

## 94306 Vertical Flame Arrester

The Shand & Jurs Flame Arresters are designed to provide a positive flame stop on low pressure tanks, storage tanks and anaerobic digesters containing flammable liquids, solvents or gases having a low flash point. The 94306 not only provides exceptional protection against fire from external ignition, but also offers maximum flow capacity.

Shand & Jurs Flame Arresters are generally installed with pressure-vacuum vents, or in-line free vent to atmosphere. The tube bank design consisting of a spiral-wound crimped ribbon around a solid core, maximize flow capacity with minimum pressure drop. This unique design meets FM Factory Mutual approval for all sizes and material options.

Standard construction includes light weight cast aluminum, cast iron, cast steel, 304 stainless steel and 316 stainless steel body materials suitable for most environments. Tube bank is available in aluminum, 304 stainless steel and 316 stainless steel as standard. For highly corrosive and severe conditions, special materials and coatings are available.

Available with flat face flanges for aluminum or raised face flanges for cast steel and stainless steel to match ANSI, EN1092-1, or JIS 10K specifications.

Periodic inspection, maintenance and replacement of the tube bank is easily accomplished by simply removing tie-bolts and expanding the remaining jack screws. Once the upper and lower body sections are expanded, the tube bank and shell are easily removed with the aid of a handle.

For in-line deflagration arrester, see the Shand & Jurs 94406.



### Features

- Unitized tube bank design
- Maximum protection and efficiency with minimum pressure drop
- Wide range of standard construction materials
- Easy inspection and maintenance, due to simple removal of tube bank on site
- FM Approval, 2" to 12" inclusive, NEC Group

## Specifications

### \*Sizes:

2", 3", 4", 6", 8", 10" and 12"  
\*Consult Factory for larger sizes

### Max. Static Pressure:

5 PSIG Standard.  
25 and 50 PSIG Consult Factory.

### Flange Rating:

To match drilling of ANSI 125/150 lb. flat face or 150 lb. raised face (cast aluminum body option available with flat face only). EN1092-1 and JIS options.

### Approval/Gas Application:

FM (Factory Mutual), NEC Group D

## Materials of Construction

### Body:

Cast Iron, Cast Steel, Cast Aluminum, 304 Stainless Steel or 316 Stainless Steel

### Hardware:

18-8 Stainless Steel Standard, 316 Stainless Steel

### Tube Bank:

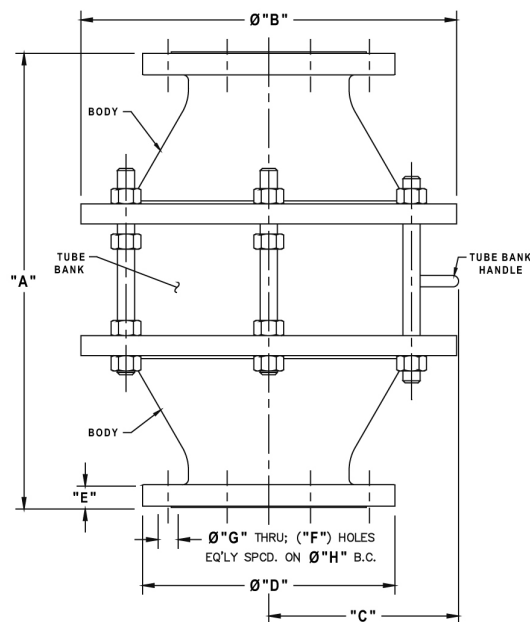
Aluminum with Aluminum Shell;  
304 Stainless Steel with Steel Shell;  
304 Stainless Steel with 304 Stainless Steel Shell;  
316 Stainless Steel with 316 Stainless Steel Shell

## Outline Dimensions

| Dimensions in Inches |        |              |        |              |        |           |              |              | Approximate Shipping Wt. (lbs) |      |
|----------------------|--------|--------------|--------|--------------|--------|-----------|--------------|--------------|--------------------------------|------|
| Vent Size            | "A"    | Diameter "B" | "C"    | Diameter "D" | "E"    | Holes "F" | Diameter "G" | Diameter "H" | Alum.                          | Iron |
| 2"                   | 13 3/8 | 8 1/2        | 7 7/16 | 6            | 5/8    | 4         | 3/4          | 4 3/4        | 15                             | 43   |
| 3"                   | 15 5/8 | 10 1/2       | 8 5/16 | 7 1/2        | 3/4    | 4         | 3/4          | 6            | 25                             | 65   |
| 4"                   | 17 7/8 | 12 3/8       | 6 1/2  | 9            | 15/16  | 8         | 3/4          | 7 1/2        | 45                             | 120  |
| 6"                   | 19 7/8 | 16 3/8       | 8 1/4  | 11           | 1      | 8         | 7/8          | 9 1/2        | 69                             | 207  |
| 8"                   | 24 1/2 | 20 1/2       | 10 3/8 | 13 1/2       | 1 1/8  | 8         | 7/8          | 11 3/4       | 93                             | 280  |
| 10"                  | 28 7/8 | 24 1/2       | 12 1/4 | 16           | 1 3/16 | 12        | 1            | 14 1/4       | 165                            | 480  |
| 12"                  | 32 7/8 | 28 3/4       | 14 3/8 | 19           | 1 1/4  | 12        | 1            | 17           | 200                            | 610  |

ANSI Connection shown. Other Connection Sizes Available.

