Reverse filter/regulator standard white Series

# W1100/W3100/W4100/W8100-W Series

Introducing the 5 µm dust removing element and 0.3 µm 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 |
|---|---|---|---|---|
| Appearance |  |  |  |  |
| Working fluid | Compressed air | | | |
| Max. working pressure MPa | 1.0 Note 4, 5, 6 | | | |
| Withstanding pressure MPa | 1.5 Note 6 | | | |
| Ambient temperature range ℃ | 5 to 60 Note 7 | | | |
| Filtration rating µm | 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, NPT, G | 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, 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 75 when selecting the model.
Note 3: Up to 170 $m^3$ is stored only with the manual drain cock type.
Note 4: Min. operating pressure of automatic drain is 0.1MPa for "F" with automatic drain. Air is purged with initial drainage until pressure reaches 0.1 MPa.
Note 5: The minimum operation pressure of the automatic drain is 0.15 MPa for the “F1” with an automatic drain.
Note 6: When “F1” with an automatic drain is selected for the W1100 series, minimum operating pressure is 0.2 MPa, maximum operation pressure is 0.7 MPa and the guaranteed pressure resistance is 1.05 MPa. Refer to the maximum processing flow table (page 83) 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℃.

## Ozone specifications

(Page 182)

**W*100-·····-W-·····-P11**

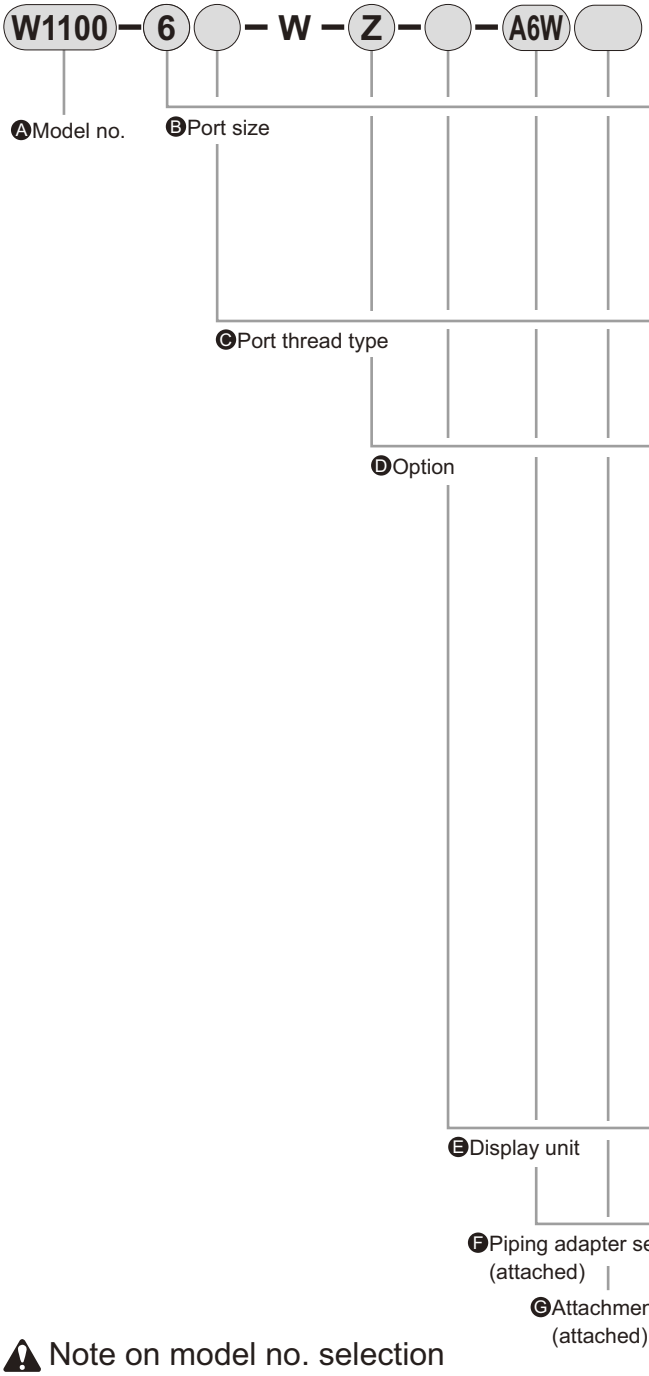
## Clean room specifications

(Catalog No. CB-033SA)

