

# KATIX<sup>®</sup>

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## Precision Pressure Regulator PR Series








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# PR Series

## Precision Pressure Regulator

Series: PR100 / 200/ 300

	Series	Model	Regulating pressure range	Port size
Basic Type	<b>SERIES PR100</b> 	<b>PR100</b>	0.005 to 0.2 MPa	1/8
		<b>PR101</b>	0.01 to 0.4 MPa	
		<b>PR102</b>	0.01 to 0.8 MPa	
	<b>SERIES PR200</b> 	<b>PR200</b>	0.005 to 0.2 MPa	1/4
		<b>PR201</b>	0.01 to 0.4 MPa	
		<b>PR202</b>	0.01 to 0.8 MPa	
	<b>SERIES PR300</b> 	<b>PR300</b>	0.01 to 0.2 MPa	1/4, 3/8, 1/2
		<b>PR301</b>	0.01 to 0.4 MPa	
		<b>PR302</b>	0.01 to 0.8 MPa	
Air Operated Type	<b>SERIES PR200</b> 	<b>PR212</b>	0.01 to 0.8 MPa	1/4
	<b>SERIES PR300</b> 	<b>PR312</b>	0.01 to 0.8 MPa	1/4, 3/8, 1/2

# PR Series Precision Pressure Regulator

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## Bracket and pressure gauge can be mounted from 2 directions

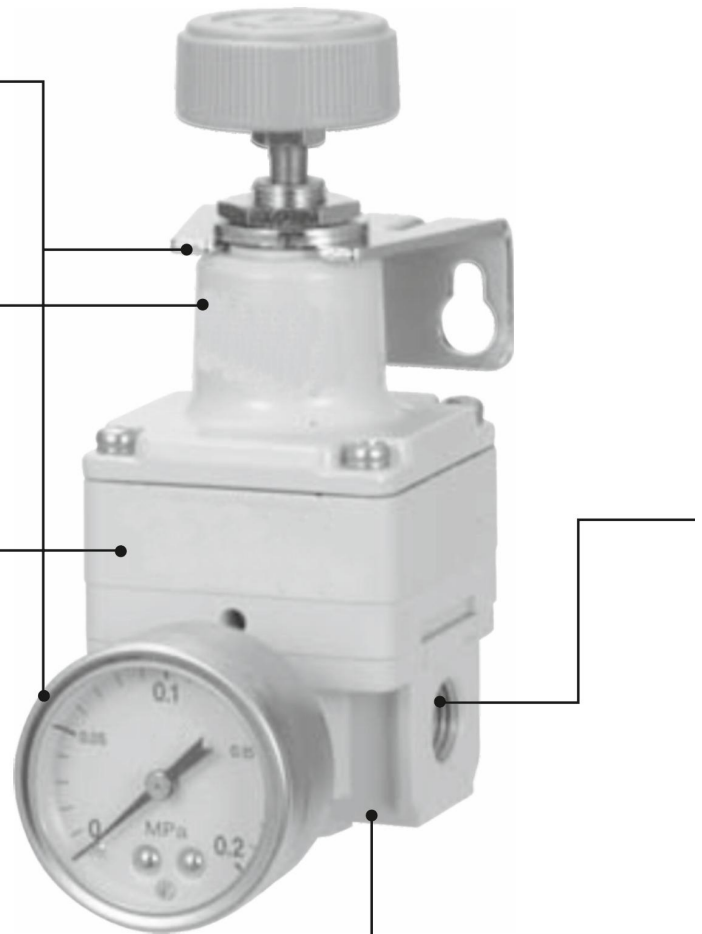
Mounting is possible on either the front or the back.

## Expanded regulating pressure range

The maximum set pressure has been expanded from the conventional 0.7 MPa to 0.8 MPa.

