

Regulator for process gas

# PGM Series

● Metal diaphragm

RoHS

CAD

## High-performance regulator derived from rich experience PGM series

### ● Slim body

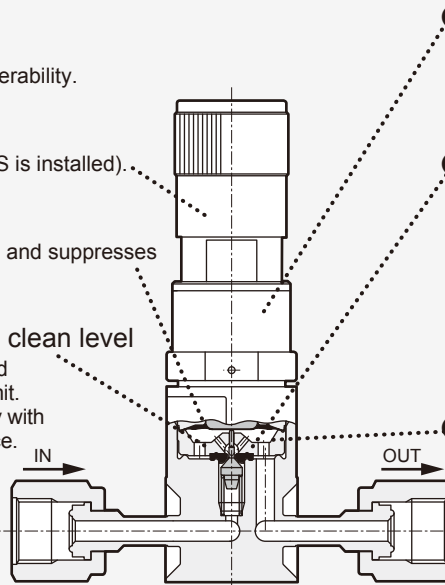
- Easy mounting and improved knob operability.
- Enough space even for harnesses (when IGS is installed).
- Compatible with 1.125" size (when IGS is installed).

### ● Seal performance

- Improves valve seat seal performance and suppresses outflow generation.

### ● Ultra high purity gas compatible clean level

- Reduces sliding parts of the poppet and decreases particle generation to the limit.
- Metal seal specification that does away with threads on the gas contact inner surface.
- The diaphragm uses Hastelloy® C-22, which has high corrosion resistance and long service life.
- Electrolytic polishing specification.
- Volumetric capacity reduction and optimum flow path design, supporting gas replaceability as well.
- High corrosion-proof grade is also available! (Option)



### ● Vibration countermeasures

- Thorough countermeasures with newly developed vibration prevention mechanism. (patented)

### ● Flow characteristics

- Low pressure drop.
- Compact size with large flow rate!
- Our first free poppet! Negative pressure can be controlled. (patented)
- Smoother operation with low-sliding parts! Hysteresis reduced!

### ● Fine flow rate control

- Does away with problems causing change in MFC output signals for fine flow rate at tens of SCCM and below.

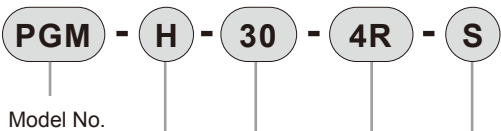
Model No.	Flow rate series	Secondary set pressure
PGM-30V	20 ℓ/min	-0.07 to 0.21 MPa
PGM-30	20 ℓ/min	0 to 0.21 MPa
PGM-50	20 ℓ/min	0 to 0.35 MPa
PGM-100	20 ℓ/min	0 to 0.7 MPa

Model No.	Flow rate series	Secondary set pressure
PGM-H-60	50 ℓ/min	0 to 0.42 MPa
PGM-H-100	50 ℓ/min	0 to 0.7 MPa

## Specifications

Descriptions	PGM- PGM-H-	30V -	30 -	50 -	- 60	100 100
Working fluid	Inert gas/process gas					
Max. working pressure MPa	1.0					
Set pressure MPa		-0.07 to 0.21	0 to 0.21	0 to 0.35	0 to 0.42	0 to 0.7
Fluid temperature °C	-5 to 40					
Valve seat leakage Pa·m³/s (He)	1.0 x 10 <sup>-8</sup> or less					
External leakage Pa·m³/s (He)	2.8 x 10 <sup>-12</sup> or less					
Proof pressure MPa	1.5					
Ambient temperature °C	-5 to 40					
Surface treatment of gas contact parts	Electrolytic polishing specification					
Connection	Various integrated valves (IGS) interface (PGM-*-1, 2, 3, 4, 5) 1/4" JXR fitting (can be connected to VCR) (PGM-*-4R, 4RM, 4MF, 4FM)					
Weight kg	0.39(PGM-*-4)					
JIS symbol						

### How to order



**A** Flow rate series

**B** Secondary set pressure

**C** Connection

**D** Option

**A** Flow rate series

Blank	H
20 ℓ/min	50 ℓ/min

Code	Content	PGM	PGM-H
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#### **B** Secondary set pressure

