

## 94470 Combination Conservation Vent and Deflagration Flame Arrester

The Shand and Jurs 94470 Combination Conservation Vent and Deflagration Flame Arrester is a single, easy to configure package providing for pressure and vacuum relief, as well as positive flame stop on low pressure tanks containing flammable liquids or solvents having a low flash point.

The conservation vent features cushion seated diaphragms constructed of FEP for reliability and extended service life. For high reliability, the pressure and vacuum pallets are both peripherally and center stem guided.

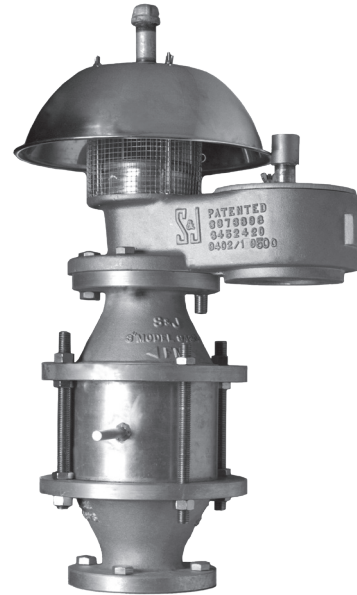
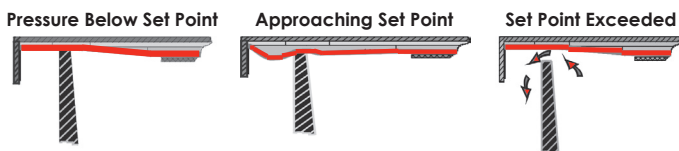
The unitized tube bank provides maximum flow while minimizing pressure drop. Both body and tube banks are available in numerous materials to meet the requirements of your site.

Temperature monitor device available. Consult Factory.

### Expanda-Seal

Shand & Jurs "Expanda-Seal" option is available on all pressure pallet assemblies. This feature significantly reduces leakage. The ballooning effect of the FEP diaphragm effectively seals the valve.

The "Expanda-Seal" feature ensures less than .5 SCFH of air at 95% of the set point.



## Features

- ISO 16852 Approved
- ATEX EN 12874 approved
- Cost effective, dual purpose
- Provides pressure & vacuum relief
- Serves as a barrier between external flame and internal vapors
- Provides protection against flame propagation
- Open or closed vent configurations
- Sizes 2" (50 mm) thru 12" (300 mm) ANSI, EN1092-1, JIS

### Specifications

**Sizes:**

2", 3", 4", 6", 8", 10" and 12"

**Standard Pressure & Vacuum Settings:**

1/2 oz/in<sup>2</sup> (.865 in.W.C.)

**Expanda-Seal Pressure Setting:**

1.5 oz/in<sup>2</sup> Minimum (Consult Factory for lower settings)

**Standard Maximum Setting w/o Modification:**

	(Pressure)	(Vacuum)
2":	18 oz/in <sup>2</sup>	8 oz/in <sup>2</sup>
3":	18 oz/in <sup>2</sup>	9 oz/in <sup>2</sup>
4":	18 oz/in <sup>2</sup>	11 oz/in <sup>2</sup>
6":	12 oz/in <sup>2</sup>	12 oz/in <sup>2</sup>
8":	10 oz/in <sup>2</sup>	14 oz/in <sup>2</sup>
10":	8 oz/in <sup>2</sup>	17 oz/in <sup>2</sup>
12":	6 oz/in <sup>2</sup>	20 oz/in <sup>2</sup>

**Maximum Setting w/ Modification:**

	(Pressure)	(Vacuum)
2"-6":	24 oz/in <sup>2</sup>	Consult Factory
8"-12":	20 oz/in <sup>2</sup>	Consult Factory

**Diaphragm:**

FEP (Fluorinated Ethylene Propylene), FKM (Fluoroelastomer), NBR (Nitrile-Butadiene), PFA (Fluoroplastic Film)

**Service and Body Material:**

Normal:	Cast Low Copper Aluminum
Low Temperature:	Cast Low Copper Aluminum
Severe:	Cast Steel, Cast 316 Stainless Steel
Integral Seats:	Same as body; Aluminum, 316 Stainless Steel, Cast Steel with 316 Stainless Steel Seat Overlay.
Replaceable Seats:	316 Stainless Steel

**Approvals:**

ATEX 94/4/EC and EN 12874, ISO 16852 (Short Term Burn)

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

**Gas Application:**

IIA (NEC Group D)

**Type of Flange Connection:**

NPT or Flanged for: 2" & 3" sizes  
 Flanged for: 4", 6", 8", 10" & 12" sizes  
 Raised face flange available, except for aluminum body material.