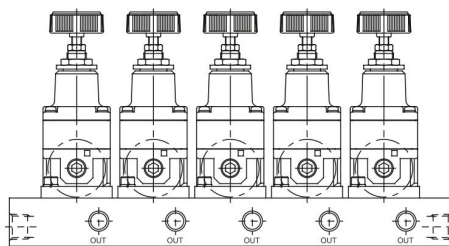
## Compact and lightweight

**PR100** width 35 mm mass 140 g  
**PR200** width 50 mm mass 300 g  
**PR300** width 66 mm mass 640 g



## Manifolding is possible 8 stations at the maximum

Made to order specifications  
 (Except Series **PR212**, **PR300**)



### Accessory (Option)/Part No.

Description	Part no.								
	PR100	PR101	PR102	PR200	PR201	PR202/212	PR300	PR301	PR302/312
Bracket	PR1-B			PR2-B			PR3-B <sup>*1</sup>		
Pressure gauge <sup>*2</sup>	PR1G-2-01	PR1G-4-01	PR1G-4-01	PR2G-2-01	PR2G-4-01	PR2G-10-01	PR2G-2-01	PR2G-4-01	PR2G-10-01

\*1 A bracket and two mounting screws (M5 x 35)

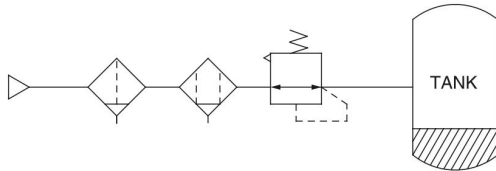
To mount the bracket, remove two body screws (M5 x 30) on the name plate on the opposite side and replace the attached two bracket mounting screws (M5 x 35).

\*2 Accuracy  $\pm 3\%$  (Full span)

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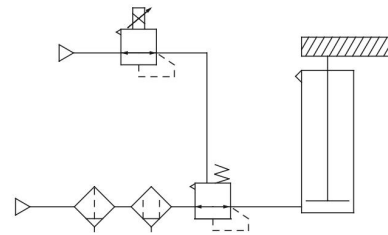
## Application Example

### Constant fluid pressure



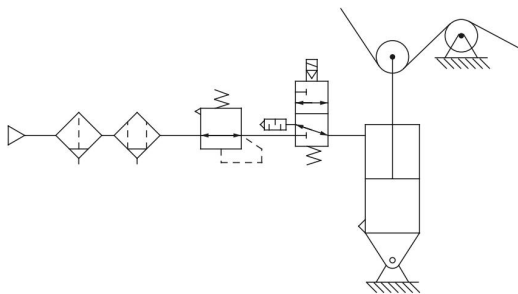
- Since there is a large effective area for supply and exhaust pressure, setting can be done quickly.

### Balance and drive Accurate balance pressure setting

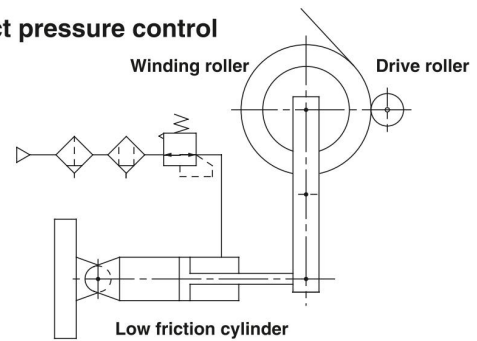


- Limits pressure fluctuation when driving a cylinder, maintaining excellent static and dynamic balance.

### Accurate pressure setting — Sensitivity within 0.2% F.S. (Full Span) Tension control

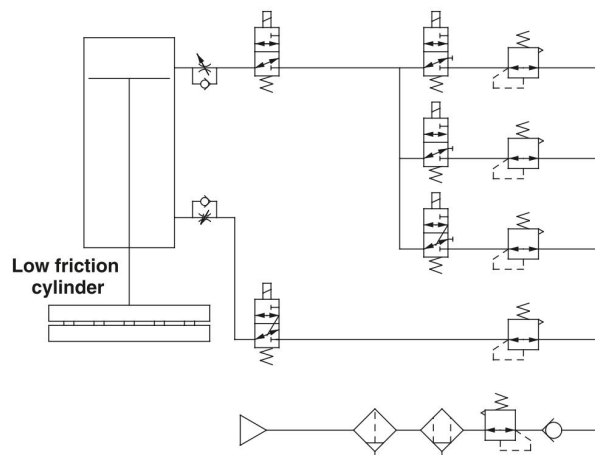


### Contact pressure control

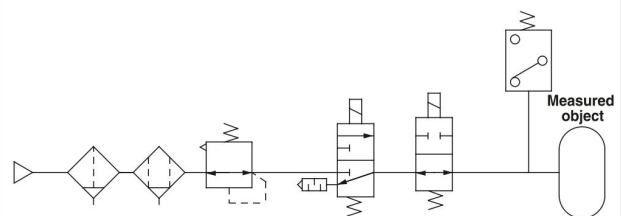


- Adapts to the cylinder's piston displacement, maintaining a constant pressure.

