) |

Refrigerating type dryer
 Desiccant type dryer
 High polymer membrane 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



Precision regulator

RP2000 Series

● Port size: Rc 1/4, Rc3/8

JIS symbol



Specifications

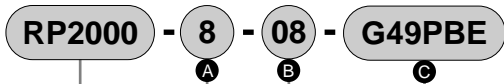
| Descriptions | RP2000-8-08 | RP2000-10-08 |
|-------------------------------------------|---------------------------------------------------------------------|--------------|
| Working fluid | Clean compressed air (refer to recommended air circuit on page 672) | |
| Max. working pressure Mpa | 1.0 | |
| Min. working pressure Mpa | Setting pressure + 0.1 Note 1 | |
| Withstanding pressure Mpa | 1.5 | |
| Ambient temperature, fluid temperature °C | -5 to 60 (no freezing) Note 3 | |
| Set pressure range Mpa | 0.03 to 0.85 | |
| Sensitivity | Within 0.2% of full scale | |
| Repeatability | Within ±0.5% of full scale | |
| Air consumption ℓ /min (ANR) | 5 or less Note 2 | |
| Port size | Rc1/4 | Rc3/8 |
| Exhaust side port size | Rc3/8 | |
| Pressure gauge port size | Rc1/8 | |
| Weight g | 470 | |

Note 1. Flow rate of the secondary side is to be zero.

Note 2. Conditions where the primary pressure is 0.7MPa and set pressure is 0.3MPa. Consumed air is normally released to the atmosphere from the bleed port and EXH port. So, air consumption is the total of consumption volume released from the bleed port and EXH port. Air 1ℓ /min. (ANR) or less is released from EXH port.

Note 3. The range is -5 to 50°C when a digital pressure sensor is used.

How to order



Model
 RP2000: Precision regulator

| A Port size | | B Setting pressure range | | C Attachment | |
|-------------|-------|--------------------------|--------------|--------------|-------------------------|
| 8 | Rc1/4 | 08 | MAX. 0.85MPa | Blank | Without attachment |
| 10 | Rc3/8 | | | G49P | Pressure gauge |
| | | | | B | C type bracket |
| | | | | E | Silencer |
| | | | | R2 | Digital pressure sensor |

Note 1: If the port size Rc1/2 is required, use a piping adapter set (model no.: A400-15).

Note 2: Attachment is attached.

Note 3: The piping adapter set and C bracket cannot be used together.

Note 4: One R1/8 plug is attached to the product.

Discrete attachment model no.

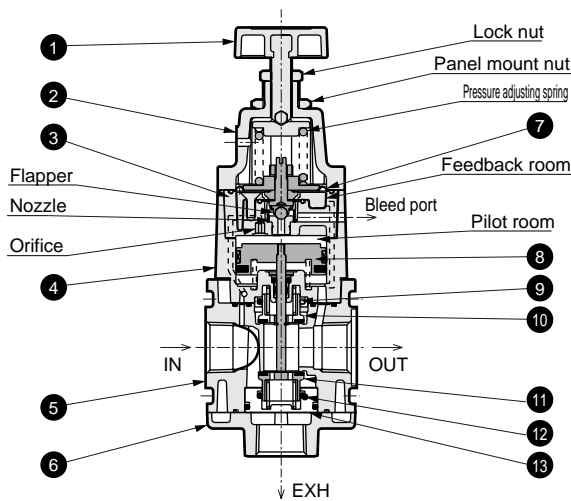
| Attachment symbol | Discrete attachment model no. |
|-------------------|-------------------------------|
| G49P | G49D-6-P10 |
| B | B220 |
| E | SLW-10A |
| R2 | PPX-R10N-6M |

