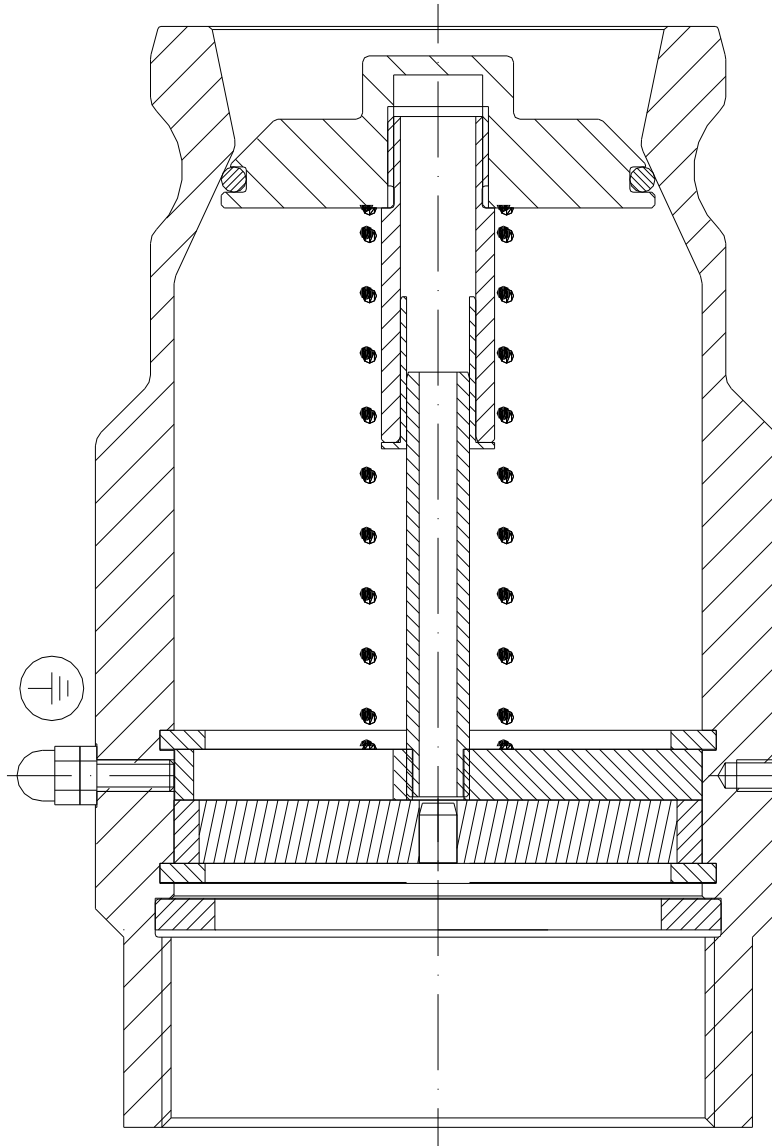


Operating Instruction
End of line Deflagration Flame Arrester 1038-0001
(With VKG Camlock coupling and poppet valve for vapour return line)



IBExU 10 ATEX 2104 X

 G IIB3



1. Preface

This operating instruction apply to end of line deflagration flame arrester 1038-0001, 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 10 ATEX 2104 X
- DIN EN ISO 16852 Flame arresters
- European Directive 2014/34/EU
- 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 2.1
- 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 and limits of use

The end of line deflagration flame arrester 1038-0001 is on the unprotected side constructed as a male coupling (VKG, Camlock) according to EN 14420-7 and EN 13081.

It prevents light-back at deflagration of potentially explosive vapour-air, and or gas-air mixtures of explosives group I, IIA, IIB1, IIB2 and IIB3 with a standard gap (MESG) ≥ 0.65 mm during coupling or not connected vapour return hose from outside (atmospheric conditions) to the protected side (e. g. storage tank).

The integrated poppet valve avoids emission of vapour after disconnecting the vapour return hose.



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 Here: End of line deflagration flame arrester
Lu/D	n/a		Not applicable
BC	c		No time for stabilized burning
EX	G IIB3		Explosion group
To	60	[°C]	Maximum operating temperature
po	1,10	[bar]	Maximum absolute operating pressure

4.1 Special conditions for safe usage

- Combustible gases and or liquids produced during operation must pertain to explosives group IIA1 (old I), 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 is **not tested** on safety against flame transmission in case of pipe deflagration and detonation arising in the connected vapour return line. Therefore it has to be ensured that the vapour return line is always detached first at the protective system.
- To open the poppet valve the usage of a female coupling according to the above mentioned standards is necessary.
- The protective system must be included in the equipotential bonding of the vessels or plants (e. g. by means of conductive hose connections)
- 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

(Refer to fig.1)

Connection : VKG "Camlock" EN14420-7 and EN 13081
Female thread ISO 228-1 G3"

Pressure loss : see fig. 2

6. Assembly

(See figure 1)

The protective system 1038-0001 is to be fully screwed onto the respective connecting parts (e. g. vapour line to earth vessel).

