



- // Optimum dimensioning allows high throughput performance
- // Regulator for gaseous media, to be installed on multiple types of gas consuming equipment
- // Design incorporating inlet pressure compensation ensures high regulating precision
- // Available in a wide variety of threaded and flanged connections
- // Inlet pressures to 60 psig (4 bar)
- // Internal safety diaphragm
- // Wide selection of outlet pressure ranges
- // Inlet pressure compensation and zero shut-off

### Application

VGBF regulators are general-purpose regulators for controlling gas pressure to furnaces, ovens and other gas consuming equipment. They are suitable for natural, LP and clean biogas at inlet pressure up to 60 psig (4 bar). Springs are available to allow for a wide choice of outlet pressures.

## Specifications

### Operating Limits

Type of gas:	Natural, LPG, clean coke oven gas and clean biogas
Ambient temperature range:	5° F to 140° F (-15° C to 60° C)
Maximum inlet pressure:	15 psig (1 bar) and 60 psig (4 bar) versions are available
Outlet pressure factory setting:	1.85 psig (130 mbar)

### Mechanical Data

Available pipe sizes:	NPT-threaded: ½" to 2"
	ANSI flanged: 2" to 4"

Regulator size (NPT)	½"	1"	1½"	2"	3"	4"
Vent connection (NPT)	¾"	½"	½"	½"	¾"	¾"
External impulse line (NPT)	½"	½"	½"	½"	½"	½"

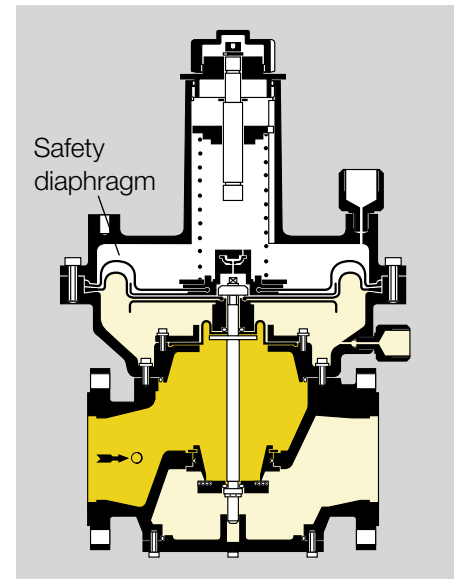
### Materials of Construction

VGBF Regulators have pressure die-cast or sand cast aluminium alloy bodies and diaphragm housings. Diaphragms are nitrile rubber. Valve discs have vulcanized nitrile rubber seals

### Special features

#### Safety diaphragm

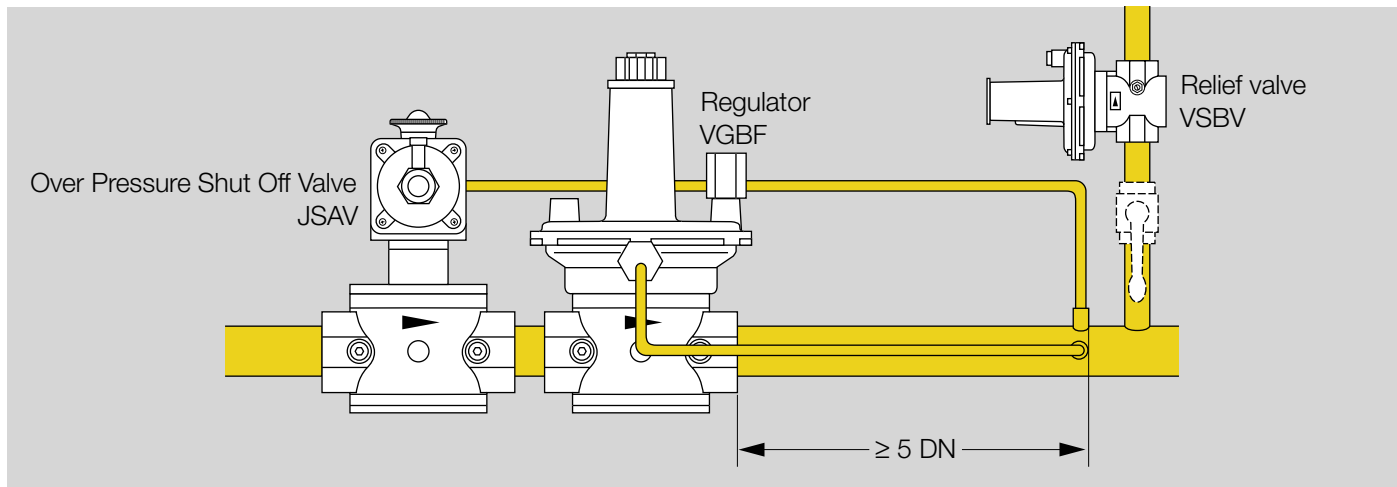
In event of a major malfunction the diaphragm will limit the amount of gas that can escape to the atmosphere. During normal operation the hole in the safety diaphragm allows air to pass freely in and out of the top cover, through the vent opening. If there is a sudden surge of pressure, due to equipment failure, a small hole in the safety diaphragm limits the amount of escaping gas. Maximum flow through the safety diaphragm is 2.5 SCFH.



