

Filter/regulator

Outdoor-use series



FILTER REGULATOR FOR OUTDOOR USE





Outdoor use available too:

Most suitable for outdoor-use!

Added the series assured for outdoor use to the CKD FR series, which have been favored for their long lives and low pressure loss Assured long-period use under outdoor severe environments

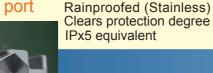
Improved outdoor durability due to exteriors entirely made of metal and use of stainless screws



Covers and gauge plugs entirely made of metal

Improved weather resistance through replacement of all general-purpose resin components with metallic ones

Relief port



Excellent maintainability

The inside of the ball is visible through the metal ball window (Reinforced glass). Disassembly and assembly are easy due to the use of stainless screws.

Relative humidity: 20% to 30%



Durability is assured by passing the accelerated corrosion resistance test for equivalent to seven years

960-hour combined cycle tests (JIS H8502:199) and 400-hour ozone exposure tests (JIS D0205:1987) have been passed, assuring sufficient durability

Warranty of up to three years
Provision of long-term reliability (Option)

Warranty period of three years post-delivery, for plant and overseas use, or short period of one year post-use start. (Inspection result tables, inspection instruction procedures, drawings, specifications, traceability system diagrams accompanied)

Salt spray (2 hours Ambient temperature: 35°C Salt concentration: 5%

Dry (4 hours) loistening (2 hours Ambient temperature: 60°C

Ambient temperature: 50°C delative humidity: 95% or more

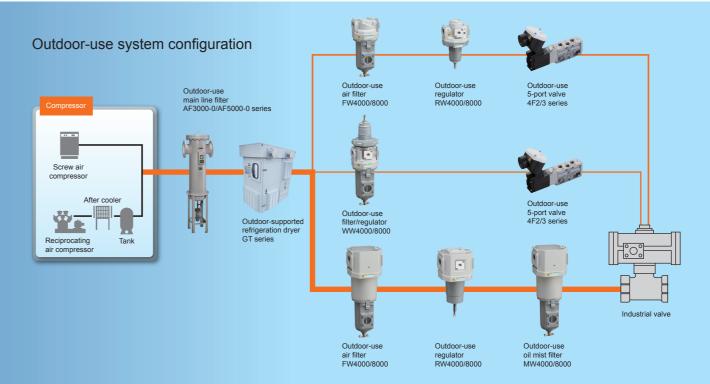


* Agreement regarding specification documents is needed

New, reliable FR Series!

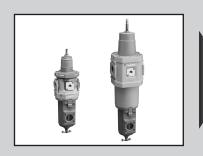


WEATHER PROOF is used for assurance of CKD product for outdoor-use.



Filter/regulator outdoor-use series framework

Filler/regulator outdoor-use series framework													
	Series name/ap	nogranco		Bore s	ize (Rc/N	IPT/G)		Maximi	um flow r	ate (m) ³ /r	min. (Refe	erence)	Page
	Series name/ap	реагапсе	1/4	3/8	1/2	3/4	1	1/4	3/8	1/2	3/4	1	
	Filter/regulator WW4000		•	•	•			2.5	4.35	4.75			1
4000 series	Air filter FW4000		•	•	•			1.32	2.14	3.0			3
	Oil mist filter MW4000	M type Rated filtration: 0.01 µm S type Rated filtration: 0.03 µm	•	•	•				0.825				5
	Regulator RW4000	0.00 pm	•	•	•			2.5	4.4	5.0			7
	Filter/regulator WW8000					•	•				1	0	1
8000 series	Air filter FW8000					•	•				6.4	6.8	3
8000	Oil mist filter MW8000	M type Rated filtration: 0.01 µm S type Rated filtration: 0.03 µm				•	•				2	.9	5
	Regulator RW8000					•	•				14.0	11.0	7



Filter/regulator outdoor-use series

WW4000/WW8000-W Series

Release of outdoor-use products as a series

Port size: 1/4 to 1

JIS symbol





AModel No.

