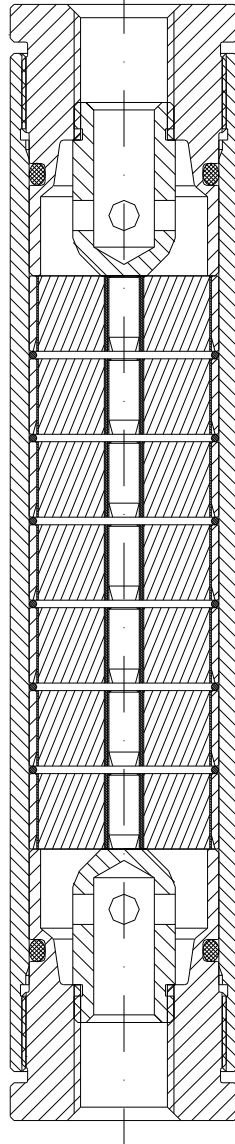


Operating Instruction

Volume End of Line Deflagration Flame Arrester 1005-0002



IBExU 09 ATEX 2021 X

 G IIC

 0102

1. Preface

These operating instructions apply to Volume End of Line Deflagration Flame Arrester 1005–0002 provided the fact that your Volume End of Line Deflagration Flame Arrester meet all technical standards described in this document

Any information required for the assembly, use and maintenance of the protective system may be obtained from these instructions.

Please read the operating instructions on hand carefully to ensure the safe use of this Volume End of Line Deflagration Flame Arrester.

All assembly and maintenance work needs to be carried out by qualified staff.

Information provided in this document may be subject to change without prior notice.

This document or individual parts of it may not be multiplied or copied without the written consent of Flammer GmbH, irrespective of its purpose.

© 2022 by Flammer GmbH. All rights reserved.

The trade names and/or used name designations, trademarks, etc. (even if not particularly identified), are subject to trademark protection laws and do not justify the assumption that they may be considered as fair use.

Content is subject to change. Errors excepted.

In case of dispute, the German text shall prevail.

2. Symbols



Pay attention to accompanying documents!
Important instructions for safe usage!

3. Safety regulations and safety instructions

3.1 Safety regulations

The following regulations and guidelines are to be observed for the use of this protection system:

- EC type examination number IBExU 09 ATEX 2021 X
- EN ISO 16852 Flame arresters
- European Directive 2014/34/EU
- Country-specific safety regulations
- Country-specific provisions for the protection of workers and employees

3.2 Safety instructions

The following instructions are to be observed to guarantee workers' protection and occupational safety:

- Safety regulations in compliance with section 3.1
- Compliance with laws and protective provisions in force at point of application. Operators and supervising staff are responsible for the fact that these provisions are observed.
- Assembly and maintenance work is to be carried out by qualified staff.

4. Intended application

Volume End of Line Deflagration Flame Arrester type 1005-0002 prevents light-back from inside a vessel to the outside at deflagration of potentially explosive vapour-air, and/or gas-air mixtures of explosives group IIA1, IIA, IIB1, IIB2, IIB3, IIB or IIC at an absolute working pressure of pabs ≤ 1.10 bar. (Atmospheric conditions)



Warning!

Flame arresters are limited in mounting and use.

Pay attention to the following hints according to EN ISO 16852

Type	DEF		Deflagration flame arrester
Lu/D	n/a		Not applicable
BC	c		Not suitable for endurance burning
EX	G IIC		Explosion group
To	60	[°C]	Maximum operating temperature
po	1.10	[bar]	Maximum absolute operating pressure

4.1 Special requirements for safe use

- Maximum vessel volume : 10 l
- Connector's nominal diameter DN of unprotected side : ≤ 10 mm
- Connector's nominal diameter DN of protected side : ≤ 10 mm
- Maximum pipe length between vessel and flame arrester : 200 mm
- Maximum pipe length after flame arrester and vent opening : 300 mm
- Fitting position : user-defined
- Combustible gases, i.e. combustible fluids that occur during operation have to be listed in explosives group IIA1, IIA, IIB1, IIB2, IIB3, IIB or IIC presenting with a standard gap width (MESG) ≥ 0.29 mm.
- The Volume End of Line Deflagration Flame Arrester may only be used, if the materials resist against the mechanical and/or chemical influences under the actual operating conditions, in such a way, that explosion protection is always guaranteed.
This applies particularly to the flame arrester elements whose protection against flame transmission may be endangered by corrosion among others.
- The Volume End of Line Deflagration Flame Arrester is **not** tested for endurance burning and is not authorized for that purpose!
- The Volume End of Line Deflagration Flame Arrester is protected against light-back on both sides, i.e. that it may be connected to either side of the side that is to be protected.
- Shut off valves before and after the flame arrester must be fully open during normal operation

