

Gas pressure regulators VGBF

Technical Information · GB

2 Edition 08.12



- 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
- No breather line required
- EC type-tested and certified
- Certified by Gosstandart pursuant to GOST-TR

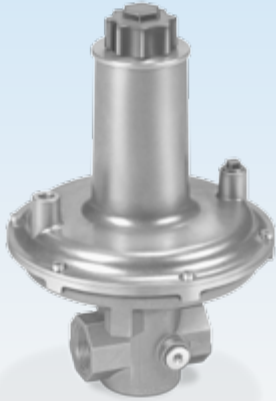


krom //
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Table of contents

Gas pressure regulators VGBF	1
Table of contents	2
1 Application	3
1.1 Examples of application	4
2 Certification	5
3 Function	6
4 Flow rate	7
4.1 Selection example for VGBF..05	7
4.2 Selection example for VGBF..10	8
4.3 Selection example for VGBF..40	9
5 Selection	10
5.1 Type code	10
6 Project planning information	11
6.1 Installation	11
6.2 Installation to EN 746-2	11
7 Accessories	12
7.1 Damping valve	12
8 Technical data	13
8.1 Dimensions	14
8.2 Data table	14
8.3 Spring table	15
9 Maintenance cycles	16
Feedback	17
Contact	17

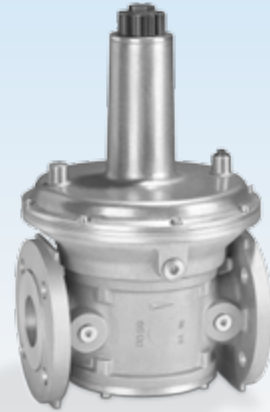
1 Application



VGBF..R

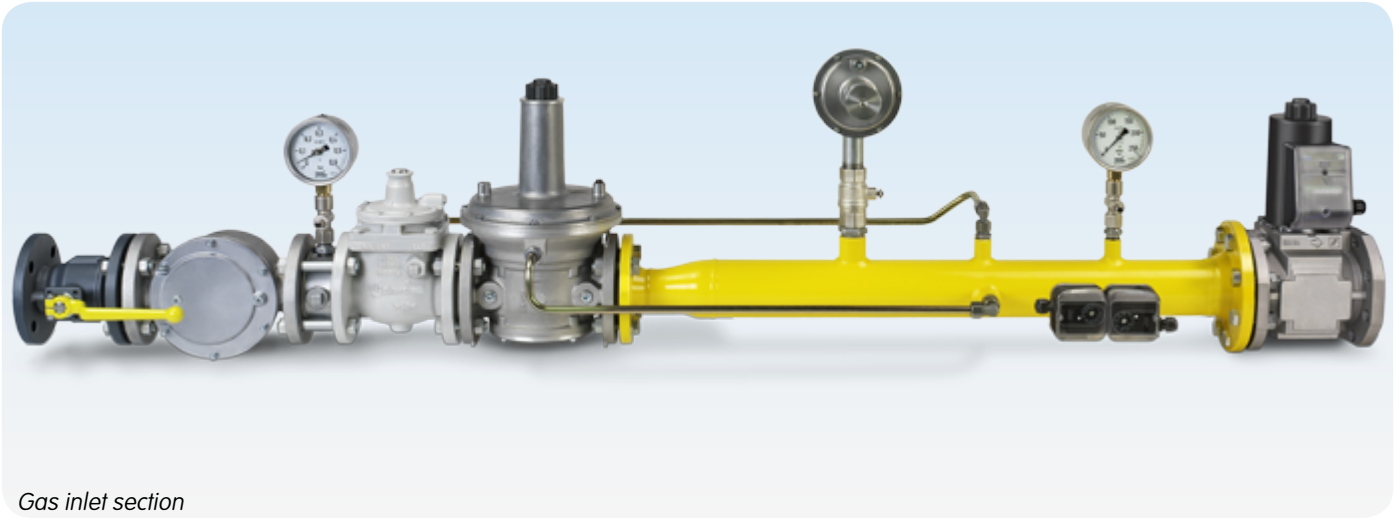
The spring-loaded gas pressure regulator VGBF with inlet pressure compensation diaphragm and zero shut-off serves to maintain the set outlet pressure constant despite changing gas flow rates and inlet pressures in gas pipelines. Thanks to an additional safety diaphragm, no purge line is required.

