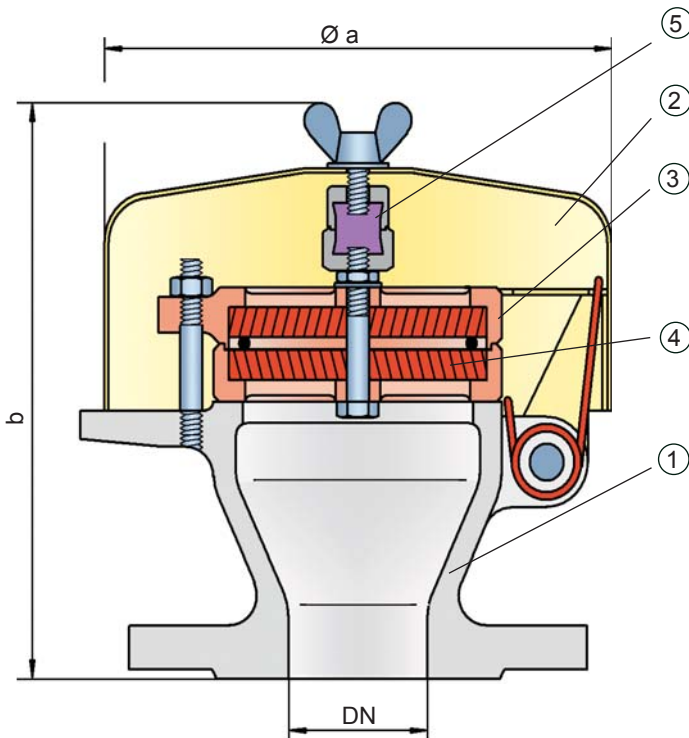




## Deflagration Flame Arrester, endurance burning proof, End-of-Line

**PROTEGO® BE/HK**



### Function and Description

For many years the PROTEGO® BE/HK end-of-line deflagration flame arrester has been successfully used to protect vessels and process engineering apparatus which are not pressurized. The device provides protection against flame transmission through atmospheric deflagration and stabilized flames which can burn for very long time on the flame arrester element surface, so called endurance burning. 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 propagating into the vessel or plant.

The PROTEGO® BE/HK 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 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 FLAMEFILTER® gap size depends on the devices intended use.

Detailing the operating conditions such as the temperature, explosion group and the composition of the fluid, enables PROTEGO® to select the best end-of-line deflagration flame arrester for your application. The PROTEGO® BE/HK series end-of-line deflagration flame arrester is available for substances from explosion groups IIA to IIB3 (NEC groups D to C MESH  $\geq 0.65$  mm). In a modified design, this device is also available for Ethanol applications.

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

Type-approved according to ATEX Directive as well as other international standards.

### Special Features and Advantages

- weather hood protects against environmental impact (i.e. weather, bird nests, etc.)
- weather hood will open and signal the impact of a flame
- endurance burning protection for IIB3 and IIA vapour (NEC group C and D); only for PROTEGO® BE/HK and BE/HK-H
- fusible link is resistant against chemicals
- modular design allows replacement of single FLAMEFILTER® discs
- easy maintenance
- modular design results in low spare part costs
- protection against atmospheric deflagration and endurance burning

### Design Types and Specifications

There are two different designs:

End-of-line deflagration flame arrester, **BE/HK - [ ]**  
basic design

End-of-line deflagration flame arrester **BE/HK - [H]**  
with heating jacket

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
BE/HK-IIA	b	180 / 7.09	177 / 6.97	177 / 6.97	190 / 7.48	190 / 7.48	200 / 7.87	200 / 7.87
BE/HK-IIB3	b	180 / 7.09	177 / 6.97	177 / 6.97	-	-	-	-

Dimensions for deflagration flame arrester with heating jacket upon request

**Table 2: Selection of explosion group**

MESG	Expl. Gr. (IEC/CEN)	Gas Group (NEC)	
> 0,90 mm	IIA	D	Special approvals upon request
≥ 0,65 mm	IIB3	C	

**Table 3: Material selection for housing**

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

**Table 4: Material combinations of flame arrester unit**

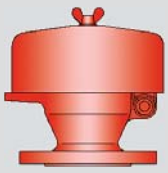
Design	A	C	
FLAMEFILTER® cage	Stainless Steel	Stainless Steel	Special materials upon request
FLAMEFILTER®	Stainless Steel	Hastelloy	
Spacer	Stainless Steel	Hastelloy	