If necessary use standard adapter from suitable material.



Note!

- Follow the special conditions of chapter 4.
- Use medium resistant sealing if necessary.
- Check connection for leakage after assembly. (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

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.

7.1 Disassembly

For taking out the flame arrester element (9) disassemble first sealing (11) and then retaining ring (10).

Unscrew connector ground (12) for disassembling the poppet valve.



Note!

- Parts are spring loaded by spring (4).

7.2 Assembly

After cleaning, reassemble in reverse order.



Note!

- Pay attention for the right gap width of the flame arrester element!
The gap width (Δ **0.70 mm**) 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)!
- Without flame arrester element (9) there is no flame arrester function!
- Ensure that connector ground (12) has contact with stabilizing bar (8) after mounting.
Vapour adaptor will loose flame proof function without connector ground (12)



7.3 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)

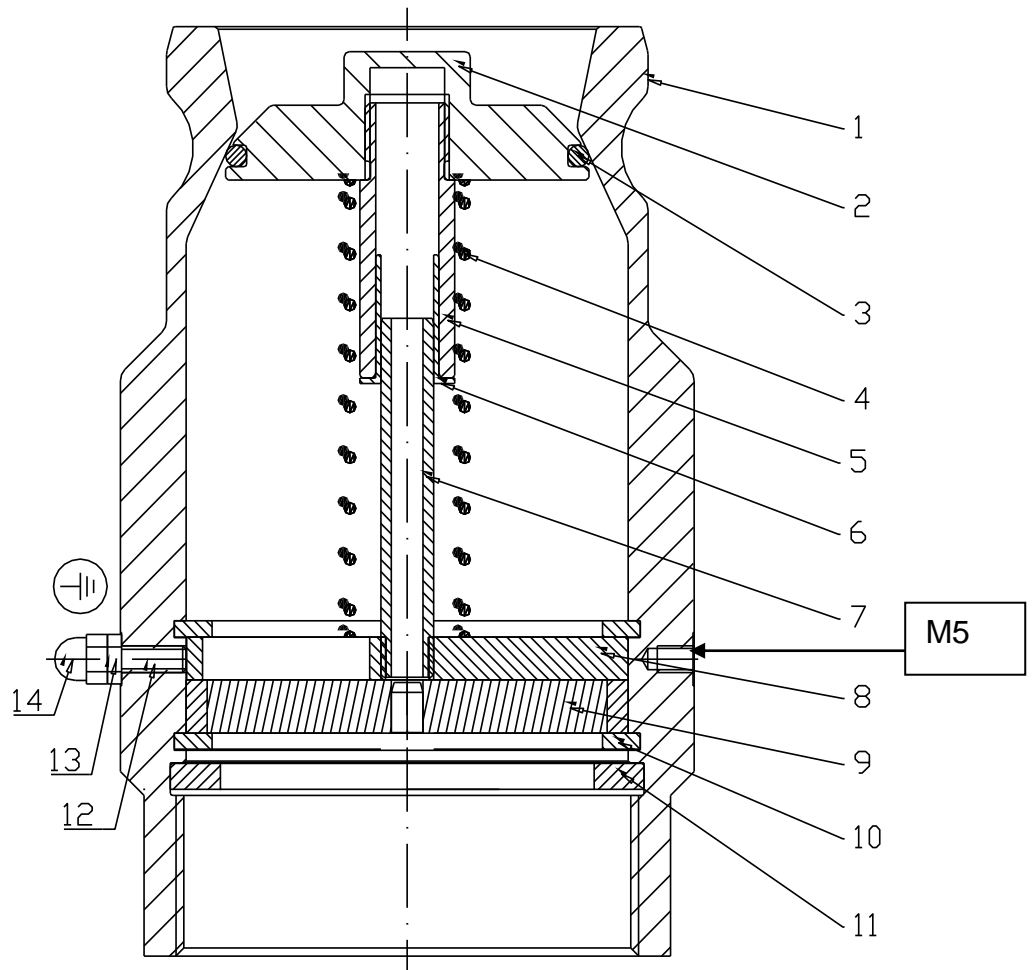
Item	Product	Spare part no.
3	O-Ring	9013-0014-00
9	Flame arrester element	1000-0029-00
11	Sealing ring 3"	3021-0004-00
	Sealing ring 4"	3021-0005-00

