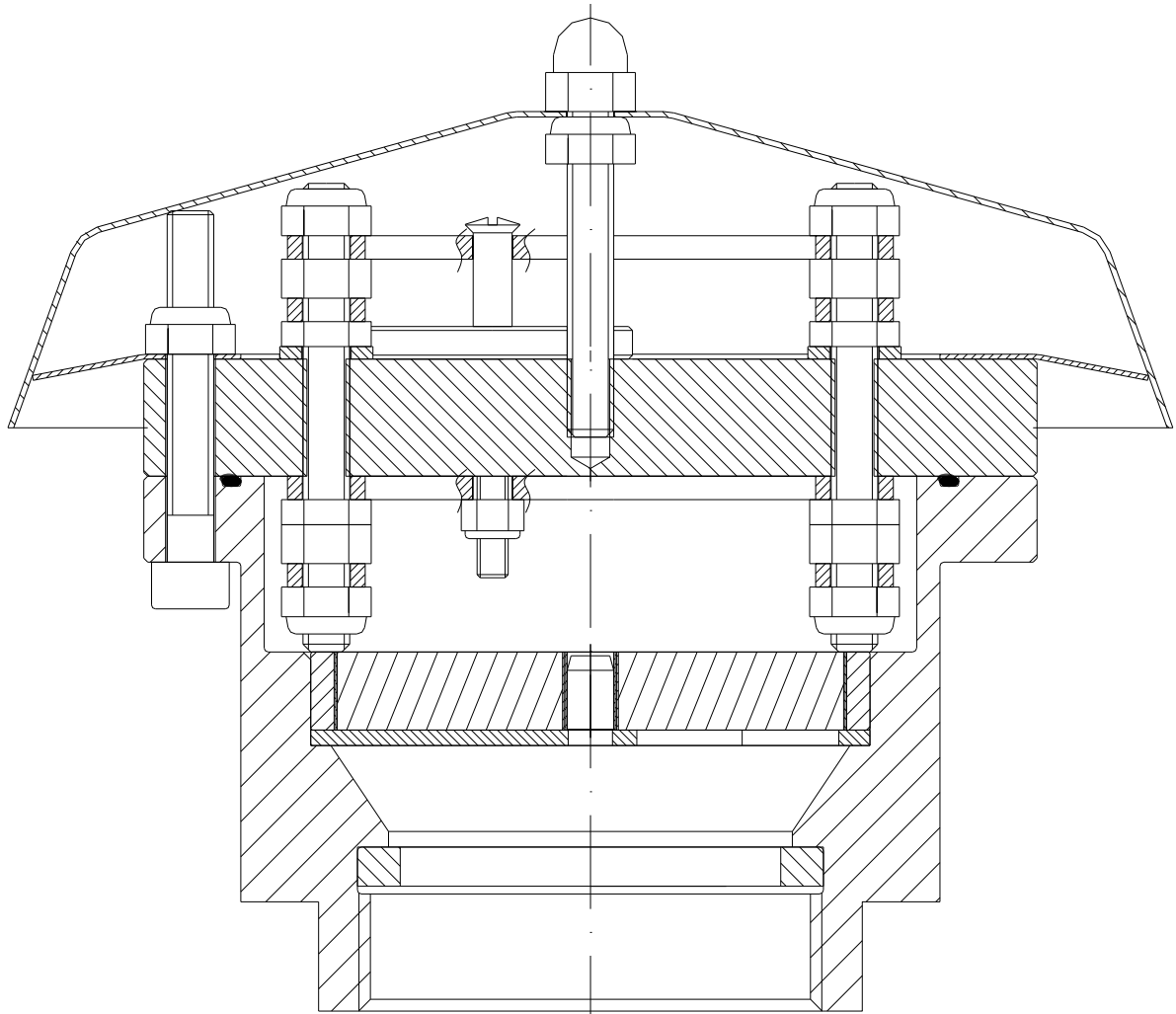


Operating Instruction
End of line Deflagration Flame Arrester 1048-0001
(With integrated pressure / vacuum valve)



IBExU 12 ATEX 2142 X

 G IIB3



1. Preface

This operating instruction apply to end of line deflagration flame arrester 1048–0001, provided the fact that your end of line deflagration flame arrester meets all technical standards described in this document.