Specifications

Item	WW4000-W	WW8000-W		
Working fluid	Compressed air			
Max. working pressure MPa	1.0	0 Notes 1, 2		
Proof pressure MPa	1	.5		
Fluid temperature °C	5 to	60		
Ambient temperature °C	-10 to 60 (no freezing)			
Filtration rating µm	5 or 0.3			
Set pressure MPa	0.05 to	o 0.85		
Relief	With relief i	mechanism		
Drain capacity cm ³	80	80 (Note 3)		
Port size Rc, NPT, G	1/4, 3/8, 1/2	3/4, 1		
Weight kg	1.1	2.3		

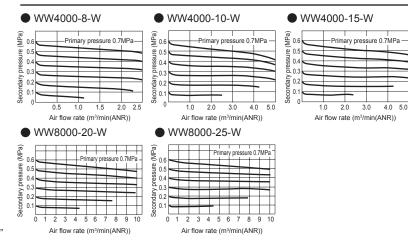
Note 1: The automatic drain's minimum operating pressure for "F" with an automatic drain is 0.1 MPa Initially generated drainage and air are purged until

pressure reaches 0.1 MPa.

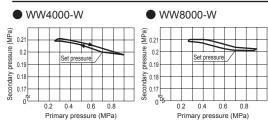
Note 2: The automatic drain's minimum operating pressure for "F1" with an automatic drain is 0.15 MPa.

Note 3: The drainage accumulates up to 170 cm³ only with the manual petcock.

Flow characteristics



Pressure characteristics



How to order (WW4000)-(8 B Port size A Model No. Attachment Option © Port thread type

A Note on model No. selection

Note1: G and NPT threads are available for IN, OUT, gauge ports, and auto drain port.

Note 2: NPT and G threads available for overseas market.

For use in Japan, select the Rc thread. (For Japanese market, the pressure unit and the temperature indication unit must be MPa and °C respectively due to the measurement law.)

Note 3: Select the options from drainage, element, knob, warranty period, and flow direction.

> When selecting options for several items, list options in order from the top.

Note 4: Options are not selectable for a pressure meter.

(If you have any request, consult our sales representative.) Note 5: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog

No. CB-024SA)" for working conditions of the automatic drain. Note 6: Refer to page 3 for max. flow rate of option "Y".

Note 7: The warranty period of option G is three years after delivery or one year after start using: shorter one between the two.

Note 8: For option G, agreement regarding specification documents are

			, ,	
	Symbol	Description	0	ŏ
_	BPort size			
	8	1/4	•	
	10	3/8	•	
	15	1/2	•	
	20	3/4		•
	25	1		•
_	©Port thread t	Note 1.	Note 2	

<u> </u>		.,,,,,		
Bla	ank	Rc screw (Pressure unit: MPa/ temperature indication unit: °C)	•	•
1	V	NPT screw (Pressure unit: psi/ temperature indication unit: °F)	•	•
(3	G screw (Pressure unit: bar/ temperature indication unit: °C)	•	•
● Opti	on		Note 3,	Note 4
D	Blank	With manual petcock	•	•
Drainage Note 5	F	Automatic drain with manual override (NO type: exhausts without pressurization)	•	•
	F1	Automatic drain with manual override (NC type: no exhaust without pressurization)	•	•

Note 5	F	Automatic drain with manual override (NO type: exhausts without pressurization)		
Note o	F1	Automatic drain with manual override (NC type: no exhaust without pressurization)	•	•
Element	Blank	5 μm	•	•
Element	Υ	0.3 µm (submicron) Note 6	•	•
Knob	Blank	Without a knob	•	•
KIIOD	K	With a knob	•	•
	Blank	1 year after delivery	•	•
Warranty period	G	3 years after delivery Note 7, Note 8 (Inspection result tables, inspection instruction procedures, drawings,	•	•
ps.100	3	specifications, traceability system diagrams accompanied)	•	•
Flow	Blank	Standard flow (left to right)	•	•
Direction	X1	Reverse flow (right to left)	•	•

