

# SELEX F.R.L. Modular design

## Oil-prohibition Series

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



### C O N T E N T S

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|----------------------|------------|
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| <b>Regulator</b>     |            |
| ● Regulator (RN*000) | 474        |
| Bracket (B)          | 480        |
| Pressure gauge       | 481        |

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

Oil-prohibition Series  
F.R.L. unit



Oil-prohibited regulator

# RN3000/RN4000/RN8000 Series

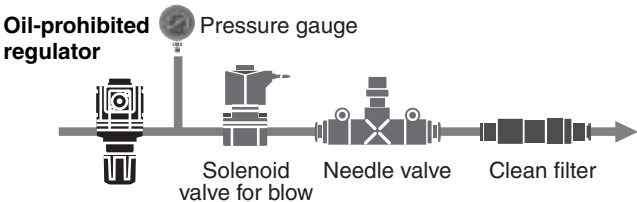
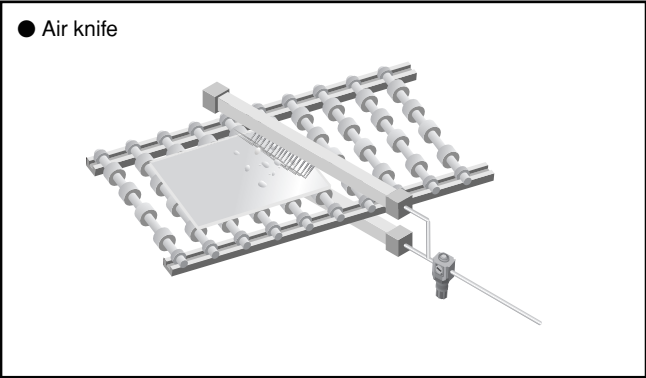
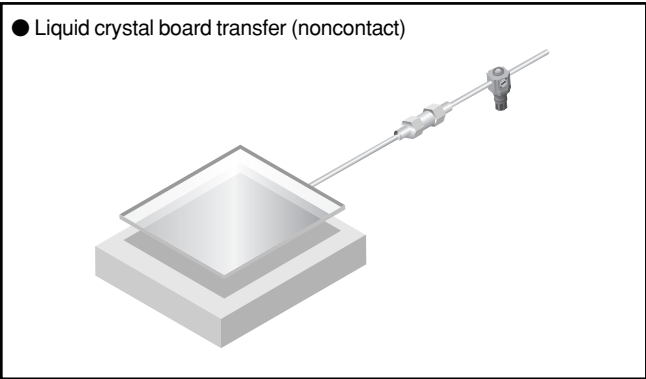
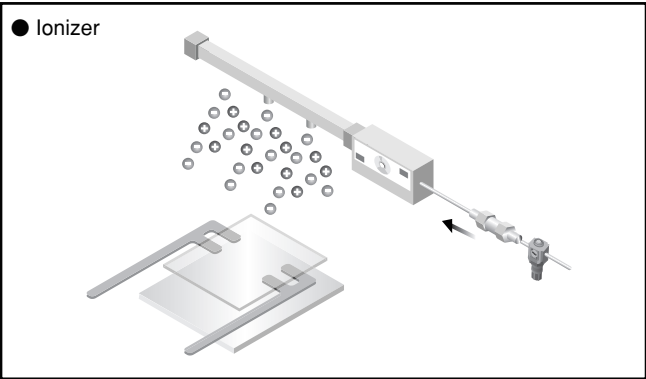
Ideal for applications susceptible to grease, including liquid crystals, semiconductors, foodstuffs, medicines, and electronic parts.  
All parts in the fluid passage area are degreased and washed, and use no grease.  
Port size: 1/4 to 1 JIS symbol



