

Springloaded Back-Pressure Regulator

Model – GBF20S

Description

The GBF20S springloaded back-pressure regulator controls the supply pressure on the inlet side. When the supply pressure rises above the set pressure, the fluid starts flowing to the outlet side.

Specifications

| | |
|----------------|--|
| Inlet pressure | 20, 40, 50, 100, 250 or 420 bar |
| Adjustable | 0-420 bar - 7 pressure ranges |
| Connections | DN20 or DN25 flanges according EN 1092-1 or 3/4" or 1" |
| Seat diameter | 12,5 mm |
| Cv / Kv | Cv 3.2 / Kv 2.7 |

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 |
| Set spring | ss 302 |
| O-rings / diaphragm | NBR, FKM or EPDM |


Other materials available on request.

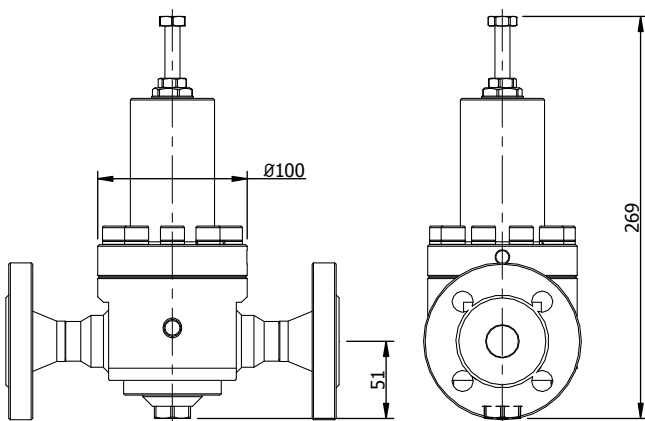
All metal parts are marked with a traceable batch number. Material certificates are available on request.

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 -  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.

Adjusting the regulator

The regulator comes standard with a setscrew.



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 - 1:13
- range 0-50 bar - 1:50
- range 0-100 bar - 1:25
- range 0-280 bar - 1:9
- range 0-420 bar - 1:7

Flow

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

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

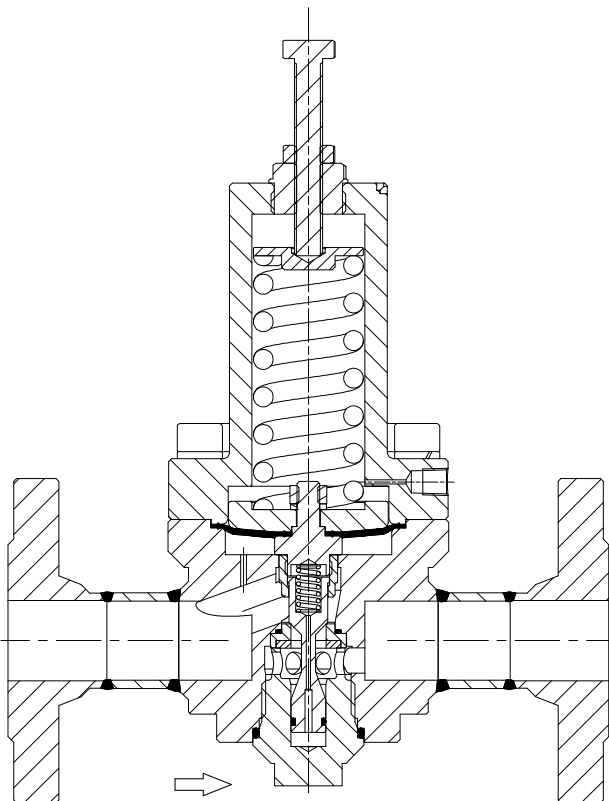
Rubber seats for control ranges up to 20 bar.
A rubber seat is less sensitive to dirt.

Plastic seats for control ranges above 20 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

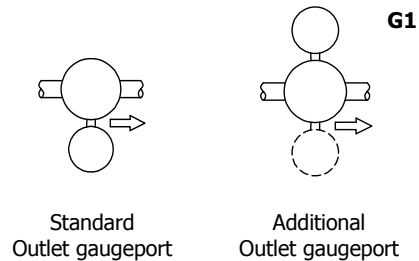


Section view of:
GBF20F25S-40D8-SSPV

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.



Gauges

Regulators can be supplied with gauges.

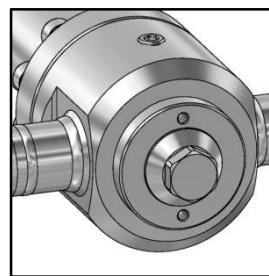
Below ranges are available:

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 50 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

GBF20S DN20 or 3/4"
GBF20F25S DN25 or 1"

EN 1092-1 - flanges - design pressure

DN20 - DN25 PN40 40 bar

ASME B16.5 - flanges - design pressure

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

Weld stub connections

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

GBF20S20S 3/4" weld stubs
GBF20S25S 1" weld stubs

Design pressures

The design pressure applies for inlet and outletside.

Seat materials

The seat materials are related to the control ranges.

NBR, FKM or EPDM control range up to 20 bar
PCTFE or PEEK control range above 20 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 : GBF20F25S - 100A50 - SSPV

| model | design pressure | connections | adjustable | material | seat | seals | options |
|------------------|----------------------|-----------------------|------------------------|-------------------|----------------|---------------|------------------------------------|
| GBF20S | 20 : 20 bar | D : EN 1092-1 | 3 : 0-3 bar | SS SS 316L | N NBR | N NBR | G1 one extra gaugeport |
| GBF20F25S | 40 : 40 bar | A : ASME B16.5 | 8 : 0-8 bar | | nitrite | nitrite | |
| | 50 : 50 bar | | 20 : 0-20 bar | | V FKM | V FKM | G2 two extra gaugeports |
| | 100 : 100 bar | | 50 : 0-50 bar | | viton | viton | |
| | 250 : 250 bar | S : weld stubs | 100 : 0-100 bar | | E EPDM | E EPDM | L locking cap |
| | 420 : 420 bar | | 250 : 0-250 bar | | K PCTFE | | |
| | | | 420 : 0-420 bar | | kel-f | | xx codes for special option |
| | | | | | P PEEK | | |

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.