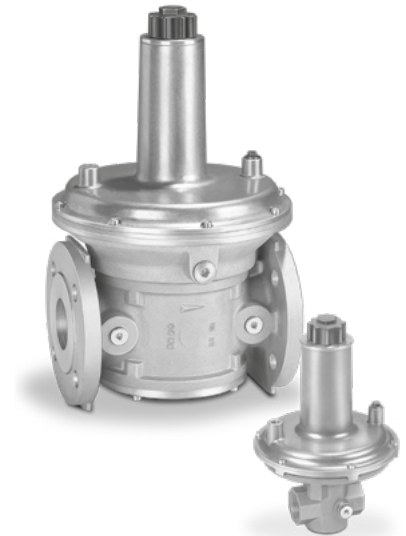


Gas pressure regulators VGBF

TECHNICAL INFORMATION

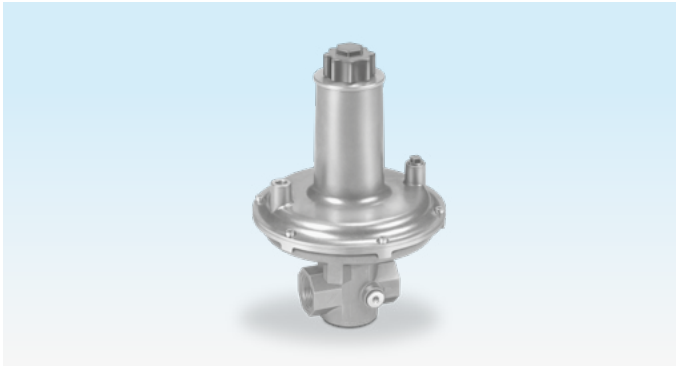
- Pressure regulators for gaseous media for installation in all types of gas appliances
- Design with inlet pressure compensation diaphragm ensures high control accuracy
- High flow rate due to optimal dimensioning
- Internal impulse on VGBF..05
- Feedforwarding the furnace chamber pressure is possible
- No breather line required



Contents

| | | | |
|--|-----------|------------------------------------|-----------|
| Contents | 2 | 9 Maintenance cycles | 23 |
| 1 Application | 3 | Fore more information | 24 |
| 1.1 Application examples | 4 | | |
| 2 Certification | 5 | | |
| 3 Function | 6 | | |
| 4 Flow rate | 8 | | |
| 4.1 VGBF..05 | 8 | | |
| 4.2 VGBF..10 | 10 | | |
| 4.3 VGBF..40 | 12 | | |
| 4.4 Calculating the nominal size | 13 | | |
| 5 Selection | 14 | | |
| 5.1 ProFi | 14 | | |
| 5.2 Selection table with Rp internal thread or with ISO flange | 14 | | |
| 5.3 Selection table VGBF..T VGBF with Rp internal thread or with ISO flange | 14 | | |
| 5.4 Type code | 15 | | |
| 6 Project planning information | 16 | | |
| 6.1 Installation | 16 | | |
| 6.2 Installation to EN 746-2 | 16 | | |
| 6.3 Installing the impulse line | 17 | | |
| 6.4 Installation to NFPA 86 | 17 | | |
| 6.5 Feedforwarding the furnace chamber pressure | 17 | | |
| 7 Accessories | 18 | | |
| 7.1 Damping valve | 18 | | |
| 8 Technical data | 19 | | |
| 8.1 Dimensions VGBF with Rp internal thread or with ISO flange | 20 | | |
| 8.2 Dimensions VGBF..T with NPT internal thread or with ANSI flange | 21 | | |
| 8.3 Spring table | 22 | | |

1 Application



VGBF..R



VGBF..TN



VGBF..F



VGBF..TA

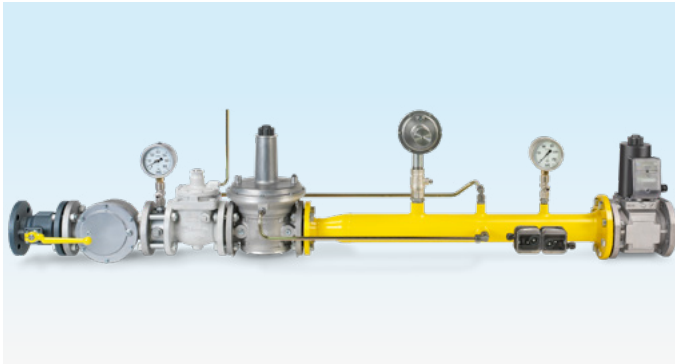
Application

The spring-loaded gas pressure regulator VGBF with inlet pressure compensation diaphragm and zero shut-off serves to maintain the set outlet pressure constant despite changing gas flow rates and inlet pressures in gas pipelines.