### Multistage control of pressing force for workpiece (Wrapping machine)



### Leak test circuit



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## How to Order

**PR 2 0 0 - 02 BG**

Precision regulator

Body size

1	PR100
2	PR200
3	PR300

Type of setting

0	Basic type (Handle)
1	Air operated type (Series PR200/300 only)

Regulating pressure range

For series PR100/200

0	0.005 to 0.2 MPa
1	0.01 to 0.4 MPa
2	0.01 to 0.8 MPa

Note) Air operated type is model PR212 only.

For series PR300

0	0.01 to 0.2 MPa
1	0.01 to 0.4 MPa
2	0.01 to 0.8 MPa

Note) Air operated type is model PR312 only.

Thread type

Nil	Rc
N	NPT*
F	G*

\* Option

Port size

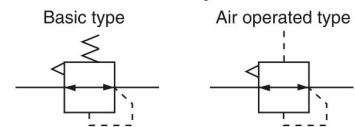
Symbol	size	Application		
		PR100	PR200	PR300
01	1/8	●		
02	1/4		●	●
03	3/8			●
04	1/2			●

Accessory

BG	With Bracket & Pressure Gauge*
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\* Pressure gauge is included, (but not assembled).

### JIS Symbol



## Standard Specifications

Model	Basic type			Air operated type	
	PR10□	PR20□	PR30□	PR212	P312
Max. supply pressure	Max. 1.0 MPa				
Min. supply pressure (1)	Set pressure + 0.05 MPa		Set pressure + 0.1 MPa	Set pressure + 0.05 MPa	Set pressure + 0.1 MPa
Regulating pressure range	PR100: 0.005 to 0.2 MPa PR101: 0.01 to 0.4 MPa PR102: 0.01 to 0.8 MPa	PR200: 0.005 to 0.2 MPa PR201: 0.01 to 0.4 MPa PR202: 0.01 to 0.8 MPa	PR300: 0.01 to 0.2 MPa PR301: 0.01 to 0.4 MPa PR302: 0.01 to 0.8 MPa	0.01 to 0.8 MPa	0.01 to 0.8 MPa
Input signal (2)	—			0.01 to 0.8 MPa	0.01 to 0.8 MPa
Sensitivity	Within 0.2% of full span				
Repeatability	Within ±0.5% of full span				
Linearity (3)	—			Within ±1% of full span	
Air consumption (4) (At supply pressure of 1.0 MPa)	4.4 ℓ/min (ANR) or less	4.4 ℓ/min (ANR) or less	11.5 ℓ/min (ANR) or less	4.4 ℓ/min (ANR) or less	11.5 ℓ/min (ANR) or less
Port size	Rc 1/8	Rc 1/4	Rc 1/4, 3/8, 1/2	Rc 1/4	Rc 1/4, 3/8, 1/2
Pressure gauge port	Rc 1/8 (2 locations)				
Ambient and fluid temperature	-5 to 60°C (No freezing)				
Mass (kg)	0.14	0.30	0.64	0.35	0.71



Note 1) With the condition of no flow on the output side. Together with the set pressure, be sure to maintain a minimum differential pressure of 0.05 MPa for model PR100 and PR200, and 0.1 MPa for model PR300.

Note 2) Applicable only to air operated types PR212 and PR312. The basic type is excepted.

Note 3) Indicates the linearity of the output pressure with respect to the input signal pressure.

Note 4) Air is normally being discharged to the atmosphere from a bleed hole or an exhaust port.

