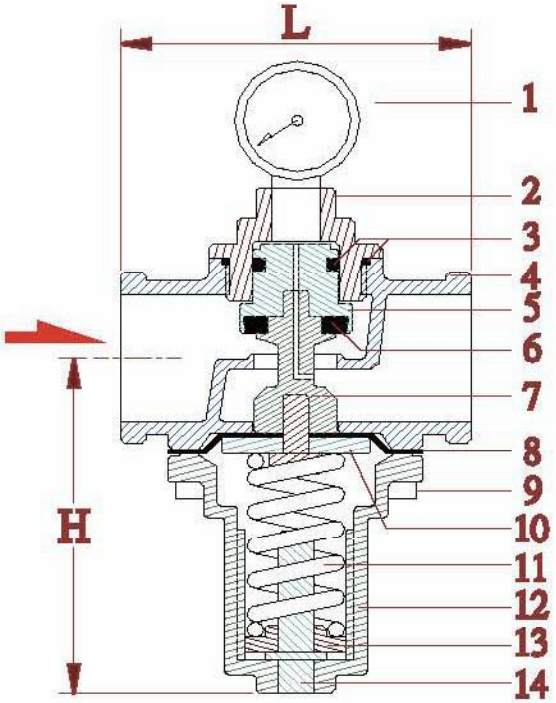
# DIRECT-ACTIVATED PRESSURE REDUCING VALVE
## ( Titanium - Offshore )

- Valve Body is made by Titanium, suitable for chemical, oil & gas, sea water, drink water, food, air, steam ...etc.
- The gate is balanced-pressure designed, which will not influence the outlet pressure caused by unstable inlet pressure.
- When the outlet pressure responds directly to the pressure control chamber and adjusts the setting pressure , it responds quickly and adjusts the pressure accurately.
- Design of piston and diaphragm improves the inability of sustaining pressure and leakage.




- Body Testing Pressure : 24 kgf/cm$^2$
- Max Applied Pressure : 16 kgf/cm$^2$
- Adjusting Range : 1 ~ 6 kgf/cm$^2$
  4 ~ 10 kgf/cm$^2$
- Applied Temperature : -15 ~ 180 c°

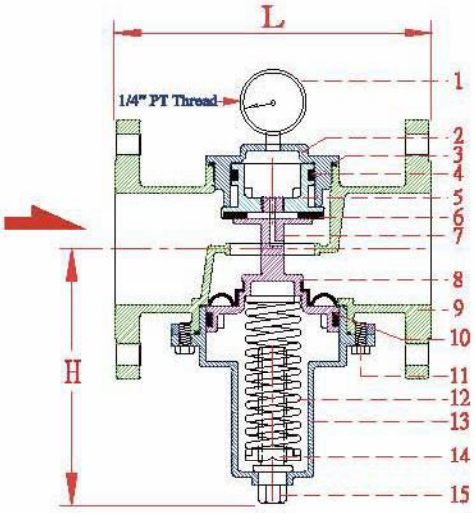
| No | Part Name | Material |
|---|---|---|
| 1 | Pressure Gauge | Stainless Steel |
| 2 | Upper Cover | Titanium |
| 3 | U-Ring | Viton(Teflon Coating) |
| 4 | Main Body | Titanium |
| 5 | Piston | Titanium |
| 6 | Sealing Spacer | Viton / Teflon |
| 7 | Shaft | Titanium |
| 8 | Diaphragm | CR Rubber(Teflon Coating) |
| 9 | Fixed Bolt | Titanium |
| 10 | Washer | Stainless Steel 304 |
| 11 | Spring | Spring Steel |
| 12 | Spring Cover | Titanium/SS316 |
| 13 | Washer | Stainless Steel 304 |
| 14 | Adjusting Stem | Stainless Steel 304 |

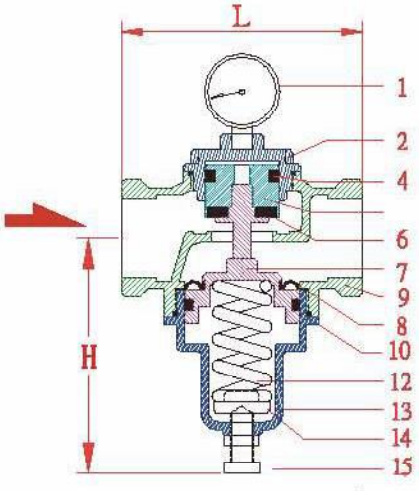
(Thread End)

| Item No | Size | H(mm) | L(mm) | Weight(kg) | CV |
|---|---|---|---|---|---|
| RDT-15 | 1/2" | 70 | 60 | 0.32 | 2 |
| RDT-20 | 3/4" | 70 | 70 | 0.40 | 6 |
| RDT-25 | 1" | 80 | 80 | 0.64 | 8 |
| RDT-32 | 1.25" | 85 | 90 | 1.20 | 16 |
| RDT-40 | 1.5" | 110 | 110 | 2.00 | 18 |
| RDT-50 | 2" | 115 | 115 | 2.40 | 21 |