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.



VGBF..F

1.1 Examples of application



2 Certification

EC type-tested and certified



pursuant to

- Gas Appliances Directive (2009/142/EC) in conjunction with DIN EN 88 and DIN 3380.
- Pressure Equipment Directive (97/23/EC) in conjunction with DIN EN 334.

Approval for Russia

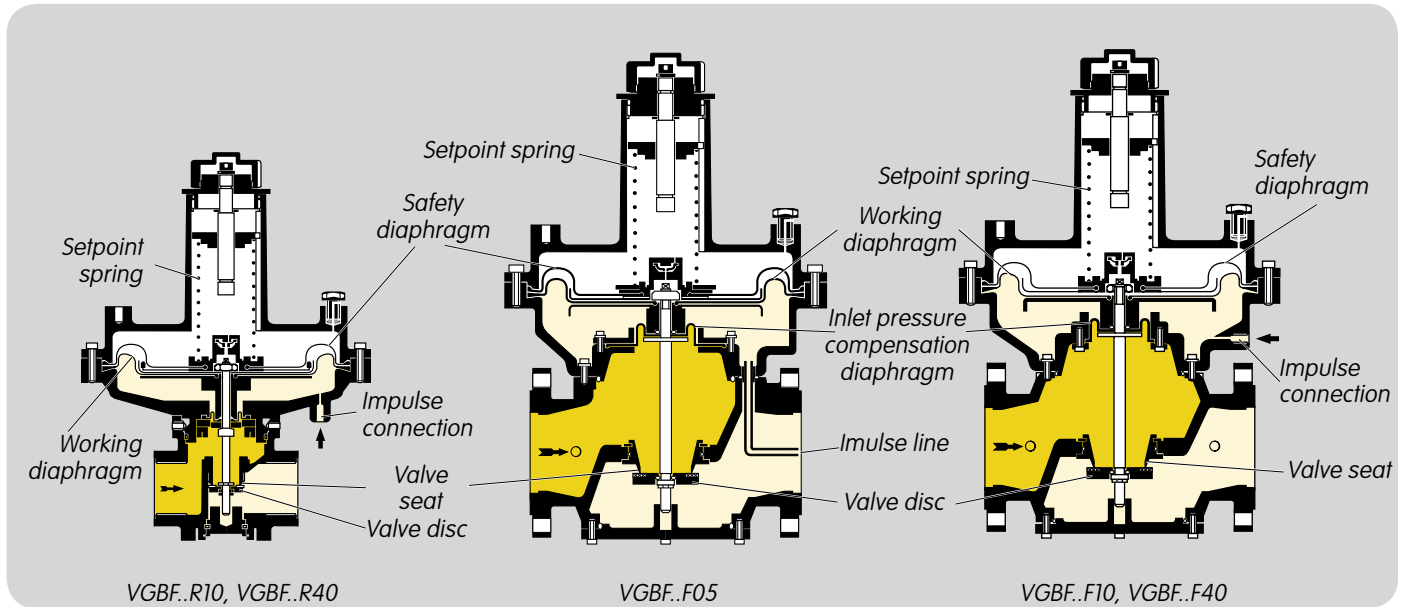


Certified by Gosstandart pursuant to GOST-TR.

Approved by Rostekhnadzor (RTN).

Scan of the approval for Russia (RUS) – see www.docuthek.com
 → Elster Kromschroder → Products → 02 Pressure regulators
 → Gas pressure regulators VGBF → Kind of document: Certificate → VGBF B00093 (nationales Zertifikat Russland) (RUS).