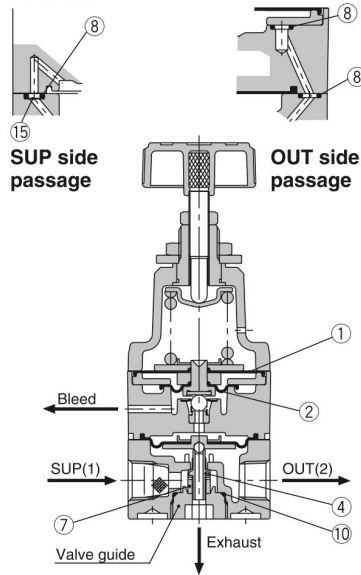
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# PR Series Precision Pressure Regulator

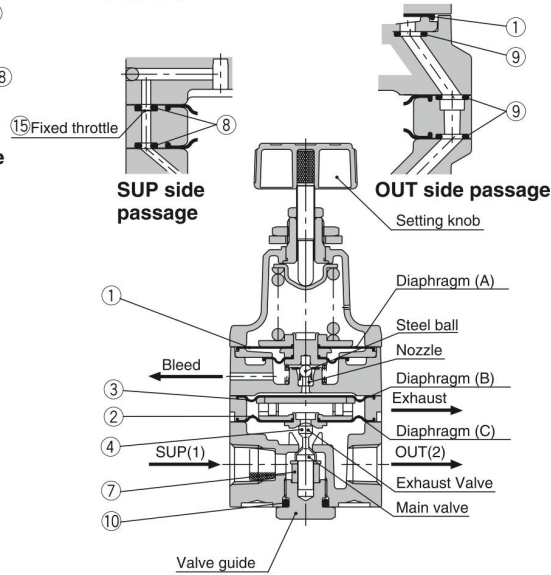
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## Construction

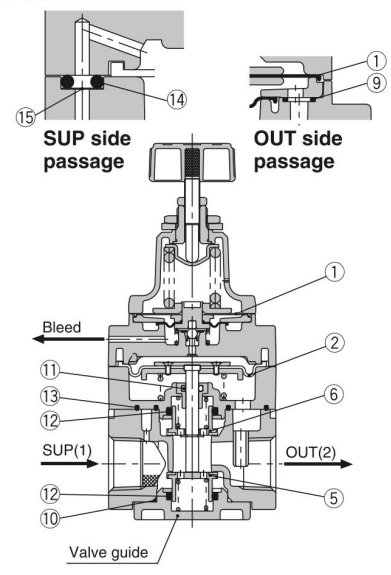
### PR100



### PR200



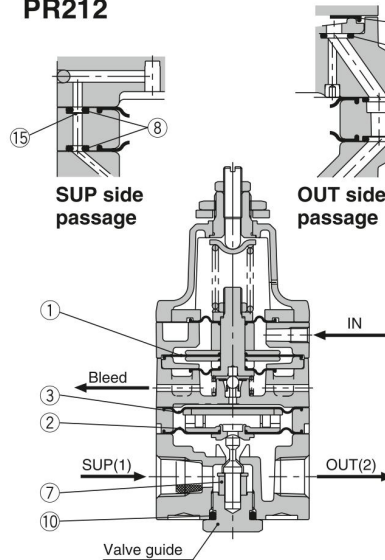
### PR300



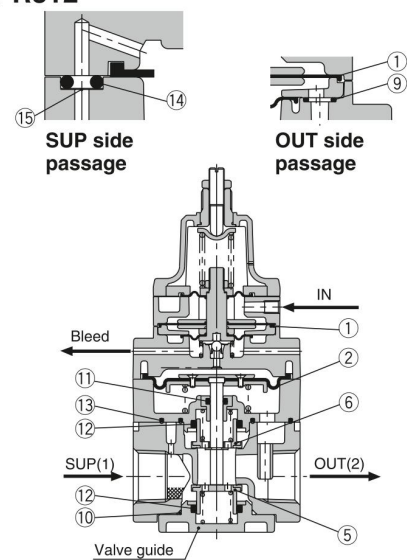
## Working Principle

When the setting knob is turned, the nozzle is closed by the flapper allowing the supply air that flows in from the upstream side to pass through the fixed throttle. It then acts on diaphragm B as nozzle back pressure, the main valve is pushed down by the generated force, and the supply pressure flows out to the downstream side. The air pressure that flows in acts on diaphragm C. While opposing the force generated by diaphragm B it also acts on diaphragm A, opposing the compression force of the setting spring and becomes the set pressure. If the set pressure rises too high, diaphragm A is pushed up, the interval between the flapper and the nozzle widens, the nozzle back pressure drops, the balance of diaphragms B and C is broken, the main valve closes, the exhaust valve opens and the excess pressure from the downstream side is discharged to the atmosphere. In this way fine pressure variations are detected by the nozzle/flapper type pilot mechanism, and precise pressure adjustment is performed.