# DIRECT-ACTIVATED PRESSURE REDUCING VALVE
## ( Stainless Steel 316 )

- Valve Body is made by Stainless Steel #316, suitable for fluid, air and steam.
- The gate is balanced-pressure designed, which will not influence the outlet pressure caused by unstable inlet pressure. Pressure needed from fully-closed gate to fully-opened gate : 1.5 kgf/cm$^2$.
- When the outlet pressure responds directly to the pressure control chamber and adjusts the setting pressure, it responds quickly and adjusts the pressure accurately.
- Design of piston and diaphragm improves the inability of sustaining pressure and leakage.




- Pressure Adjusting Range : 1～6 kgf/cm$^2$ ( 1 kgf/cm$^2$ = 14.2 psi) 4～10 kgf/cm$^2$ 8～13 kgf/cm$^2$
- Applied Temperature : -15～100°C 100～180°C (For steam)
- Valve Body Testing Pressure : 35 kgf/cm$^2$
- Maximum Applied Pressure : 25 kgf/cm$^2$
- Please cover steam pipelines with thermal materials

◎Special order can be arranged for higher pressure adjustment range.

| No | Part Name | Material |
|---|---|---|
| 1 | Pressure Gauge | Stainless Steel |
| 2 | Upper Cover | Stainless Steel 316 |
| 3 | O-ring | NBR / Viton / Teflon |
| 4 | U-ring | NBR / Viton |
| 5 | Piston | Stainless Steel 316 |
| 6 | Sealing Spacer | NBR / Viton / Teflon |
| 7 | Shaft | Stainless Steel 316 |
| 8 | Diaphragm | NBR/ Viton |
| 9 | Main Body | Stainless Steel 316 |
| 10 | UH-ring | NBR / Viton |
| 11 | Fixed Bolt | Stainless Steel 304 |
| 12 | Spring | Spring Steel |
| 13 | Lower Cover | Stainless Steel 316 |
| 14 | Washer | Brass |
| 15 | Adjusting Stem | Stainless Steel 304 |

(Thread End)

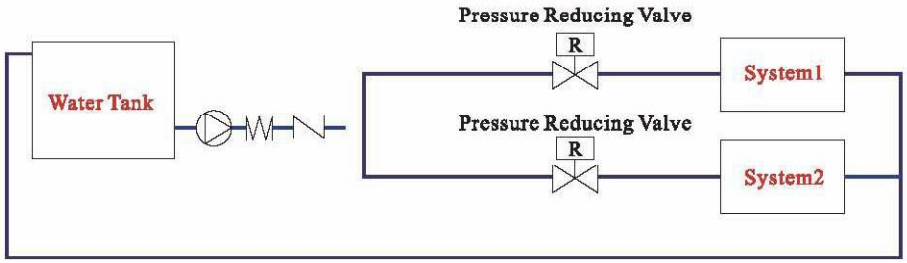
| Item No | Size | H(mm) | L(mm) | Weight(kg) | CV |
|---|---|---|---|---|---|
| RET15-S | 1/2" | 80 | 70 | 0.8 | 2.4 |
| RET20-S | 3/4" | 105 | 85 | 1.0 | 9.0 |
| RET25-S | 1" | 105 | 92 | 1.1 | 11.0 |
| RET40-S | 1.5" | 130 | 115 | 2.2 | 21.0 |
| RET50-S | 2" | 130 | 120 | 3.1 | 25.0 |