● Dust generation preventing structure for use in cleanrooms

**W*100-·····-···-·····-P7***

## How to order




* Refer to page 9 for explanation of an option.

| Symbol | | Descriptions | Ⓐ Model no. W1100 | W3100 | W4100 | W8100 |
|---|---|---|---|---|---|---|
| **Ⓑ Port size** | | | | | | |
| **6** | | 1/8 | ● | | | |
| **8** | | 1/4 | ● | ● | ● | |
| **10** | | 3/8 | | ● | ● | |
| **15** | | 1/2 | | | ● | |
| **20** | | 3/4 | | | | ● |
| **25** | | 1 | | | | ● |
| **Ⓒ Port thread type** | | | | | | Note 1 |
| **Blank** | | Rc thread | ● | ● | ● | ● |
| **N** | | NPT thread | ● | ● | ● | ● |
| **G** | | G thread | ● | ● | ● | ● |
| **Ⓓ Option** | | | | | | Note 2, Note 3 |
| **Drainage Note 4** | **Blank** | With manual drain cock | ● | ● | ● | ● |
| | **F** | Automatic drain with manual override (NO type: Exhaust without pressurized) | | ● | ● | ● |
| | **F1** | Automatic drain with manual override (NC type: No exhaust without pressurized) | ● | ● | ● | ● |
| | **FF** | Large automatic drain with manual override (NO type: Exhaust without pressurized) | | | | ● |
| | **FF1** | Large automatic drain with manual override (NC type: No exhaust without pressurized) | | | | ● |
| **Bowl material** | **Blank** | Polycarbonate bowl | ● | ● | ● | ● |
| | **Z** | Nylon bowl | ● | ● | ● | ● |
| | **M** | Metal bowl | | ● | ● | ● |
| | **M1** | Metal bowl with manual drain cock | | ● | ● | ● |
| **Element** | **Blank** | 5µm | ● | ● | ● | ● |
| | **Y** | 0.3µm (submicron) Note 5 | | ● | ● | ● |
| **Pressure range** | **Blank** | 0.05 to 0.85MPa | ● | ● | ● | ● |
| | **L** | 0.05 to 0.35MPa | ● | ● | ● | ● |
| **Relief** | **Blank** | With relief mechanism | ● | ● | ● | ● |
| | **N** | Nonrelief type | ● | ● | ● | ● |
| **Pressure gauge** | **Blank** | With standard pressure gauge (G401-W) | ● | ● | ● | ● |
| | **T** | Without pressure gauge (a pressure gauge port (Rc1/4) is assembled with sealed) | ● | ● | ● | ● |
| | **T8** | Pressure gauge attached (a pressure gauge port (Rc1/4) is assembled by open) | ● | ● | ● | ● |
| | **T6** Note 6 | Digital pressure sensor PPX attached option | ● | ● | ● | ● |
| | **R1** | Pressure switch with display PPD assembly | ● | ● | ● | ● |
| **Flow direction** | **Blank** | Standard flow (left → right) | ● | ● | ● | ● |
| | **X1** | Reverse flow (right → left) | ● | ● | ● | ● |
| **Ⓔ Display unit** | | | | | | |
| **Blank** | | MPa display, Rc thread | ● | ● | ● | ● |
| **J1** | | MPa display, NPT, G thread | ● | ● | ● | ● |
| **Ⓕ Piping adapter set (attached)** | | | | | | Note 7 Pages 151 to 153 |
| **Blank** | | Not attached | ● | ● | ● | ● |
| **A6*W** | | 1/8 piping adapter set | ● | | | |
| **A8*W** | | 1/4 piping adapter set | ● | ● | ● | |
| **A10*W** | | 3/8 piping adapter set | ● | ● | ● | |
| **A15*W** | | 1/2 piping adapter set | | ● | ● | |
| **A20*W** | | 3/4 piping adapter set | | | ● | ● |
| **A25*W** | | 1 piping adapter set | | | | ● |
| **A32*W** | | 1 1/4 piping adapter set | | | | ● |
| *** Adaptor screw type** | | | | | | |
| **Blank** | | Rc thread | ● | ● | ● | ● |
| **N** | | NPT thread | ● | ● | ● | ● |
| **G** | | G thread | ● | ● | ● | ● |
| **Ⓖ Attachment (attached)** | | | | | | Pages 148, 194 |
| **Blank** | | Not attached | ● | ● | ● | ● |
| **BW** | | C type bracket | ● | ● | ● | ● |
| **B3W** Note 8 | | L type bracket | ● | ● | ● | |
| **G49P** | | G49D-8-P10 (L: G49D-8-P04) | ● | ● | ● | ● |
| **G59P** | | G59D-8-P10 (L: G59D-8-P04) | ● | ● | ● | ● |
| **G40P** | | G40D-8-P10 (L: G40D-8-P04) | ● | ● | ● | ● |
| **G50P** | | G50D-8-P10 (L: G50D-8-P04) | ● | ● | ● | ● |
| **G41P** | | G41D-8-P10 (L: G41D-8-P04) | ● | ● | ● | ● |
| **G52P** | | G52D-8-P10 (L: G52D-8-P10) | ● | ● | ● | ● |
| **R2** Note 6 | | Digital pressure sensor: PPX-R10N-6M | ● | ● | ● | ● |

