



FUJIKURA COMPOSITES

# PRECISION AIR REGULATOR

**RP** SERIES

- ▶ Highly accurate pressure control
- ▶ Direct acting, and Non-bleeding type



FUJIKURA COMPOSITES Inc.



## PRECISION AIR REGULATOR

### FEATURES

- **Accurate Pressure Regulation**  
Repeatability: within  $\pm 0.5\%$  F.S.
- **Superior Supply Pressure Characteristics**  
output pressure variation to changes in supply pressure: within 0.5kPa
- **Excellent Non-Bleed Pressure Regulation**  
Generates a Zero-based precision output pressure unmatched by any other direct acting type of regulators.
- **Free from Dust Trouble**  
Incorporated Screen Filter assures long trouble-free operation.



### SPECIFICATIONS

TYPE	Relieving	RP-0.5-2	RP-2-2	RP-4-2	RP-7-2
	Non-Relieving	RP·NR-0.5-2	RP·NR-2-2	RP·NR-4-2	RP·NR-7-2
Working Fluid	Clean Compressed Air				
Set Pressure Range MPa	0.05	0.2	0.4	0.7	
Supply Pressure Range MPa	0.5 max.	1 max.			
Repeatability % F.S.	Within $\pm 0.5$				
Sensitivity % F.S.	Within 1	Within 0.5		Within 0.3	
Operating Temperature °C	5 ~ 60				
Pipe Port	Rc	1/4			
Gauge Port	Rc	1/4 (2 Ports)			
Bracket	Standard Equipment				
Weight kg	0.41				

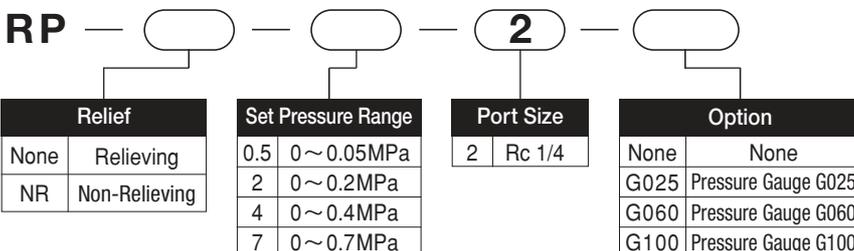
\*0.02MPa and 0.03MPa models available.

### PRESSURE GAUGE (OPTION)

- **Accuracy**  $\pm 1.6\%$  F.S.

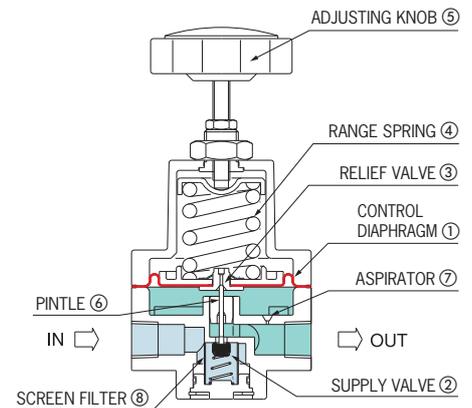
Opt. No.	G025	G060	G100
Unit	MPa		
Pressure Range	0 ~ 0.25	0 ~ 0.6	0 ~ 1
Min. Graduation	0.005	0.01	0.02

### MODEL DESIGNATION



\*0.02MPa and 0.03MPa models available.

### EXPLANATORY CONSTRUCTION AND PRINCIPLE OF OPERATION



Range spring ④, which has been compressed by Adjusting knob ⑤, causes Pintle ⑥ to move downward, opening Supply valve ② and allowing air flow to the downstream. The pressure builds up against Control diaphragm ① until Supply valve ② closes.

This is the equilibrium or set pressure, which is closely maintained under changes in operating conditions in the following manner.

#### 1. Downstream Pressure Drop

A drop in downstream pressure reduces the diaphragm pressure force, upsetting the equilibrium condition.

