

## Model PCV Series, Pressure Regulating Valves

Valution's PCV series regulators are valves that adjust the variable pressure of fluid such as gas and liquid used as an energy source by self acting without external power.

PCV series are divided into a Pressure Reducing Valve (secondary pressure reducing valve, Seat normal open) that decompresses and keeps the secondary pressure constant, and a Pressure Relief Valve (primary pressure regulating valve, Seat normal close) that opens and starts discharging when overpressure (set pressure) occurs.

It can be applied to the pressure adjustment of compressed air, gas, liquids (water, chemical liquids) in boilers, heat exchangers, fire prevention lines, industrial ovens or process engineering.

The structure of the body is the Straight Globe pattern, and soft and metal seats can be applied according to the Seat tightness requirements.

The sensing structure is generally integral, and external type is also possible depending on the requirements.



Figure 1. PRV-PCV Series, Pressure Reducing Valves

< Fig. 1 >

## 1. Numbering System

### Model : PCV

RV-11 : Pressure Reducing Valves, for 2" or Larger Sizes, Casting Body  
 RV-12 : Pressure Relief Valves, for 2" or Larger Sizes, Casting Body  
 RV-21 : Pressure Reducing Valves, for 1/2" to 2" Sizes  
 RV-22 : Pressure Relief Valves, for 1/2" to 2" Sizes  
 RV-31 : Micro Pressure Reducing Valves  
 RV-32 : Micro Pressure Relief Valves  
 Actuator Type : Spring Diaphragm or Spring Cylinder, Installed on the body  
 Body Pattern : Straight Globe Pattern

## 2. Features

- Low-maintenance proportional regulators
- Compact regulator design providing excellent control accuracy
- Internal set point springs with set point adjustment using a bolt on the actuator
- Spring-loaded, single-seated valve, balanced-seated
- External connection of a control line with option
- Meets strict emission requirements
- Minimum leakage class IV

### Standard versions

- Valves in NPS ½ to 8 (DN 15 to 200)
- Flanged, Threaded, Welding end connections
- Body made of CF8(304SS), CF8M(316SS), CF3M(316L) or Hastelloy, Titanium and other alloy steels.
- Soft diaphragm and seals

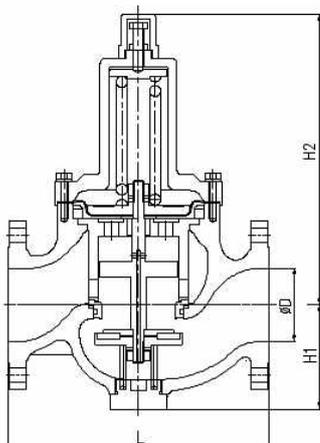
### 3. Model PCV, RV-11 & 12 Series

RV-11 : Pressure Reducing Valves, for 2" or Lager Sizes, Casting Body

RV-12 : Pressure Relief Valves, for 2" or Lager Sizes, Casting Body

#### Standard Specifications

- Valve Sizes : NPS 2" to 8" (DN 50 to 200)
- Pressure Ratings : ASME Class 150, 300, 600
- Flanged End Connections (Optional : Welding ends)
- Body made of CF8(304SS), CF8M(316SS), CF3M(316L) or Hastelloy, Titanium and other alloy steels.
- Applicable Media : Liquids, Gas
- Applicable Temp. : -10 ~ 80°C (Other ranges : optional)
- Minimum Applicable DP : 0.5 bar
- Spring Range : 0.5~3.0 bar, 3.0~6.5 bar, 6.5~10 bar
- Leakage Class : ANSI Class IV (Optional : Class V, VI)
- Max. Pr. Reduction Ratio = 5 : 1



< Fig. 2 >

| Dimensions (mm) |     |           |           |           |     |     |
|-----------------|-----|-----------|-----------|-----------|-----|-----|
| Body Size (IN)  | ØD  | L         |           |           | H1  | H2  |
|                 |     | Class 150 | Class 300 | Class 600 |     |     |
| 2"              | 50  | 254       | 267       | 286       | 102 | 250 |
| 3"              | 80  | 298       | 318       | 337       | 132 | 305 |
| 4"              | 100 | 352       | 368       | 394       | 160 | 395 |
| 6"              | 150 | 451       | 473       | 508       | 215 | 505 |
| 8"              | 200 | 543       | 568       | 610       | 275 | 615 |

< Table 1 > RV-11 & 12, Dimensions



< Fig. 3 >

| Valve Rated Cv Table |        |        |         |         |         |
|----------------------|--------|--------|---------|---------|---------|
| Size                 | 2"(50) | 3"(80) | 4"(100) | 6"(150) | 8"(200) |
| Rated Cv             | 20     | 75     | 125     | 200     | 275     |

< Table 2 > RV-11 & 12, Valve Rated Cv

#### \*. Note

1. All data shown in this product specification are currently standard specifications of Valution and can be customized by order specification.
2. All data shown above are subject to change without notice.

