	FLAME ARRESTER 934-B-T 400(350)/2x0,7	REV 1.0
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For the flame arrester type 934-B-T 400(350)/2x0,7 dimension sheet and pressure drop/volume flow diagram are available.

1. Use

The flame arrester type 934-B-T 400(350)/2x0,7 complies with the standard EN ISO 16852:2001 "Flame Arresters-Performance requirements, test methods and limits for use".

The general suitability as a deflagration- and short time burning flame arrester when used with inflammable gas/air mixture and vapour/air mixture of inflammable liquids of the explosion group IIB3 (gap $\geq 0,65$ mm) had been verified by tests executed at the Institute for Safety Technology IBExU Freiberg. The results of it were confirmed by the issued EC prototype test certificate **IBExU14ATEX2078 X**. It has to be considered that the safe use of hydrocarbons is restricted, and an extension of the usage onto other chemicals needs special testing.

On principle, for all cases of use the placement conditions, especially the following limits for the operating pressure and temperature have to be considered:

- permissible operating pressure : atmospheric (0,8bar (absolute) to 1,1bar (absolute))
- permissible operating temperature : -20°C to 60°C

For the case of short time burning on the flame arrester element the flame arrester is equipped with an integrated temperature sensing element (resistance thermometer). In the case of exceeding the operating temperature by ≥ 60 K a temporary unlimited stabilized burning on the flame arrester element shall be prevented by installing a resistance thermometer in connection with an automatic initiating of emergency functions (interruption or blanketing of the mixture flow).

On delivery of the devices the technical parameter of the flame arrester with stating the EC prototype test certificate number are documented in the works test certificate according to EN 10204.

In the declaration of compliance it is referred to the accordance with the harmonized standard EN ISO 16852. The maintenance of the basic safety requirements according to directive 2014/34/EU has been confirmed.

2. Construction


The flame arrester 934-B-T consists of a welded housing (1), on which the flame arrester element is covered above set screws (13) and nuts (14).

The flame arrester element consists of two metal foil elements (2) and (3) which are covered in a grid cage (6) and clamped between two stars (4) and (5). ing flange (6), and are clamped above set screws (5), hexagon nuts (7) and ring nuts (9).

The foil elements have different directions of winding in its gaps. The gap width amounts 0,7 mm. The metal foils are kept constant on a distance of 2 mm by a clamp (10) and a ring (9). The welded nut at star (5) could be used to screw in the resistance thermometer (20).

For protection against effects of the weather and contamination the flame arrester is equipped with a metal sheet cover (12) and a safety guard (16).

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3. Marking

The information for marking the flame arrester is arranged on the nameplate, the hazard sign and an additional hazard sign (page 4/4).

The following data are indicated:

Nameplate:

- name and address of the manufacturer
- type (including version number)
- serial number and year of production
- number of the certificate (EC prototype certificate-no.)
- number of relevant standard – ISO 16852
- specific mark for prevention of explosions in connection with the mark indicating the group of devices II, and the letter “G” (for areas where explosive gas, vapour, air mixtures are available)
- explosion group
- CE mark with the number of the indicated inspection authority, which act during production

Hazard sign:

- **Warning Flame arresters have installation and application limits**
Type designation in accordance with ISO 16852
- sign for type of flame arrester: **DEF** (deflagration)
- ratio L_u/D (distance to ignition source): **---** (not applicable)
- burn rate „BC“: **b** (short time burning)
- burn time t_{BT} (only for „BC“ b): **1 min**
- explosion group: **IIB3**
- operational temperature T_0 : **60°C**
- maximum operational pressure p_0 : **atm.** (atmospheric)

Warning note:

Note: This flame arrester is safe for short time burning!
Please refer to operating and maintenance instructions!


The flame arrester is marked on the outer border of the pipe socket as follows: BS&B - 2x0,7

The metal foil is marked at the outermost wound element, as follows:

- name of the manufacturer
- gap width
- material number
- direction of winding

Example: BS&B – 0,7 – 1.4571 – R

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4. Installation

The arrangement and the installation of the flame arrester into the plant shall be done under observance of the rules applicable to the relevant range of use. Especially the instructions for accident prevention have to be observed.

A vertical installation position of the flame arrester has to be kept under any circumstances.

A minimum distance of outlet to external devices has to be adhered, to avoid reduction of volume flow resp. to avoid damage due to flame causing by short time burning.

This minimum distance depends on local circumstances and has to be specified by operator.

Flame arrester for continuous burning must not be equipped with heat insulation.

The flame arrester is equipped with a flanged connection PN16 – form C or ANSI 150 RF. While flanging be careful that the sealing face is not damaged and that there is no foreign matter or grease between the flanges for no gap to the atmosphere can occur.

For connecting the temperature sensor to the measuring plant the manufacturers installation guidelines for the resistance thermometer and the conditions for guaranteeing the conformity shall be followed.

The circuit between the resistance thermometer and the installation for interrupting the mixture inlet or a similar action (emergency function) has to be carried out in that way that the hazardous state will be stopped within 30 seconds after detecting a flame by the resistance thermometer.

Please note: The sheet metal cover is only used for protection of the flame arrester element.

For transport or installation the flame arrester element is to attach after remove of the metal sheet cover at the ring nuts (11).