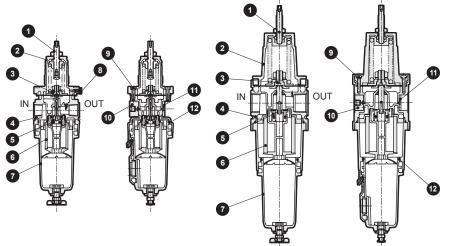
E Attachment						
Blank	Not attached	•	•			
BW	C type bracket	•	•			

Filter/Regulator Series

Internal structure/ external dimensions

Internal structure and parts list

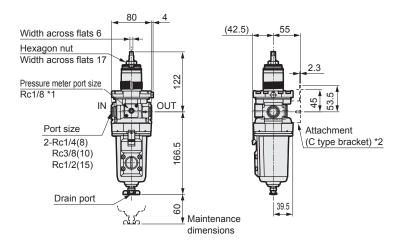
● WW4000-W



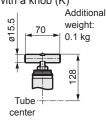
No.	Part name	Material
1	Adjusting screw assembly	Stainless steel (Nitrile rubber, polyacetal resin: WW4000 only)
2	Cover	Aluminum alloy die-casting
3	Diaphragm assembly	Stainless steel, nitrile rubber, aluminum
4	Body	Aluminum alloy die-casting
5	Valve assembly	Brass, hydrogenated nitrle rubber (polyacetal resin: WW4000 only)
6	Element	Polypropylene
7	Metal bowl assembly	Aluminum alloy die-casting, brass, zinc, nitrile rubber
8	Adapter	Stainless steel
9	Screw	Stainless steel
10	Gauge plug assembly	Aluminum, nitrile rubber, stainless steel
11	Seal plug assembly	Aluminum, nitrile rubber, stainless steel
12	O ring	Special nitrile rubber

Dimensions

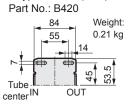
WW4000-W



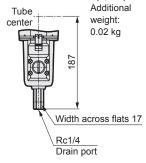
Option dimensions With a knob (K)



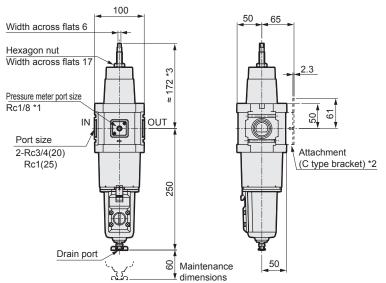
• Attachment C type bracket (-BW)



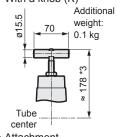
With automatic drain (F, F1)



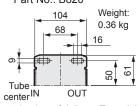
WW8000-W

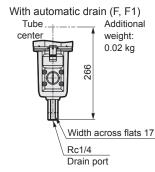


Option dimensions With a knob (K)



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





- *1 The pressure meter port is kept open at the time of delivery. To seal the port, use the supplied pipe plug.
- *2 The bracket is an option.
- *3 Dimensions when the set pressure is 0 MPa



Air filter: Outdoor-use series

FW4000/FW8000-W Series

Release of outdoor-use products as a series

Port size: 1/4 to 1

JIS symbol



FW800

Specifications

opcomodiono								
Item	FW4000-W	FW8000-W						
Working fluid	Compre	ssed air						
Max. working pressure MPa	1.0 No	tes 1, 2						
Proof pressure MPa	1.	.5						
Fluid temperature °C	5 to 60 (no freezing)							
Ambient temperature °C	-10 to 60							
Filtration rating µm	5 or 0.3							
Drain capacity cm ³	80	80 (Note 3)						
Port size Rc, NPT, G	1/4, 3/8, 1/2	3/4, 1						
Weight kg	0.55	1.26						

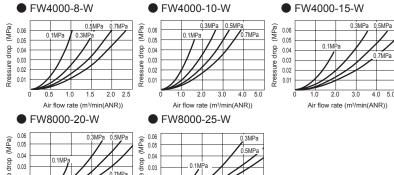
Note 1: The automatic drain's minimum operating pressure for "F" with an automatic drain is 0.1 MPa.