**Temperature Range:**

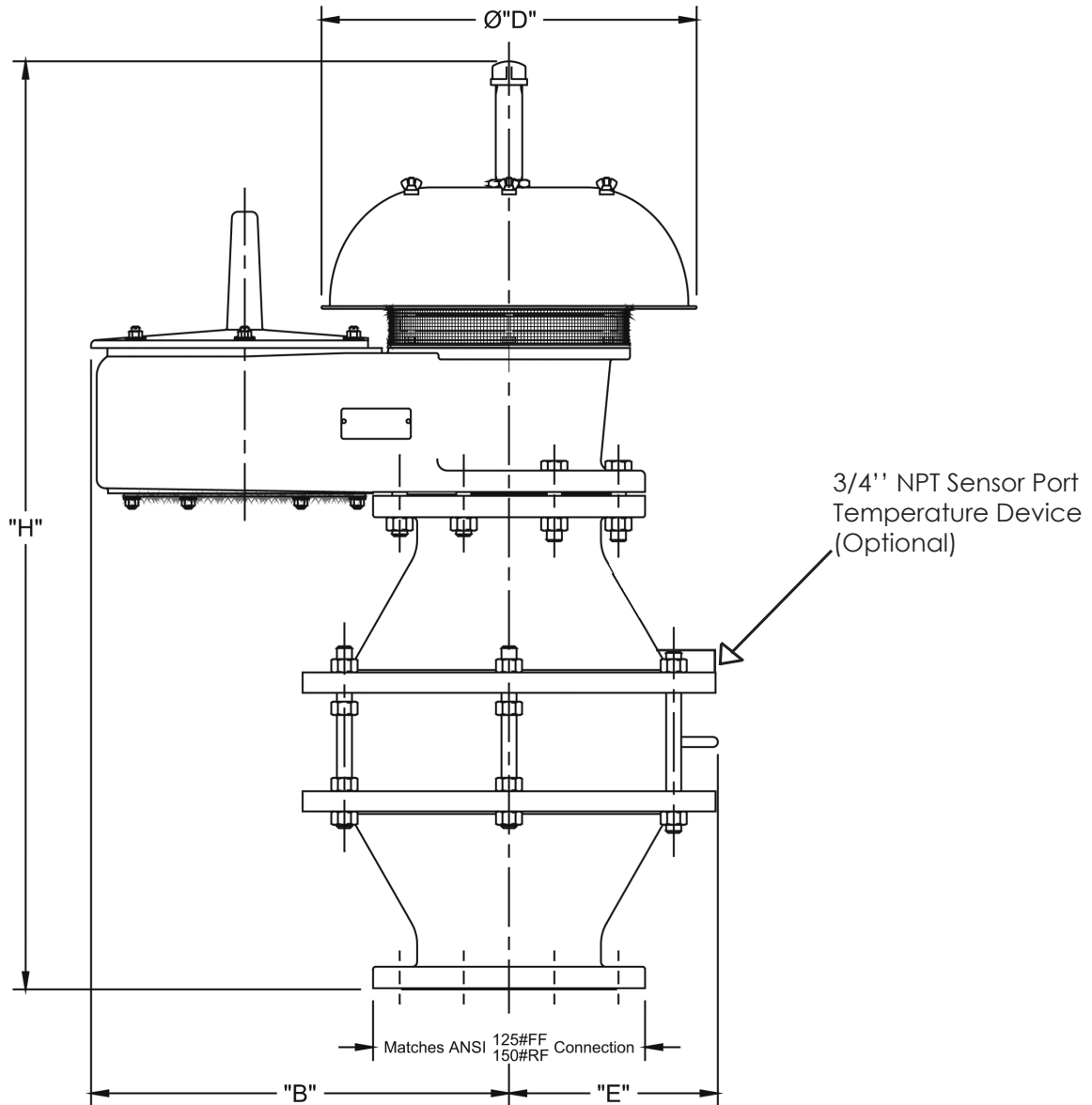
Body and Seal: -40°F to 140°F (-20°F Steel)

