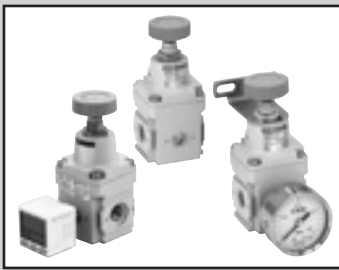
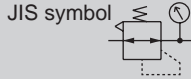


F.R.L.  
F.R.  
F (Filtr)  
R (Reg)  
L (Lub)  
Drain  
Separ  
Mech  
Press SW  
Res press  
exh valve  
SlowStart  
Anti-bac/Bac-  
remove Filtr  
Film  
Resist FR  
Oil-Prohr  
Med  
Press FR  
No Cu/  
PTFE FRL  
Outdrs FRL  
Adapter  
Joiner  
Press  
Gauge  
CompFRL  
LgFRL  
PrecsR  
VacF/R  
Clean FR  
ElecPneur  
AirBoost  
Speed Ctrl  
Silncr  
CheckV/  
other  
Fit/Tube  
Nozzle  
Air Unit  
PrecsCompn  
Electro  
Press SW  
ContactSW  
AirSens  
PresSW  
Cool  
Air Flo  
Sens/Ctrl  
WaterRtSens  
TotAirSys  
(Total Air)  
TotAirSys  
(Gamma)  
Gas  
generator  
RefrDry  
DesicDry  
HiPolymDry  
MainFiltr  
Dischrg  
etc  
Ending



# Precision regulator RP1000 Series

● Port size: 1/4



## Specifications

Item	RP1000-8-02	RP1000-8-04	RP1000-8-07
Working fluid	Compressed clean air (refer to recommended air circuit on page 527)		
Max. working pressure MPa	1.0		
Min. working pressure MPa	Set pressure +0.1 *1		
Proof pressure MPa	1.5		
Ambient/fluid temperatures °C	-5 to 60 (no freezing) *3		
Set pressure 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 *2 l/min(ANR)	1.3 or less		3.4 or less
Port size *4 Rc, NPT, G			1/4
Pressure gage port size Rc, NPT, G			1/8
Weight g	250		

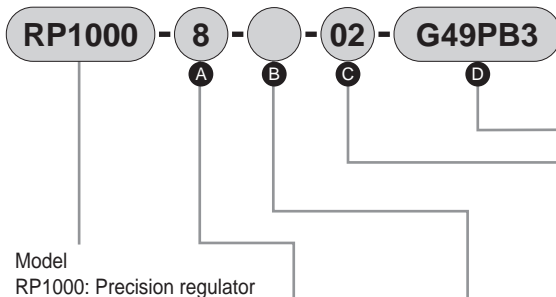
\*1: Flow rate of the secondary side is to be zero. For RP1000-8-04, if the set pressure is 0.3 MPa and over, increase +0.2 MPa in the set pressure.

\*2: Conditions where the primary pressure is 0.7MPa. Air is released to the atmosphere normally.

\*3: -5 to 50°C when using a digital pressure sensor.

\*4: When selecting G thread, the OUT side screw depth is 6 mm.

## How to order



A Port size	B Port thread/pressure indication	C Set pressure range	D Attachment (attachedwith)
8 1/4	Blank Rc thread, MPa display N NPT thread, psi display *4 G G thread, bar display	02 MAX.0.2MPa 04 MAX.0.4MPa 07 Max. 0.7 MPa	Blank Without attachment G49P Pressure gauge (G49D-6-□) B3 L-bracket R 2 Digital pressure sensor

\*1: A pressure gauge, a digital pressure sensor and a bracket are attached.

\*2: A pressure gauge with the same pressure range as the regulator is attached.

\*3: One 1/8 plug is attached with the product...(G thread is not included.)

\*4: In compliance with the Measurement Act, the psi display cannot be used in Japan.

\*5: The pressure gauge and digital pressure sensor (included) can be selected only when Port thread is Rc thread.

## Discrete attachment model No.

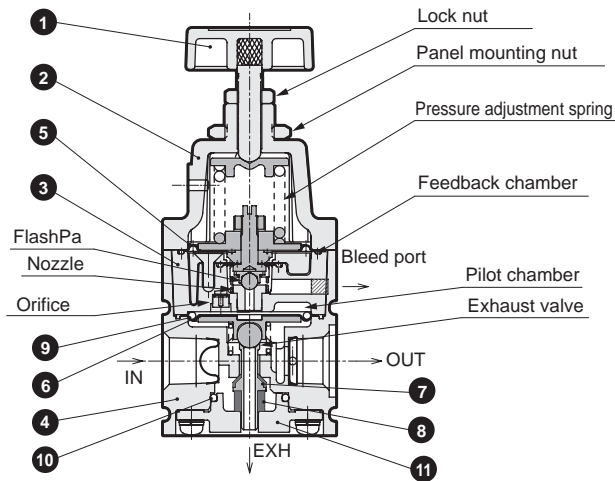
Model	Discrete attachment model No.
RP1000-8-02-G49P	G49D-6-P02
RP1000-8-04-G49P	G49D-6-P04
RP1000-8-07-G49P	G49D-6-P10
RP1000-8- <sup>02</sup> / <sub>04</sub> -B3	B131
RP1000-8- <sup>02</sup> / <sub>04</sub> -R2	PPX-R10N-6M

## Clean-room specifications (Catalog No. CB-033SA)

● Anti-dust generation structure for use in cleanrooms

RP1000-.....- P70

### Internal structure and parts list



Part No.	Part name	Material
1	Pressure adjustment knob	PolyacetalResin, stainless steel
2	Cover	Aluminum alloy die-casting
3	Pilot body assembly	Aluminum alloy die-casting, etc.
4	Body	Aluminum alloy die-casting
5	Pilot diaphragm	Hydrogenated nitrile rubber
6	Main diaphragm	Hydrogenated nitrile rubber
7	Valve	Hydrogenated nitrile rubber, Stainless steel
8	Bottom rubber	Silicone rubber
9	O-ring	Nitrile rubber
10	O-ring	Hydrogenated nitrile rubber
11	Bottom plug	Polybutylene terephthalate resin

### Operational explanation

Air supplied from the IN side is prevented from flowing to the OUT side by the 7 valve. Some supplied air passes through the orifice to flow into the pilot chamber. When 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 chamber rises, the 6 main diaphragm is forced lower to open the 7 valve, and to supply air to the OUT side. The intake air flows into the feedback chamber, and works on the 5 pilot diaphragm. If the diaphragm is forced upward until the air reaches the pressure of the regulator spring, the 5 pilot diaphragm and flapper are forced upward to open the nozzle, and an extremely small amount of air is released to the atmosphere to reduce pressure in the pilot chamber. At the same time, the OUT side pressure works on the 6 main diaphragm to force it upward, and the 7 valve is closed and the set pressure is maintained. When the air is consumed and the pressure drops on the OUT side, the pressure in the feedback chamber also drops. The 5 pilot diaphragm and the flapper are forced lower to close the nozzle. Pressure in the pilot chamber rises, causing the 6 main diaphragm to operate and open the 7 valve, compensating for any drop in pressure. If the OUT side pressure increases further than the set pressure, the pressure in the feedback chamber also increases. The 5 pilot diaphragm and the flapper are forced upward to open the nozzle. This allows the pressure in the pilot chamber 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 using the nozzle and flapper can follow up a minimal pressure change, which enables the high precision pressure control.