The protective system is **not** tested and authorised for endurance burning.

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 protective system.

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

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In case of dispute, the German text shall prevail.

2. Symbols



Take note of the accompanying documents!
Important instructions for safe usage

3. Safety regulations and safety instructions

3.1 Safety regulations

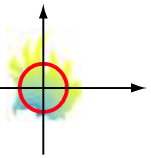
The following regulations and guidelines are to be observed for the use of this protective system:

- EC type examination number IBExU 12 ATEX 2142 X
- EN ISO 16852 (Replaces DIN EN 12874) Flame arresters
- European Directive 94/9/EC
- National safety regulations
- National workers' protection regulations

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
- Observation of laws and provisions in force at the place 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. Purpose of use

The end of line deflagration flame arrester 1048-0001 at the end of vent pipes prevents light-back at deflagration of potentially explosive vapour-air, and or gas-air mixtures of explosives group IIA1, IIA, IIB1, IIB2 and IIB3 with a standard gap (MESG) ≥ 0.65 mm from outside (atmospheric conditions) to the protected side (e. g. storage tank). The integrated pressure/vacuum valve limits the storage tank pressure up to the adjusted pressures.



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 IIB3		Explosion group
To	60	[°C]	Maximum operating temperature
po	1.10	[bar]	Atmospheric conditions

4.1 Special requirements for safe usage

- Max. internal nominal pipe diameter DN : DN50
- The protective system has to be fitted in vertical position.
- Combustible gases and or liquids produced during operation must pertain to explosives group IIA1, IIA, IIB1, IIB2 or IIB3 with a standard gap (MESG) ≥ 0.65 mm.
- The protective system is **not tested** and authorised for endurance burning!
- The protective system 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.

5. Technical specifications

(See fig.1)

Connection : Thread DIN ISO 228-1 G2" internal

Standard settings pressure valve

Switch back pressure : 30 mbar (3000 Pa)

Maximum flow rate : 75 m³/h (Air)

Standard settings vacuum valve

Switch back pressure : 5 mbar (500 Pa)

Maximum flow rate : 30 m³/h (Air)

Pressure loss : see fig. 2 and fig.3

6. Assembly

(See figure 1)

The deflagration flame arrester is to be fully joined to the respective connecting parts.



- Note requirements of chapter 4.
- The internal diameter of the connecting parts may not exceed the maximum permitted nominal pipe size.
- To ensure best sealant, screw the deflagration flame arrester fully against the integrated flat sealing (2). Check connection for leakage.

7. Maintenance

(See figure 1)

To keep flow resistance at a constantly low level, the protective system is to be checked for impurities and, if necessary cleaned, in regular intervals.

Disassembling

Unscrew nut (11) to remove rain cover (7).

After disassembling the screws (5) remove grid (8) and valve plate (12)

Take out the flame arrester element (4) for cleaning.

Petroleum ether is often a applicable cleaning agent, although the instructions of the corresponding safety data sheet in accordance with directive 91/155/EC need to be observed.

Assembly

After cleaning, reassemble in reverse order.

Tightening moment for screw M6 (5, 9) : 5 ± 1 Nm

Tightening moment for nut M6 (11) : $2 + 1$ Nm



Note!

- Change O-Ring (6) when it is damaged.
- Pay attention for the right gap width of the flame arrester element!
The gap width (**070**) is mentioned on the type label.
- For safety reason it is not permitted to increase the gaps in the flame arrester elements (e.g. to drill)!

After a deflagration:

- All parts (inside and outside) has to be examined and if necessary exchanged.
- Only use original spare parts of Flammer GmbH.