5. Technical specifications

(See figure 1)

Connection : Thread ISO 228-1 G1/4 internal
Width across : 30 mm
Pressure loss : see fig. 2

6. Assembly

(See fig.1)

The internal screw thread of Volume End of Line Deflagration Flame Arrester is to be completely screwed onto respective connecting parts.



- Note requirements of chapter 4.
- The internal diameter of the connecting parts may not exceed the maximum permitted nominal pipe size.
- Any connection is to be sufficiently sealed with suitable media resistant sealing and checked for leakage.
- Look out for sufficient electrical grounding.
- Due to possible bimetallic corrosion (contact corrosion), we advise against use galvanized steel fittings in connection with stainless steel installations.

7. Maintenance

In order to keep flow resistance at a constantly low level, it is necessary to regularly check the Volume End of Line Deflagration Flame Arrester for impurities, and to clean it, if required.

To do this, unscrew the thread nut (pos 1); remove flame arrester elements (pos. 4) and inspect them.

Check if O-ring (pos. 3) presents with defects, and replace it, if necessary.

Reassemble Volume End of Line Deflagration Flame Arrester in reverse order – please pay attention to assembling the spacers (pos. 5) and flame arrester element (pos. 4) in the right order. (Refer fig. 1)

Petroleum ether is in often a suitable cleaning agent, it is, however, necessary to fulfill all related safety data sheet instructions in accordance with directive 91/155/EC.



After a deflagration:

- All parts (inside and outside) has to be examined and if necessary exchanged.
- In any case, replace flame arrestor elements (pos. 4) and O-ring (pos. 3).
- For safety reason it is not permitted to increase the gaps in the flame arrester elements (e.g. to drill).

8. Spare parts

For ordering spare parts please declare:

- Type of product
- Complete serial number
- Spare part no. (Please refer to **fig. 1** for items)

Item	Product	Material	Order number
3	O – Ring (ID20.29X2.62)	FPM (Viton) PTFE	3006-0003-00 9013-0006-00
4	Flame arrester element		1000-0011
5	Spacer		3005-0004-00

9. Technical Consulting

Flammer GmbH
Daimlerstr. 3
D-74389 Cleebronn

Tel. : +86/ (21)3141 7058
Fax. : +86/ (21)3141 7059
E-mail : info@flammergmbh.cn
Homepage : www.flammergmbh.cn