### PR212



### PR312



## Replacement Parts

No.	Description	Material	PR10□		PR20□		PR30□		PR212		PR312	
			Part no.	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.	Qty.	Part no.	Qty.
1	Diaphragm assembly	NBR, other	2010-1	1	2020-2	1	2020-2	1	2020-13	1	2020-13	1
2	Diaphragm assembly	NBR, other	2010-2	1	2020-5	1	2030-1	1	2020-5	1	2030-1	1
3	Diaphragm	NBR, other	—	—	202019	1	—	—	202019	1	—	—
4	Valve	Stainless steel, NBR	201058	1	202068#1	1	—	—	202068#1	1	—	—
5	Valve	Brass, NBR	—	—	—	—	203009#1	1	—	—	203009#1	1
6	Valve	Brass, NBR	—	—	—	—	203010#1	1	—	—	203010#1	1
7	Damper	NBR, other	201021	1	202026	1	—	—	202026	1	—	—
8	O-ring	H-NBR	ø2.5 x 1.05	3	ø1.42 x 1.52	2	—	—	ø1.42 x 1.52	2	—	—
9	O-ring	NBR	—	—	ø4.5 x 1	3	ø4.5 x 1	1	ø4.5 x 1	3	ø4.5 x 1	1
10	O-ring	NBR	ø10 x 1.3	1	JISB2401P11	1	ø27.8 x 1.5	1	JISB2401P11	1	ø27.8 x 1.5	1
11	O-ring	NBR	—	—	—	—	JISB2401P5 <small>Note)</small>	1	—	—	JISB2401P5 <small>Note)</small>	1
12	O-ring	NBR	—	—	—	—	JISB2401P6 <small>Note)</small>	2	—	—	JISB2401P6 <small>Note)</small>	2
13	Seal (A)	NBR	—	—	—	—	203015	1	—	—	203015	1
14	Seal (B)	NBR	—	—	—	—	203016	3	—	—	203016	3
15	Fixed throttle	Stainless steel	202018	1	202018	1	203017	1	202018	1	203017	1
Repair kit no. (A set of above nos. ① to ⑮.)			KT-PR100		KT-PR200		KT-PR300		KT-PR212		KT-PR312	

Note) Use mini-flick type.

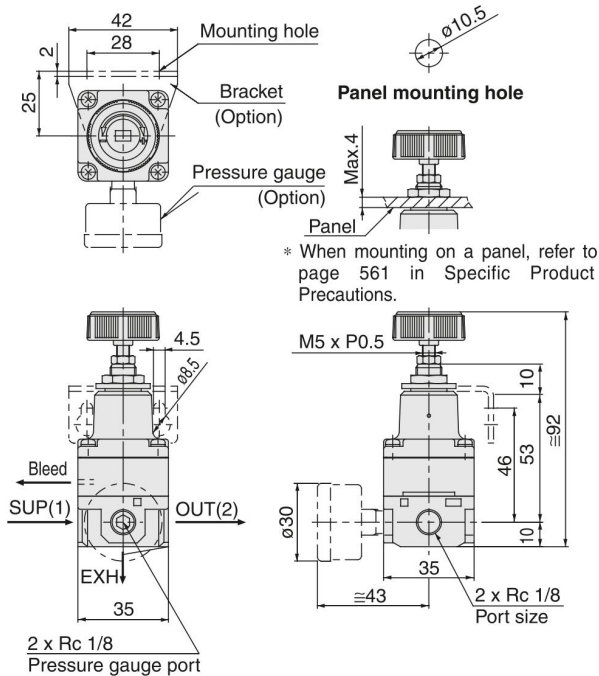
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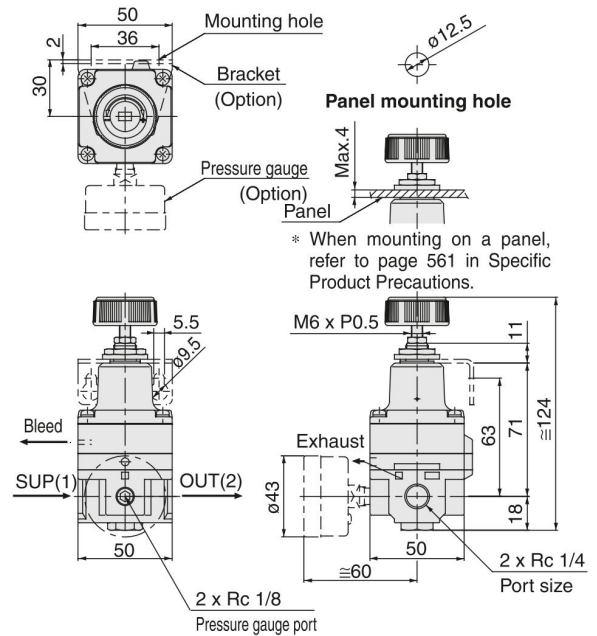
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## Dimensions

