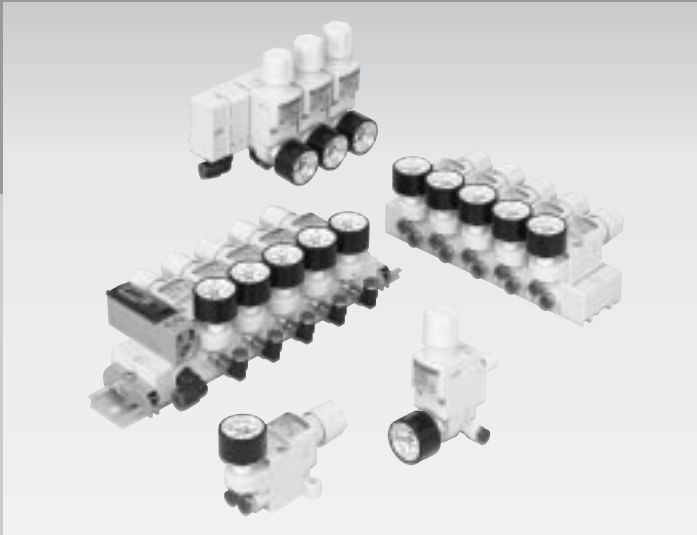


Compact direct acting precision regulator

■ Components for air preparation and pressure adjustment / F.R.L. unit



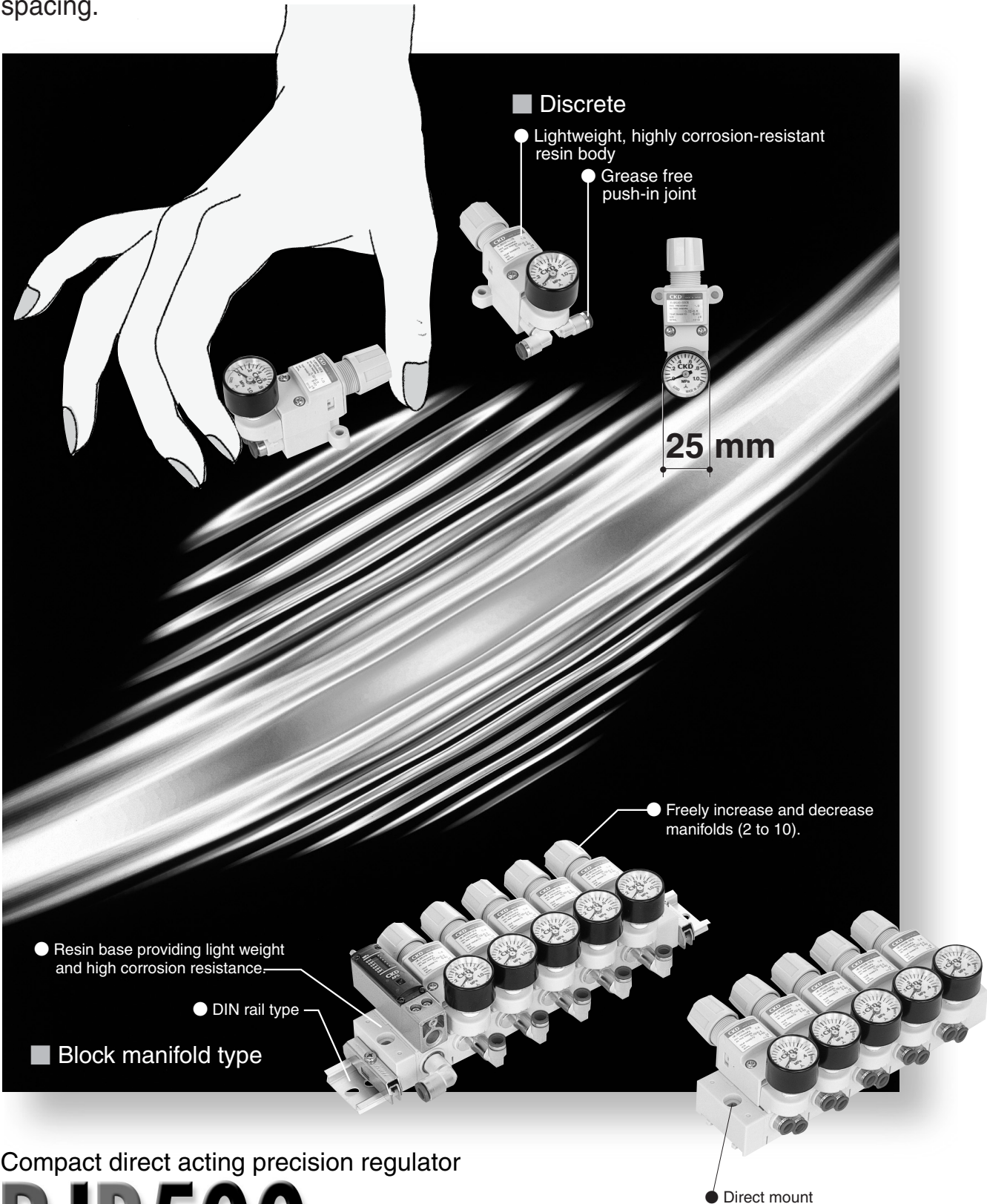
C O N T E N T S

Product introduction	618
⚠ Safety precautions	621
● Discrete (RJB500)	624
● Block manifold (MNRJB500)	626
Block configurations	632
Technical data	637
Manifold specification sheet	638

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Precise control starting from 0.01MPa achieved with a miniature size.

This miniature direct-acting precision regulator realizes a minimum setting pressure of 0.01 MPa and sensitivity of 0.001 MPa even with compact 25 mm spacing.

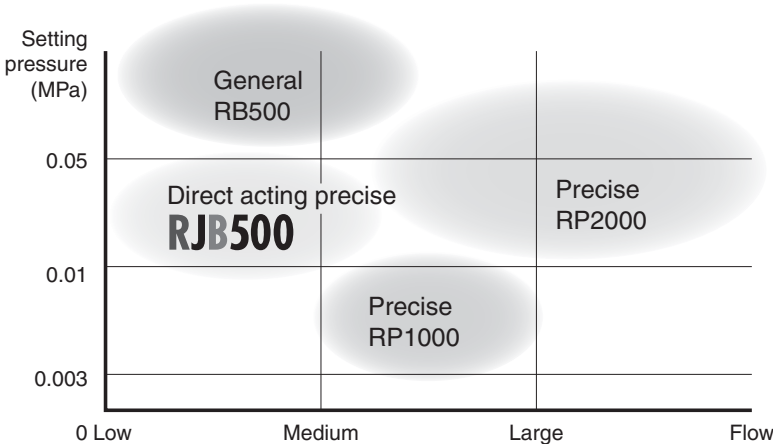


Compact direct acting precision regulator
RJB500 Series
CKD

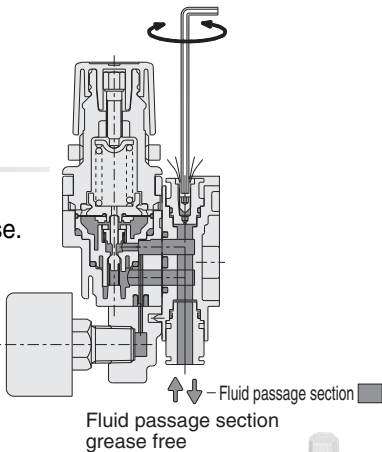
Ideal for semiconductor manufacturing post processes, IT applications, and compact assembly, etc., requiring space saving, precision, and grease-free products

High-sensitivity control in low pressure ranges

Pressure can be set from 0.01 to 0.2 MPa for low pressure and from 0.02 to 0.5 MPa for standard pressures. Sensitivity is 0.001 MPa for both applications. Highly sensitivity adjustment is realized in low-pressure ranges with a special diaphragm.



Energy is conserved with a variable constant-bleed mechanism



Grease-free specifications

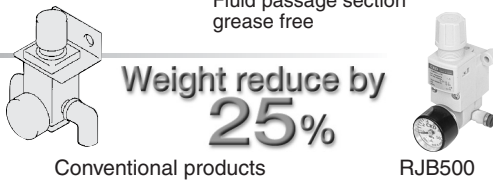
Standard grease-free specifications are used for fluid passage areas and push-in joints, making this device ideal for applications susceptible to grease.

Energy saving

A variable constant-bleed mechanism is used. minimum air consumption can be set to match the working pressure.

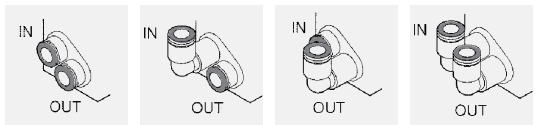
Compact

The push-in joint, mounting bracket, and pressure gauge are integrated, saving space and keeping things compact.

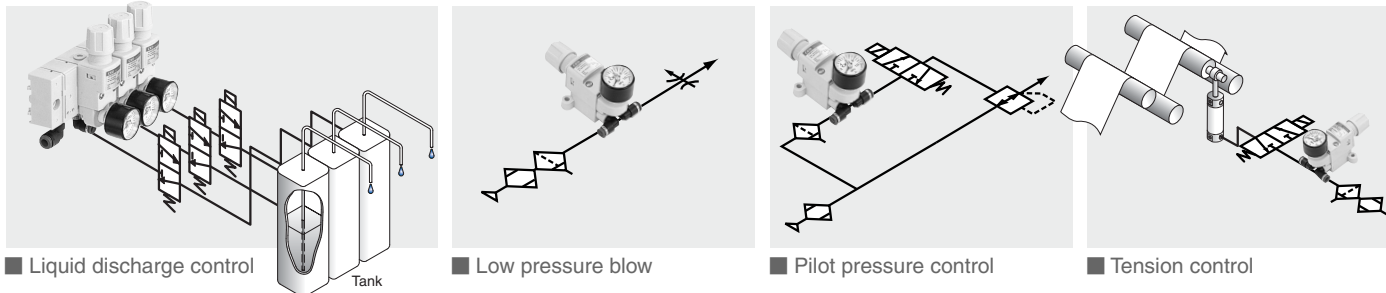


Improved workability

One-touch joints are standard. The piping direction can be selected for straight or elbow.



Applications



Compact direct acting precision regulator
F.R.L. unit

[illegible]



Pneumatic components

Safety precautions

Always read this section before starting use.

Refer to Intro 67 for general precautions for pneumatic components.

Compact direct operating precision regulator RJB500 Series

Design & Selection

CAUTION

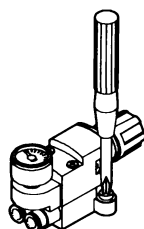
- Avoid using this product where strong pulsation of pressure or vibration is applied.
- Please consult with CKD for frequent operation.
- Set a 5 μm or smaller air filter on the primary side of the regulator.
- Differential pressure between primary and secondary sides is to be 0.1 to 0.7 MPa.

- Even if primary and secondary pressure differ 0.7 MPa or less, secondary pressure may vibrate or make noise. In this case, lower primary pressure. If vibration or noise continues, contact CKD.
- On/Off using the direction switch valve on the regulator's primary side can cause set pressure to change greatly. The direction switch valve should be installed on the regulator's secondary side.
- When the set output pressure of regulator is exceeded, if damage and malfunction of devices at the secondary side could be caused, always provide a safety device.

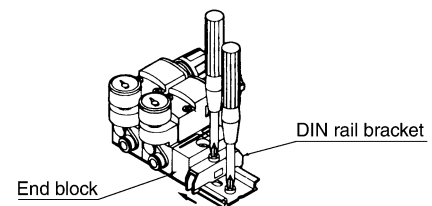
Installation & Adjustment

CAUTION

- When transporting or installing the product, do not apply impact such as falling, etc, or failure of indicator accuracy may be caused.
- Do not install the product where it is high temperature or humidity, or may cause a failure.
- When installing a pressure gauge, screw the gauge into using a wrench on across floats of square section. If another section is used on, air leakage or damage may be caused.
- When installing or piping, observe following matters.
 - Check the IN arrow showing air inlet before connecting. If connected reversely, malfunction may be caused.
 - Do not move and swing products with gripping adjustment knob.
 - When installing a compact regulator, use M4 plain washer attached screws, and fix them with tightening torque 1.4 to 2.0 N·m or less.



- When installing a block manifold with DIN rail, fix the DIN rail, while pinching the bracket by end blocks of manifold. Recommended tightening torque of DIN rail bracket is 1.4 to 2.0 N·m. Fix DIN rail bracket, while making no gaps between end blocks. Care must be taken when expanding, maintaining or disassembling regulator blocks.



- Avoid installation where vibration or impact is applied.
- Flash the pipe carefully before installation.
- When assembling a pressure gauge or extending joint to a pressure gauge port, fix the part with tightening torque 3.5N·m or less.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Compact direct acting precision regulator
F.R.L. unit

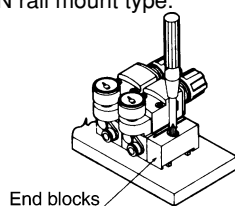
Installation & Adjustment

CAUTION

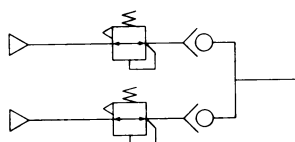
- When installing the product directly without using DIN rail (direct mount), fix end blocks on both sides with M4 set screws.

Recommended tightening torque is 1.4 to 2.0 N·m.

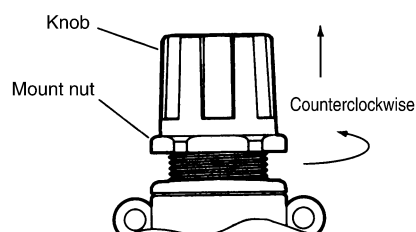
Install the product on fully flat plane. If the sheet plane is small, an external pressure from top may result in damaging manifold connection section. If flat sheet plane is not secured, use DIN rail mount type.



- When using in parallel as below, out side of circuit must not be closed. If closed circuit is required, install a check valve on each OUT side.



- When installing to a panel, loosening the mount nut, the nut function as a jack, so the knob is removed easily. Fix the product on a panel with a mount nut.



- Connecting a regulator, push-in joint is used. Tube coming off or air leakage could occur depending with outer diameter precision, wall thickness or hardness of piping tube. Use CKD specified tube. When mounting or dismounting a joint, press the release ring equally, while not twisting, then pull out the tube. When using a tube once used, cut the section having mark of chuck jaw.

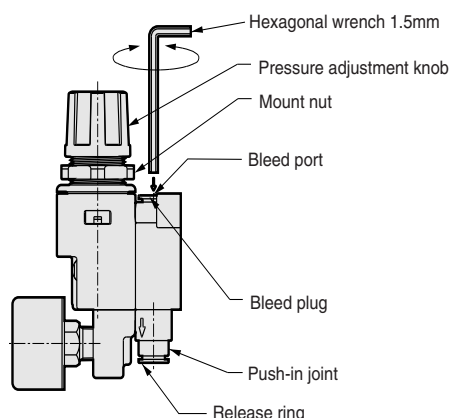
Tube	O.D. (mm)	Tolerance of outer diameter (mm)	Bore size (mm)	Min. bending range (mm)
Soft nylon F-1500 series	ø4	±0.1	ø2.5	10
	ø6		ø4	20
	ø8		ø5.7	30
Urethane U-9500 series	ø4	+0.1	ø2	10
	ø6	-0.15	ø4	20
	ø8	+0.1	ø5	30
Urethane NU series	ø4	±0.1	ø2.5	8
	ø6		ø4.5	15
	ø8		ø6	24

- Insert piping tube into push-in joint certainly and check that tube does not dislocate before starting use.
- For tube used with push in joint, cut the tube to right angle by the dedicating tool.
- Adjusting constant bleed

Constant bleed is adjusted by turning the set screw in the constant bleed port, increasing it in proportion to the set pressure but if set pressure is 0.1 MPa or more to decrease it. In low pressure ranges, constant bleed should be increased to improve sensitivity.

Constant bleed is set to 1.5 ℓ/min (ANR) before the product is shipped from CKD. Insert a hexagonal wrench into the constant bleed port and adjust the rate. After adjustment, confirm that set pressure does not increase.

When adjusting constant bleed, do not turn the hexagonal wrench fully closed. It will not be possible to adjust pressure and damage could occur.



During Use & Maintenance

⚠ CAUTION

■ Working air quality

- Use clean compressed air filtered with 5 μm of air filter.
- Do not use the product with other than compressed air. Air containing corrosive gas, liquid and chemical may result in pressure adjustment failure, damage to body or rubber swelling.

■ Working environment

Avoid using the products in following environment.

- When ambient temperature exceeds range of 5 to 60°C.
- Where water drip and cutting lubricant contact to the product.
- Where it is humid, temperature fluctuates and dew condensates.
- Where splash of salt air or sea water contacts to the product.
- If there is atmosphere of corrosive gas and liquid and chemical material.
- Where the product is exposed to direct sun lay.

