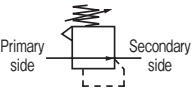
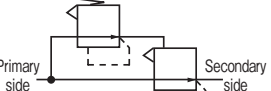
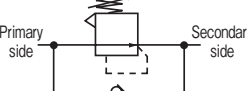


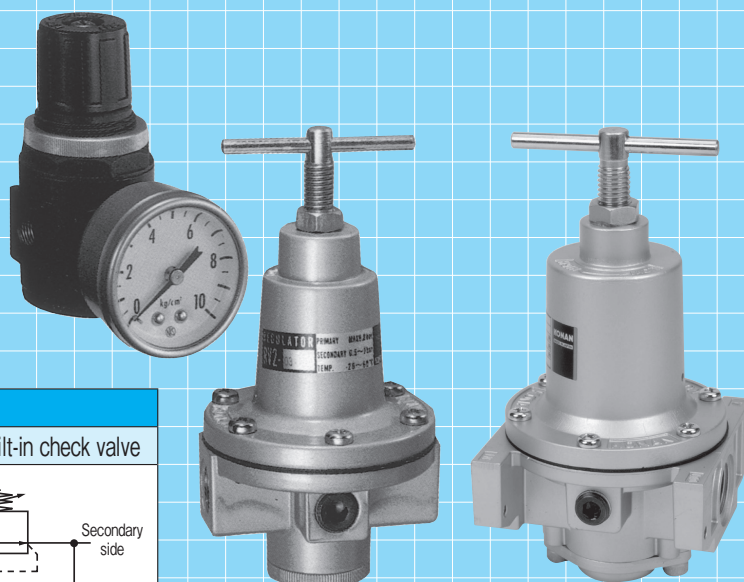
REGULATORS

RV2/RV21 Standard type RC $\frac{1}{8} \sim 2\frac{1}{2}$

RV2P/RV21P Panel-mount type RC $\frac{1}{4} \sim \frac{1}{2}$

Regulators are used to reduce the pressure of the compressed air from the compressor so that air is automatically fed at constant pressure to the pneumatic line.

JIS Symbol		
Rc $\frac{1}{8} \sim 1$	Rc $\frac{1}{4} \sim 2\frac{1}{2}$	Type with built-in check valve
		



Model Code

When ordering, specify the model as follows:

Standard type

Rc $\frac{1}{8} \sim \frac{1}{4}$ **RV2-02-** 3 - 10 - 11
 • Port size • Pressure gauge • Bracket

Rc $\frac{1}{4} \sim \frac{3}{8}$ **RV** 1 **2** 2 - **03** - 4 - 9 - 10 - 11
 • Built-in check valve • Corrosion-resistant • Port size • Operating temperature range • Pressure gauge • Bracket

Rc $\frac{3}{8} \sim \frac{1}{2}$ **RV** 1 **21** 2 - **04** - 5 - 9 - 10 - 11
 • Built-in check valve • Corrosion-resistant • Port size • Operating temperature range • Pressure gauge • Bracket

Rc $\frac{3}{4} \sim 1$ **RV** 1 **2** 2 - **08** - 6 - 9 - 10 - 11
 • Built-in check valve • Corrosion-resistant • Port size • Operating temperature range • Pressure gauge • Bracket

Rc $1\frac{1}{4} \sim 1\frac{1}{2}$ **RV2** 2 - **14** - 7 - 10
 • Corrosion-resistant • Port size • Pressure gauge

Rc $2 \sim 2\frac{1}{2}$ **RV2** 2 - **20** - 8 - 10
 • Corrosion-resistant • Port size • Pressure gauge

Panel-mount type

Rc $\frac{1}{4} \sim \frac{3}{8}$ **RV** 1 **2P** 2 - **03** - 4 - 9 - 10
 • Built-in check valve • Corrosion-resistant • Port size • Operating temperature range • pressure gauge

Rc $\frac{3}{8} \sim \frac{1}{2}$ **RV** 1 **21P** 2 - **04** - 5 - 9 - 10
 • Built-in check valve • Corrosion-resistant • Port size • Operating temperature range • pressure gauge

1 Built-in check valve

Without	No entry
With	C

2 Corrosion-resistant

- Portions that are exposed to outside weather conditions are corrosion-resistant coating and the exposed bolts,nuts and brackets are stainless steel.

Standard	No entry
Corrosion-resistant type	S

3 Port size

Rc 1/8	6A
Rc 1/4	8A

4 Port size

Rc 1/4	8A
Rc 3/8	10A

5 Port size

Rc 3/8	10A
Rc 1/2	15A

6 Port size

Rc 3/4	20A
Rc 1	25A

7 Port size

Rc 1_1/4	32A
Rc 1_1/2	40A

8 Port size

Rc 2	50A
Rc 2_1/2	65A

9 Operating temperature range

General purpose	- 20 ~ 60°C	No entry
Heat-resistant	5 ~ 100°C	HT
Freeze-resistant	- 40 ~ 45°C	LT

- For heat, freeze resistant type, allow some margin for delivery.
- In operating temperatures of 5°C or less, provide adequate measures against freezing.

10 Pressure gauge

Without	No entry
With	G

- Pressure gauge sizes :
40mm dia. (for RV2-02)
50mm dia. (Others)
Scale : 0 ~ 1MPa
- Pressure gauge is not mounted but appended with regulators.

11 Bracket

Without	No entry
With	BR

- Bracket is not mounted but appended with regulators.



Regulators

Specifications

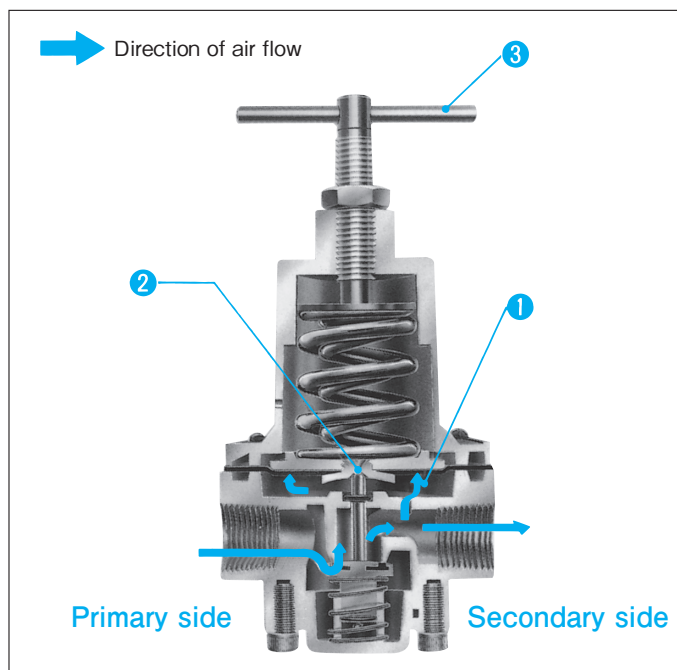
Model code	Standard type	RV2-02		RV2-03		RV21-04		RV2-08		RV2-14		RV2-20	
	Panel-mount type			RV2P-03		RV21P-04							
Port size		6A	8A	8A	10A	10A	15A	20A	25A	32A	40A	50A	65A
		Rc1/8	Rc1/4	Rc1/4	Rc3/8	Rc3/8	Rc1/2	Rc3/4	Rc 1	Rc1 1/4	Rc1 1/2	Rc2	Rc2 1/2
Operating pressure	Primary side (IN)	Max.1.0MPa											
	Secondary side (OUT)	0.05 ~ 0.7MPa											
Proof pressure		1.5MPa (primary side only)											
Operating temperature		- 20 ~ 60°C		See Model Code section.						- 20 ~ 60°C			
Mass		0.25kg		0.58kg		0.84kg		2.5kg		5.1kg		5.2kg	

● Above values of mass exclude weight of mounting bracket.

● For specifications other than those listed above, please contact us.

Operation

Standard type



1 Diaphragm chamber

- Air pressure enters the diaphragm chamber as it passes from the primary to the secondary side. The diaphragm is raised until the pressure in the chamber is equal to the force of the spring. The valve is then closed.
- If the pressure on the secondary side drops, the valve is opened, and air is fed from the primary to the secondary side.

2 Relief valve

- When the handle is turned counterclockwise to lower the pressure setting, the spring becomes weaker than the pressure in the diaphragm. Thus, the diaphragm is raised, the relief valve opened, and the air in the secondary side released to the atmosphere until the pressure is equal to the force of the spring.

3 Handle (adjusting screw)

- To lower the pressure setting, turn the handle counterclockwise.
- As the handle is turned clockwise, the tip of the adjusting screw forces down the spring retainer, compressing the spring. The valve is opened, and air is fed from the primary to the secondary side.

