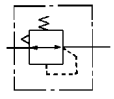
Precision Pressure Regulator

Series PER 2000,3000

Model	Port size(PT)	Set Pressure Ranges kgf/cm²	PSIG	Accessories
PER2000	1/8, 1/4	0.1~1.7	2-25	Pressure Gauge
PER2010		0.1~4.1	2-60	
PER2020		0.1~8.3	2-120	
PER2030		0.1~8.3	2-120	
PER3000	1/4, 3/8	0.1~2.1	0-30	Pressure Gauge, Bracket
PER3010		0.1~4.1	1-60	
PER3020		0.1~10.3	2-150	

Symbol



How to Order

PER 20 00 — 03 BG

1 2 3 4 5

1 Precision Pressure Regulator

2 Body Size
- **20** : 1/8, 1/4
- **30** : 1/4, 3/8

3 Set Pressure Ranges(kgf/cm²)(PSI)

Model	PER2000	PER3000	Note
00	0.1~1.7(1.42~24.18)	0.1~2.1(0~29.86)	
10	0.1~4.1(1.42~58.3)	0.1~4.1(1.42~58.3)	
20	0.1~8.3(1.42~118.0)	0.1~10.3(1.42~678.3)	
30	0.1~8.3(1.42~118.0)	–	High emission EXHR

4 Port Size
- **01** : Rc(PT)1/8
- **02** : Rc(PT)1/4
- **03** : Rc(PT)3/8
- ※ RER2000 Port Size:1/8, 1/4
- ※ RER3000 Port Size:1/4, 3/8

5 Attachment
- **B** : Bracket mounting
- **G** : Pressure Gauge
- ※ For PER 2000 Series Bracket, Inguire Separately.

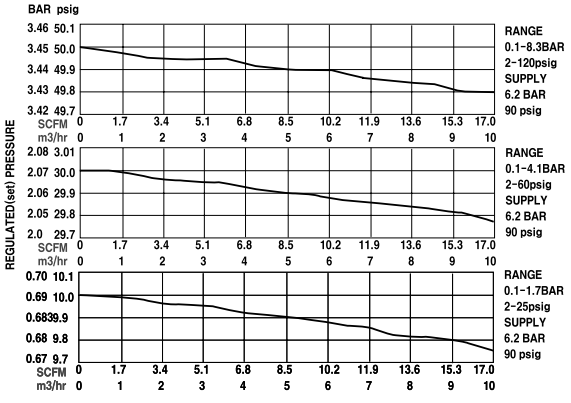
Specifications

Type	PER2000	PER3000
Port Size Rc(PT)	1/8 1/4	1/4 3/8
Proof Pressure	Please refer to the table of model Specifications	
Max. Operating Pressure	Please refer to the table of model Specifications	
Amibient and Fluid Temperature · °C(°F)	5~60℃(41~140°F)	
Set Pressure Ranges(kgf/cm²(psi))	0.1~8.3kgf/cm² (1.42~118.0psi)	0~1.03kgf/cm²(1.42~146.5psi)
Structure	Relief Type	
Gauge Port Size	1/4 NPT	