**Table 5: Flange connection type**

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

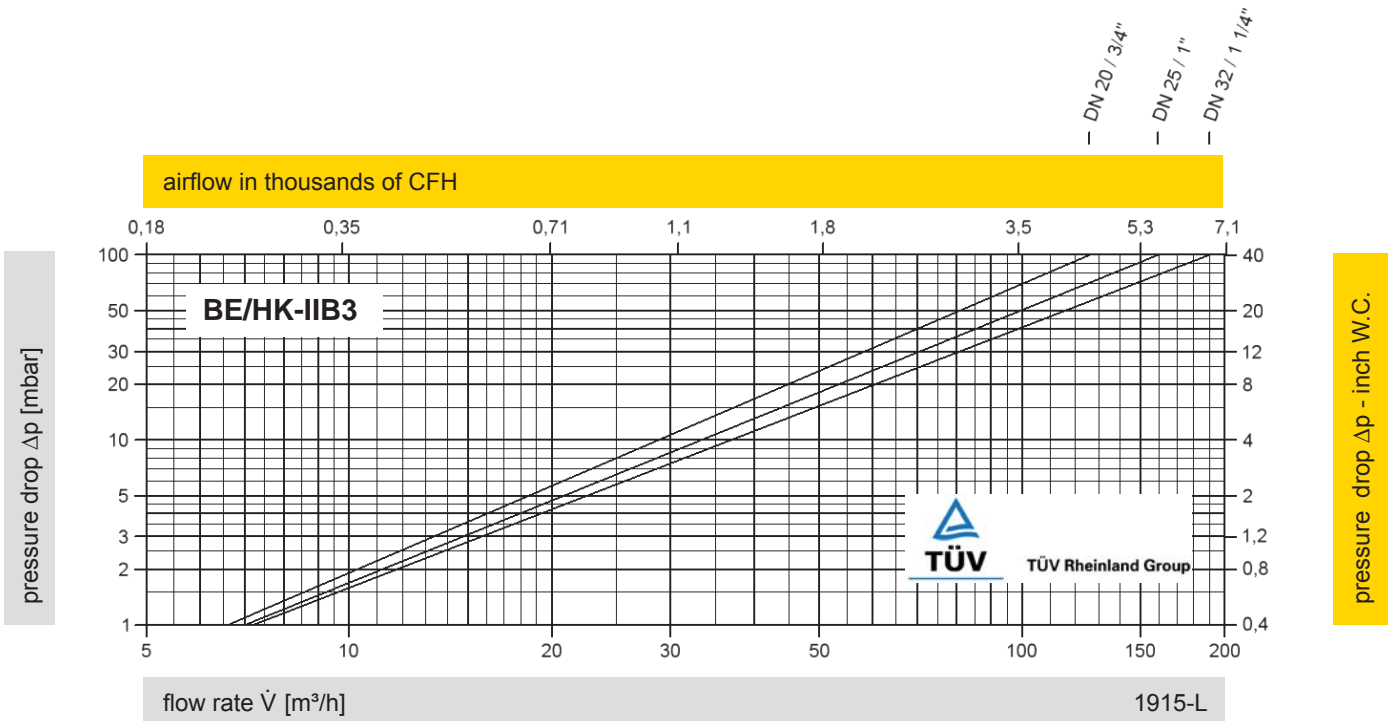
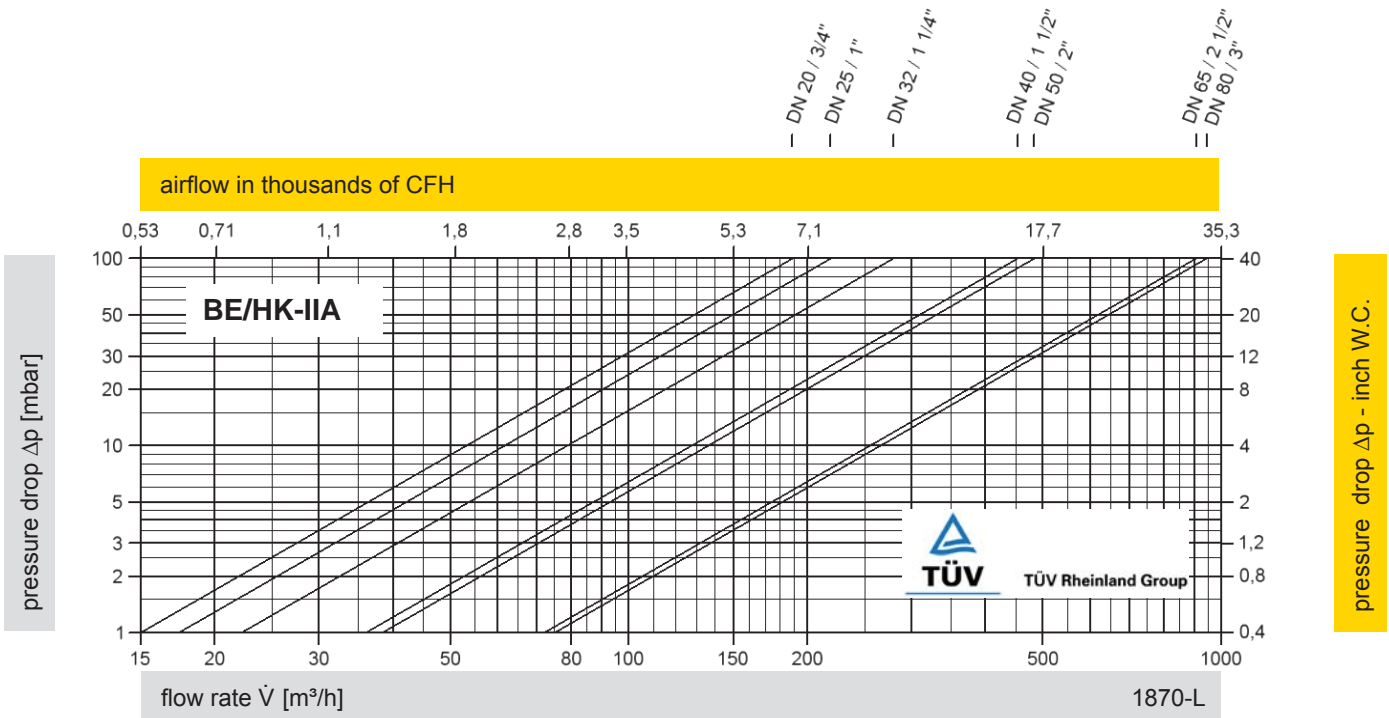


for safety and environment



# Deflagration Flame Arrester, endurance burning proof, End-of-Line Flow Capacity Charts

## PROTEGO® BE/HK



The flow capacity charts have been determined with a calibrated and TÜV certified flow capacity test rig. Volume flow  $\dot{V}$  in [m<sup>3</sup>/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".