## ⚠ Note on model no. selection

Note 1: When G threads or NPT threads are selected, the IN, OUT, gauge port, and drain port (metal bowl automatic drain) are available.

Note 2: Select options per drainage, bowl material, element, and regulator sections.
When selecting options for several items, list options in order from the top.

Note 3: **The check valve and pressure gauge positions cannot be changed. If the IN and OUT direction must be reversed, indicate "X1" at the end of the option field.**

Note 4: Refer to page 11 for the automatic drain use conditions.

Note 5: Refer to page 83 for maximum processing flow when option "Y" is selected.

Note 6: When option "T6" is selected, only "blank" or "R2" is selected for the Ⓒ pressure gauge (enclosed). The digital pressure sensor PPX mounting port (Rc1/8) is assembled ventilated.

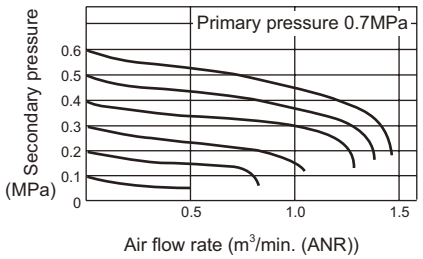
Note 7: The piping adapter set and C type bracket cannot be used together.

Note 8: Refer to Section 2. Regulator, in "⚠CAUTIONS for Installation and Adjustment" (page 14) for details on mounting the L-type bracket.

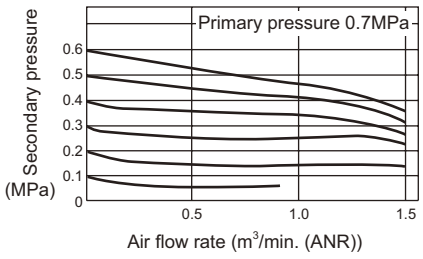
Note 9: If NPT is selected for the Ⓒ piping thread type, a NPT pressure gauge is enclosed. If Rc or G thread is selected, an R thread pressure gauge is enclosed.