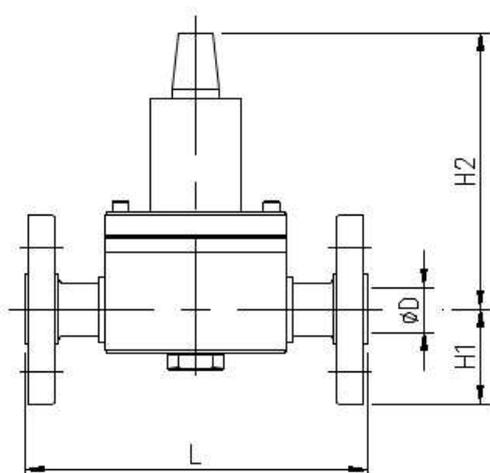
## 4. Model PCV, RV-21 & 22 Series

RV-21 : Pressure Reducing Valves, for 1/2" to 2" Sizes

RV-22 : Pressure Relief Valves, for 1/2" to 2" Sizes

### Standard Specifications

- Valve Sizes : NPS 1/2" to 2" (DN 15 to 50)
- Pressure Ratings : ASME Class 150, 300, 600
- Flanged, Threaded End Connections (Optional : Welding ends)
- Body made of 304SS, 316SS, 316L or Hastelloy, Titanium and other alloy steels.
- Applicable Media : Liquids, Gas
- Applicable Temp. : -10 ~ 80°C (Other ranges : optional)
- Minimum Applicable DP : 0.5 bar
- Spring Ranges : 0.5~3.0 bar, 3.0~6.5 bar, 6.5~10 bar
- Leakage Class : ANSI Class IV (Optional : Class V, VI)
- Max. Pr. Reduction Ratio = 5 : 1



< Fig. 4 >

| Dimensions, Flanged (mm) |    |     |       |         |
|--------------------------|----|-----|-------|---------|
| Body Size (IN)           | ØD | L   | H1    | H2      |
| 1/2"                     | 15 | 209 | 49~59 | 150~165 |
| 3/4"                     | 20 | 209 | 49~59 | 150~165 |
| 1"                       | 25 | 220 | 55~70 | 160~175 |
| 1.5"                     | 40 | 235 | 55~85 | 160~185 |
| 2"                       | 50 | 254 | 65~98 | 170~210 |

< Table 3 > RV-21 & 22, Dimensions

| Valve Rated Cv Table   |          |          |        |          |        |
|--|----------|----------|--------|----------|--------|
| Size   | 1/2"(15) | 3/4"(20) | 1"(25) | 1.5"(40) | 2"(50) |
| Rated Cv   | 4        | 5.5      | 8      | 14       | 22     |
| * The 'Cv' recorded in the table above is the rated capacity(Max.), and the minimum flow rate adjustment range is Cv=0.06 by optional. |          |          |        |          |        |

< Table 4 > RV-21 & 22, Valve Rated Cv



< Fig. 5 >

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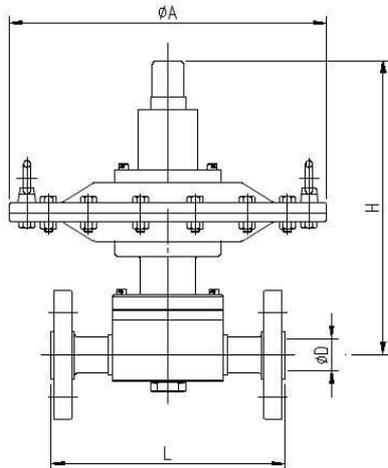
### 3. Model PCV, RV-31 & 32 Series

RV-31 : Micro Pressure Reducing Valves, for 1/2" to 2" Sizes

RV-32 : Micro Pressure Relief Valves, for 1/2" to 2" Sizes

#### Standard Specifications

- Valve Sizes : NPS 1/2" to 2" (DN 15 to 50)
- Pressure Ratings : ASME Class 150, 300
- Flanged, Threaded End Connections (Optional : Welding ends)
- Body made of 304SS, 316SS, 316L or Hastelloy, Titanium and other alloy steels.
- Applicable Media : Liquids, Gas
- Applicable Temp. : -10 ~ 80°C (Other ranges : optional)
- Minimum Applicable DP : 0.5 bar
- Spring Range : See next page Table
- Leakage Class : ANSI Class IV (Optional : Class V, VI)