Initially generated drainage and air are purged until pressure reaches 0.1 MPa.

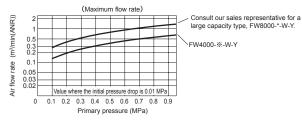
Note 2: The automatic drain's minimum operating pressure for "F1" with an automatic drain is 0.15 MPa.

Note 3: The drainage accumulates up to 170 cm³ only with the manual petcock.

Flow characteristics



FW4000/FW8000-*-W-Y (0.3 μm element)



FW4000 - 8 - W - F B Port size D Option Attachment Port thread type

Symbol	Description	0	0
Symbol B Port size			
8	1/4	•	
10	3/8	•	
15	1/2	•	
20	3/4		•
25	1		•

	ļ.		
© Port threa	d type N	ote 1, I	Note 2
Blank	Rc screw (Pressure unit: MPa/ temperature indication unit: °C)	•	•
N	NPT screw (Pressure unit: psi/ temperature indication unit: °F)	•	•
G	G screw (Pressure unit: bar/ temperature indication unit: °C)	•	•

Opt	ion			Note 3
Dusinsus	Blank	With manual petcock	•	•
Drainage Note 4	F	Automatic drain with manual override (NO type: exhausts without pressurization)		•
Note 4	F1	Automatic drain with manual override (NC type: no exhaust without pressurization)		•
Element	Blank	5 μm		•
Liellielli	Υ	0.3 µm (submicron)	•	•
Mannant	Blank	1 year after delivery	•	•
Warranty	G	3 years after delivery Note 5, Note 6 (Inspection result tables, inspection instruction procedures,	•	•
ponou)	drawings, specifications, traceability system diagrams accompanied)	•	•
Flow	Blank	Standard flow (left to right)		•
direction	X1	Reverse flow (right to left)		•

⊜ Attachment					
Blank	Not attached		•		
BW	C type bracket	•	•		

A Note on model No. selection

Note1: G and NPT threads are available for IN, OUT, and auto drain port. Note 2: NPT and G threads available for overseas market.

For use in Japan, select the Rc thread.

(For Japanese market, the pressure unit and the temperature indication unit must be MPa and °C respectively due to the measurement law.)

Note 3: Select the option from drainage, element, warranty period, and flow direction.

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

Note 4: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for working conditions of the automatic drain.

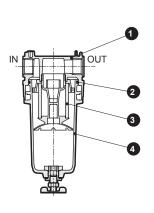
Note 5: The warranty period of option G is three years after delivery or one year after start using: shorter one between the two.

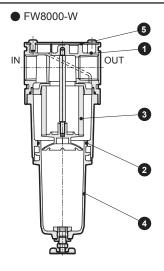
Note 6:For option G, agreement regarding specification documents are needed.

Internal structure/ external dimensions

Internal structure and parts list

● FW4000-W

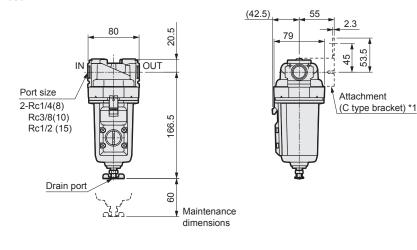




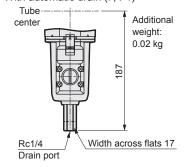
No.	Part name	Material
1	Body	Aluminum alloy die-casting
2	O ring	Special nitrile rubber
3	Element	Polypropylene
4	Metal bowl assembly	Aluminum alloy die-casting, brass, zinc, nitrile rubber
5	Plate cover	Aluminum

Dimensions

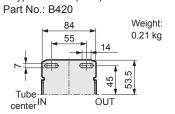
● FW4000-W



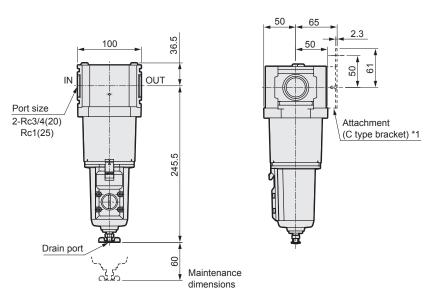
Option dimensions
 With automatic drain (F, F1)



Attachment
 C type bracket (-BW)

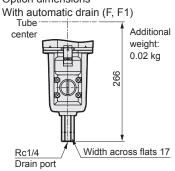


FW8000-W

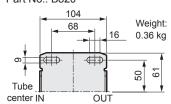


*1 The bracket is an option.