## Flow characteristics

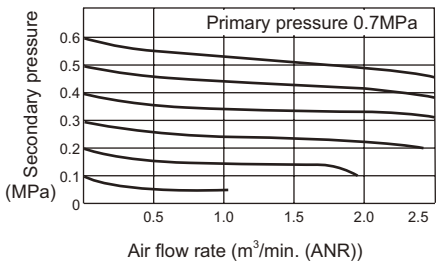
● W1100-6-W



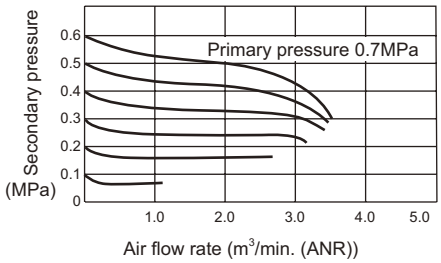

● W1100-8-W



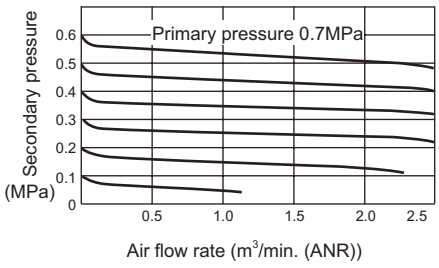

● W3100-8-W



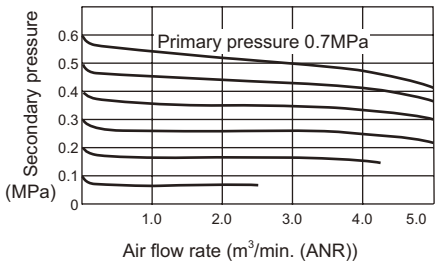

● W3100-10-W



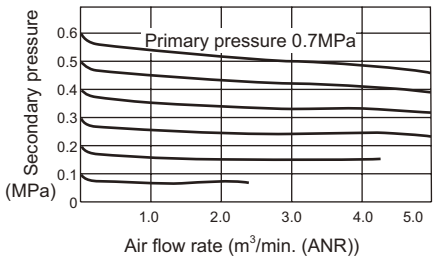

● W4100-8-W



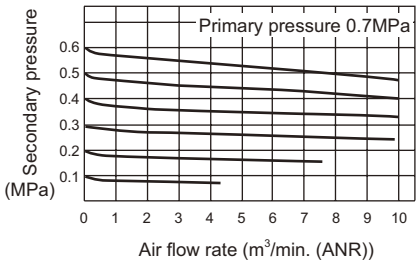

● W4100-10-W



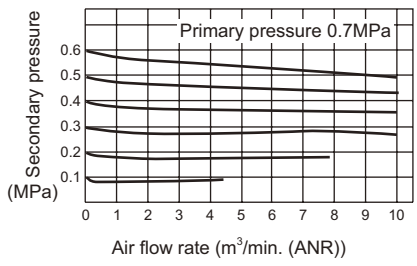

● W4100-15-W



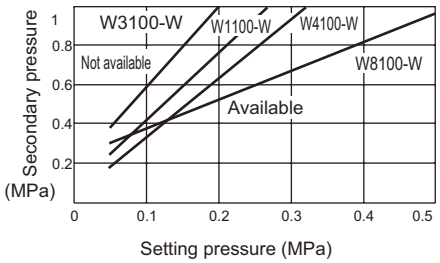

● W8100-20-W




● W8100-25-W




● Set pressure range for back pressure

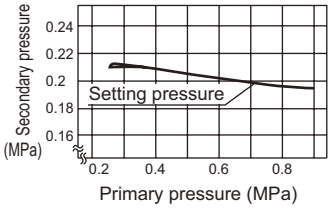



Note: The upper side of the graph is nonusable and the lower side usable.

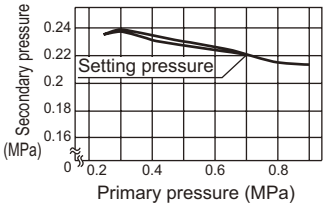
Example: If W4100-W is set to set pressure 0.2 MPa and the secondary back pressure is 0.6 MPa or more, the secondary pressure will not be released to the primary side.