## Specifications

| Descriptions              | RN3000                                                     |  | RN4000        | RN8000                                |
|---------------------------|------------------------------------------------------------|--|---------------|---------------------------------------|
| Working fluid             | Compressed air                                             |  |               |                                       |
| Max. working pressure MPa | 0.8 (0.5 for low pressure)                                 |  |               |                                       |
| Withstanding pressure MPa | 1.5                                                        |  |               |                                       |
| Working temperature °C    | 5 to 60                                                    |  |               |                                       |
| Set pressure range MPa    | 0.05 to 0.7                                                |  |               |                                       |
| Relief                    | With relief mechanism                                      |  |               |                                       |
| Port size Rc              | 1/4, 3/8                                                   |  | 1/4, 3/8, 1/2 | 3/4, 1                                |
| Product weight kg         | 0.5                                                        |  | 0.7           | 1.9                                   |
| Standard specifications   | Fluid passage section: Oil-prohibited, nut for panel mount |  |               | Fluid passage section: Oil-prohibited |

## Application



### How to order

**RN3000 - 8 - LT - BW**

**A** Model no.

**B** Port size

**C** Option

**D** Attachment (attached)

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

| Symbol                         | Descriptions                          | <b>A</b> Model no.                                                                                           |        |        |
|--------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------|--------|--------|
| <b>B</b> Port size             |                                       | RN3000                                                                                                       | RN4000 | RN8000 |
| <b>8</b>                       | Rc1/4                                 | ●                                                                                                            | ●      |        |
| <b>10</b>                      | Rc3/8                                 | ●                                                                                                            | ●      |        |
| <b>15</b>                      | Rc1/2                                 |                                                                                                              | ●      |        |
| <b>20</b>                      | Rc3/4                                 |                                                                                                              |        | ●      |
| <b>25</b>                      | Rc1                                   |                                                                                                              |        | ●      |
| <b>C</b> Option                |                                       | Note 1                                                                                                       |        |        |
| <b>Pressure range</b>          | <b>Blank</b>                          | 0.05 to 0.7MPa                                                                                               |        |        |
|                                | <b>L</b>                              | 0.05 to 0.3MPa Note 2                                                                                        |        |        |
| <b>Relief</b>                  | <b>Blank</b>                          | With relief mechanism                                                                                        |        |        |
|                                | <b>N</b>                              | Nonrelief type                                                                                               |        |        |
| <b>Pressure gauge</b>          | <b>T</b> Note 3                       | Without pressure gauge (gauge port is assembled with sealed)                                                 |        |        |
|                                | <b>T8</b> Note 3                      | Round shaped pressure gauge attached (pressure gauge port is assembled by open)                              |        |        |
|                                | <b>T6</b> Note 4                      | Option for PPX installation (pressure gauge mounting board is assembled in ventilated state port size Rc1/8) |        |        |
| <b>Flow direction</b>          | <b>Blank</b>                          | Standard flow (left → right)                                                                                 |        |        |
|                                | <b>X1</b>                             | Reverse flow (right → left)                                                                                  |        |        |
| <b>D</b> Attachment (attached) |                                       | Pages 425, 659                                                                                               |        |        |
| <b>Blank</b>                   | Not attached                          | ●                                                                                                            | ●      | ●      |
| <b>BW</b>                      | C type bracket                        | ●                                                                                                            | ●      | ●      |
| <b>B3W</b> Note 5              | L type bracket                        | ●                                                                                                            | ●      |        |
| <b>GX59</b>                    | Pressure gauge: G59D-8-P10-P70 Note 6 | ●                                                                                                            | ●      | ●      |
| <b>GY59</b>                    | Pressure gauge: G59D-8-P10-P94        | ●                                                                                                            | ●      | ●      |

### ⚠ Note on model no. selection

- Note 1: When selecting options for several items, list options in order from the top.
- Note 2: If "L" is selected for the pressure range option, the pressure gauge for low pressure (0 to 0.4 MPa) are selected.
- Note 3: The gauge plug is assembled for "T" and "T8". The gauge port is Rc1/4.
- Note 4: The digital pressure sensor PPX must be prepared separately. The following models are recommended.  
PPX-R10N-6M-P12  
PPX-R10NH-6M-P12
- Note 5: Refer to Section (2. Regulator), in "⚠ PRECAUTIONS for Installation and Adjustment" (page 279) for details on mounting the L-type bracket.
- Note 6: Attachment for options made of brass. All others are attachments for options not made of brass.