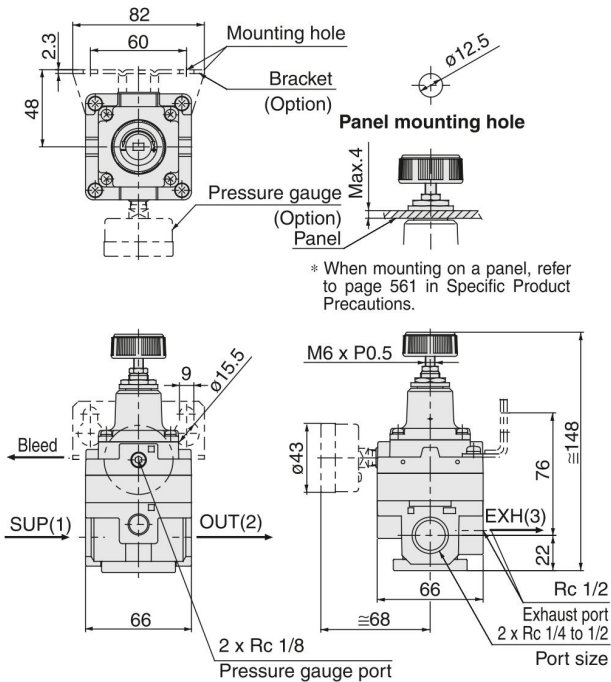
### PR10□-01□



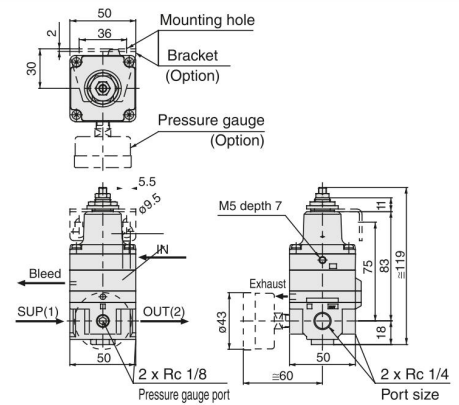
### PR20□-02□



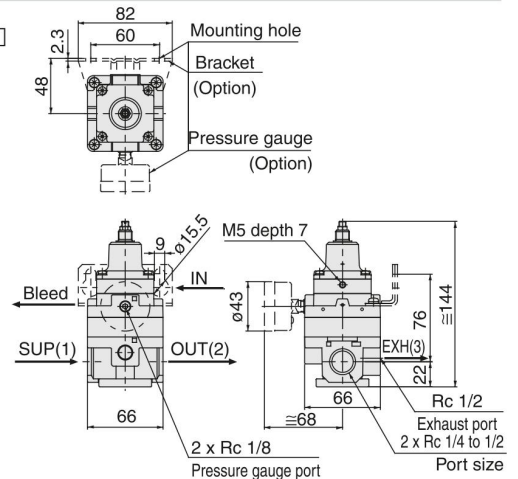
### PR30□-0□□



### PR212-02□



### PR312-0□□





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