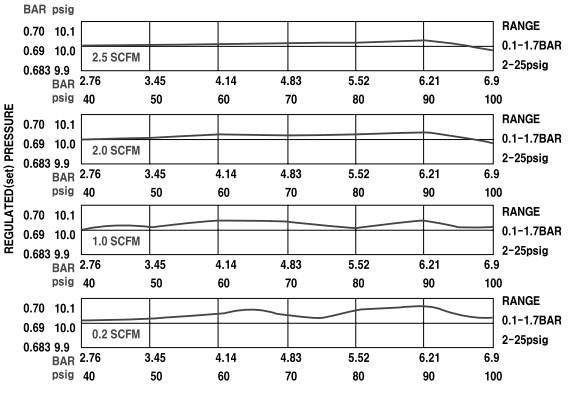
Model Specifications

Model	PER 2000	PER 2000 EXHR	PER 3000-02	PER 3000-03
Sensitivity	1/8" (3,2mm) Water Column	1/8" (3,2mm) Water Column	1/4" (6,4mm) Water Column	1/8" (3,2mm) Water Column
Flow Capacity	14CFM/396LPM	14CFM/396LPM	40,50 or 80SCFM(1113,1416,2266LPM)	50SCFM(1416LPM)
Effect of supply Pressure Variation(25psig) on Outlet Pressure	0,005psig/0,3mBAR per 25psig/1,7BAR Change	0,005psig/0,3mBAR per 25psig/1,7BAR Change	(0,025psig(1,7BAR)	–
Exhaust Capacity(5psig above 20psig set point)	25scfm/56LPM	15scfm/424LPM	4SCFM/(113LPM)	–
Maximun Input / Supply Pressure	150psig/10,3BAR	150psig/10,3BAR	250psig(17,2BAR)	250psig(17,2BAR)
Effect of Changes in Flow on Regulated Pressure (100psig / 6,9 BAR Supply)	2,5psig 10,01BAR per 10scfm/283LPM	2,5psig 10,01BAR per 10scfm/283LPM	2,5psig(0,2BAR) over flow, 50SCFM(1416LPM)(3/8NPT, 0-30psig/0-2,1BAR ronge,15psig/1BAR set point)	–
Output Pressure Ranges	2-25, 2-60, 2-120psig 0,14-1,7, 0,14-4,1, 0,14-8,3BAR	2-120psig 0,14-8,3BAR	0-2psig, 0-10psig, 0-30psig, 1-60psig, 2-150psig, 3-200psig, 0-0,1BAR,0-0,7BAR,0-2,1BAR,0,1-4,1BAR,0,1-10,3BAR,0,2-13,8BAR	–
Set Point Ranges			–	0-2psig, 0-10psig, 0-30psig, 0-60psig, 0-150psig, 0-0,1BAR,0-0,7BAR,0-2,1BAR,0-4,1BAR,0-10,3BAR
Total Air Consumption @ Maximum Output			from 1,0 to 12,5SCFH(0,5-6LPM)	–
Temperature Range(°F(°C))	-20 to 160°F (-29 to 70°C)	-20 to 160°F (-29 to 71°C)	-40° to 200°F(-40 to 93°C)	-40° to 200°F(-40 to 93°C)
Port Size	1/8", 1/4", 3/8"	1/8", 1/4", 3/8"	1/4", 3/8", 1/2" BSPT	1/4", 3/8", 1/2" BSPT
Size			3,0" ×3,0" ×6,0"(76×76×152mm)	3,0" ×3,0" ×6,0"(76×76×152mm)
Weight	1,47 l b(0,67kg)	1,47 l b(0,67kg)	1,41 l b(0,6kg)	1,51 l b(0,6kg)
Materials of Construction	Body : Diecast aluminum with vinyl paint Adjusting Screw : Plated steel Trim : Acetal, brass, plated steel, nitrile Diaphragm : Buna-N with polyester fabric Knob : Phenolic plastic Spring : Music Wire			
Preset Pressure	No			
Tamper Resistant Cover	Yes			
Mounting	Pipe, Panel		Pipe, Panel, or bracket	