Thanks to an additional safety diaphragm, no breather line is required, except for installation pursuant to NFPA 86, see page 17 (Installation to NFPA 86).

For use in gas inlet sections in all sectors of the iron, steel, glass and ceramics industries as well as in commercial heat generation, such as the packaging, paper and foodstuffs industries.

1.1 Application examples



Gas inlet section

2 Certification

Certificates, see www.docuthek.com

EU certified



VGBF 15 to VGBF 150

- (EU) 2016/426 (GAR) – Gas Appliances Regulation
- DIN EN 88-1:2011
- DIN EN 88-2:2008
- DIN EN 334:2009

VGBF 100F40

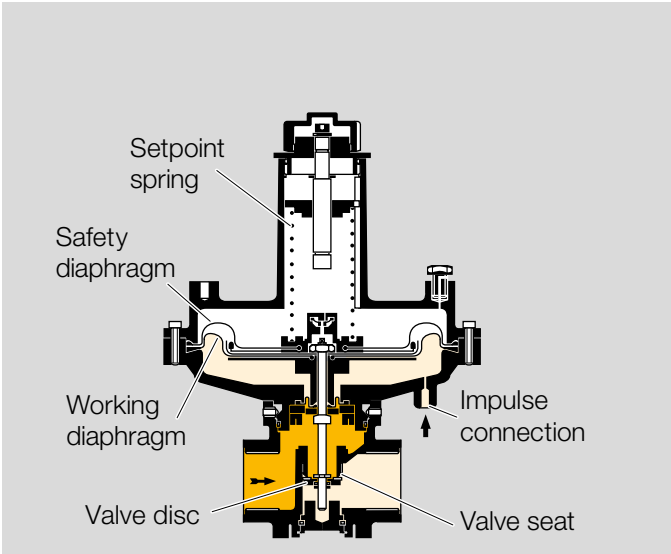
- 2014/68/EU (PED), Pressure Equipment Directive

Eurasian Customs Union

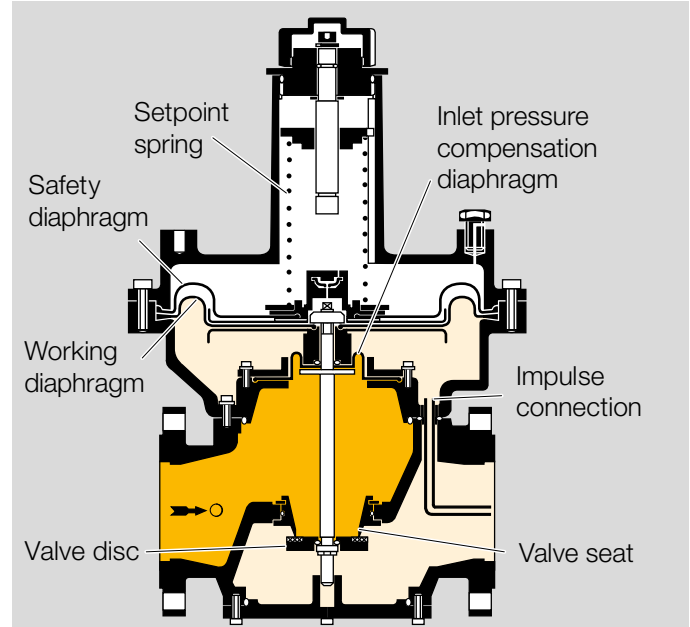


The products VGBF meet the technical specifications of the Eurasian Customs Union.

