

# SPRINGLOADED PRESSURE REDUCING REGULATOR TBR(S)H8

## THE MILLIBAR REGULATOR



### MAIN FEATURES

- ss 316L body
- ptfе diaphragm
- balanced valve
- vacuum tight
- atex Ex II 2 GD
- adjustable from zero pressure
- easy to polish
- easy maintenance
- shell design according to EN 12516
- delivery according to PED

### CHARACTERISTICS

Inlet pressure : 0,1 - 6 bar, 0,1 -16 bar  
16 bar design pressure

Outlet ranges : 5 – 500 mbar  
6 bar design pressure

Under pressure : vacuum

Seat diameters:

• TBR(S)H8 : 8 mm

• TBR(S)H5 : 5 mm

Seat leakage : EN12266, rate a, p12  
ANSI Class VI

Dependency ratio : 1 : 3000

Materials:

• Body & Trim : ss 316L

• Springhousing : ss 316L

• Stem guide : ptfе

• Valve housing : ptfе

• Valve seat ring : viton

• Diaphragm : ptfе

Connections : 1" bspp female

1" npt female

flanges ansi 1" 150# rf

flanges din DN25 PN16

tri-clamps 1" bsod

Weight:

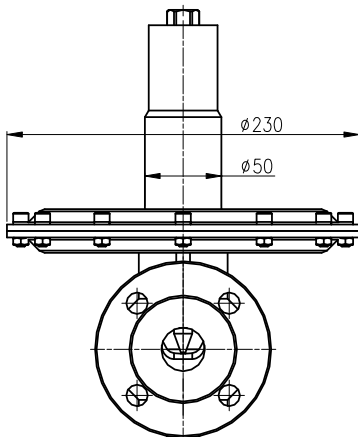
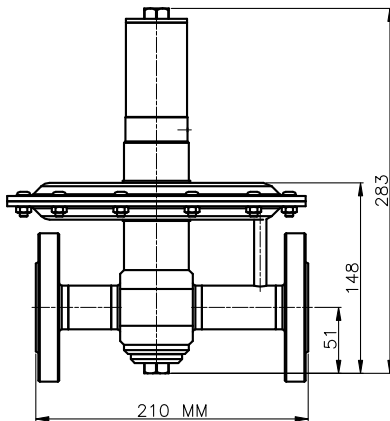
• screwed models : 6,5 kg

• flanged models : 8,5 kg

Temperature range : -20 to + 140°C \*

**Do not use teflon tape or anaerobic sealing compounds on the bspp threads.**

\* Actual range depends on choice of seat- and seal material.



Swagelok regulators are not "Safety Accessories" as defined in the Pressure Equipment Directive 97/23/EC:



Do not use the regulator as a shut off device.

**RHPS Series**

**Swagelok**

## O-RINGS

Viton o-rings are standard.

### Options:

- EPDM (compound FS-EPDM70-USP05) to FDA 21CFR, USP24 CL VI
- Kalrez (compound 6230) to FDA 21CFR, USP24 CL VI

## CLEANING

This regulator is ultrasonically cleaned and degreased.

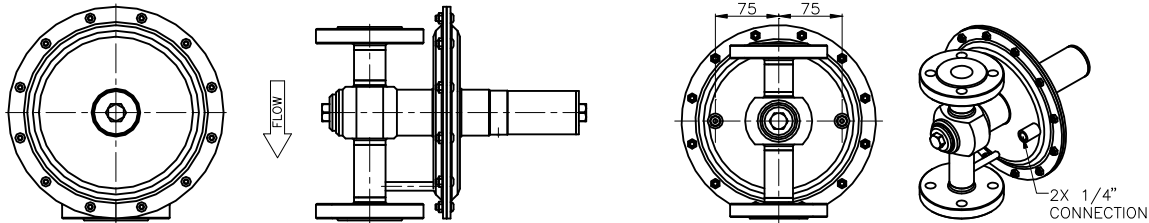
Oxygen cleaning based on

ASTM-G93 Level C / CGA 4.1 is optional.

## INSTALLATION

Preferably in a vertical mode to allow draining.

From a control point of view there is little or no difference between horizontal or vertical mounting.



mounting mode (preferably)

gauge connections (option)

## MAINTENANCE

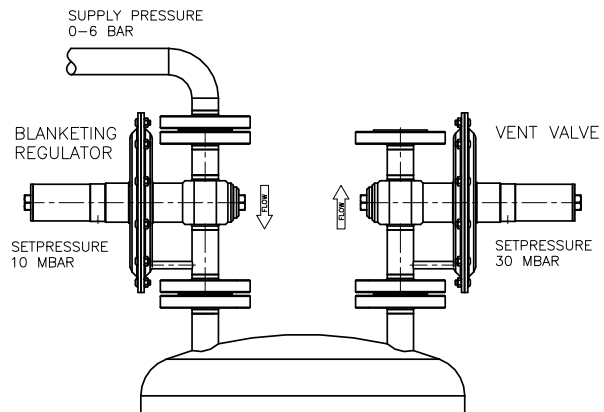
- No need to remove LoBār from the system for maintenance / repair.
- No special tools required.