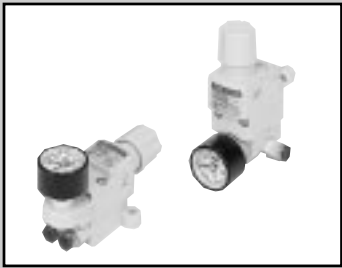
■ Pressure management

- Confirm primary pressure before setting.
- Pressure higher than the primary pressure can not be set.
- If pressure adjustment knob is rotated clockwise, the secondary pressure increases, while counterclockwise, the pressure decreases. When adjusting pressure pull up the knob to check that lock is not applied.
- Pressure is set in the depressurizing direction (high pressure → low pressure), so a highly precise setting can be made.
- Lock the pressure adjustment knob after setting pressure.
- Air constantly leaks from the bleed hole. This is necessary for precise pressure control, so do not plug the hole.
- When setting pressure, turn the secondary direction switch valve several times and confirm set pressure. Failure to confirm pressure could cause set pressure to change greatly.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

Ending

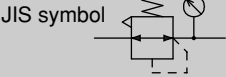
Compact direct acting precision regulator
F.R.L. unit



Compact direct operating precision regulator

RJB500 Series

Grease free specification, compact, space saving type.
 Port size: Push-in joint ø4, ø6



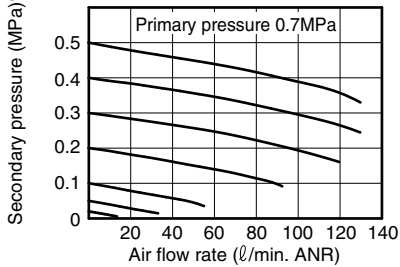
Specifications

Descriptions		RJB500
Working fluid		Compressed air
Max. working pressure	MPa	1.0
Withstanding pressure	MPa	1.5
Ambient temperature range		5 to 60
Set pressure range	MPa	0.02 to 0.5 (0.01 to 0.2) (Note 1)
Sensitivity	MPa	0.001 (lock sensitivity 0.004) (Note 2)
Air consumption		1.5 (Note 3)
Port size	IN-OUT	Push-in joint: ø4, ø6
	GAUGE	Rc1/8
Product weight	g	90

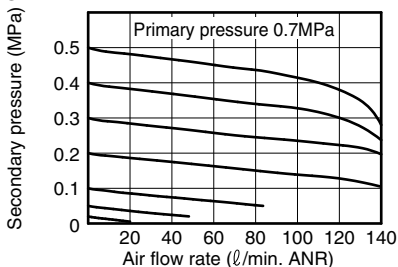
Note 1: Values in parentheses are for low pressure.
 Note 2: Set pressure sensitivity for the pressure adjustment knob block's minimum spacing.
 Note 3: Value for secondary side setting pressure 0.1 MPa.

Flow characteristics

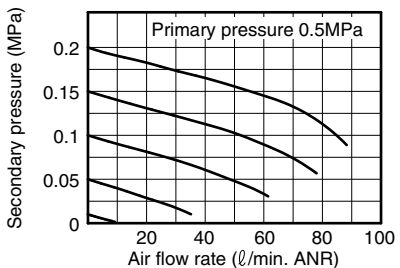
● RJB500-**C4



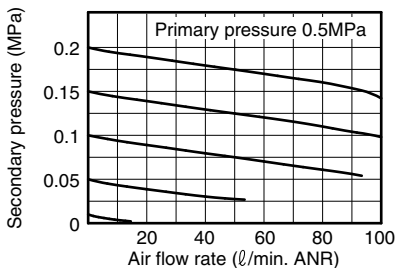
● RJB500-**C6



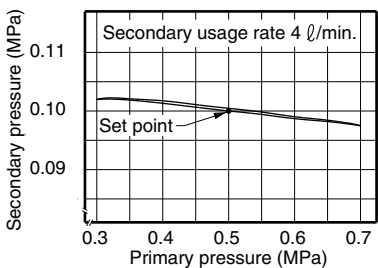
● RJB500-**C4-L



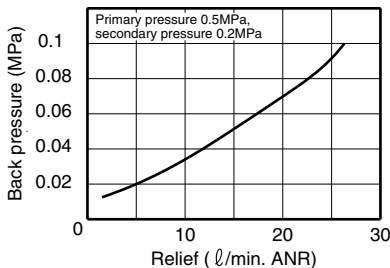
● RJB500-**C6-L



Pressure characteristics



Relief characteristics



How to order

RJB500 - SSC4 - P

Model no.

A Connection

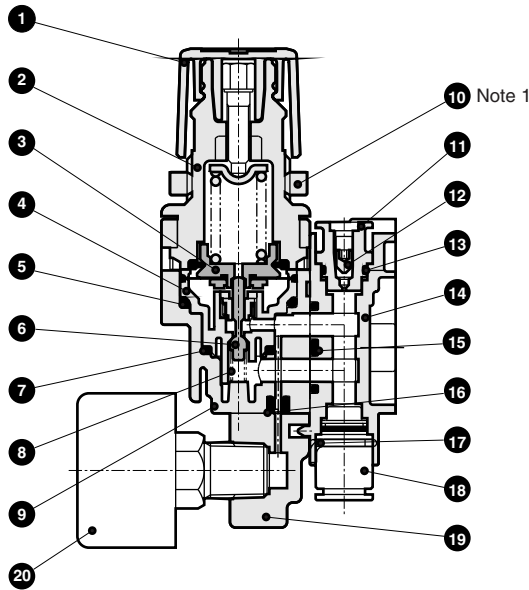
B Option

⚠ Note on model no. selection

Note 1: A 0 to 1.0 MPa pressure gauge is assembled.
 Note 2: A 0 to 0.4 MPa pressure gauge is assembled.
 Note 3: For panel installation, indicate option symbol "P".

Symbol		Descriptions	
A Connection			
Direction	IN	S	Straight
		L	Elbow
	OUT	S	Straight
		L	Elbow
Port size		C4	ø4
		C6	ø6
B Option			
Panel mount	Blank	Without nut	
	P	With nut	
Pressure range	Blank	0.02 to 0.5 MPa Note 1	
	L	0.01 to 0.2 MPa Note 2	
Pressure gauge	Blank	With pressure gauge	
	T	Without pressure gauge (gauge port Rc1/8)	

Internal structure and parts list



Note 1: A mounting nut is optional.
Nut is attached only for option symbol "P".

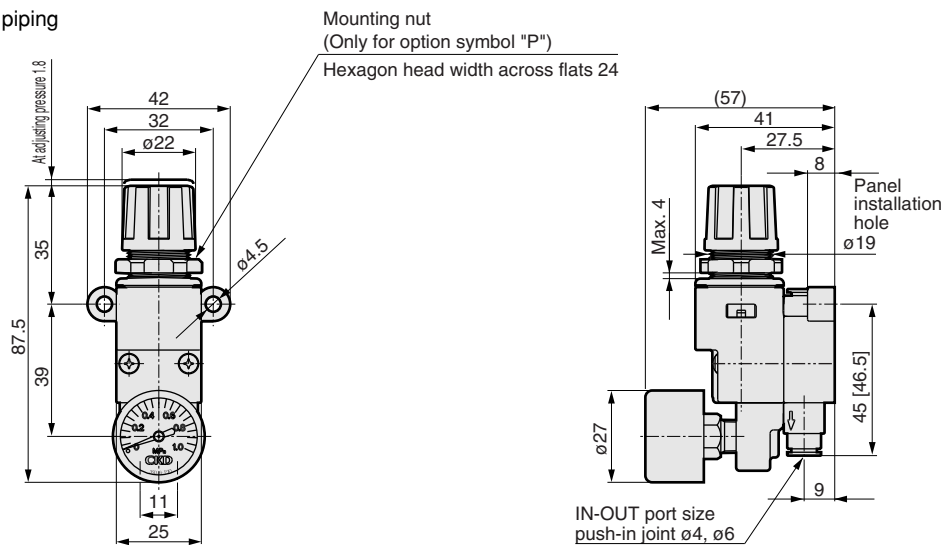
No.	Parts name	Material
1	Knob	Polyacetal resin
2	Guard	Polyamide resin
3	Diaphragm assembly	Polyacetal resin, nitrile rubber, chloroprene rubber
4	Valve guide assembly	Polyacetal resin, brass, stainless steel
5	O ring	Fluoro rubber
6	Valve	Stainless steel
7	O ring	Fluoro rubber
8	Spring	Stainless steel
9	Body	Polyamide resin
10	Mounting nut	Polyacetal resin
11	Bleeding plug	Polyamide resin
12	Hexagon socket head set screw	Stainless steel
13	O ring	Nitrile rubber
14	Piping block assembly	Polyamide resin, steel
15	Body packing seal	Hydrogen nitrile rubber
16	Packing seal	Nitrile rubber
17	Stop pin	Stainless steel
18	Cartridge joint	
19	Gauge plug	Polyamide resin
20	Pressure gauge	

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Dimensions

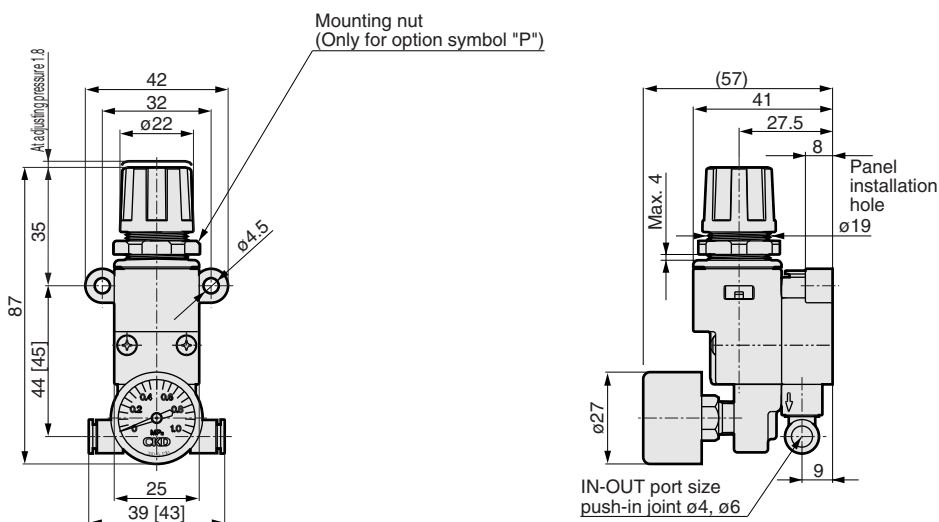


● RJB500 straight piping



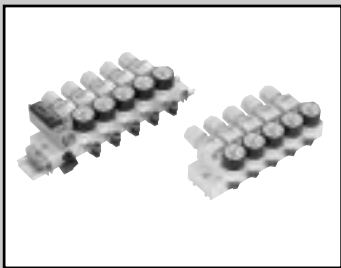
Dimensions shown in parentheses are for push-in joint $\phi 6$.

● RJB500 elbow piping



Dimensions shown in parentheses are for push-in joint $\phi 6$.

Compact direct acting precision regulator
F.R.L. unit



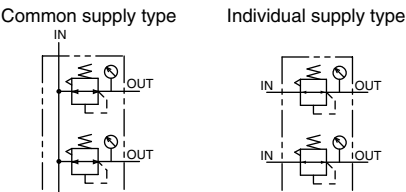
Block manifold compact direct operating precision regulator

MNRJB500 Series

Mix manifold of RJB500/RB500 Series
Port size: Push-in joint $\varnothing 4$, $\varnothing 6$, $\varnothing 8$



JIS symbol

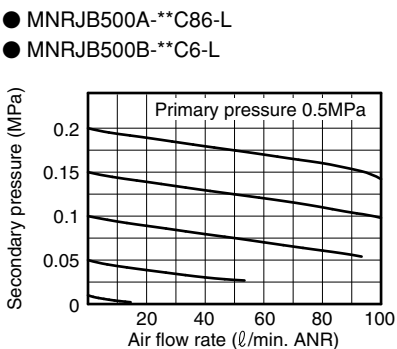
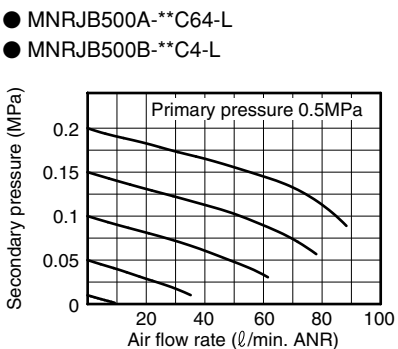
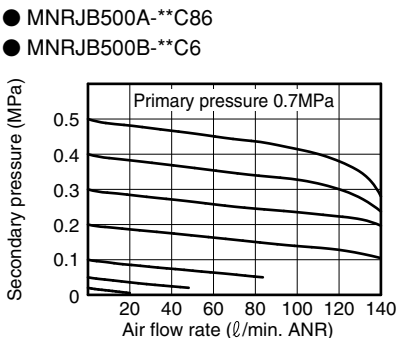
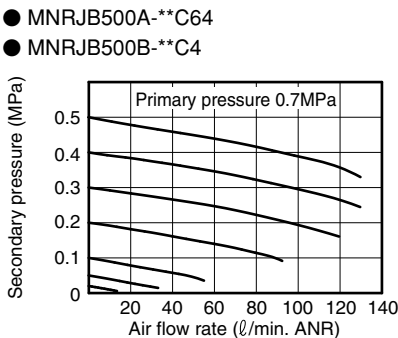


Specifications

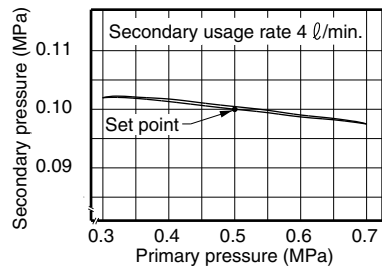
Descriptions		MNRJB500A	MNRJB500B
Working fluid		Compressed air	
Max. working pressure MPa		0.8	
Withstanding pressure MPa		1.2	
Ambient temperature range °C		5 to 60	
Set pressure range MPa		0.02 to 0.5 (0.01 to 0.2) (Note 1)	
Sensitivity MPa		0.001 (lock sensitivity 0.004) (Note 2)	
Air consumption ℓ/min.		1.5 (Note 3)	
Port size	IN	Push-in joint $\varnothing 6$, $\varnothing 8$	Push-in joint $\varnothing 4$, $\varnothing 6$
	OUT	Push-in joint: $\varnothing 4$, $\varnothing 6$	
	GAUGE	Rc1/8	

Note 1: Values in parentheses are for low pressure.
Note 2: Set pressure sensitivity for the pressure adjustment knob block's minimum spacing.
Note 3: Value for secondary side setting pressure 0.1 MPa.

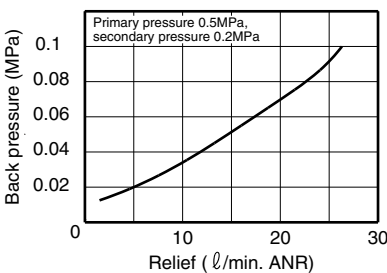
Flow characteristics



Pressure characteristics



Relief characteristics



Note 1: With common exhaust, primary pressure is insufficient when using multiple manifolds simultaneously.
So, install air supply block per three stations. Use an air supply port larger than OUT port size.

How to order

MNRJB500A - SSC64 - 5 - L - D

A Model no.
Note 1

B Joint type

C Port size

D Station number
Note 2

E Option
Note 3

F Installation method

Symbol		Descriptions	
A Model no.			
MNRJB500A		Common supply type	
MNRJB500B		Individual supply type	
B Joint type			
IN direction			
S	Straight		
L	Elbow		
OUT direction			
S	Straight		
L	Elbow		
C Port size IN-OUT			
		MNRJB500A	MNRJB500B
C64	IN; ø6, OUT; ø4	●	
C66	IN; ø6, OUT; ø6	●	
C84	IN; ø8, OUT; ø4	●	
C86	IN; ø8, OUT; ø6	●	
C4	IN / OUT; ø4		●
C6	IN / OUT; ø6		●
D Station number			
1	1 station		
to	to		
10	10 stations		
E Option			
		MNRJB500A	MNRJB500B
Pressure range	Blank	0.02 to 0.5 MPa Note 4	●
	L	0.01 to 0.2 MPa Note 5	●
Pressure gauge	Blank	With pressure gauge	●
	T	Without pressure gauge (gauge port Rc1/8)	●
Flow direction	Blank	Standard flow (left → right)	●
	X1	Reverse flow (right → left)	●
F Installation method			
Blank	DIN rail installation		
D	Direct mount		

Note on model no. selection

Note 1: Air supply block is to be 1 station.

When using three or more stations simultaneously with the common supply, increase one supply block station for every three stations.

In this case, indicate specifications in the mix manifold specification sheet.

Note 2: Maximum installation number of direct mount type is 5 stations.

Note 3: Same options and pressure gauge apply for each regulator block.

Note 4: A 0 to 1.0 MPa pressure gauge is assembled.

Note 5: A 0 to 0.4 MPa pressure gauge is assembled.

Note 6: When other than basic model specifications, issue the mix manifold specification sheet on page 639.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

Ending

Compact direct acting precision regulator block manifold
F.R.L. unit

● Common supply type DIN rail mount type

[illegible]

Station number	L ₂ dimension
1	125
2	150
3	175
4	212.5
5	237.5
6	262.5
7	287.5
8	325
9	350
10	375

- Common supply type direct mount type

Technical drawings of the 3000 series pressure regulator, showing front and side views with dimensions.