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

● Dust generation preventing structure for use in cleanrooms

RP2000 P70

Internal structure and parts list



| No. | Parts name | Material |
|-----|--------------------------|-----------------------------------|
| 1 | Pressure adjustment knob | Polyacetal resin, stainless steel |
| 2 | Cover | Aluminum alloy die-casting |
| 3 | Pilot body assembly | Aluminum alloy die-casting, etc. |
| 4 | Top body assembly | Aluminum alloy die-casting, etc. |
| 5 | Body | Aluminum alloy die-casting |
| 6 | Exhaust adaptor | Aluminum alloy die-casting |
| 7 | Pilot diaphragm | Hydrogen nitrile rubber |
| 8 | Piston assembly | Aluminum, stainless steel, etc. |
| 9 | O ring | Nitrile rubber |
| 10 | Exhaust valve | Brass, hydrogen nitrile rubber |
| 11 | Air supply valve | Brass, hydrogen nitrile rubber |
| 12 | O ring | Nitrile rubber |
| 13 | Bottom cap | Brass |

Operational explanation

Air supplied from IN side is stopped its flow to OUT side by the air supply valve. Some supplied air passes through the orifice to flow into the pilot room. If the ① pressure adjustment knob is rotated, the pressure adjustment spring is compressed, and the ⑦ pilot diaphragm and the flapper are pushed down to close the nozzle.

If the pressure in the pilot room rises, piston is forced lower to open ⑪ air supply valve, and to supply air to OUT side. The entered air is flowed into the feedback room, and functions to the ⑦ pilot diaphragm. If the diaphragm is forced upward until reach the pressure of regulator spring, the ⑦ pilot diaphragm and flapper is forced upward to open the nozzle, and extremely small air is released to the atmosphere to reduce pressure in the pilot room.

At the same time, OUT side pressure functions to the piston to force upward, the ⑪ air supply valve is closed and set pressure is maintained. Air is consumed and the pressure drops in OUT side, the pressure in feedback room also drops. The ⑦ pilot diaphragm and the flapper are forced lower to close the nozzle.

If the pressure in the pilot room rises, and the pressure functions to the piston to open the ⑪ air supply valve. This compensates pressure drops. If OUT side pressure increases higher than the set pressure, the pressure in feedback room also increases. The ⑦ pilot diaphragm and the flapper are forced upward to open the nozzle.

This allows the pressure in the pilot room to decrease, and the piston is forced upward to open the ⑩ exhaust valve, and the surplus pressure is exhausted from EXH port in OUT side to the atmosphere.

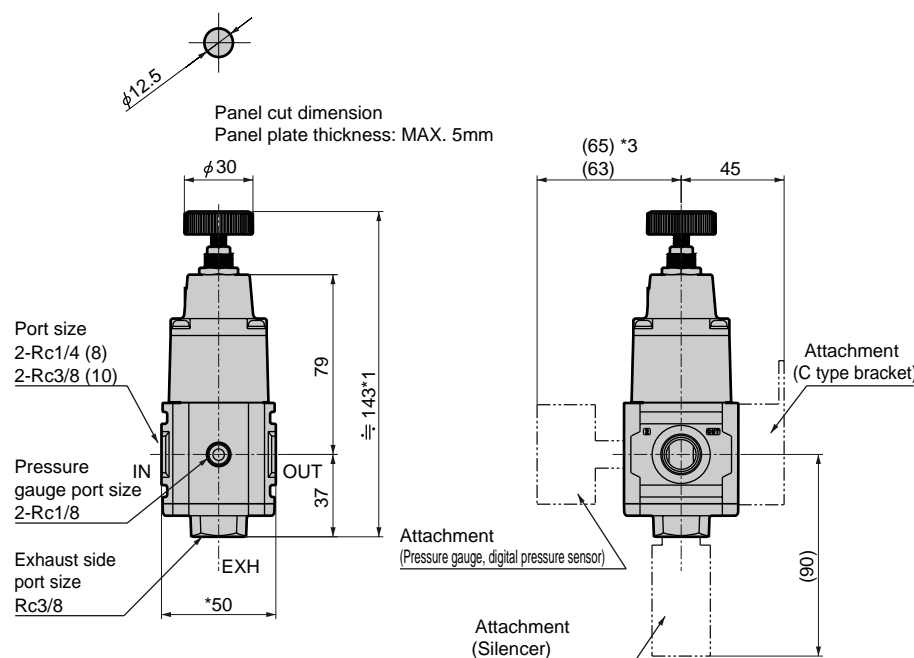
This pilot pressure control method with precise pressure control enables precise pressure control following extremely small pressure deviation.

