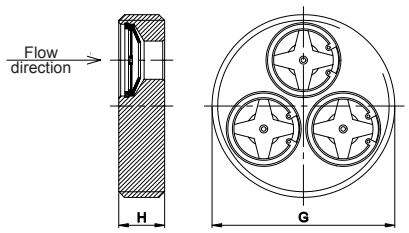
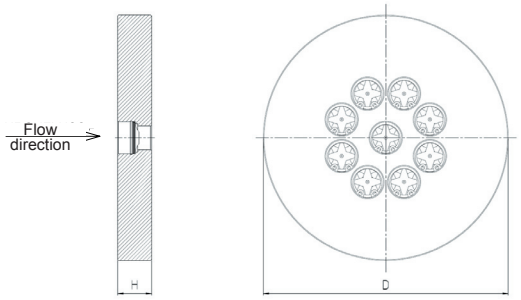
BC



Type	G	H [mm]	Q_{min}* [l/min]	Q_{max}* [l/min]	Weight [g]
BC	G 3/4"	12	1	30	25
BC	G 1 1/2"	12	3	90	104
BC	G 2"	15	5	150	190
BC	G 2 1/2"	15	9	270	290
BC	G 3"	15	13	390	375

* from Q_{min} to Q_{max} in 1l/min - increments

BF



Type	Nominal size (DN)	Standard	Number Drilled holes	Pressure stage of Intermediate flange	Minimum flow [l/min]	Maximum flow [l/min]	H [mm]	D [mm]
BF	DN 40	DIN / ASME	2	PN 16 / 300 lbs	2	60	19,1	95
BF	DN 50	DIN	4	PN 16	4	120	18,0	110
BF	DN 50	ASME	4	300 lbs	4	120	23,9	113
BF	DN 65	DIN / ASME	7	PN 16 / 300 lbs	7	210	23,9	130
BF	DN 80	DIN	9	PN 16	9	270	20,0	145
BF	DN 80	ASME	9	300 lbs	9	270	23,9	150
BF	DN 100	DIN	14	PN 16	14	420	20,0	165
BF	DN 100	ASME	14	300 lbs	14	420	23,9	182

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Contents

1 Introduction

Flow limiters of the series BA, BB, BC and BF are characterized by reliable operation. To use the advantages of the device in its entirety, please note the following:

Every person who is charged with the commissioning and operation of this device must have read and understood the operating instructions and especially the safety information!

2 Safety precautions

2.1 General precautions

To ensure safe operation, the device may only be operated in accordance with the specifications in the operating instructions. In use, the regulations for the respective application, as well as the legal and safety regulations must also be observed. Correspondingly, the same applies to the use of accessories.

2.2 Intended use

The flow limiters of the series BA, BB, BC and BF are used for maintaining, or respectively limiting, a constant volume flow of liquids.
The flow limiters of the series BA, BB, BC and BF may not be used as the sole means to avoid dangerous situations on machines and systems.
Machines and systems must be designed and constructed so that faulty conditions or malfunctions cannot lead to hazardous situations for the operator.
The flow limiters may be used only within the specified temperature limits stated in the data sheet.
It must be ensured that the medium does not freeze.
The operating pressure specified in the data sheet must not be exceeded at any time.
The predetermined flow direction must be complied with.
The static pressure at the inlet of the limiter (upstream) must always be greater than or equal to the pressure at the outlet of the limiter. The pressure difference between the inlet pressure and the outlet pressure (control pressure) must not exceed 10 bar.
To ensure the specified operation of the flow limiter, a minimum control pressure of 2 bar is required.

2.3 Qualified personnel

The flow limiters of the series BA, BB, BC and BF may only be installed by qualified personnel who are able to use the equipment professionally. Qualified personnel are persons who are familiar with the installation, assembly, start-up and operation of these devices and have the appropriate qualifications for their job.

3 Functional description

The flow limiters work purely mechanically and require no external power.
The cross-sectional area available to the flow medium changes due to changes in pressure, so that the flow rate remains nearly constant.
The flow limiters operate in a pressure range between 2 to 10 bar.