## RECOMMENDATIONS

We recommend keeping the supply pressure level below 6 bar.

Set the supply blanketing regulator at 10 mbar outlet pressure and the vent valve at 30 mbar.

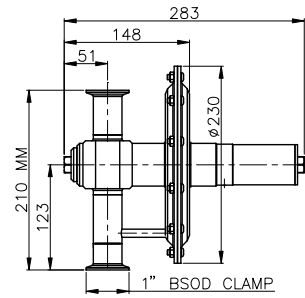
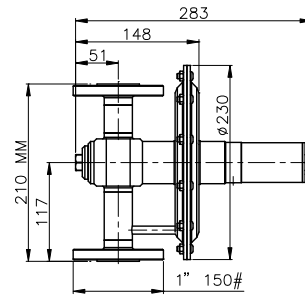
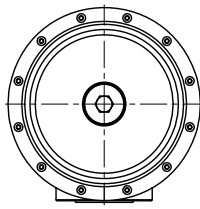
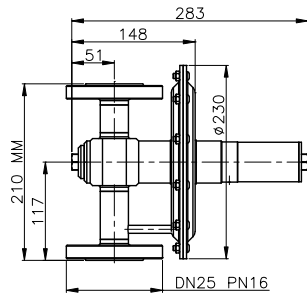
Supply pressure : 0 - 6 bar  
 Pressure range : 10 – 50 mbar  
 Mounting mode : vertically



## GENERAL INFORMATION

- Setpoint is the point where the regulator closes bubble tight.
- A tankblanketing regulator is not a substitute for a vacuum relief device.
- Failure of the tank blanketing regulator must be taken into account when considering possible causes of over-pressure in a tank.
- Dependency ratio 1: 3000 means that a change in inletpressure of 3bar (3000 mbar) will result in a change in outletpressure of 1 mbar.

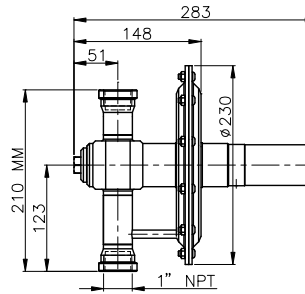
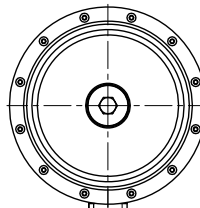
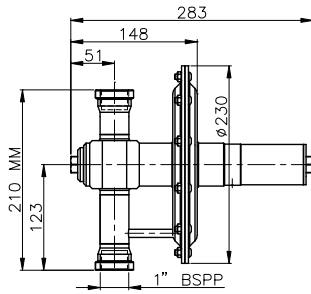
## DIMENSIONS



DN25 PN16 – EN 1092-1/ Type 11 / B1

1" 150# - ANSI B16.5

1" BSOD CLAMP



1" BSPP – ISO 228-1

1" NPT – ANSI B1.20.1

All dimensions are in millimeters.

## FLOWTABLE – SEAT Ø8MM

|                              |  | Airflow (Nm <sup>3</sup> /hr) |     |     |     |     |    |    |    |     |     |     |
|------------------------------|--|-------------------------------|-----|-----|-----|-----|----|----|----|-----|-----|-----|
|                              |  | Inlet pressure (bar)          |     |     |     |     |    |    |    |     |     |     |
| Outlet pressure range (mbar) |  | 0.1                           | 0.2 | 0.4 | 0.6 | 0.8 | 1  | 2  | 3  | 4   | 5   | 6   |
| 5 – 10                       |  | 4                             | 8   | 16  | 24  | 32  | 40 | 65 | 85 | 105 | 125 | 145 |
| 10 – 50                      |  | "                             | "   | "   | "   | "   | "  | "  | "  | "   | "   | "   |
| 20 – 200                     |  | -                             | -   | "   | "   | "   | "  | "  | "  | "   | "   | "   |
| 50 – 500                     |  | -                             | -   | -   | -   | -   | "  | "  | "  | "   | "   | "   |

### Note 1:

If P1 is less than 1 bar, P2 should not exceed 50% of P1 in order to reach the given flow.

