

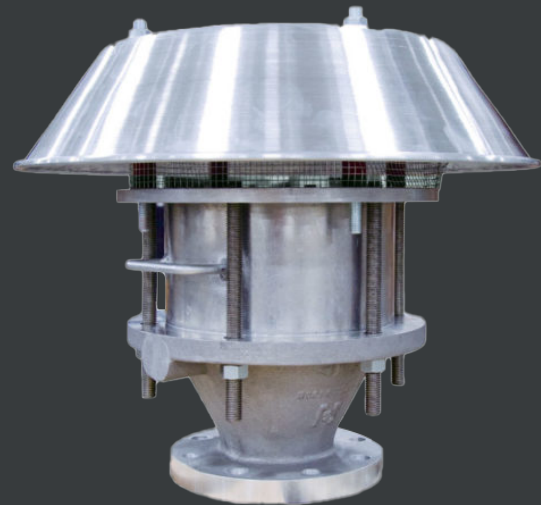
94450

Combination Deflagration Flame Arrester & Free Vent

The Shand & Jurs® Model 94450 combines atmospheric tank venting with deflagration flame protection in a single compact assembly. Installed at open vent terminations, the unit allows continuous tank breathing while preventing flame propagation into the vapor space, eliminating the need for separate free vent and arrester devices.

The crimped ribbon flame element absorbs heat from an approaching flame front and quenches combustion before it can enter the tank. During normal operation, the integrated hooded vent provides unrestricted atmospheric flow, preventing pressure accumulation in low-pressure storage tanks and vessels.

Approved to ATEX EN 12874 and ISO 16852, the 94450 is certified for deflagration protection in IIA (NEC Group D) gas service. Flow capacity and pressure drop can be verified using Shand & Jurs WinSize sizing software. Available in 2"–12" sizes with ANSI, EN1092-1, or JIS flange connections.



Key Features

Integrated free vent and deflagration arrester

Provides continuous atmospheric venting and certified deflagration protection in a single device

Crimped ribbon flame element

Rapidly dissipates flame heat and stops deflagration propagation

ATEX EN 12874 and ISO 16852 certified

Confirms suitability for classified IIA (NEC Group D) vapor service under European and international standards

Temperature monitoring port

3/4" NPT port on unprotected side of tube bank accepts user-supplied probe for element condition monitoring

Unitized removable element

Allows inspection and replacement without removing the body from the tank nozzle

Wide material selection

Supports service from standard carbon steel through Hastelloy C and Alloy 20 for highly corrosive environments



Benefits



COMBINED FREE VENT AND ARRESTER ASSEMBLY

Reduces equipment count, structural supports, and installation labor cost



CONTINUOUS ATMOSPHERIC BREATHING

Prevents tank damage and avoids unplanned outage events



DEFLAGRATION PROTECTION AT THE OUTLET

Reduces explosion risk and potential facility liability in classified areas



ACCESSIBLE REMOVABLE ELEMENT

Shortens maintenance duration and minimizes confined space entry planning



CERTIFIED APPROVAL BASIS

Supports engineering acceptance under ATEX and ISO 16852 requirements



CORROSION-RESISTANT MATERIAL OPTIONS

Extends service life in aggressive chemical or coastal environments

Available Options



Cast aluminum body

Lightweight installation. ISO 16852 approved.



Cast steel body

Standard industrial service with ATEX and ISO 16852 approval



316 stainless steel body

Corrosion resistance in aggressive vapors with full approval



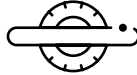
Duplex SS, Hastelloy C, or Alloy 20

Highly corrosive service environments



Flat face or raised face flanges

Matches piping specification. Raised face not available with aluminum body.