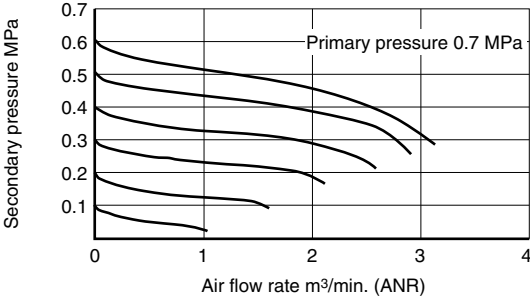
|                                  |
|----------------------------------|
| Refrigerating type dryer         |
| Desiccant type dryer             |
| High polymer membrane type dryer |
| Air filter                       |
| Auto. drain / others             |
| <b>F.R.L.</b> (Module unit)      |
| <b>F.R.L.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

Oil-prohibition Series  
F.R.L. unit

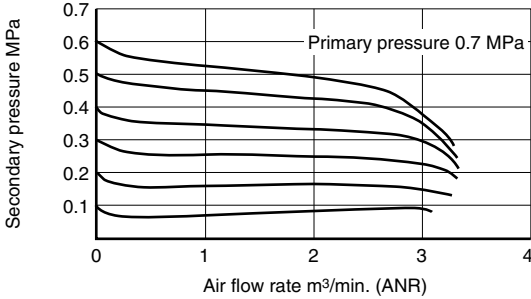
|                                  |
|----------------------------------|
| Refrigerating type dryer         |
| Desiccant type dryer             |
| High polymer membrane type dryer |
| Air filter                       |
| Auto. drain / others             |
| F.R.L. (Module unit)             |
| F.R.L.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

