

# GD-400,400SS

|                 |                   |                  |                 |
|-----------------|-------------------|------------------|-----------------|
| Direct type     | Pilot type        | Piston           | Diaphragm       |
| Bellows         | Internal sensing  | External sensing | Stainless steel |
| With handle     | Built-in strainer | Slight pressure  | Remote          |
| Valve leakage 0 | Nylon             |                  |                 |



GD-400SS

## ■Features

1. Pressure balance structure can keep the reduced pressure at a constant level without being affected by inlet pressure.
2. Due to simple structure, disassembly and maintenance can be conducted easily.
3. Wide range of use due to high maximum pressure ratio.
4. Diaphragm with a large pressure sensing area has accuracy to high set pressure.

## ■Specifications

| Model                             |             | GD-400                                                                                                    | GD-400SS                     |
|-----------------------------------|-------------|-----------------------------------------------------------------------------------------------------------|------------------------------|
| Nominal size                      |             | 15-50A                                                                                                    |                              |
| Application                       |             | Air, Nitrogen gas *1                                                                                      |                              |
| Inlet pressure                    |             | 2.5-400 kPa                                                                                               |                              |
| Reduced pressure                  |             | (A) 0.5-1.4 kPa (B) 1.2-3.3 kPa (C) 3.0-8.0 kPa (D) 7.0-20 kPa                                            |                              |
| Working temperature               |             | 5-60°C                                                                                                    |                              |
| Minimum differential pressure     |             | 2.0 kPa                                                                                                   |                              |
| Maximum pressure reduction ratio  |             | 400:1                                                                                                     |                              |
| Reduced pressure detection method |             | External sensing *2                                                                                       |                              |
| Minimum adjustable flow rate      |             | 15-25A: 1.2 m <sup>3</sup> /h (standard condition)<br>32-50A: 10.0 m <sup>3</sup> /h (standard condition) |                              |
| Material                          | Body        | Cast iron                                                                                                 | Cast stainless steel (SCS14) |
|                                   | Valve       | Stainless steel                                                                                           |                              |
|                                   | Valves seat | Stainless steel                                                                                           |                              |
|                                   | Disc        | NBR *3                                                                                                    |                              |
|                                   | Spindle     | Stainless steel                                                                                           |                              |
| Diaphragm                         |             | NBR *3                                                                                                    |                              |
| Connection                        |             | JIS 10K FF Flanged                                                                                        |                              |

\*1 Please contact us when using for other fluids.

\*2 A conduit (ø 8-2 m) and a joint for external sensing are included for GD-400. For

GD-400SS, please prepare one at your end.

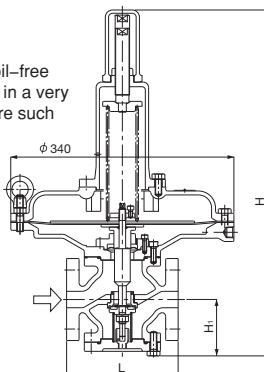
\*3 Available with FKM type.

\*4 Use on a compressed air system with dry air from oil-free compressors may cause deterioration of rubber parts in a very short time (ozone crack). Please consult with us before such installation.

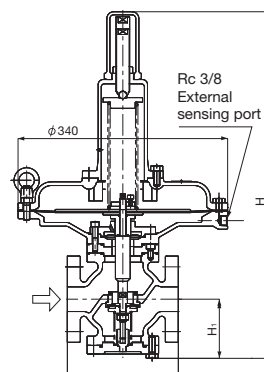
## ■Dimensions (mm) and Weights (kg)

| Nominal size | L   | H <sub>1</sub> | H   | Weight      |
|--------------|-----|----------------|-----|-------------|
| 15A          | 166 | 86             | 526 | 29.0 (32.0) |
| 20A          | 170 | 86             | 526 | 29.0 (32.0) |
| 25A          | 170 | 86             | 526 | 30.0 (33.0) |
| 32A          | 180 | 96             | 561 | 32.0 (34.0) |
| 40A          | 180 | 96             | 561 | 32.0 (34.0) |
| 50A          | 180 | 101            | 561 | 33.0 (35.0) |

\* The values in parentheses are the weights of the GD-400SS.