This unbalance causes Supply valve ② to open until the pressure builds up once more to the set value.

#### 2. Downstream Pressure Increase

An increase in downstream pressure acts on Control diaphragm ①, causing the relief seat to lift and Relief valve ③ to open.

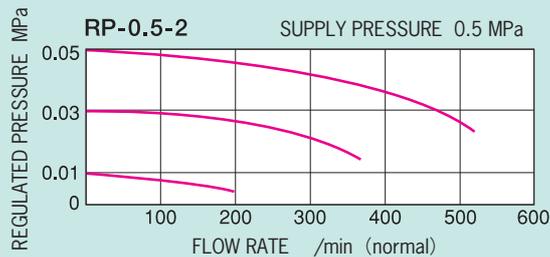
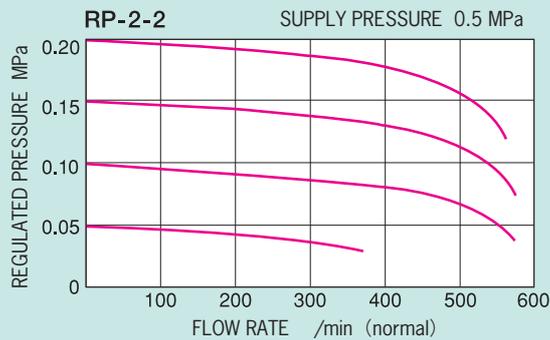
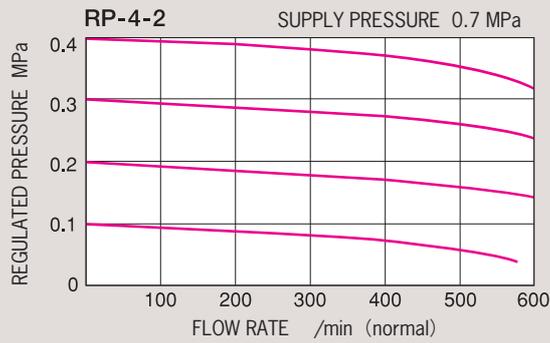
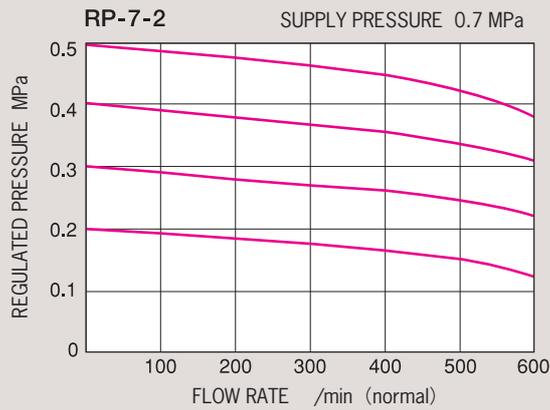
The excess pressure drops quickly to the set value.