Front View Dimensions:

- Overall length: $L_1 = (28 \times n) + 48$
- Distance between regulator centers: $L_1 - 12$
- Individual regulator width: 28
- Port spacing: 20, 28, 16
- Port diameter: $\phi 27$
- Port size: push-in joint $\phi 6$, $\phi 8$
- Port size: OUT port size push-in joint $\phi 4$, $\phi 6$
- Port size: 4.5

Side View Dimensions:

- Overall height: 87.5
- Height from base to top: 52.5
- Height from base to bottom: 21.5
- Height from base to top: 27
- Height from base to top: 31.5
- Height from base to top: 24.5
- Height from base to top: 12
- Height from base to top: 10
- Height from base to top: 19
- Height from base to top: 23

Top View Dimensions:

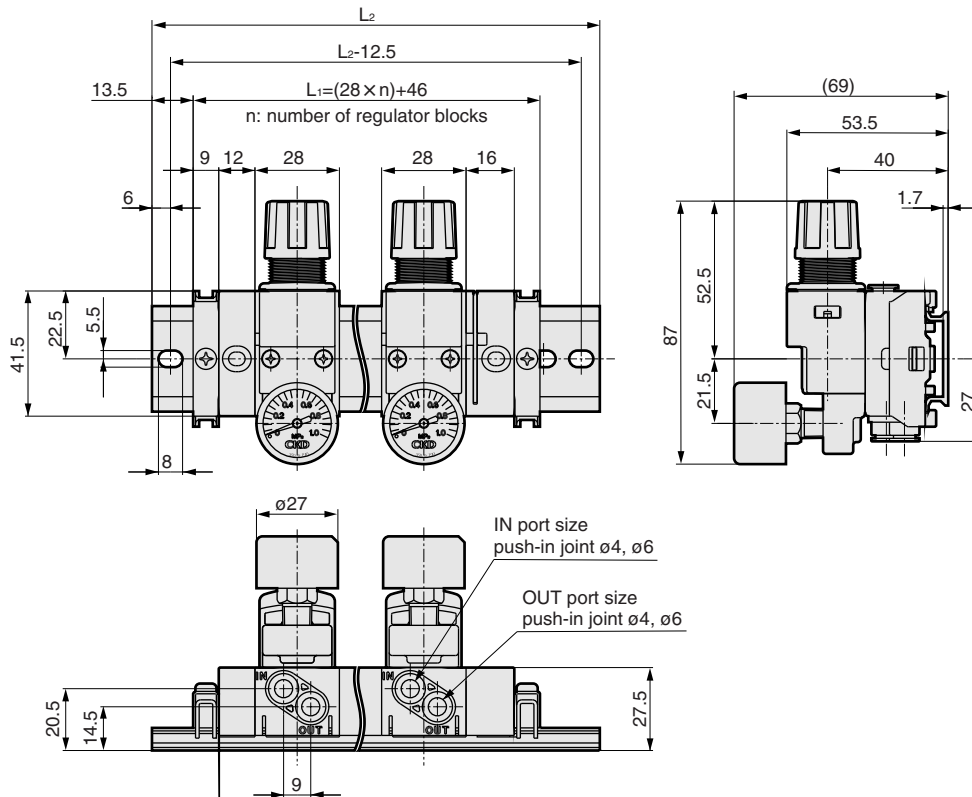
- Overall width: 64.5
- Width from center to side: 49
- Width from center to side: 35.5

Dimensions



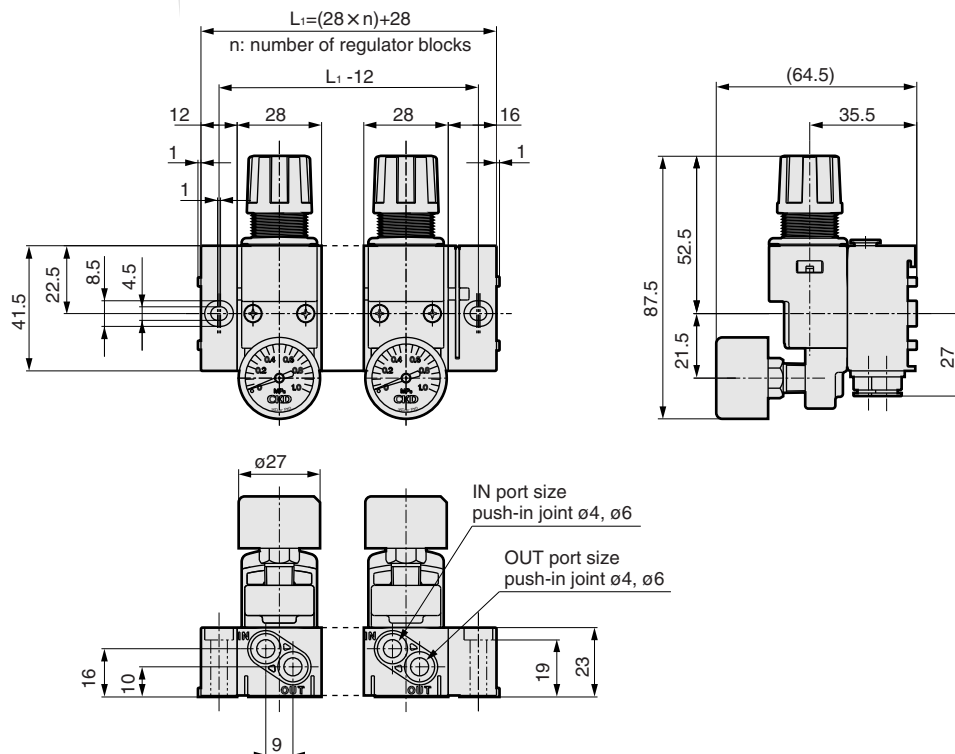
● Individual supply type DIN rail mount type

MNRJB500B-**C*-*



● Individual supply type direct mount type

MNRJB500B-**C*-*D



Station number	L2 dimension
1	100
2	137.5
3	162.5
4	187.5
5	212.5
6	250
7	275
8	300
9	325
10	362.5

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Compact direct acting precision regulator block manifold
F.R.L. unit

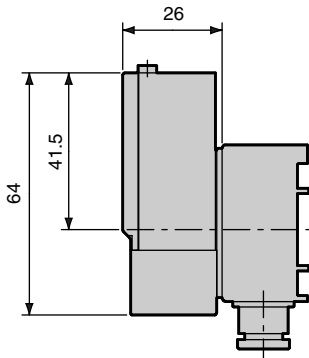
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Pressure switch / push-in joint elbow type dimensions

● Air supply block with pressure gauge

NRB500-APS-*C*

Pressure switch APS is integrated into air supply block to control primary pressure.

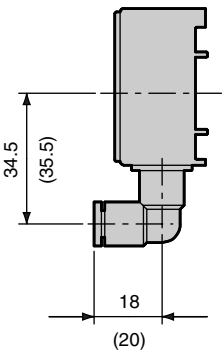


● Air supply block

Push-in joint elbow type

NRB500-NP-LC*

Front or rear piping is enabled with air supply port with elbow joint.



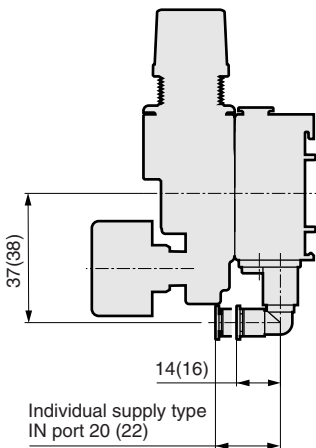
Dimension in () is for C8

● Regulator block

Push-in joint elbow type

NRJB500*-*C*

Front or rear piping is enabled with IN and OUT ports with elbow joint.



Dimension in () is for C6

MEMO

Refrigerating type dryer	
Desiccant type dryer	
High polymer membrane type dryer	
Air filter	
Auto. drain / others	
F.R.L. (Module unit)	
F.R.L. (Separate)	
Compact F.R.	
Precise regulator	
F.R.L. (Related products)	
Clean F.R.	
Electro pneumatic regulator	
Air booster	
Speed control valve	
Silencer	
Check valve / others	
Joint / tube	
Vacuum filter	
Vacuum regulator	
Suction plate	
Magnetic spring buffer	
Mechanical pressure SW	
Electronic pressure SW	
Contact / close contact conf. SW	
Air sensor	
Pressure SW for coolant	
Small flow sensor	
Small flow controller	
Flow sensor for air	
Flow sensor for water	
Total air system	
Total air system (Gamma)	
Ending	

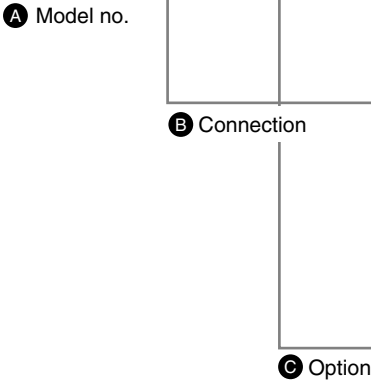
Compact direct acting precision regulator block manifold
F.R.L. unit

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Regulator block

How to order

NRJB500B - SSC4 - L

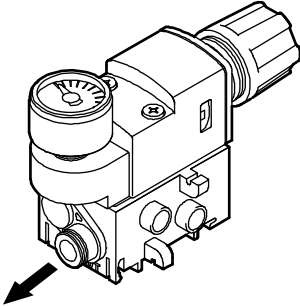


Note on model no. selection

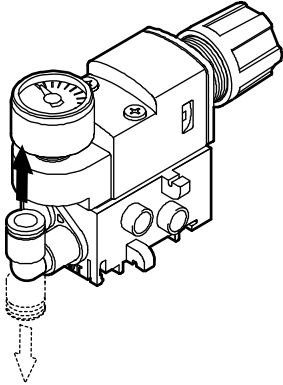
Note 1: For common supply, IN port connection type is not required.
Note 2: A 0 to 1.0 MPa pressure gauge is assembled.
Note 3: A 0 to 0.4 MPa pressure gauge is assembled.

Symbol		Descriptions	
A Model no.			
NRJB500A		Common supply type	
NRJB500B		Individual supply type	
B Connection			
Direction	Note 1 IN	S	Straight
		L	Elbow
	OUT	S	Straight
		L	Elbow
Port size	IN-OUT	C4	ø4
		C6	ø6
C Option			
Pressure range	Blank	0.02 to 0.5MPa	Note 2
	L	0.01 to 0.2MPa	Note 3
Pressure gauge	Blank	With pressure gauge	
	T	Without pressure gauge (gauge port Rc1/8)	

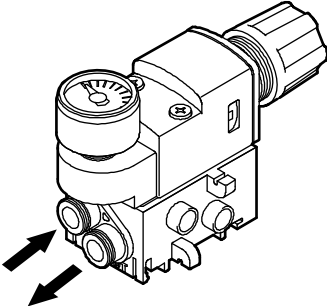
● Common supply straight type
Downward piping in enabled with OUT port with straight joint.



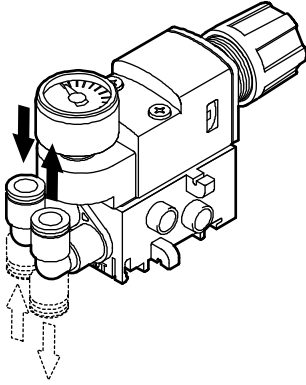
● Common supply elbow type
Front or rear piping is enabled with OUT port with elbow joint.



● Individual supply straight type
Front or rear piping is enabled with IN and OUT ports with straight joint.



● Individual supply elbow type
Front or rear piping is enabled with IN and OUT ports with elbow joint.



Sub base

How to order

NRJB500B - NS - SSC4 MP

A Model no.

B Connection

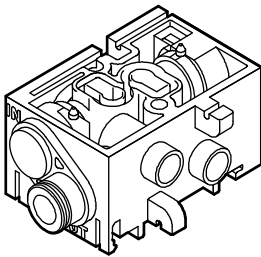
C Option

⚠ Note on model no. selection

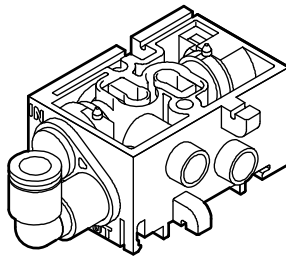
Note 1: For common supply, IN port connection type is not required.

Symbol		Descriptions	
A Model no.			
NRJB500A		Common supply	
NRJB500B		Individual supply	
B Connection			
Direction	Note 1 IN	S	Straight
		L	Elbow
	OUT	S	Straight
		L	Elbow
Port size	IN-OUT	C4	ø4
		C6	ø6
C Option			
Blank		Without masking plate	
MP		Note 2	With masking plate

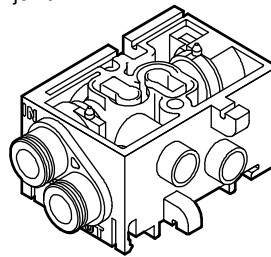
- Common supply straight type
OUT port with straight joint



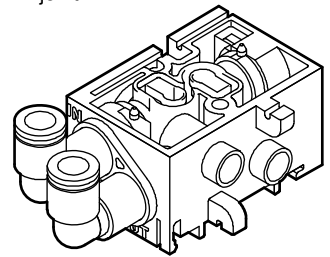
- Common supply elbow type
OUT port with elbow joint



- Individual supply straight type
IN, OUT ports with straight joint



- Individual supply elbow type
IN, OUT ports with elbow joint



Regulator body

How to order

RJB500 - 00 S - L

A Connection

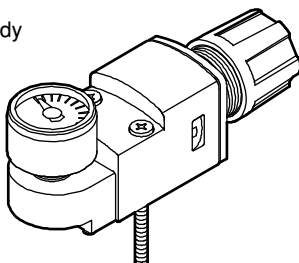
B Option

⚠ Note on model no. selection

Note 1: A 0 to 1.0 MPa pressure gauge is assembled.
Note 2: A 0 to 0.4 MPa pressure gauge is assembled.

Symbol	Descriptions	
A Connection		
S	Discrete (RJB500)	
M	Manifold (MNRJB500A.B)	
B Option		
Panel mount	Blank	Without nut
	P	With nut
Pressure range	Blank	0.02 to 0.5 MPa Note 1
	L	0.01 to 0.2 MPa Note 2
Pressure gauge	Blank	With pressure gauge
	T	Without pressure gauge (gauge port Rc1/8)

- Regulator body



Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending
Compact direct acting precision regulator block manifold
F.R.L. unit

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Common supply block

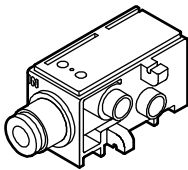
How to order

NRJB500-NP - SC6

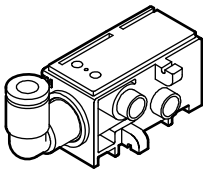
A Connection

Symbol		Descriptions
A Connection		
Direction	S	Straight
	L	Elbow
Port size	C6	ø6
	C8	ø8

● Straight type
Air supply port with straight joint



● Elbow type
Air supply port with elbow joint



Common supply block with pressure switch

How to order

NRB500-APS - SC6 - 3

Note 1

A Connection

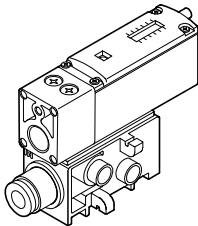
B Lead wire length

Symbol		Descriptions
A Connection		
Direction	S	Straight
	L	Elbow
Port size	C6	ø6
	C8	ø8
B Lead wire length		
Blank		1m
3		3m
5		5m

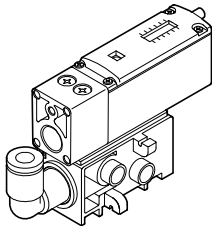
⚠ Note on model no. selection

Note 1: Grease is applied to the APS before assembly.
This part is not compatible with grease-free specifications.

● Straight type
Air supply port with straight joint



● Elbow type
Air supply port with elbow joint



End block

How to order

NRJB500-NE **D**

A Connection

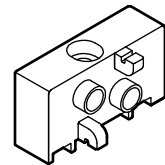
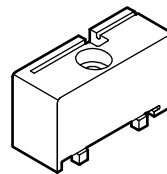
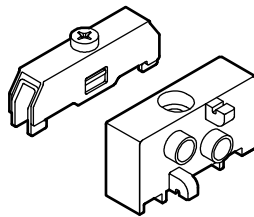
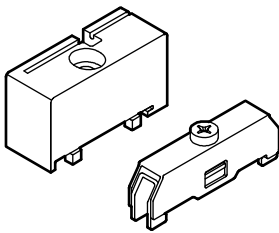
Symbol	Descriptions
A Connection	
Blank	End block R for DIN rail (right)
L	End block L for DIN rail (left)
D	Direct end block R
DL	Direct end block L

● End block R for DIN rail

● End block L for DIN rail

● Direct end block R

● Direct end block L



End blocks R and L are required for manifold configuration.
For DIN rail, use end blocks R and L with DIN rail bracket.