<b>30V</b>	-0.07 to -0.21 MPa {-10 to 30 psi}	●	
<b>30</b>	0 to -0.21 MPa {0 to 30 psi}	●	
<b>50</b>	0 to 0.35 MPa {0 to 50psi}	●	
<b>60</b>	0 to 0.42 MPa {0 to 60psi}		●
<b>100</b>	0 to 0.7 MPa {0 to 100psi}	●	●

#### **C** Connection

<b>4R</b>	1/4" JXR female fitting	●	●
<b>4RM</b>	1/4" JXR male fitting	●	●
<b>4MF</b>	1/4" JXR male → female fitting	●	●
<b>4FM</b>	1/4" JXR female → male fitting	●	●
<b>1</b>	1.125" C seal	●	●
<b>2</b>	1.5" C seal	●	●
<b>3</b>	1.5" CS seal	●	●
<b>4</b>	1.5" W seal	●	●
<b>5</b>	1.125" W seal	●	●

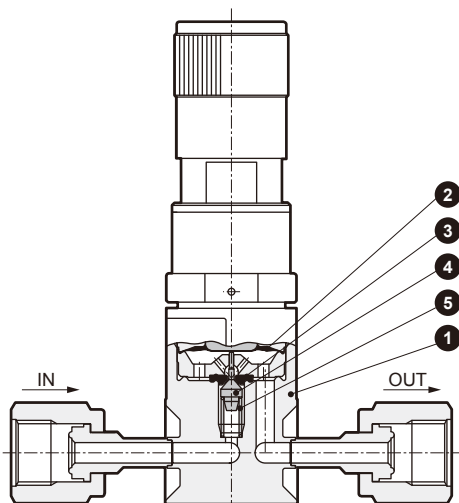
#### **D** Option

<b>S</b>	Poppet: Hastelloy ® C-22 Spring: Ni-Co alloy	●	
<b>P</b>	Valve seat: PI	●	

\*1: Flow rate is nominal value. Check the pressure conditions in the flow characteristics graph.

\*2: Without gauge port.

### Internal structure and parts list



#### Gas contact part materials

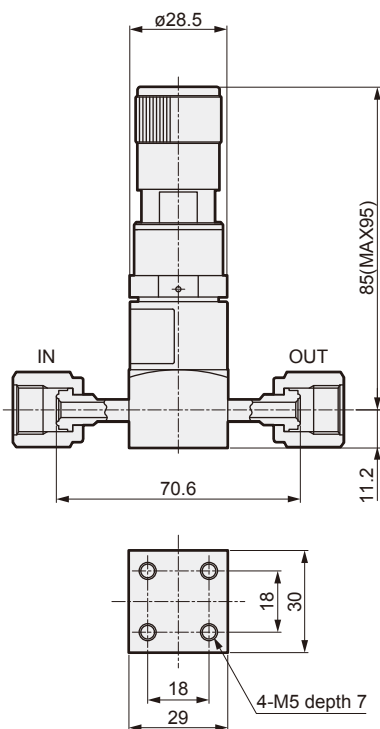
No.	Part name	Material
<b>1</b>	Body	SUS316L
<b>2</b>	Diaphragm	Hastelloy ® C-22
<b>3</b>	Seat	PFA or PI (option)
<b>4</b>	Poppet	SUS316L or Hastelloy ® C-22 (option)
<b>5</b>	Spring	SUS316 or Ni-Co alloy (option)

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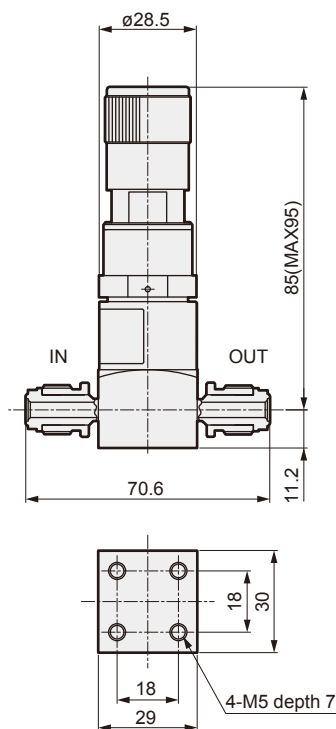
## Dimensions

Note: Flow path direction is indicated with an arrow on the body.