Installation Note: Locate flame arrester within 10 pipe diameters of potential atmospheric ignition source.



All designs subject to change. Certified dimensions and specifications available upon request.

## 94306 Ordering Guide

### Model Number Selection

The model number will consist of a base number **94306** followed by 6 digit numbers. These digits will represent 2 option tables.

**94306 - AB - CD - EF**

### Ordering Information

Specify:

1. Model 94306 Vertical Flame Arrester
2. Size and Body Material

3. Tube Bank and Shell Material
4. Type of Flange Option
5. Special Materials or Coatings, If Required

#### Table AB - Size and Body\*

#### Table CD - Tube Bank and Shell\*

| Option AB | Size (Inches) | Body Material           | Option CD* | Tube Bank Material  | Shell Material      |
|-----------|---------------|-------------------------|------------|---------------------|---------------------|
| 12        | 2             | Cast Aluminum           | 11 (12)    | Aluminum            | Aluminum            |
| 12        | 2             | Cast Aluminum           | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 12        | 2             | Cast Aluminum           | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 12        | 2             | Cast Aluminum           | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 14        | 3             | Cast Aluminum           | 11 (12)    | Aluminum            | Aluminum            |
| 14        | 3             | Cast Aluminum           | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 14        | 3             | Cast Aluminum           | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 14        | 3             | Cast Aluminum           | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 15        | 4             | Cast Aluminum           | 11 (12)    | Aluminum            | Aluminum            |
| 15        | 4             | Cast Aluminum           | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 15        | 4             | Cast Aluminum           | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 15        | 4             | Cast Aluminum           | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 16        | 6             | Cast Aluminum           | 11 (12)    | Aluminum            | Aluminum            |
| 16        | 6             | Cast Aluminum           | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 16        | 6             | Cast Aluminum           | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 16        | 6             | Cast Aluminum           | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 17        | 8             | Cast Aluminum           | 11 (12)    | Aluminum            | Aluminum            |
| 17        | 8             | Cast Aluminum           | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 17        | 8             | Cast Aluminum           | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 17        | 8             | Cast Aluminum           | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 18        | 10            | Cast Aluminum           | 11 (12)    | Aluminum            | Aluminum            |
| 18        | 10            | Cast Aluminum           | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 18        | 10            | Cast Aluminum           | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 18        | 10            | Cast Aluminum           | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 19        | 12            | Cast Aluminum           | 11 (12)    | Aluminum            | Aluminum            |
| 19        | 12            | Cast Aluminum           | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 19        | 12            | Cast Aluminum           | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 19        | 12            | Cast Aluminum           | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 32, 62    | 2             | Cast Iron, Ductile Iron | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 32, 62    | 2             | Cast Iron, Ductile Iron | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 32, 62    | 2             | Cast Iron, Ductile Iron | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 52        | 2             | Cast Steel              | 66 (67)    | 304 Stainless Steel | Carbon Steel        |

\*Raised Face Flanges Available, not available with Aluminum bodies.

\*NOTE: 18-8 Stainless Steel Hardware is Standard.  
For 316 Stainless Steel Hardware, use Option CD in (XX).

### Table AB - Size and Body\*

### Table CD - Tube Bank and Shell\*

| Option AB | Size (Inches) | Body Material            | Option CD* | Tube Bank Material  | Shell Material      |
|-----------|---------------|--------------------------|------------|---------------------|---------------------|
| 52        | 2             | Cast Steel               | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 52        | 2             | Cast Steel               | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 42        | 2             | Cast 316 Stainless Steel | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 34, 64    | 3             | Cast Iron, Ductile Iron  | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 34, 64    | 3             | Cast Iron, Ductile Iron  | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 34, 64    | 3             | Cast Iron, Ductile Iron  | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 54        | 3             | Cast Steel               | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 54        | 3             | Cast Steel               | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 54        | 3             | Cast Steel               | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 44        | 3             | Cast 316 Stainless Steel | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 35, 65    | 4             | Cast Iron, Ductile Iron  | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 35, 65    | 4             | Cast Iron, Ductile Iron  | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 35, 65    | 4             | Cast Iron, Ductile Iron  | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 55        | 4             | Cast Steel               | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 55        | 4             | Cast Steel               | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 55        | 4             | Cast Steel               | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 45        | 4             | Cast 316 Stainless Steel | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 36, 66    | 6             | Cast Iron, Ductile Iron  | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 36, 66    | 6             | Cast Iron, Ductile Iron  | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 36, 66    | 6             | Cast Iron, Ductile Iron  | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 56        | 6             | Cast Steel               | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 56        | 6             | Cast Steel               | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 56        | 6             | Cast Steel               | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 46        | 6             | Cast 316 Stainless Steel | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 37, 67    | 8             | Cast Iron, Ductile Iron  | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 37, 67    | 8             | Cast Iron, Ductile Iron  | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 37, 67    | 8             | Cast Iron, Ductile Iron  | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 57        | 8             | Cast Steel               | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 57        | 8             | Cast Steel               | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 57        | 8             | Cast Steel               | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 47        | 8             | Cast 316 Stainless Steel | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 38, 68    | 10            | Cast Iron, Ductile Iron  | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 38, 68    | 10            | Cast Iron, Ductile Iron  | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 38, 68    | 10            | Cast Iron, Ductile Iron  | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 58        | 10            | Cast Steel               | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 58        | 10            | Cast Steel               | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 58        | 10            | Cast Steel               | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 48        | 10            | Cast 316 Stainless Steel | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 39, 69    | 12            | Cast Iron, Ductile Iron  | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 39, 69    | 12            | Cast Iron, Ductile Iron  | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 39, 69    | 12            | Cast Iron, Ductile Iron  | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 59        | 12            | Cast Steel               | 66 (67)    | 304 Stainless Steel | Carbon Steel        |
| 59        | 12            | Cast Steel               | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |
| 59        | 12            | Cast Steel               | 44 (45)    | 304 Stainless Steel | 304 Stainless Steel |
| 49        | 12            | Cast 316 Stainless Steel | 22 (23)    | 316 Stainless Steel | 316 Stainless Steel |

