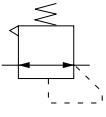


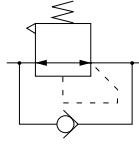
# REGULATORS

## RN650, RN651, RN652, RN900, RN902

### Symbols



- Standard specification
- Low pressure specification



- Built-in check valve specification



### Specifications

Item	Series		650 series			900 series	
	Type		Standard	Low pressure	Built-in check mechanism	Standard	Built-in check mechanism
	Model		RN650	RN651	RN652	RN900	RN902
Media	Air or non-corrosive gas						
Port size	Rc	3/4, 1					
Pressure setting range	MPa [psi.]	0.05 ~ 0.83 [7 ~ 120]	0.05 ~ 0.25 [7 ~ 36]			0.05 ~ 0.83 [7 ~ 120]	
Max. operating pressure	MPa [psi.]	0.97 [141]					
Proof pressure	MPa [psi.]	1.47 [213]					
Operating temperature range	°C [°F]	5 ~ 60 [41 ~ 140]					
Pressure gauge connection port	Rc	1/4 (2 places)					
Construction		Relieving type					
Max. processed flow rate <sup>Note</sup>	ℓ/min [ft <sup>3</sup> /min] (ANR)	2500 [88]	1500 [53]	2500 [88]		8000 [282]	
Lubrication		Not required					
Mass	kg [lb.]		0.53 [1.17]			1.26 [2.78]	
Materials	Body	Aluminum die-casting					
	Bonnet	Polyacetal					Aluminum die-casting
	Knob	ABS					PBT
	Diaphragm	Synthetic rubber with layer cloth					
Standard attachments	Bracket	Standard attachments					
	Mounting ring	Standard attachments					
Embedded pressure gauge	Pressure indicator range	MPa [psi.] 1 [145]					
	Max. operating pressure	MPa [psi.] 0.95 [138]					
	Operating temperature range	°C [°F] 5 ~ 60 [41 ~ 140]					
	Materials	Bourdon tube	Brass tube				
Cover (case)		PPS					
Digital pressure gauge with built-in sensor	Rated pressure range	MPa [psi.] 0 ~ 1.000 [0 ~ 145]					
	Setting pressure range	MPa [psi.] 0 ~ 1.000 [0 ~ 145]					
	Materials	Case					ABS

Note: This is the maximum processed flow rate when the air primary pressure is 0.69MPa [100psi.] and the secondary setting pressure is 0.5MPa [73psi.].

### Order Codes



**Regulator**

**Body model**

**Port size**

**Non-ion specification**

**Blank** — Standard specification

**NCU** — Non-ion specification

**650** — 06 08 — Standard specification

**900** — 06 08 — Standard specification

**651** — 06 08 — Low pressure specification

**652** — 06 08 — Built-in check mechanism specification

**902** — 06 08 — Built-in check mechanism specification

**Bracket specification<sup>Note3</sup>**

**Blank** — Mounting bracket

**BR** — Bracket module (only for 900 series)

**BM** — Module for supporting piping (only for 900 series)

**Pressure gauge specification**

**Blank** — No pressure gauge

**G1A** — 1MPa [145psi.] specification,  $\phi$  40 pressure gauge<sup>Note1</sup>

**G1B** — 1MPa [145psi.] specification,  $\square$  30 Embedded pressure gauge (only for 900 series)<sup>Note2</sup>

**G3** — 0.3MPa [44psi.] specification,  $\phi$  40 pressure gauge (only for 650 series)<sup>Note1</sup>

**GS1A** — 1MPa [145psi.] specification,  $\square$  50 Pressure gauge with built-in switch, lead wire type for DC24V<sup>Note1</sup>

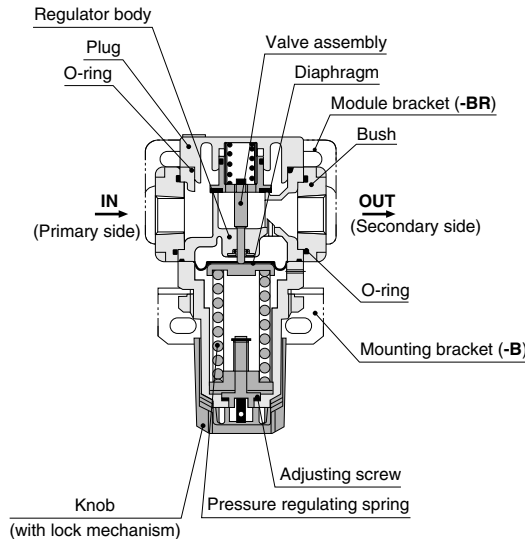
**GS1B** — 1MPa [145psi.] specification,  $\square$  50 Pressure gauge with built-in switch, lead wire type for AC100V, AC200V<sup>Note1</sup>

