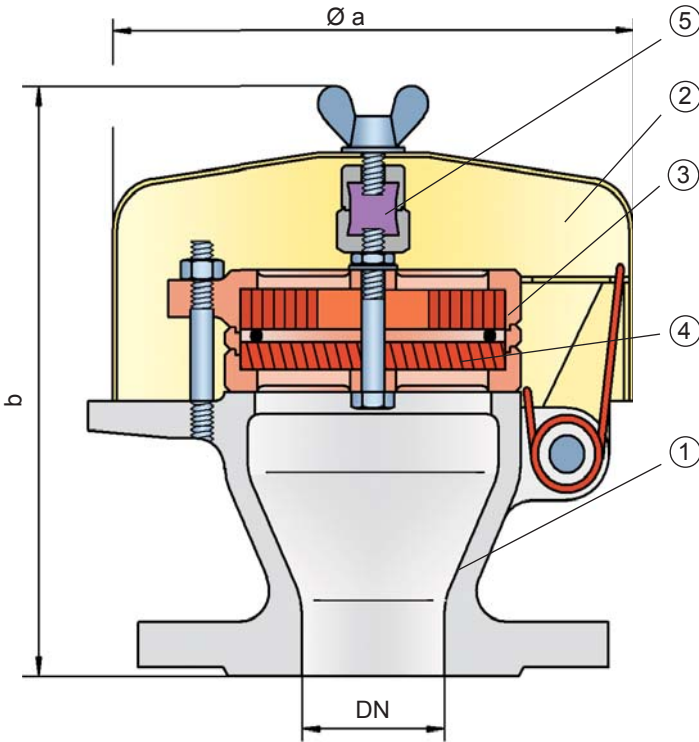


Deflagration Flame Arrester, endurance burning proof, End-of-Line

PROTEGO® BE/HK-E



⑤ the spring loaded weather hood move into the open position. The PROTEGO® flame arrester unit consists of two FLAMEFILTER® discs (4), which are installed in a FLAMEFILTER® cage. The PROTEGO® BE/HK-E end-of-line deflagration flame arrester is available for alcohols and other substances with MESG $\geq 0,85\text{mm}$.

The standard design can be used for operating temperatures up to $+60^\circ\text{C} / 140^\circ\text{F}$.

④ Type-approved in accordance with the current ATEX Directive and EN ISO 16852 as well as other international standards.

① Special Features and Advantages

- endurance burning protection for alcohols and hydrocarbons with MESG $\geq 0,85\text{mm}$.
- weather hood protects against environmental impact (i.e. weather, bird nests, etc.)
- weather hood will open and signal the impact of a flame
- fusible link is resistant against chemicals
- modular design allows replacement of single FLAMEFILTER®
- easy maintenance
- protection against atmospheric deflagration and endurance burning
- modular design results in low spare part cost

Function and Description

The PROTEGO® BE/HK-E end-of-line deflagration flame arrester was specifically developed for vessels which are not pressurized and store Ethanol or other alcohols. The combustion of alcohol requires a modified flame arrester element design to provide protection against endurance burning. In addition, the device provides protection against atmospheric deflagration. Main application area is on in - and outbreathing and vent lines, with the goal to prevent flame transmission caused by endurance burning or atmospheric deflagration from propogating into the vessel or plant.

The PROTEGO® BE/HK-E consists of a housing (1), a weather hood (2) and the PROTEGO® flame arrester unit (3). During normal operation the metal weather hood is in a closed position. If a stabilized flame burns on the flame arrester element surface, the fusible link (5), located in a center position, will melt and let

Design Types and Specifications

There are two different designs:

End-of-line deflagration flame arrester, basic design BE/HK-E -

End-of-line deflagration flame arrester with heating jacket BE/HK-E -

Special designs available on request

Table 1: Dimensions

Dimensions in mm / inches

To select the nominal size (DN), please use the flow capacity charts on the following pages

DN	20 / ¾"	25 / 1"	32 / 1¼"	40 / 1½"	50 / 2"	65 / 2½"	80 / 3"
a	163 / 6.42	163 / 6.42	163 / 6.42	183 / 7.20	183 / 7.20	218 / 8.58	218 / 8.58
b	180 / 7.09	177 / 6.97	177 / 6.97	190 / 7.48	190 / 7.48	200 / 7.87	200 / 7.87

Dimensions for deflagration flame arrester with heating jacket upon request



Demonstration of endurance burning
Video

Table 2: Selection of explosion group

MESG	Expl. Gr. (IEC/CEN)	Gas Group (NEC)	Special approvals upon request
≥ 0,85 mm	IIB1	–	