#### 3. Changes in Forward Flow

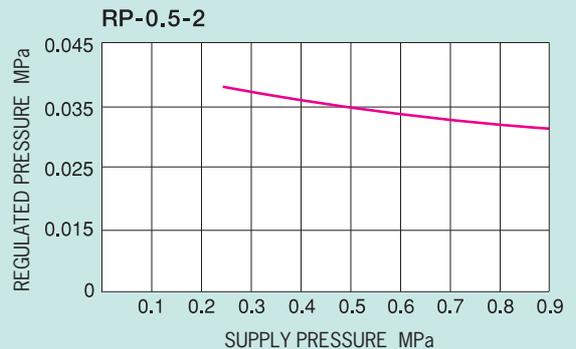
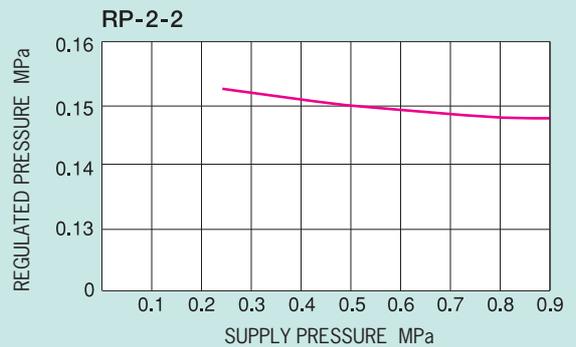
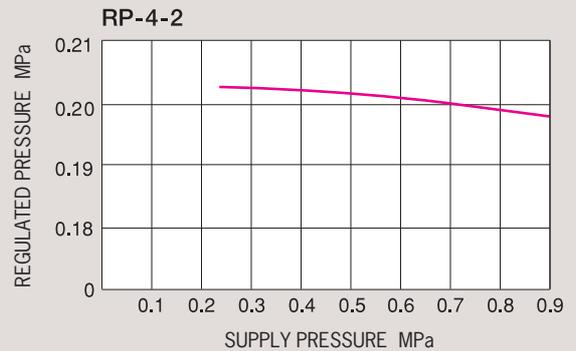
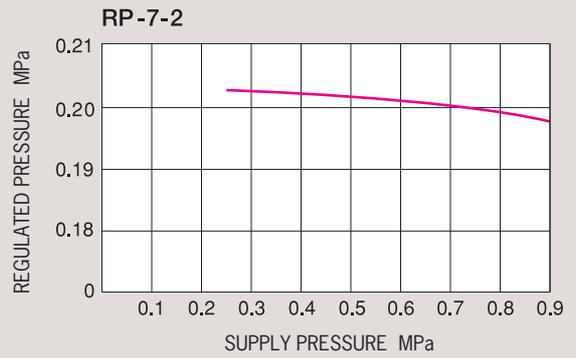
Under stable forward flow condition, the range spring force is balanced by the diaphragm pressure force, with Supply valve ② open just enough to maintain the required equilibrium pressure.

When high flow occurs, Aspirator ⑦ helps maintain downstream pressure and compensates for droop.

■ **Flow Characteristic**



■ **Pressure Characteristic**

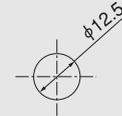
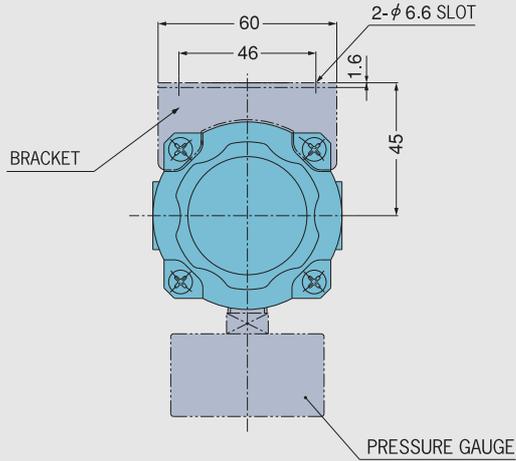


**CAUTION**

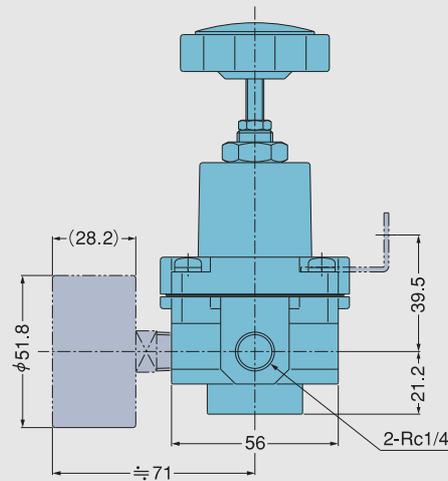
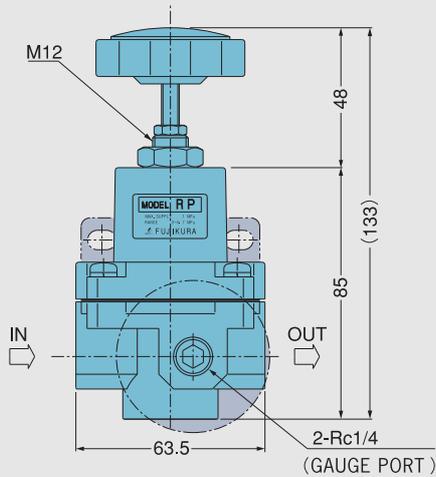
- ① Flush out all air lines thoroughly to remove dirt and scale before installation is made.
- ② Do not apply shock load on the top of fully tightened Adjusting knob to avoid possible damage of inner parts.
- ③ When attaching Mounting bracket to the body with two pan head screws which serve also for tightening Bonnet, make sure the screws are not tightened too hard.