Repair parts list

| No. | Parts name | Model no. |
|-----|---------------------|-----------------------|
| 3 | Pilot body assembly | RP2000-PILOT-ASSY |
| 7 | Pilot diaphragm | |
| 4 | Top body assembly | RP2000-TOP-BODY-ASSY |
| 11 | Air supply valve | RP2000-BTM-VALVE-ASSY |
| 12 | O ring | |
| 13 | Bottom cap | |

Note: Part no. (8), (9) and (10) are contained in top body assembly (4).

Dimensions



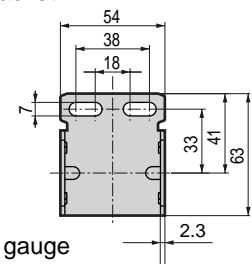
*1: Dimension at setting pressure OMPa

*2: Pressure gauge, digital pressure sensor, C type bracket and silencer are optionally attached.

*3: Dimension when digital pressure sensor assembled.

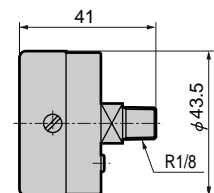
C type bracket

· B220



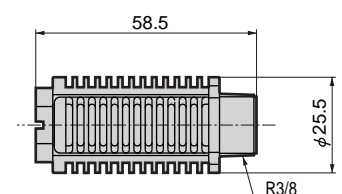
Pressure gauge

· G49D-6-P10



Silencer

· SLW-10A



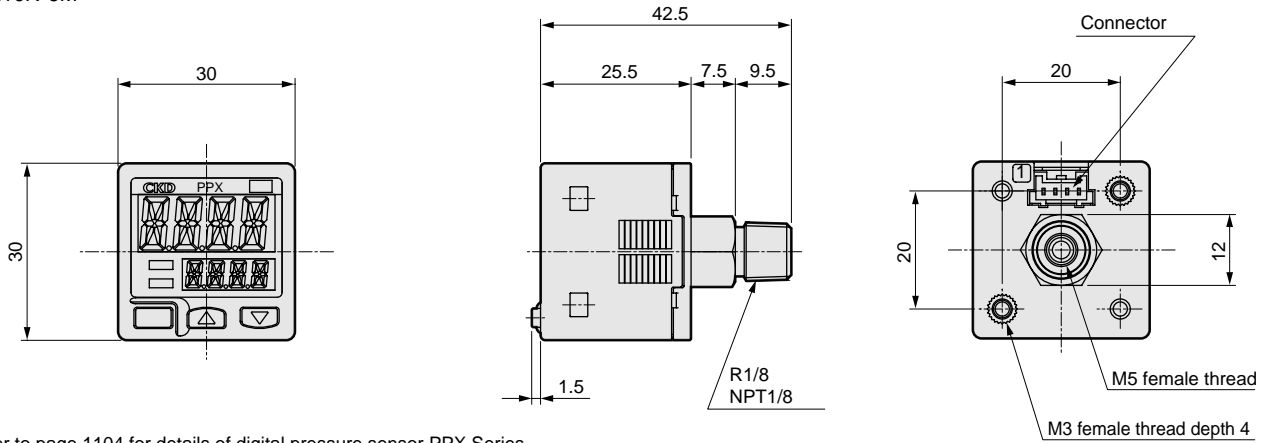
Refrigerating type dryer
Desiccant type dryer
High polymer membrane dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others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