4 Installation

4.1 Process connection

Attention! The following requirements must be adhered to, otherwise the flow limiter or the plant will be damaged:

- a suitable process connection must be available
- check connection size
- check screw-in depth
- use suitable sealants (liquid sealants will damage the flow limiters)
- seal correctly
- The flow direction must be observed.

4.2 Preparatory work

- The flow limiter must not be installed as a supporting part in a pipe system.
- The medium must not contain any solids.
- If necessary, check rust inhibitor and antifreeze before use for compatibility.

Warning! The following requirements must be met, otherwise the function of the flow limiter will be impaired:

- Changes in cross section, branch-offs or elbows in the piping affect the function. There must be an unimpeded flow section of 10 x DN (rated width) upstream and 5 x DN (rated width) downstream of the flow limiter. Never reduce the pipe diameter immediately before the limiter!

B Begrenzer BA, BB, BC, BF 0001 05-14 E M

5 Maintenance and servicing

Due to the small number of moving parts the limiters require little maintenance.
However, regular function checks and maintenance will not only increase the life and reliability of the device, but of the whole plant or system.

Maintenance intervals depend on

- the degree of contamination of the medium
- the operating conditions (e.g. vibrations)

During maintenance, at a minimum, the following points must be checked:

- check for leaks from the limiter
- check for soiling and contamination

The operator must determine suitable maintenance intervals based on the local conditions and circumstances.

Recommendation:

- In most cases, rinsing with clean medium will be sufficient. In persistent cases (e.g. lime scale deposits) conventional cleaning agents may be used, provided they are not aggressive to the materials of the limiter.

6 Troubleshooting guide

1. No flow
► check that medium is flowing through the pipe line

2. Flow is too low

Control pressure too low
► increase control pressure

Soiling
► clean the flow limiter

regulating star is defective
► replace the flow limiter

3. Flow too high

Control pressure too high
► reduce control pressure

Soiling
► clean the flow limiter

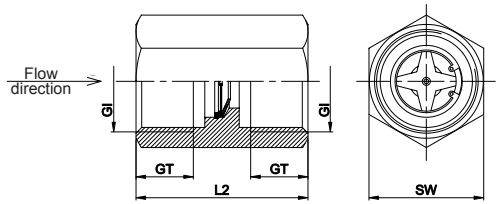
regulating star is defective
► replace the flow limiter

7 Technical specifications

Operating data	BA, BB and BC	BF
minimum control pressure:	2 bar	
maximum control pressure:	10 bar	
Measuring accuracy:	up to 2 l/min: ± 15% of nominal value, above 3 l/min: ± 10% of nominal value	
Maximum temperature:	200 °C	

Materials	BA, BB and BC			BF
Body (BF = flange):	Brass	Stainless steel		Stainless steel
		BA, BB	BC	1.4571
		1.4305	1.4571	
Regulating star:	1.4310			
Cone:	1.4301			
Rivet:	1.4301			
Retaining ring:	A2			

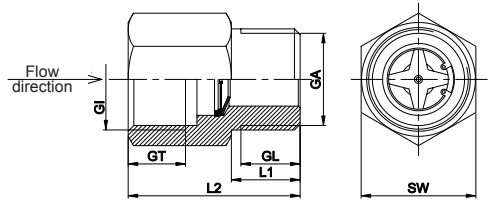
BA



Type	GI1	GI2	GT [mm]	SW [mm]	L2 [mm]	Weight [g]
BA	G 1/2"	G 1/2"	14	27	43	72
BA	G 3/4"	G 3/4"	15	30	45	125

Flow rate: 1 - 30 l/min in 1 l/min - increments

BB



Type	GI/GA	GT [mm]	GL [mm]	SW [mm]	L1/L2 [mm]	Weight [g]
BB	G 1/2"	14	14	24	16/43	71
BB	G 3/4"	15	15,5	30	18/45	135

Flow rate: 1 - 30 l/min in 1 l/min - increments