PER2000

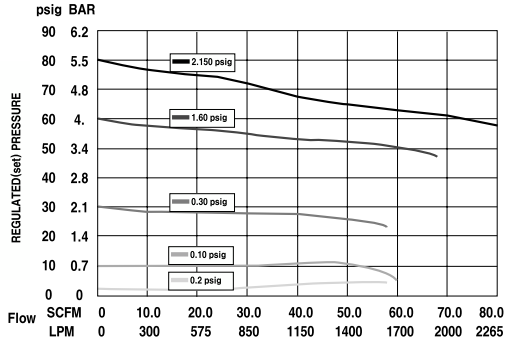


Effect of Changes in Flow on Regulated Pressure

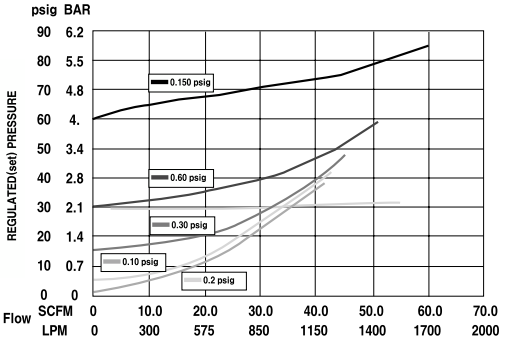


Effect of Upstream Pressure Variations on Regulated Pressure

PER3000



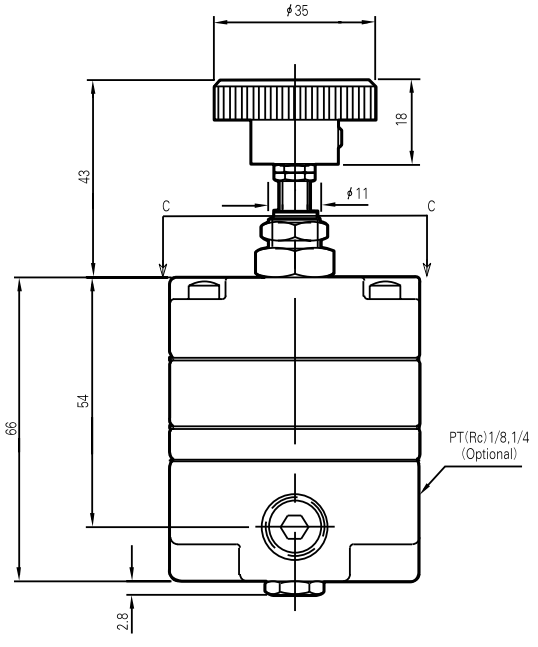
Regulated Pressure VS · FLOW

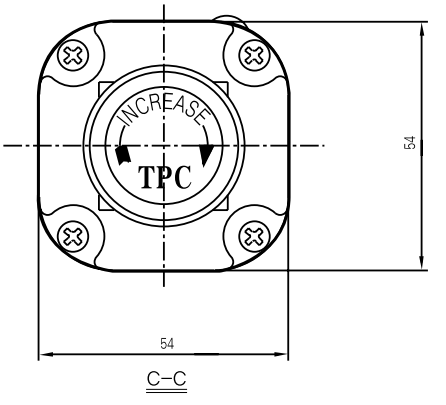


Regulated Pressure VS · FLOW

Series PER 2000

(Unit:mm)

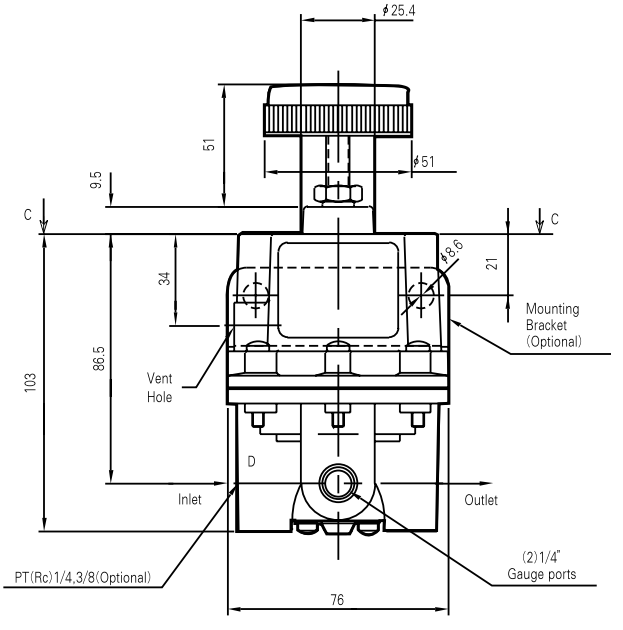


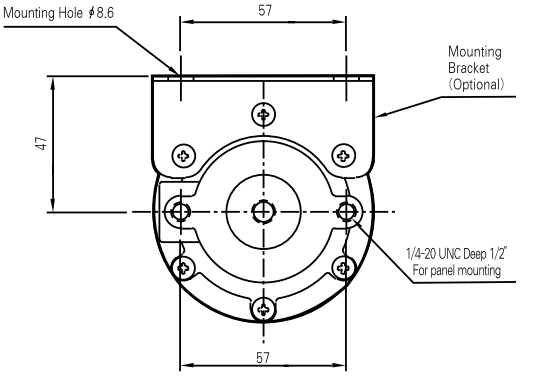


C–C

Series PER3000

(Unit:mm)





C–C

Warning

Make sure to check the following Instruction prior to use. Make sure to check common precautions on the products mentioned in this catalog, and refer to main text for precautions on every series.

Air Supply

Warning

1. In event that condensate is not emptied in the drain bowl on a regular basis, it is needed to over-flow the bowl and allow the condensate to enter the compressed air lines. In event that it is difficult to check and remove, it is needed to check that a drain bowl with the auto-drain option be installed.