### Consumable parts list

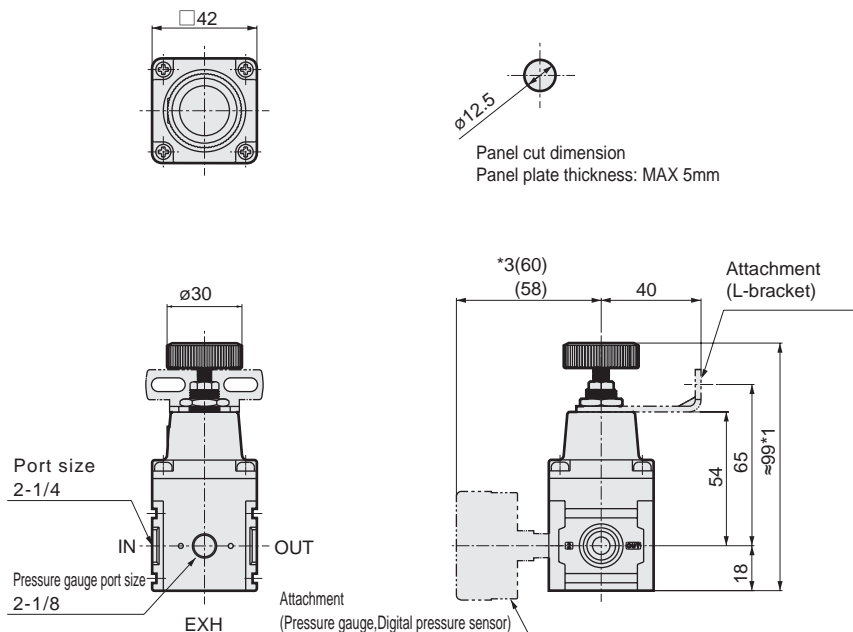
For 0.2 and 0.4 MPa

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

For 0.7 MPa

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

### Dimensions

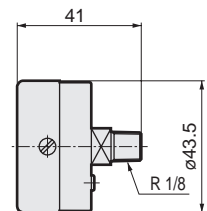


- \*1: Dimensions at the set pressure of 0MPa
- \*2: A pressure gauge, a digital pressure sensor and a bracket are included options.
- \*3: Dimensions when the digital pressure sensor is assembled.

### Pressure gauge

• G49D-6-  
P02  
P04  
P10

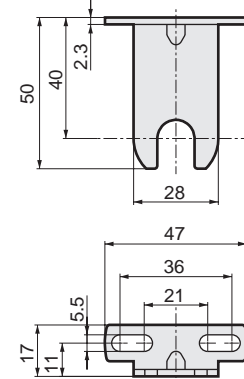
Weight: 86 g



### L-bracket

• B131

Weight: 29 g  
Material: Steel  
Nickel plated

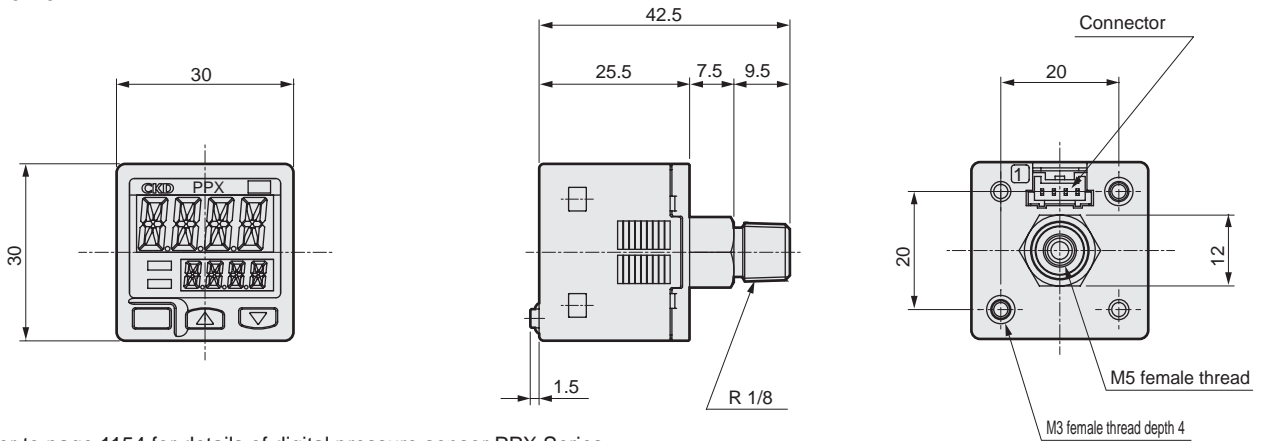


F.R.L.
F.R.
F (Filtr)
R (Reg)
L (Lub)
Drain Separ
Mech Press SW
Res press exh valve
SlowStart
Anti-bac/Bac-remove Filtr
Film Resist FR
Oil-Prohr
Med Press FR
No Cu/ PTFE FRL
Outdris FRL
Adapter Joiner
Press Gauge
CompFRL
LgFRL
PrecsR
VacF/R
Clean FR
ElecPneuR
AirBoost
Speed Ctrl
Silncr
CheckV/ other
Fit/Tube
Nozzle
Air Unit
PrecsCompn
Electro Press SW
ContactSW
AirSens
PresSW Cool
Air Flo Sens/Ctrl
WaterRISens
TotAirSys (Total Air)
TotAirSys (Gamma)
Gas generator
RefrDry
DesicDry
HiPolymDry
MainFiltr Dischrg etc
Ending

# RP1000 Series

## F.R.L. Dimensions

F.R. ● PPX-R10N-6M



Note: Refer to page 1154 for details of digital pressure sensor PPX Series.