Flow characteristic

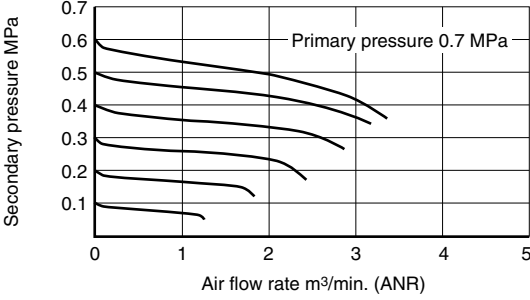
● RN3000-8



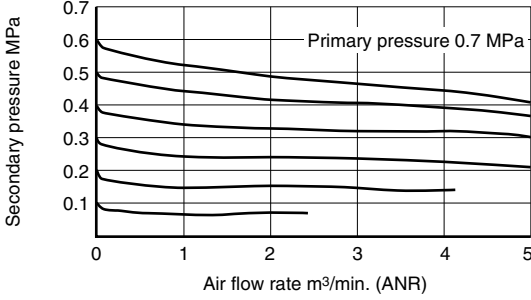
● RN3000-10



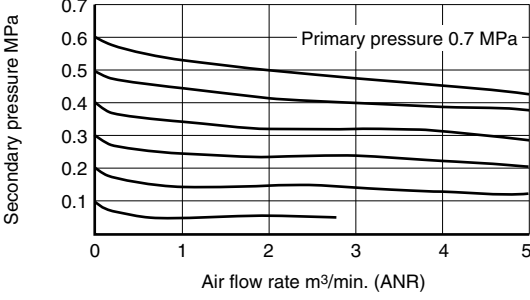
● RN4000-8



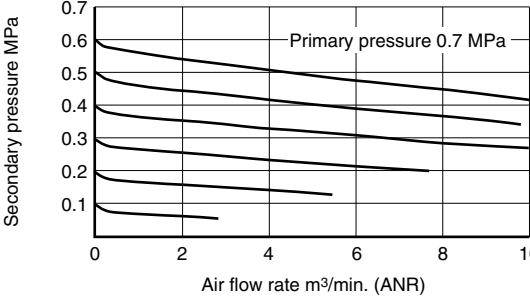
● RN4000-10



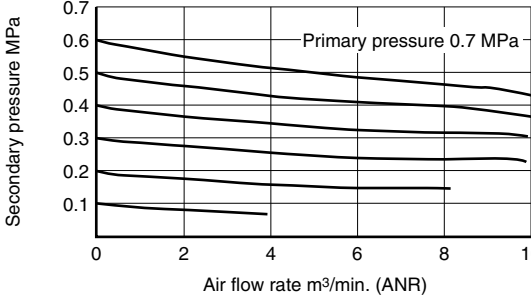
● RN4000-15



● RN8000-20

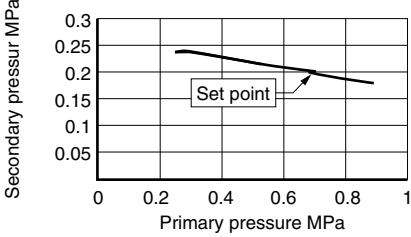


● RN8000-25

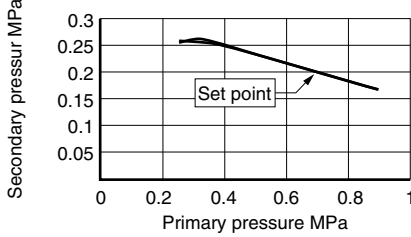


Pressure characteristic

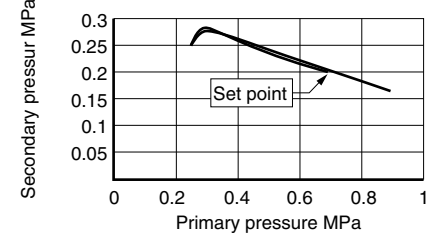
● RN3000



● RN4000



● RN8000

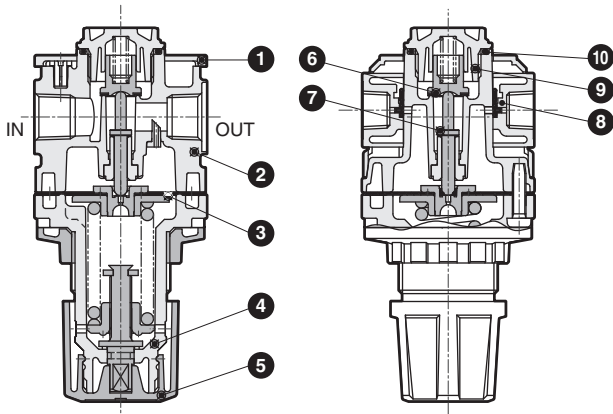


# Oil Prohibited Regulator Series

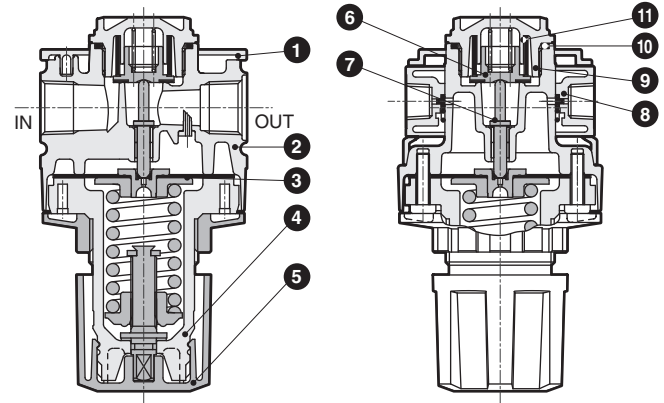
## Internal structure and parts list

### Internal structure and parts list

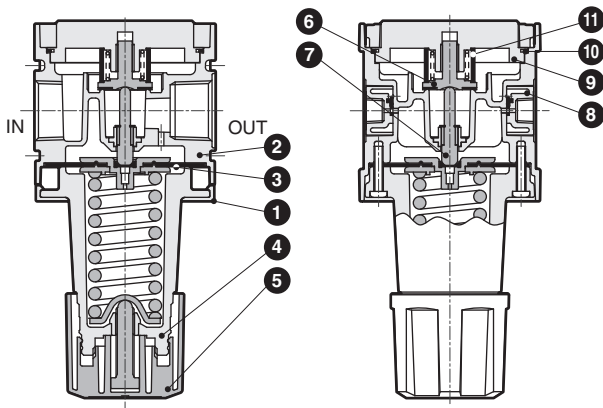
#### ● RN3000



#### ● RN4000



#### ● RN8000



| No. | Parts name          | Material                                |                         |                                          |
|-----|---------------------|-----------------------------------------|-------------------------|------------------------------------------|
|     |                     | RN3000                                  | RN4000                  | RN8000                                   |
| 1   | Plate cover         | ABS resin                               |                         |                                          |
| 2   | Body                | Aluminum alloy die-casting              |                         |                                          |
| 3   | Diaphragm assembly  | Zinc alloy die-casting, nitrile rubber  |                         |                                          |
| 4   | Cover               | PBT resin                               |                         | Aluminum alloy die-casting               |
| 5   | Knob                | Polyacetal resin                        |                         |                                          |
| 6   | Valve               | Aluminum alloy, hydrogen nitrile rubber |                         | Stainless steel, hydrogen nitrile rubber |
| 7   | Stem                | Aluminum alloy                          |                         | Stainless steel                          |
| 8   | Gauge plug assembly | Polyamide resin, nitrile rubber, steel  |                         |                                          |
| 9   | Bottom cap          | Polyacetal resin                        |                         | Aluminum alloy                           |
| 10  | Bottom O-ring       | Fluoro rubber                           |                         |                                          |
| 11  | Bottom rubber       | -                                       | Hydrogen nitrile rubber |                                          |

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

Speed control valve  
Silencer  
Check valve / others  
Joint / tube  
Vacuum filter  
Vacuum regulator  
Suction plate  
Magnetic spring buffer  
Mechanical pressure SW  
Electronic pressure SW  
Contact / close contact cont. SW  
Air sensor  
Pressure SW for coolant  
Small flow sensor  
Small flow controller

Flow sensor for air  
Flow sensor for water  
Total air system  
Total air system (Gamma)