· Option dimensions



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





Oil mist filter: Outdoor-use series

MW4000/MW8000-W Series

Release of outdoor-use products as a series

Port size: 1/4 to 1

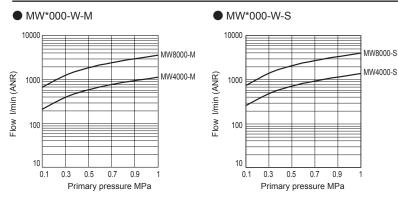
JIS symbol



Specifications

Item	MW4000-W	MW8000-W
Working fluid	Compressed air	
Working pressure MPa	0.1 to 1.0	Note 2
Proof pressure MPa	1.5	
Drain capacity cm ³	80	80
Port size Rc,NPT, G	1/4, 3/8, 1/2	3/4, 1
Weight kg	0.62	1.45

Flow characteristics (Maximum flow rate)



Mantle option na	ame	Blank (M type)	S (S type)
Maximum flow rate Note 1 I/min. (ANR)	MW4000W	825	1000
At primary pressure: 0.7 MPa	MW8000W	2600	2900
Fluid temperature °C		5 to 60	
Ambient temperature	e °C	-10 to 60 (no freezing)	
Filtration rating µm		0.01 (Nominal)	0.3
Secondary side oil concentration mg/m³		0.01 or less (After oil saturation: 0.1 or less) Note 3, Note 4	
Mantle (element) rep	olacement	1 year (6000 hours) or pressure drop of 0.1MPa	

- Note 1: Use within the maximum processing flow rate.

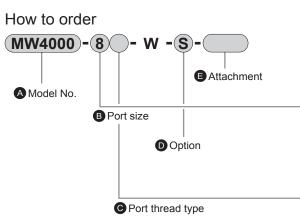
 If the maximum processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil or drainage, etc., could splatter to the secondary side and result in faults at the terminal
 - Note 2: The minimum operating pressure is 0.15 MPa for models with automatic drain "F1".
 - Note 3: The secondary oil density is the value when the primary oil density is 30 mg/m³ and inlet air temperature is 21°C.
- Note 4: Install an oil mist filter (S type) as a prefilter on the primary side to prevent early clogging.

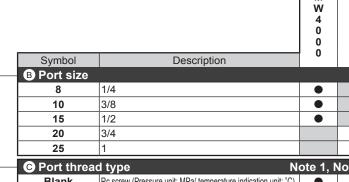
A Model No.

W

8

0





A Note on model No. selection

Note1: G and NPT threads are available for IN, OUT, and auto drain port. Note 2: NPT and G threads available for overseas market.

For use in Japan, select the Rc thread.

(For Japanese market, the pressure unit and the temperature indication unit must be MPa and °C respectively due to the measurement law.)

Note 3: Select the option from drainage, mantle, warranty period, and flow direction.

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

Note 4: N.O. automatic drain cannot be selected.

Note 5: Refer to "Pneumatic, Vacuum and Auxiliary Components (catalog No. CB-024SA)" for working conditions of the automatic drain.

Note 6: The warranty period of option G is three years after delivery or one year after start using: shorter one between the two.