8. Spare parts

For ordering spare parts please declare:

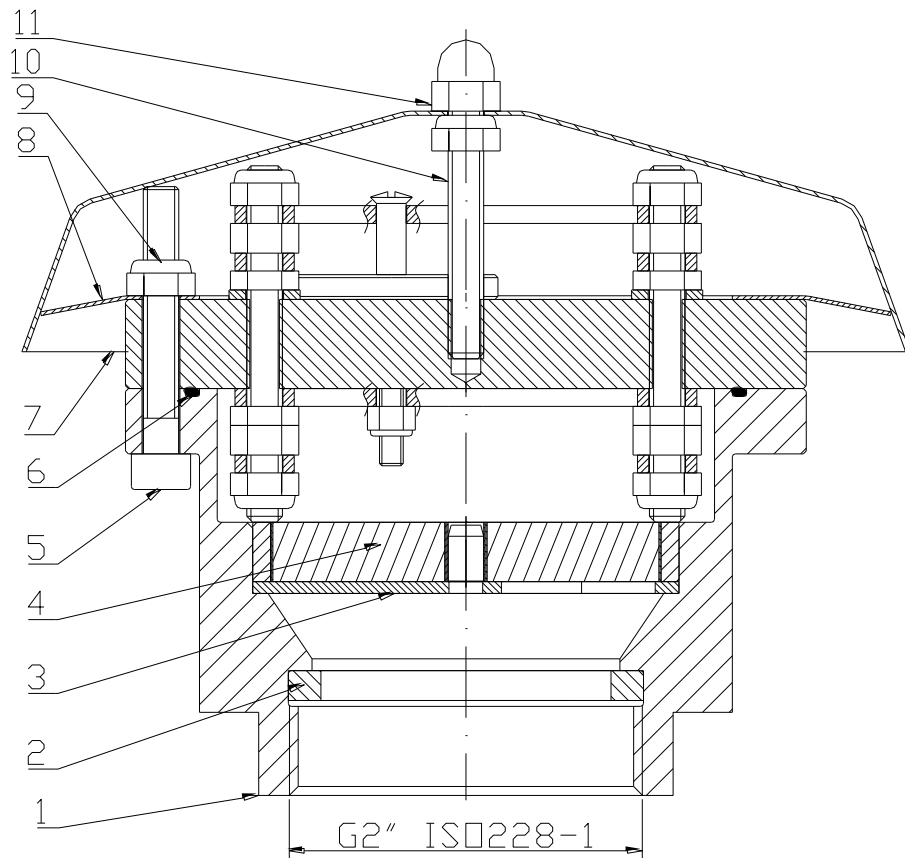
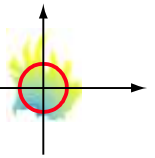
- Type of product
- Complete serial number
- Spare part no. (Please refer to **fig. 1** for items)

Item	Product	Spare part no.
2	Gasket	3021-0003-00
4	Flame arrester element	1000-0007-20
6	O-Ring	9013-0008-00
7	Rain cover	3017-0003-00
22	V-Ring	9027-0001-00

9. Technical Consultations

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Teile der Ventilplatte / Parts of valve plate