5. Maintenance

The maintenance includes a periodic visual control of the flame arrester, especially the flame arrester element with regard to contamination and appearance. The intervals for the maintenance works depend on the operating conditions and the kind how the individual media tend to contamination. They are determined by the operator.

For the purpose of cleansing the flame arrester element shall be dismantled:

The metal sheet cover (12) and the safety guard (16) have to be dismantled by loosening the cap nuts (19). Then the distance tubes (18) can be removed. The resistance thermometer (20) has to remove. The hexagon nuts (14) have to dismount. Now the flame arrester element can be removed by using the ring nuts (11).

In case of minor contamination the metal foil elements shall be blown up with compressed air or hot vapour.

In case of major contamination a flushing with a cleaning agent can be carried out. After cleansing all parts which had been wetted by a cleansing agent; shall be blown dry.

The remounting of the flame arrester is carried out in reverse order.

During the cleansing works no mechanical modifications may be done on the flame arrester element or on the housing parts of the flame arrester.


On principle, the flame arrester element has to be replaced by a new one, if:

- a fire occurred at the flame arrester element;
- loosening or distortions in the structure of the metal foil elements can be recognized;
- corrosion damages at the metal foil elements have been detected;
- in case of strongly contaminated metal foil elements, even after cleaning, a residual contamination of more than 30 % of the free flow cross-section remained.

All works in connection with the replacement of metal foil elements in a flame arrester element shall be executed only by trained and authorized skilled personnel.

In case of replacement of structural units only original spare parts listed in the spare parts list may be installed to ensure the required safety.

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6. Spare part list

Table : Spare parts 934-B-T 400(350)/2x0,7

Item No.	Designation	No.	Material	Order-No.
				DN350 / DN400
2-11	Flame arrester element 2x0,7	1	NSt	FET15337611
12	Sheet metal cover	1	St NSt	FET999676800 FET999676900
16	Safety guard	1	NSt	FET999676300
20	Resistance thermometer	1	NSt	662036220

Material marks

St ... steel	NSt ... stainless steel
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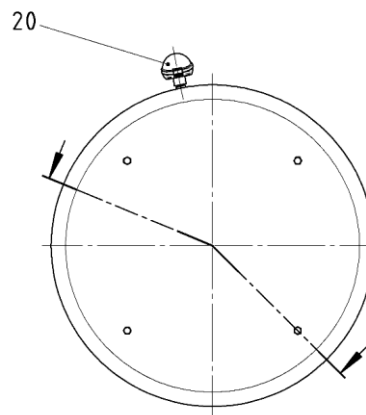
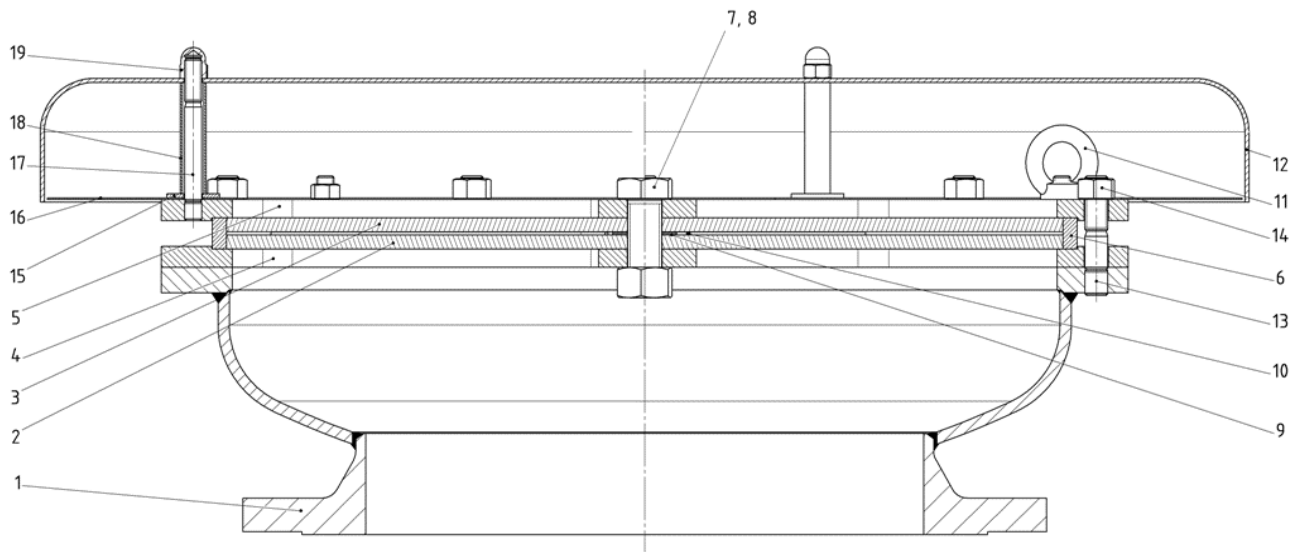


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Assembly Drawing



Hazard sign

Warning Flame arrester have installation and application limits. Type design in accordance with ISO 16852			
DEF	$L_u/D = \text{---}$	BC: b	$t_{BT} = 1 \text{ min}$
	Ex G IIB3	$T_0 = 60 \text{ }^\circ\text{C}$	$p_0 = \text{atm.}$

Warning note

Note : This flame arrester is safe for short time burning !
 Please refer to operating and maintenance instructions !

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