3 Function



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.

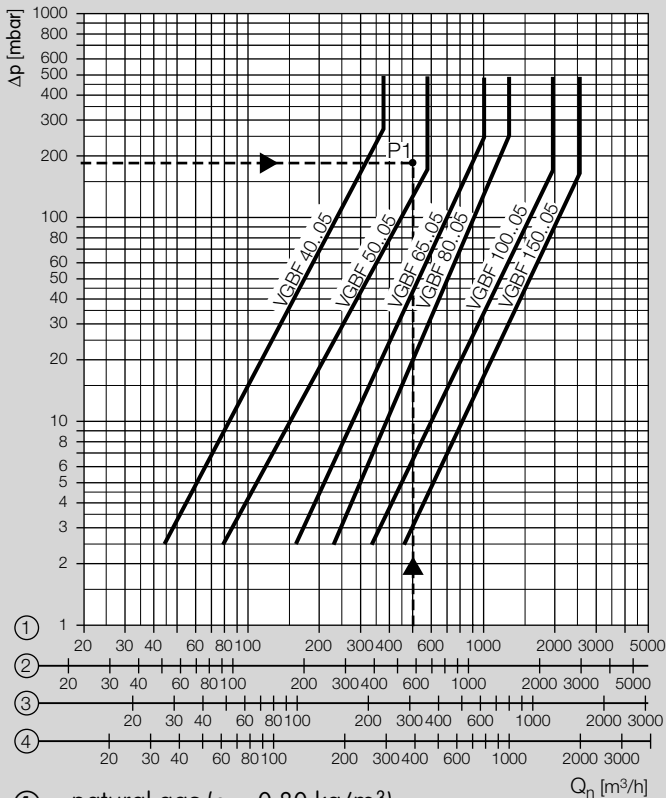
If consumption is stopped, the valve disc cuts off the flow completely (zero shut-off).

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 Selection example for VGBF..05



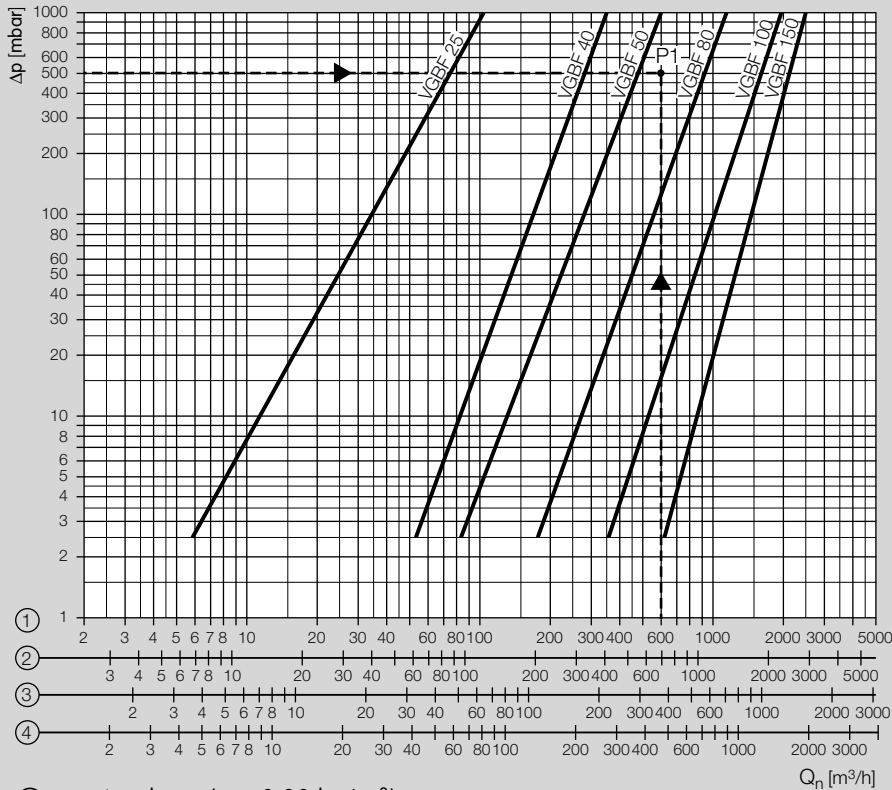
Gas type: natural gas,
 flow rate $Q = 500 \text{ m}^3/\text{h}$,
 inlet pressure $p_U = 200 \text{ mbar}$,
 outlet pressure $p_D = 20 \text{ mbar}$,
 pressure loss $\Delta p = p_U - p_D = 180 \text{ mbar}$.