9. Technical Consultations

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Unprotected side (Connection of vapour hose)



Protected side (E.g. connection to earth vessel)

Fig. 1
Construction

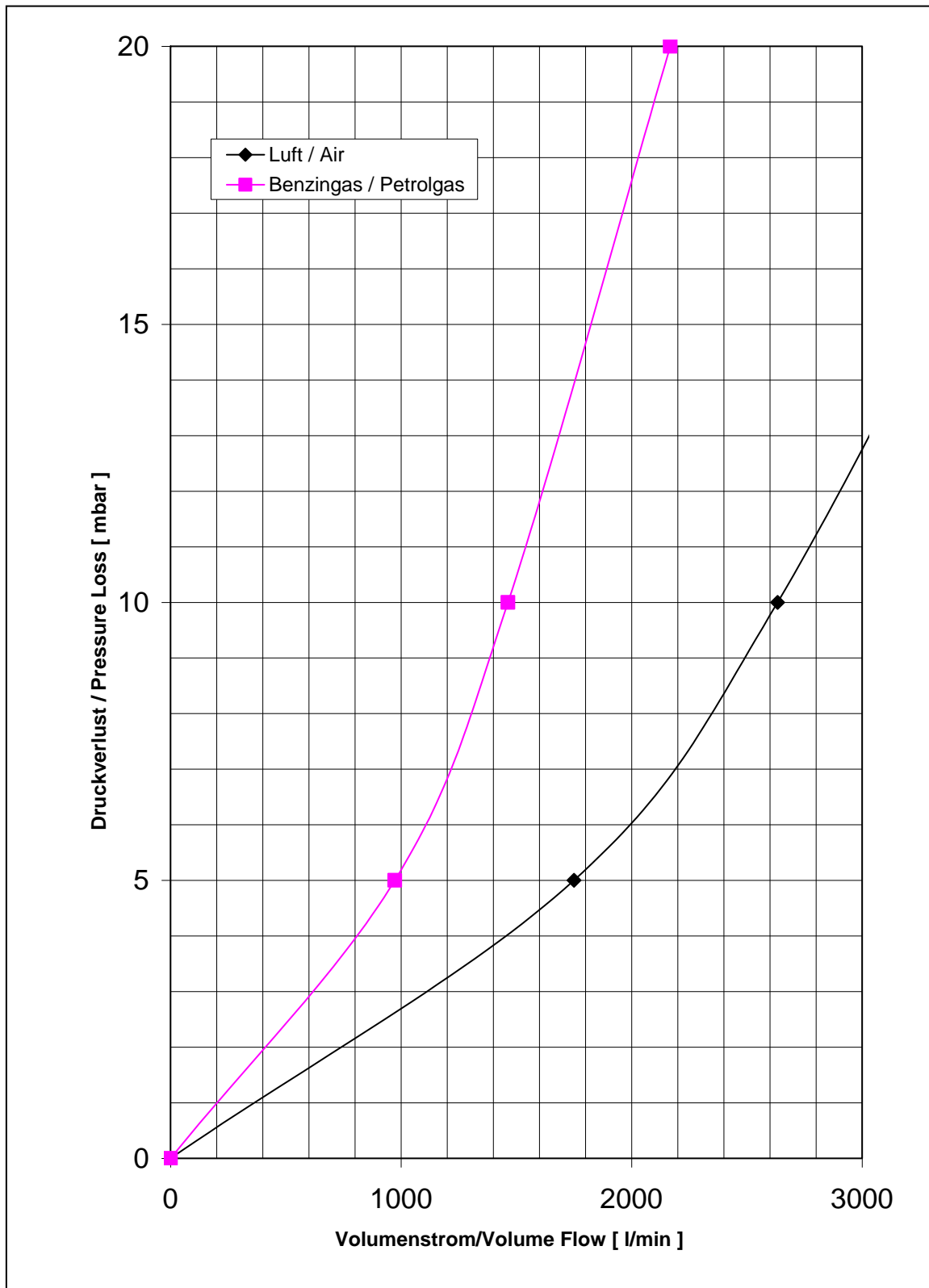


Fig. 2

Pressure loss ($p_0=1013 \text{ mbar}$, $T= 293 \text{ K}$)

Air density = $1,205 \text{ kg/m}^3$

Petrolgas density $\sim 4,80 \text{ kg/m}^3$