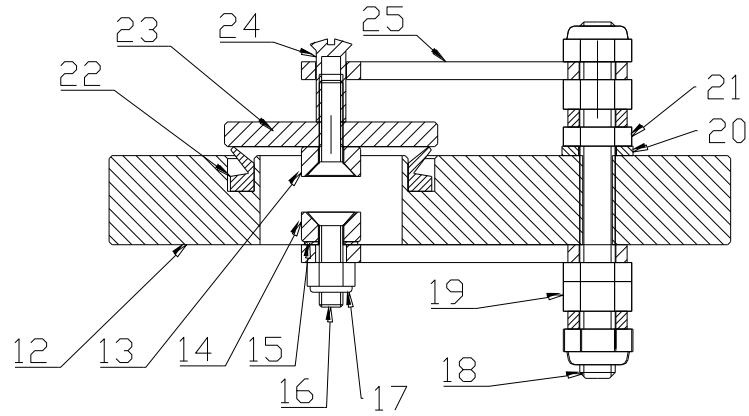


Fig. 1
Construction

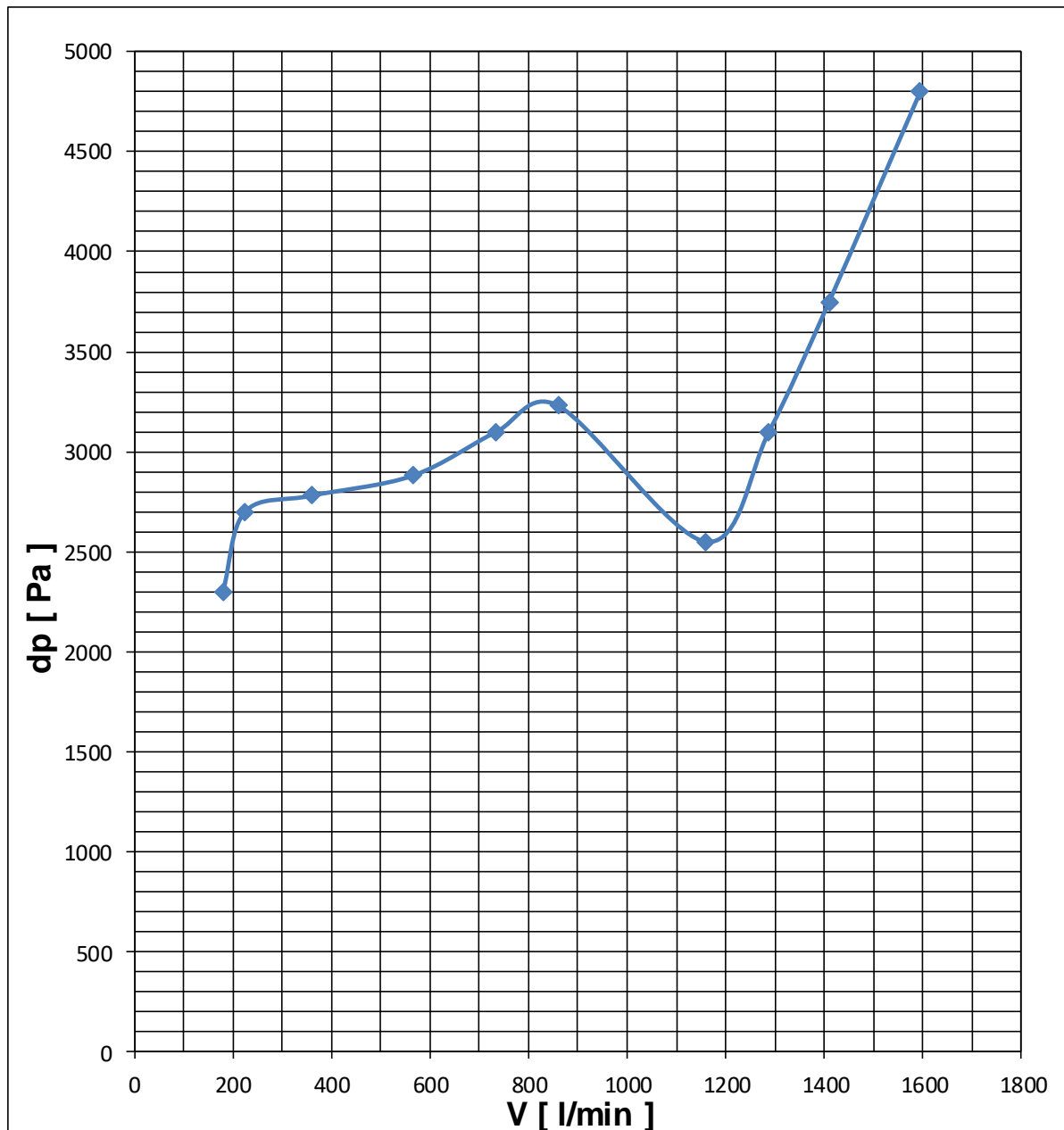
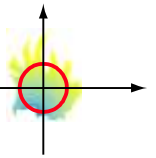


Fig. 2

Pressure loss of pressure valve

Switch back pressure: 3000 Pa (30 mbar)

