

# Flame Arrestor

The most straight-forward protection device against flame propagation



**In-Line Flame Arrestor**



**End of Line Flame Arrestor**



**SS In-Line Flame Arrestor**

## What is a Flame Arrestor?

A flame arrestor is a device fitted to the opening of an enclosure or to the connecting pipe work in a system of enclosures and which permits gases or vapours to flow under normal operating condition but prevents the transmission of a flame should an ignition take place.

The flame arrestors are divided into various group accordingly to their design, place of installation, type and time of the flame presence.

## How Flame Arrestor Work

Flame Arrestor are passive device with no moving parts. They prevent the propagation of flame from the exposed side of the unit to the protected side by the use of wound crimped metal ribbon type flame cell element. This construction produces a matrix of uniform opening that are carefully constructed to quench the flame by absorbing the heat of the flame. This provides an extinguishing barrier to the ignited vapour mixture.

Under normal operating conditions the flame arrestor permits a relatively free flow of gas or vapor through the piping system. If the mixture is ignited and the flame begins to travel back through the piping, the arrestor will prohibit the flame from moving back to the gas source.

## Type of Flame Arrestor

### In-line flame arrestor



In-line flame arrestors are so called because they are located in the process line. If the flame could come from either direction then a bi-directional flame arrestor is require. In-line flame arrestor can be either deflagration or detonation arrestor depending on the conditions under which they are to be used. Pipe orientation is usually not a problem unless liquid is entrained in the gas flow and would tend to collect in the arrestor.

### End-of-line flame arrestor



End of line flame arrestor prevent flame from entering the pipe, and not (as is sometime believed) from exiting the pipe. Without a weather-hood they may be mounted in almost any orientation but inverted mounting is not good idea as this increase the risk of heat being trapped and causing a burn through. With a weather-hood incorporated they may be fitted in a conventional vertical orientation and be used outside exposed to rain and snow.

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## Gas Group

The type of gas in the system and its corresponding gas group determines the design of the arrestor element. The SS316 element must be designed to accommodate the specific gas group that could possibly ignited and propagate in the system. The available designs consist of International Electric Code (IEC) group gases into IIC, IIB, IIA and I, The National Electric Code (NEC) group gases into A,B,C and D categories depending on the MESG value of the gas.

## Standard Material of Construction

Part Name	Material
Body	CS ASTM A216 Gr. WCB / SS ASTM A351 Gr. CF8/CF8M
Arrestor Housing	CS / SS304 / SS316
Arrestor Element	SS316
Weather Hood (for End of Line type)	SS
Gasket	CAF
Hex Bolt & Nut	SS
Stud & Nut	MS Zinc Plated, ASTM A193 Gr. B7/2H / SS304 / SS316
Finish	Epoxy Coated In CS, SS supplied unpainted

- ◆ Optional material will be provided on request
- ◆ Standard flanges are ANSI 150# and other connection are available upon request.
- ◆ Size range from 25mm to 200mm available



## Flame arresters are used:

- ◆ to stop the spread of an open fire
- ◆ to limit the spread of an explosive event that has occurred
- ◆ to protect potentially explosive mixtures from igniting
- ◆ to confine fire within an enclosed, controlled, or regulated location

## They are commonly used on:

- ◆ fuel storage tank vents
- ◆ fuel gas pipelines
- ◆ safety storage cabinets for paint, aerosol cans, and other flammable mixtures
- ◆ the exhaust system of internal combustion engines
- ◆ Davy lamps in coal mines
- ◆ overproof rum and other flammable liquors

Note: Due to continuous development program, the design and data given are subject to change without prior notice.

## Manufacturer

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