Springloaded Back-Pressure Regulator

Model – GBF15S

Description

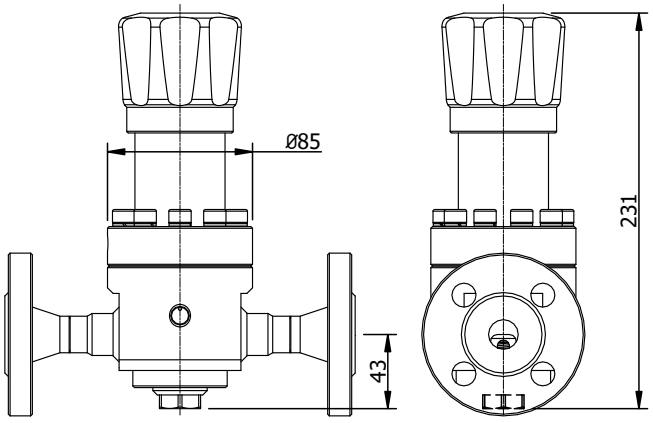
The GBF15S springloaded back-pressure regulator controls the supply pressure on the inletside.
When the supply pressure rises above the setpressure, the fluid starts flowing to the outletside.

Specifications

Inlet pressure	20, 40, 50, 100, 250 or 420 bar
Adjustable	0-420 bar - 7 pressure ranges
Connections	DN15, DN20 or DN25 flanges according EN 1092-1 or 1/2", 3/4" or 1" flanges according ASME B16.5
Seatdiameter	9,5 mm
Cv / Kv	Cv 1.8 / Kv 1.5

Fluids

This pressure regulator is suitable for gases and liquids.



Materials

The regulator is made out of barstock stainless steel material.

Body	ss 316L
Springhousing	ss 316L
Valve	ss 316L
Seat	PCTFE, PEEK or rubber
Valve spring	ss 316
Setspring	ss 302
O-rings / diaphragm	NBR, FKM or EPDM

Other materials available on request.

All metal parts are marked with a traceable batch number. Material certificates are available on request.

Technical details

- all parts cleaned and degreased
- leak-tight seat design
- all regulators tested before delivery

Standards

- EN 12516 - design
- EN 12266-1 - testing
- PED 2014/68/EU - SEP (article 4, paragraph 3)
- ATEX 2014/34/EU - Ex II 2G

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Options

Many options are available. The most requested options are mentioned below.

Materials

Regulators can be produced in higher graded materials than stainless steel 316L.

Seals

Regulators can be equipped with FFKM + PTFE seals. Other compounds for higher or lower temperatures are available.

NACE - MR 0175

All wetted parts of the regulators can be supplied according to NACE MR 0175, including Inconel X750 valvespring and a NACE report.

Spare parts

Spare parts kits are available for the regulator. Mention the serial number in case you need spare parts for existing regulators.

Dependency

A character of the regulator is "dependency". The set-pressure will change, when you have a changing outletpressure.

Dependency ratios are listed below.

- range 0-3 bar - 1:20
- range 0-8 bar - 1:20
- range 0-20 bar - 1:20
- range 0-50 bar - 1:8
- range 0-100 bar - 1:35
- range 0-280 bar - 1:12
- range 0-420 bar - 1:9

Flow

The regulator has good flow performance over the complete range. Ask for advice if this regulator is the best choice for your application.

Adjusting the regulator

The regulator comes standard with a knob. The threadpiece below the knob is designed for frequent adjustment.

Regulators that have a fixed setpoint, can be equipped with a locking cap.

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Internals

The internals of the regulator are important for the performance. The different internals are mentioned below.

Diaphragm or piston sensing
Diaphragm sensed for pressure ranges
0-3 bar / 0-8 bar / 0-20 bar

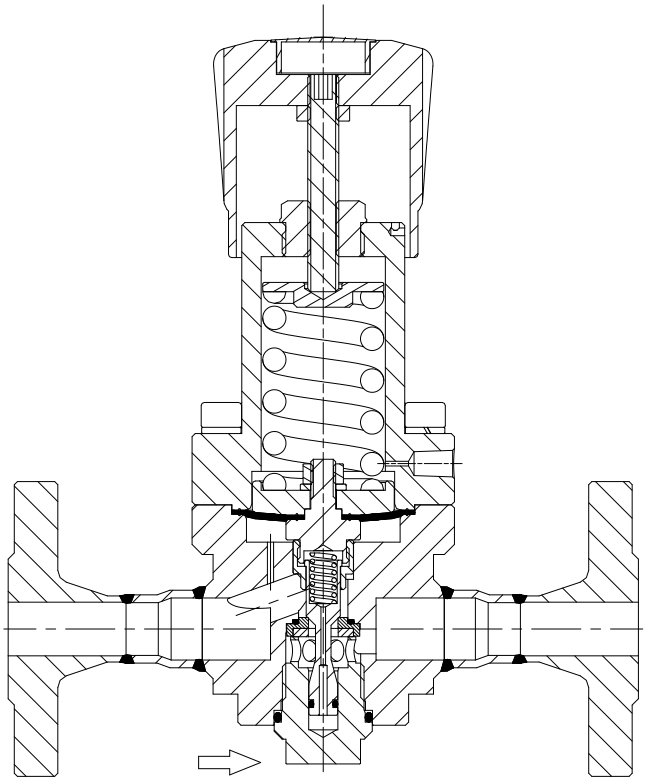
Piston sensed for pressure ranges
0-50 bar / 0-100 bar / 0-280 bar / 0-420 bar

Rubber or plastic seated
Rubber seats for control ranges up to 50 bar.
A rubber seat is less sensitive to dirt.