Weight: 40 g

## Flow characteristics

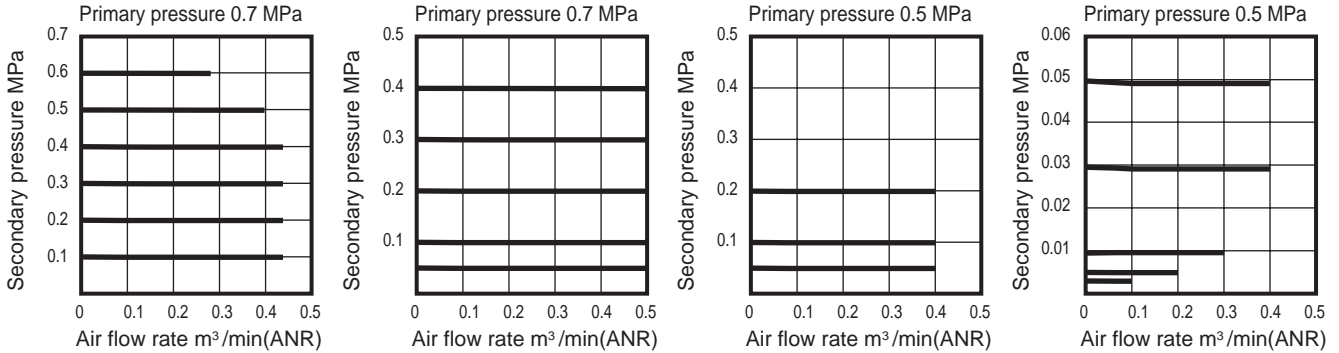
● RP1000-8-07

● RP1000-8-04

● RP1000-8-02

● RP1000-8-02

(Flow characteristics at low pressure)