## Pressure characteristics

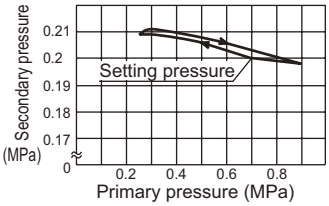
● W1100-W



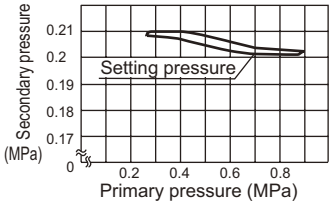

● W3100-W




● W4100-W

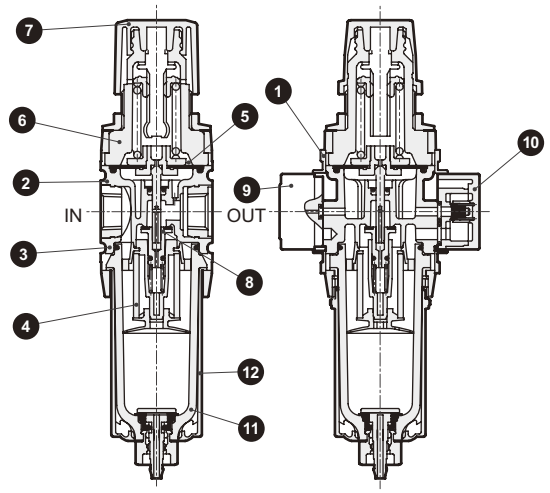



● W8100-W

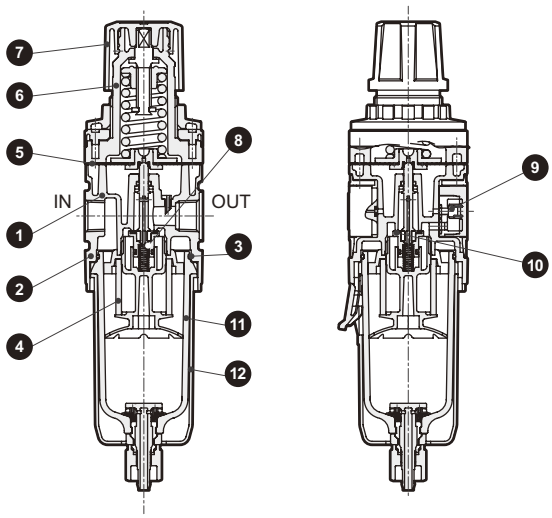


## Internal structure and parts list

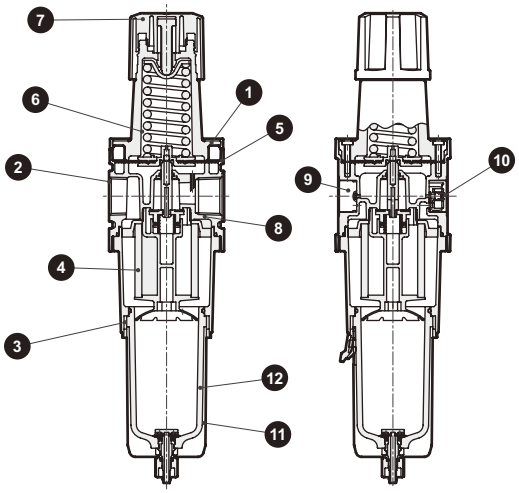
● W1100-W




● W3100-W/W4100-W




● W8100-W




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

Note 1: W1100-W has an element assembly.
Note 2: The W1100-W O ring has a special shape.
Note 3: Refer to page 79 for repair kits model no.

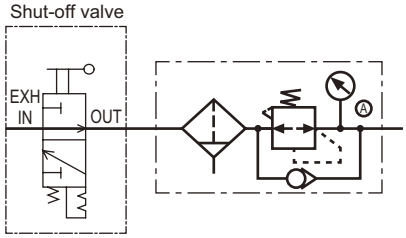
## Functional explanation

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 changeover 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 75 for the graph)

● Circuit diagram

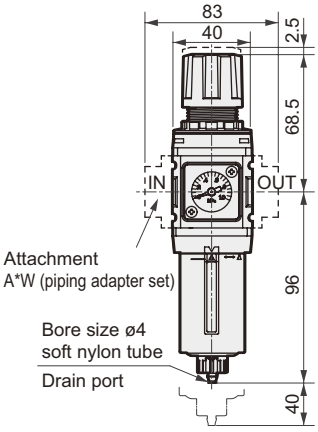
Shut-off valve

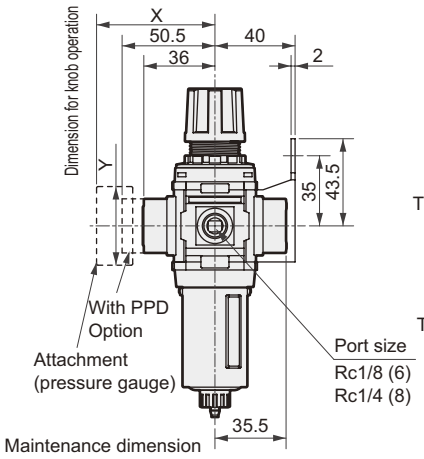


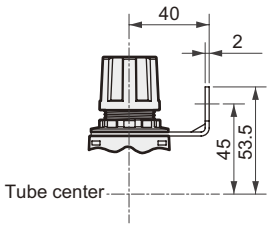

When using shut-off valve in front of reverse filter and regulator

## Dimensions CAD

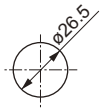
● W1100-W



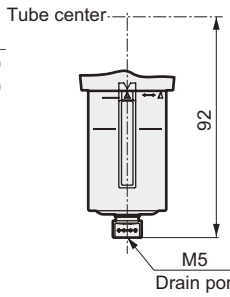




Panel cut dimension

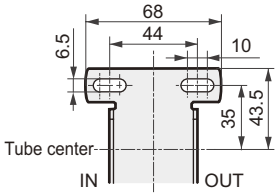



Panel plate thickness: MAX. 6mm

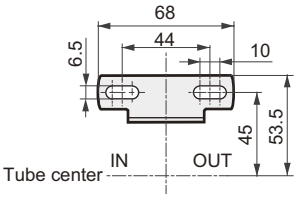
・Option dimensions
With automatic drain (F1)