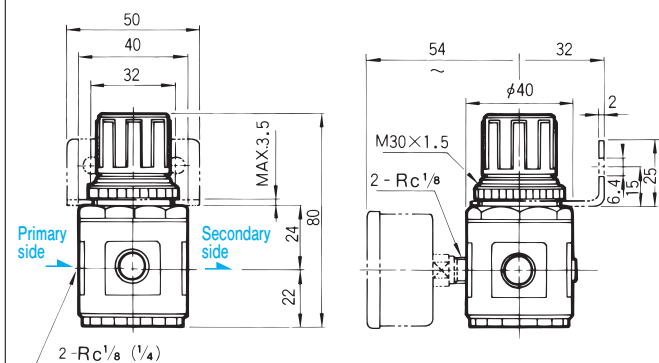


Regulators

Outside Dimensions

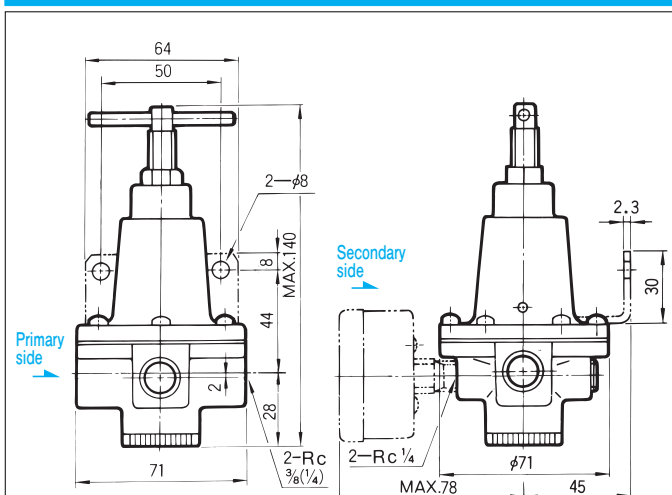
Standard type

RV2-02-6A · 8A

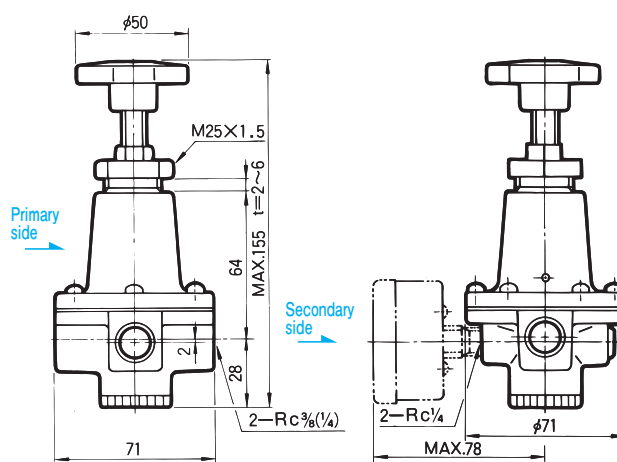


Panel-mount type

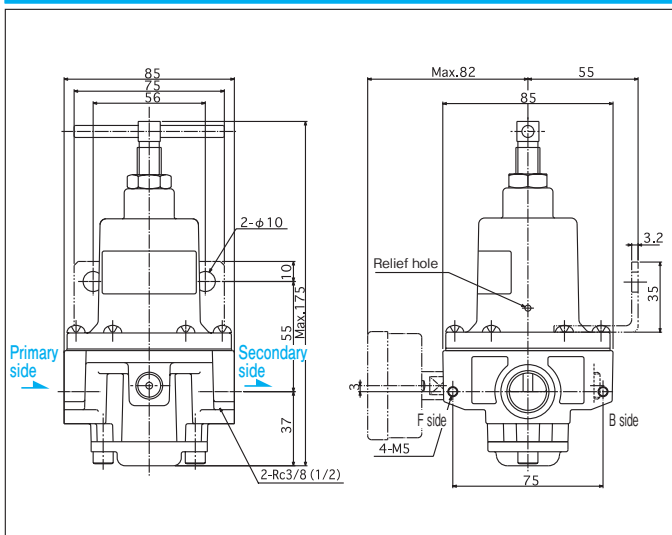
RV2-03-8A · 10A



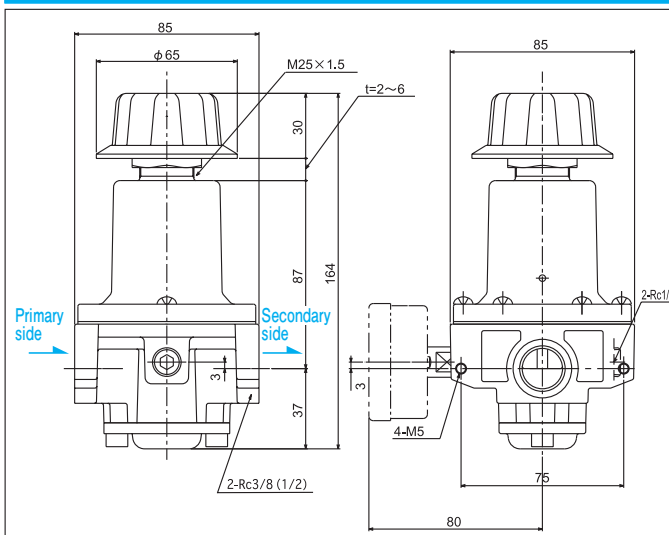
RV2P-03-8A · 10A



RV21-04-10A · 15A



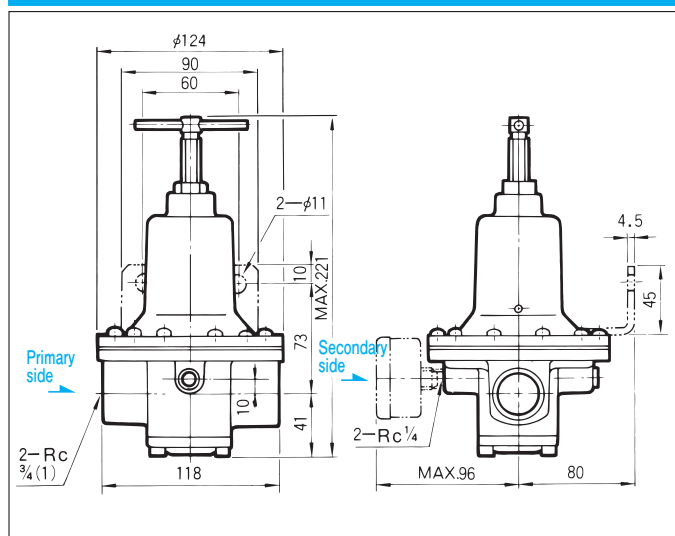
RV21P-04-10A · 15A



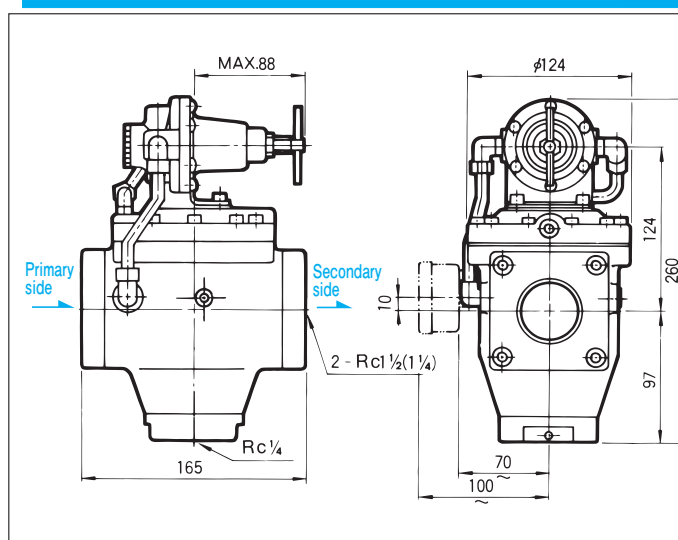
Outside Dimensions

Standard type

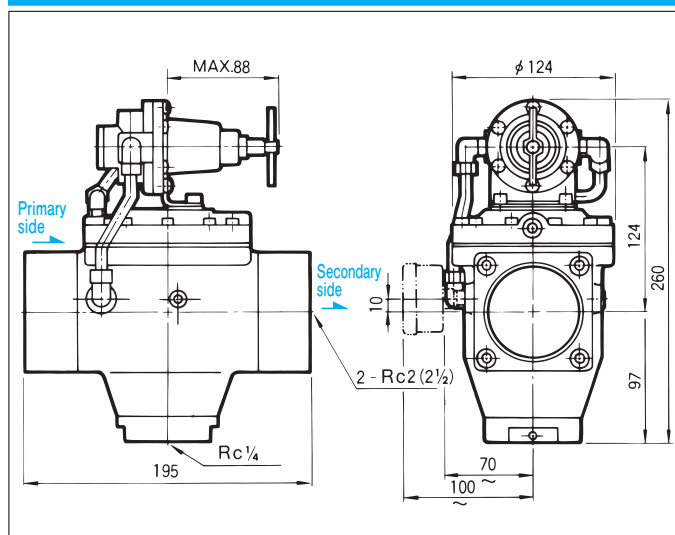
RV2-08-20A • 25A



RV2-14-32A • 40A



RV2-20-50A · 65A





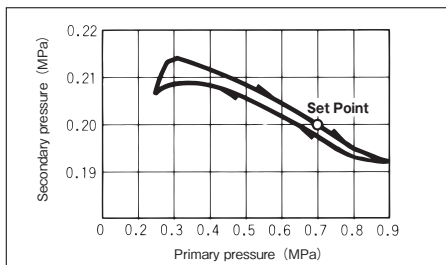
Regulators

Performance Tables

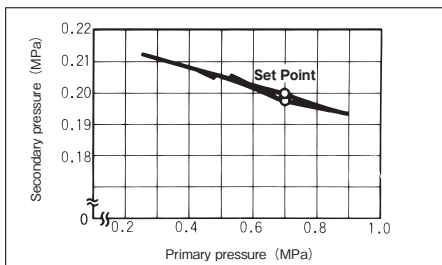
Pressure characteristics graphs

Standard and Panel-mount type

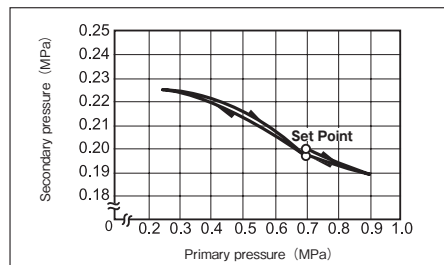
RV2-02-6A · 8A



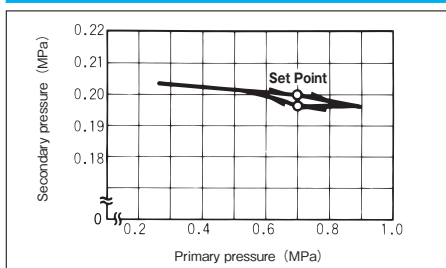
RV2-08-20A



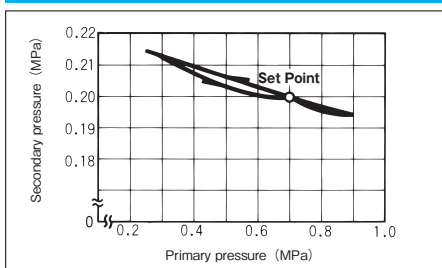
RV2-14-32A



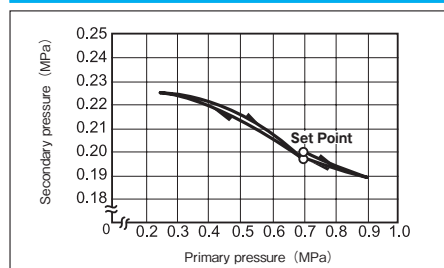
RV2-03-8A



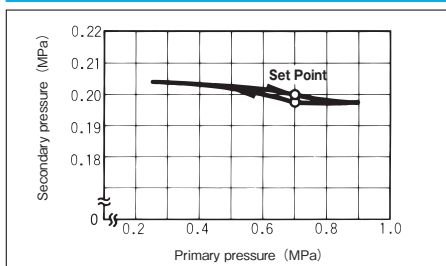
RV2-08-25A



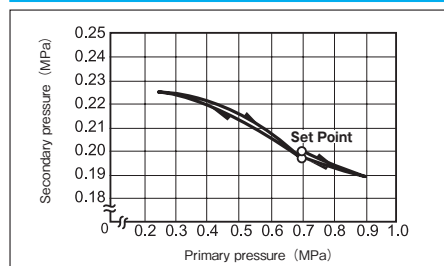
RV2-14-40A



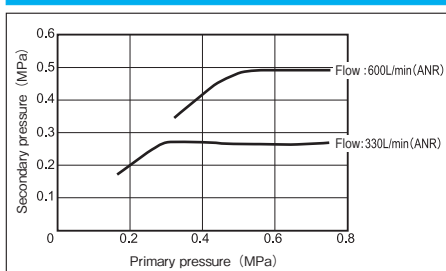
RV2-03-10A



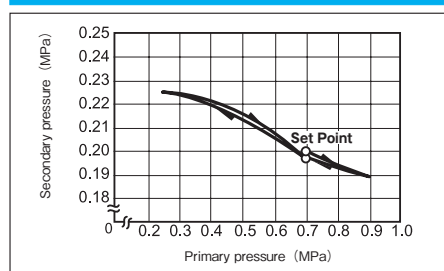
RV2-20-50A



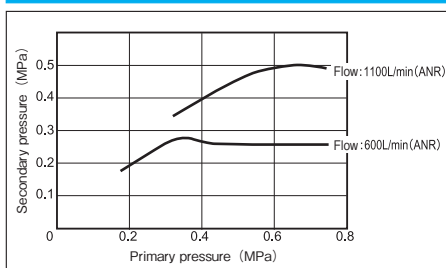
RV21-04-10A ※ This characteristics are based on the new JIS standard.



RV2-20-65A



RV21-04-15A ※ This characteristics are based on the new JIS standard.

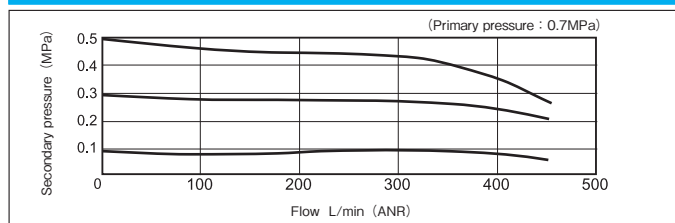


Performance Tables

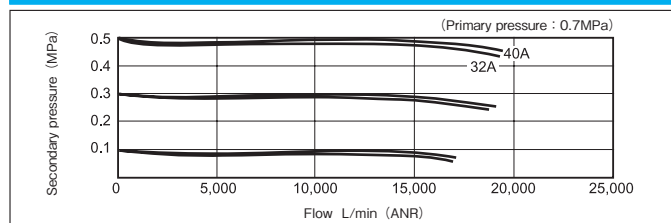
Flow characteristics graphs

Standard and Panel-mount type

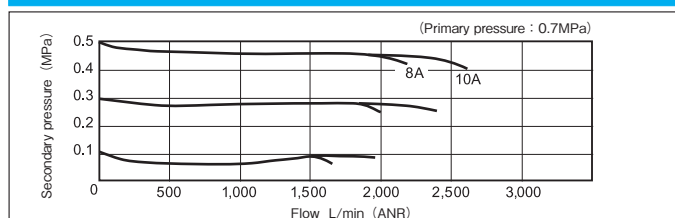
RV2-02



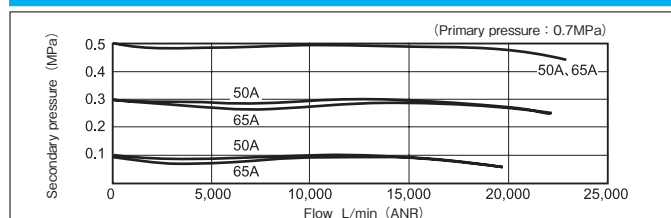
RV2-14



RV2-03

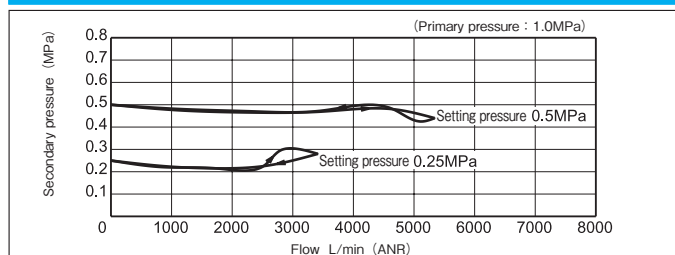


RV2-20



RV21-04-10A

※ This characteristics are based on the new JIS standard.

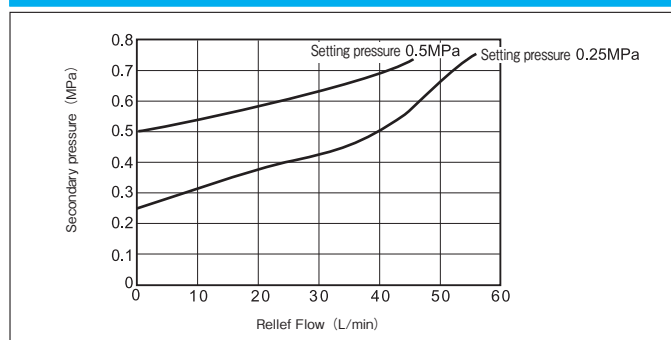


Relief flow characteristics graphs

Standard and Panel-mount type

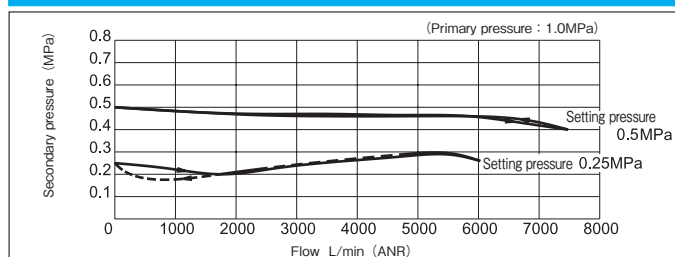
RV21-04-10A

※ This characteristics are based on the new JIS standard.