☆ If you have any question, FUJIKURA are ready to assist you. Please consult us at the address printed on the back cover.

(Unit : mm)



PANEL MOUNTING HOLE  
(Panel Thickness : 3 max.)



**Fujikura's Pneumatic Control Products Line**

- Precision Pneumatic Control Products General Guide      Cat. No. KS-572E
- Super Precision Air Regulators      **Series RS** } Cat. No. KS-128E
- Super Precision Air Relays      **Series RR** }
- Precision Electro-Pneumatic Transducers      **Series RT**      Cat. No. KS-130E
- Precision Vacuum Pressure Regulators      **Series RV**      Cat. No. KS-131E
- Precision BF Cylinders      **Series FC**      Cat. No. KS-570E

[Please request respective catalog for detailed contents of each product.]

**Control Equipment Sales Department**

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## Notice: Specification changes of Accessory (Bracket for regulator “RP series”, )

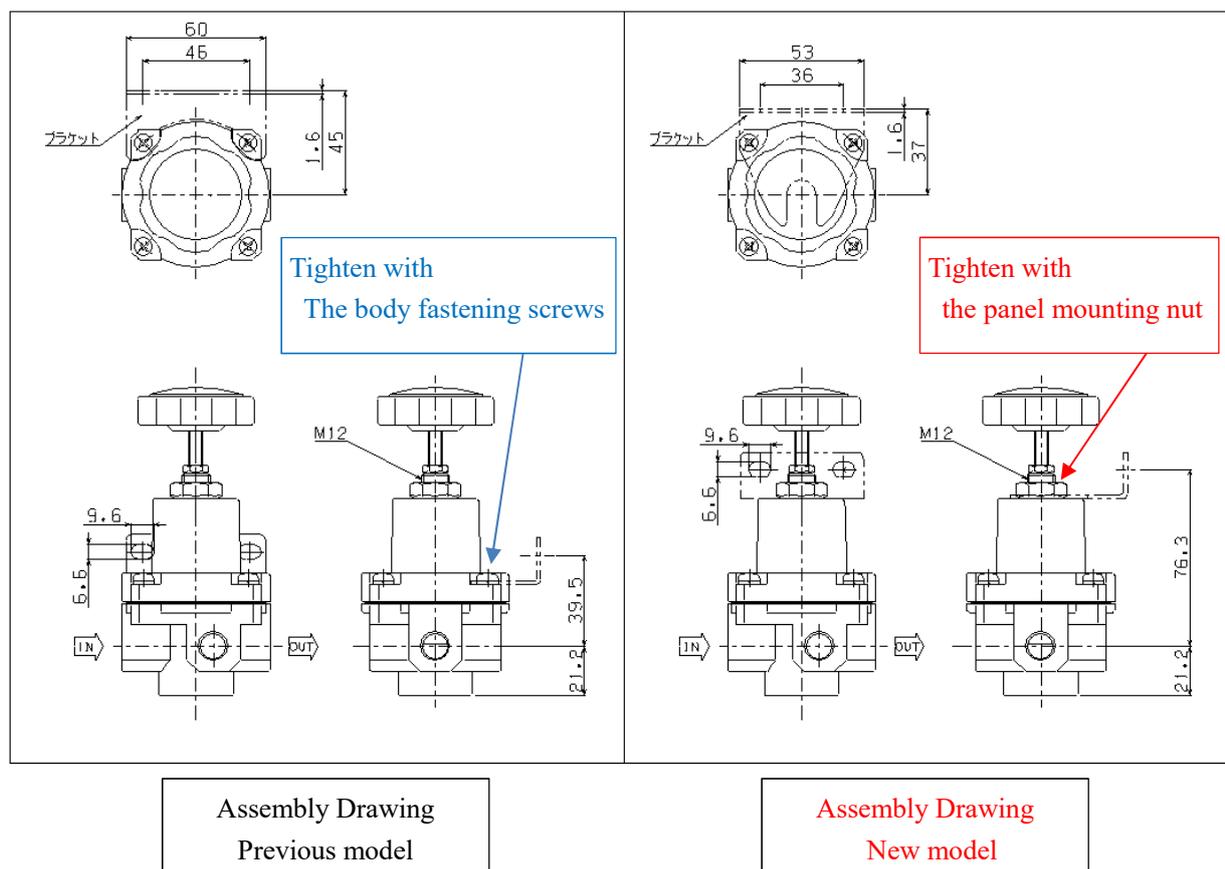
Dear Valued Customer,

We hereby give official notification that the specifications of the bracket for air regulator “RP series” and “RP series” you have purchased from us are changing from the first lot of production in April 2023. There will be no change in product model number due to this change.

