# Model GP-2000 Pressure Reducing Valve

## Instruction Manual

Please read this bulletin thoroughly before using the pressure reducing valve, so that you may do so correctly and safely. Please carefully store this bulletin in a handy place.

The following safety symbols are used in this manual.

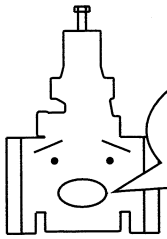
| | |
|---|---|
| ⚠Warning | This symbol indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. |
| ⚠Caution | This symbol indicates a hazardous situation that, if not avoided, may result in minor or moderate injury. ("Caution" may also be used to indicate other unsafe practices or risks of property damage.) |

## Specifications

| Model | GP-2000 | | |
|---|---|---|---|
| Connection Type | Screwed (JIS Rc) | Flanged (JIS 20K RF) | Flanged (JIS 10K FF) |
| Reduced pressure sensing method | External sensing | | |
| Nominal size | 15~50A | 15~150A | 15~150A |
| Fluid | Steam | | |
| Inlet pressure | 0.1~2.0MPa | | 0.1~1.0 MPa |
| Reduced pressure ※85% or less of inlet pressure (gauge pressure) | A (yellow) : 0.02~0.15MPa | | A (yellow) :0.02~0.15MPa |
| | B (green) :0.1~1.4MPa | | B (green) :0.1~0.85MPa |
| Min. differential pressure | 0.05MPa | | |
| Max. pressure reducing ratio | 20: 1 | | |
| Max. temperature | 220 ℃ | | |
| Valve seat leakage | 0.01% or less of rated flow | | |
| Material | Body: Ductile cast iron<br>Valve, Valve seat (Main and Pilot):Stainless steel<br>Diaphragm (Main and Pilot): Stainless steel | | |

※ [Optional valves (Cv value varies.)]
(1) For reduced pressure sensing method, internal sensing method valves will be available upon request. (15~100A)
(2) Valves with outlet pressure of 0.01~0.02MPa will be available upon request. (15~100A)

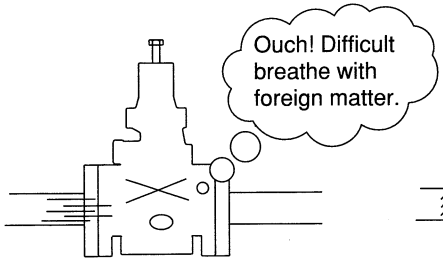
| | |
|---|---|
| ⚠ Caution | (1) Please collate with attached nameplate and specification of ordered model.<br>※Please consult factory in case they do not match each other. |



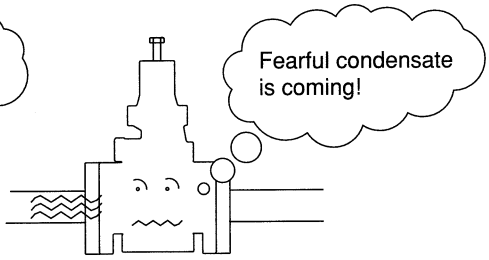
# Please read this instruction before using the pressure reducing valve.

In correct installation causes malfunction of the pressure reducing valve.
Please confirm the piping is not like what shown below.

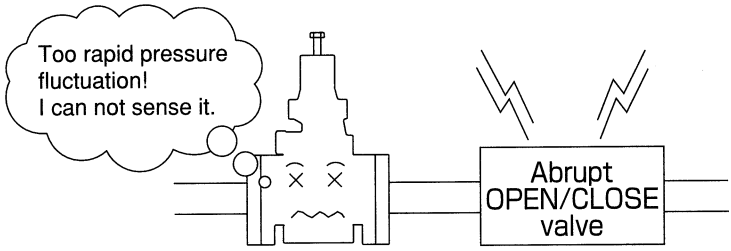
Strainer is not installed before the pressure reducing valve.



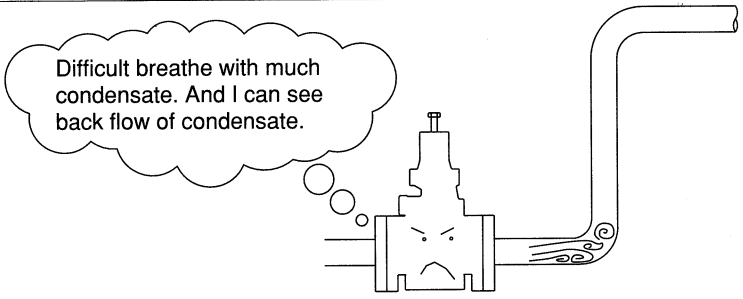

Drain separator and trap are not installed the pressure reducing valve.