Note 7: For option G, agreement regarding specification documents

Port thread		d type No	ote 1, No	ote 2
Blank		Rc screw (Pressure unit: MPa/ temperature indication unit: °C)	•	•
N	1	NPT screw (Pressure unit: psi/ temperature indication unit: °F)	•	•
C	}	G screw (Pressure unit: bar/ temperature indication unit: °C)	•	•
Opt	ion		No	ote 3
Drainage	Blank	With manual petcock	•	•
Note4,Note 5	F1	Automatic drain with manual override (NC type: no exhaust without pressurization)	•	•
Mantle	Blank	M type (Nominal 0.01 m; remaining oil 0.01 mg/m ³)	•	•
(Element)	S	S type (0.3 µm; remaining oil 0.5 mg/m³)	•	•
VA/	Blank	1 year after delivery	•	•
Warranty period	G	3 years after delivery Note 6, Note 7 (Inspection result tables, inspection instruction procedures, drawings, specifications, traceability system diagrams accompanied)	•	•
Flow	Blank	Standard flow (left to right)	•	
direction	X1	Reverse flow (right to left)	•	•
Atta	chmer	nt		
Blank		Not attached	•	•

BW

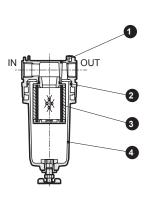
C type bracket

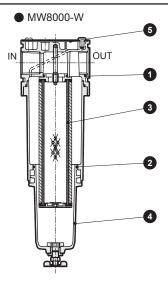
Oil Mist Filter Series

Internal structure/ external dimensions

Internal structure and parts list

MW4000-W

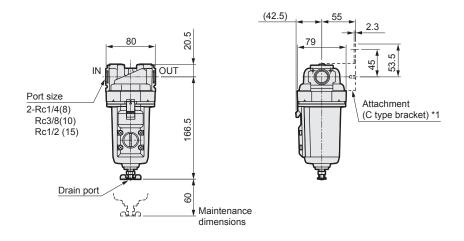




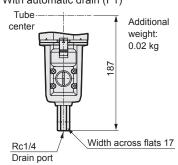
No.	Part name	Material
1	Body	Aluminum alloy die-casting
2	O ring	Special nitrile rubber
3	Mantle assembly	-
4	Metal bowl assembly	Aluminum alloy die-casting, brass, zinc, nitrile rubber
5	Plate cover	Aluminum

Dimensions

MW4000-W



Option dimensions With automatic drain (F1)



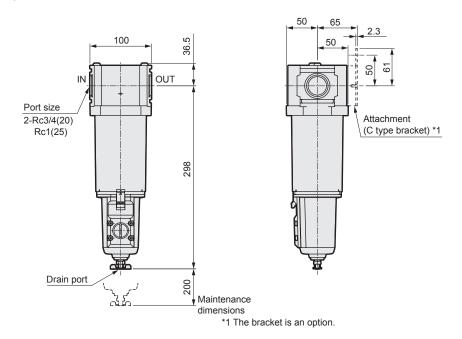
Attachment
 C type bracket (-BW)

Part No.: B420

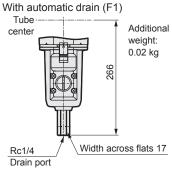
84
Weight:
0.21 kg

Tube
centerIN
OUT

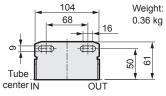
MW8000-W



Option dimensions



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





Regulator Outdoor-use series

RW4000/RW8000-W Series

Release of outdoor-use products as a series

Port size: 1/4 to 1

JIS symbol





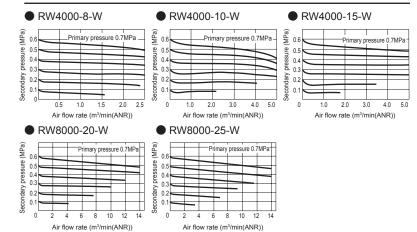
A Model No.