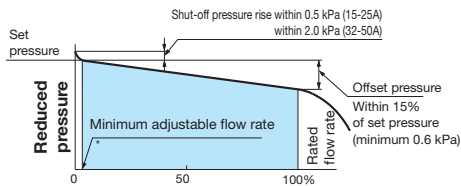


15A-25A



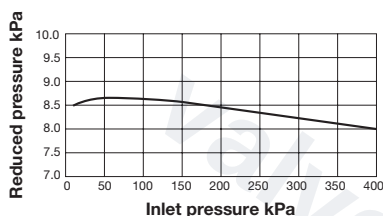
32A-50A

### Flow Characteristic Chart



\* 15-25A: 1.2 m<sup>3</sup>/h (standard condition)  
32-50A: 10.0 m<sup>3</sup>/h (standard condition)

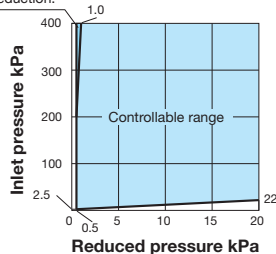
### Pressure Characteristic Chart



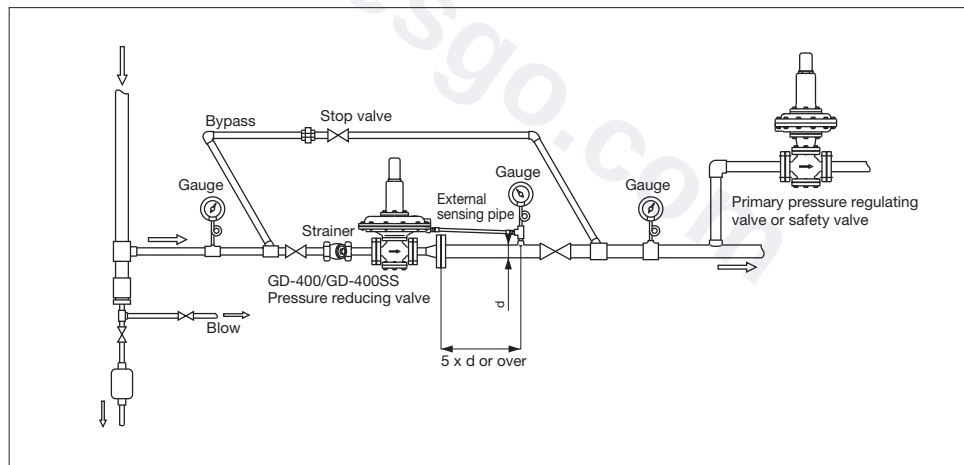
This chart shows variation in reduced pressure when the inlet pressure of 400 kPa is changed to 10 kPa while the reduced pressure is set at 8.0 kPa.

### Specifications Chart

This range requires two-stage pressure reduction.