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



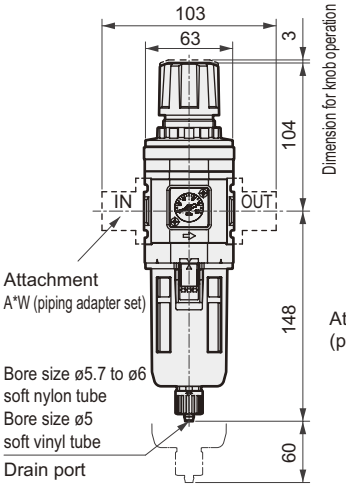

L type bracket (-B3W)
Part model no.: B130

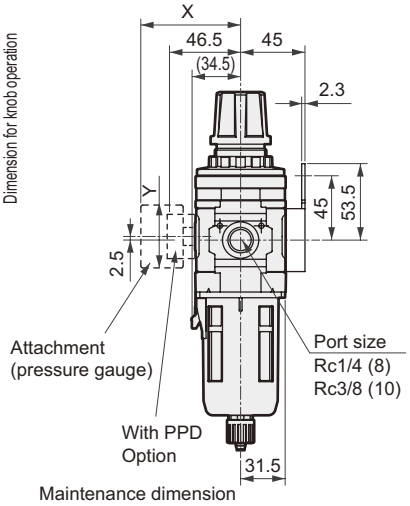


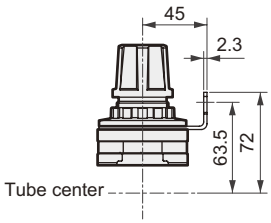

Pressure gauge attached optional dimensions table

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

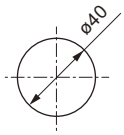
● W3100-W



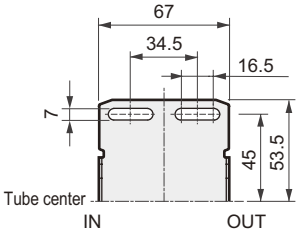




Panel cut dimension

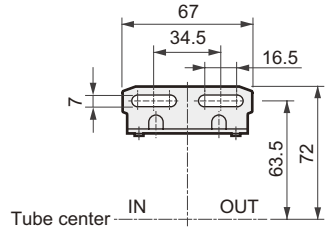



Panel plate thickness: MAX. 4mm

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




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



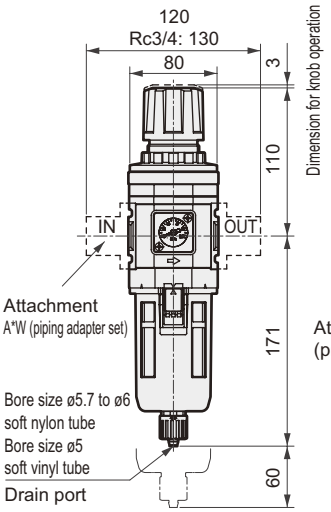

● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or automatic drain is installed.

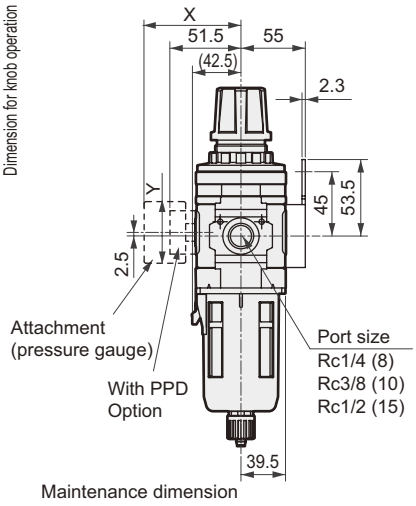
Pressure gauge attached optional dimensions table

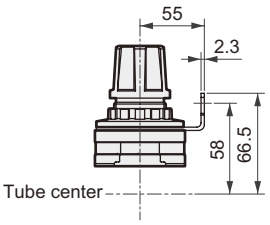
| Attached pressure gauge | X | Y |
|---|---|---|
| G49P | (69.5) | ø43.5 |
| G59P | (72) | ø52 |
| G40P | (71.5) | ø42.5 |
| G50P | (71.5) | ø52.5 |
| G41P | (70) | ø42 |
| G52P | (82) | ø52.5 |
| R2 | (69.5) | *30 |