R W 8 0 0

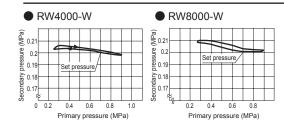
Specifications

Item	RW4000-W	RW8000-W
Working fluid	Compressed air	
Max. working pressure MPa	1.	.0
Proof pressure MPa	1.	.5
Fluid temperature °C	5 to	60
Ambient temperature °C	-10 to 60 (no freezing)	
Set pressure MPa	0.05 to 0.85	
Relief	With relief i	mechanism
Port size Rc, NPT, G	1/4, 3/8, 1/2	3/4, 1
Weight kg	0.75	1.65

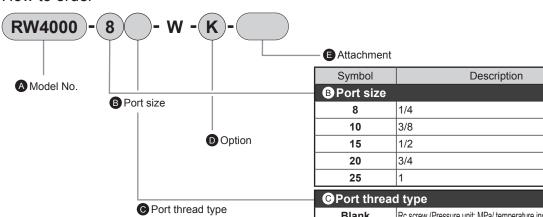
Flow characteristics



Pressure characteristics



How to order



Symbol	Description	0	0
B Port size	B Port size		
8	1/4	•	
10	3/8	•	
15	1/2	•	
20	3/4		•
25	1		•

©Port thread type			lote 1, Note 2		
Blank	Rc screw (Pressure unit: MPa/ temperature indication unit: °C)	•	•		
N	NPT screw (Pressure unit: psi/ temperature indication unit: °F)	•	•		
G G screw (Pressure unit: bar/ temperature indication		•	•		

Note 1: G and NPT threads are available for IN, OUT, and gauge ports.			
Note 2: NPT and G threads available for overseas market.			
For use in Janan, select the Rc thread			

A Note on model No. selection

(For Japanese market, the pressure unit and the temperature indication unit must be MPa and °C respectively due to the measurement law.)

Note 3: Select the options from knob, warranty period, and flow direction. When selecting options for several items, list options in order from the top.

Note 4: Options are not selectable for a pressure meter.

(If you have any request, consult our sales representative.) Note 5: The warranty period of option G is three years after delivery or one year after start using: shorter one between the two.

Note 6:For option G, agreement regarding specification documents are needed.

Option Note 3, Note			lote 4
Blank	Without a knob	•	•
K	With a knob	•	•
Blank	1 year after delivery	•	•
G	3 years after delivery Note 5, Note 6 (Inspection result tables, inspection instruction procedures, drawings, specifications, traceability system diagrams accompanied		•
Blank	Standard flow (left to right)	•	•
X1	Reverse flow (right to left)	•	•
	Blank K Blank G Blank	Blank Without a knob K With a knob Blank 1 year after delivery 3 years after delivery Note 5, Note 6 (Inspection result bables, inspection instruction procedures, drawings, specifications, traceability system diagrams accompanied Blank Standard flow (left to right)	Blank Without a knob K With a knob Blank 1 year after delivery 3 years after delivery Note 5, Note 6 (Inspection result tables, inspection instruction procedures, drawings, specifications, traceability system diagrams accompanied) Blank Standard flow (left to right)

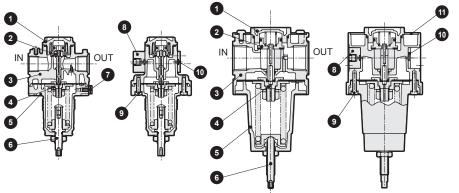
⊜ Attachment				
Blank	Not attached	•	•	
BW	C type bracket	•	•	

Regulator Series

Internal structure/ external dimensions

Internal structure and parts list

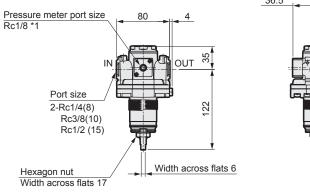
● RW4000-W

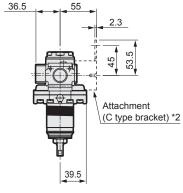


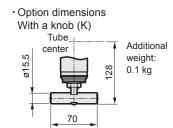
No.	Part name	Material
1	Bottom plug	Aluminum alloy die-casting
2	Valve assembly	Brass, hydrogenated nitrle rubber (polyacetal resin: RW4000 only)
3	Body	Aluminum alloy die-casting
4	Diaphragm assembly	Stainless steel, nitrile rubber, aluminum
5	Cover	Aluminum alloy die-casting
6	Adjusting screw assembly	Stainless steel (Nitrile rubber, polyacetal resin: RW4000 only)
7	Adapter	Stainless steel
8	Gauge plug assembly	Aluminum, nitrile rubber, stainless steel
9	Screw	Stainless steel
10	Seal plug assembly	Aluminum, nitrile rubber, stainless steel
11	Plate cover	Aluminum