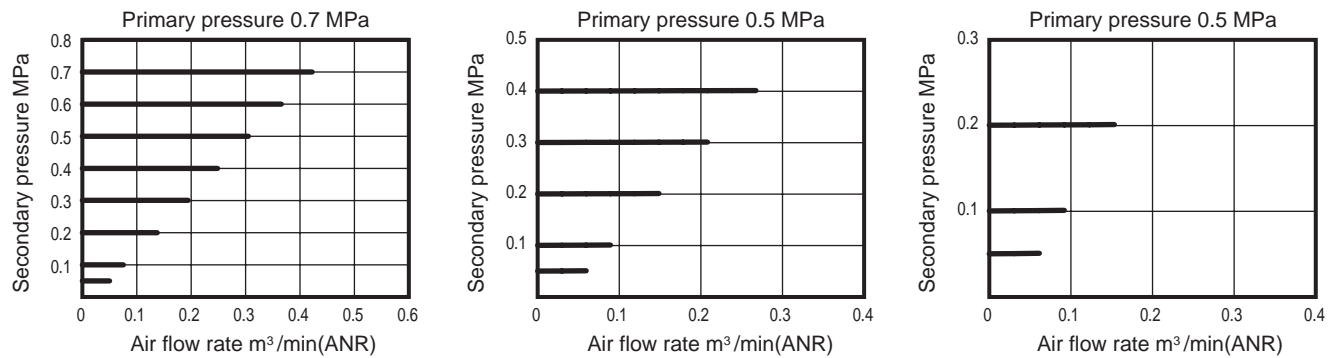


## Relief flow characteristics

● RP1000-8-07

● RP1000-8-04

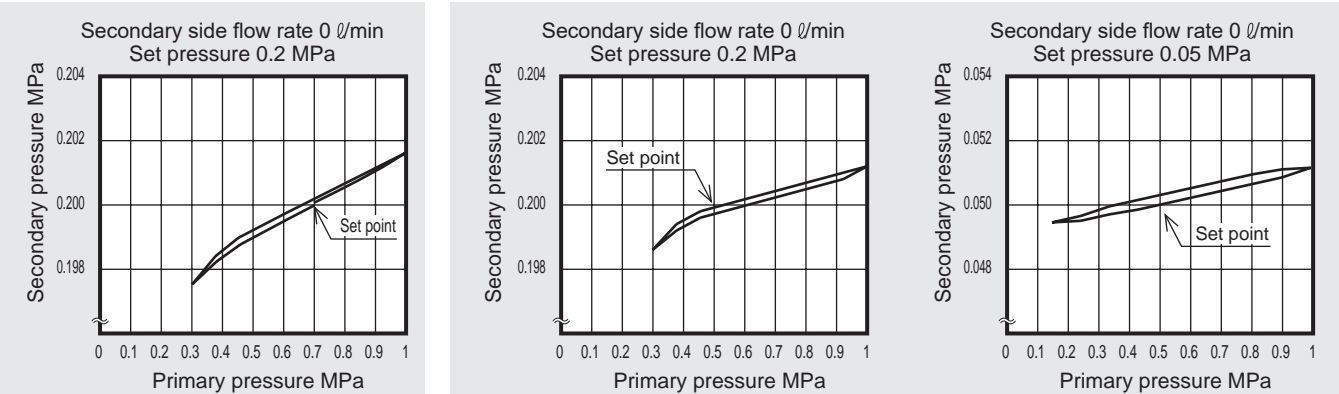
● RP1000-8-02



## Pressure characteristics

● RP1000-8-07

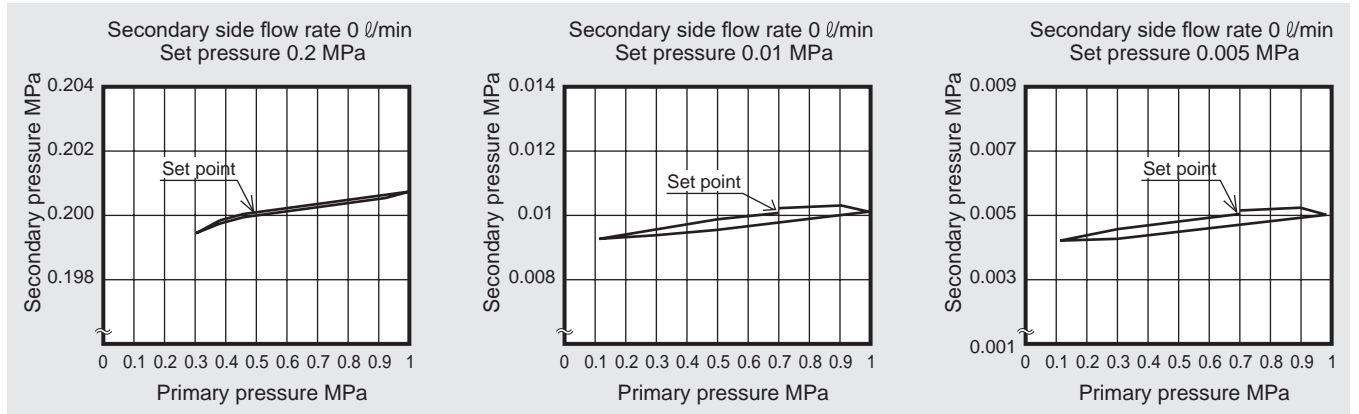
● RP1000-8-04



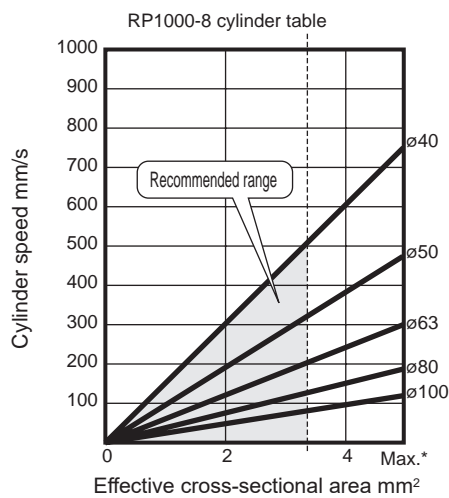
- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain Separ
- Mech Press SW
- Res press exh valve
- SlowStart
- Anti-bac/remove Filtr
- Film Resist FR
- Oil-Prohr
- Med Press FR
- No Cu/PTFE FRL
- Outdrs FRL
- Adapter Joiner
- Press Gauge
- CompFRL
- LgFRL
- PrecsR
- VacF/R
- Clean FR
- ElecPneUR
- AirBoost
- Speed Ctrl
- Silncr
- CheckV/other
- Fit/Tube
- Nozzle
- Air Unit
- PrecsCompn
- Electro Press SW
- ContactSW
- AirSens
- PresSW Cool
- Air Flo Sens/Ctrl
- WaterRtSens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Gas generator
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

### Pressure characteristics

● RP1000-8-02



### Cylinder speed range of RP1000



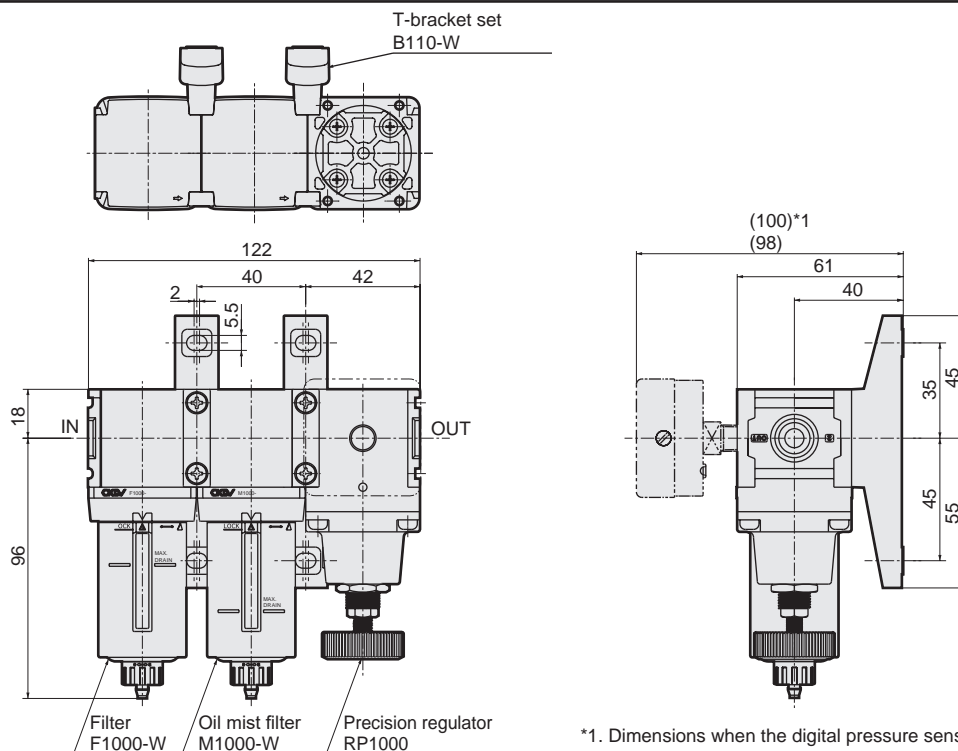
This cylinder table shows the available range according to the air supply and exhaust flow rate of the precision regulator and the required consumption flow rate at the cylinder PUSH/PULL.

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

\* Max. cylinder line  
(Cylinder directly installed)

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

### Example of precise pressure control system



Compatible model	Filter	Oil mist filter	Precision regulator	T-bracket set
Product model No.	F1000-W	M1000-W	RP1000	B110-W (2 pcs.)

- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain Separ
- Mech Press SW
- Res press exh valve
- SlowStart
- Anti-bac/Bac-remove Filtr
- Film Resist FR
- Oil-ProhR
- Med Press FR
- No Cu/ PTFE FRL
- Outdrs FRL
- Adapter Joiner
- Press Gauge
- CompFRL
- LgFRL
- PrecsR**
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- Speed Ctrl
- Silncr
- CheckV/ other
- Fit/Tube
- Nozzle
- Air Unit
- PresCompn
- Electro Press SW
- ContactSW
- AirSens
- PresSW Cool
- Air Flo Sens/Ctrl
- WaterRISens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Gas generator
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending



# Precision regulator RP2000 Series

● Port size: 1/4 3/8

JIS symbol



## Specifications

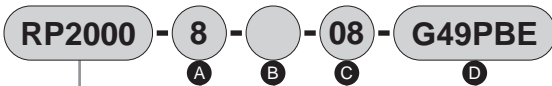
Item	RP2000-8-08	RP2000-10-08
Working fluid	Compressed clean air (refer to recommended air circuit on page 527)	
Max. working pressure MPa	1.0	
Min. working pressure MPa	Set pressure +0.1 *1	
Proof pressure MPa	1.5	
Ambient/fluid temperatures °C	-5 to 60 (no freezing) *3	
Set pressure MPa	0.03 to 0.85	
Sensitivity	Within 0.2% of full scale	
Repeatability	Within ±0.5% of full scale	
Air consumption /min (ANR) ℓ	5 or less *2	
Port size	Rc1/4	Rc3/8
Exhaust side port size Rc, NPT, G	3/8	
Pressure gage port size Rc, NPT, G	1/8	
Weight g	470	

\*1: Flow rate of the secondary side is to be zero.