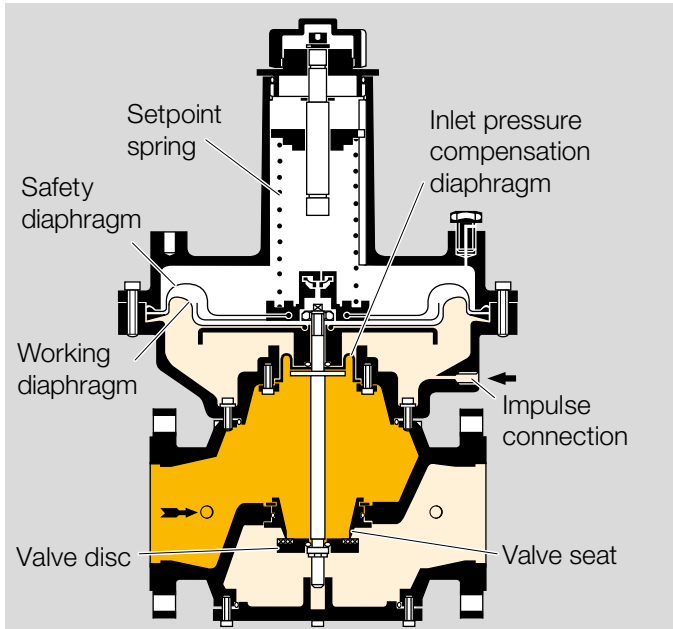
3 Function



VGBF..R10, VGBF..R40



VGBF..F05



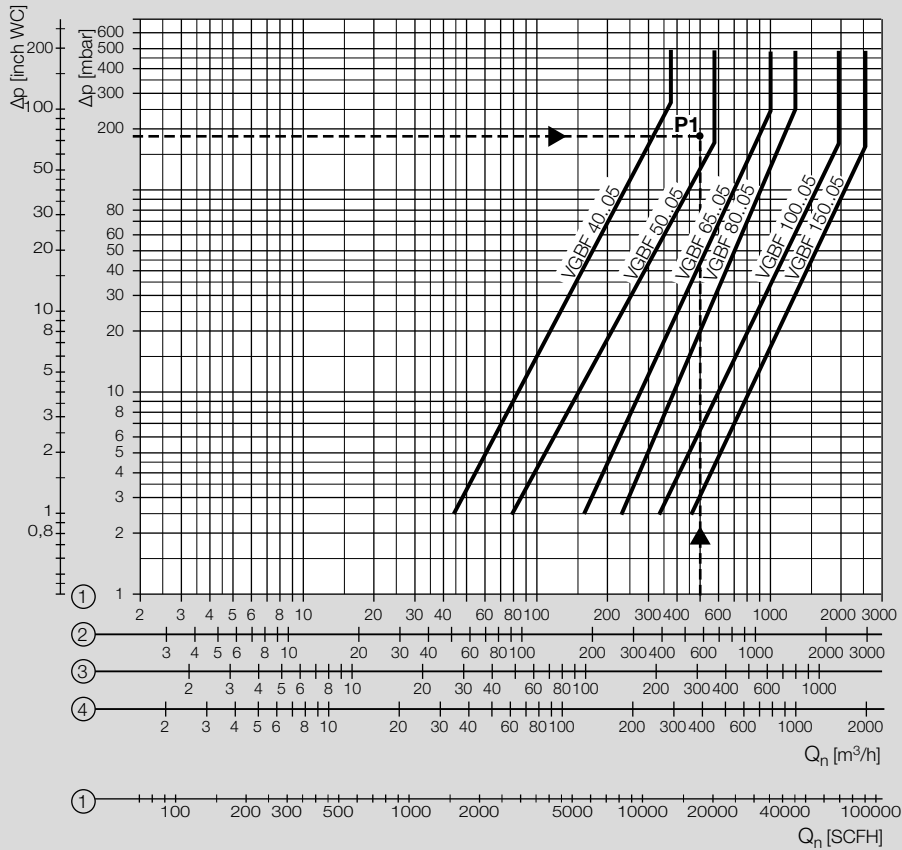
VGBF..F10, VGBF..F40

Gas pressure regulator VGBF is open when no pressure is applied. The gas supply is opened slowly and the gas flows via the open valve seat to the pressure regulator outlet. The outlet pressure is applied to the space beneath the working diaphragm via the impulse line. As soon as the outlet pressure corresponds to the set spring force, the working diaphragm lifts and the valve disc connected to it reduces the flow rate. If the outlet pressure drops, e.g. due to switching on a consumer, the valve disc is opened further and the outlet pressure increases again. If the outlet pressure increases, e.g. due to reduced consumption, the valve disc is closed further and the outlet pressure decreases again.