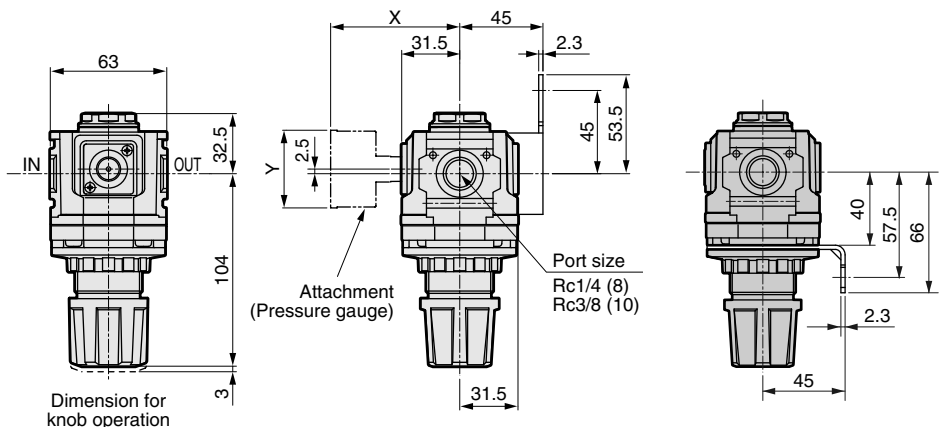
Ending

Oil-prohibition Series  
F.R.L. unit

# Oil Prohibited Regulator Series

## Dimensions

### ● RN3000

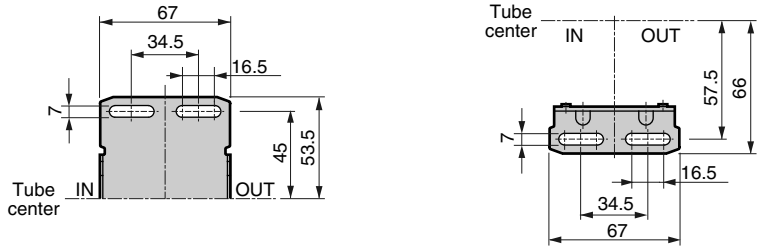


Panel cut dimension

Panel plate thickness:  
MAX. 7 mm

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

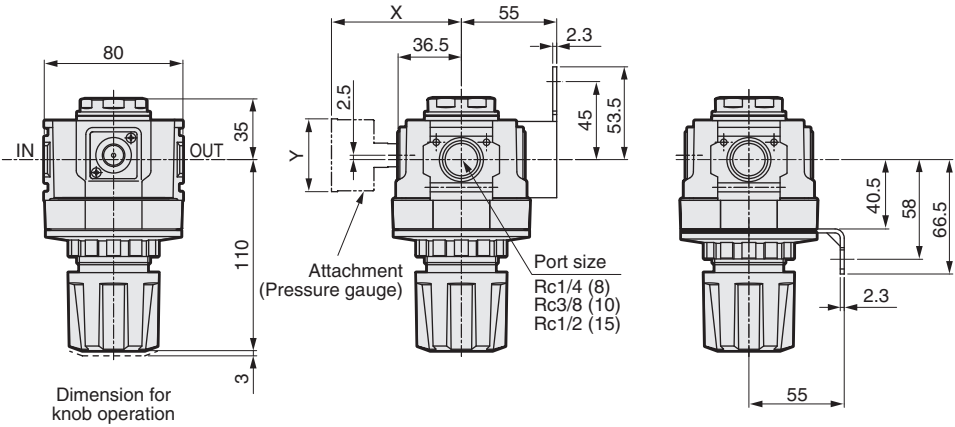
L type bracket (-B3W)  
Part model no.: B330



Pressure gauge attached optional dimensions table

| Attached pressure gauge | X    | Y   |
|-------------------------|------|-----|
| GX59                    | 76.5 | ø52 |
| GY59                    | 79   | ø52 |