\*2: Conditions where the primary pressure is 0.7 MPa and set pressure is 0.3 MPa. 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.

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

## How to order



Model  
RP2000: Precision regulator

A	Port size	B	Port thread/pressure indication	C	Set pressure range	D	Attachment
8	1/4	Blank	Rc thread, MPa display	08	MAX.0.85MPa	Blank	Without attachment
10	3/8	N	NPT thread, psi display *5			G49P	Pressure gauge
		G	G thread, bar display			B	C-bracket
						E	Silencer
						R 2	Digital pressure sensor

\*1: If a 1/2 port size is required, use a piping adapter set (model No.: A400-15\*-W).

\*2: Attachment is included.

\*3: The pipe adaptor set and C-bracket cannot be used together.

\*4: One 1/8 plug is included with the product. (G thread is not included.)

\*5: In compliance with the Measurement Act, the psi display cannot be used in Japan.

\*6: The pressure gauge, silencer and digital pressure sensor (included) can be selected only when Port thread is Rc thread.

## Discrete attachment model No.

Attachment code	Discrete attachment model No.
G49P	G49D-6-P10
B	B220
E	SLW-10A
R 2	PPX-R10N-6M

Clean-room specifications (Catalog No. CB-033SA)

● Anti-dust generation structure for use in cleanrooms

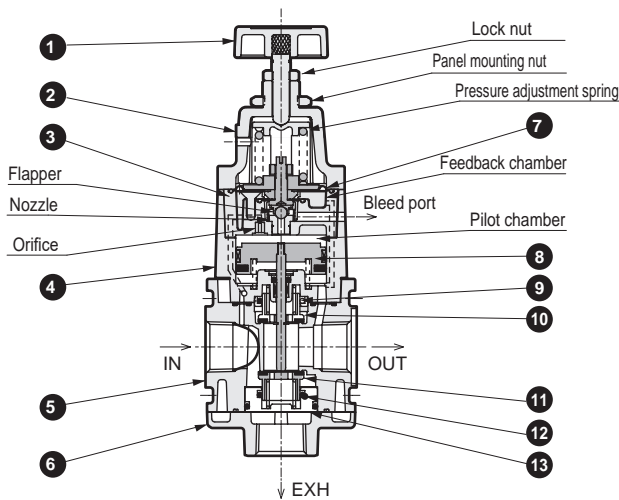
Specifications for rechargeable battery (Catalog No. CC-1226A)

● Design compatible with rechargeable battery manufacturing process

RP2000 - ..... - P70

RP2000-..... - P4\*

### Internal structure and parts list



Part No.	Part name	Material
1	Pressure adjustment knob	Polyacetal resin, stainless steel
2	Cover	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	Hydrogenated nitrile rubber
8	Piston assembly	Aluminum, stainless steel, etc.
9	O-ring	Nitrile rubber
10	Exhaust valve	Brass, hydrogenated nitrile rubber
11	Air supply valve	Brass, hydrogenated nitrile rubber
12	O-ring	Nitrile rubber
13	Bottom cap	Brass

### Operational explanation

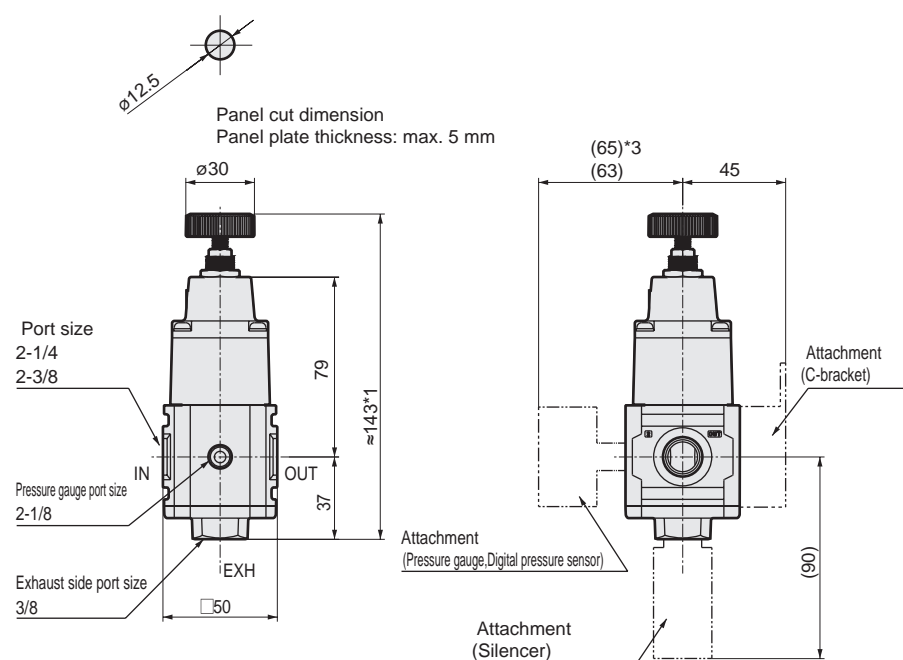
Air supplied from IN side is stopped its flow to OUT side by the air supply valve. Some supplied air passes through the orifice to flow into the pilot chamber. When the ① pressure adjustment knob is rotated, the pressure adjustment spring is compressed, and the ⑦ pilot diaphragm and the flapper are pushed down to close the nozzle. Pressure in the pilot chamber rises, forcing the piston lower to open the ⑪ air supply valve, and to supply air to OUT side. The intake air flows into the feedback chamber, and works on the ⑦ pilot diaphragm. If the diaphragm is forced upward until the air reaches the pressure of the regulator spring, the ⑦ pilot diaphragm and flapper are forced upward to open the nozzle, and an extremely small amount of air is released to the atmosphere to reduce pressure in the pilot chamber. At the same time, the OUT side pressure works on the piston to force it upward, the ⑪ air supply valve is closed and the set pressure is maintained. When the air is consumed and the pressure drops on the OUT side, the pressure in the feedback chamber also drops. The ⑦ pilot diaphragm and the flapper are forced lower to close the nozzle. Pressure in the pilot chamber rises, causing the piston to open the ⑪ air supply valve, compensating for any drop in pressure. If the OUT side pressure increases further than the set pressure, the pressure in the feedback chamber also increases. The ⑦ pilot diaphragm and the flapper are forced upward to open the nozzle. This allows the pressure in the pilot chamber to decrease, and the piston is forced upward to open the ⑩ exhaust valve; the surplus pressure is pumped from EXH port on the OUT side to the atmosphere. This pilot pressure control method using the nozzle and flapper can follow up a minimal pressure change, which enables the high precision pressure control.