### 【Details of change】

The shape will be changed in accordance with the shared use with other regulator series. Due to the change in shape, the mounting position will also change. There are no changes to the products themselves, so there are no effects on the characteristics.

### 【RP series】



管理番号: CES20-22-008E

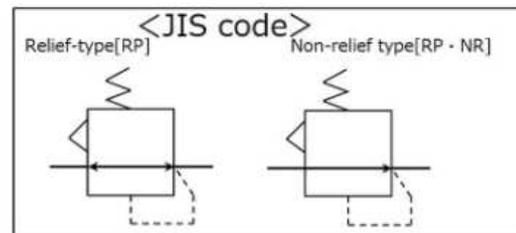
## Specifications

Relief type	RP-0.2-2	RP-0.3-2	RP-0.5-2	RP-2-2	RP-4-2	RP-7-2
Non-relief type	RP · NR-0.2-2	RP · NR-0.3-2	RP · NR-0.5-2	RP · NR-2-2	RP · NR-4-2	RP · NR-7-2
Working fluid	Clean compressed air					
Set pressure Range Mpa[psi]	0~0.02 [2.9]	0~0.03 [4.4]	0~0.05 [7.3]	0~0.20 [29]	0~0.40 [58]	0~0.70 [102]
Supply pressure range MPa[psi]	0.5 MAX			1 MAX		
Repeatability % F.S	Within ±0.5					
Sensibility % F.S.	Within ±1.5	Within ±1.3	Within ±1	Within ±0.5		Within ±0.3
Operating temperature ℃[°F]	5 ~ 60 [41 ~ 140]					
Pipe port Rc	1/4					
Pipe port Rc	1/4 (2 ports)					
Accessory parts	Mounting bracket(Standard)					
Weight kg[pound]	0.41[0.9]					

### ■ Pressure gauge

Model	Pressure range	Minimum scale
G025	0~0.25MPa [0~36.26psi]	0.005MPa [0.73]
G060	0~0.6MPa [0~87.02]	0.01MPa [1.45]
G100	0~1.0 [0~145.04]	0.02MPa [2.90]

- Accuracy ±1.6%F.S.
- Pipe port R1/4
- Size  $\Phi$ 51.8mm [2.39in.]
- Weight 125g [0.28pound]



## Model designation