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 Selection example for VGBF..10



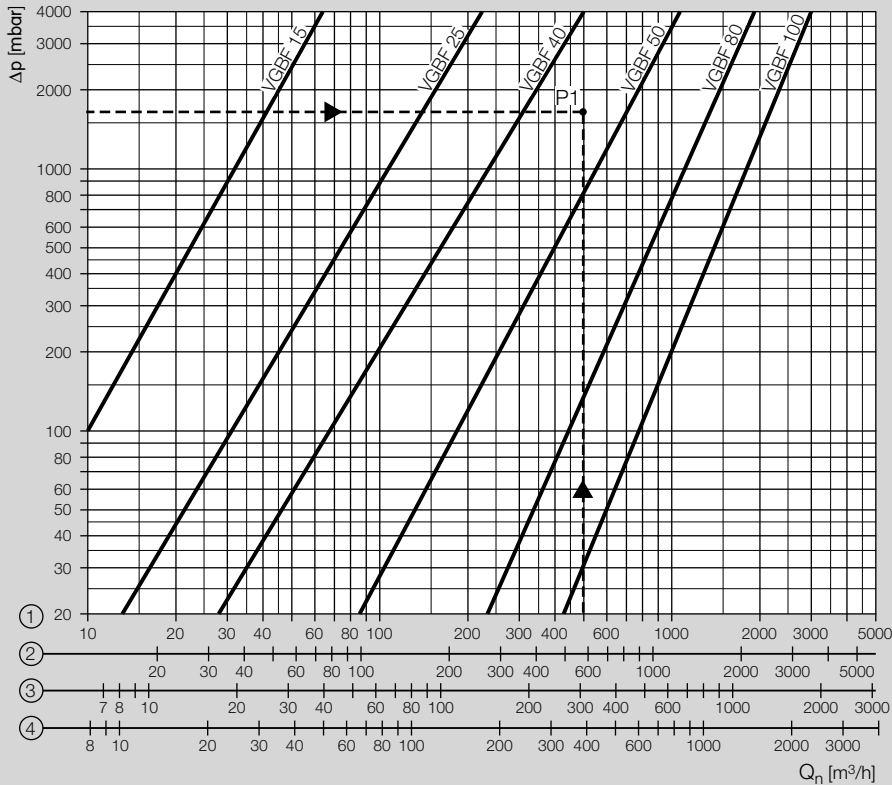
Gas type: natural gas,
 flow rate $Q = 600 \text{ m}^3/\text{h}$,
 inlet pressure $p_U = 600 \text{ mbar}$,
 outlet pressure $p_d = 100 \text{ mbar}$,
 pressure loss $\Delta p = p_U - p_d = 500 \text{ mbar}$.

The result is intersection P1.

The next largest nominal size is selected: VGBF 80..10.

At a pressure loss of $\Delta p = 500 \text{ mbar}$,
 the max. flow rate is $Q_{\text{max.}}: 910 \text{ m}^3/\text{h}$,
 the min. flow rate is $Q_{\text{min.}}$, derived from
 $Q_{\text{min.}} = Q_{\text{max.}} \times 10\% = 91 \text{ m}^3/\text{h}$.