JIS 10K flange drilling

Japanese industrial standard piping compatibility

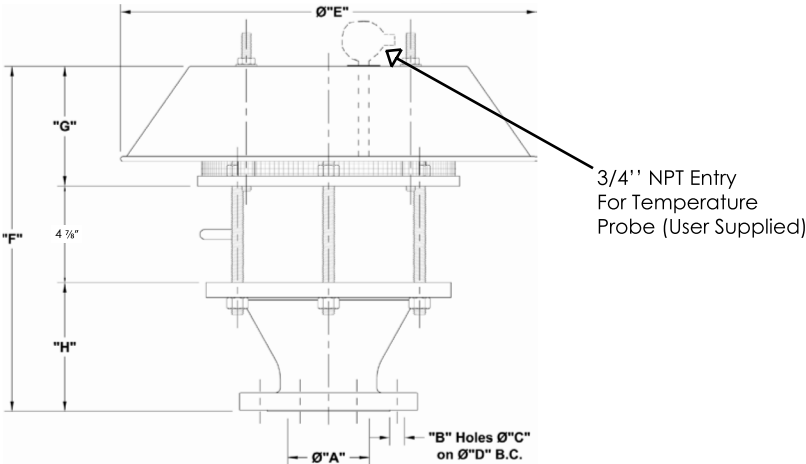


Key Performance Data

Parameter	Specification
Device Type	Combination deflagration flame arrester and free vent
Sizes	2", 3", 4", 6", 8", 10", 12"
Max Operating Pressure	1.12 BARA (16.2 PSIA) for 2"–6". 1.10 BARA (15.95 PSIA) for 8"–12".
Max Operating Temperature	60°C (140°F)
Gas Group	IIA (NEC Group D)
Approvals	ATEX EN 12874. ISO 16852 (Short Term Burn). Aluminum and cast-iron bodies: ISO 16852 only.
Flanges	ANSI 125/150 FF/RF. EN1092-1 PN10/16 FF/RF. JIS 10K FF/RF. Raised face not available with aluminum.
Body	Carbon Steel, 304 SS, 316 SS, Aluminum, Duplex SS, Hastelloy C, Alloy 20
Tube Bank	Carbon Steel, 304 SS, 316 SS, Duplex SS, Hastelloy C, Alloy 20
Hardware	18-8 SS standard. 304 SS, 316 SS, Duplex SS, Hastelloy C, Alloy 20 available.
Temperature Monitoring	3/4" NPT port on unprotected side of tube bank (probe user-supplied)

Dimensions

Dimensions in Inches								
Vent Size	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
2"	2 1/4	4	3/4	4 3/4	16	17 3/8	7	4 1/4
3"	3 3/16	4	5/8	6	18 5/8	17 3/4	7	5 3/8
4"	4 1/8	8	3/4	7 1/2	20 11/16	17 7/8	6 3/8	6 1/2
6"	6 5/32	8	7/8	9 1/2	27 1/8	19 7/8	7 3/8	7 1/2
8"	8 11/64	8	7/8	11 3/4	29 1/4	24 7/16	9 5/8	9 13/16
10"	10 1/4	12	1	14 1/4	45 1/2	30 1/4	13 1/4	12
12"	12 3/8	12	1	17	45 1/2	32 1/4	13 1/4	14





Model Number Selection

The model number will consist of a base number 94450 followed by 6 digit numbers. These digits will represent 2 option tables.

94450 - AB - CD - EF

Ordering Information

Specify:

- 1. Model 94450 Combination Deflagration Flame Arrester & Free Vent
- 2. Size
- 3. Body Material
- 4. Tube Bank Material
- 5. Hardware Material
- 6. Flange Type

Table AB - Size and Body*

Table CD - Tube Bank and Hardware*

Option AB	Size (Inches)	Body Material	Option CD	Tube Bank Material Shell/Element	Hardware Material
23	2	Cast Aluminum	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
23	2	Cast Aluminum	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
20	2	Cast Steel	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
20	2	Cast Steel	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22	2	Cast 316 Stainless Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
33	3	Cast Aluminum	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
33	3	Cast Aluminum	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
30	3	Cast Steel	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
30	3	Cast Steel	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32	3	Cast 316 Stainless Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
43	4	Cast Aluminum	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
43	4	Cast Aluminum	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
40	4	Cast Steel	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
40	4	Cast Steel	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
42	4	Cast 316 Stainless Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
63	6	Cast Aluminum	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
63	6	Cast Aluminum	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
60	6	Cast Steel	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
60	6	Cast Steel	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
62	6	316 Stainless Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
83	8	Cast Aluminum	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
83	8	Cast Aluminum	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
80	8	Cast Steel	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
80	8	Cast Steel	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
82	8	316 Stainless Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
03	10	Cast Aluminum	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
03	10	Cast Aluminum	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel

Table AB - Size and Body*

Option AB	Size (Inches)	Body Material	Option CD	Tube Bank Material Shell/Element	Hardware Material
00	10	Cast Steel	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
00	10	Cast Steel	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
02	10	316 Stainless Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
13	12	Cast Aluminum	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
13	12	Cast Aluminum	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
10	12	Cast Steel	00	Carbon Steel / 304 Stainless Steel	18-8 Stainless Steel
10	12	Cast Steel	01	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
12	12	316 Stainless Steel	22	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel

*NOTE: Aluminum and Cast Iron Bodies are only approved for ISO 16852.

Other Material Combinations are available.

Raised Face Flanges are not available with Aluminum Body.

Table EF - Flange Type

Option EF	Description
00	ANSI 125 lb./150lb. FF
10	ANSI 125lb./150lb. RF*
20	EN1092-1 PN10 FF
30	EN1092-1 PN10 RF*
40	EN1092-1 PN16 FF
50	EN1092-1 PN16 RF*

Note: Raised faced flanges with smooth finish are standard.

For optional serrated raised faced flanges, consult factory.

*Raised Face Flanges Not Available with Aluminum.

TUBE BANKS ONLY Same as 94406. Refer to chart in 94406.

Summary

The Model 94450 provides continuous atmospheric tank venting while preventing deflagration propagation at the vent outlet. ATEX EN 12874 and ISO 16852 certification confirm suitability for classified vapor service, while the wide material selection and removable element design support reliable long-term performance across a broad range of chemical environments.

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