DIN rail

How to order

NRB500-BAA **150**

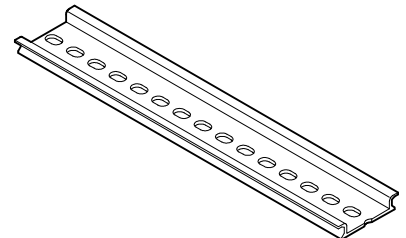
A DIN rail dimension
Note 1

⚠ Note on model no. selection

Note 1: Refer to "How to fill out mix manifold specifications" and DIN rail length and manifold dimension for determining DIN dimension, and indicate the dimension on the sheet with mm unit.

Symbol	Descriptions
A DIN rail dimension	
125	125mm
150	150mm
⋮	⋮

● DIN rail



Push-in cartridge joint (regulator block)

How to order

NRJB500 - JOINT - **CL4**

A Type

Symbol	Descriptions
A Type	
C4	Straight ø4
C6	Straight ø6
CL4	Elbow ø4 (discrete)
CL6	Elbow ø6 (discrete)
CLL4	Long elbow ø4 (manifold)
CLL6	Long elbow ø6 (manifold)



Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

Ending

Compact direct acting precision regulator block manifold
F.R.L. unit

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact conf. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

Cartridge joint (common air supply block)

How to order

NRJB500 - Q - JOINT - L6

A Type

Symbol	Descriptions	
A Type		
6	Straight ø6	
8	Straight ø8	
L6	Elbow ø6	
L8	Elbow ø8	

Pressure gauge

How to order

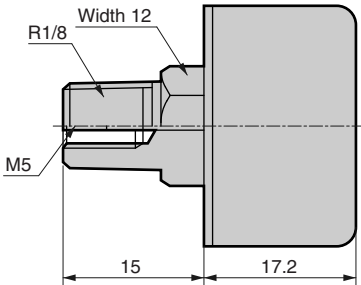
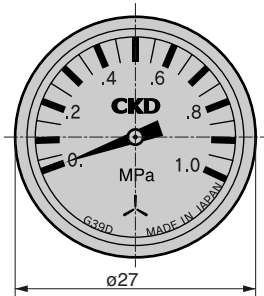
G39D - 6 - P10

A Pressure display

Symbol	Descriptions
A Pressure display	
P10	0 to 1.0 MPa
P04	0 to 0.4 MPa

Dimensions

● G39D



Blanking plug

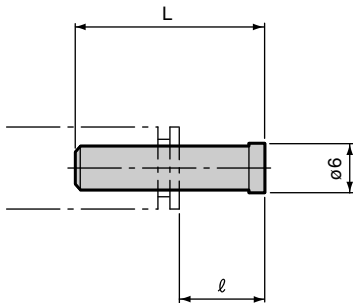
How to order

GWP 4 - B

A Connection

Symbol	Descriptions
A Connection	
4	ø4
6	ø6
8	ø8

Dimensions



⚠ Note on model no. selection

Note 1: Sales unit is 10 pieces per unit.

Model no.	Joint port size ø	L	ℓ	d
GWP 4-B	4	27	11	6
GWP 6-B	6	29	11.5	8
GWP 8-B	8	33	14	10

⚠ CAUTION

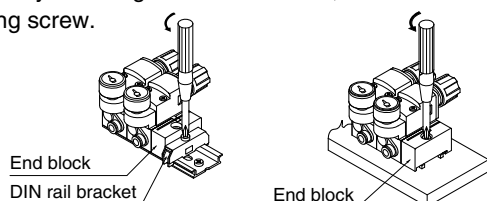
Disassembling and assembling the block manifold, and replacing the cartridge joint

To change the regulator block when the regulator body or regulator block specifications change or when life has been reached, or when adding an air supply block, use the following procedures to expand, disassemble, and assemble parts. Refer to the separate instruction manual for details.

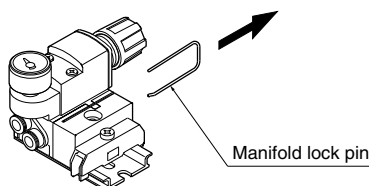
Stop the air pressure source supply and release residual pressure before starting disassembly work. After assembling parts, confirm that the lock pin is accurately inserted in the coupling groove between blocks before use. When using DIN rail installing, confirm that the DIN rail bracket is securely fixed onto the end block with no gaps. When directly installing without a DIN rail, check that the end block is fixed with screw before starting use. Air could leak between blocks if the end block is not securely fixed.

Replacing the regulator block and air supply block

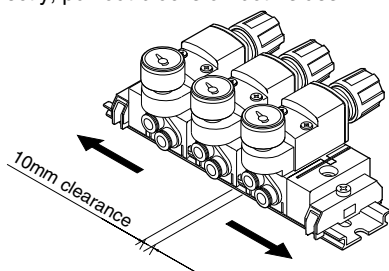
- (1) When using the DIN rail installing, loosen the DIN rail bracket set screw.
When directly installing without a DIN rail, remove the end block fixing screw.



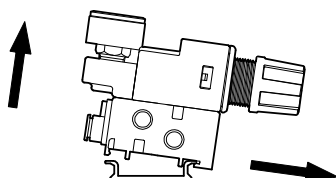
- (2) Using a tip thin screwdriver, pull out the manifold lock pin coupling the regulator block and air supply block to be replaced.



- (3) Slide the block toward the end block, and make an approximately 10mm opening at both ends of the block to be replaced. When installed directly, pull out blocks on both sides.



- (4) Remove the pressure gauge up by pulling it up and toward the pressure adjustment knob. When DIN rail brackets on both sides are slid 2mm or more from the end block, the entire manifold block can be removed.



- (5) Replace with a new block.
- (6) Check that there is no gap between blocks, and then insert the manifold lock pin until it contacts the bottom of the groove.
- (7) Refer to the safety precautions and installation methods, and fix the manifold block.

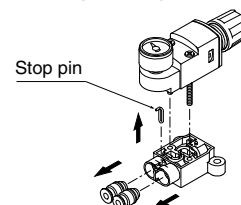
Increasing the regulator and air supply block rows

- (1) If blocks may be increased, order the DIN rail with a length providing for the increase. If the DIN rail is too short when blocks are increased, replace with a DIN rail that accommodates the increase.
- (2) When installing with DIN rails, fix DIN rail brackets. When directly installing without a DIN rail, fix the end block.

Replacing the cartridge joint

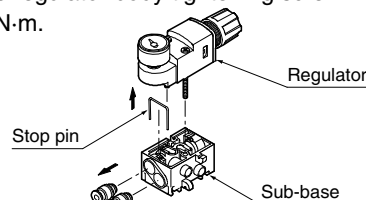
Replacing the compact regulator

- (1) Loosen the screw on the regulator body, and disassemble the piping block.
- (2) Using a minus screwdriver, etc., remove the lock pin inserted onto the top of the sub base. Replace the cartridge joint. Confirm that there is no dirt, etc., on the joint's O-ring, and then assemble it in the original position. Tighten the regulator body tightening screw with a torque of 0.5 to 0.8 N·m.

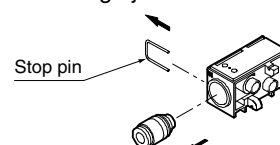


Replacing the block manifold

- (1) Disassemble the block following the regulator block and air supply block replacement procedures.
- (2) To replace the regulator block's cartridge joint, loosen the screw on the regulator body, and disassemble the sub base. Using a minus screwdriver, etc., remove the lock pin inserted onto the top of the sub-base. Replace the cartridge. Confirm that there is no dirt, etc., on the joint's O-ring, and then assemble it in the original position. Tighten the regulator body tightening screw with a torque of 0.5 to 0.8 N·m.



To replace the air supply block cartridge joint, remove the lock pin inserted on the air supply block side with a minus driver, etc. Then, replace the cartridge joint.



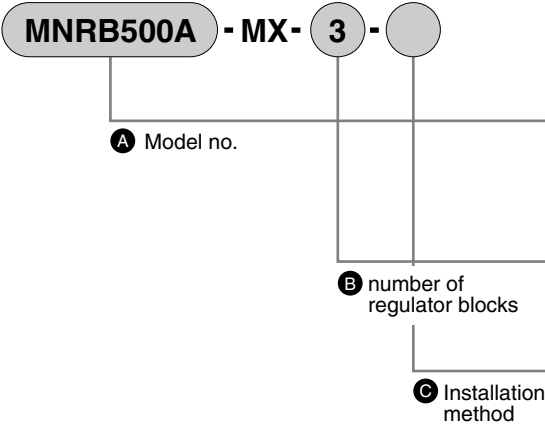
- (3) Check that the cartridge joint is fixed with the lock pin and will not move.

- Refrigerating type dryer
- Desiccant type dryer
- High polymer membrane type dryer
- Air filter
- Auto. drain / others
- F.R.L. (Module unit)
- F.R.L. (Separate)
- Compact F.R.
- Precise regulator
- F.R.L. (Related products)
- Clean F.R.
- Electro pneumatic regulator
- Air booster
- Speed control valve
- Silencer
- Check valve / others
- Joint / tube
- Vacuum filter
- Vacuum regulator
- Suction plate
- Magnetic spring buffer
- Mechanical pressure SW
- Electronic pressure SW
- Contact / close contact cont. SW
- Air sensor
- Pressure SW for coolant
- Small flow sensor
- Small flow controller
- Flow sensor for air
- Flow sensor for water
- Total air system
- Total air system (Gamma)
- Ending

How to fill out mix manifold specifications

Mix manifold model No.

A mixed manifold consisting of the compact direct acting precision type (RJB500 Series) and general-purpose type (RB500 Series) is available. Refer to page 632 to 636 for model No. per component.



Symbol	Descriptions
A Model no.	
MNRJB500A	Common supply type (only compact direct acting precision regulator selected)
MNRB500A	Common supply type (compact direct acting precision regulator, general regulator mixed)
MNRJB500B	Individual supply type (only compact direct acting precision regulator selected)
MNRB500B	Individual supply type (compact direct acting precision regulator, general regulator mixed)
B Number of regulator blocks	
1	1 station
2	2 stations
⋮	⋮
C Installation method	
Blank	DIN rail
D Note 1	Direct mount

Note on model no. selection

Note 1: Station number of direct mount block is to be within 6 blocks including regular and air supply blocks. However, a regular block is to be 5 stations or less.
Note 2: Grease-free specifications are not available when the NRB500* and common exhaust block with APS are used. Grease is applied before these are assembled.
Note 3: Consult with CKD if the common supply and the individual supply types are combined.

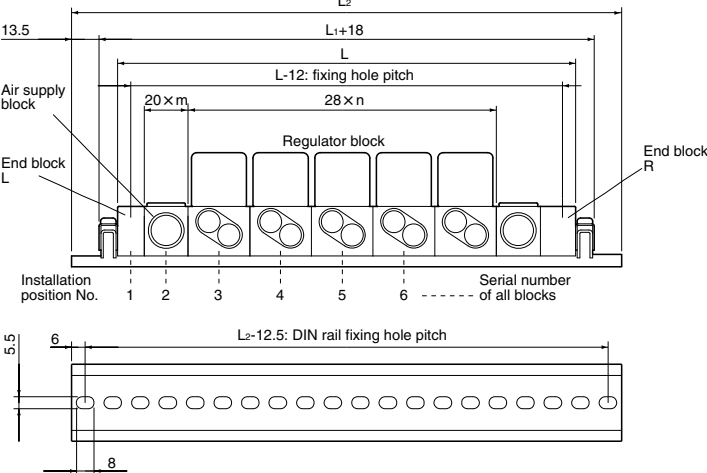
Configurations	Model no.	Installation position														Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
End block L	N[R]B500-NE	○														1
Common air supply block	N[R]B500-NP-□		○													
Common air supply block with APS	NRB500-APS-SC6-3			○												1
Regulator block	N[R]B500[A]-SC6-□				○	○										1
	N[R]B500[A]-SC6-□															2
	N□500□-□-□															
	N□500□-□-□															
	N□500□-□-□															
	N□500□-□-□															
	N□500□-□-□															
	N□500□-□-□															
Sub-base with masking plate	N□500□-NS-□-□-MP															
End block R	N[R]B500-NE						○									1
DIN rail	L2 = 175 mm	Accessories		GWP4-B		Piece		GWP8-B		Piece						
		Blanking plug		GWP6-B		Piece										

DIN rail length and manifold dimensions

Manifold length L2: Refer to the table on the right.

$$L_2 = (28 \times n) + (20 \times m) + 28$$

n: Regulator block number
m: Air supply block number



Common supply type
Manifold L2 dimensions

Station number	Dimension of m = 1	Dimension of m = 2	Dimension of m = 3
1	125		
2	150		
3	175	200	
4	212.5	225	
5	237.5	262.5	275
6	262.5	287.5	300
7	287.5	312.5	337.5
8	325	337.5	362.5
9	350	375	387.5
10	375	400	412.5

Individual supply type
Manifold L2 dimensions

Station number	L2 dimension
1	100
2	137.5
3	162.5
4	187.5
5	212.5
6	250
7	275
8	300
9	325
10	362.5

MNRJB500 mix manifold specifications

Contact _____

Slip No. _____ Quantity _____ Set _____ Delivery _____ / _____

● Mix manifold model No.



A Model no.

B Number of regulator blocks

C Installation method

Symbol	Descriptions
A Model no.	
MNRJB500A	Common supply type (only compact direct acting precision regulator selected)
MNRB500A	Common supply type (compact direct acting precision regulator, general regulator mixed)
MNRJB500B	Individual supply type (only compact direct acting precision regulator selected)
MNRB500B	Individual supply type (compact direct acting precision regulator, general regulator mixed)
B Number of regulator blocks	
1	1 station
2	2 stations
:	:
C Installation method	
Blank	DIN rail
D Note 1	Direct mount

⚠ Note on model no. selection

Note 1: Station number of direct mount block is to be within 6 blocks including regular and air supply blocks.

However, a regular block is to be 5 stations or less.

Note 2: Grease-free specifications are not available when the NRB500* and common exhaust block with APS are used. Grease is applied before these are assembled.

Note 3: Consult with CKD if the common supply and the individual supply types are combined.

● Mix manifold specifications

Configurations	Model no.	Installation position														Quantity
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
End block L	N <input type="text"/> 500-NE															
Common air supply block	N <input type="text"/> 500-NP- <input type="text"/>															
Common air supply block with APS	NRB500-APS- <input type="text"/> - <input type="text"/>															
Regulator block	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
	N <input type="text"/> 500 <input type="text"/> - <input type="text"/> - <input type="text"/>															
Sub-base with masking plate	N <input type="text"/> 500 <input type="text"/> - NS- <input type="text"/> -MP															
End block R	N <input type="text"/> 500-NE															
DIN rail Note 4	L2 = mm	Accessories		GWP4-B		Piece		GWP8-B		Piece						
		Blanking plug		GWP6-B		Piece										

Note 3: Select the DIN rail L2 dimensions from the L2 dimensions given on page 638.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Compact direct acting precision regulator block manifold
F.R.L. unit

Precision regulator

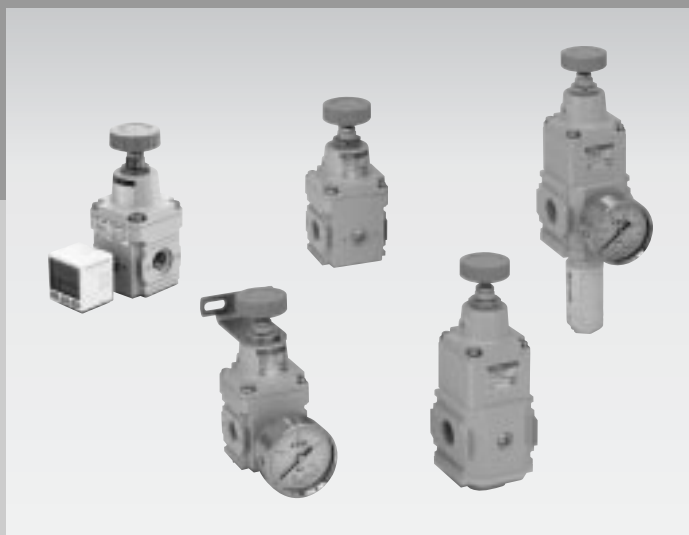
■ Components for air preparation and pressure adjustment / F.R.L. unit

Overview

Superior performance in extremely low pressure and low pressure area, compact size, and this regulator is also optimum for tension control and balancer etc. due to stabilized flow characteristics with small pressure drop. Modular design and separate type are selected per applications.

Features

- (1) High precision pressure control
- (2) Stable flow characteristics with small pressure drop
- (3) Compact



C O N T E N T S

Modular design

Product introduction 642

⚠ Safety precautions 644

● RP1000 646

● RP2000 650

Applications 654

Separate type

● Precision regulator (2100) 656

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Outstanding performance in extremely low pressure and low pressure ranges from 0.003 to 0.1 MPa.

Realizing high performance, energy saving, and compact size.
Realize precise pressure control in a pressure range of 0.03 to 0.4M Pa.