4.3 Selection example for VGBF..40



Gas type: natural gas,
 flow rate $Q = 500 \text{ m}^3/\text{h}$,
 inlet pressure $p_U = 2 \text{ bar}$,
 outlet pressure $p_d = 300 \text{ mbar}$,
 pressure loss $\Delta p = p_U - p_d = 1.7 \text{ bar}$.

The result is intersection P1.
 The next largest nominal size is selected: VGBF 50..40.

At a pressure loss of $\Delta p = 1.7 \text{ bar}$, the max. flow rate is $Q_{\text{max.}}$: $700 \text{ m}^3/\text{h}$, the min. flow rate is $Q_{\text{min.}}$, derived from $Q_{\text{min.}} = Q_{\text{max.}} \times 10\% = 70 \text{ m}^3/\text{h}$.

5 Selection

Type	R	F	05	10	40	-1	-3	L	V
VGBF 15	●	–	–	–	●	●	–		
VGBF 25	●	–	–	●	●	●	–		
VGBF 40	●	●	●	●	●	–	●	○	○
VGBF 50	–	●	●	●	●	–	●	○	○
VGBF 65	–	●	●	–	–	–	●	○	○
VGBF 80	–	●	●	●	●	–	●	○	○
VGBF 100	–	●	●	●	●	–	●	○	○
VGBF 150	–	●	●	●	–	–	●	○	○

● = standard, ○ = available

Order example

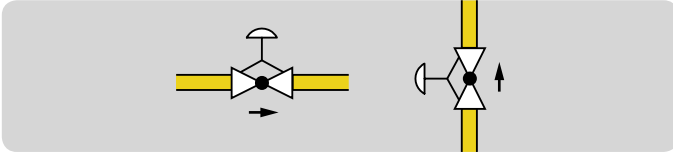
VGBF 50F05-3

5.1 Type code

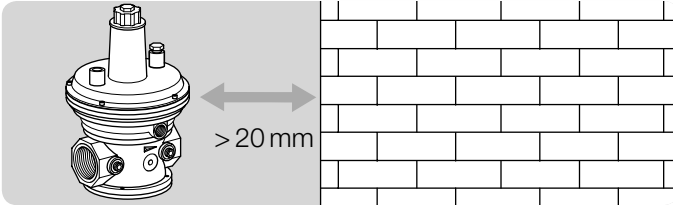
Code	Description
VGBF	Gas pressure regulator
15-150	Nominal size
R	Rp internal thread
F	Flange to ISO 7005
05	p_U max. 500 mbar
10	p_U max. 1 bar
40	p_U max. 4 bar
-1	Screw plug at the inlet
-3	Screw plug at the inlet and outlet
L	For air only (without approval)
V	Viton equipment (without approval)

6 Project planning information

6.1 Installation

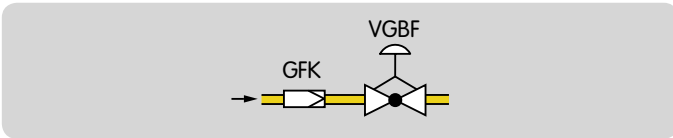


Installation position: spring dome pointing vertically upwards, up to nominal size DN 50 also to the side, but not upside down.



The gas pressure regulator VGBF must not be in contact with masonry. Minimum clearance 20 mm.

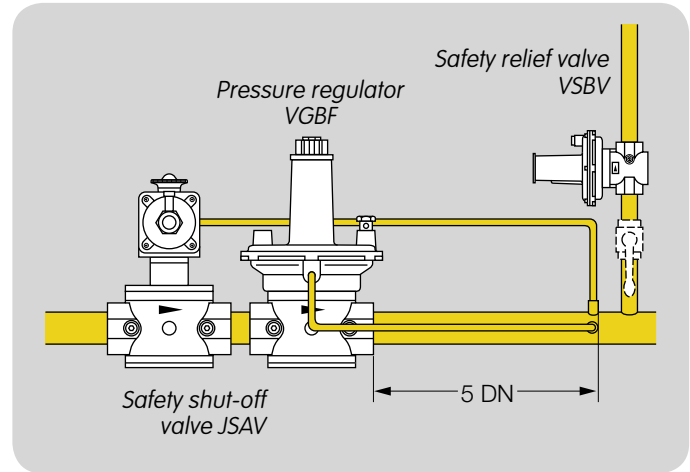
Do not store or install the unit in the open air.