(Flange End)

| Item No | Size | H(mm) | L(mm) | Weight(kg) | CV |
|---|---|---|---|---|---|
| REF15-S | 1/2" | 85 | 150 | 2.0 | 2.4 |
| REF20-S | 3/4" | 105 | 150 | 2.8 | 9 |
| REF25-S | 1" | 105 | 150 | 3.5 | 11 |
| REF40-S | 1.5" | 130 | 190 | 5.9 | 21 |
| REF50-S | 2" | 130 | 190 | 6.5 | 25 |
| REF65-S | 2.5" | 185 | 210 | 11.5 | 75 |
| REF80-S | 3" | 185 | 225 | 12.0 | 80 |
| REF100-S | 4" | 230 | 250 | 19.0 | 120 |
| REF150-S | 6" | 290 | 310 | 45.0 | 250 |

## Applied condition of Direct-activated Pressure Reducing Valve：

- ▶ Installing pressure reducing valve directly in sub-pipe can reduce fluid pressure inside the pipe.
- ▶ Installing a filter in the inlet of pressure reducing valve can prevent block of valve gate caused by impurities and limescale.
- ▶ Installing pressure relief valve downstream pressure reducing valve can protect the system.
- ▶ While using screws to connect pressure reducing valve, joints should be installed in the inlet and outlet to make maintainance easy.




## Pressure Setting and Flow Rate of Direct-activated Pressure Reducing Valve：

- ▶ Direct-activated pressure reducing valve directly opens and closes the valve gate by the outlet pressure. When outlet pressure is under setting pressure, valve gate automatically opens. To make valve gate fully open, adjustable pressure range and setting pressure are relative points.
- ▶ A：Pressure drop needed for fully-opened valve gate = $\frac{B}{4}$ ，B=Adjustable Pressure Range Maximum-Minimum

B：Adjustable Pressure Range ( = Maximun Minimum Adjustable Pressure Rang )

C：Setting Pressure of Outlet

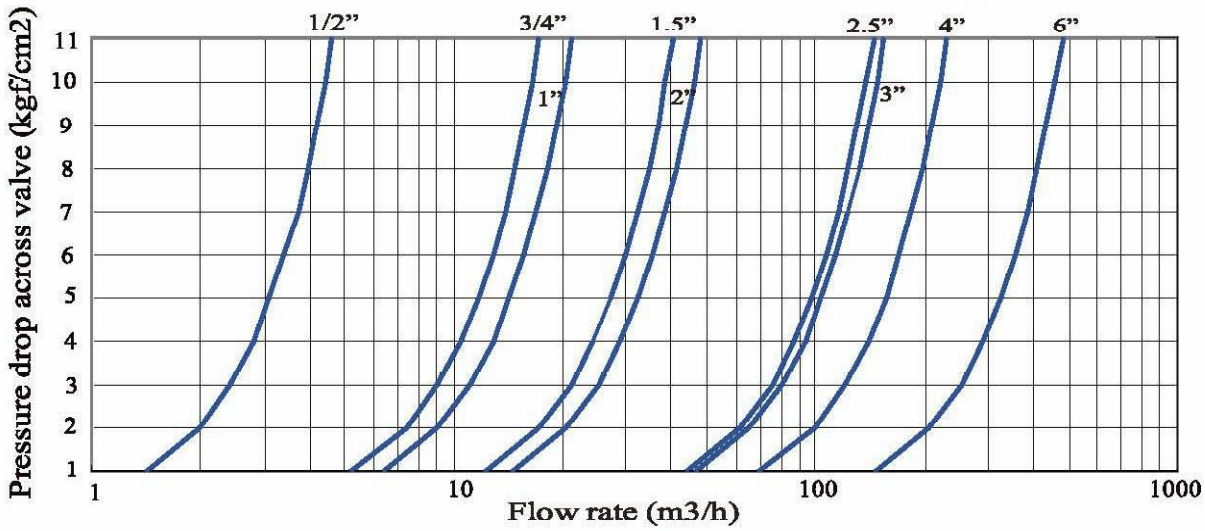
P：Pressure of fully-opened outlet valve gate, P=C-A

Example：

Pressure drop needed for fully-opened valve gate for adjusting pressure range 3～9 kgf/cm$^2$ of direct-activated pressure reducing valve. A= $\frac{B}{4}=\frac{9-3}{4}$ =1.5 kgf/cm$^2$

If the setting pressure of outlet is 6 kgf/cm$^2$, pressure of fully-opened valve gate will be P=6-1.5= 4.5 kgf/cm$^2$ (Outlet pressure should go down under 4.5 kgf/cm$^2$ to make valve gate fully open)