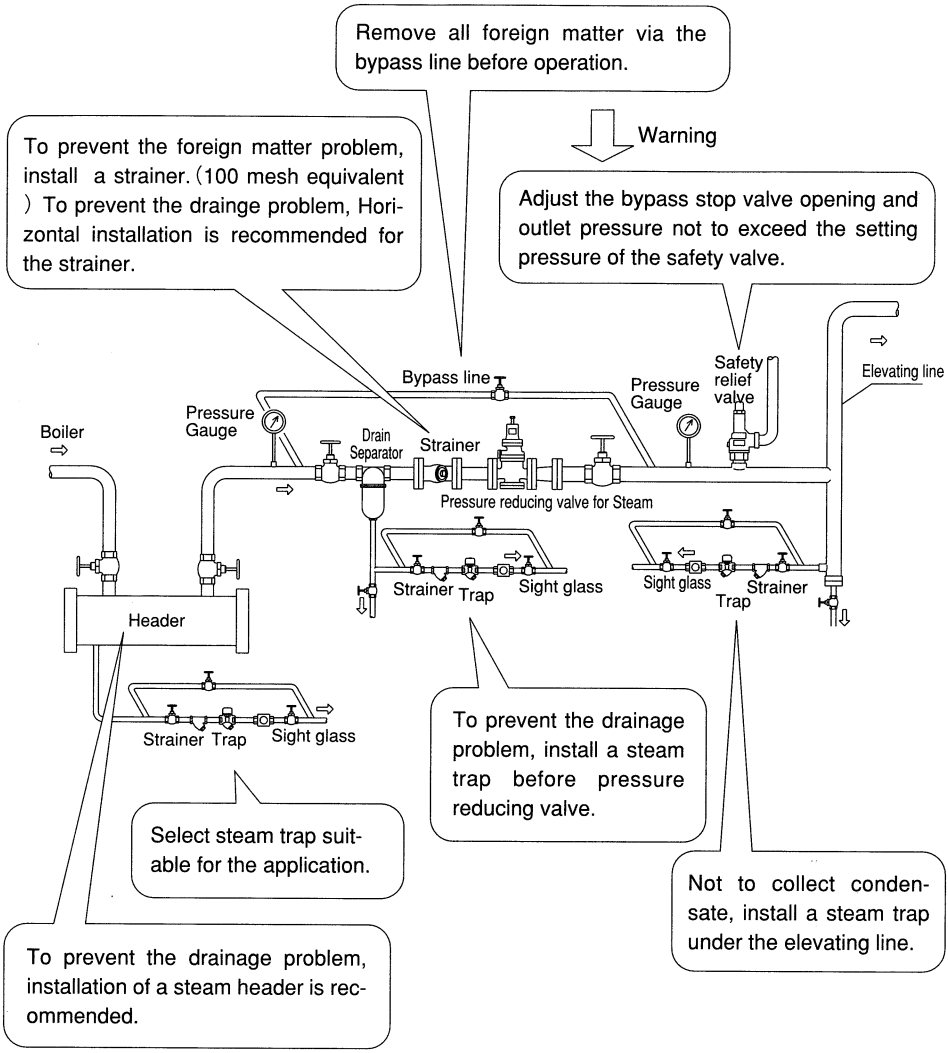

An abrupt OPEN/CLOSE valve is located too close to the pressure reducing valve, or the second pressure reducing valve is located too close to the first pressure reducing valve in two atage pressure reduction.




At outlet side of the pressure reducing valve, trap is not provided under the elevating line.



Problem with the pressure reducing valve is mainly due to foreign matter in the piping or drainage problem. Correct installation for foreign matter and drainage problem is needed to maintain the specified pressure reducing valve function.



# Install pressure reducing valve

## 1. When installing the pressure reducing valve

### ⚠Warning

(1) Because of heavy weight, hold the valve with lifting equipment while piping.
※Failure to do so may result in injury due to dropping the valve.