**GS1C** — 1MPa [145psi.] specification,  $\square$  50 Pressure gauge with built-in switch, with DIN connector for DC24V<sup>Note1</sup>

**GS1D** — 1MPa [145psi.] specification,  $\square$  50 Pressure gauge with built-in switch, with DIN connector for AC100V, AC200V<sup>Note1</sup>

**GS2** — 1MPa [145psi.] specification,  $\square$  30 Digital pressure gauge with built-in sensor, (only for 900 series)<sup>Note2</sup>

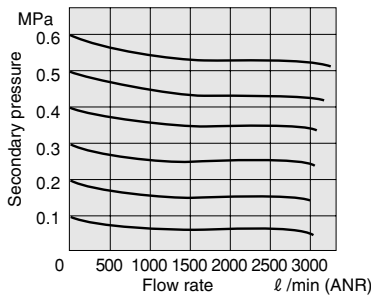
Notes: 1. For the specifications, order codes, and dimensions of the pressure gauge and the pressure gauge with built-in switch, see p.172 and 183.  
2. If a non-ion specification is selected, note that **-G1B** and **-GS2** cannot be selected.  
3. For the bracket and module order codes and specifications, see p.147 ~ 152.



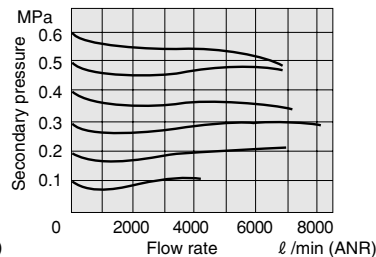
Flow Rate Characteristics

● Standard and built-in check mechanism specifications

RN650  
RN652

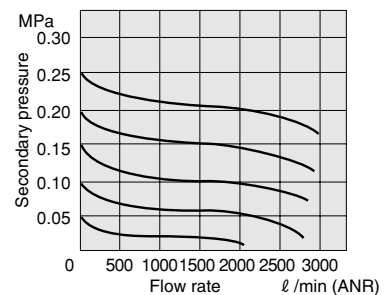


RN900  
RN902



● Low pressure specification

RN651

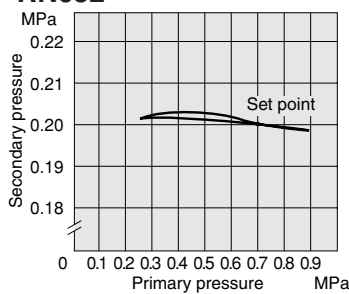


Pressure Characteristics

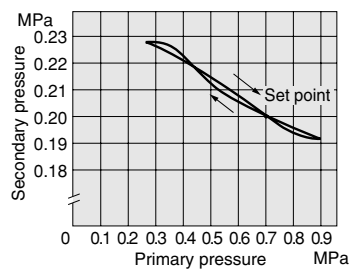
Remark: Graphs show flow rate characteristics when the primary pressure is at 0.7MPa [102psi]. 1 l/min = 0.0353ft<sup>3</sup>/min.

● Standard and built-in check mechanism specifications

RN650  
RN652

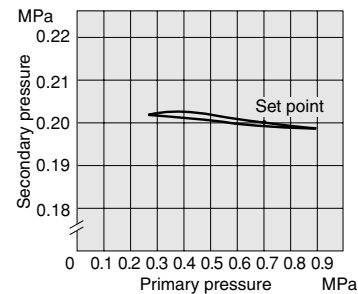


RN900  
RN902



● Low pressure specification

RN651



1MPa = 145psi.

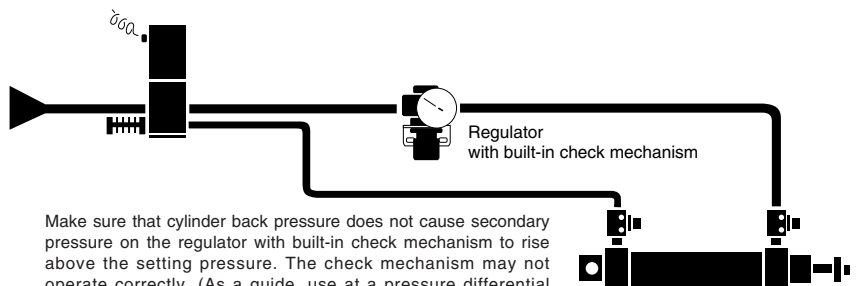
System Upgrade Using a Regulator with Built-in Check Mechanism

The regulator with built-in check mechanism is equipped with a built-in check valve that opens up when the primary pressure falls off, causing the pressure balance to collapse and simultaneously opening up the main valve to relieve the secondary pressure to the primary side.