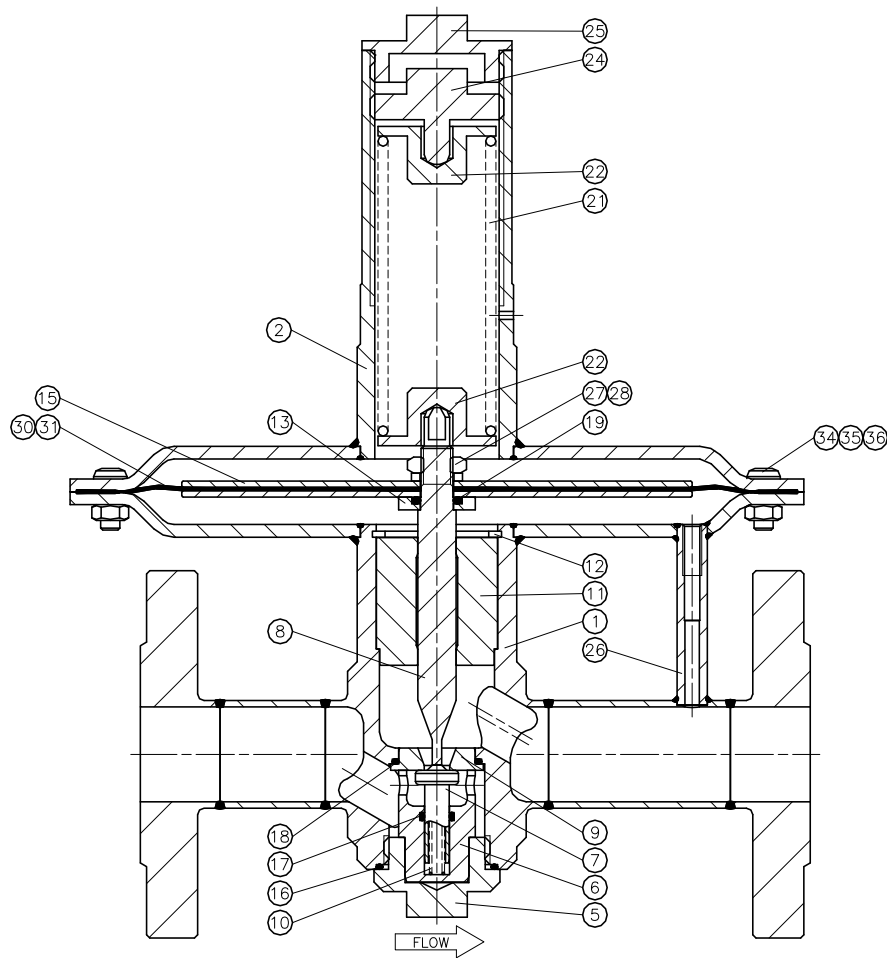
## FLOWTABLE – SEAT Ø5MM

|                              |  | Airflow (Nm <sup>3</sup> /hr) |    |    |    |    |     |
|------------------------------|--|-------------------------------|----|----|----|----|-----|
|                              |  | Inlet pressure (bar)          |    |    |    |    |     |
| Outlet pressure range (mbar) |  | 2                             | 4  | 6  | 9  | 12 | 16  |
| 5 – 10                       |  | 16                            | 32 | 48 | 70 | 90 | 120 |
| 10 – 50                      |  | "                             | "  | "  | "  | "  | "   |
| 20 – 200                     |  | "                             | "  | "  | "  | "  | "   |
| 50 – 500                     |  | "                             | "  | "  | "  | "  | "   |

### Note 2:

As one can see the P1 determines the maximum flow.

Reason: P2 is less than half of the P1. In this situation the gas flows through the seat at sonic velocity, cannot go any faster. We have critical or choked flow. So, even if P2 becomes 1 mbar, the flow will not increase.



**ORDERING INFORMATION**  
**example: TBRSA8A1-02-3-VTV-FS**

| TBRS   | FA8A  | 1   | - 02               | -3  | - V   | T               | V   | - FS   |
|--|---|---|--------------------|---|---|-----------------|---|--|
| series / inlet   | connection  | flange facing*  | material           | outlet range  | o-rings   | diaphragm       | seat  | options  |
| <b>TBRS =</b><br>0, 1 - 6 bar<br>8 mm seat<br><br><b>TBRSH =</b><br>0, 1 - 16 bar<br>5 mm seat | <b>B8 = 1" bspp</b><br><b>N8 = 1" npt</b><br><b>FA8A = 1" Class 150</b><br><b>FD8M = DN25 PN16</b><br><b>TC8 = 1" bsod tri-clamps</b> | (if flanges are ordered)<br><b>1 = raised face</b><br><b>smooth</b> | <b>02 = ss316L</b> | <b>1 = 5 - 10 mbar</b><br><b>2 = 10 - 50 mbar</b><br><b>3 = 20 - 200 mbar</b><br><b>4 = 50 - 500 mbar</b> | <b>V = viton</b><br><br><i>Options:</i><br><b>E = epdm</b><br><b>K = kalrez</b> | <b>T = ptfе</b> | <b>V = viton</b><br><i>Options:</i><br><b>E = epdm</b><br><b>K = kalrez</b> | <b>FS = factory set &amp; locked</b><br><b>P4 = wetted parts polished 0, 4 μm</b><br><b>P8 = wetted parts polished 0, 8 μm</b> |

Red text identifies an example ordering number.

**Safe Product Selection**

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

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