### Materials of Construction

Component	Normal Aluminum	Low Temperature	Severe	
Body	Cast Aluminum	Cast Aluminum	Carbon Steel	316 Stainless Steel
Cover	Cast Aluminum	Cast Aluminum	Carbon Steel	316 Stainless Steel
Hood	18-8 Stainless Steel <sup>1</sup>	Aluminum <sup>2</sup>	18-8 Stainless Steel <sup>1</sup>	316 Stainless Steel
Seats <sup>3</sup>	Aluminum	Aluminum	316 Stainless Steel	316 Stainless Steel
Stem Guide	Stainless Steel	316 Stainless Steel	Galvanized Iron	316 Stainless Steel
Pallets	Aluminum	Aluminum	316 Stainless Steel	316 Stainless Steel
Pressure Stem	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel	316 Stainless Steel
Vacuum Stem	Aluminum <sup>4</sup>	Aluminum <sup>4</sup>	316 Stainless Steel	316 Stainless Steel
Screens	304 Stainless Steel	304 Stainless Steel	304 Stainless Steel	316 Stainless Steel
Retainer	Aluminum	Aluminum	316 Stainless Steel	316 Stainless Steel
Hardware	18-8 Stainless Steel	316 Stainless Steel	18-8 Stainless Steel	316 Stainless Steel
Diaphragms	FEP, FKM, NBR	FEP	FEP, FKM, NBR	FEP, FKM, NBR

**NOTES:**  
 1. 18-8 Stainless Steel for 2", 3", 4", 6" & 8" sizes; spun alum. for 10" & 12" sizes.  
 2. 2", 3", 4", 6", 8", 10" & 12" sizes ; Aluminum enclosure w/flapper.  
 3. Material same as body.  
 4. 316 Stainless Steel for elevated settings.

**Outline Dimensions**



Vent Size	"B"	"D"	"E"	"H"
2"	8 13/16	12 7/8	7 5/8	26 5/16
3"	11 3/16	13 5/16	8 5/16	29 7/16
4"	13 5/16	15 15/16	6 13/16	33 11/16
6"	16 11/16	18 5/8	8 1/4	38 11/16
8"	20 1/2	18 5/8	10 1/4	45 13/16
10"	24 11/16	25 5/16	12 1/4	57 1/16
12"	29 1/16	29 7/8	14 3/8	65 3/16

Dimensions in inches unless otherwise stated.

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

### 94470 Ordering Guide

#### Model Number Selection

The model number will consist of a base number **94470** followed by 8 digit numbers. These digits will represent 6 option tables.

**94470 - AB - CD - EF - GH**

#### Ordering Information

Specify:

1. Size and Body Material
2. Type of Flange
3. Tube Bank and Hardware Material
4. Closed or Open Vent
5. Pressure and Vacuum Settings (If not Standard)
6. Optional materials of Construction or Coatings, if required



**Table AB - Size, Body Material & Connections\***

Option AB	Size	Type of Connection	Material
11	2"	NPT	Aluminum
12	2"	Flanged	Aluminum
21	2"	NPT	Aluminum Cryo Hood
22	2"	Flanged	Aluminum Cryo Hood
51	2"	NPT	Carbon Steel
52	2"	Flanged	Carbon Steel
71	2"	NPT	316 Stainless Steel
72	2"	Flanged	316 Stainless Steel
13	3"	NPT	Aluminum
14	3"	Flanged	Aluminum
23	3"	NPT	Aluminum Cryo Hood
24	3"	Flanged	Aluminum Cryo Hood
53	3"	NPT	Carbon Steel
54	3"	Flanged	Carbon Steel
73	3"	NPT	316 Stainless Steel
74	3"	Flanged	316 Stainless Steel
15	4"	Flanged	Aluminum
25	4"	Flanged	Aluminum Cryo Hood