Pilot pressure control with a nozzle flapper enables highly precise, stable precise pressure control in a setting pressure range between 0.003 to 0.4 Mpa. Control performance is especially outstanding in extremely low to low pressure ranges between 0.003 and 0.1 MPa. The relief flow is high even with the *42mm compact size. This energy saving type also has low air consumption.

High precision pressure control

Pressure control within $\pm 0.5\%$ of repeatability full scale and within 0.1% of the sensitivity full scale is possible.

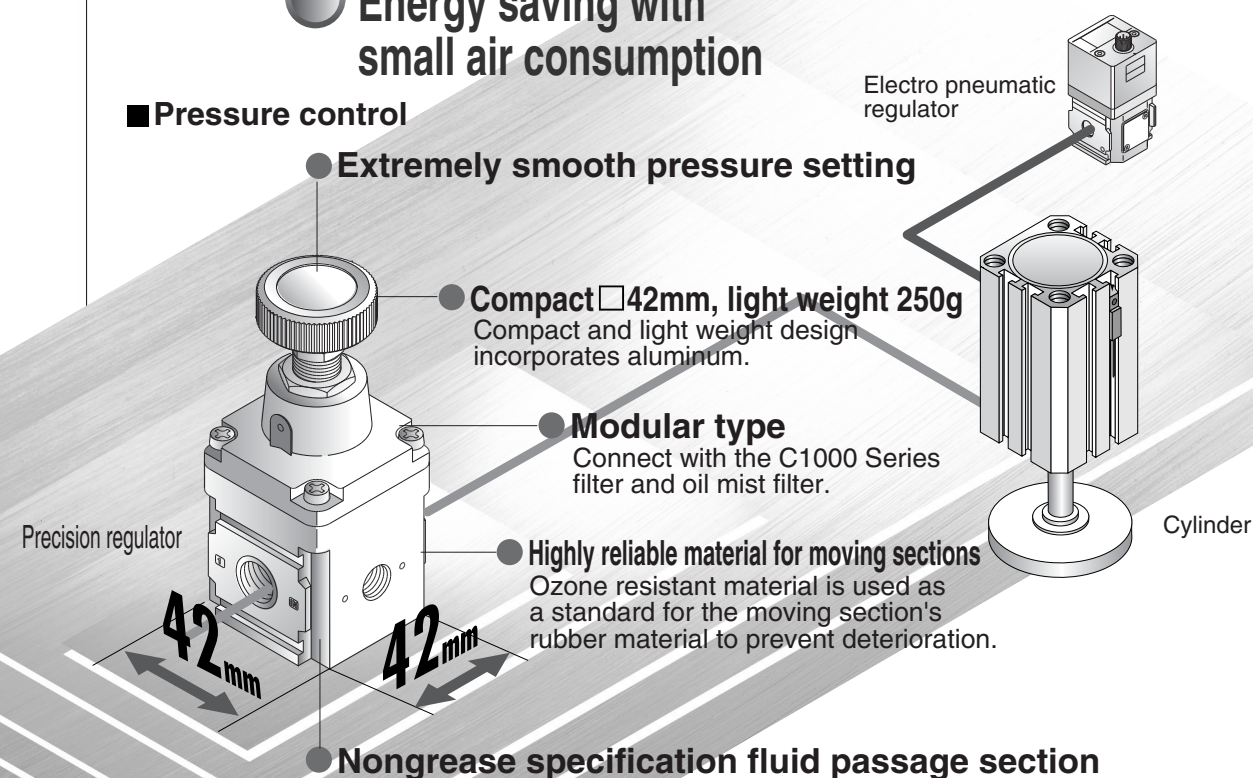
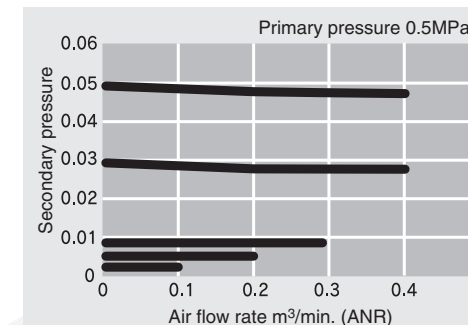
Set extremely low pressures

A pressure as low as 0.003MPa can be set (RP1000-8-02).

High relief flow

Energy saving with small air consumption

Stable flow characteristics with small pressure drop



High performance, energy saving, compact

RP1000 Series

CKD

Pressure setting: Max. 0.85MPa

RP1000/2000 Series

Long-life, high flow perfect for balancer applications.

Realizing high performance, long service, and high exhaust flow.
Realize precise pressure control in a pressure range of 0.03 to 0.85MPa.

The RP2000 Series incorporates pilot pressure control using a nozzle flapper similar to the 1000 Series. However, this *50mm compact high exhaust flow has high relief. Low sliding packing is used for moving parts, extending parts life. This type has outstanding durability and sufficient supply/discharge at optimum high frequency and high response required for devices such as balancers.

High precision pressure control

Pressure control within $\pm 0.5\%$ of repeatability full scale and within 0.2% of the sensitivity full scale is possible.

● Cylinder bore size and corresponding speed (guide)

φ 80	1000mm/s
φ 100	900mm/s
φ 125	600mm/s

● □ 50mm · 470g
Compact aluminum body with high flow.

Foreign matter entry prevention

A mesh filter is installed as a standard on the IN side.

Modular type

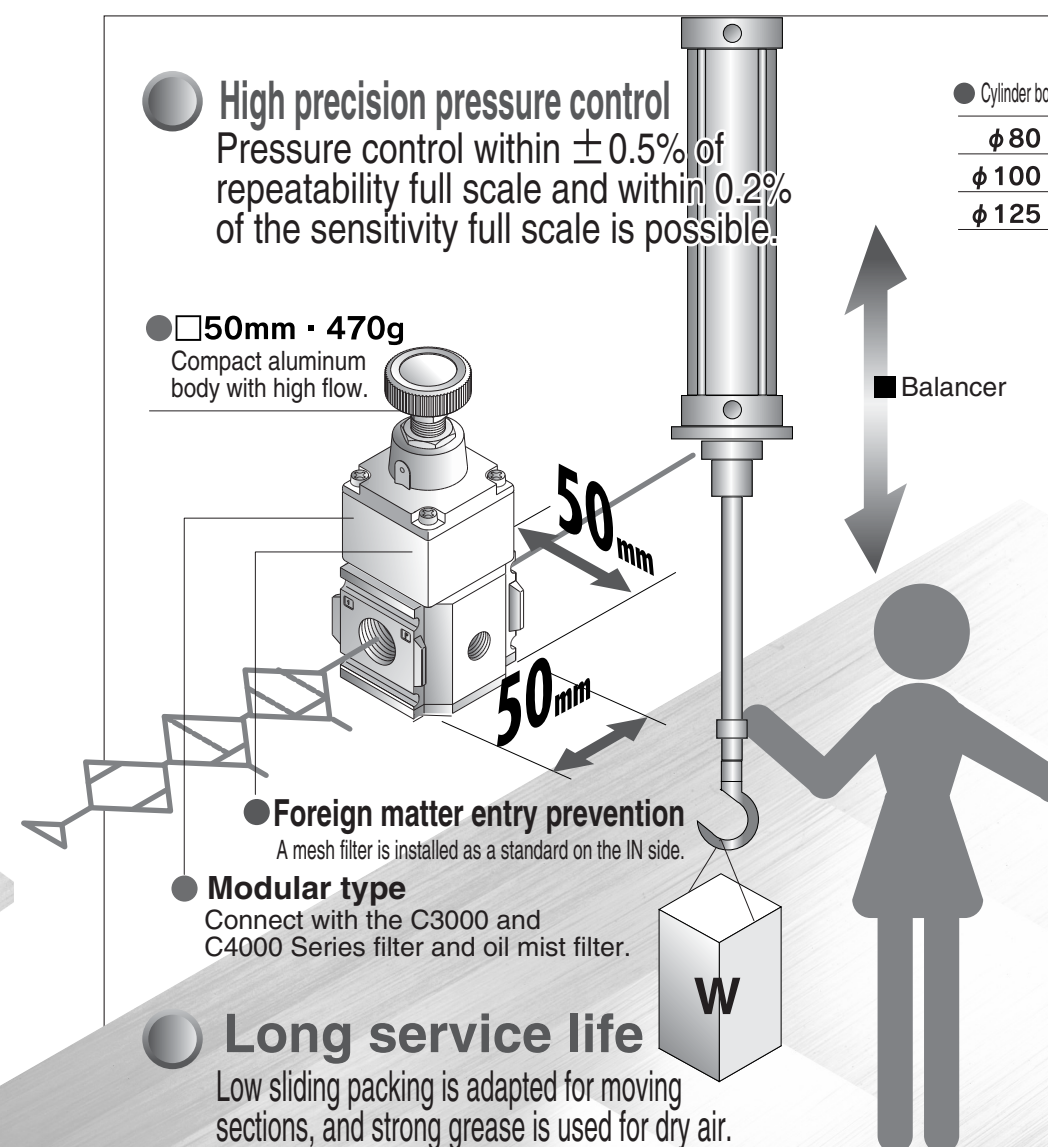
Connect with the C3000 and C4000 Series filter and oil mist filter.

Long service life

Low sliding packing is adapted for moving sections, and strong grease is used for dry air.

Stable flow characteristics with small pressure drop

High relief flow



High performance, long service life, and high exhaust flow

RP2000 Series

CKD



Pneumatic components (F.R.L. unit precision type)

Safety precautions

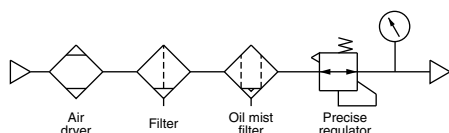
Always read this section before starting use.
Refer to Intro 67 for general precautions.

Precision regulator RP1000/2000 Series

Design & Selection

⚠ WARNING

- Use this product in accordance with the specifications range.
- Working fluid must be clean air from which solids, water and oil have been sufficiently removed using a dryer, filter and oil mist filter. Never supply oiled air.
When secondary pressure, etc., is turned off, air on the secondary side will pass through the regulator and be discharged from the EXH port. Thus, if secondary piping or inside of the load side is dirty, performance is adversely affected so characteristics will deteriorate. Keep the inside of pipes clean.



⚠ CAUTION

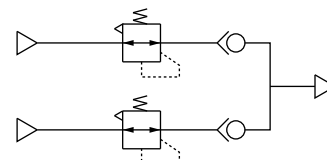
- Keep the pressure difference between the primary and secondary sides to 0.1 MPa and over. Note that, for RP1000-8-04, if the set pressure is 0.3 MPa and over, keep the pressure difference at 0.2 MPa and over.
(Precautions for RP1000)
When using under conditioned with a small pressure difference between the primary and secondary sides, the secondary pressure could pulsate. In this case, decrease the pressure setting (high pressure → low pressure). Another method is to set the primary pressure to an extremely high level or to somewhat lower the setting pressure, and restrict the secondary side line. Consult with CKD if the pulsation still does not cease. When using with low friction cylinder having constant leak, secondary pressure may pulsate depending on working conditions. In this case, restrict the secondary side line and decrease the pressure setting (high pressure → low pressure) to attenuate pulsation. Consult with CKD if the pulsation still does not cease.
- (Precautions for RP2000)
If the pressure difference between primary and secondary sides is large and secondary side piping is large, secondary pressure could pulse during low flow. In this case, set the primary side to the secondary side pressure +0.1 to 0.2 MPa or restrict the secondary side line.
Consult with CKD if the pulsation still does not cease.
- If the regulator is repeatedly turned ON and OFF with the directional control valve on the primary side, the set pressure may change greatly. Thus, the directional control valve should be installed on the secondary side.
- 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.
- Do not operate the pressure adjustment knob while the primary side is released to the atmosphere as performance could deteriorate.

Installation & Adjustment

⚠ CAUTION

- Check IN and OUT indications indicating the air inlet and outlet before connecting. Reverse connection could result in improper operation. If connected reversely, malfunction may be caused.
- Do not move or swing the product holding the adjustment knob on the regulator.
- Avoid installing this product where vibration and impact are present.

- Flush air pipes before connecting the regulator.
- Check that sealing tape is not caught when piping.
- When using regulator in parallel as shown below, do not use the OUT side as a closed circuit. If a closed circuit is required, set a check valve at the regulator's OUT side.



- Install the regulator so that the EXH is not plugged.
- When installing on a panel, completely loosen the pressure adjustment knob, and insert the body into the 12.5 diameter panel hole. Then, fix to the tightening panel with the panel mounting nut. Next, turn the pressure adjustment knob, and assemble it onto the body.

(Precautions for RP2000)

If the product is installed on the panel in a horizontal direction, the panel could be damaged by the product weight and vibration.

- Apply adequate torque when connecting pipes.
 - To prevent air leakage and screw damage.
 - First tighten the screw by hand, then use a tool, to prevent thread damage.

(Recommended value)

Port thread	Tightening torque N·m
Rc1/8	3 to 5
Rc1/4	6 to 8
Rc3/8	13 to 15

During use & Maintenance

⚠ CAUTION

■ Working air quality

- Use only compressed air. Air containing corrosive gases, fluids or chemicals could result in improper pressure adjustment due to body damage or rubber deterioration.

■ Working environment

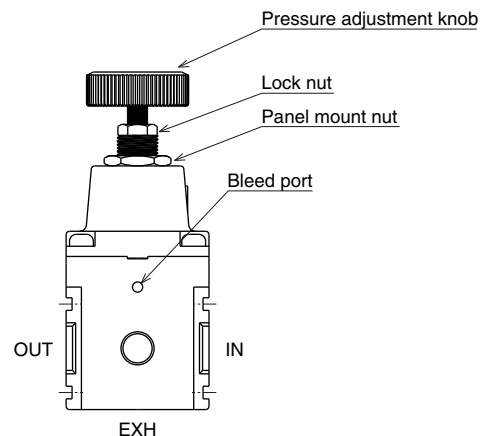
- Avoid using the regulator in the following environment.
- Place where the ambient temperature exceeds -5 to 60°C.
- Where air freezes.
- Where water drip and cutting lubricant contact to the product.
- Highly humid places where dew condenses due to temperature fluctuations.
- Where sea breeze or salt water could come in contact.
- If there is atmosphere of corrosive gas and liquid and chemical material.
- Where the product is exposed to direct sun lay.
- With the precision regulator RP1000, the setting pressure fluctuates by approx. 0.12kPa/°C. The pressure tends to drop when the temperature rises.

■ Use

- Air constantly leaks from the bleed port. This is necessary for precise pressure control, so do not plug the hole.
- Check primary pressure before setting pressure.
- Do not set a pressure higher than primary pressure.
- Turn the pressure adjustment knob clockwise to increase secondary pressure, and counterclockwise to lower pressure.
- Pressure is set in the depressurizing direction (high pressure → low pressure), so a highly precise setting can be made.
- After adjusting pressure, tighten the lock nut, and then fix the knob.
- The precise regulator RP1000 exhaust valve has a metal seal, so a small mount of secondary air will leak.

■ Maintenance

- Pneumatic components must be disassembled and assembled by a qualified worker.
- Personnel involved in this step must have passed the Pneumatic Pressure Skill Test Class 2 or higher.
- Read the relevant product instruction manual thoroughly and fully familiarize yourself with work before disassembling or assembling the pneumatic component.
- Personnel must be fully familiar with pneumatic component structure and operational principles and safety requirements.
- Be sure to turn power off, stop supplied compressed air, and check that there is no residual pressure before starting maintenance.



Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

Ending

Precision regulator
F.R.L. unit



Precision regulator

RP1000 Series

● Port size: Rc1/4

JIS symbol



Specifications

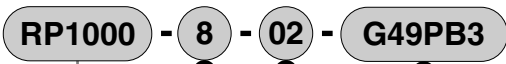
Descriptions		RP1000-8-02	RP1000-8-04	RP1000-8-07
Working fluid		Clean compressed air (refer to recommended air circuit on page 644)		
Max. working pressure	MPa	1.0		
Min. working pressure	MPa	Setting pressure + 0.1 Note 1		
Withstanding pressure	MPa	1.5		
Ambient temperature, fluid temperature	°C	-5 to 60 (no freezing) Note 3		
Set pressure range	MPa	0.003 to 0.2	0.005 to 0.4	0.005 to 0.7
Sensitivity		Within 0.1% of full scale		
Repeatability		Within ±0.5% of full scale		
Air consumption Note 2	ℓ/min.(ANR)	1.3 or less		3.4 or less
Port size		Rc1/4		
Pressure gauge port size		Rc1/8		
Weight	g	250		

Note 1. Flow rate of the secondary side is to be zero. If the set pressure is 0.3MPa and over, increase +0.2MPa in the set pressure.

Note 2. The primary pressure is to be 0.7MPa. Air is released to atmosphere normally.

Note 3. The range is -5 to 50°C when a digital pressure sensor is used.

How to order



Model
RP1000: Precision regulator

A Port size		B Setting pressure range		C Attachment (attached)	
8	Rc1/4	02	MAX.0.2MPa	Blank	Without attachment
		04	MAX.0.4MPa	G49P	Pressure gauge (G49D-6-*)
		07	MAX.0.7MPa	B3	L type bracket
				R2	Digital pressure sensor

Note 1: A pressure gauge and a bracket are attached.