## Dimensions

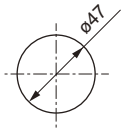
● W4100-W



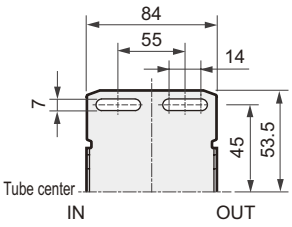




Panel cut dimension

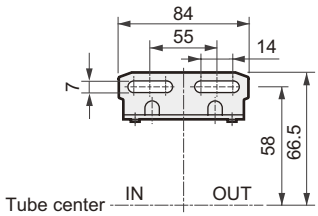



Panel plate thickness: MAX. 7mm

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




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

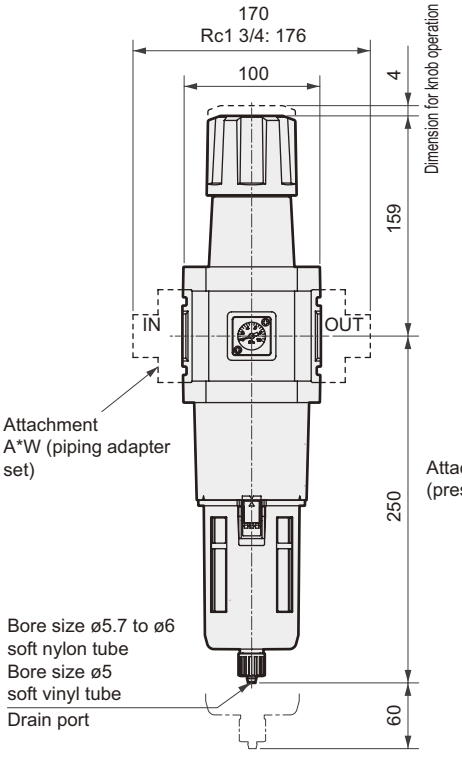


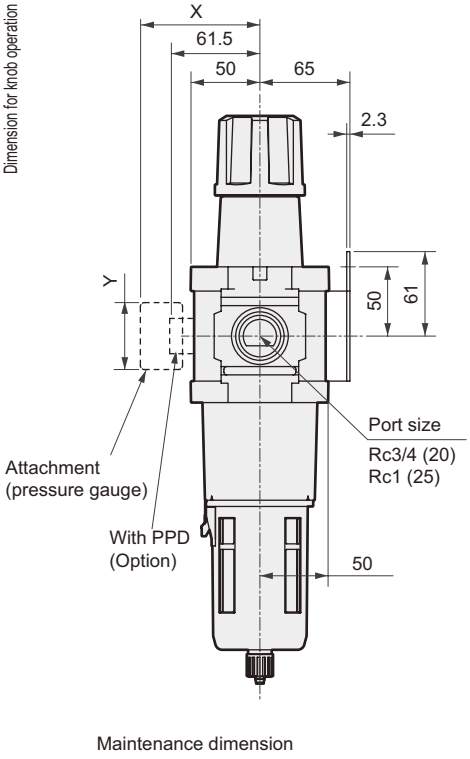

● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or automatic drain is installed.

Pressure gauge attached optional dimensions table

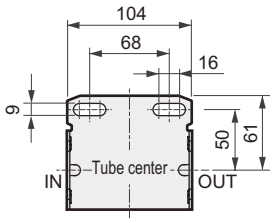
| Attached pressure gauge | X | Y |
|---|---|---|
| G49P | (74.5) | ø43.5 |
| G59P | (77) | ø52 |
| G40P | (76.5) | ø42.5 |
| G50P | (76.5) | ø52.5 |
| G41P | (75) | ø42 |
| G52P | (86) | ø52.5 |
| R2 | (75) | *30 |

● W8100-W




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



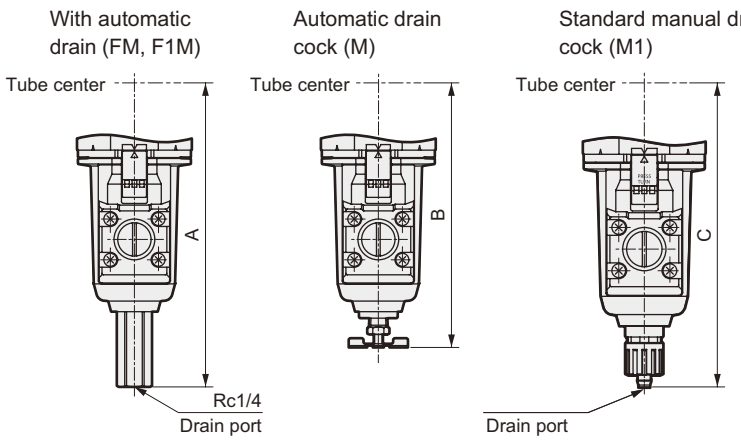

● For the plastic bowl, the dimensions are the same regardless of whether the manual cock or automatic drain is installed.