\*Raised Face Flanges Available, not available with Aluminum bodies. \*NOTE: 18-8 Stainless Steel Hardware is Standard. For 316 Stainless Steel Hardware, use Option CD in (XX).

**Table EF - Flange Type and Drain Plugs\***

| Flange Style         | No Drain Plugs<br>Option EF | With Drain Plugs<br>Option EF |
|----------------------|-----------------------------|-------------------------------|
| ANSI 125/150 lb. FF  | 77                          | 71                            |
| ANSI 125/150 lb. RF* | 87                          | 81                            |
| EN1092-1 PN16 FF     | 27                          | 21                            |
| EN1092-1 PN16 RF*    | 37                          | 31                            |
| JIS 10K FF           | 47                          | 41                            |
| JIS 10K RF*          | 57                          | 51                            |

\*RF not available in Aluminum.

### Tube Banks Only

| Parts Number | Size (Inches) | Tube Bank Materials | Shell Material      | Shipping Weight (lbs.) |
|--------------|---------------|---------------------|---------------------|------------------------|
| 9430-10150   | 2             | Aluminum            | Aluminum            | 9                      |
| 091211       | 2             | 304 Stainless Steel | Carbon Steel        | 22                     |
| 9430-11120   | 2             | 304 Stainless Steel | 304 Stainless Steel | 25                     |
| 9430-11110   | 2             | 316 Stainless Steel | 316 Stainless Steel | 25                     |
| 9430-10151   | 3             | Aluminum            | Aluminum            | 14                     |
| 091212       | 3             | 304 Stainless Steel | Carbon Steel        | 30                     |
| 9430-11121   | 3             | 304 Stainless Steel | 304 Stainless Steel | 35                     |
| 9430-11111   | 3             | 316 Stainless Steel | 316 Stainless Steel | 35                     |
| 9430-10152   | 4             | Aluminum            | Aluminum            | 20                     |
| 091213       | 4             | 304 Stainless Steel | Carbon Steel        | 55                     |
| 9430-11122   | 4             | 304 Stainless Steel | 304 Stainless Steel | 60                     |
| 9430-11112   | 4             | 316 Stainless Steel | 316 Stainless Steel | 60                     |
| 9430-10153   | 6             | Aluminum            | Aluminum            | 35                     |
| 9430-11070   | 6             | 304 Stainless Steel | Carbon Steel        | 90                     |
| 9430-11123   | 6             | 304 Stainless Steel | 304 Stainless Steel | 100                    |
| 9430-11113   | 6             | 316 Stainless Steel | 316 Stainless Steel | 100                    |
| 9430-10154   | 8             | Aluminum            | Aluminum            | 55                     |
| 9430-11071   | 8             | 304 Stainless Steel | Carbon Steel        | 145                    |
| 9430-11124   | 8             | 304 Stainless Steel | 304 Stainless Steel | 160                    |
| 9430-11114   | 8             | 316 Stainless Steel | 316 Stainless Steel | 160                    |
| 9430-10155   | 10            | Aluminum            | Aluminum            | 85                     |
| 9430-11072   | 10            | 304 Stainless Steel | Carbon Steel        | 225                    |
| 9430-11125   | 10            | 304 Stainless Steel | 304 Stainless Steel | 240                    |
| 9430-11115   | 10            | 316 Stainless Steel | 316 Stainless Steel | 240                    |
| 9430-10156   | 12            | Aluminum            | Aluminum            | 120                    |
| 9430-11073   | 12            | 304 Stainless Steel | Carbon Steel        | 310                    |
| 9430-11126   | 12            | 304 Stainless Steel | 304 Stainless Steel | 320                    |
| 9430-11116   | 12            | 316 Stainless Steel | 316 Stainless Steel | 320                    |