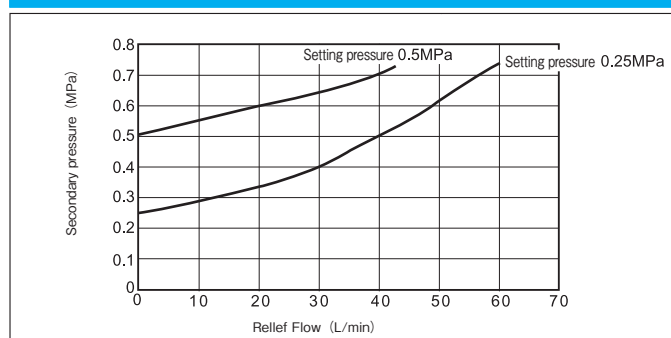
RV21-04-15A

※ This characteristics are based on the new JIS standard.

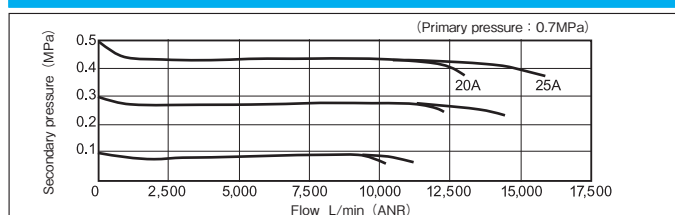


RV21-04-15A

※ This characteristics are based on the new JIS standard.



RV2-08



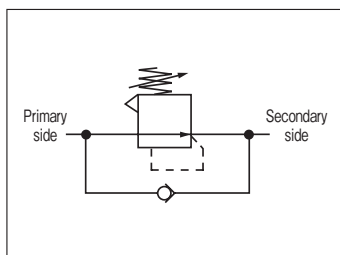


Regulators

Operating Instructions

1 Installation

- For a circuit in which the flow of air is reversed, running from the secondary to the primary side, use the type with a built-in check valve (RVC2) or install a check valve in parallel, as shown.



2 Fluid

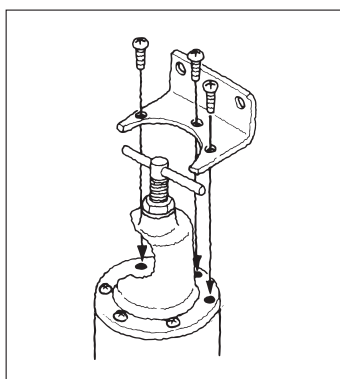
- Use the regulator with clean fluids only. Dirt, wastes, etc. in the fluid may cause regulator malfunction.

3 Lubrication

- As a general rule, do not attempt to lubricate the regulator. When disassembling for checking, however, apply grease.

4 Bracket

- The regulator mounting bracket is available as an option. For the mounting of the bracket, see the figure below.



- Remove any three machine screws from the upper part of the regulator. Attach the bracket to the regulator using the longer machine screws supplied with the bracket.
- For the miniature type, hold the bracket in place using lock screws.

5 Pressure

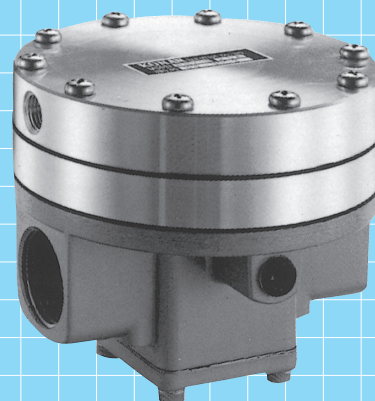
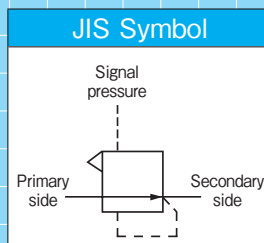
- To lower the pressure setting, lower the present setting below the target point first and then increase the setting to the target point.
- After setting, be sure to tighten the locknut.

REGULATORS

with External Pilot

PRV11B Standard type $R_c \frac{3}{4} \cdot 1\frac{1}{2}$

Pressure is controlled by external signal pressure (pilot pressure) instead of by spring force. Performance, etc. is exactly the same as the spring-controlled regulators.



Model Code

When ordering, specify the model as follows:

Standard type

Rc 3/4 ~ 1

PRV11B - 1 - 3 - 4

• Port size • Pressure gauge • Bracket

Rc 1 1/4 ~ 1 1/2

PRV2-14 - 2 - 3

• Port size • Pressure gauge

1 Port size

Rc 3/4	20A
Rc 1	25A

3 Pressure gauge

Without	No entry
With	G

- Pressure gauge sizes : 50mm dia.
Scale : 0 ~ 1MPa
- Pressure gauge is not mounted but appended with regulators.

4 Bracket

Without	No entry
With	BR

- Bracket is not mounted but appended with regulators.

2 Port size

Rc 1 1/4	32A
Rc 1 1/2	40A

Specifications

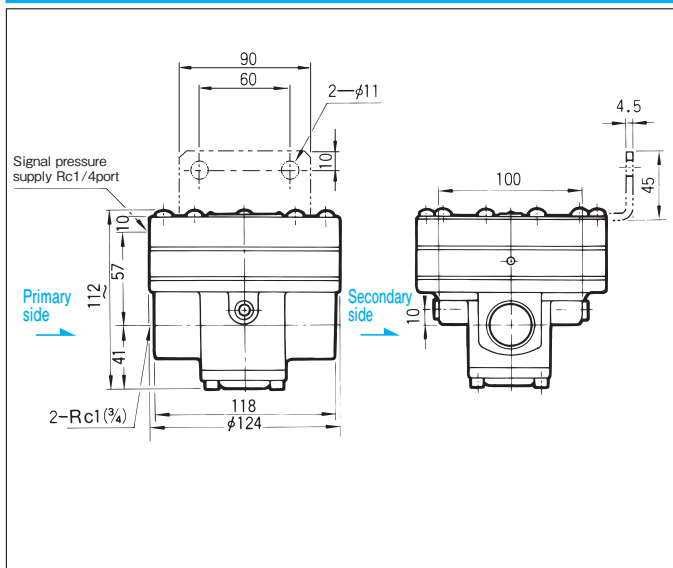
Model code		PRV11B		PRV2-14	
Port size		20A	25A	32A	40A
		Rc3/4	Rc1	Rc1 1/4	Rc1 1/2
Operating pressure	Primary side (IN)	Max. 1.0MPa			
	Secondary side (OUT)	0.05 ~ 0.7MPa			
Proof pressure		1.5MPa (Primary side only)			
Operating temperature		- 20 ~ 60°C			
Mass		2.5kg		5.1kg	

- Above values of mass exclude weight of mounting bracket.

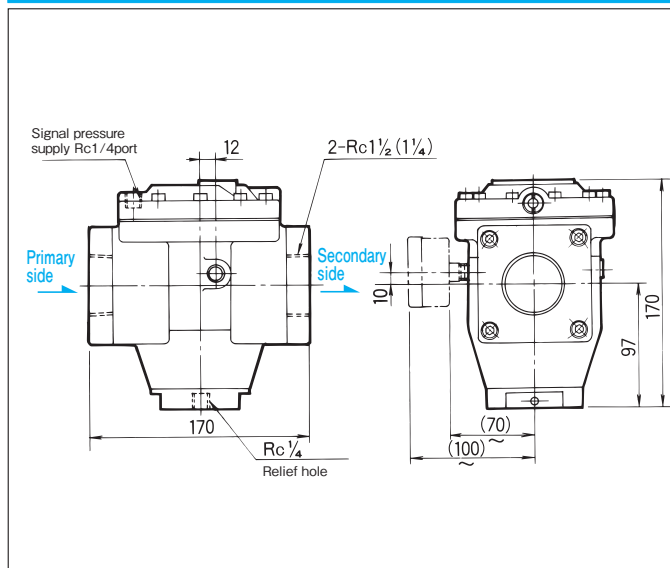


Outside Dimensions

PRV11B-20A · 25A



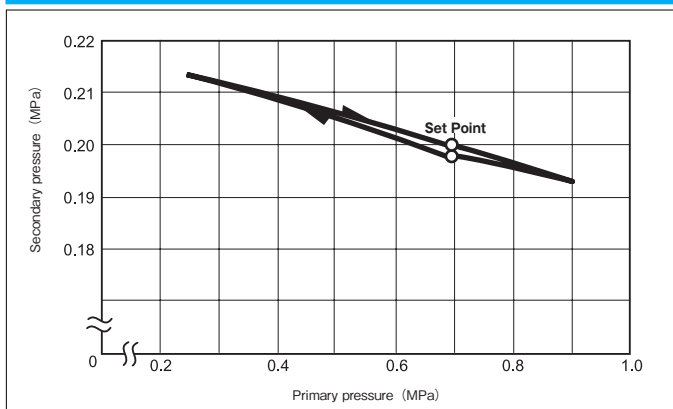
PRV2-14-32A · 40A



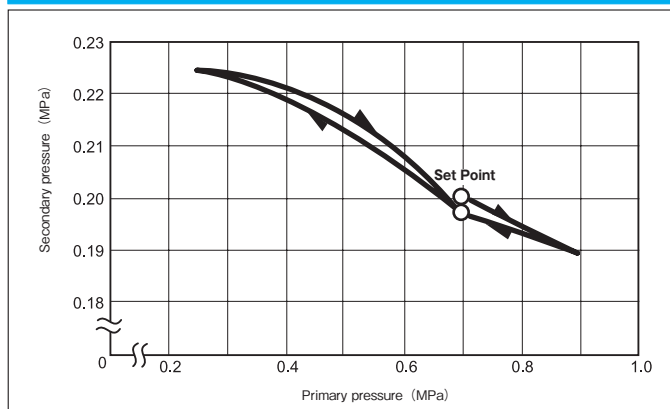
Performance Tables

Pressure characteristics graphs

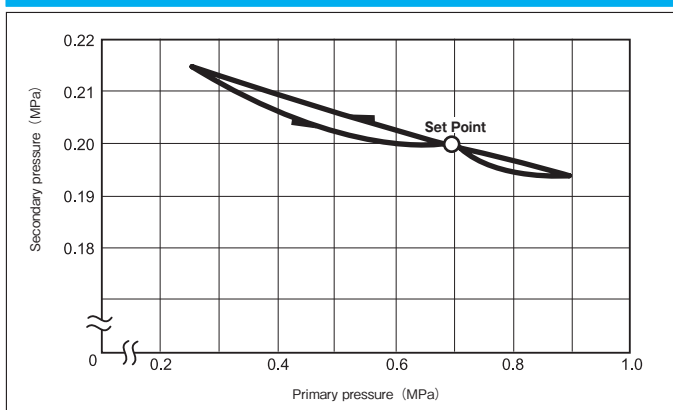
PRV11B-20A



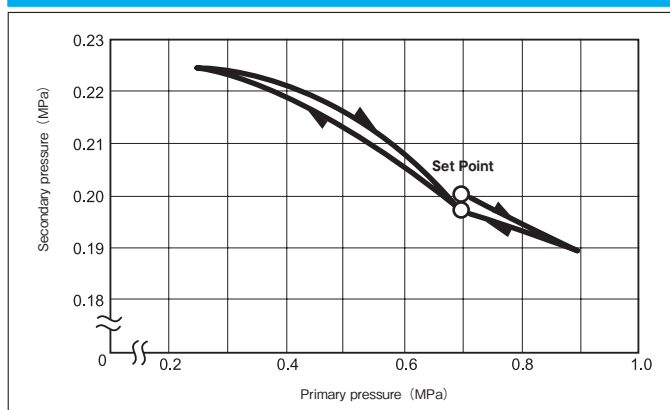
PRV2-14-32A



PRV11B-25A



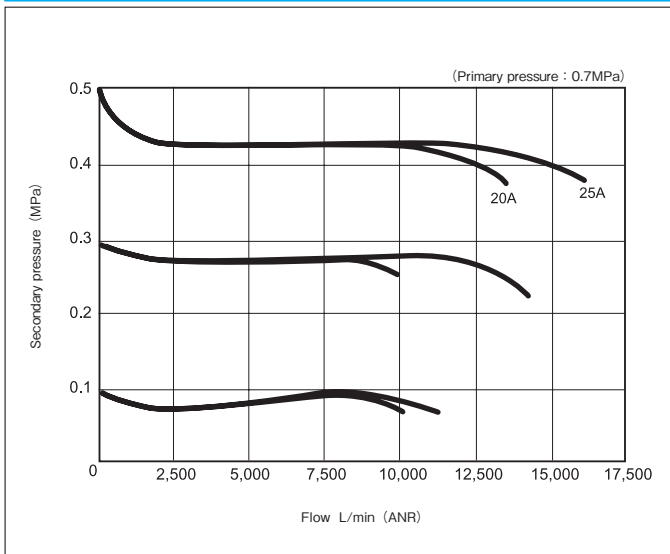
PRV2-14-40A



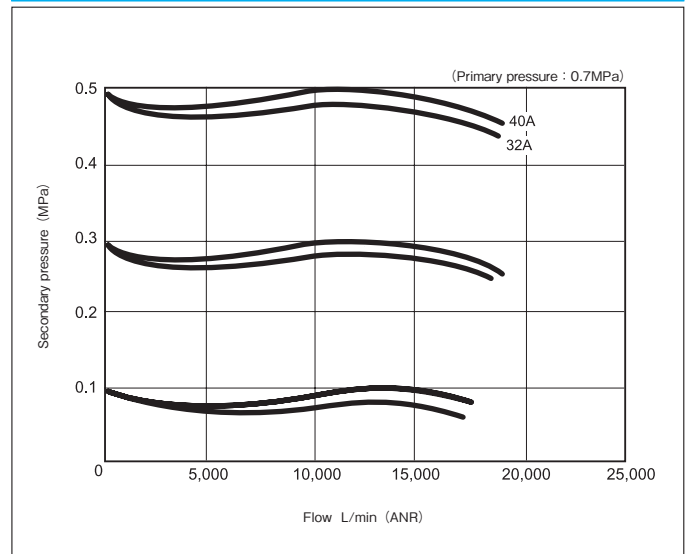
Performance Tables

Flow characteristics graphs

PRV11B-20A • 25A



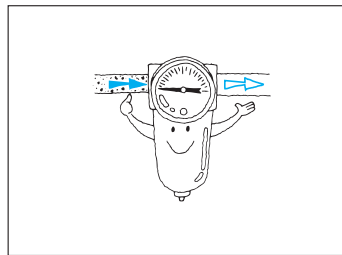
PRV2-14-32A • 40A



Operating Instructions

1 Fluid

- Use the regulator with clean fluids only. Dirt, wastes, etc. in the fluid may cause regulator malfunction.