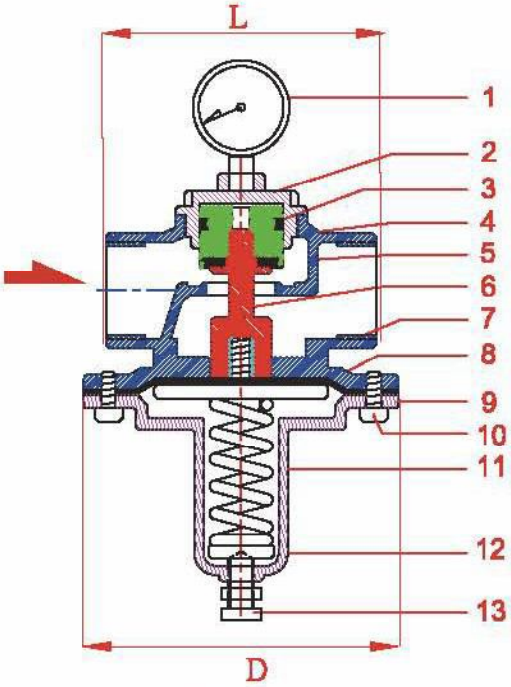
## Flow Chart of Direct-activated Pressure Reducing Valve



# LOW PRESSURE TYPE DIRECT-ACTIVATED PRESSURE REDUCING VALVE ( Stainless Steel 316 )

- Valve Body is made by Stainless Steel #316, suitable for fluid, air and oil.
- Larger diaphragm is more sensitive to pressure.

- Pressure Adjusting Range：0.2 ～1.5 kgf/cm²
- Applied Temperature：-15～80°C
- Valve Body Testing Pressure：16 kgf/cm²
- Maximum Applied Pressure：10 kgf/cm²
- Holizontal installation (Adjusting stem points down) is obligatory




**Thread / Flange Type**

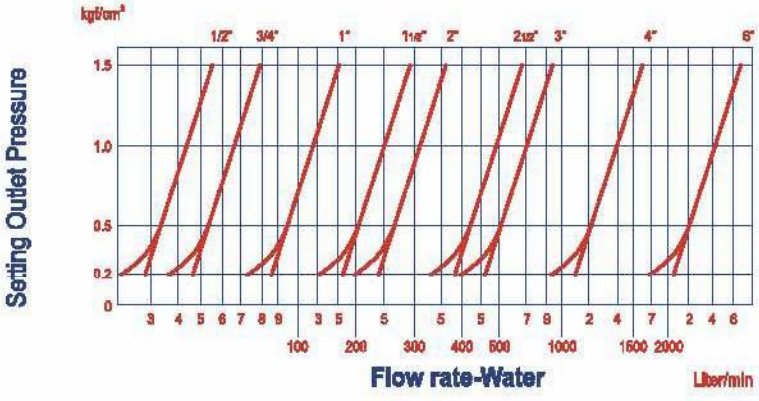
**◎Thread type does not have Part No. 10.**

| No | Part Name | Material |
|---|---|---|
| 1 | Pressure Gauge | Stainless Steel |
| 2 | Upper Cover | Stainless Steel 316 |
| 3 | U-ring | NBR / Viton |
| 4 | Piston | Stainless Steel 316 |
| 5 | Sealing Spacer | NBR / Viton |
| 6 | Shaft | Stainless Steel 316 |
| 7 | Main Body | Stainless Steel 316 |
| 8 | Diaphragm | Nylon-CR/Nylon-Viton |
| 9 | Lower Cover | Stainless Steel 316 |
| 10 | Fixed Bolt | Stainless Steel 304 |
| 11 | Spring | Spring Steel |
| 12 | Washer | Brass |
| 13 | Adjusting Stem | Stainless Steel 304 |

(Thread End)

| Item No | Size | H(mm) | L(mm) | D(mm) | Weight(kg) | CV |
|---|---|---|---|---|---|---|
| RELT15-S | 1/2" | 110 | 70 | 105 | 1.3 | 2.4 |
| RELT20-S | 3/4" | 125 | 85 | 105 | 1.5 | 9.0 |
| RELT25-S | 1" | 125 | 90 | 105 | 1.6 | 11.0 |
| RELT40-S | 1.5" | 155 | 115 | 145 | 3.0 | 21.0 |
| RELT50-S | 2" | 155 | 120 | 145 | 4.0 | 25.0 |