### ⚠Caution

(1) Do not disassemble the valve unreasonably.
※Disassembling the valve at your discretion may affect the original performance.
(2) Remove foreign matter and scales from the lines before connecting the valve.
※Failure to do so may prevent the valve from functioning correctly.
(3) Install a strainer (100-mesh or equivalent) at the valve inlet side.
※Failure to do so may hamper correct pressure control, which affects the original performance.
(4) Install a safety valve at the valve outlet sides of alarms.
※Failure to do so prevents problem identification, resulting in equipment damage.
(5) Install a pressure gauge at both the inlet and outlet sides of the valve.
※Failure to do so may hamper correct pressure control, which affects the original performance.
(6) Install a steam trap to the inlet sides of the valve to prevent drainage problems.
※Failure to do so may result in drainage problem, affecting the original performance.
(7) When installing quick open and close valves, such as a solenoid valve,secure at least 3m from the valve.
※Failure to do so may result in malfunction or drastically shortened service life.
(8) When reducing pressure in two stages, secure at least 3m between the valves.
※Failure to do so may result in malfunction, affecting the original performance.
(9) Install the valve in proper direction of the fluid flow.
※Failure to do so may affect the original performance.
(10) Do not apply excessive load, torque or vibration to the valve.
※Doing so may result in malfunction, affecting the original performance.

(1) Install the valve perpendicularly to horizontal lines.
(2) Set pressure of safety relief valve should be higher than the pressure reducing valve's pressure.
(3) When the pressure reducing ratio is large, install a reducer to keep the flow velocity below 30m/s or less in the pipe.
(4) Provide space on the top and bottom of the valve so that the valve can be easily disassembled and inspected. (See Fig.1)

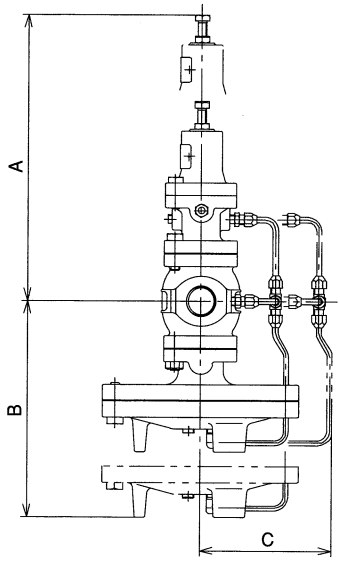



Fig.1

(mm)

| サイズ | A | B | C | Weight(JIS20K:kg) |
|---|---|---|---|---|
| 15A | 300 | 340 | 180 | 15.5 |
| 20A | 300 | 340 | 180 | 16.0 |
| 25A | 300 | 350 | 200 | 21.0 |
| 32A | 320 | 380 | 200 | 24.0 |
| 40A | 320 | 380 | 200 | 24.5 |
| 50A | 360 | 430 | 220 | 36.0 |
| 65A | 380 | 370 | 260 | 64.5 |
| 80A | 390 | 390 | 260 | 71.5 |
| 100A | 410 | 470 | 280 | 111.0 |
| 125A | 410 | 470 | 280 | 115.0 |
| 150A | 620 | 740 | 340 | 234.3 |
| 200A | 620 | 740 | 340 | 242.0 |

## 2. When installing accessories

**⚠Caution**

(1) When installing the pressure reducing valve, be sure to connect the provided sensing pipe and joint.
※Unless the sensing pipe is connected, the valve will not operate. Further, steam may blow off, resulting burns.

### <Sensing pipe connection method>

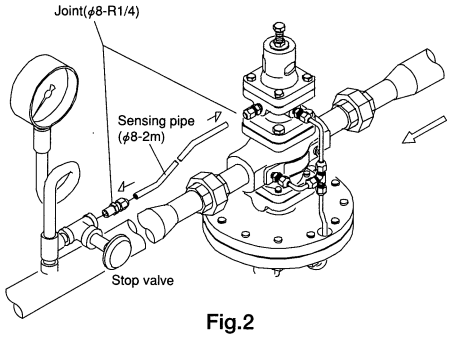



Fig.2

Connect the provided sensing pipe (ϕ8-2m)and joint (ϕ8-R1/4) as shown in the illustration on the left.

1. Wind sealing tape around the joint and insert the joint into the pressure sensing side.
2. Fully insert the sensing pipe into the valve and the pressere sensing side joint. Tighten the cap nut until it can no longer be rotated manually, and then turn the cap nut about one and quarter times with a tool. Note that the sensing pipe must be connected so that the valve side is higher than the pressure sensing side.

# Precautions for Pressure Reducing Valve Operation

## ⚠Warning

(1) Do not touch the valve directly with bare hands.
※Doing so may result in burns.

## ⚠Caution

(1) Close the stop valves before and after the pressure reducing valve, and remove all foreign matter and scales via the by-pass line before operation.
※Failure to do so may prevent the valve from functioning correctly.

(2) When adjusting pressure, slowly turn the adjusting screw.
※Incorrect adjustment may cause hunting, water hammer, etc., resulting in damage to the valve and other equipment.

(3) Remove condensation completely from the line, and close the stop valves before and after the valve when not using it for long periods of times.
※Rust generated in the valves and lines may cause malfunction.

## ■ Piping Example