Sealing material and dirt, e.g. thread cuttings, must not be allowed to get into the regulator housing.

Install a filter (GFK) upstream of every system.

6.2 Installation to EN 746-2

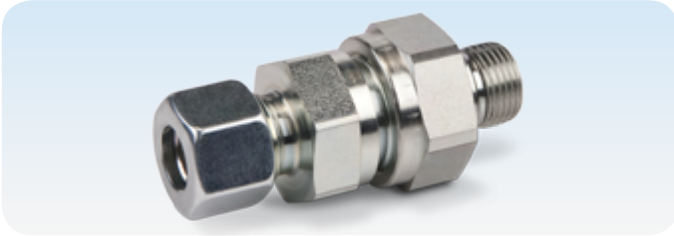


In accordance with EN 746-2, a safety shut-off valve upstream of the gas pressure regulator and a safety relief valve are required for gas pressure control systems.

These valves are not required if the highest possible operating pressure upstream of the regulator cannot exceed the maximum allowable operating pressure of the downstream devices.

7 Accessories

7.1 Damping valve



VGBF..10 and VGBF..40: damping valve for impulse line Rp $\frac{3}{8}$.

VGBF 15–25: not required,

VGBF 40–100..40: loosely enclosed.

Can be ordered on request for VGBF 40–150..10.

Order No. 75439215.

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8 Technical data

Gas types: natural gas, town gas, LPG (gaseous) and biologically produced methane (max. 0.02 %-by-vol. H₂S), VGBF..05..L also for air. The medium must be dry in all temperature conditions and must not contain condensate.

Inlet pressure range: up to 500 mbar, 1 bar and 4 bar.

Outlet pressure ranges:

VGBF 15–50: 5–350 mbar,

VGBF 65, 150: 5–160 mbar,

VGBF 80, 100: 5–350 mbar.

VGBF..05: Class A.

VGBF..10, VGBF..40:

Accuracy Class: AC 10,

Lock-up pressure class: SG 30.

Ambient temperature:

standard: -15 to +60°C,

VGBF..L/VGBF..V: 0 to +60°C.

Storage temperature:

standard: -15 to +40°C,

VGBF..L/VGBF..V: 0 to +40°C.

Valve housing: aluminium,
valve seat and stem: aluminium.

Diaphragms:

standard: Perbunan,

VGBF..L: Perbunan, Viton,

VGBF..V: Viton.

Valve disc:

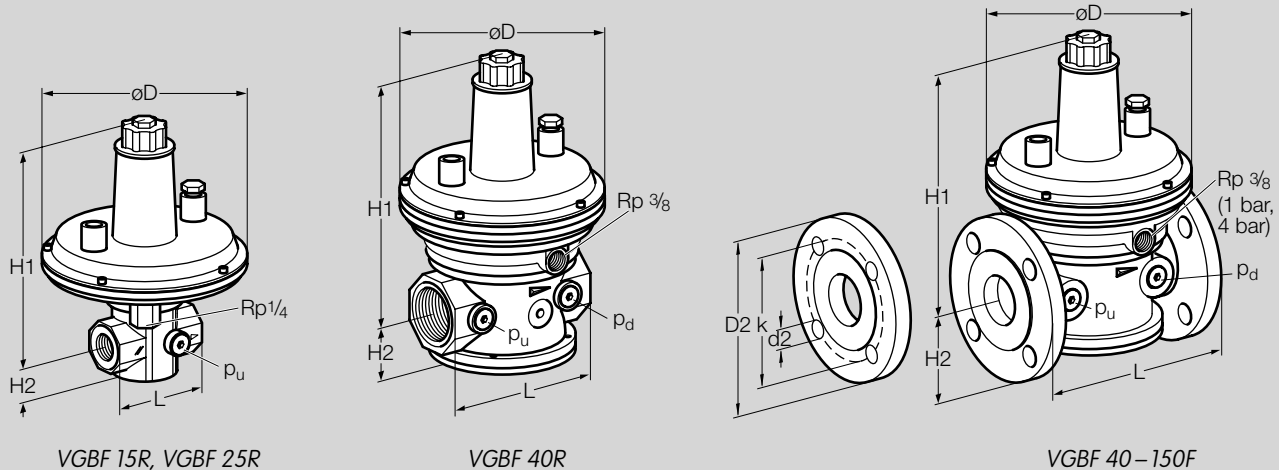
standard, VGBF..L: Perbunan,

VGBF..V: Viton.

Internal thread: Rp to ISO 7-1.

Flanged connection: PN 16 to ISO 7005.

8.1 Dimensions



8.2 Data table

Type	Dimensions						p_u max. bar	Flange		Drilling		Weight kg
	DN	Connection	L mm	H1 mm	H2 mm	D mm		D2	k	d2	No.	
VGBF 15R	15	Rp 1/2	70	151	24	132	4	–	–	–	–	0,9
VGBF 25R	25	Rp 1	90	250	33	190	1; 4	–	–	–	–	1,9
VGBF 40R	40	Rp 1 1/2	150	260	56	190	1; 4	–	–	–	–	2,9
VGBF 40F	40	40	200	260	75	190	0,5; 1; 4	150	110	18	4	4,8
VGBF 50F	50	50	230	316	83	240	0,5; 1; 4	165	125	18	4	7,7
VGBF 65F	65	65	290	412	89	260	0,5	185	145	18	4	12,0
VGBF 80F	80	80	310	446	100	310	0,5; 1; 4	200	160	18	8	16,1
VGBF 100F	100	100	350	501	115	396	0,5; 1; 4	229	180	18	8	26,0
VGBF 150F	150	150	480	573	150	520	0,5; 1	285	240	22	8	46,5

8.3 Spring table

Outlet pressure range [mbar]	Marking	Order No.						
		VGBF 15	VGBF 25 VGBF 40	VGBF 50	VGBF 65	VGBF 80	VGBF 100	VGBF 150
5–12,5	–	75421911	75421961	75422031	75426160	75426230	75426310	75426450
10–30	red	75421921	75421971	75422041	75426070	75426240	75426320	75426460
25–45	yellow	75421931	75421980	75422051	75426180	75426250	75426330	75426470
40–60	green	75421942	75421990	75422061	75426190	75426260	75426340	75426480
55–75	blue	75421951	75422000	75422071	75426200	75426270	75426350	75426490
70–90	black	75442046	75422010	75422081	75426210	75426280	75426360	75426500
85–105	white	75442047	75422020	75422091	75426220	75426290	75426370	75426510
100–160	black/red	75442048	75438978	75438981	75446329	75438984	75438987	75438990
150–230	black/yellow	75442049	75438979	75438982	–	75438985	75438988	–
220–350	black/green	75442050	75438980	75438983	–	75438986	75438989	–

Dispatch complete with label for changed outlet pressure.

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9 Maintenance cycles

At least once a year, at least twice a year in the case of biologically produced methane.

Feedback

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Clarity

Found information quickly
Searched for a long time
Didn't find information
What is missing?
No answer

Comprehension

Coherent
Too complicated
No answer

Scope

Too little
Sufficient
Too wide
No answer



Use

To get to know the product
To choose a product
Planning
To look for information

Navigation

I can find my way around
I got "lost"
No answer

My scope of functions

Technical department
Sales
No answer

Remarks

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