### ● RN4000

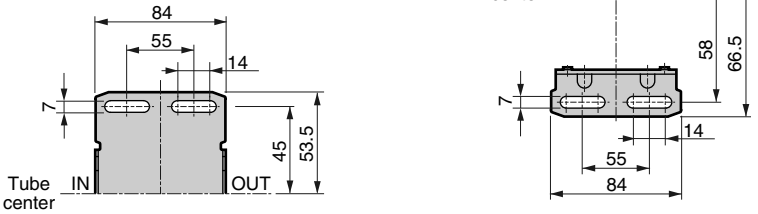


Panel cut dimension

Panel plate thickness:  
MAX. 7 mm

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

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

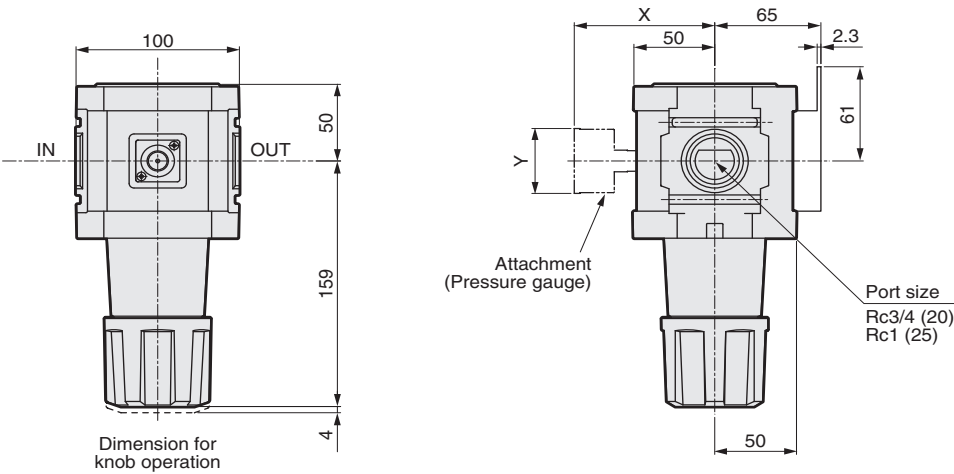


Pressure gauge attached optional dimensions table

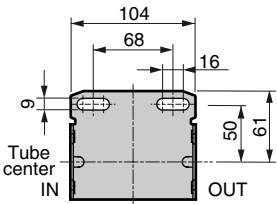
| Attached pressure gauge | X    | Y   |
|-------------------------|------|-----|
| GX59                    | 81.5 | ø52 |
| GY59                    | 84   | ø52 |

Dimensions

● RN8000



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



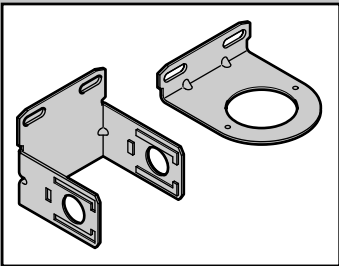
Pressure gauge attached optional dimensions table

| Attached pressure gauge | X    | Y   |
|-------------------------|------|-----|
| GX59                    | 91.5 | ø52 |
| GY59                    | 94   | ø52 |

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

Oil-prohibition Series  
F.R.L. unit

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



# Bracket

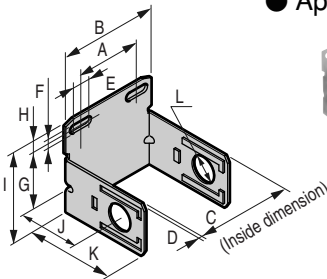
## B Series



### C type bracket

- Model No.: B320/B420/B820
- Attachment:BW

#### ● Application



| Model no. | Applicable model | A    | B   | C   | D    | E    | F | G  | H  | I    | J  | K   | L     |
|-----------|------------------|------|-----|-----|------|------|---|----|----|------|----|-----|-------|
| B320      | 3000 Series      | 34.5 | 67  | 63  | t2.3 | 16.5 | 7 | 45 | 9  | 75.5 | 45 | 69  | ø21.7 |
| B420      | 4000 Series      | 55   | 84  | 80  | t2.3 | 14.0 | 7 | 45 | 9  | 75.5 | 55 | 69  | ø21.7 |
| B820      | 8000 Series      | 68   | 104 | 100 | t2.3 | 16   | 9 | 50 | 11 | 93.5 | 65 | 102 | ø35   |

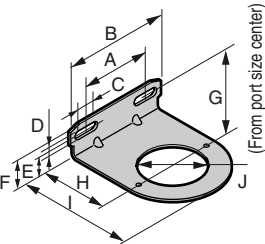
White type

### L type bracket

- Model No.: B330/B430
- Attachment:B3W

Loosen the mounting nut to remove the knob.  
After inserting L type bracket, fix the bracket by the mounting nut.  
Press the knob in manually after fixing.

#### ● Application



| Model no. | Applicable model | A    | B  | C    | D | E    | F  | G  | H  | I  | J   |
|-----------|------------------|------|----|------|---|------|----|----|----|----|-----|
| B330      | 3000 Series      | 34.5 | 67 | 16.5 | 7 | 17.5 | 26 | 58 | 45 | 76 | ø40 |
| B430      | 4000 Series      | 55   | 84 | 14   | 7 | 17.5 | 26 | 58 | 55 | 94 | ø47 |

