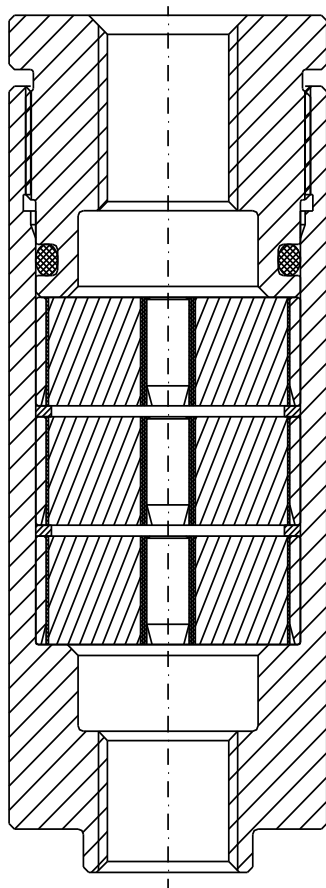


Operating Instruction

Inline Detonation Flame Arrester 1002-0008



IBExU 11 ATEX 2071 X

 G IIB3



1. Preface

These operating instructions apply to inline detonation flame arrester 1002–0008 provided the fact that your inline detonation flame arresters 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 inline detonation 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.

The operating instructions on hand correspond to the current technical state of inline detonation flame arrester 1002-0008. 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 protective system:

- EC type examination number IBExU 11 ATEX 2071 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

Inline detonation flame arrester type 1002-0008 prevents light-back at the deflagration and stable detonation of potentially explosive vapor-air, and or gas-air mixtures of explosives group IIA1, IIA, IIB1, IIB2 or IIB3 at an absolute working pressure of $p_{abs} \leq 1.30$ bar in a pipe that is located upstream of the ignition source presenting with a maximum nominal diameter of DN = 15 mm also in connection with a restriction on the protected side.



Warning!

Flame arresters are limited in mounting and use.

Pay attention to the following hints according to EN ISO 16852

Type	DET3		Inline detonation flame arrester for stable detonation with restriction
Lu/D	n/a		Pipe length not limited
BC	c		Not suitable for endurance burning
EX	G IIB3		Explosion group
To	150	[°C]	Maximum operating temperature
po	1,30	[bar]	Maximum absolute operating pressure

4.1 Special requirements for safe use

- Maximum connector's nominal diameter DN of unprotected side : DN 15 mm
- Maximum pipe length : unrestricted
- 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 or IIB3, presenting with a standard gap width ≥ 0.65 mm.
- The nominal pipe diameter on the unprotected side shall be no larger than the nominal flame arrester connection.
The nominal pipe diameter on the protected side shall be no less than the pipe diameter on the unprotected side.
- The inline detonation 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 inline detonation flame arrester is **not** tested for endurance burning and is not authorized for that purpose!
- The inline detonation 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.

5. Technical specifications

(See also 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 thread of inline detonation 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. (Maximum test pressure $p_e = 12$ bar).
- Pay attention to professional earthing!
- Due to possible bimetallic corrosion (contact corrosion), we advise against use galvanized steel fittings in connection with stainless steel installations.

7. Maintenance

(See fig. 1)

In order to keep flow resistance at a constantly low level, it is necessary to regularly check the inline detonation flame arrester for impurities, and to clean it, if required. To do this, unscrew the thread nut (pos 1), remove flame arrester element (pos. 4) and inspect them.

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

Reassemble inline detonation flame arrester in reverse order – please pay attention to assembling the spacers (pos. 5) and flame arrester element (pos. 4) in the right order.

Tightening torque for nut (pos. 1) : 60 ± 2 Nm

Petroleum ether is 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 detonation:

- All parts (inside and outside) has to be examined and if necessary exchanged.
- In any case, replace flame arrester elements (pos. 4) and O - ring (pos. 3). Only use of original spare parts from Flammer GmbH is permitted.
- For safety reason it is not allowed 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	Order number
3	O – ring (ID20.29X2.62)	3006 - 0001
4	Flame arrester element	1000 – 0006 - 00
5	Spacer	3005 - 0004