Note 2: A pressure gauge as same pressure range as the regulator is attached.

Note 3: One R1/8 plug is attached to the product.

Discrete attachment model no.

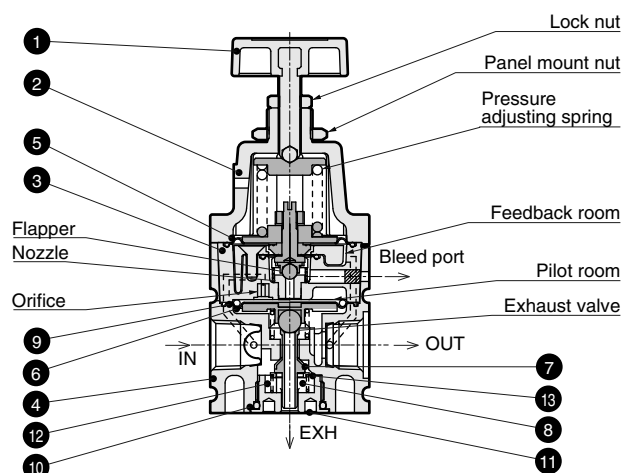
Model	Discrete attachment model no.
RP1000-8-02-G49P	G49D-6-P02
RP1000-8-04-G49P	G49D-6-P04
RP1000-8-07-G49P	G49D-6-P10
RP1000-8- ⁰² / ₀₄ / ₀₇ -B3	B131
RP1000-8- ⁰² / ₀₄ / ₀₇ -R2	PPX-R10N-6M

Clean room specifications (catalog No. CB-033S)

● Dust generation preventing structure for use in cleanrooms

RP1000 ————— P70

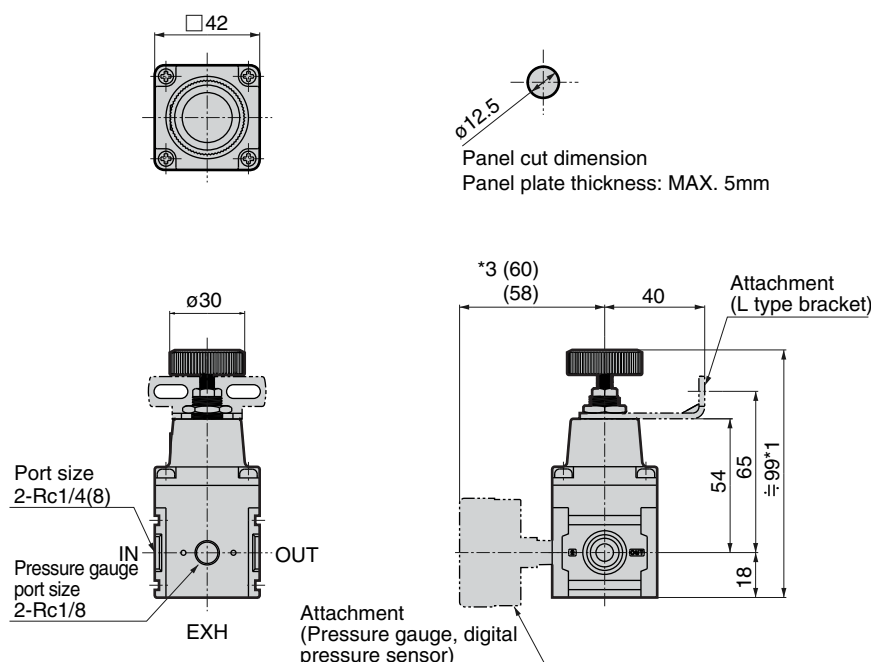
Internal structure and parts list



No.	Parts name	Material
1	Pressure adjustment knob	Polyacetal resin, stainless steel
2	Guard	Aluminum alloy die-casting
3	Pilot body assembly	Aluminum alloy die-casting, etc.
4	Body	Aluminum alloy die-casting
5	Pilot diaphragm	Hydrogen nitrile rubber
6	Main diaphragm	Hydrogen nitrile rubber
7	Valve	Hydrogen nitrile rubber, stainless steel
8	Bottom rubber	Silicon rubber
9	O ring	Nitrile rubber
10	O ring	Hydrogen nitrile rubber
11	Bottom plug	Brass, electroless nickel plating
12	Spring	Stainless steel
13	Valve adaptor	Aluminum alloy

Part No. 12 and 13 cannot be used for 0.2 or 0.4 MPa.

Dimensions



- *1: Dimension at setting pressure 0MPa
- *2: Pressure gauge, digital pressure sensor and bracket are optional.
- *3: Dimension when digital pressure sensor assembled.

Operational explanation

Air supplied from IN side is stopped its flow to OUT side by the 7 valve. Some supplied air passes through the orifice to flow into the pilot room. If the 1 pressure adjustment knob is rotated, the pressure adjustment spring is compressed, and the 5 pilot diaphragm and the flapper are pushed down to close the nozzle.

If the pressure in the pilot room rises, 6 main diaphragm is forced lower to open 7 valve, and to supply air to OUT side. The entered air is flowed into the feedback room, and functions to the 5 pilot diaphragm. If the diaphragm is forced upward until reach the pressure of regulator spring, the 5 pilot diaphragm and flapper is forced upward to open the nozzle, and extremely small air is released to the atmosphere to reduce pressure in the pilot room. At the same time, OUT side pressure functions to the 6 main diaphragm to force upward, the 7 valve is closed and set pressure is maintained.

Air is consumed and the pressure drops in OUT side, the pressure in feedback room also drops. The 5 pilot diaphragm and the flapper are forced lower to close the nozzle.

If the pressure in the pilot room rises, and the pressure functions to the 6 main diaphragm to open the 7 valve. This compensates pressure drops. If OUT side pressure increases higher than the set pressure, the pressure in feedback room also increases. The 5 pilot diaphragm and the flapper are forced upward to open the nozzle. This allows the pressure in the pilot room to decrease, and the 6 main diaphragm is forced upward to open the exhaust valve, and the surplus pressure is exhausted from EXH port in OUT side to the atmosphere.

This pilot pressure control method with precise pressure control enables precise pressure control following extremely small pressure deviation.

Repair parts list

0.2, 0.4MPa

Model no.	No.
RP1000-PILOT-ASSY	3 5
RP1000-DIAPHRAGM-ASSY	6 9
RP1000-VALVE-ASSY	7 8 10

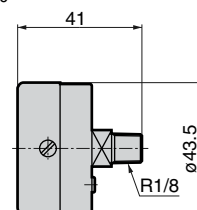
0.7MPa

Model no.	No.
RP1000-PILOT-ASSY-07	3 5
RP1000-DIAPHRAGM-ASSY-07	6 9
RP1000-VALVE-ASSY	7 8 10

The RP1000-VALVE-ASSY is common to 0.2 and 0.4 MPa models.

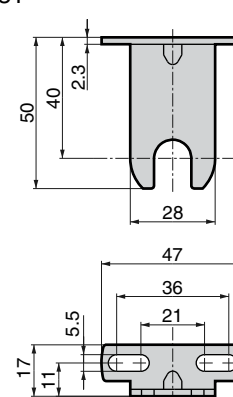
Pressure gauge

- G49D-6-
P02
P04
P10



L type bracket

- B131



Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

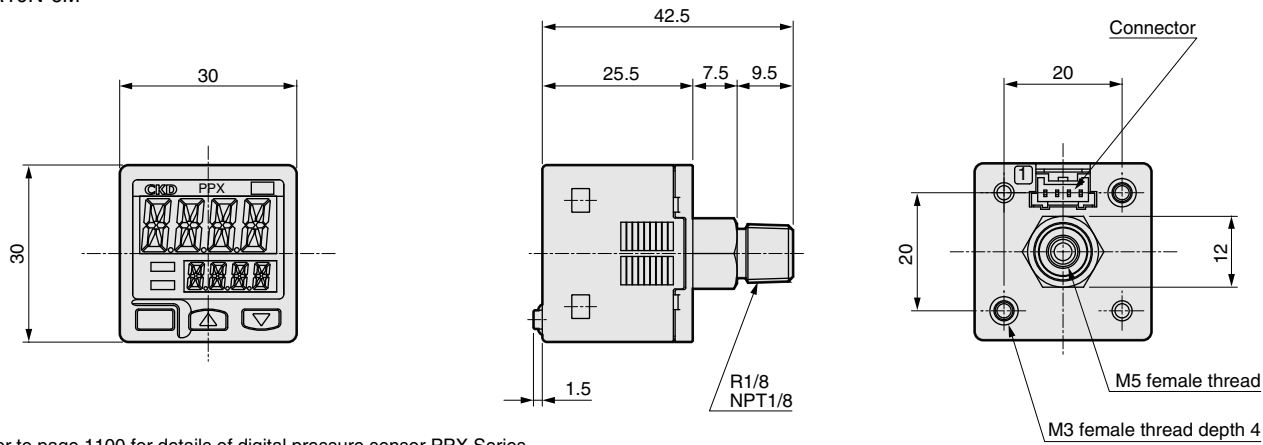
Ending

Precision regulator
F.R.L. unit

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Dimensions

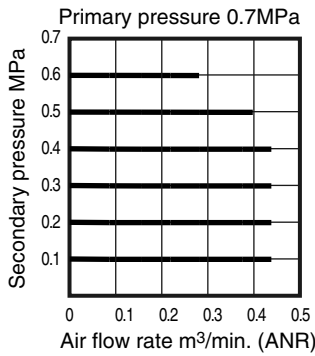
● PPX-R10N-6M



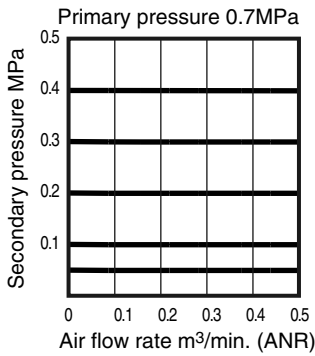
Note: Refer to page 1100 for details of digital pressure sensor PPX Series.

Flow characteristics

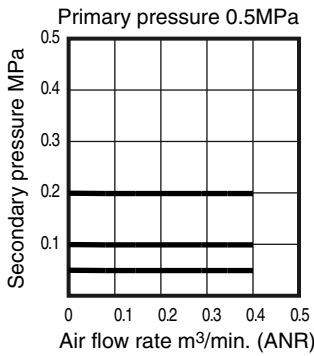
● RP1000-8-07



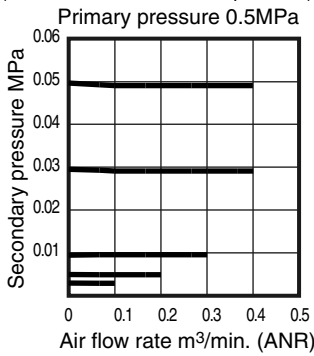
● RP1000-8-04



● RP1000-8-02

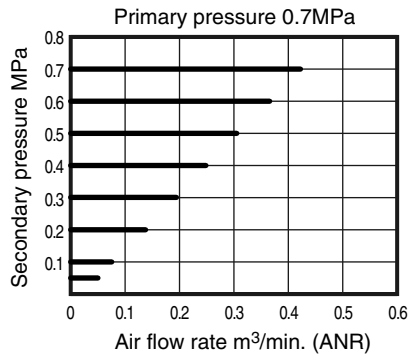


● RP1000-8-02 (Flow characteristics at low pressure)

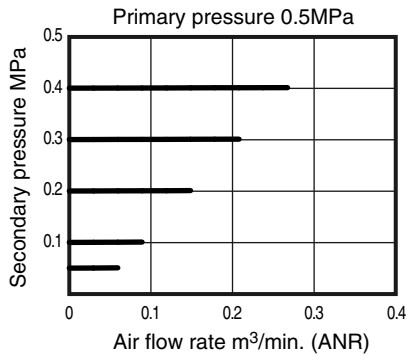


Relief flow characteristics

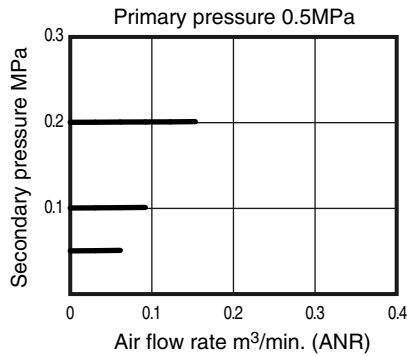
● RP1000-8-07



● RP1000-8-04

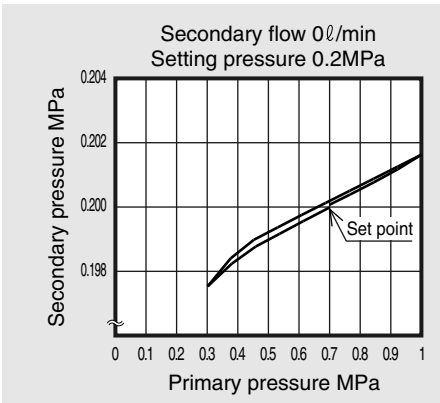


● RP1000-8-02

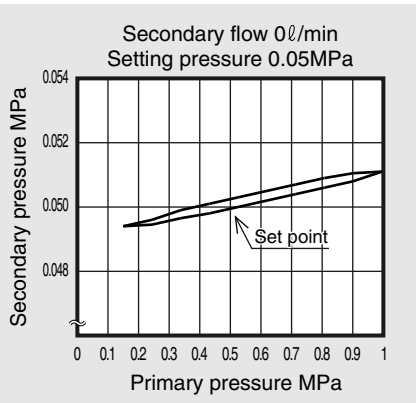
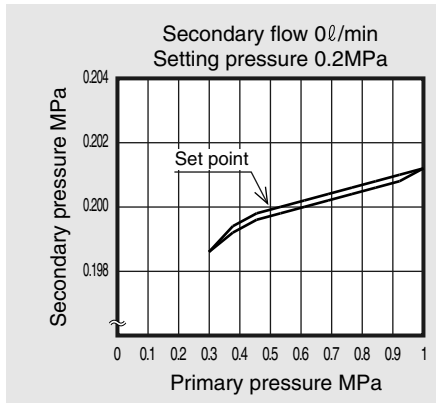


Pressure characteristics

● RP1000-8-07

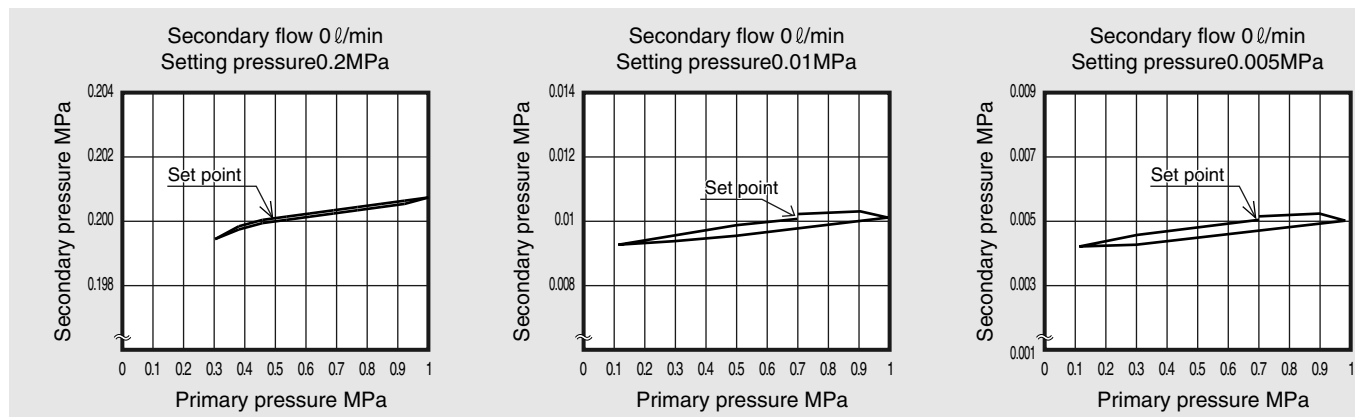


● RP1000-8-04

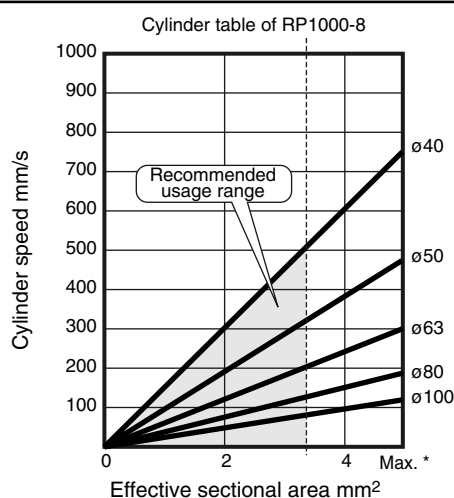


Pressure characteristics

● RP1000-8-02



Cylinder speed range of RP1000



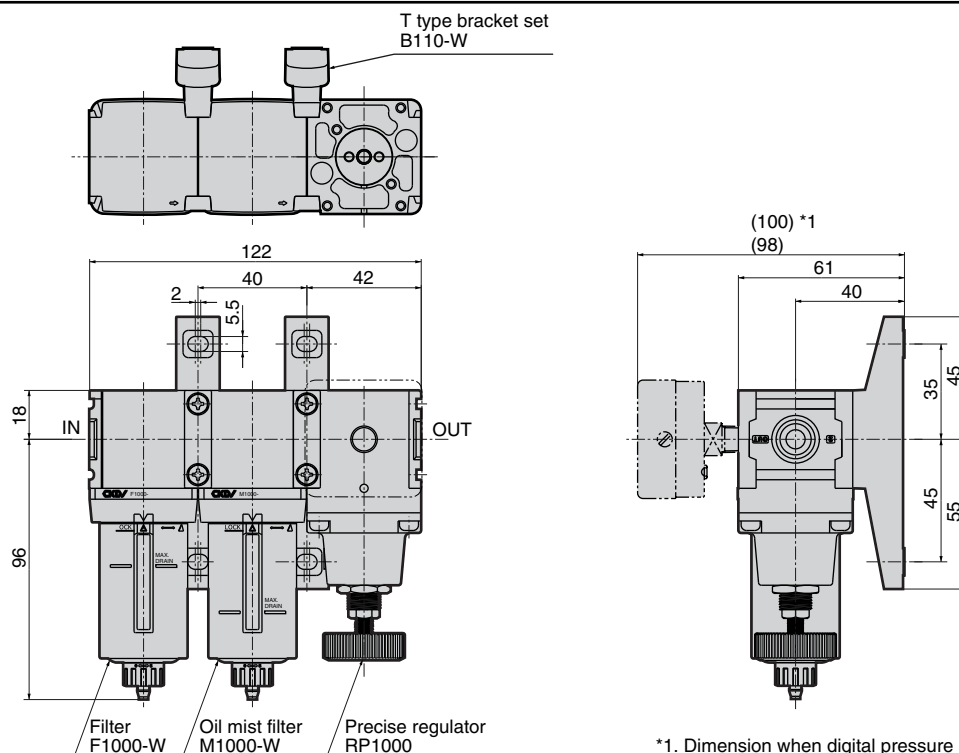
This cylinder table shows available range according to air supply / exhaust flow rate of precision regulator and required consumption flow rate at cylinder PUSH/PULL.