Changing push side and pull side thrust

The thrust on an air cylinder's push side and pull side can be changed easily. Cylinders can be operated at low pressure on the side where thrust is not required, allowing reduction of air consumption.

Example: More thrust on push side, less thrust on pull side  
Push side air pressure: 0.5MPa  
Pull side air pressure: 0.3MPa

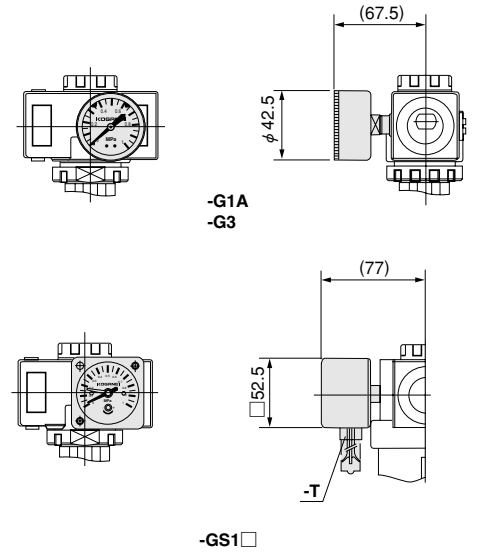
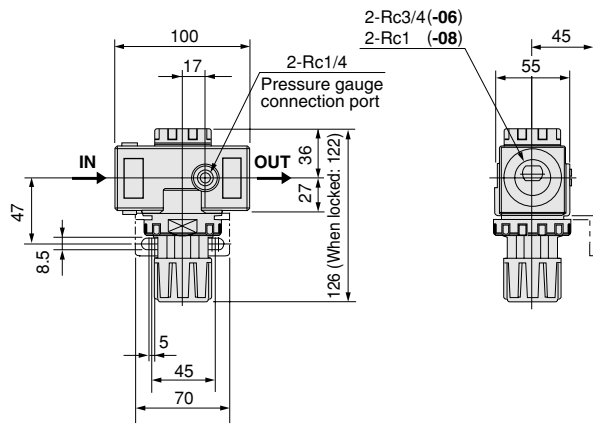


Make sure that cylinder back pressure does not cause secondary pressure on the regulator with built-in check mechanism to rise above the setting pressure. The check mechanism may not operate correctly. (As a guide, use a pressure differential between the push and pull sides of 0.3MPa or less.)