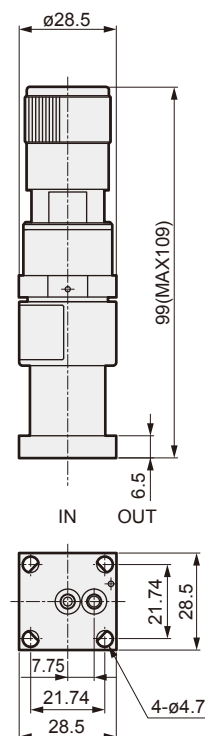
● PGM-\*-4R  
(1/4" JXR female fitting)



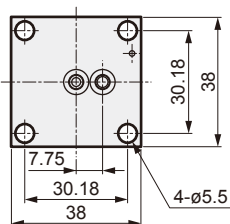
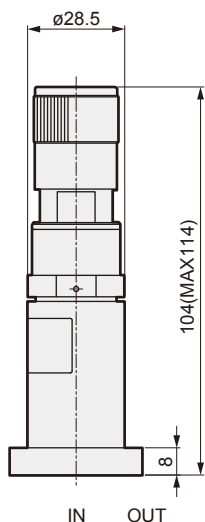
● PGM-\*-4RM  
(1/4" JXR male fitting)



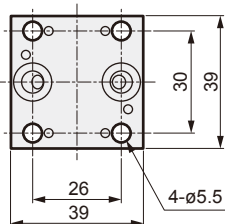
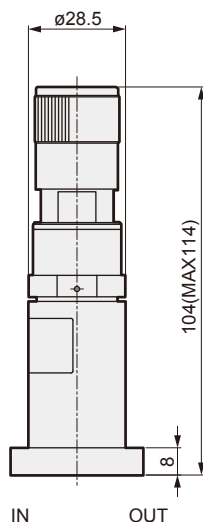
● PGM-\*-1  
(1.125" C seal)



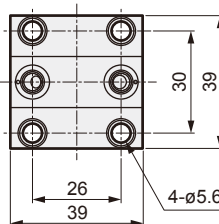
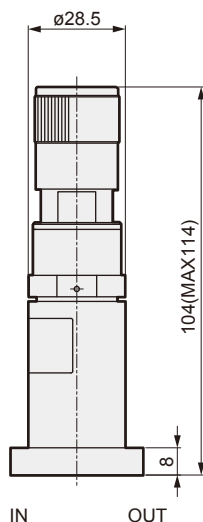
● PGM-\*-2  
(1.5" C seal)



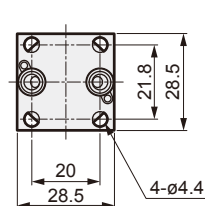
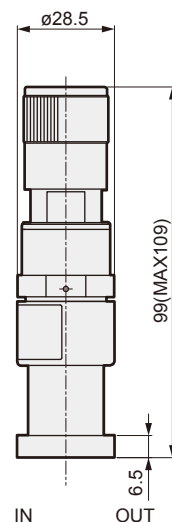
● PGM-\*-3  
(1.5" CS seal)



● PGM-\*-4  
(1.5" W seal)

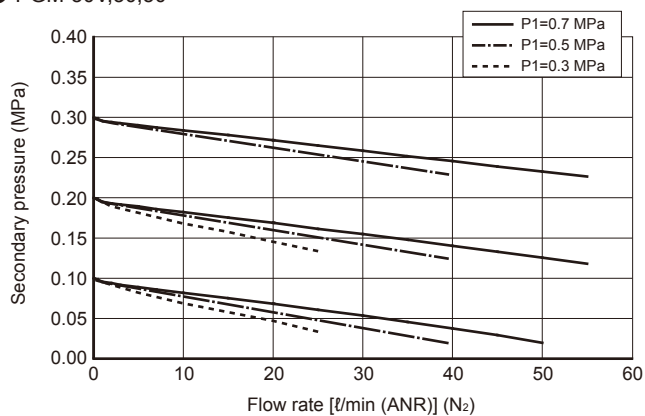


● PGM-\*-5  
(1.125" W seal)