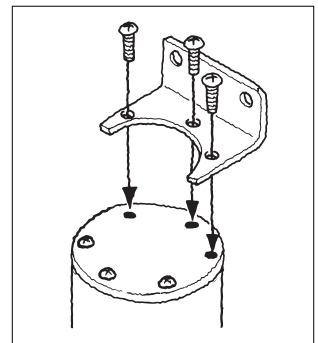


2 Lubrication

- In general, do not attempt to lubricate the regulator. When disassembling for checking, however, apply grease.

3 Bracket

- The regulator mounting bracket is available as an option. For the mounting of the bracket, see the figure at right.
- Remove any three machine screws from the upper part of the regulator. Attach the bracket to the regulator by means of the three longer machine screws supplied with the regulator.



Precision REGULATORS

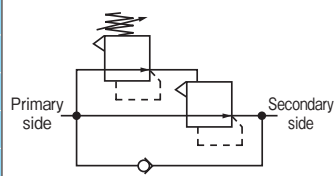
RV10C

Standard type

Rc $\frac{1}{4} \sim \frac{1}{2}$

This is a precision, pilot-operated regulator, capable of a wide range of stable pressure settings. The built-in check valve permits secondary pressure to be fed back to the primary side if the primary pressure supply is shut off.

JIS Symbol



Model Code

When ordering, specify the model as follows:

Standard type

Rc $\frac{1}{4} \sim \frac{1}{2}$

RV10C –

1

● Port size

2

● Pressure gauge

1 Port size

Rc $\frac{1}{4}$	8A
Rc $\frac{3}{8}$	10A
Rc $\frac{1}{2}$	15A

● In case of 8A, bushings are threaded to the piping port.

2 Pressure gauge

Without	No entry
With	G

● Pressure gauge is not mounted but appended with regulators.

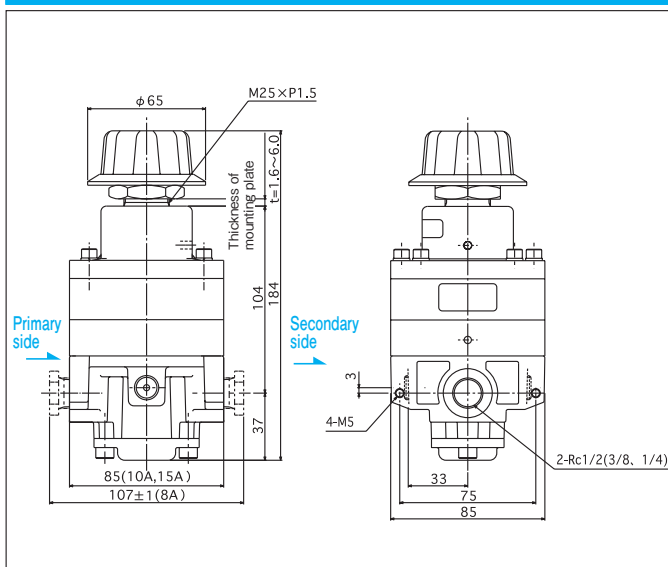
Specifications

Model code		RV10C		
Port size		8A	10A	15A
		Rc $\frac{1}{4}$	Rc $\frac{3}{8}$	Rc $\frac{1}{2}$
Operating pressure	Primary side (IN)	Max. 1.0MPa		
	Secondary side (OUT)	0.01 ~ 0.7MPa		
Sensitivity		0.0005MPa		
Operating temperature		5 ~ 60°C		
Mass		2.0kg		

● For specifications other than those listed above, please contact us.

Outside Dimensions

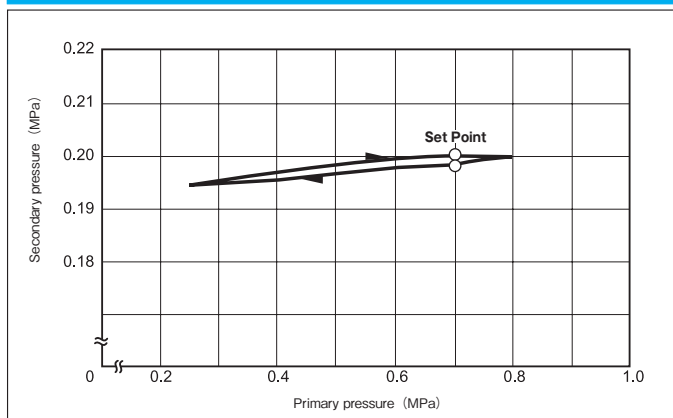
RV10C-8A · 10A · 15A



Performance Tables

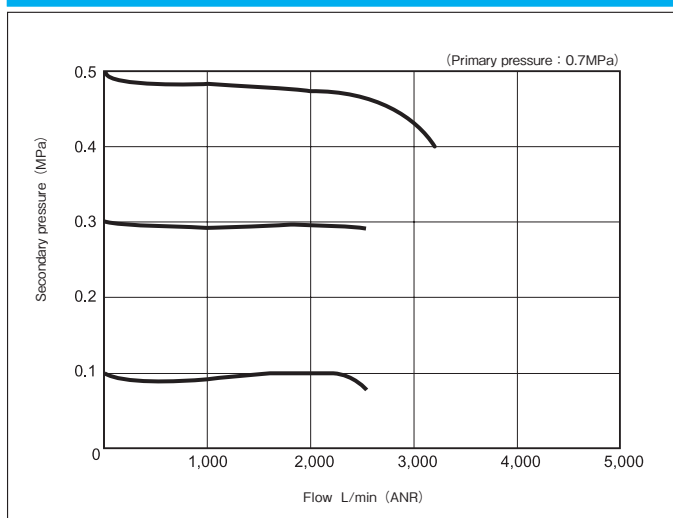
Pressure characteristics graphs

RV10C-15A



Flow characteristics graphs

RV10C-15A



Operating Instructions

1 Fluid

- Use the regulator with clean fluids only. Dirt, wastes, etc. in the fluid may cause regulator malfunction.

2 Lubrication

- In general, do not attempt to lubricate the regulator. When disassembling for checking, however, apply grease.

3 Pressure

- To lower the pressure setting, lower the present setting below the target point first, and then increase the setting to the target point.

Precision REGULATORS

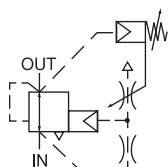
RV6

Standard type

RC $\frac{1}{4} \sim \frac{1}{2}$

The nozzle flapper high-sensitivity pilot amplification system has achieved adjustable sensitivity of 0.001MPa. Large relief flow enables strong resistance against excessive pressure at secondary side and prevents reverse flow. This regulator is suitable for balancer and tension control.

JIS 記号



Model Code

When ordering, specify the model as follows:

Standard type

Rc $\frac{1}{4} \sim \frac{3}{8}$

RV6-03- 1 - 2 - 4 - 5

● Secondary operating pressure ● Port size ● Pressure gauge ● Bracket

Rc $\frac{3}{8} \sim \frac{1}{2}$

RV6-04- 1 - 3 - 4 - 5

● Secondary operating pressure ● Port size ● Pressure gauge ● Bracket

1 Secondary operating pressure range		
General purpose	0.01 ~ 0.7	No entry
Middle pressure purpose	0.01 ~ 0.4	4
Low pressure purpose	0.01 ~ 0.2	2

2 Port size	
Rc1/4	8A
Rc3/8	10A

3 Port size	
Rc3/8	10A
Rc1/2	15A

4 Pressure gauge	
Without	No entry
With	G

● Pressure gauge is not mounted but appended with regulators.

5 Bracket	
Without	No entry
With	BR

● Bracket is not mounted but appended with regulators.

Specifications

Model code			RV6-03	RV6-04	
Port size			8A	10A	15A
			Rc1/4	Rc3/8	Rc1/2
Applicable Fluid			Dry air after filter passage less than 5μm.		
Operating pressure	Primary side (IN)		Max.1.0MPa		
	Secondary side (OUT)	Generay purpose	0.01 ~ 0.7MPa		
		Middle pressure purpose	0.01 ~ 0.4MPa		
		Low pressure purpose	0.01 ~ 0.2MPa		
Sensitivity			0.001MPa		
Operating temperature range			－ 20 ~ 60℃		
Mass			1.0kg		1.4kg

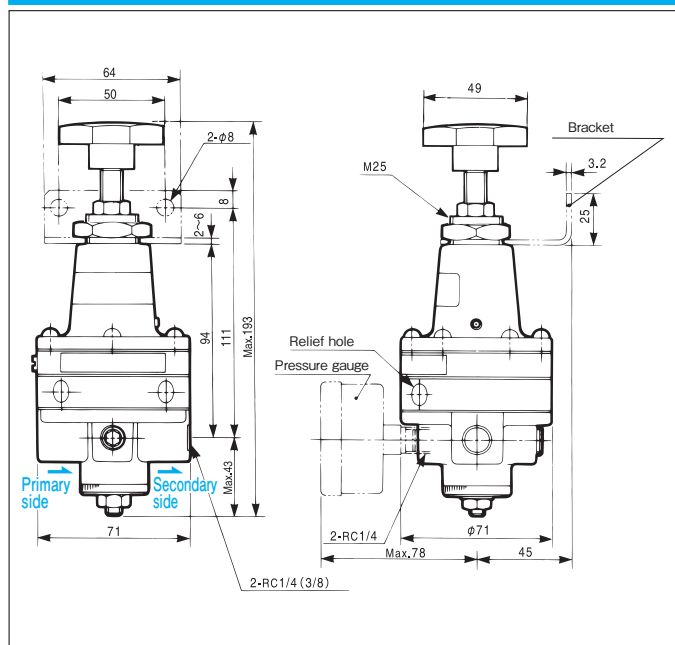
Characteristic table

		RV6-03	RV6-04	Note
Rated flow	Primary side → Secondary side	700L/min (ANR)	1600L/min (ANR)	● Flow rate of air pressure when primary pressure is 0.7MPa and secondary pressure 0.5MPa.
	At relief	700L/min (ANR)	1600L/min (ANR)	
Air consumption		3L/min (ANR)	5L/min (ANR)	● Primary pressure: 0.7MPa
Pressure characteristic		Less than 0.01MPa		● Secondary pressure fluctuation due to change in primary pressure.

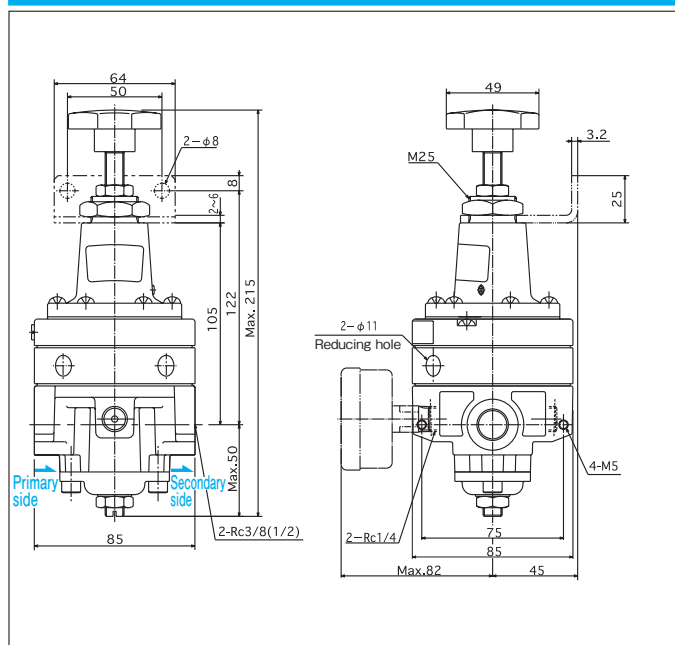
- Do not use fluid containing oil.
- For use below 5°C, provide adequate measures against freezing.
- For specifications other than those listed above, please contact us.
- Minimal leakage may occur due to the diaphragm performance characteristics. This does not affect the regulator function at all.