### NFPA 86

If normal inlet pressure to the fuel pressure regulator immediately upstream from the valve exceeds the valve's pressure rating, a relief valve shall be provided and it shall be vented to a safe location.

**\* Note: A fuel gas regulator may not be required to be vented if an automatic device shuts off gas upstream of the fuel gas regulator as a result of system over pressure. (See drawing below)**



**Function**

The outlet pressure is kept constant with changing gas flow as a function of the spring setting. The inlet pressure compensation provides high control accuracy. The zero shut-off prevents the outlet pressure from increasing when there is no gas flow through the regulator.

**Sizing**

Type	Inlet pressure 60 psig outlet pressure 51" WC max. flow at		Inlet pressure 15 psig outlet pressure 51" WC max. flow at		Max. recommended outlet pressure (normal service)		Max. inlet pressure	
	SCFH	m <sup>3</sup> /h	SCFH	m <sup>3</sup> /h	psig	mbar	psig	mbar
VGBF 15TN10	–	–	1,100	31	5	350	15	1000
VGBF 25TN10	–	–	3,200	91	5	350	15	1000
VGBF 40TN10	–	–	11,000	310	5	350	15	1000
VGBF 50TN10	–	–	20,000	560	5	350	15	1000
VGBF 80TA10	–	–	36,000	1,020	5	350	15	1000
VGBF 100TA10	–	–	60,000	1,700	5	350	15	1000
VGBF 15TN40	2,000	56	1,000	28	5	350	60	4000
VGBF 25TN40	6,200	176	3,500	100	5	350	60	4000
VGBF 40TN40	15,000	425	7,500	210	5	350	60	4000
VGBF 50TN40	35,000	990	16,000	450	5	350	60	4000
VGBF 80TA40	57,000	1,600	37,000	1,050	5	350	60	4000
VGBF 100TA40	90,000	2,550	63,500	1,800	5	350	60	4000

Flows in table above are based on 1 psig, 60° F at sea level (14.7 psia) and natural gas with a specific gravity of 0.62. Flows will change if the ambient temperature or altitude increase and if the specific gravity increases. To correct for conditions other than the ones used in table multiply the flows by the factors calculated with below equation.

$$\text{Flow factor} = \sqrt{\frac{0.62}{\text{S.G.}} \times \frac{520}{460 + ^\circ\text{F}} \times \frac{\text{PSIA} + \text{PSIG}}{15.7}}$$

Where

- °F = Gas temperature through regulator
- S.G. = Specific gravity of gas – air (1.0 s.g.), propane (1.56 s.g.), butane (2.0 s.g.)
- PSIA = Barometric pressure
- PSIG = Supply pressure to regulator

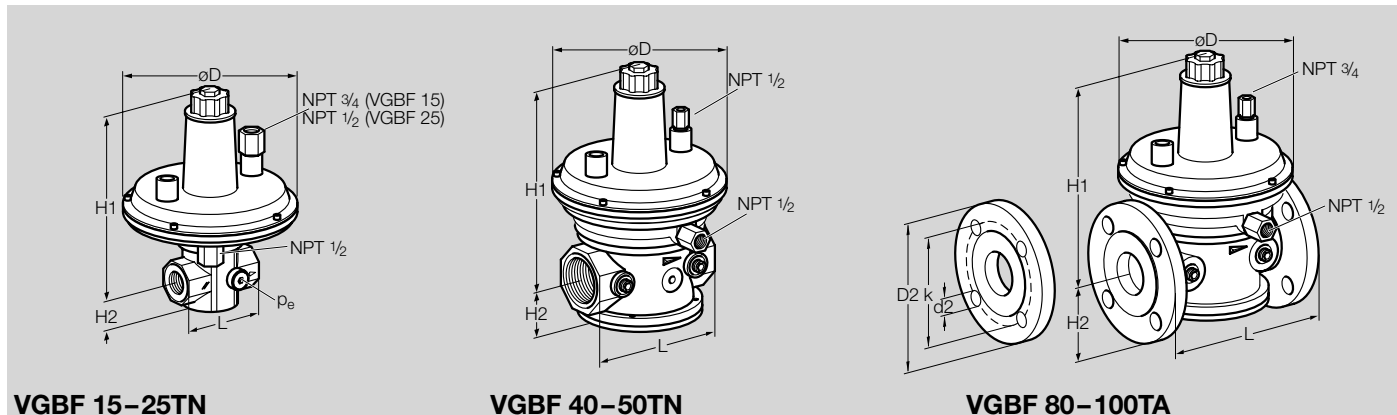
Estimate barometric pressure at various altitudes:

Sea level	14.7 psia
1000 ft	14.2 psia
2000 ft	13.7 psia
3000 ft	13.2 psia
4000 ft	12.7 psia
5000 ft	12.2 psia
6000 ft	11.8 psia
7000 ft	11.3 psia

To estimate flows for other medias across the regulator, divide figures in the table above by these factors:

Medium	Air	Propane	Butane
Flow Factor	1.27	1.61	1.83

## Dimensions and Weights



**VGBF 15-25TN**

**VGBF 40-50TN**

**VGBF 80-100TA**

Type	Connection	Dimensions								Flange				Drilling		No.	Weight	
		L	D	H1	H2	D2	k	d2	inch	mm	inch	mm	LBS	kg				
VGBF 15T	NPT 1/2"	2.76	70	5.20	132	5.91	150	0.94	24	-	-	-	-	-	-	-	2.0	0.9
VGBF 25T	NPT 1"	3.54	90	7.48	190	9.84	250	1.30	33	-	-	-	-	-	-	-	4.2	1.9
VGBF 40T	NPT 1 1/2"	5.91	150	7.48	190	10.24	260	2.20	56	-	-	-	-	-	-	-	6.4	2.9
VGBF 50T	NPT 2"	7.17	182	9.45	240	12.44	316	2.72	69	-	-	-	-	-	-	-	12.6	5.7
VGBF 50T	ANSI 2"	9.06	230	9.45	240	12.44	316	3.01	77	6.02	153.0	4.75	120.6	0.75	19	4	17.0	7.7
VGBF 80T	ANSI 3"	12.20	310	12.20	310	17.56	446	3.78	96	7.50	190.5	6.00	152.4	0.75	19	4	35.5	16.1
VGBF 100T	ANSI 4"	13.78	350	15.59	396	19.72	501	4.53	115	9.02	229.0	7.50	190.5	0.75	19	8	57.3	26.1

## Spring table

in WC	Outlet pressure range		Spring Marking	VGBF 15	VGBF 25, VGBF 40	VGBF 50	VGBF 80	VGBF 100
	psig	mbar						
2-5		5-2.5	none	75421911	75421961	75422031	75426230	75426310
4-12		10-30	red	75421921	75421971	75422041	75426240	75426320
10-18		25-45	yellow	75421931	75421980	75422051	75426250	75426330
16-24		40-60	green	75421941	75421990	75422061	75426260	75426340
22-30		55-75	blue	75421951	75422000	75422071	75426270	75426350
	1.0-1.3	70-90	black	75442046	75422010	75422081	75426280	75426360
	1.2-1.5	85-105	white	75442047	75422020	75422091	75426290	75426370
	1.4-2.3*	100-160*	black/red*	75442048	75438978	75438981	75438984	75438987
	2.2-3.3	150-230	black/yellow	75442049	75438979	75438982	75438985	75438988
	3.2-5.0	220-350	black/green	75442050	75438980	75438983**	75438986	75438989

\* Standard spring

\*\* Spring assembly consists of 2 springs

## Order Information

<b>VGBF</b>	pressure reducing regulator
<b>1/2" to 4" (DN 15 to 100)</b>	nominal diameter
<b>T</b>	T-product
<b>N</b>	NPT-internal thread
<b>A</b>	ANSI flange
<b>10</b>	max. inlet pressure 15 psig (1000 mbar)
<b>40</b>	max. inlet pressure 60 psig (4000 mbar)
<b>-2</b>	screw plug at the outlet
<b>-3</b>	screw plug at the inlet and outlet

### Warning:

Situations dangerous to personnel and property can result from the misapplication and incorrect operation of combustion equipment. Kromschroder advises compliance with the National Fire Protection Association standards that apply for related equipment and Insurance Underwriters recommendation, and care of operation.

We reserve the right to make technical changes designed to improve our products without prior notice. For current product information, visit our website at [www.kromschroder.com](http://www.kromschroder.com).