**Flow Chart of Direct-activated Pressure Reducing Valve**



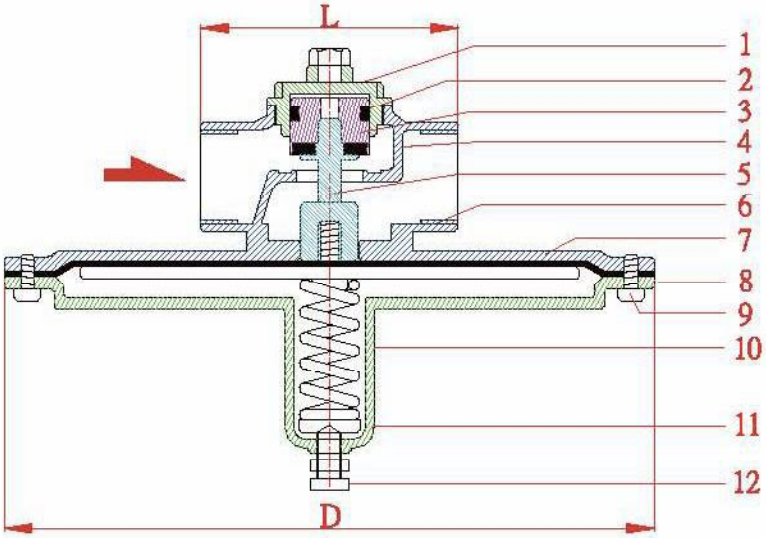

(Flange End)

| Item No | Size | H(mm) | L(mm) | Weight(kg) | CV |
|---|---|---|---|---|---|
| RELF15-S | 1/2" | 110 | 150 | 2.5 | 2.4 |
| RELF20-S | 3/4" | 125 | 150 | 3.5 | 9.0 |
| RELF25-S | 1" | 125 | 150 | 5.6 | 11.0 |
| RELF40-S | 1.5" | 155 | 190 | 8.7 | 21.0 |
| RELF50-S | 2" | 155 | 190 | 13.5 | 25.0 |

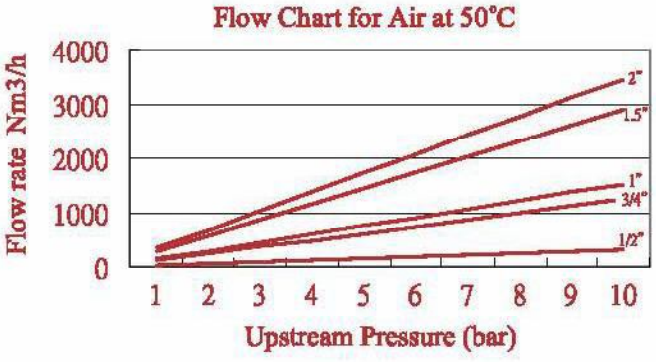
# MICRO PRESSURE TYPE DIRECT-ACTIVATED PRESSURE REDUCING VALVE (STAINLESS STEEL 316)

- Valve Body is made by Stainless Steel #316, suitable for fluid, air and oil.
- Larger diaphragm is more sensitive to pressure.

- Pressure Adjusting Range : 0.02 ~ 0.2 kgf/cm$^2$
- Applied Temperature : -15~80°C
- Valve Body Testing Pressure : 16 kgf/cm$^2$
- Maximum Applied Pressure : 10 kgf/cm$^2$
- Holizontal installation (Adjusting stem points down) is obligatory




| No | Part Name | Material |
|---|---|---|
| 1 | Cover | Stainless Steel 316 |
| 2 | UH-Ring | NBR |
| 3 | Piston | Stainless Steel 316 |
| 4 | Sealing | NBR |
| 5 | Shaft | Stainless Steel 316 |
| 6 | Main Body | Stainless Steel 316 |
| 7 | Diaphragm | Nylon-CR/Nylon-Viton |
| 8 | Spring Cover | Stainless Steel 316 |
| 9 | Stem | Stainless Steel 304 |
| 10 | Spring | Spring Steel |
| 11 | Washer | Brass |
| 12 | Stem | Stainless Steel 304 |




(Thread End)

| ITEM NO. | SIZE | L | D | Weight(kg) | CV |
|---|---|---|---|---|---|
| RELT-15-SLP | 1/2" | 70 | 310 | 12 | 2.4 |
| RELT-20-SLP | 3/4" | 85 | 310 | 12 | 9.0 |
| RELT-25-SLP | 1" | 90 | 310 | 12 | 11.0 |
| RELT-40-SLP | 1.5" | 115 | 310 | 14 | 21.0 |
| RELT-50-SLP | 2" | 120 | 310 | 16 | 25.0 |