### Consumable parts list

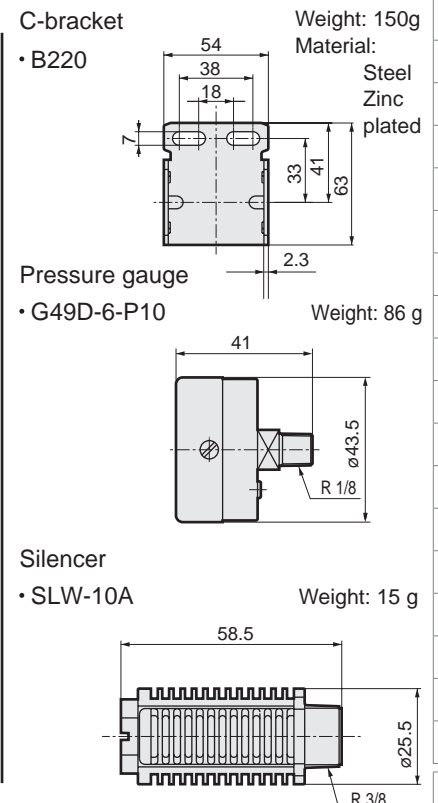
Part No.	Part name	Model No.
3	Pilot body assembly	RP2000-PILOT-ASSY
7	Pilot diaphragm	
4	Top body assembly	RP2000-TOP-BODY-ASSY
11	Air supply valve	RP2000-BTM-VALVE-ASSY
12	O-ring	
13	Bottom cap	

Note: Parts No. (8), (9), (10) are contained in the top body assembly (4)

### Dimensions



\*1: Dimensions at the setting pressure of 0 MPa  
 \*2: Pressure gauge, digital pressure sensor, C-bracket and silencer are optionally included.  
 \*3: Dimensions when the digital pressure sensor is assembled.

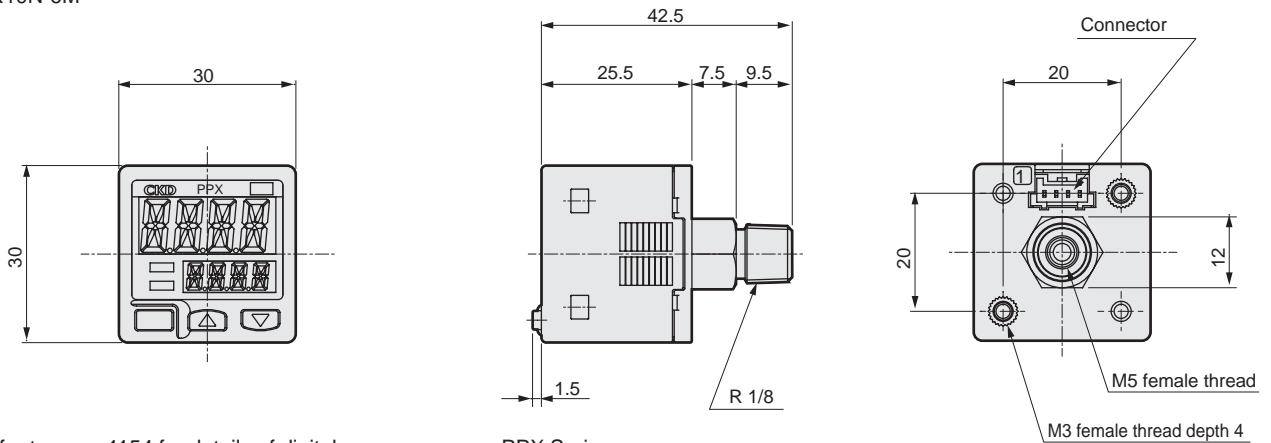


- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain Separ
- Mech
- Press SW
- Res press exh valve
- SlowStart
- Anti-bac/Bac-remove Filtr
- Film
- Resist FR
- Oil-ProhR
- Med Press FR
- No Cu/ PTFE FRL
- Outdris FRL
- Adapter Joiner
- Press Gauge
- CompFRL
- LgFRL
- PreCSR
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- Speed Ctrl
- Silncr
- CheckV/ other
- Fit/Tube
- Nozzle
- Air Unit
- PresCompn
- Electro Press SW
- ContactSW
- AirSens
- PresSW Cool
- Air Flo Sens/Ctrl
- WaterRISens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Gas generator
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

# RP2000 Series

## F.R.L. dimensions

F.R. ● PPX-R10N-6M



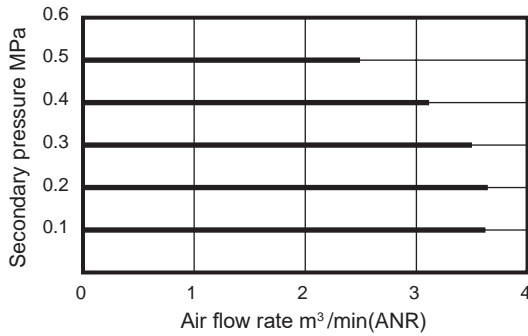
Note: Refer to page 1154 for details of digital pressure sensor PPX Series.