Outside Dimensions

RV6-03-8A · 10A



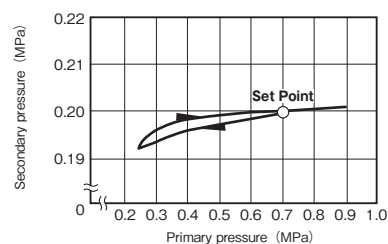
RV6-04-10A · 15A



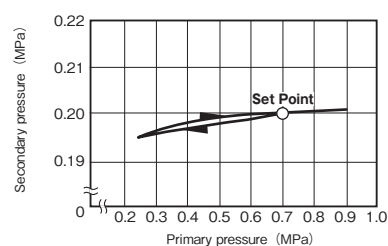
Performance Tables

Pressure characteristics graphs

RV6-03-8A · 10A

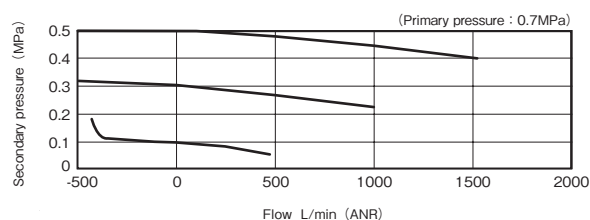


RV6-04-10A · 15A

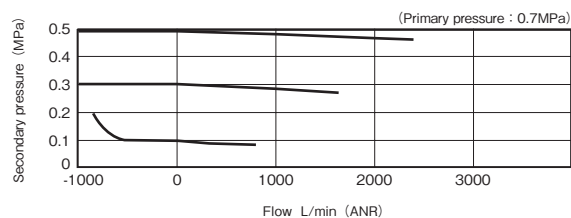


Flow characteristics graphs

RV6-03-8A · 10A



RV6-04-10A · 15A





Operating Instructions

1 Installation

- In principle install RV6 precision type regulator vertically (so that wheel comes either top or bottom) .
- Install in correct direction as indicated by an arrow mark on the body to make sure correct air flow.

2 Fluid

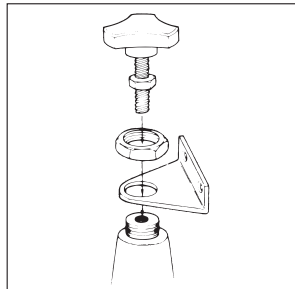
- For air supply to the primary side,filtrate the fluid using an air filter with filtration less than $5\mu\text{m}$.
- When high temperature air reaches the nozzle of the pilot valve,oil film may be created on the surface of the nozzle.in order to avoid this,use after-cooler or dryer.

3 Lubrication

- Do not lubricate the regulator.
- When lubricating downstream components using lubricator in open air,perform the process at secondary side of the regulator.

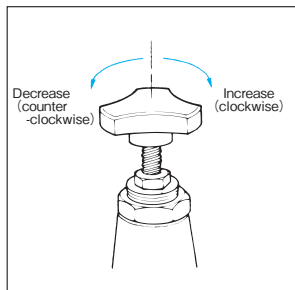
4 Bracket

- Bracket is available as an option. For mounting,remove the wheel and lock nut (cramp) and inset the bracket.



5 Pressure

- Turn the wheel while checking the pressure regulator to set pressure. (Turn clockwise to increase the pressure and counterclockwise to decrease the pressure.)



- Set the primary pressure about 0.1 MPa higher than the secondary set pressure.If there is no pressure difference,available flow volume is decreased.
- Fasten the lock nut tight if it is necessary to avoid vibration and maintain set position.

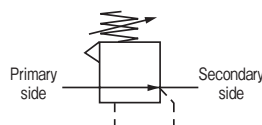
0.02 to 0.2MPa REGULATORS

RV2-G RC $\frac{1}{4} \sim 1$

RV21-G RC $\frac{3}{8} \sim \frac{1}{2}$

This is a regulator exclusively for use in low pressure lines. This wide range of available pressure settings facilitates precise pressure adjustments.

JIS Symbol



Model Code

When ordering, specify the model as follows:

Standard type

Rc $\frac{1}{4} \sim \frac{3}{8}$	RV2-03-	①	-	④	-	⑤	-	⑥	- G4177
		• Port size		• Operating temperature range		• Pressure gauge		• Bracket	
Rc $\frac{3}{8} \sim \frac{1}{2}$	RV21-04-	②	-	④	-	⑤	-	⑥	- G4528
		• Port size		• Operating temperature range		• Pressure gauge		• Bracket	
Rc $\frac{3}{4} \sim 1$	RV2-08-	③	-	④	-	⑤	-	⑥	- G4247
		• Port size		• Operating temperature range		• Pressure gauge		• Bracket	

① Port size

Rc1/4	8A
Rc3/8	10A

② Port size

Rc3/8	10A
Rc1/2	15A

③ Port size

Rc3/4	20A
Rc1	25A

④ Operating temperature range

General purpose	-20 ~ 60°C	No entry
Heat-resistant	5 ~ 100°C	HT
Freeze-resistant	-40 ~ 45°C	LT

- For corrosion, freeze resistant type, allow some margin for delivery.
- In operating temperatures of 5°C or less, provide adequate measures against freezing.

⑤ Pressure gauge

Without	No entry
With	G

- Pressure gauge sizes : 50mm dia.
Scale : 0 ~ 0.2MPa
- Pressure gauge is not mounted but appended with regulators.

⑥ Bracket

Without	No entry
With	BR

- Bracket is not mounted but appended with regulators.

Specifications

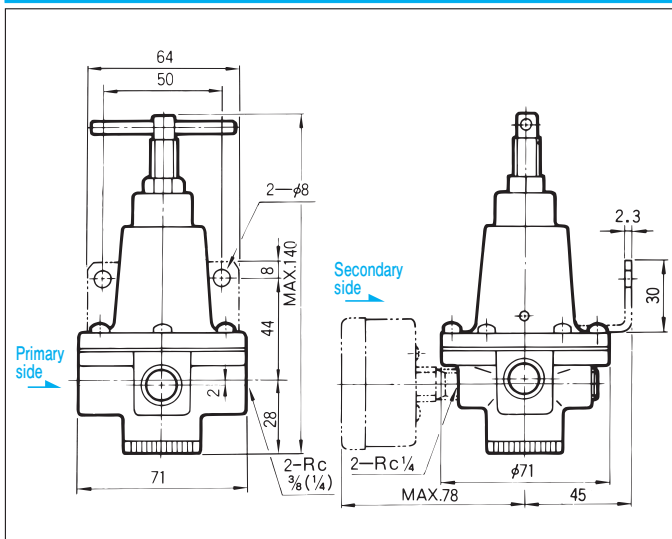
Model code	RV2-03-①-G4177		RV21-04-②-G4528		RV2-08-③-G4247	
Port size	8A	10A	10A	15A	20A	25A
	Rc1/4	Rc3/8	Rc3/8	Rc1/2	Rc3/4	Rc1
Operating pressure	Max. 1.0MPa					
	0.02 ~ 0.2MPa					
Proof pressure	1.5MPa					
Operating temperature	See Model Code section.					
Mass	0.58kg		0.84kg		2.5kg	

• For specifications other than those listed above, please contact us.

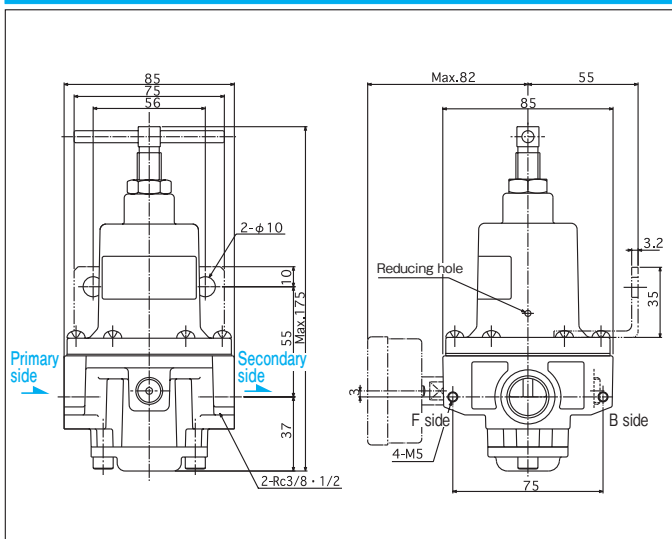


Outside Dimensions

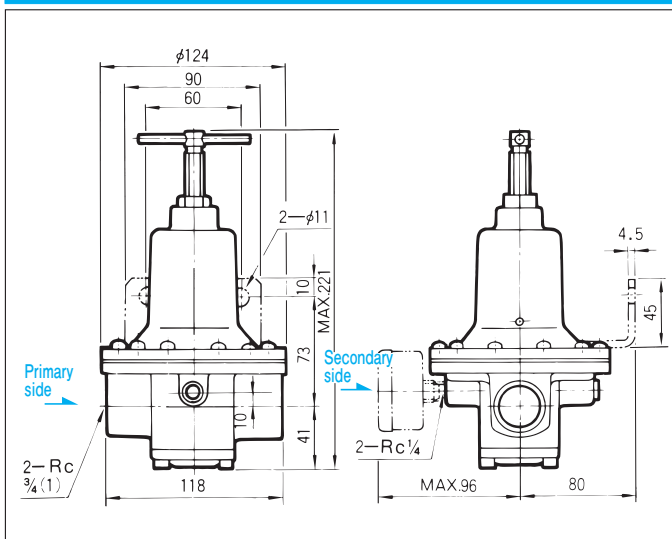
RV2-03-8A · 10A-G4177



RV21-04-10A · 15A-G4528



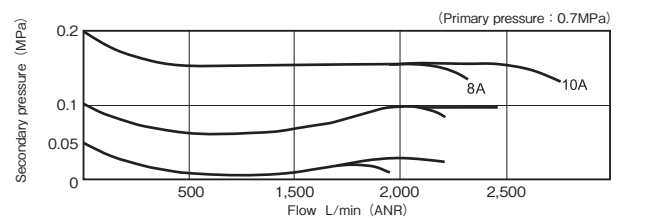
RV2-08-20A · 25A-G4247



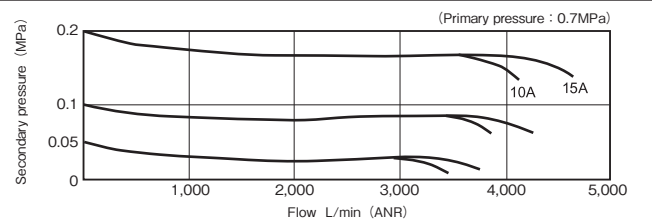
Performance Tables

Flow characteristics graphs

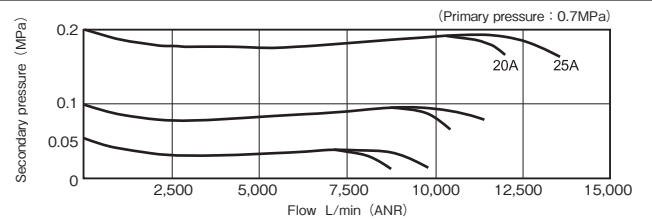
RV2-03-8A · 10A-G4177



RV21-04-10A · 15A-G4528



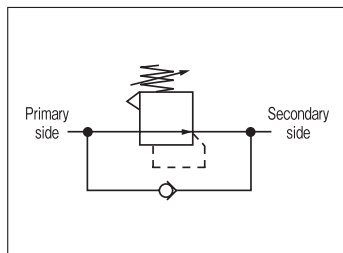
RV2-08-20A · 25A-G4247



Operating Instructions

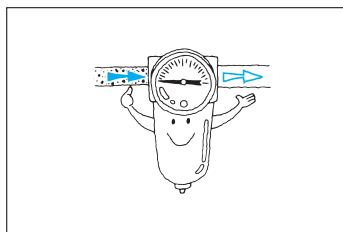
1 Installation

- For a circuit where the flow of air is reversed, running from the secondary to the primary side, install a check valve in parallel, as shown.



2 Fluid

- Use the regulator with clean fluids only. Dirt, waste, etc. in the fluid may cause regulator malfunction.

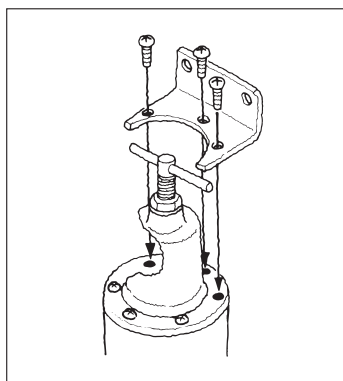


3 Lubrication

- In general, do not attempt to lubricate the regulator. When disassembling for checking, however, apply grease.

4 Bracket

- The regulator mounting bracket is available as an option.
- Remove any three machine screws from the upper part of the regulator. Attach the bracket to the regulator by means of the longer machine screws supplied with the regulator.



5 Pressure

- To lower the pressure setting, lower the present setting below the target point first, and then increase the setting to the target point.
- After setting, be sure to tighten the locknut.

0 to 0.04MPa REGULATORS

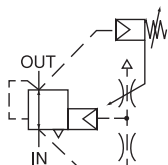
RV6-G

Standard type

RC $\frac{1}{4} \sim \frac{3}{8}$

The nozzle flapper high-sensitivity pilot amplification system has achieved adjustable 0 to 0.04 MPa control. Outside dimensions are same as standard model of RV6-03.

JIS Symbol



Model Code

When ordering,specify the model as follows:

Standard type

Rc $\frac{1}{4} \sim \frac{3}{8}$

RV6-03 – **1** – **2** – **3** – **G3267**

• Port size

• Pressure gauge

• Bracket

1 Port size

Rc $\frac{1}{4}$	8A
Rc $\frac{3}{8}$	10A

2 Pressure gauge

Without	No entry
With	G

• Pressure gauge is not mounted but appended with regulators.