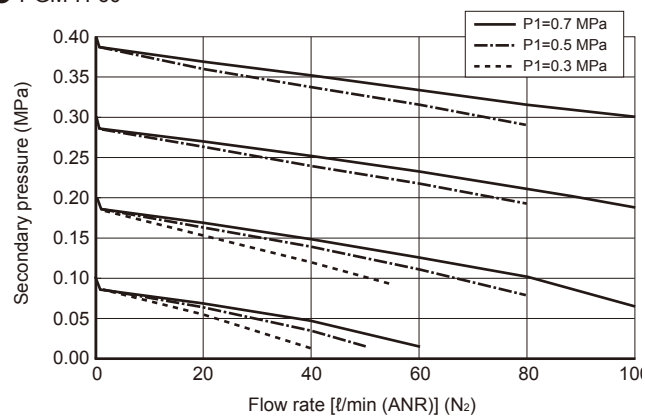


## Flow characteristics

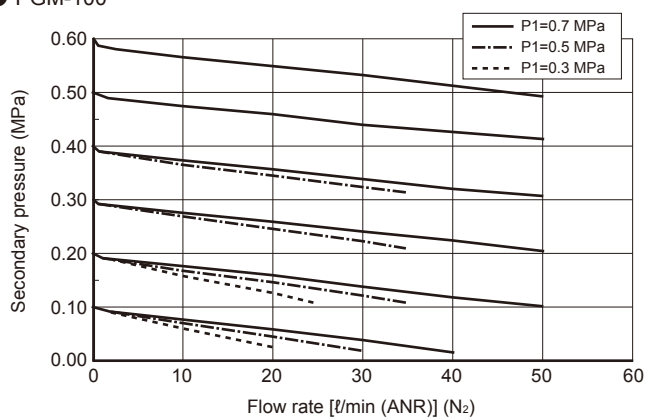
● PGM-30V,30,50



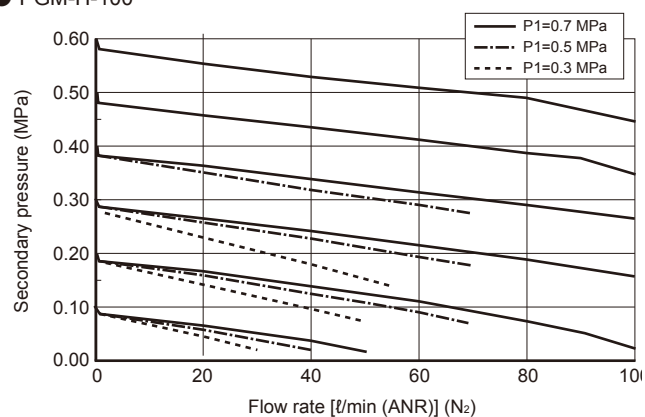
● PGM-H-60



● PGM-100

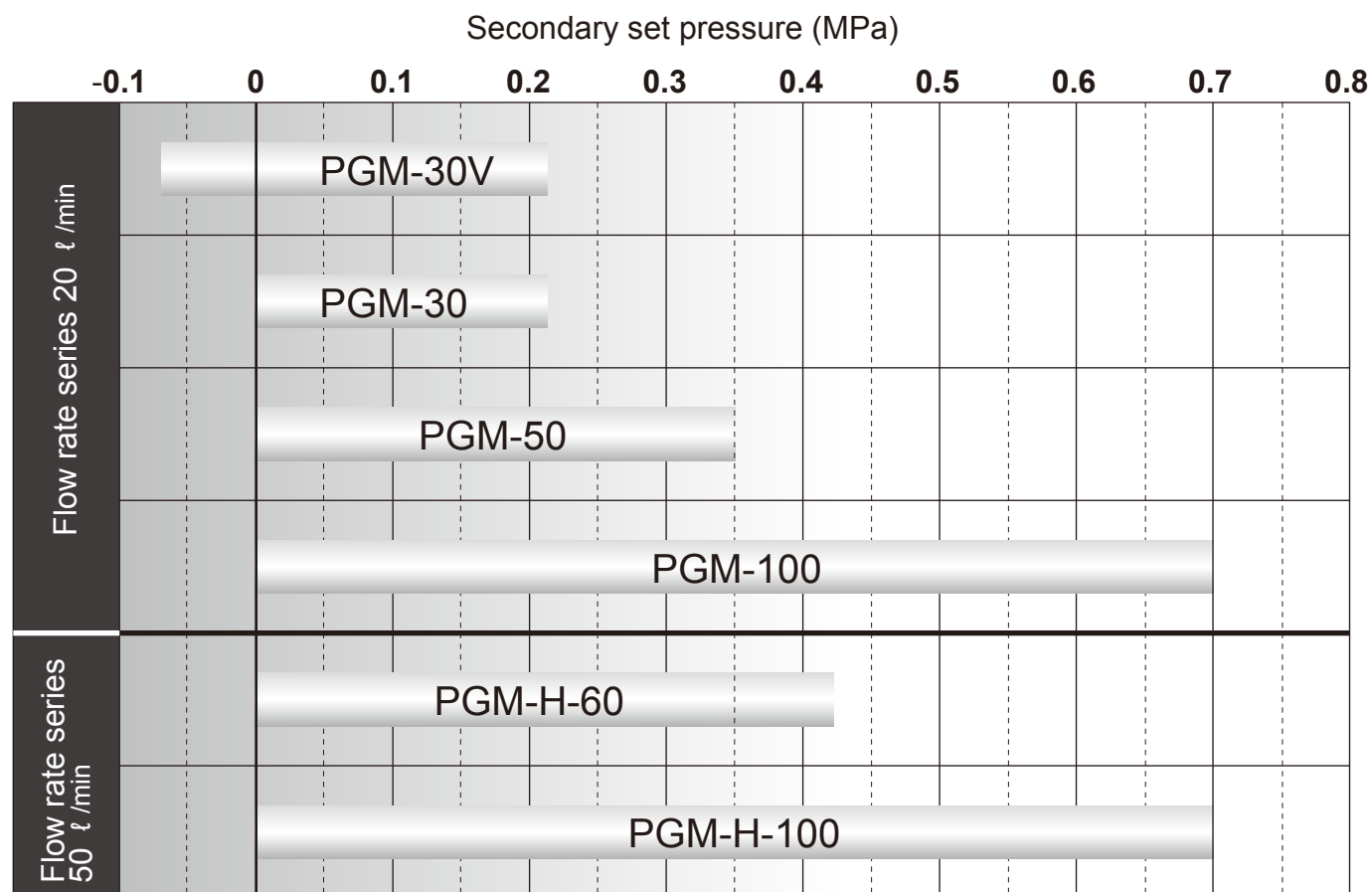


● PGM-H-100



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## Wide range of pressure variations



## Diverse range of connection variations

1/4" JXR female fitting

1/4" JXR male fitting

1/4" JXR male → female fitting

1/4" JXR female → male fitting



(JXR fitting)

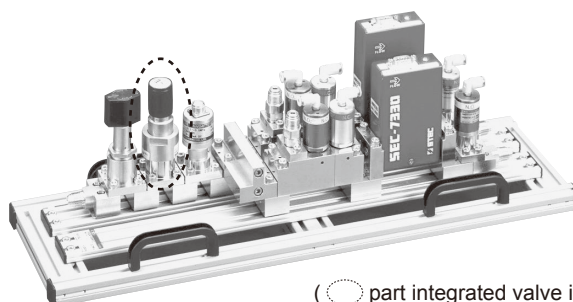
1.5" C seal

1.5" CS seal

1.5" W seal

1.125" C seal

1.125" W seal



(○ part integrated valve interface)

# Variation-compatible products

## PGM Series

RoHS

Made to Order

### ● With gauge port



- Gauge port connection  
JXR male fitting, JXR female fitting, and double barbed fitting are available.

- Port size 1/4"

### ● Panel mount



- Panel mount diameter  $\varnothing 31$

- Panel thickness 5 mm or less

### ● Misoperation prevention



- Prevents fluctuations of set pressure due to misoperation.

- Misoperation prevention type with total height 108 mm and diameter  $\varnothing 32$ .