Weight: 40 g

## Flow characteristics

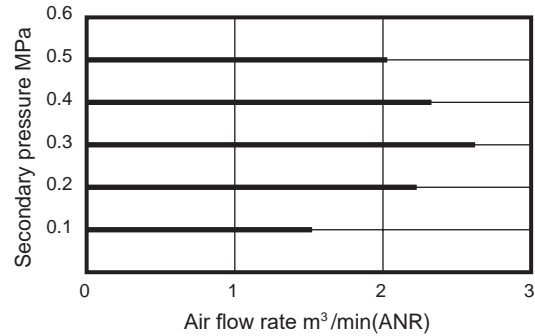
● RP2000-10-08

Primary pressure 0.7 MPa



● RP2000-8-08

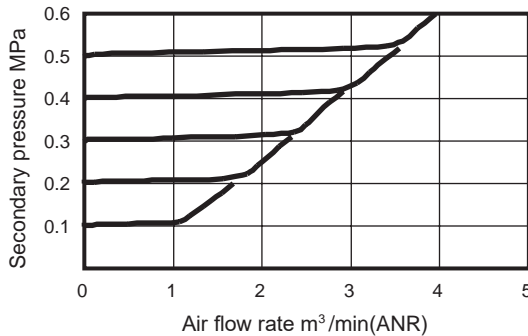
Primary pressure 0.7 MPa



## Relief flow characteristics

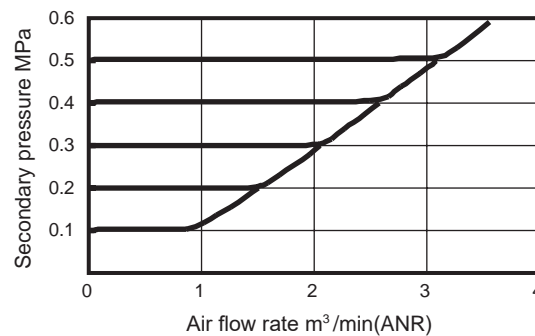
● RP2000-10-08

Primary pressure 0.7 MPa



● RP2000-8-08

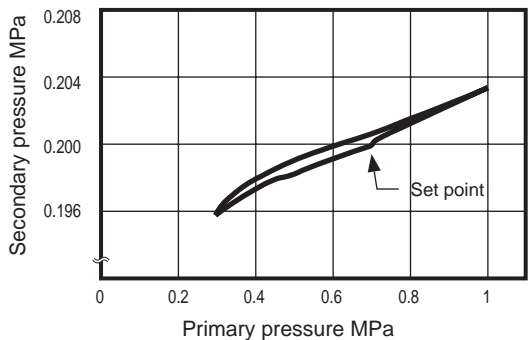
Primary pressure 0.7 MPa



## Pressure characteristics

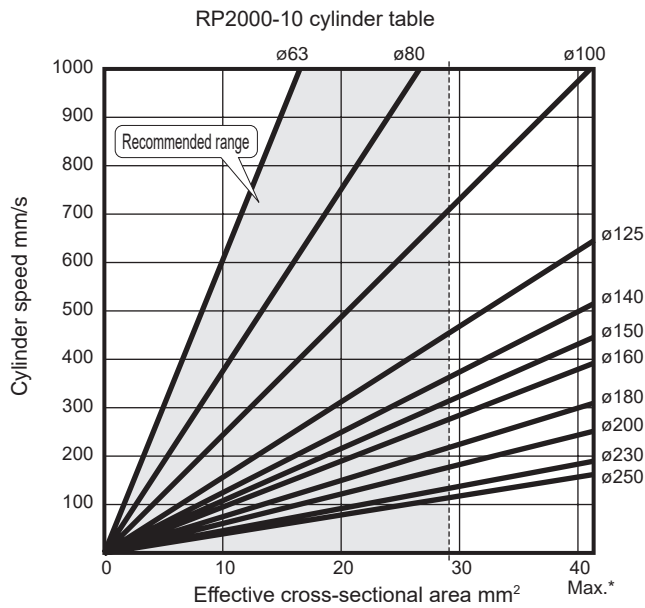
● RP2000-\*-08

Secondary side flow rate 0 l/min



- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain Separ
- Mech Press SW
- Res press exh valve
- SlowStart
- Anti-bac/Bac-remove Filtr
- Film Resist FR
- Oil-Prohr
- Med Press FR
- No Cu/PTFE FRL
- Outdrs FRL
- Adapter Joiner
- Press Gauge
- CompFRL
- LgFRL
- PrecsR**
- VacF/R
- Clean FR
- ElecPneur
- AirBoost
- Speed Ctrl
- Silncr
- CheckV/other
- Fit/Tube
- Nozzle
- Air Unit
- PrecsCompn
- Electro Press SW
- ContactSW
- AirSens
- PresSW Cool
- Air Flo Sens/Ctrl
- WaterRtSens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Gas generator
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

### Cylinder speed range of RP2000

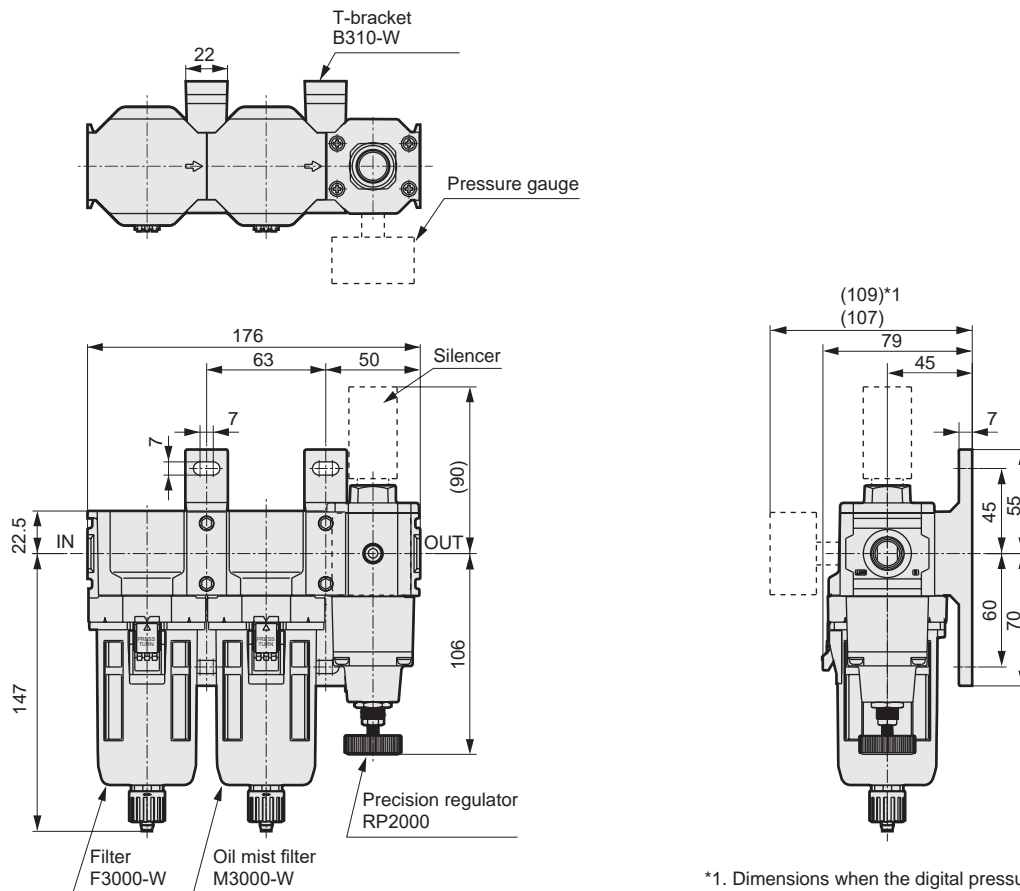


This cylinder table shows the available range according to the air supply and exhaust flow rate of the precision regulator and the required consumption flow rate at the cylinder PUSH/PULL.