# Dimensions of Regulators (mm)

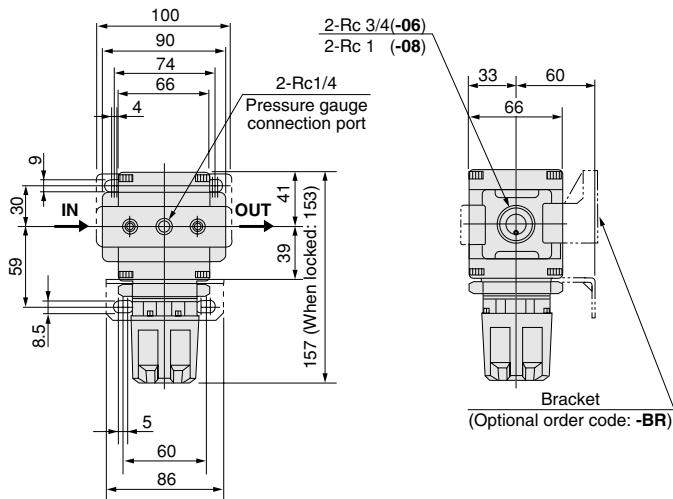
- RN650
- RN651
- RN652

● Optional pressure gauges  RN650

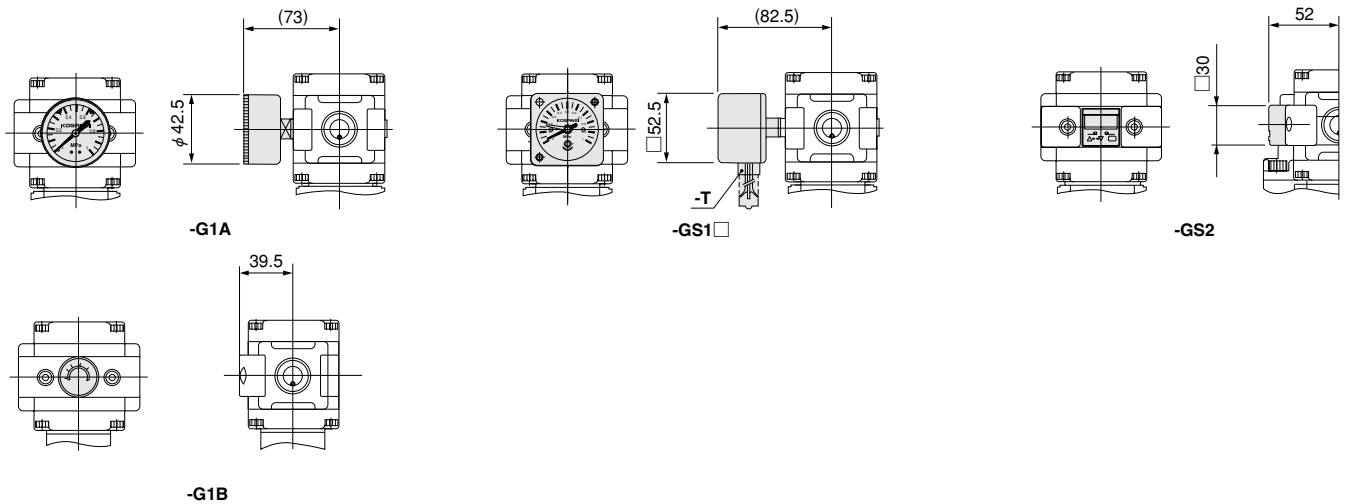


- RN900
- RN902

 RN900



● Optional pressure gauges



# BRACKETS



## Bracket Models and Applicable Component

Component type		Bracket model	Remark
Air filters	FN650	8-65B <sup>Note</sup>	Piping supporting type, optional
	FN900	8-90A	Body supporting type, optional
Mist filters	MF800	8-80A	Body supporting type, optional
	MF1000		
Micro mist filters	MMF600	8-80A	Body supporting type, optional
	MMF800		
Regulators	RN650	8-65	Standard
	RN900	8-90	
Lubricators	LN650	8-65B <sup>Note</sup>	Piping supporting type, optional
	LN900	8-90A	Body supporting type, optional

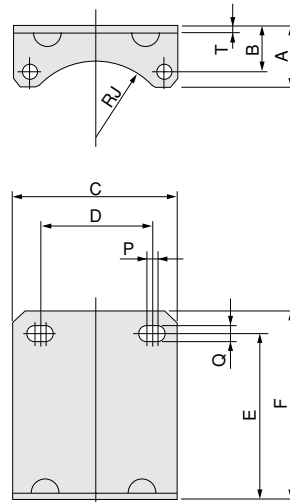
Note: Pipe supporting type brackets (8-65B) are sold in a set of two brackets.

## Dimensions of Brackets (mm)

■ For air filters, mist filters, micro mist filters, and lubricators

● 8-80A

● 8-90A



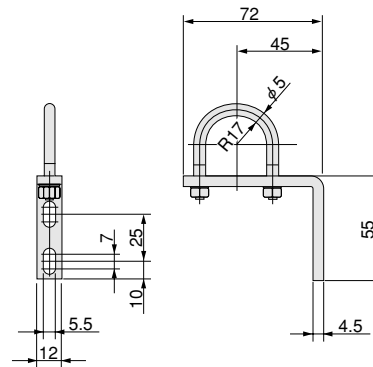
Model	A	B	C	D	E	F	RJ	P	Q	T	Applicable model
8-80A	50	32	108	80	70	80	47	5	8.5	3.2	MF800, MF1000, MMF600, MMF800
8-90A	31	23	88	62	90	100	42	5	8.5	3.2	FN900, FN901, LN900, LN901, LN902

■ For air filters and lubricators

● 8-65B<sup>Note</sup>



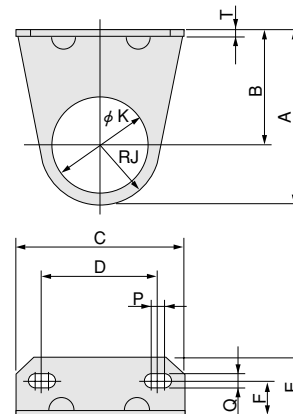
Note: Pipe supporting type brackets (8-65B) are sold in a set of two brackets.



■ For regulators

● 8-65

● 8-90



Model	A	B	C	D	E	F	RJ	φ K	P	Q	T	Applicable model
8-65	72.5	45	70	45	30	20	27.5	45	5	8.5	3.2	RN650, RN651, RN652
8-90	91	60	86	60	30	20	31	52.5	5	8.5	3.2	RN900, RN902