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

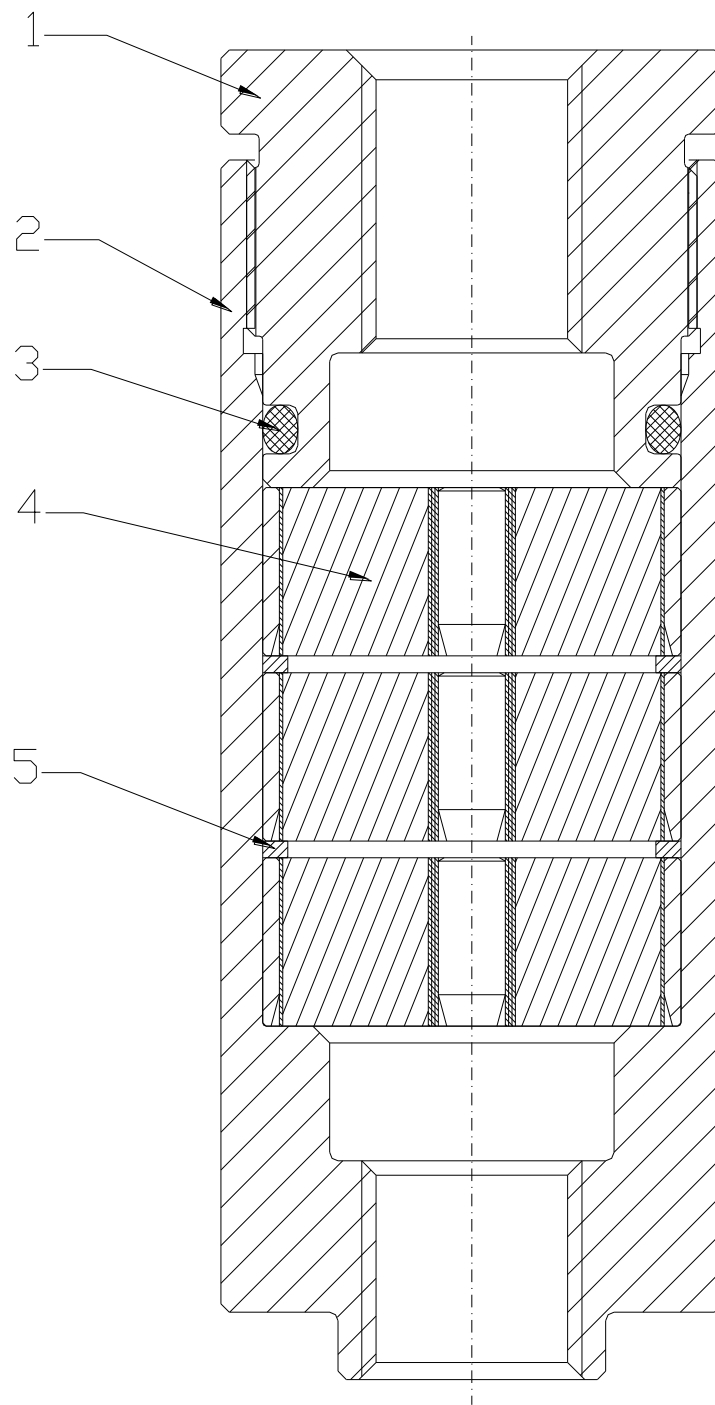


Fig. 1
Construction

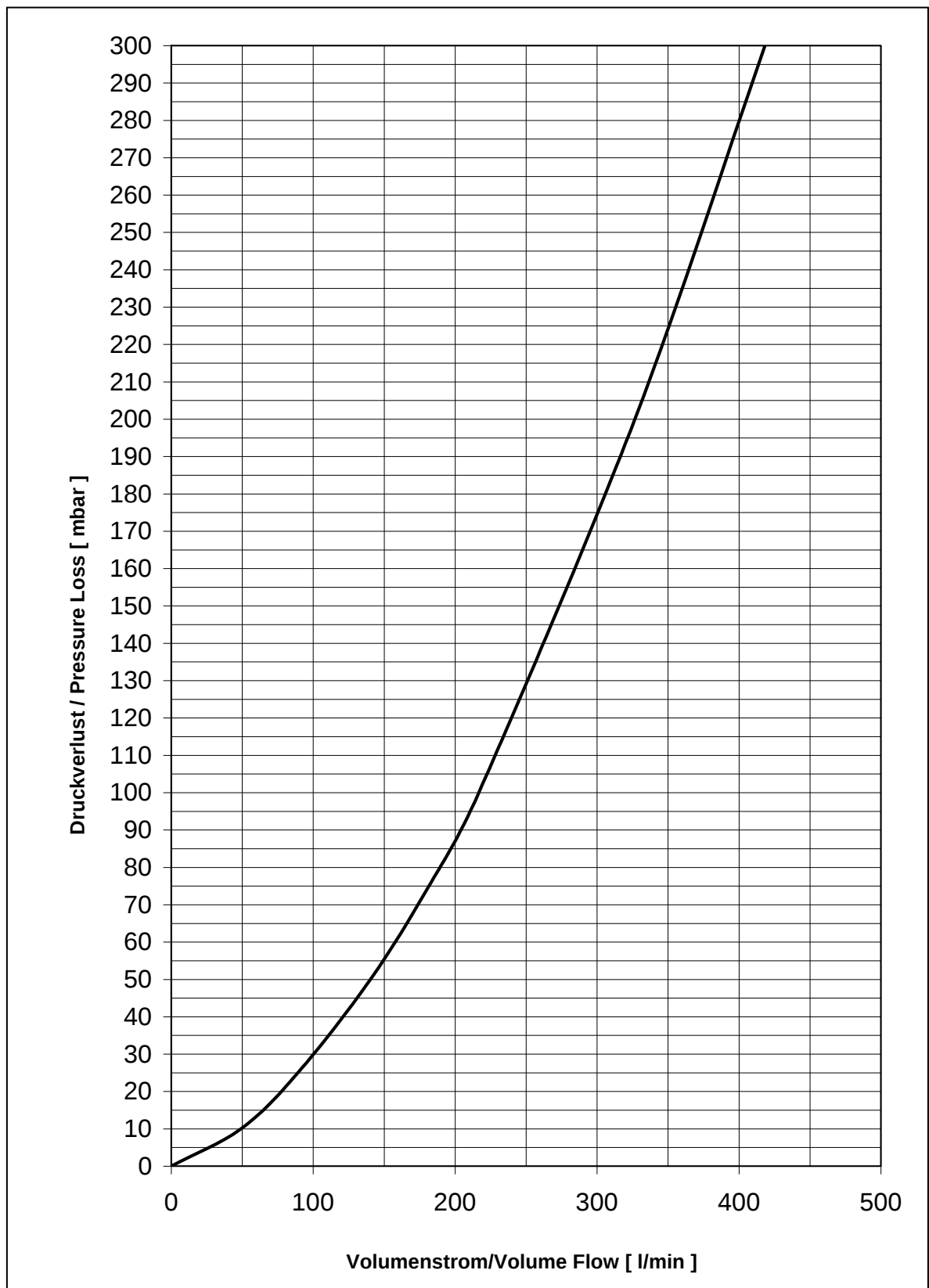


Fig. 2

Pressure loss

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