Medium : Air at $p_0 = 1013$ mbar, $T_0 = 293$ K, density = $1,205$ kg/m³

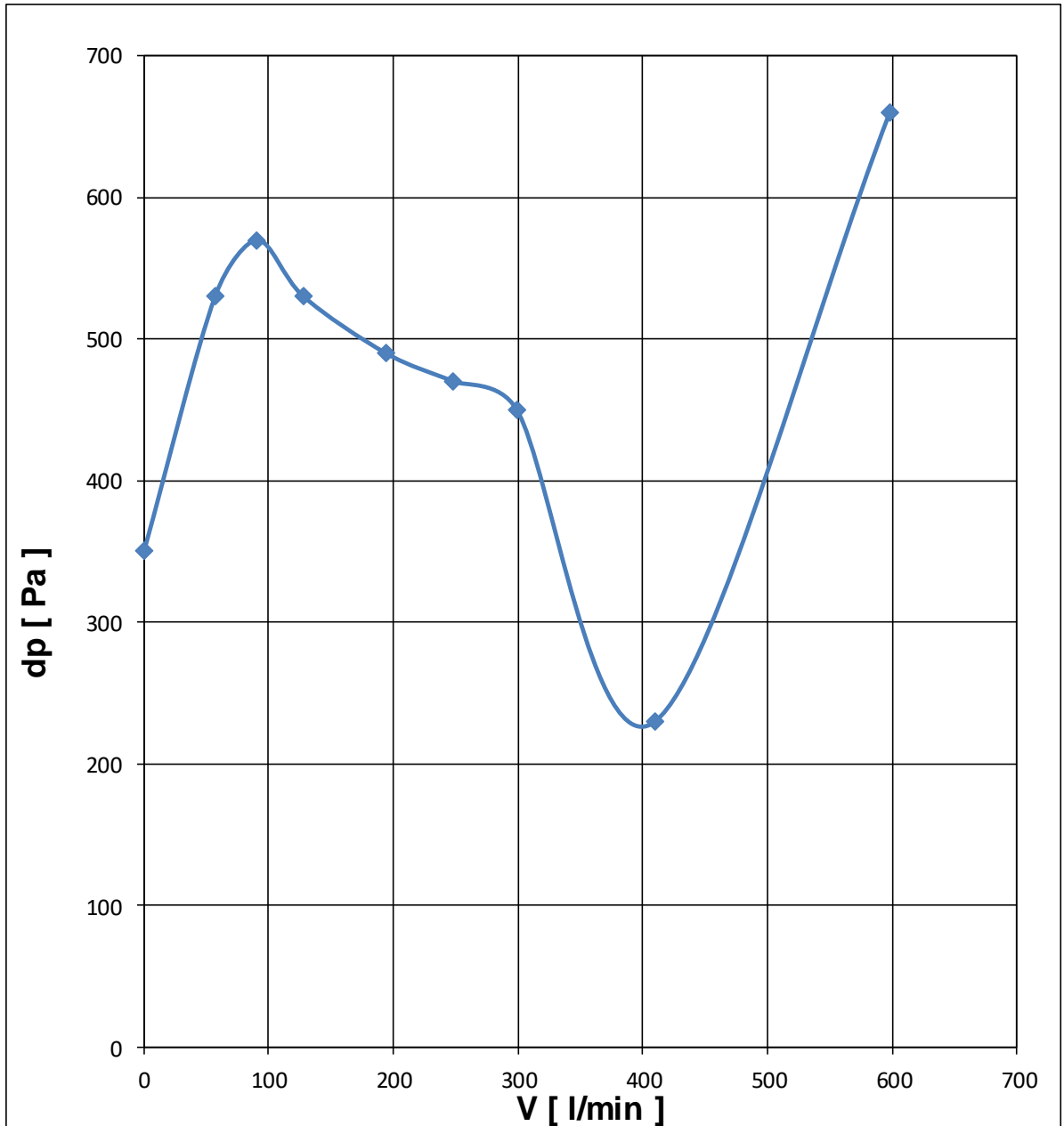
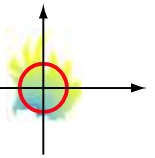


Fig. 3

Pressure loss of vacuum valve

Switch back pressure: 500 Pa (5 mbar)

Medium : Air at $p_0 = 1013 \text{ mbar}$, $T_0 = 293\text{K}$, density = $1,205 \text{ kg/m}^3$