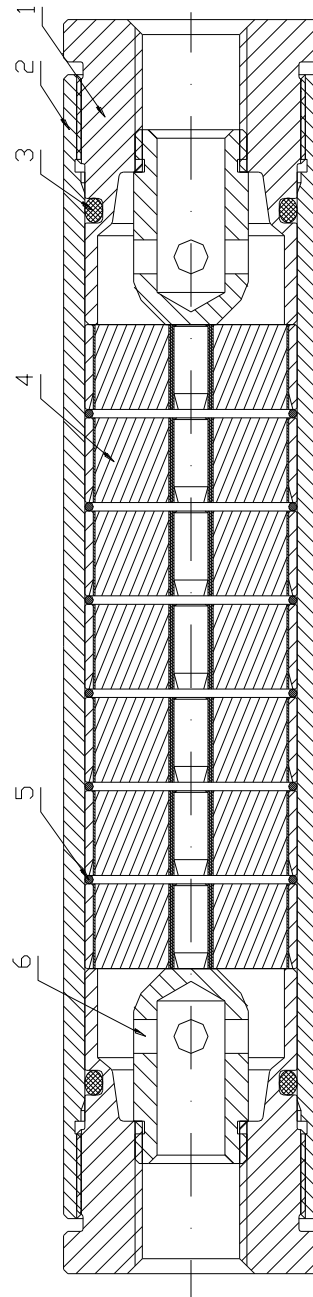


Fig. 1
Construction

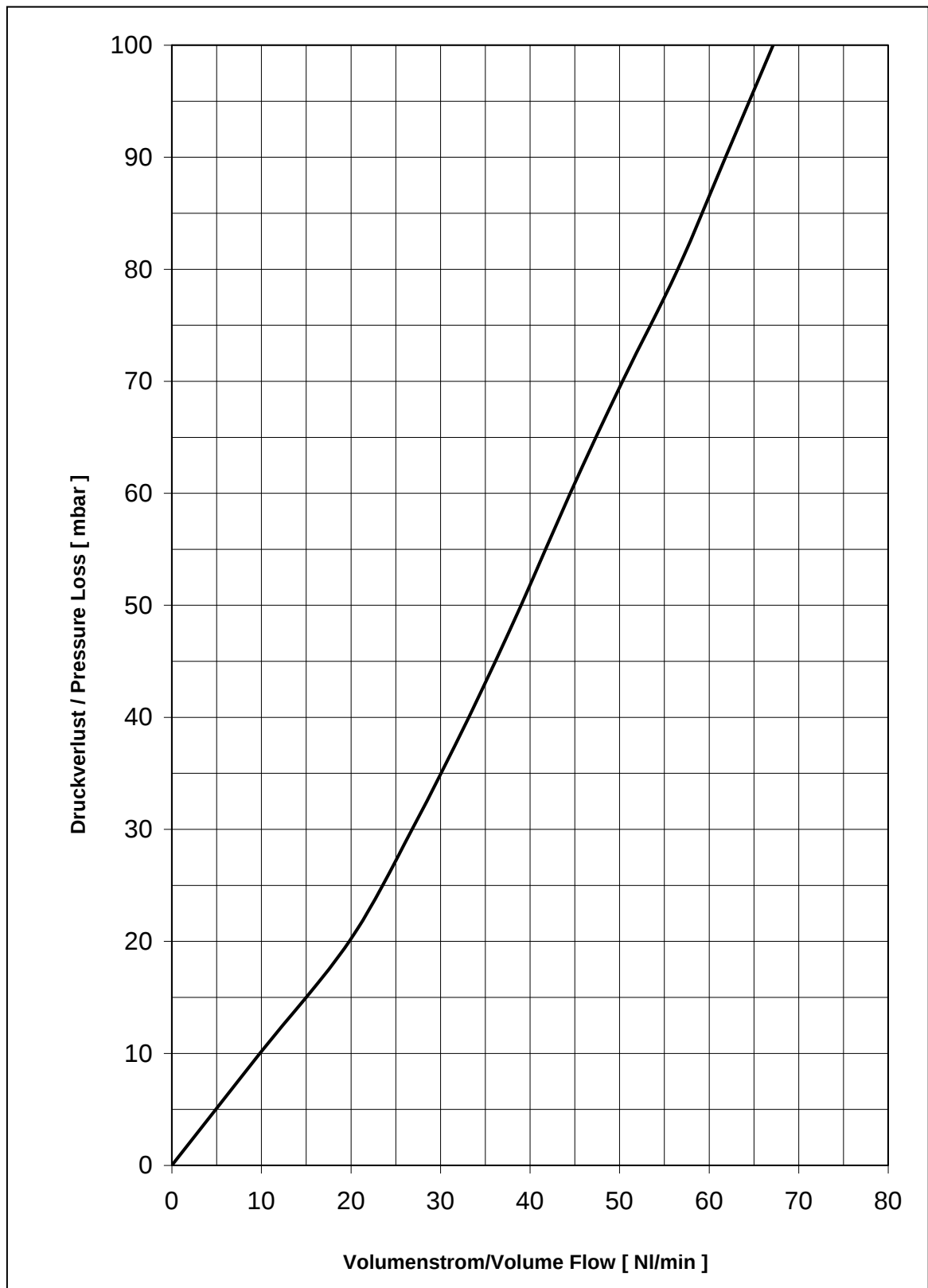


Fig. 2

Pressure loss

Medium : Air at $p_0 = 1013 \text{ mbar}$, $T_0 = 273\text{K}$, density = $1,293 \text{ kg/m}^3$