Caution

- In event that the supply pressure line is provided with drainage or dirt, etc., the liked throttle could get clogged resulting in malfunction. In addition to an air filter, it is needed to be sure to use a mist separator.
- The use of a lubricator on the supply side of the regulator should be avoided, because the fixed throttle could become clogged and lead to malfunction. In event that it is needed to provide lubrication for terminal devices, be sure to connect a lubricator on the output side of the regulator.

Maintenance

Warning

- Regulator
  It is needed to set up the regulator while the pressure indicated on the supply is and the secondary pressure gauges are being verified. By turning the handle excessively, the internal parts could be damaged. It is needed to set the pressure gauge provided with the product between 0.02 to 0.2MPa based on the 0.2MPa type. In an attempt to prevail damage to the pressure gauge, it is needed to be sure to check that a pressure in excess of 0.2Mpa is not applied.
- Shut-down before maintenance
  It is needed to make sure the supply pressure is shut off and all residual air pressure is released from the system to be worked on prior to attempting any kind oil maintenance.
- Start-up after maintenance
  It is needed to apply operating pressure and power to the equipment and check for proper operation and possible air leaks. Be sure to verify product set-up parameters when operation is abnormal.
- Any modification to the product should be avoided.
- Taking the product apart should be avoided.
  Malfunction could occur to product and damage to equipment and machine could occur when not following proper procedures.
- It is needed to examine regularly so as to find cracks, scratches and other sorts of degradation of air filter, standard resin bowl of lubricator and sightdome of lubricator.

Caution

- Regulator
  When the pressure adjustment handle is turned clockwise, the secondary pressure could increase, and when turning it counterclockwise, the pressure (To set the pressure, do so in the direction of pressure increase.) could decrease.
  It is needed to be sure to the supply pressure before setting the pressure.
  It is preferred to set the range for selling the secondary pressure in ≤85% of the supply pressure.

Piping

Warning

- It is needed to use recommended torques so as to screw in piping materials. Less fastening torque could cause looseness and seal malfunction, and over fastening torque could damage threads. In event that fastened without being held on the female-thread side, over force could damage piping bracket.

Caution

- The use of a precision regulator outside the range of its specifications should be avoided as this can cause failure. (see to specifications.)
- It is needed to make connections while confirming port indications during mounting.

Recommended proper Torque.

Connecting thread	Torque kgf · cm(N · m)
M5	15~20(213.3~284.4)
Rc(PT) 1/8	70~90(995.4~1279.8)
Rc(PT) 1/4	120~140(1706.4~1990.8)
Rc(PT) 3/8	220~240(3125.4~3412.8)
Rc(PT) 1/2	280~300(3981.6~4266)
Rc(PT) 3/4	280~300(3981.6~4266)
Rc(PT) 1	360~380(5119.2~5403.6)

- It is needed to act no twisting, bending moments other than the equipment's own weight.
  It is needed to hold external piping separately so as to prevent damaged.
- In event that a directional switching valve(solenoid valve, mechanical valve, etc.) is provided on the supply side of the regulator and repeatedly switched ON and OFF, it may be accelerated due to wear of the nozzle/flapper section and a discrepancy in the setting value may occur. Thus, it is needed to avoid using a directional switching valve on the supply side. If directional switching valve is used, it is preferred to install it on the output side of the regulator
- Though the bleed port (the hole on the side of the body's midsection), air is normally discharged. Air is necessarily consumed based on the construction of the precision regulator, which is not an abnormality.
- It is needed to make sure to tighten the lock-nut after pressure adjustment.

Environment

Warning

- The use in atmospheres in which the valve is in direct contact with corrosive gases, chemicals, salt water or steam should be avoided.
- The use in an explosive atmosphere should be avoided.
- The use in a place subjected to heavy vibration and/or shock should be avoided. It is needed to check the specifications for each series.
- Be sure to check that the valve should not be exposed to prolonged sun light. Use a protective cover.
- It is needed to remove emissive heat.
- In event that is used in an atmosphere in which there is possible contact with water drop-lets. oil, weld spatter, etc., it is needed to take suitable protection measures.
- In event that the valve is used in the dusty ambient or the noise produced at the valve switching is unendurable, it is needed to provide and install a silencer etc. in R port so as to prevent dust from entering or reduce the noise.