White type





Pressure gauge

# G49D/G59D Series

● Port size: R1/8, R1/4

JIS symbol



RoHS

## Specifications

| Descriptions           |              | G49D-P70/P9*                                                          | G59D-P70/P9* |
|------------------------|--------------|-----------------------------------------------------------------------|--------------|
| Working fluid          |              | Compressed air, N2                                                    |              |
| Fluid temperature      | °C           | 5 to 60                                                               |              |
| Ambient temperature    | °C           | 5 to 60                                                               |              |
| Precision Note 1       |              | JIS3 grade or equivalent (±3%FS)                                      |              |
| Shape                  |              | DT type (rear side screw, stock section 4 square)                     |              |
| Display section system |              | ø43                                                                   | ø52          |
| Material               | Bourdon tube | P90, P94: SUS316<br>P70: Brass                                        |              |
|                        | Stock        | P90, P94: SUS14 (SUS316 or equivalent)<br>P70: Brass (nickel plating) |              |
|                        | Housing      | Steel (chrome plating)                                                |              |
|                        | Lens         | Glass                                                                 |              |
| Pressure range         | MPa          | 0 to 0.2<br>0 to 0.4<br>0 to 1.0                                      |              |
| Port size              | R            | 1/8                                                                   | 1/4          |
| Weight                 | G            | 90                                                                    | 140          |

Note 1: Display precision endorsement temperature is 20±15°C.

## How to order

**G49D - 6 - P04 - P90**

A Model no.

B Port size

C Pressure display

D Clean room specifications

### Note on model no. selection

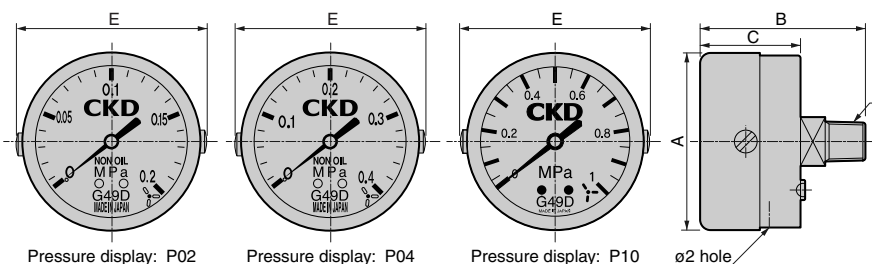
Note 1: Displays other than MPa is custom order.

Note 2: NPT screw is custom order.

| Symbol                           | Descriptions           |                        |                     |               |
|----------------------------------|------------------------|------------------------|---------------------|---------------|
| A Model no.                      |                        |                        |                     |               |
| G49D                             |                        |                        |                     |               |
| G59D                             |                        |                        |                     |               |
| B Port size *Note 2              |                        |                        |                     |               |
| 6                                | R1/8 (only G49D)       |                        |                     |               |
| 8                                | R1/4 (only G59D)       |                        |                     |               |
| C Pressure display (MPa) *Note 1 |                        |                        |                     |               |
| P02                              | 0 to 0.2               |                        |                     |               |
| P04                              | 0 to 0.4               |                        |                     |               |
| P10                              | 0 to 1.0               |                        |                     |               |
| D Clean room specifications      |                        |                        |                     |               |
|                                  | Material               | Oil-prohibited         | assembly            | Package       |
| P70                              | Brass (nickel plating) | Oil / water prohibited | General environment | Clean package |
| P90                              | Stainless steel        | Oil / water prohibited | Clean assembly      | Clean package |
| P94                              | Stainless steel        | Oil / water prohibited | General environment | Clean package |

Use of copper-based, silicon-based, and halogen-based (fluorine, chlorine, bromine) is not acceptable with the P94 model.

## Dimension



| Model no.  | A   | B    | C    | D    | E    |
|------------|-----|------|------|------|------|
| G49D-6-P70 | ø43 | 43.5 | 27.5 | R1/8 | 46.5 |
| G59D-8-P70 | ø52 | 50.5 | 28.5 | R1/4 | 55.5 |
| G49D-6-P90 | ø43 | 43.5 | 27.5 | R1/8 | 46.5 |
| G59D-8-P90 | ø52 | 53   | 28.5 | R1/4 | 55.5 |

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

Oil-prohibition Series  
F.R.L. unit