----- Recommended cylinder line
(70% of maximum flow rate is recommended)

* Max. cylinder line
(Cylinder directly installed)

Note: Using at a speed higher than maximum could cause relief faults.

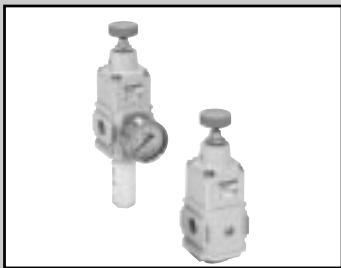
Example of precise pressure control system



*1. Dimension when digital pressure sensor assembled.

* Consult with CKD if required for assembly.

Applicable model	Filter	Oil mist filter	Precision regulator	T type bracket set
Model	F1000-W	M1000-W	RP1000	B110-W (2 pcs.)



Precision regulator

RP2000 Series

● Port size: Rc1/4, Rc3/8

JIS symbol



Specifications

Descriptions		RP2000-8-08	RP2000-10-08
Working fluid		Clean compressed air (refer to recommended air circuit on page 644)	
Max. working pressure	MPa	1.0	
Min. working pressure	MPa	Setting pressure + 0.1 Note 1	
Withstanding pressure	MPa	1.5	
Ambient temperature, fluid temperature	°C	-5 to 60 (no freezing) Note 3	
Set pressure range	MPa	0.03 to 0.85	
Sensitivity		Within 0.2% of full scale	
Repeatability		Within ±0.5% of full scale	
Air consumption	ℓ/min. (ANR)	5 or less Note 2	
Port size		Rc1/4	Rc3/8
Exhaust side port size		Rc3/8	
Pressure gauge port size		Rc1/8	
Weight	g	470	

Note 1. Flow rate of the secondary side is to be zero.

Note 2. Conditions where the primary pressure is 0.7MPa and set pressure is 0.3MPa. Consumed air is normally released to the atmosphere from the bleed port and EXH port. So, air consumption is the total of consumption volume released from the bleed port and EXH port. Air 1 ℓ/min. (ANR) or less is released from EXH port.

Note 3. The range is -5 to 50°C when a digital pressure sensor is used.

How to order

RP2000

-

8

-

08

-

G49PBE

Model

RP2000: Precision regulator

A

Port size

8	Rc1/4
10	Rc3/8

B

Setting pressure range

08	MAX.0.85MPa
----	-------------

C

Attachment (attached)

Blank	Without attachment
G49P	Pressure gauge
B	C type bracket
E	Silencer
R2	Digital pressure sensor

Note 1: If the port size Rc1/2 is required, use a piping adapter set (model no.: A400-15).

Note 2: Attachment is attached.

Note 3: The piping adapter set and C bracket cannot be used together.

Note 4: One R1/8 plug is attached to the product.

Discrete attachment model no.

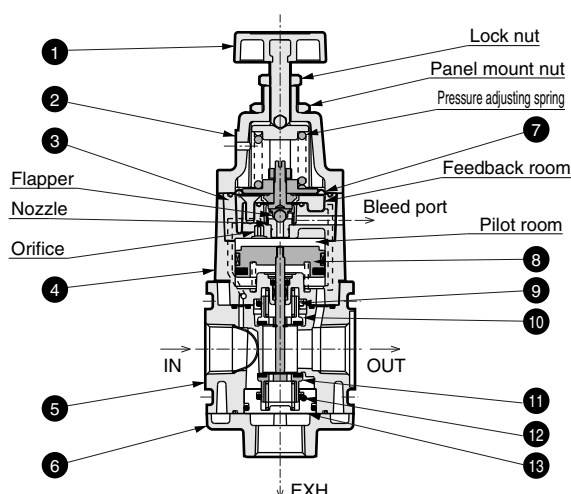
Attachment symbol	Discrete attachment model no.
G49P	G49D-6-P10
B	B220
E	SLW-10A
R2	PPX-R10N-6M

Clean room specifications (catalog No. CB-033S)

● Dust generation preventing structure for use in cleanrooms

RP2000 ————— P70

Internal structure and parts list



No.	Parts name	Material
1	Pressure adjustment knob	Polyacetal resin, stainless steel
2	Guard	Aluminum alloy die-casting
3	Pilot body assembly	Aluminum alloy die-casting, etc.
4	Top body assembly	Aluminum alloy die-casting, etc.
5	Body	Aluminum alloy die-casting
6	Exhaust adaptor	Aluminum alloy die-casting
7	Pilot diaphragm	Hydrogen nitrile rubber
8	Piston assembly	Aluminum, stainless steel, etc.
9	O ring	Nitrile rubber
10	Exhaust valve	Brass, hydrogen nitrile rubber
11	Air supply valve	Brass, hydrogen nitrile rubber
12	O ring	Nitrile rubber
13	Bottom cap	Brass

Operational explanation

Air supplied from IN side is stopped its flow to OUT side by the air supply valve. Some supplied air passes through the orifice to flow into the pilot room.

If the ① pressure adjustment knob is rotated, the pressure adjustment spring is compressed, and the ⑦ pilot diaphragm and the flapper are pushed down to close the nozzle.

If the pressure in the pilot room rises, piston is forced lower to open ① air supply valve, and to supply air to OUT side. The entered air is flowed into the feedback room, and functions to the ⑦ pilot diaphragm. If the diaphragm is forced upward until reach the pressure of regulator spring, the ⑦ pilot diaphragm and flapper is forced upward to open the nozzle, and extremely small air is released to the atmosphere to reduce pressure in the pilot room.

At the same time, OUT side pressure functions to the piston to force upward, the ⑪ air supply valve is closed and set pressure is maintained.

Air is consumed and the pressure drops in OUT side, the pressure in feedback room also drops. The ⑦ pilot diaphragm and the flapper are forced lower to close the nozzle.

If the pressure in the pilot room rises, and the pressure functions to the piston to open the ⑪ air supply valve. This compensates pressure drops.

If OUT side pressure increases higher than the set pressure, the pressure in feedback room also increases. The ⑦ pilot diaphragm and the flapper are forced upward to open the nozzle.

This allows the pressure in the pilot room to decrease, and the piston is forced upward to open the ⑩ exhaust valve, and the surplus pressure is exhausted from EXH port in OUT side to the atmosphere.

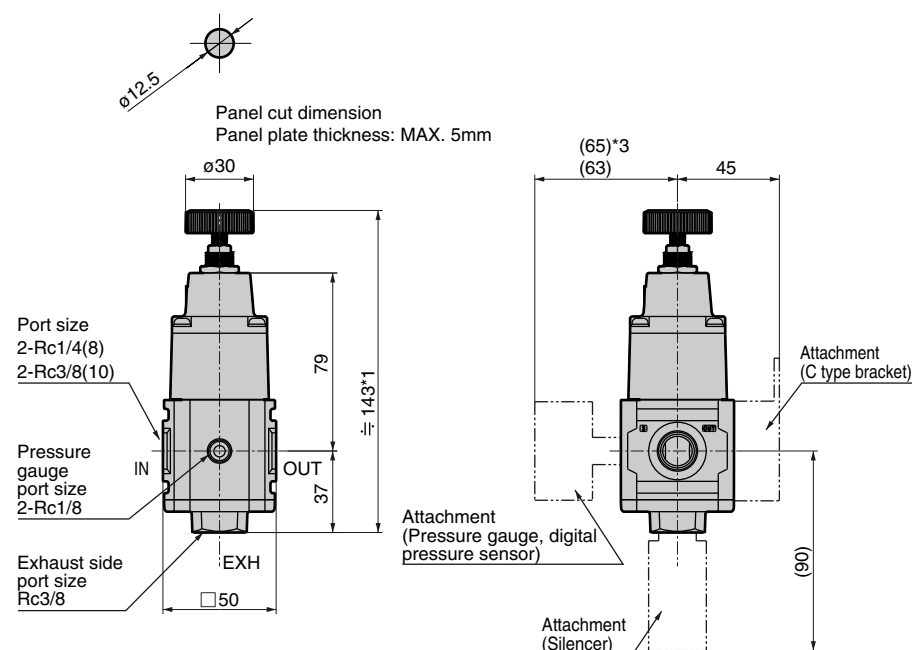
This pilot pressure control method with precise pressure control enables precise pressure control following extremely small pressure deviation.

Repair parts list

No.	Parts name	Model no.
3	Pilot body assembly	RP2000-PILOT-ASSY
7	Pilot diaphragm	
4	Top body assembly	RP2000-TOP-BODY-ASSY
11	Air supply valve	RP2000-BTM-VALVE-ASSY
12	O ring	
13	Bottom cap	

Note: Part no. (8), (9) and (10) are contained in top body assembly (4).

Dimensions



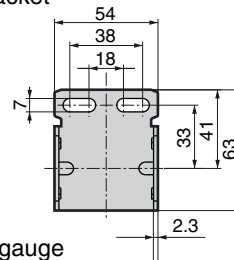
*1: Dimension at setting pressure OMPa

*2: Pressure gauge, digital pressure sensor, C type bracket and silencer are optionally attached.

*3: Dimension when digital pressure sensor assembled.

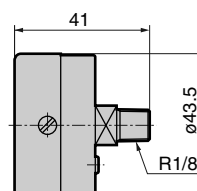
C type bracket

• B220



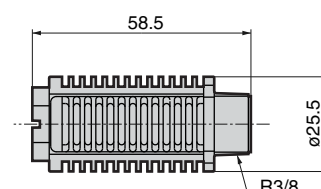
Pressure gauge

• G49D-6-P10



Silencer

• SLW-10A



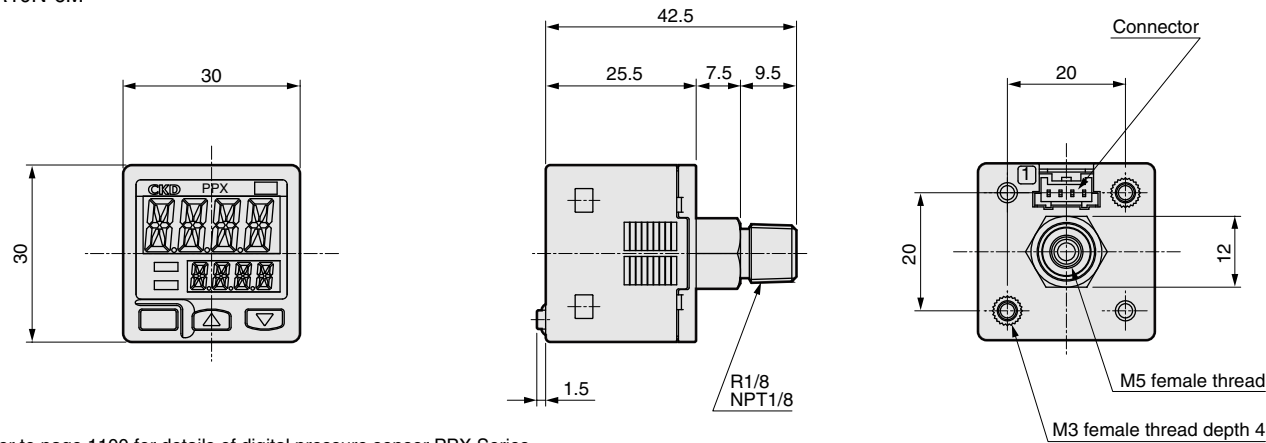
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Precision regulator
F.R.L. unit

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Dimensions

● PPX-R10N-6M

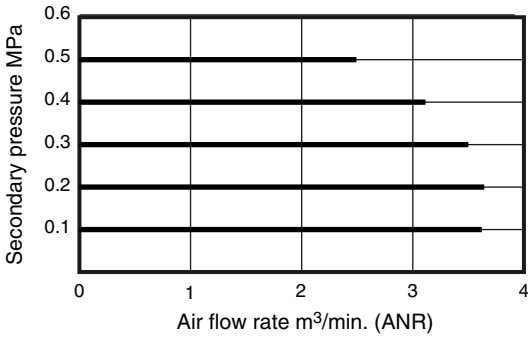


Note: Refer to page 1100 for details of digital pressure sensor PPX Series.