Table 3: Material selection for housing

Design	B	C	Special materials upon request
Housing	Steel	Stainless Steel	
Weather hood	Steel	Stainless Steel	
Flame arrester unit	A	A, B	

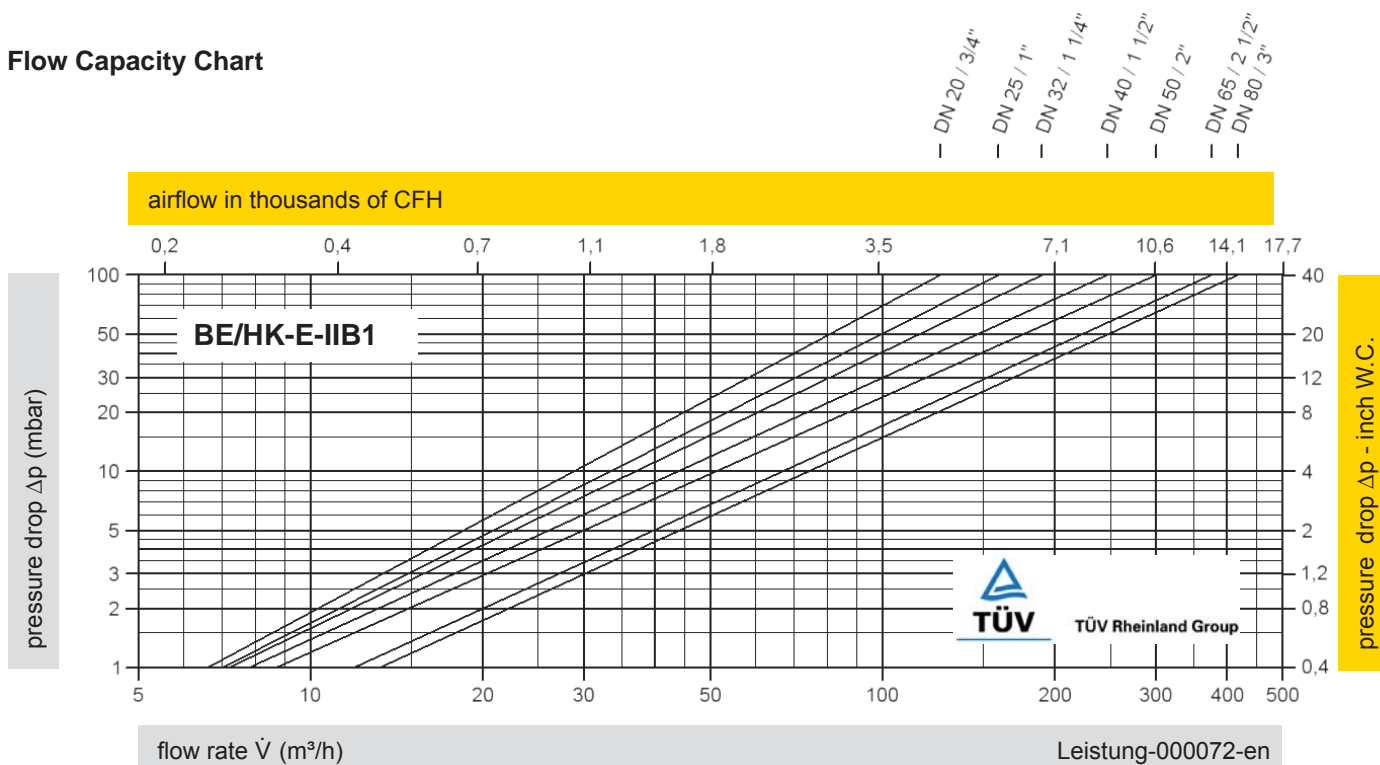
Table 4: Material combinations of flame arrester unit

Design	A	B	Special materials upon request
FLAMEFILTER® cage	Stainless Steel	Stainless Steel	
FLAMEFILTER®	Stainless Steel	Hastelloy	
Spacer	Stainless Steel	Hastelloy	

Table 5: Flange connection type

EN 1092-1; Form B1	other types upon request
ASME B16.5; 150 lbs RFSF	

Flow Capacity Chart



The flow capacity charts have been determined with a calibrated and TÜV certified flow capacity test rig. Volume flow \dot{V} in (m³/h) and CFH refer to the standard reference conditions of air ISO 6358 (20°C, 1bar). Conversion to other densities and temperatures refer to Vol. 1: "Technical Fundamentals".