Thus, the outlet pressure is maintained constant despite changing gas flow rates. If consumption is stopped, the valve disc cuts off the flow completely (zero shut-off). Fluctuations in the inlet pressure are compensated by the inlet pressure compensation diaphragm. Pressure test nipples can be installed to measure the inlet and outlet pressures.

4 Flow rate

4.1 VGBF.05



1 = natural gas ($\rho = 0.80 \text{ kg/m}^3$)
 2 = town gas ($\rho = 0.64 \text{ kg/m}^3$)

3 = LPG ($\rho = 2.01 \text{ kg/m}^3$)
 4 = air ($\rho = 1.29 \text{ kg/m}^3$)

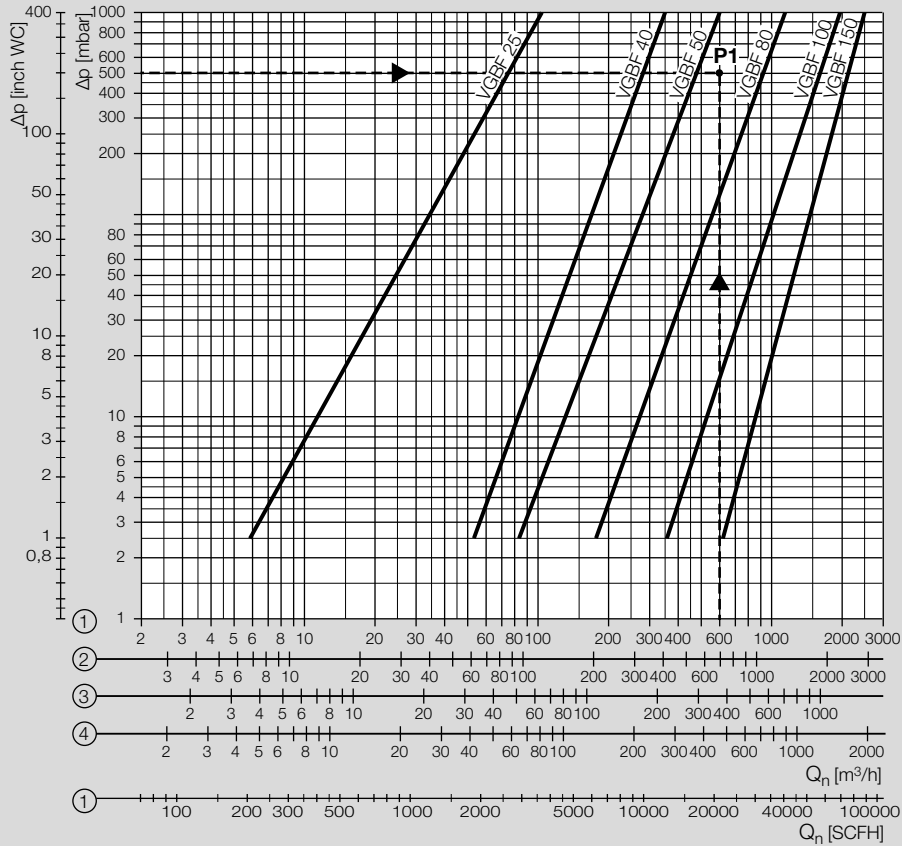
Flow rate

Gas type: natural gas,
flow rate $Q = 500 \text{ m}^3/\text{h}$,
inlet pressure $p_u = 200 \text{ mbar}$,
outlet pressure $p_d = 20 \text{ mbar}$,
pressure loss
 $\Delta p = p_u - p_d = 180 \text{ mbar}$.

The result is intersection P1. The next largest nominal size is selected: VGBF 50..05.

At a pressure loss of $\Delta p = 180 \text{ mbar}$, the max. flow rate is $Q_{\text{max.}}$:
 $580 \text{ m}^3/\text{h}$, the min. flow rate is $Q_{\text{min.}}$ derived from $Q_{\text{min.}}$
 $= Q_{\text{max.}} \times 10 \% = 58 \text{ m}^3/\text{h}$.

4.2 VGBF.10



1 = natural gas ($\rho = 0.80 \text{ kg/m}^3$)

2 = town gas ($\rho = 0.64 \text{ kg/m}^3$)

3 = LPG ($\rho = 2.01 \text{ kg/m}^3$)

4 = air ($\rho = 1.29 \text{ kg/m}^3$)