3 Bracket

Without	No entry
With	BR

• Bracket is not mounted but appended with regulators.

Specifications

Model code		8A	10A
		Rc $\frac{1}{4}$	Rc $\frac{3}{8}$
Applicable Fluid		Dry air after filter passage less than 5 μ m	
Operating pressure	Primary side (IN)	Max.0.7MPa	
	Secondary side (OUT)	0 ~ 40kPa	
Sensitivity		0.001MPa	
Operating temperature range		- 20 ~ 60°C	
Mass		1.0kg	

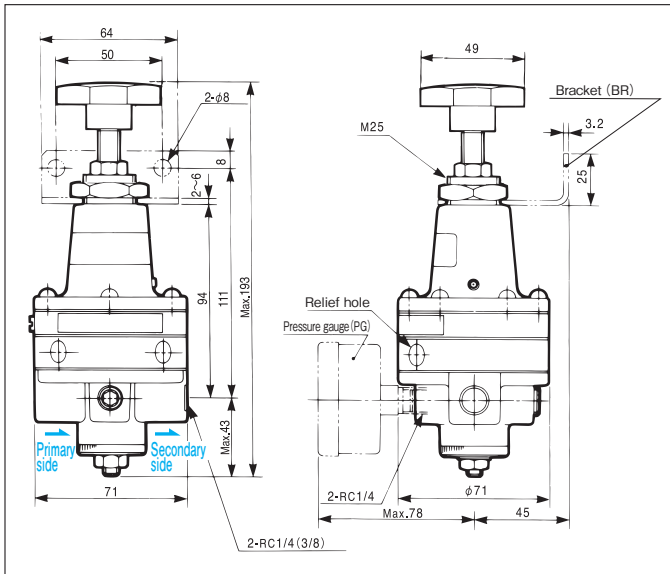
- Do not use fluid containing oil.
- For use below 5°C ,provide adequate measures against freezing.
- For specifications other than those listed above,please contact us.
- Minimal leakage may occur due to the diaphragm performance characteristics.This dose not affect the regulator function at all.

Characteristic table

Rated flow	Primary side → Secondary side	30L/min (ANR)
	At relief	30L/min (ANR)
Air consumption		3L/min (ANR)

Outside Dimensions

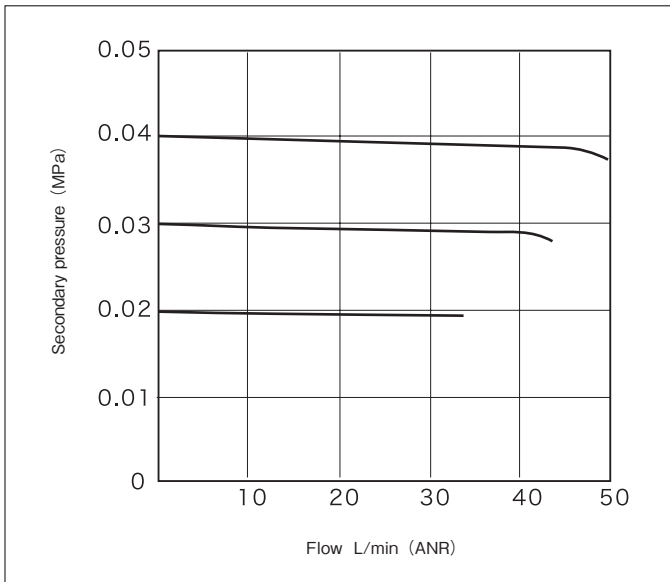
RV6-03-8A · 10A-G3267



Flow characteristics graphs

Standard type

Performance Tables



Operating Instructions

1 Installation

- In principle install RV6 precision type regulator vertically (so that wheel comes either top or bottom) .
- Install in correct direction as indicated by an arrow mark on the body to make sure correct air flow.

2 Fluid

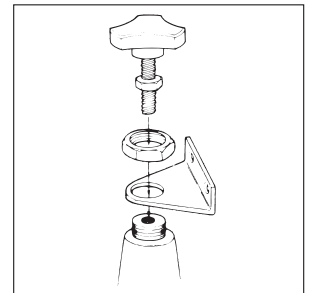
- For air supply to the primary side, filtrate the fluid using an air filter with filtration less than $5\mu\text{m}$.
- When high temperature air reaches the nozzle of the pilot valve, oil film may be created on the surface of the nozzle. In order to avoid this, use after-cooler or dryer.

3 Lubrication

- Do not lubricate the regulator.
- When lubricating downstream components using lubricator in open air, perform the process at secondary side of the regulator.

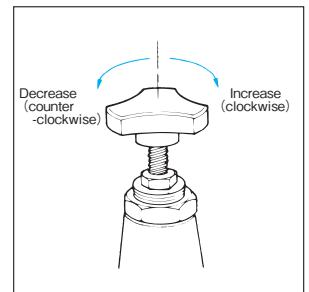
4 Bracket

- Bracket is available as an option. For mounting, remove the wheel and lock nut (cramp) and inset the bracket.



5 Pressure

- Turn the wheel while checking the pressure regulator to set pressure. (Turn clockwise to increase the pressure and counterclockwise to decrease the pressure.)



- Set the primary pressure about 0.1 MPa higher than the secondary set pressure. If there is no pressure difference, available flow volume is decreased.
- Fasten the lock nut tight if it is necessary to avoid vibration and maintain set position.

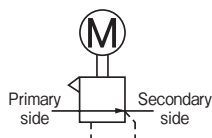
Electric REGULATORS

Size RC $\frac{1}{4}$ • $\frac{3}{8}$

In this electric regulator, the rotating force of the motor is connected to a pushing force, allowing pressure control.

It is suitable for pressure control in confined places or from remote points.

JIS Symbol



Features

Assured safety

- The set pressure will not change even if the motor is turned off.

Safe design

- The upper limit switch automatically stops the motor, preventing supply at an excessive pressure if the pressure rises above a given level.

Multifunction design

- In combination with a booster relay, the regulator can control the pressure of large-flow lines.

Model Code

When ordering, specify the model as follows:

380-3075 1 - 2

● Operating pressure range ● Port size

① Operating pressure range

0.05 ~ 0.5MPa	No entry
0.02 ~ 0.3MPa	L

② Port size

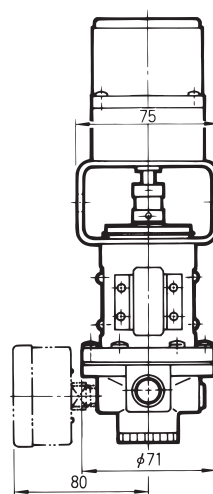
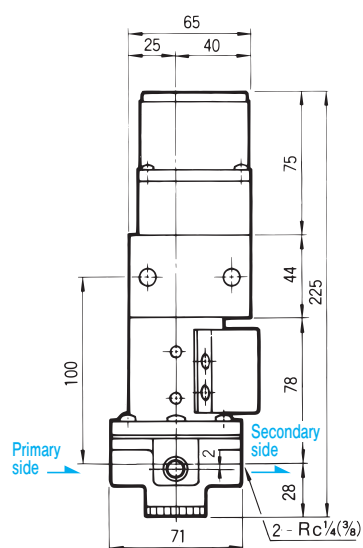
Rc1/4	8A
Rc3/8	10A

Specifications

Model code		380-3075		380-3075L	
Port size		8A	10A	8A	10A
		Rc1/4	Rc3/8	Rc1/4	Rc3/8
Operating pressure	Primary side (IN)	Max.0.98MPa			
	Secondary side (OUT)	0.05 ~ 0.5MPa		0.02 ~ 0.3MPa	
Proof pressure		1.5MPa			
Pressure setting speed		about 5s/0.1MPa			
Bleed from relief valve		1L/min (ANR) or less			
Operating temperature		- 10 ~ 50℃ (For use below 5℃ ,provide adequate measures against freezing.)			
Motor	Voltage	AC100V (50/60Hz)	AC110V (50/60Hz)	AC115V (50/60Hz)	
	Current	0.15A	0.12A	0.12A	
	Output	2W			
	Wiring diagram	Motor Provided capacitor (1.5μF) Built-in limit switch Motor wiring drawing (sample circuit)			
● Motor wiring should be conducted according to the above drawing (sample circuit) ,paying attention to the color of lead wise.					

● Motor wiring should be conducted according to the above drawing (sample circuit), paying attention to the color of lead wire.

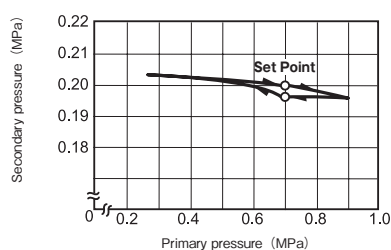
Outside Dimensions



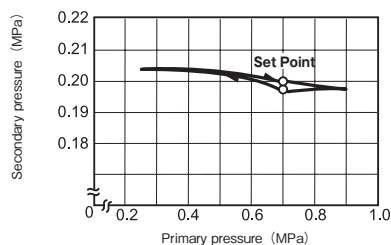
Performance Tables

Pressure characteristics graphs

8A

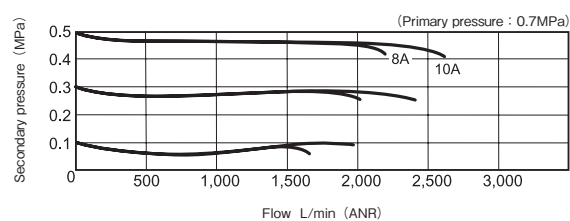


10A



Flow characteristics graphs

8 • 10A





Applications

The electric regulator is best suited to the following applications :

Remote pressure control from central control rooms,etc.

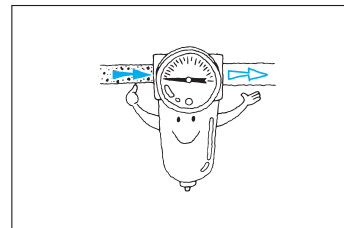
Pressure control in confined places and where access is difficult.

Pressure control in hazardous places.

Operating Instructions

1 Fluid

- Use the regulator with clean fluids only.Dirt,waste,etc.in the fluid may cause regulator malfunction.



2 Wiring

- A limit switch is provided to prevent the motor iron running out of control.Wire the regulator so that the motor stops if the limit switch operates.

3 Piping

- Since it is difficult to set the regulator for pressure at high loads,make the piping as short as possible.

4 Pressure

- Set the pressure while observing the pressure gauge.

VOLUME BOOSTERS

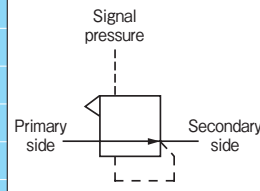
VB3

Standard type

Rc $\frac{3}{8}$ ~ 2

Volume booster maintains pressure supply to air tanks and actuators, and provides great performance where rapid pressure relief is required. It can be operated remotely using a pilot-operated regulator at a nearby, convenient point.

JIS Symbol



Model Code

When ordering, specify the model as follows:

Standard type

Rc $\frac{3}{8}$ ~ $\frac{1}{2}$

VB3 1 - **04** - 2 - 4 - 5
 • Corrosion-resistant • Port size • Pressure gauge • Bracket

Rc $\frac{3}{4}$ ~ 1

VB3 1 - **08** - 3 - 4 - 5
 • Corrosion-resistant • Port size • Pressure gauge • Bracket

Rc 2

VB3 - 20 - 50A - 4
 • Pressure gauge

1 Corrosion-resistant

- Portions that are exposed to outside weather conditions are corrosion-resistant coating and the exposed bolts, nuts and brackets are stainless steel.

Standard	No entry
Corrosion-resistant type	S

2 Port size

Rc $\frac{3}{8}$	10A
Rc $\frac{1}{2}$	15A

3 Port size

Rc $\frac{3}{4}$	20A
Rc 1	25A

4 Pressure gauge

Without	No entry
With	G

- Pressure gauge is not mounted but appended with regulators.

5 Bracket

Without	No entry
With	BR

- Bracket is not mounted but appended with regulators.

Specifications

Model code		VB3-04		VB3-08		VB3-20
Port size		10A	15A	20A	25A	50A
		Rc3/8	Rc1/2	Rc3/4	Rc1	Rc2
Applicable Fluid		Dry air after filter passage less than 40μm				
Operating pressure	Primary side (IN)	Max.1.0MPa				
	Signal pressure	0.02 ~ 0.7MPa				0.05 ~ 0.8MPa
	Secondary side (OUT)	0.02 ~ 0.7MPa				0.05 ~ 0.8MPa
	Pressure ratio	Signal pressure : Secondary side = 1 : 1				
Accuracy		Less than ± 0.014MPa (Less than2% FS)Please consult us.				
Operating temperature range		- 20 ~ 60℃				
Mass		1.2kg		3.5kg		9.2kg

- For use below 5°C, provide adequate measures against freezing.
- Make sure that the primary pressure is at least 0.1MPa higher than the secondary pressure.