Flow characteristics

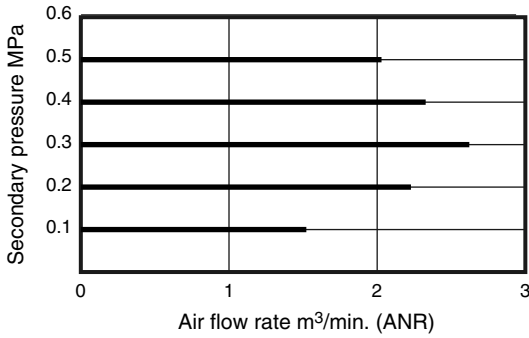
● RP2000-10-08

Primary pressure 0.7MPa



● RP2000-8-08

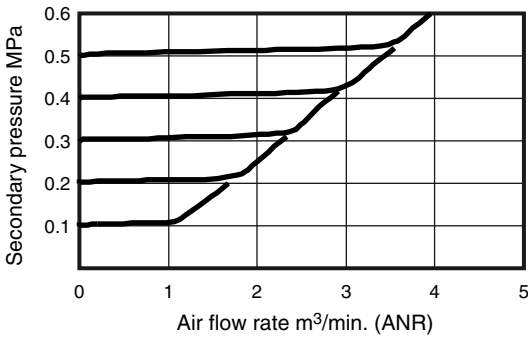
Primary pressure 0.7MPa



Relief flow characteristics

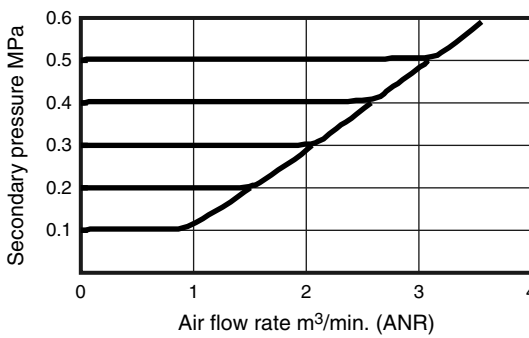
● RP2000-10-08

Primary pressure 0.7MPa



● RP2000-8-08

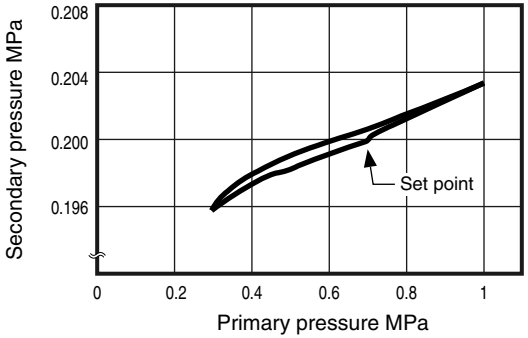
Primary pressure 0.7MPa



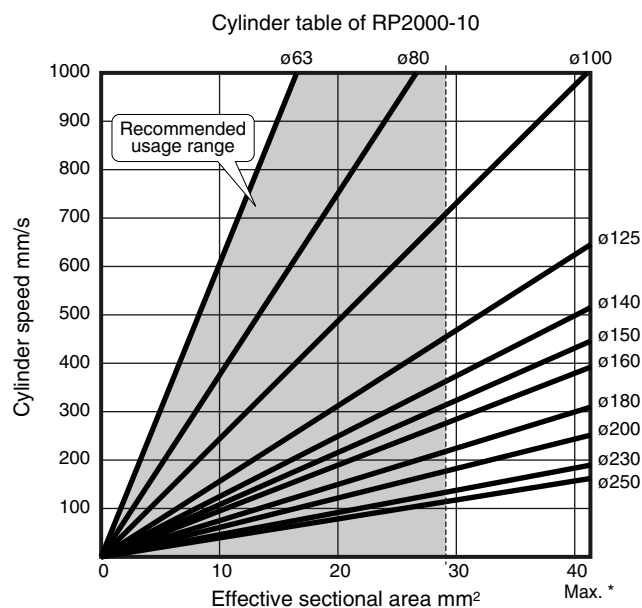
Pressure characteristics

● RP2000-* -08

Secondary flow 0 ℓ/min



Cylinder speed range of RP2000

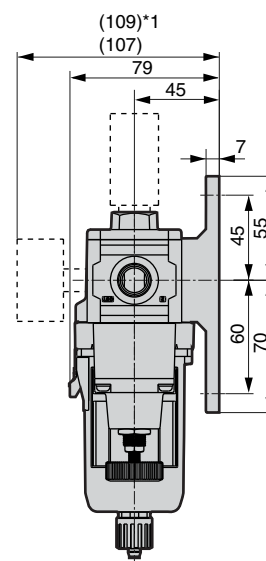
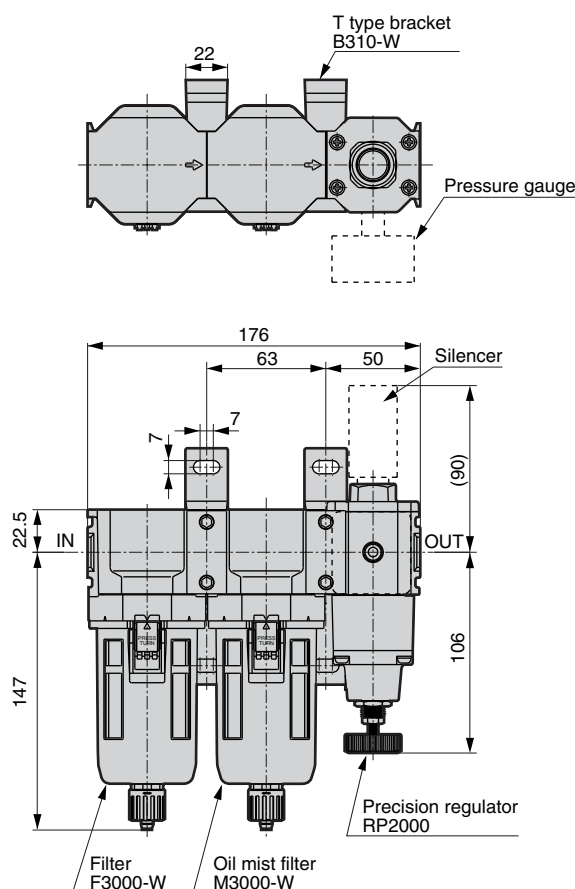


This cylinder table shows available range according to air supply / exhaust flow rate of precision regulator and required consumption flow rate at cylinder PUSH/PULL.

----- Recommended cylinder line
(70% of maximum flow rate is recommended)

* Max. cylinder line
(Cylinder directly installed)

Example of precise pressure control system



*1. Dimension when digital pressure sensor assembled.

* Consult with CKD if required for assembly.

Applicable model	Filter	Oil mist filter	Precision regulator	T type bracket set
Model	F3000-W	M3000-W	RP2000	B310-W (2 pcs.)

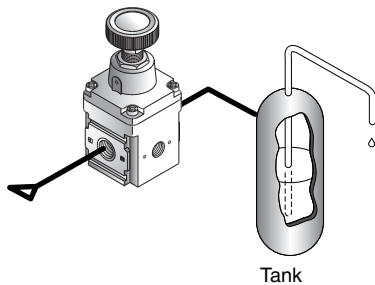
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Precision regulator
F.R.L. unit

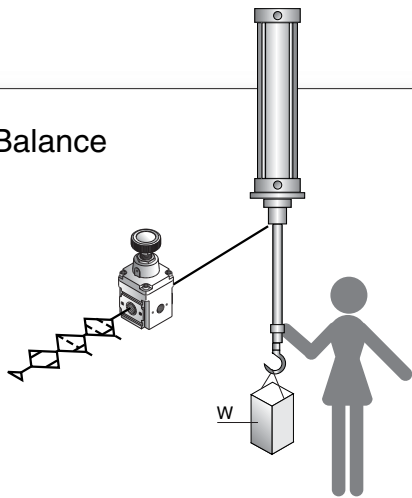
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending

Major applications

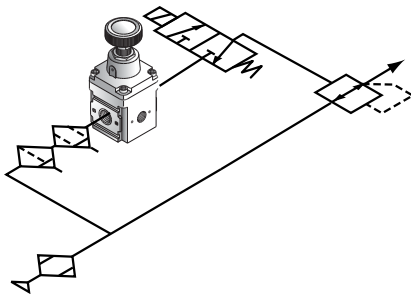
■ Liquid discharge control



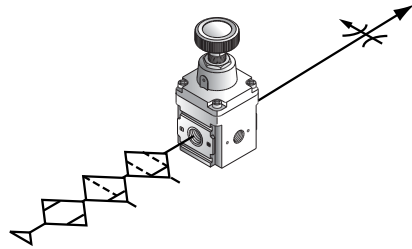
■ Balance



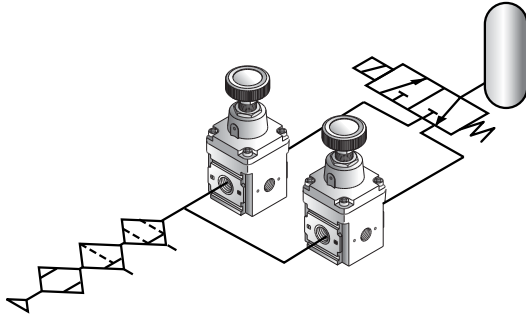
■ Pilot pressure control



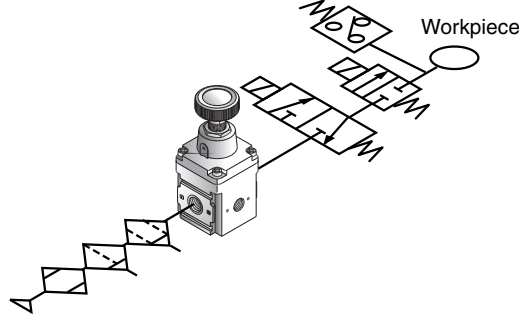
■ Extremely low pressure blow



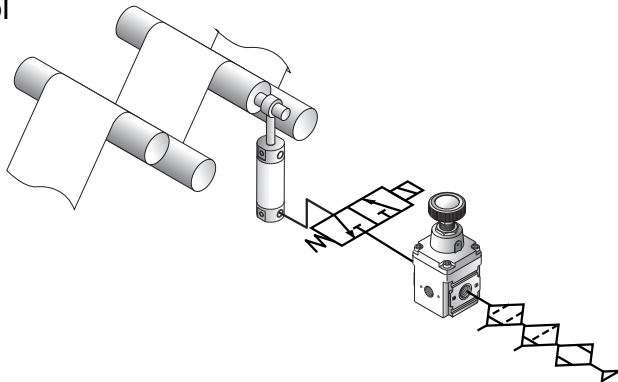
■ Quick pressure adjustment in tank



■ Leak test



■ Tension control



MEMO

Refrigerating type dryer	
Desiccant type dryer	
High polymer membrane type dryer	
Air filter	
Auto. drain / others	
F.R.L. (Module unit)	
F.R.L. (Separate)	
Compact F.R.	
Precise regulator	
F.R.L. (Related products)	
Clean F.R.	
Electro pneumatic regulator	
Air booster	
Speed control valve	
Silencer	
Check valve / others	
Joint / tube	
Vacuum filter	
Vacuum regulator	
Suction plate	
Magnetic spring buffer	
Mechanical pressure SW	
Electronic pressure SW	
Contact / close contact conf. SW	
Air sensor	
Pressure SW for coolant	
Small flow sensor	
Small flow controller	
Flow sensor for air	
Flow sensor for water	
Total air system	
Total air system (Gamma)	
Ending	

Precision regulator
F.R.L. unit

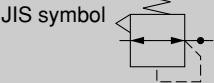
Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact conf. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)
Ending



Precision regulator

2100 Series

Enabling high precision pressure control within 0.01 to 0.25 MPa range
Port size: Rc1/4, Rc3/8



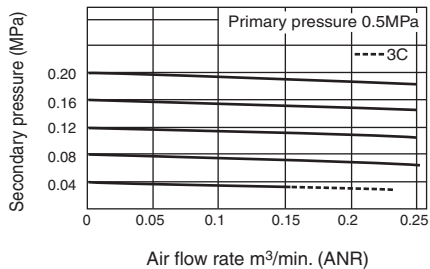
Specifications

Descriptions	2100-2C2100-2C/3C-L
Working fluid	Compressed air
Max. working pressure MPa	1.0
Withstanding pressure MPa	1.5
Fluid temperature (ambient temperature) °C	5 to 65
Set pressure range MPa	0.01 to 0.25
Relief starting MPa	Setting pressure plus 0.005
Constant bleeding rate ℓ/min. (ANR)	2 or less
Port size Rc	1/4, 3/8
Product weight kg	0.6

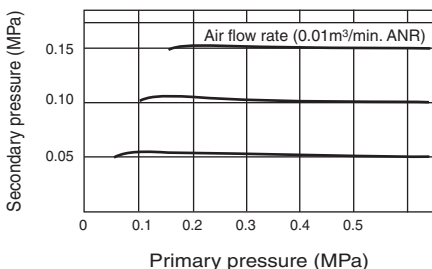
Ozone specifications (Ending 19)

2100 P11

Flow characteristics

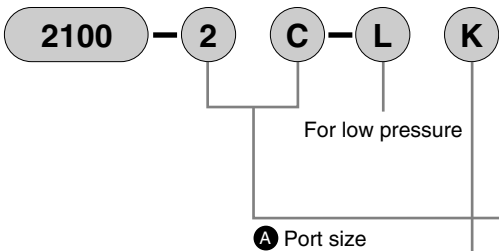


Pressure characteristics



How to order

● Precision regulator



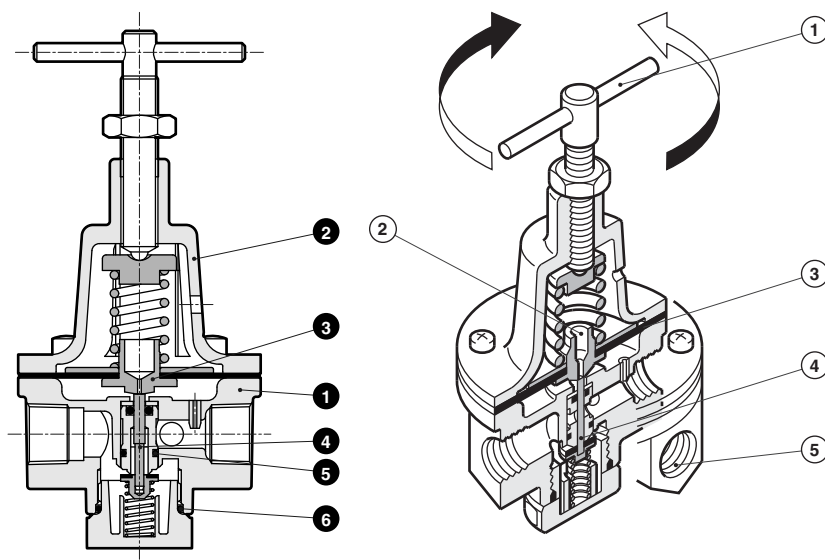
Note on model no. selection

- Note 1: "K", "P", "G" and "B" can be combined.
Note 2: A pressure gauge, G59D-8-P02 MPa is attached.
Refer to related components on page 664 for the specifications on pressure gauge.
Note 3: A bracket, No. 6503 is attached.
Note 4: Consult with CKD if pressure gauge and bracket assembly products are required.
Note 5: If NPT port is required, do not indicate nominal size C. (example) 2100-2-L

Symbol	Descriptions	
A Port size		
2C	Rc1/4	
3C	Rc3/8	
B Option		
Regulator	Blank	None
	K	Plastic knob
	P	Panel mount
Attachment	Blank	None
	G	Pressure gauge
	B	Bracket

Internal structure and parts list

● 2100



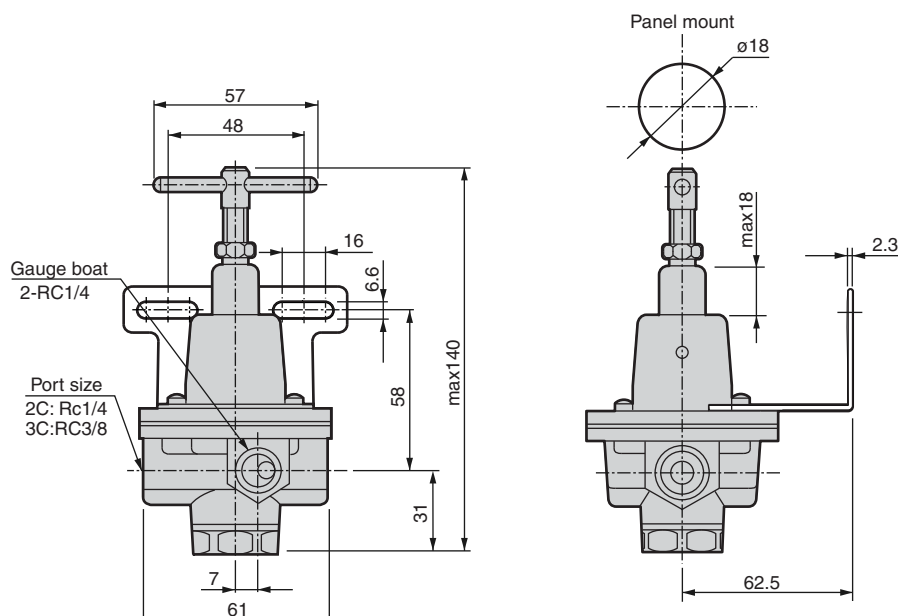
No.	Parts name	Material
1	Body	Zinc die casting
2	Guard	Zinc die casting
3	Diaphragm assembly	Brass, steel, nitrile rubber
4	Valve assembly	Stainless steel, brass, hydrogen nitrile rubber
5	O ring	Nitrile rubber
6	O ring	Nitrile rubber

Repair parts list

No.	Parts name	Model no.
3	Diaphragm assembly	2100-DIAPHRAGM-ASSY
4	Valve assembly	2100-VALVE-ASSY

Dimensions

● 2100



Functional explanation

- (1) Adjusting screw
Adjusting screw to adjust secondary pressure is turned clockwise to increase pressure.
- (2) Relief valve
Metal seal relief valve is used to obtain outstanding pressure characteristic.
- (3) Diaphragm
The balance between the force of pressure adjusting spring and applied to diaphragm bottom (secondary pressure) are maintained. The valve stem is opened and closed to supply accurate and constant set pressure to the secondary side.
- (4) Valve combination
If the balance between the diaphragm and the pressure adjusting spring turns to off-balance, compressed air on the primary side is supplied to the secondary side as much as required.
- (5) Gauge port
Designed the gauge port in the position near to OUT side rather than the center, the secondary pressure is measured accurately. Two gauge ports are provided.

⚠ Safety precautions

- Note 1: Turn the pressure adjustment handle clockwise to increase the secondary pressure, and counterclockwise to lower the pressure.
- Note 2: Start setting after checking the primary pressure.
- Note 3: Flash the pipe before connecting the regulator.
- Note 4: Prevent sealing tape from entering into the pipe.
- Note 5: When pressure adjustment problems, check if possible foreign matter adhesion or scratch, etc., on O ring valve stem assembly.

Refrigerating type dryer
Desiccant type dryer
High polymer membrane type dryer
Air filter
Auto. drain / others
F.R.L. (Module unit)
F.R.L. (Separate)
Compact F.R.
Precise regulator
F.R.L. (Related products)
Clean F.R.
Electro pneumatic regulator
Air booster
Speed control valve
Silencer
Check valve / others
Joint / tube
Vacuum filter
Vacuum regulator
Suction plate
Magnetic spring buffer
Mechanical pressure SW
Electronic pressure SW
Contact / close contact cont. SW
Air sensor
Pressure SW for coolant
Small flow sensor
Small flow controller
Flow sensor for air
Flow sensor for water
Total air system
Total air system (Gamma)

Ending

Precision regulator
F.R.L. unit