Dimensions

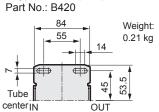
RW4000-W



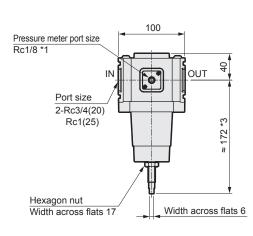


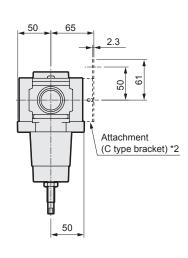


• Attachment C type bracket (-BW)

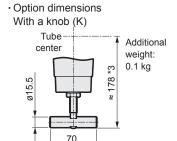


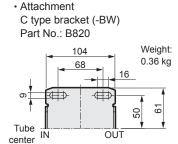
RW8000-W





- *1 The pressure meter port is kept open at the time of delivery, To seal the port, use the supply pipe plug.
- *2 The bracket is an option.
- *3 Dimensions when the set pressure is 0 MPa







Filter/regulator (Outdoor-use series)

Safety precautions

Be sure to read the instructions before use.

Refer also to the precautions of "Pneumatic/vacuum/auxiliary equipment (No. CB-024S)".

Individual notes: Filter/regulator (Outdoor-use series)



When designing and examining

- This product is for industrial use only. Must not be used in components or circuits for medical equipment or components that involve human lives.
- Install a safety device where an output pressure exceeding the regulator's set pressure value could result in damage or faulty operation of secondary side devices.

■ Working Environment

- Whereas this product is designed for outdoor use, it must not be used in environments below:
 - · When the ambient temperature and the product's temperature are outside the range of -10 to 60°C. (Using the product in a place exposed to direct sunlight may cause the product's temperature to be higher than the ambient temperature.)
 - \cdot When air congelation occurs.
 - \cdot If there is atmosphere of corrosive gas and liquid and chemical material.
 - · Place exposed to oscillation and shock

During use and maintenance

Do not disassemble filter/regulator or regulator cover.



CAUTION

■ During use and maintenance

- When pressure adjustment is not performed, keep the hexagon nuts tightened and the adjusting screws fixed. (Use with loose nuts/screws may result in damage.)
- Do not subject the product to load which is unusual for appropriate use of the product.
 (Do not step onto the product.)
- Using the regulator with its cover faced downward may result in pressure adjustment failure due to congelation. Be careful when using in a low-temperature environment.
- The set pressure changes from initial values in accordance with usage environment and conditions and change over time of part material. Check the pressure periodically and reset if it has changed.
- Product maintenance must be performed periodically (every 6 to 12 months).
- Replace the following consumables every year: metal bowl assembly, valve assembly, bottom spring, element, mantle assembly, O ring.
 - For consumables, contact our sales representative.
- When the set pressure is high, more operating force is required to turn the adjusting screw (knob).

■ Working fluid

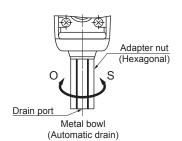
Do not use fluid other than compressed air. Air containing corrosive gases, fluids or chemicals could result in improper pressure adjustment due to body damage or rubber deterioration.

■ Others

- Whereas outdoor-use of this product is assured, its corrosion resistance (such as no rust generation and no discoloration) is not assured.
- When screwing an joint, etc. into the drain port of the metal bowl with automatic drain, screw it by fixing the hexagon of the adapter nut.

If not fixing the hexagon of the adapter nut, the product may be damaged due to excess screwing.

When using the metal bowl with automatic drain, if the drain is piped with a tightening joint, manual operation cannot be performed.



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Hexagon nut

Width across flats 17 mi

Width across flats 6 mm

If the goods and their replicas, or the technology and software in this catalog are to be exported, laws require the exporter. To make sure they will never be used for the development or the manufacture of weapons for mass destruction.



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