Pressure gauge attached optional dimensions table

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

## Optional dimensions

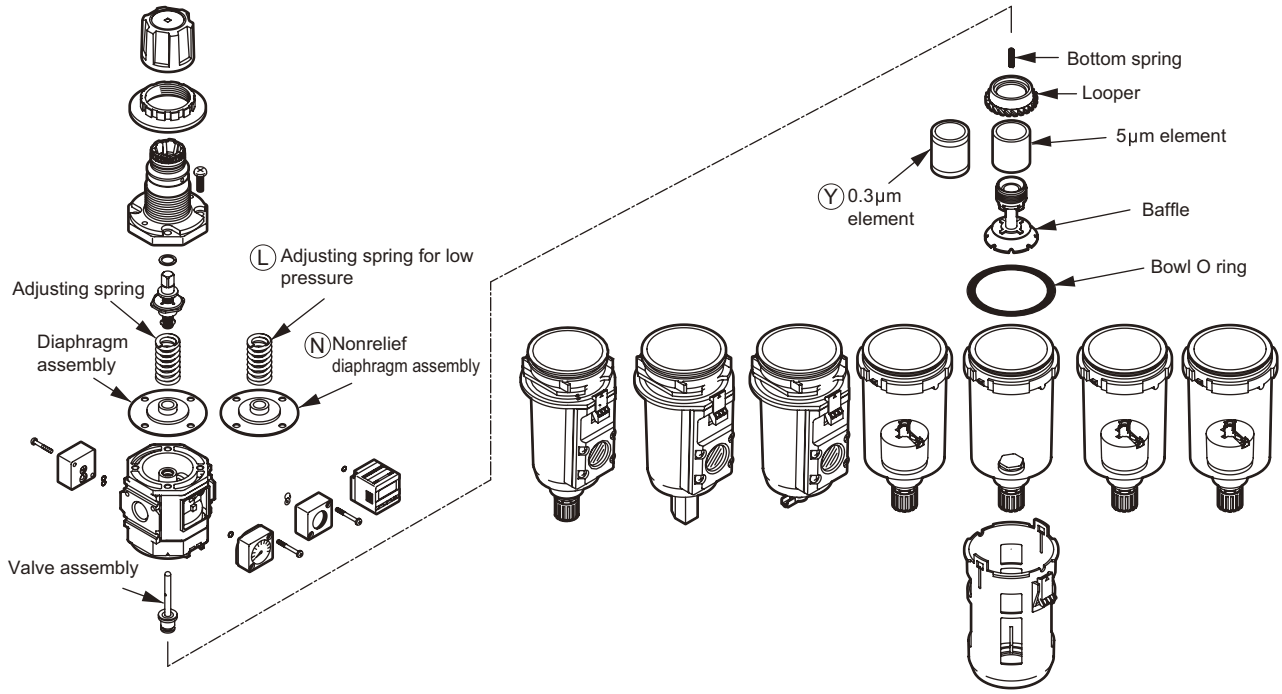
● Metal bowl W3100-W/W4100-W/W8100-W (option)




### Dimensions table

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

## Option and parts diagram




### Consumable parts kit (Set consisting of diaphragm assembly, valve assembly, bottom spring, louver, element, baffle, bowl O ring)

| Repair kits model no. / Model | Relief type diaphragm 5µm element (blank) | Nonrelief type diaphragm 5µm element (N) | Relief type diaphragm 0.3µm element (Y) | Nonrelief type diaphragm 0.3µm element (NY) |
|---|---|---|---|---|
| W1000-W, W1100-W | W1000-KIT | W1000-KIT-N | - | - |
| W3000-W, W3100-W | W3000-KIT | W3000-KIT-N | W3000-KIT-Y | W3000-KIT-NY |
| W4000-W, W4100-W | W4000-KIT | W4000-KIT-N | W4000-KIT-Y | W4000-KIT-NY |
| W8000-W, W8100-W | W8000-KIT | W8000-KIT-N | W8000-KIT-Y | W8000-KIT-NY |

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

### Valve assembly (sets of valve assembly and bottom spring)

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

* Re□

Refer to air filter options and parts table (pages 89 to 90) for details on the element, bowl assembly, and bowl guard.