< Fig. 6 >

| Dimensions, Flanged (mm) |    |     |              |              |
|--------------------------|----|-----|--------------|--------------|
| Body Size (IN)           | ØD | L   | ØA           | H            |
| 1/2"                     | 15 | 209 | 295(with #3) | 275(with #3) |
| 3/4"                     | 20 | 209 | 295(with #3) | 275(with #3) |
| 1"                       | 25 | 220 | 295(with #3) | 295(with #3) |
| 1.5"                     | 40 | 235 | 375(with #4) | 385(with #4) |
| 2"                       | 50 | 254 | 375(with #4) | 385(with #4) |

< Table 5 > RV-21 & 22, Dimensions

| Valve Rated Cv Table |          |          |        |          |        |
|----------------------|----------|----------|--------|----------|--------|
| Size                 | 1/2"(15) | 3/4"(20) | 1"(25) | 1.5"(40) | 2"(50) |
| Rated Cv             | 4        | 5.5      | 8      | 14       | 22     |

\*. The 'Cv' recorded in the table above is the rated capacity(Max.), and please refer to the table on the next page for the applicable flow rate adjustment range.

< Table 6 > RV-31 & 32, Valve Rated Cv



< Fig. 7 >

**\*. Note**

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### 3. Model PCV, RV-31 & 32 Series

RV-31 : Micro Pressure Reducing Valves, for 1/2" to 2" Sizes

RV-32 : Micro Pressure Relief Valves, for 1/2" to 2" Sizes

#### Specification Details

| Valve Size   |   | NPS 1/2<br>(DN 15)   | NPS 3/4<br>(DN 20)                    | NPS 1<br>(DN 25)                           | NPS 1-1/2<br>(DN 40)                             | NPS 2<br>(DN 50)                                      |
|--|---|--|---------------------------------------|--|--|---|
| Pressure Ratings   |   | Class 150, 300   |                                       |  |  |   |
| Applicable Cv  | Standard(Rated)                                   | 4  | 5.5                                   | 8  | 14   | 22  |
|  | Reduced Cv  | 0.02, 0.06<br>0.12, 0.25, 1,<br>2.5  | 0.02, 0.06<br>0.12, 0.25<br>1, 2.5, 4 | 0.02, 0.06<br>0.12, 0.25<br>1, 2.5, 4, 5.5 | 0.02, 0.06<br>0.12, 0.25<br>1, 2.5, 4,<br>5.5, 8 | 0.02, 0.06<br>0.12, 0.25<br>1, 2.5, 4,<br>5.5, 8, 14, |
| Max. permissible differential pressure                     |   | 150 psi (10 bar)   |                                       |  |  |   |
| Max. permissible temperature range<br>(medium temperature) |   | -20 to +60 °C  |                                       |  |  |   |
| Seat tightness class<br>IEC 60534-4 or ANSI/FCI 70-3       |   | Soft seated, minimum Class IV  |                                       |  |  |   |
| P2 Set pressure ranges                                     |   | 5~15 mbar, 10~30 mba, 25~60 mbar, 50~200 mbar, 0.1~0.6 bar, 0.2~1 bar,<br>0.8~2.5 bar, 2~5 bar, 4.5~10 bar |                                       |  |  |   |
| Max. permissible<br>pressure at operating<br>diaphragm     | Size #1, OD 200<br>E. Area : 154 cm <sup>2</sup>  | 5 bar, 12 bar  |                                       |  |  |   |
|  | Size #2, OD 250<br>E. Area : 276 cm <sup>2</sup>  | 4 bar, 10 bar  |                                       |  |  |   |
|  | Size #3, OD 290<br>E. Area : 371 cm <sup>2</sup>  | 3 bar, 10 bar  |                                       |  |  |   |
|  | Size #4, OD 370<br>E. Area : 604 cm <sup>2</sup>  | 3 bar, 7 bar   |                                       |  |  |   |
|  | Size #5, OD 480<br>E. Area : 1102 cm <sup>2</sup> | 3 bar, 5 bar   |                                       |  |  |   |
|  | Size #6, OD 550<br>E. Area : 1336 cm <sup>2</sup> | 3 bar, 5 bar   |                                       |  |  |   |
| Pressure sensing   |   | Integral (External : optional)   |                                       |  |  |   |
| Pressure gauges  |   | Aavailable by optional (In, Out)   |                                       |  |  |   |
| Pressure gauges connection                                 |   | G 1/4, (NPT 1/4 : with adapter)  |                                       |  |  |   |

\*. Available other ranges

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