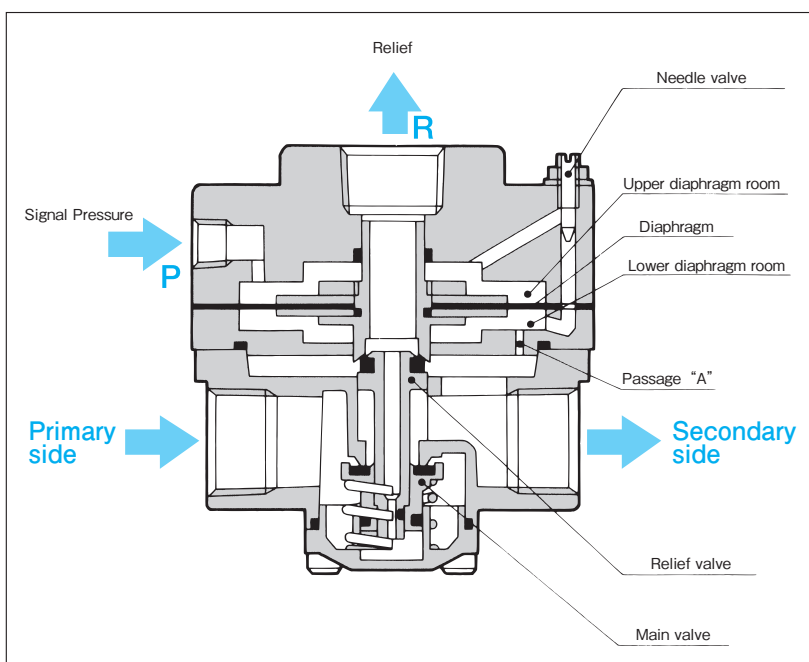
Characteristic table

		VB3-04	VB3-08	Note
Rated flow	Primary side $\rightarrow$	2,200L/min (ANR)	6,500L/min (ANR)	• Flow rate of air pressure when primary pressure is 0.7MPa and secondary pressure 0.5MPa.
	Secondary side			
	At relief	2,200L/min (ANR)	6,500L/min (ANR)	
Air consumption		Less than 0.6L/min (ANR)	Less than 1.2L/min (ANR)	• Primary pressure : 0.7MPa at needle valve is full open.
Pressure characteristic		Less than 0.01MPa		• Secondary pressure fluctuation due to change in primary pressure.



Volume Boosters

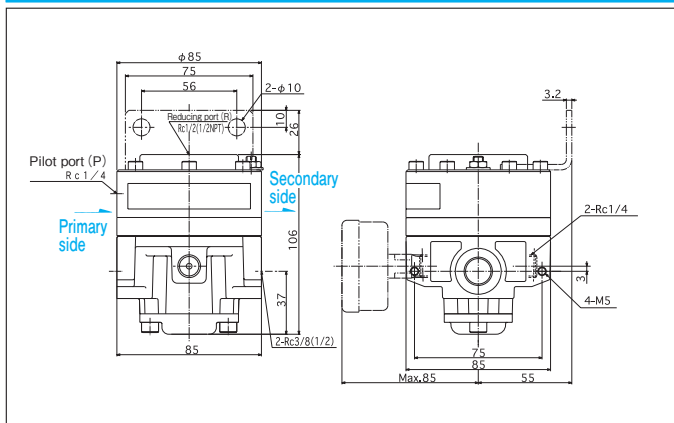
Operation



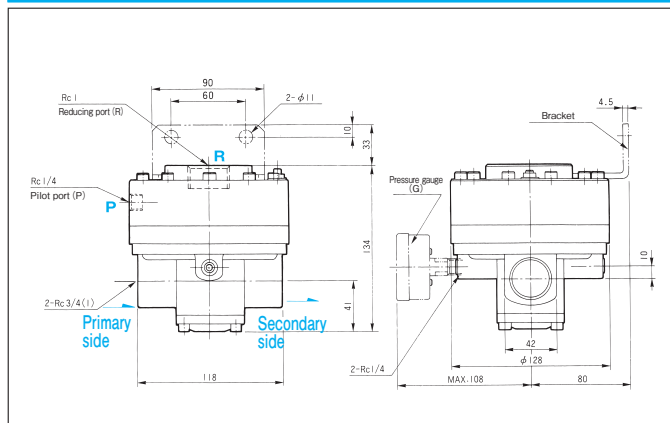
- ① Signal pressure enters from the pilot port (P) to the upper diaphragm room and acts on the diaphragm to open the main valve.
- ② The primary pressure flows through the main valve to the secondary side and increase the secondary pressure, while entering through passage A to the lower diaphragm room and acts on the diaphragm.
- ③ When the secondary pressure and the signal pressure are equal, the main valve closes to hold the secondary pressure.
- ④ When the secondary pressure is higher than the signal pressure, the diaphragm is pushed up to open the relief valve. The secondary pressure is then exhausted through the relief port (R) until the secondary pressure is equal to the signal pressure.
- ⑤ The needle valve is used as a by-path between signal pressure side and primary side. When strained (turned clockwise), response of the secondary pressure to the signal pressure becomes faster. When needle valve is open (turned counterclockwise), the response becomes slower. Adjust the needle valve to obtain stable operation of the regulator.

Outside Dimensions

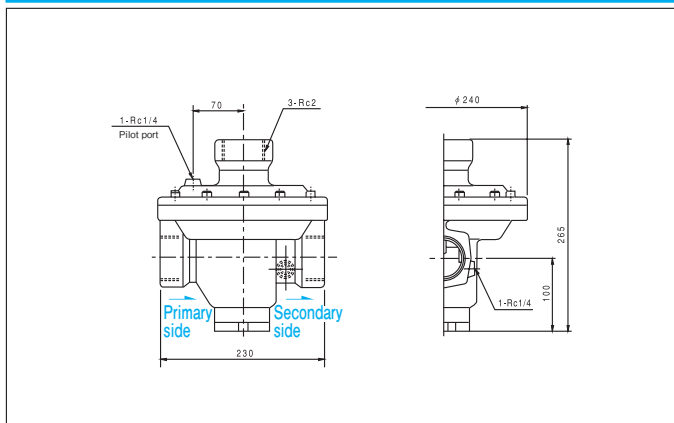
VB3-04-10A · 15A



VB3-08-20A · 25A



VB3-20-50A



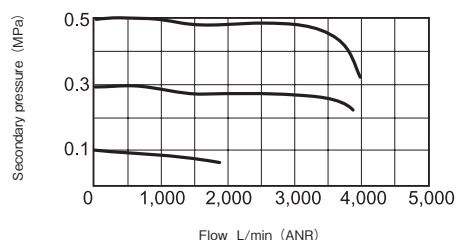
Performance Tables

(With needle valve fully closed) ● For the characteristics of VB3-20-50A, please contact us.

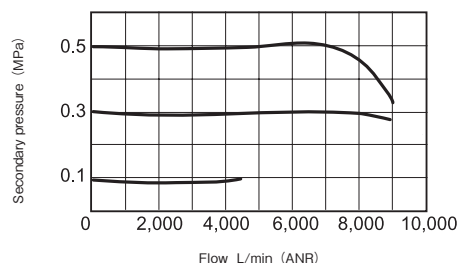
Flow characteristics graphs

● pressure conditions — Primary pressure : 0.7MPa

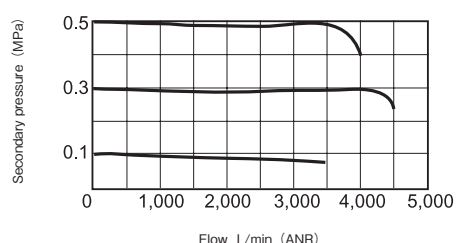
VB3-04-10A



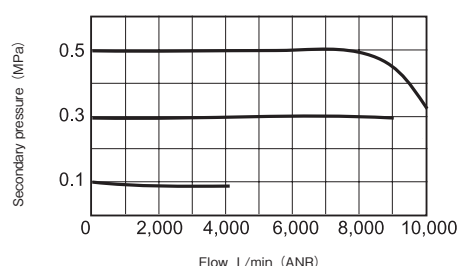
VB3-08-20A



VB3-04-15A



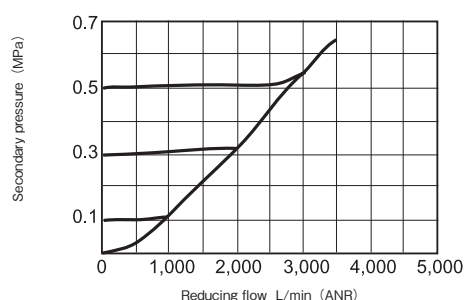
VB3-08-25A



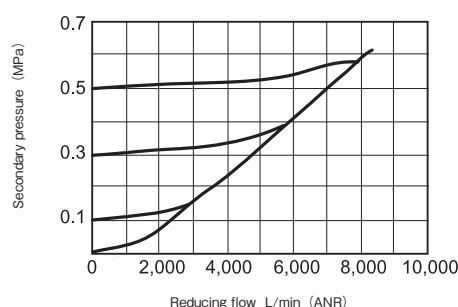
Relief flow characteristics graphs

● pressure conditions — Primary pressure : 0.7MPa

VB3-04-10A · 15A



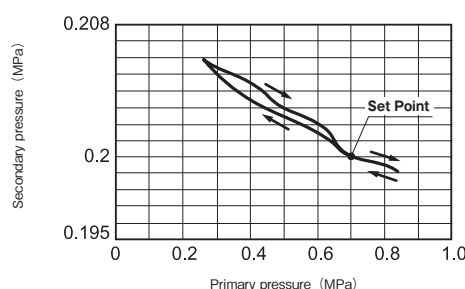
VB3-08-20A · 25A



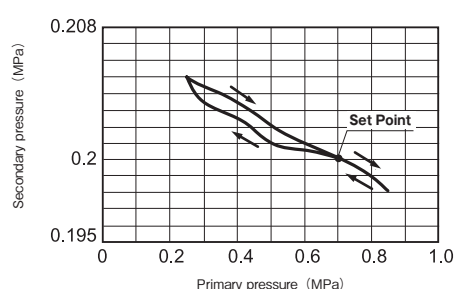
Pressure characteristics graphs

● Initial-setting pressure conditions — Primary pressure : 0.7MPa, Secondary pressure : 0.2MPa

VB3-04-10A · 15A



VB3-08-20A · 25A





Volume Boosters

Operating Instructions

1 Installation

- Perform enough air flushing of pipes and piping materials to eliminate dusts and foreign substances completely before connecting to components.
- Install in correct direction as indicated by an arrow mark on the body to make sure correct air flow.
- Always open the relief port to the atmosphere or connect a silencer. When relief port is closed or pressurized, the volume booster cannot be normally operated.

2 Fluid

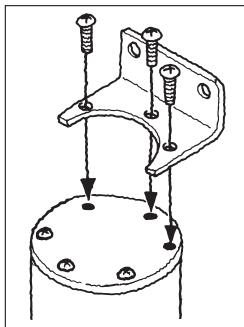
- For air supply to the primary side, filtrate the fluid using an air filter with filtration less than $40\mu\text{m}$.

3 Lubrication

- Do not lubricate the volume booster.
- When lubricating downstream components using lubricator in open air, perform the process at secondary side of the volume booster.

4 Bracket

- Bracket is available as an option.



5 Pressure

- Set and adjust the secondary pressure using a pilot-operated regulator.
- Set primary pressure about 0.1 MPa higher than the secondary set pressure. If there is no pressure difference, available flow volume is decreased.

Precision type VOLUME BOOSTERS

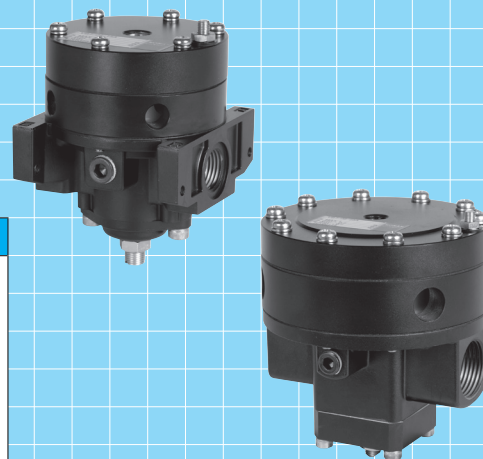
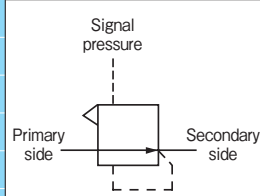
VB7

Precision type

RC $\frac{1}{4} \sim 1$

VB7 series precision type volume booster provides excellent performance supported by superior flow rate, accuracy, amplification factor, response and relief characteristics.

JIS Symbol



Features

High precision

- Outstanding input/output precision assures significantly low hysteresis at pressure rise/down.

Large fluid amplification factor

- Even minimal change in signal pressure can produce large fluid rate.

Large relief flow

- With its large relief flow volume, VB7 is suitable for tension control.

Minimal cracking pressure

- Minimal cracking pressure with flow rate at around 0L/min allows rapid response to slight pressure change.

Slight pressure fluctuation

- Outstanding pressure characteristics minimize the effect of the primary pressure change on the secondary pressure.

By-path system

- A built-in needle valve reduces electrode hunting that may occur on the electric circuit.

Model Code

When ordering, specify the model as follows:

Standard type

Rc $\frac{1}{4} \sim \frac{3}{8}$

VB7-03 – **1** – **4** – **5**
 • Port size • Pressure gauge • Bracket

Rc $\frac{3}{8} \sim \frac{1}{2}$

VB7-04 – **2** – **4** – **5**
 • Port size • Pressure gauge • Bracket

Rc $\frac{3}{4} \sim 1$

VB7-08 – **3** – **4** – **5**
 • Port size • Pressure gauge • Bracket

1 Port size

Rc1/4	8A
Rc3/8	10A

2 Port size

Rc3/8	10A
Rc1/2	15A

3 Port size

Rc3/4	20A
Rc1	25A

4 Pressure gauge

Without	No entry
With	G

- Pressure gauge is not mounted but appended with regulators.