Precision regulator
F.R.L. unit

Dimensions

● PPX-R10N-6M

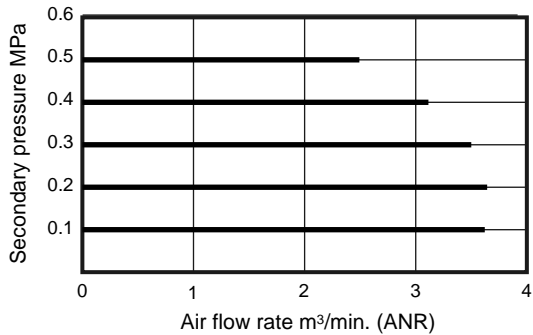


Note: Refer to page 1104 for details of digital pressure sensor PPX Series.

Flow characteristics

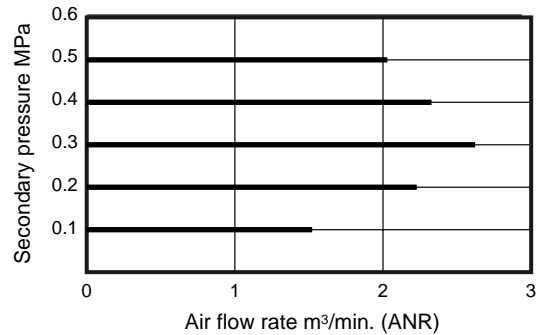
● RP2000-10-08

Primary pressure 0.7MPa



● RP2000-8-08

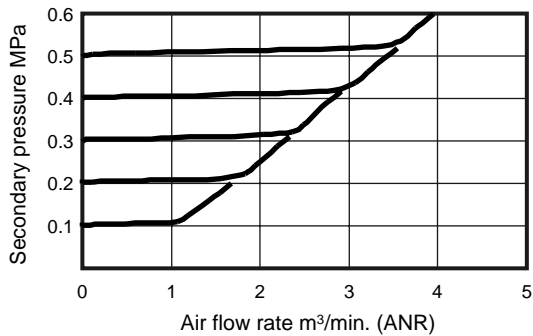
Primary pressure 0.7MPa



Relief flow characteristics

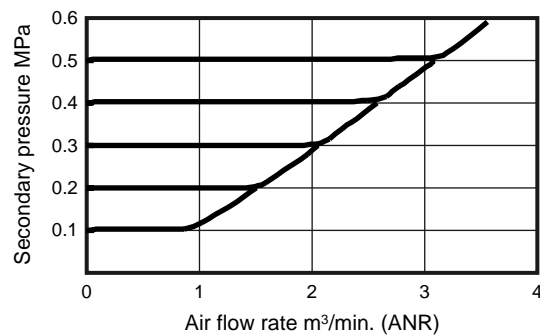
● RP2000-10-08

Primary pressure 0.7MPa



● RP2000-8-08

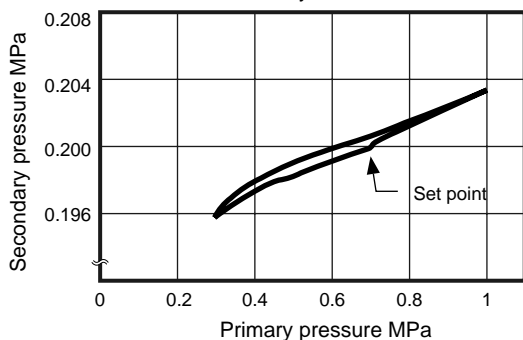
Primary pressure 0.7MPa



Pressure characteristics

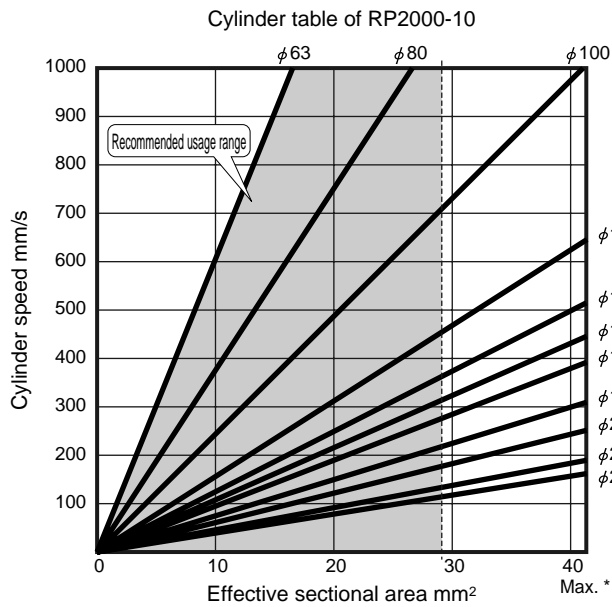
● RP2000-*-08

Secondary flow 0 l/min.



- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane 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

Cylinder speed range of RP2000

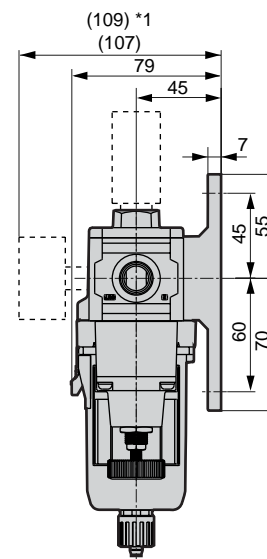