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

\* Max. cylinder line  
(Cylinder directly installed)

### Example of precise pressure control system



\*1. Dimensions when the digital pressure sensor is assembled.

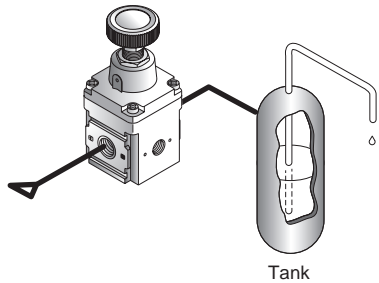
Compatible model	Filter	Oil mist filter	Precision regulator	T-bracket set
Product model No.	F3000-W	M3000-W	RP2000	B310-W (2 pcs.)

- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain Separ
- Mech Press SW
- Res press exh valve
- SlowStart
- Anti-bac/Bac-remove Filtr
- Film Resist FR
- Oil-ProhR
- Med Press FR
- No Cu/ PTFE FRL
- Outdrs FRL
- Adapter Joiner
- Press Gauge
- CompFRL
- LgFRL
- PrecsR**
- VacF/R
- Clean FR
- ElecPneuR
- AirBoost
- Speed Ctrl
- Silncr
- CheckV/ other
- Fit/Tube
- Nozzle
- Air Unit
- PrecsCompn
- Electro Press SW
- ContactSW
- AirSens
- PresSW Cool
- Air Flo Sens/Ctrl
- WaterRISens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Gas generator
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending

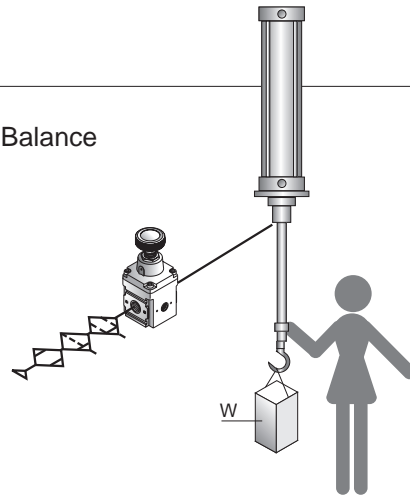


## Applications

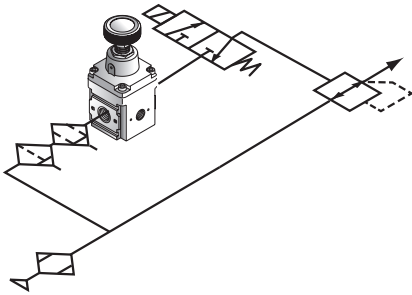
### Fluid discharge control



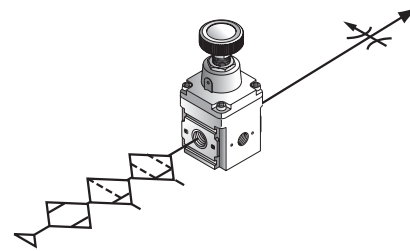
### Balance



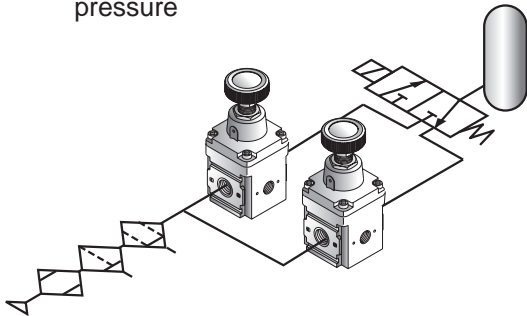
### Pilot pressure control



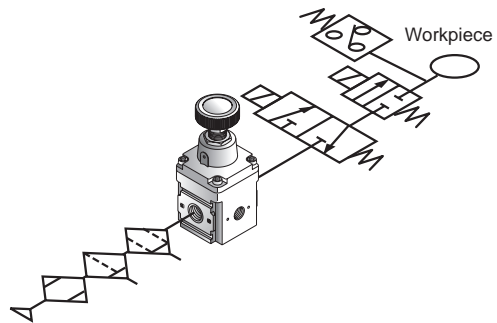
### Very low pressure blow



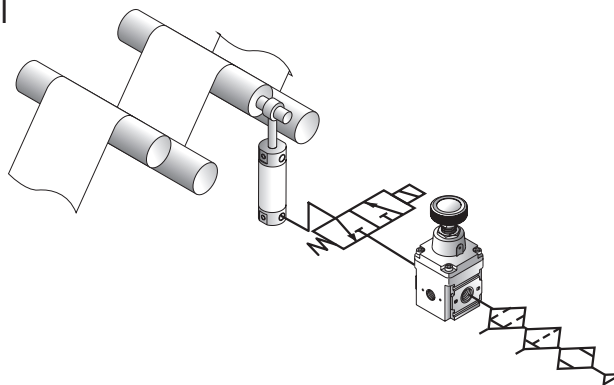
### Quick pressure regulation of tank pressure



### Leakage test



### Tension control



- F.R.L.
- F.R.
- F (Filtr)
- R (Reg)
- L (Lub)
- Drain Separ
- Mech Press SW
- Res press exh valve
- SlowStart
- Anti-bac/Bac-remove Filtr
- Film Resist FR
- Oil-ProhR
- Med Press FR
- No Cu/PTFE FRL
- Outdrs FRL
- Adapter Joiner Press Gauge
- CompFRL
- LgFRL
- PrecsR**
- VacF/R
- Clean FR
- ElecPneUR
- AirBoost
- Speed Ctrl
- Silncr
- CheckV/other
- Fit/Tube
- Nozzle
- Air Unit
- PrecsCompn
- Electro Press SW
- ContactSW
- AirSens
- PresSW Cool
- Air Flo Sens/Ctrl
- WaterRtSens
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Gas generator
- RefrDry
- DesicDry
- HiPolymDry
- MainFiltr
- Dischrg etc
- Ending