### Piping Diagram Example



### [Precautions]

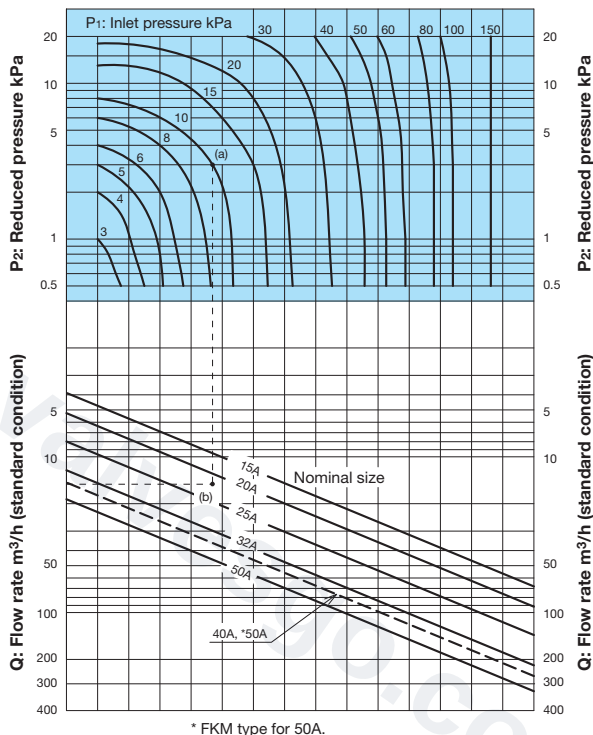
1. Connect the external sensing part to the outlet side.
2. Do not adjust needle valve of the pressure reducing valve unreasonably.
3. Make sure to use a pipe with a diameter that can keep the inside flow velocity between 5 m/s and 15 m/s for outlet side.
4. When performing pressure test or airtight test after connected to the piping, apply the airtest pressure specified in the right table.

\* If pressure beyond the specified airtest pressure is applied, internal parts may be damaged.

| Airtight test pressure |                  |              |                 |
|------------------------|------------------|--------------|-----------------|
| Inlet pressure         |                  |              | 400 kPa or less |
| Airtight test          | Reduced pressure | Spring range | A               |
|                        |                  |              | B               |
|                        |                  |              | C               |
|                        |                  |              | D               |
|                        |                  |              | 1.8 kPa or less |
|                        |                  |              | 4.2 kPa or less |
|                        |                  |              | 10 kPa or less  |
|                        |                  |              | 25 kPa or less  |

## ■ Chart for Selecting Nominal Sizes (GD-400)

When the inlet pressure is between 2.5 kPa and 200 kPa (Fluid: 20°C Air)



### [Example]

When selecting the nominal size of a pressure reducing valve whose inlet pressure ( $P_1$ ), reduced pressure ( $P_2$ ), and flow rate are 10 kPa, 3 kPa, and 15 m<sup>3</sup>/h (standard condition), respectively, first find intersection point (a) of the inlet pressure of 10 kPa and the reduced pressure of 3 kPa. Trace down vertically from this intersection point to find intersection point (b) with the flow rate of 15 m<sup>3</sup>/h (standard condition). Since intersection point (b) lies between nominal sizes 20A and 25A, select the larger one, 25A.

\* Set the safety factor at 80 to 90%.

**Table 1: When the inlet pressure is between 200 kPa and 400 kPa**

| Nominal size | Inlet pressure (kPa) | Rated flow rate (m <sup>3</sup> /h [standard condition]) |      |
|--------------|----------------------|----------------------------------------------------------|------|
|              |                      | Reduced pressure (kPa)                                   |      |
|              |                      | 0.5-4                                                    | 4-20 |
| 15A          | 200-400              | 60                                                       | 60   |
| 20A          | 200-300              | 90                                                       | 90   |
|              | 300-400              | 90                                                       | 120  |
| 25A          | 200-300              | 120                                                      | 120  |
|              | 300-400              | 120                                                      | 150  |
|              | 400                  | 120                                                      | 190  |

| Nominal size | Inlet pressure (kPa) | Rated flow rate (m <sup>3</sup> /h [standard condition]) |           |
|--------------|----------------------|----------------------------------------------------------|-----------|
|              |                      | Reduced pressure (kPa)                                   |           |
|              |                      | 0.5-4                                                    | 4-20      |
| 32A          | 200-400              | 200                                                      | 250       |
|              | 300-400              | 200                                                      | 300       |
| 40A          | 200-300              | 250                                                      | 300       |
|              | 300-400              | 250                                                      | 350       |
| 50A          | 200-300              | 350 [300]                                                | 400 [350] |
|              | 300-400              | 350 [300]                                                | 450 [400] |

\* The values in parentheses are the rate of FKM type.