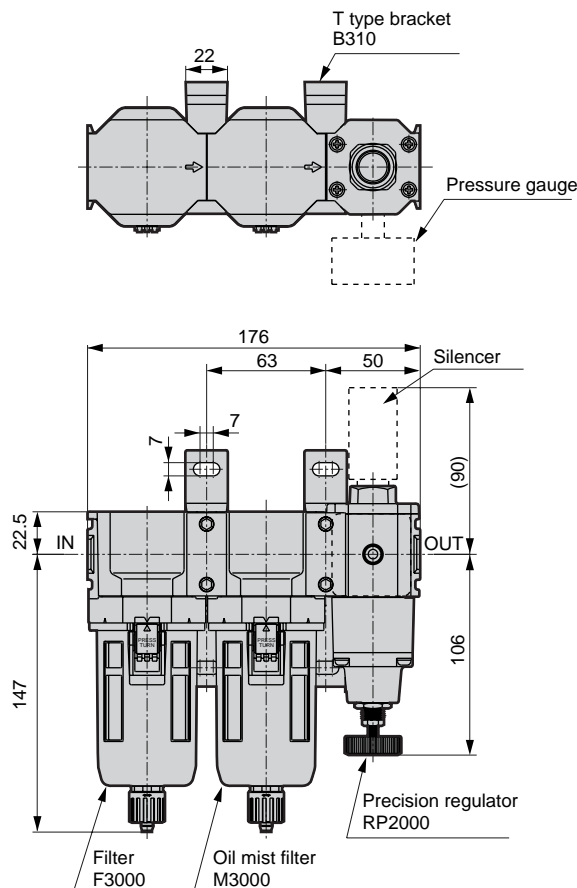


This cylinder table shows available range according to air supply / exhaust flow rate of precision regulator and required consumption flow rate at cylinder PUSH/PULL.

----- Recommended cylinder line
(70% of maximum flow rate is recommended)

* Max. cylinder line
(Cylinder directly installed)

Example of precise pressure control system



* Dimension when digital pressure sensor assembled.

* Consult with CKD if required for assembly.

| Applicable model | Filter | Oil mist filter | Precision regulator | T type bracket set |
|------------------|--------|-----------------|---------------------|--------------------|
| Model | F3000 | M3000 | RP2000 | B310 (2 pcs.) |

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane 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)

Precision regulator
F.R.L. unit