Plastic seats for control ranges above 50 bar.
PCTFE recommended and seals easy.
PEEK recommended for liquid and high temperatures.

Setspring
The setspring is produced according to our high quality specifications. The low spring rate ensures good performance at high flow.

Section view

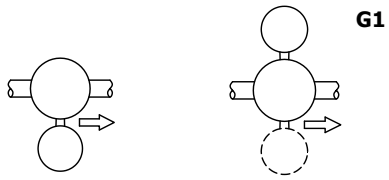


Section view of:
GBF15S-40D20-SSPN

Gaugeports

The regulator has standard one 1/4" NPT gaugeport to measure the controlled setpressure.

Additional 1/4" NPT gaugeport is available, see option G1 below.



Standard Outlet gaugeport

Additional Outlet gaugeport

Gauges

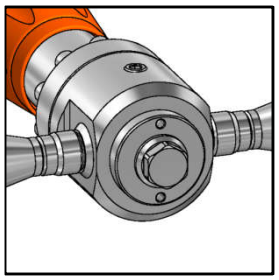
Regulators can be supplied with gauges.

Below ranges are available:
0-4 bar / 0-10 bar / 0-25 bar / 0-60 bar / 0-160 bar / 0-400 bar / 0-600 bar

- case diameter 63 mm
- internals ss 316
- bottom connection 1/4" NPT

Mounting

The regulator can be mounted in every position (horizontal / vertical).



The bottom of the regulator has two mounting holes M6 with 8 mm thread and a C-C distance of 45 mm.

For regulators installed outdoors, make sure that rain cannot enter the springhousing or mount it drainable.

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Connections

The regulator is designed for flanged connections. The flanges are welded to the regulator with butt-welds.

Model - flange size

GBF15S	DN15 or 1/2″
GBF15F20S	DN20 or 3/4″
GBF15F25S	DN25 or 1″

EN 1092-1 - flanges - design pressure

DN15 - DN20 - DN25	PN40	40	bar

ASME B16.5 - flanges - design pressure

1/2″ - 3/4″ - 1″	150#	20	bar
1/2″ - 3/4″ - 1″	300#	50	bar
1/2″ - 3/4″ - 1″	600#	100	bar
1/2″ - 3/4″	1500#	250	bar
1/2″ - 3/4″	2500#	420	bar

Weld stub connections

Regulator can be supplied with weld-stubs. They have the model name as below.

GBF15S15S	1/2″	weld stubs
GBF15S20S	3/4″	weld stubs
GBF15S25S	1″	weld stubs

Design pressures

The design pressure applies for inlet and outletside. Design pressure is limited to the maximum pressure of the flanges.

Seat materials

The seat materials are related to the control ranges.

NBR, FKM or EPDM	control range	up to 50 bar
PCTFE or PEEK	control range	above 50 bar

Depending on temperature or special wishes, the seat material could be different as mentioned above.

Temperature

The general temperature range of the regulator is -50 / 200 °C, but is often limited due to the used sealing materials.

PCTFE	seat	- 50 / 60 °C
PEEK	seat	- 50 / 200 °C
NBR	seat / seals	- 35 / 130 °C
FKM	seat / seals	- 20 / 200 °C
EPDM	seat / seals	- 50 / 120 °C

Typenumber explanation

Example : GBF15F20S - 40D8 - SSNN - L

model	design pressure	connections	adjustable	material	seat	seals	options
GBF15S	**20** : 20 bar	**D** : EN 1092-1	**3** : 0-3 bar	**SS** SS 316L	**N** NBR nitrile	**N** NBR nitrile	**G1** one extra gaugeport
GBF15F20S	**40** : 40 bar	**A** : ASME B16.5	**8** : 0-8 bar		**V** FKM viton	**V** FKM viton	**G2** two extra gaugeports
GBF15F25S	**50** : 50 bar		**20** : 0-20 bar		**E** EPDM	**E** EPDM	**L** locking cap
	100 : 100 bar		**50** : 0-50 bar		**K** PCTFE kel-f		
	250 : 250 bar	**S** : weld stubs	**100** : 0-100 bar		**P** PEEK		**xx** codes for special option
	420 : 420 bar		**250** : 0-250 bar				
			420 : 0-420 bar				

All regulators are marked with a typenumber, a drawingnumber and a unique serialnumber.
Dutch Regulators stores the exact configuration of the regulator in the serialnumber.