5 Bracket

Without	No entry
With	BR

- Bracket is not mounted but appended with regulators.

Specifications

Model code		VB7-03		VB7-04		VB7-08	
Port size		8A	10A		15A	20A	25A
		Rc1/4	Rc3/8		Rc1/2	Rc3/4	Rc1
Applicable Fluid		Dry air after filter passage less than 40μm					
Operating pressure	Primary side (IN)	0.1 ~ 1.0MPa					
	Signal pressure	0.01 ~ 0.7MPa					
	Secondary side (OUT)	0.01 ~ 0.7MPa					
	Pressure ratio	Signal pressure : Secondary side = 1 : 1					
Accuracy		Less than ± 0.007MPa (Less than 1% FS 以下)					
Operating temperature range		- 20 ~ 60℃					
Mass		0.6kg		1.0kg		2.5kg	

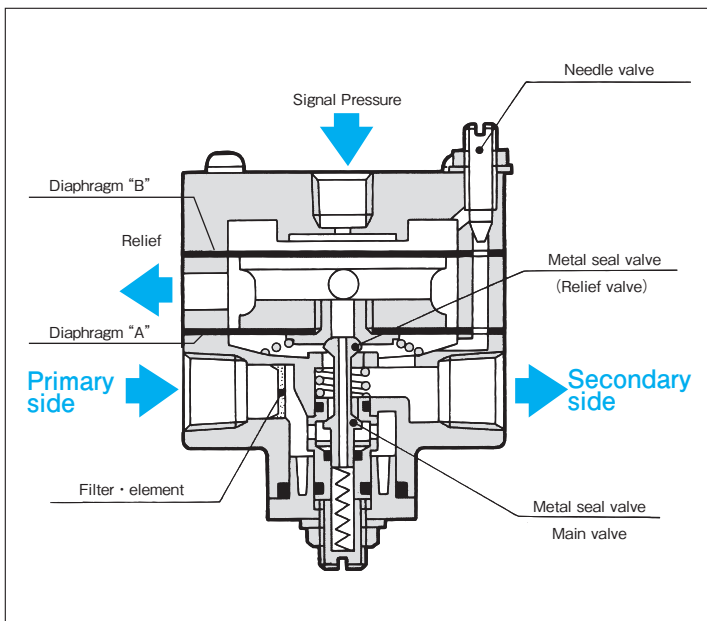
- For use below 5 $^{\circ}$ C ,provide adequate measures against freezing.
- Make sure to produce at least 0.1MPa of pressure difference between primary and secondary sides of the pressure port,or appropriate flow rate cannot be achieved.
- Minimal leakage may occur due to the diaphragm performance characteristics.This does not have any problem to the function.

Characteristic table

	VB7-03	VB7-04	VB7-08	Note
Rated flow	Primary side→ Secondary side	700L/min (ANR)	1.600L/min (ANR)	5.000L/min (ANR)
	At relief	700L/min (ANR)	1.600L/min (ANR)	5.000L/min (ANR)
※ Air consumption	Less than 1L/min (ANR)	Less than 2L/min (ANR)	Less than 4L/min (ANR)	● Primary pressure : 0.7MPa
Pressure characteristic	0.01MPa 以下			● Secondary pressure fluctuation due to change in primary pressure.

- Air consumption (※) specifies leakage from the relief port after metal seal valve.

Operation



1 Diaphragm "B"

Signal pressure acts on diaphragm B to open the valve.

2 Diaphragm "A"

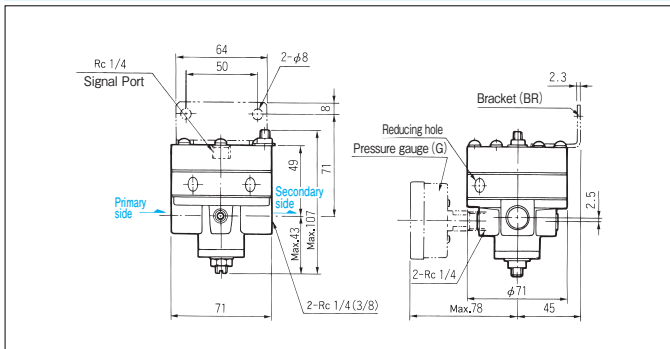
The secondary pressure acts on diaphragm A against signal pressure. When the secondary pressure is lower than the signal pressure, diaphragm A is forced down and the valve opens. When both pressures are equal, the valve closes. When the secondary pressure is higher than the signal pressure, relief valve opens and releases the secondary pressure until the secondary pressure is equal to the signal pressure.

3 Needle valve

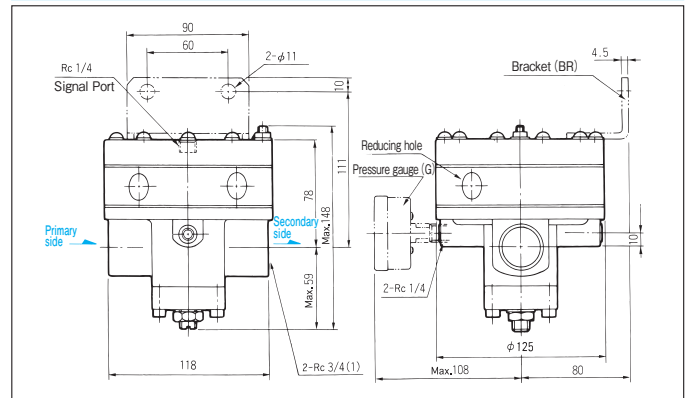
When needle valve is opened, the secondary side is connected to signal pressure side. This mechanism maintains safe and stable operating condition.

Outside Dimensions

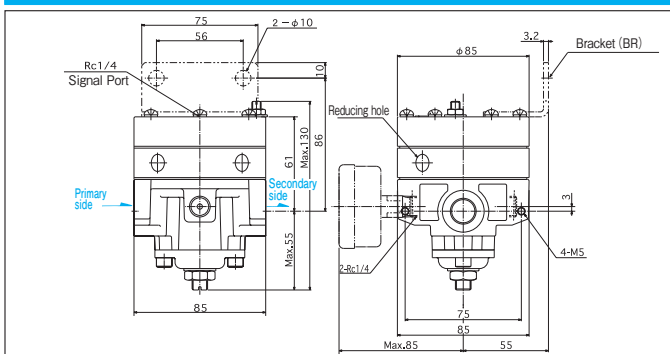
VB7-03-8A • 10A



VB7-08-20A • 25A



VB7-04-10A • 15A



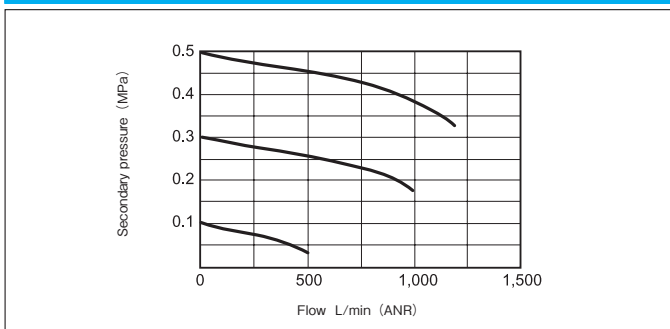
Performance Tables

(With needle valve fully closed)

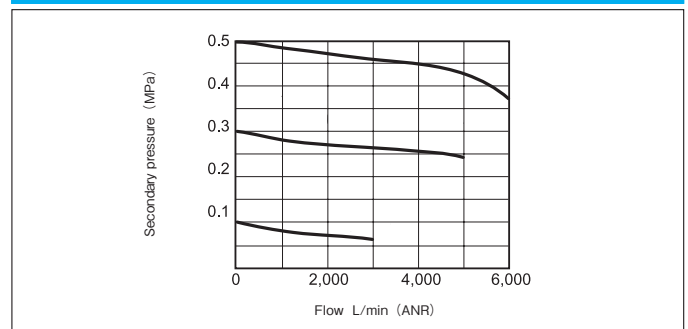
Flow characteristics graphs

● pressure conditions — Primary pressure : 0.7MPa

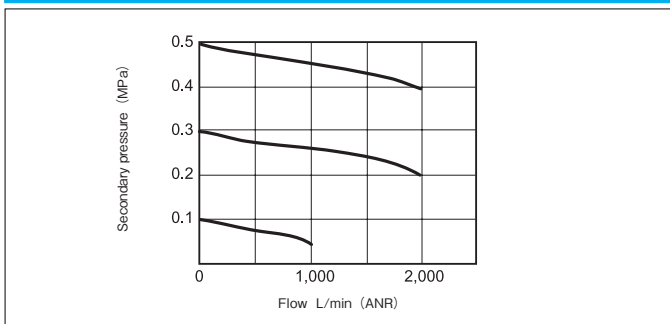
VB7-03-8A • 10A



VB7-08-20A • 25A



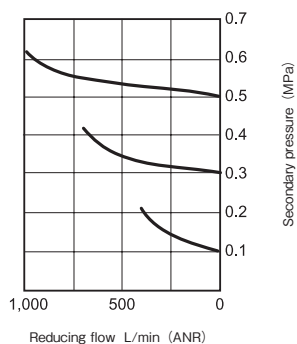
VB3-04-10A • 15A



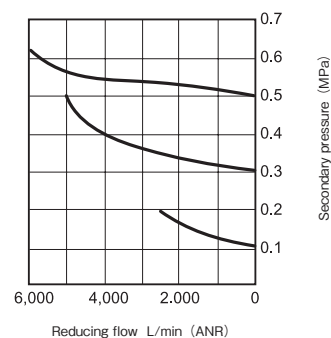


Relief flow characteristics graphs ● pressure conditions — Primary pressure : 0.7MPa, Secondary pressure : 0.7MPa,

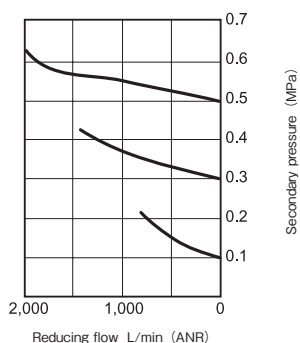
VB7-03-8A · 10A



VB7-08-20A · 25A

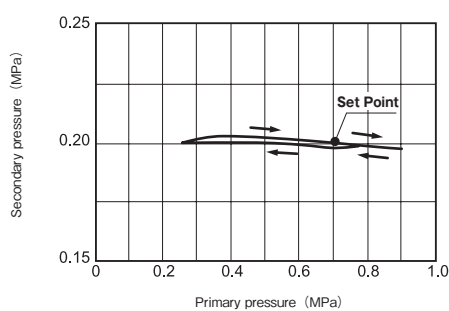


VB7-04-10A · 15A

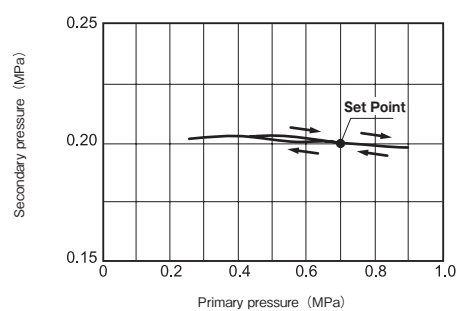


Pressure characteristics graphs ● Initial-setting pressure conditions — Primary pressure : 0.7MPa, Secondary pressure : 0.2MPa,

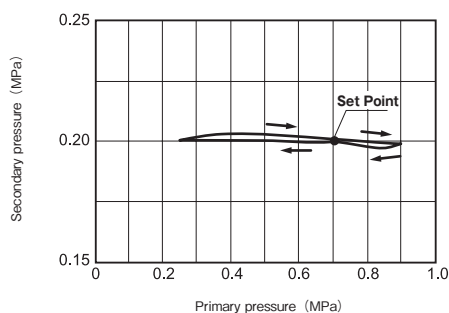
VB7-03-8A · 10A



VB7-08-20A · 25A



VB7-04-10A · 15A



Operating Instructions

1 Installation

- Perform enough air flushing of pipes and piping materials to eliminate dusts and foreign substances completely before connecting to components.
- Install in correct direction as indicated by an arrow mark on the body to make sure correct air flow.
- Do NOT pressurize or close the relief port.
- Place the volume booster vertically in order to minimize the effect of body weight on performance.

2 Fluid

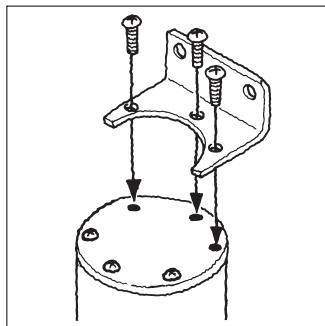
- For air supply to the primary side, filtrate the fluid using an air filter with filtration less than $40\mu\text{m}$.

3 Lubrication

- Do not lubricate the volume booster.
- When lubricating downstream components using lubricator in open air, perform the process at secondary side of the volume booster.

4 Bracket

- Bracket is available as an option.
- Remove any 3 machine screws from the top of the volume booster and mount the bracket with longer machine screws supplied with the volume booster.



5 Pressure

- Set and adjust the secondary pressure using a pilot-operated regulator.
- Set primary pressure about 0.1 MPa higher than the secondary set pressure. If there is no pressure difference, available flow volume is decreased.