Option AB	Size	Type of Connection	Material
55	4"	Flanged	Cast Steel
75	4"	Flanged	316 Stainless Steel
16	6"	Flanged	Aluminum
26	6"	Flanged	Aluminum Cryo Hood
56	6"	Flanged	Carbon Steel
76	6"	Flanged	316 Stainless Steel
17	8"	Flanged	Aluminum
27	8"	Flanged	Aluminum Cryo Hood
57	8"	Flanged	Carbon Steel
77	8"	Flanged	316 Stainless Steel
18	10"	Flanged	Aluminum
28	10"	Flanged	Aluminum Cryo Hood
58	10"	Flanged	Carbon Steel
78	10"	Flanged	316 Stainless Steel
19	12"	Flanged	Aluminum
29	12"	Flanged	Aluminum Cryo Hood
59	12"	Flanged	Carbon Steel
79	12"	Flanged	316 Stainless Steel

**NOTE:** Aluminum and Cast Iron bodies are only approved for ISO 16852.  
\*OTHER MATERIAL COMBINATIONS AVAILABLE.

### Table C - Flange Type

Option C	Flange
0	ANSI 125/150 lb. FF
1	ANSI 125/150 lb. RF*
2	EN1092-1 PN 16 FF
3	EN1092-1 PN 16 RF*
4	JIS 10K FF
5	JIS 10K RF*
6	EN1092-1 PN10 FF
7	EN1092-1 PN10 RF*

\*Raised face flanges not available with aluminum bodies  
 Note: Raised faced flanges with smooth finish are standard.  
 For optional serrated raised faced flanges, consult factory.

### Table D - Vent Type

Option D	Vent Type
1	Open Vent
3	Closed, Standard Outlet > Inlet
4	Pipe Away, P&V
6	Pipe Away, Same Size in, out, Seat

### Max Set Points

SIZE	BARG	PSIG	OZ./IN. <sup>2</sup>
2"-6"	0.1	1.5	24
8"-12"	.09	1.25	20

### Table E - Pallet / Seal Type

Option E	Pallet Type	Diaphragm
0	Standard	FEP
1	Expanda-Seal	FEP
4	Standard	FKM
5	Expanda-Seal	FKM
6	Standard	FPA
7	Expanda-Seal	FPA
8	Standard	NBR
9	Expanda-Seal	NBR
A	Std. Low Blow Down FEP	FEP
B	Std. Low Blow Down FKM	FKM
C	Std. Low Blow Down FPA	FPA
D	Std. Low Blow Down NBR	NBR

### Temperature Limits

Diaphragm Material	Temperature Range
FEP	-65°F to 400°F
FKM	-15°F to 400°F
NBR	-40°F to 250°F
PFA	-65°F to 500°F

### Table F - Pressure Range

Option F	Description	Material
1	**Standard Pressure and Vacuum Setting = 0.5 oz/in <sup>2</sup>	Lead
2	Over 2.9 oz/in <sup>2</sup> to 5.0 oz/in <sup>2</sup>	Lead
3	Standard to 2.9 oz/in <sup>2</sup>	Lead
4	Standard Setting	316 Stainless Steel
5	Over 2.9 oz/in <sup>2</sup> to 5.0 oz/in <sup>2</sup>	316 Stainless Steel
6	Standard to 2.9 oz/in <sup>2</sup>	316 Stainless Steel
7	Over to 5.0 oz/in <sup>2</sup> to max	Lead
8	Over to 5.0 oz/in <sup>2</sup> to max	316 Stainless Steel

\*\*Expanda- Seal Pressure Setting - 1.5 oz./sq. in. Minimum.

L&J Technologies or any of its subsidiaries assume no responsibility and shall not be liable for any damage, injury or death caused by the mis-application or improper installation of the products that it provides. Installation shall be per manufacturer's instructions in accordance to any applicable local, state or federal regulations. It is the responsibility of the purchaser to ensure these guidelines are followed and that the products are applied properly.

**Table GH - FA Body, Tube Bank & Hardware Material\***

Option GH	Size (Inches)	Body Material	Tube Bank Material Shell / Element	Hardware Material
30	2	Cast Aluminum	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32			316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
30	3	Cast Aluminum	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32			316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
30	4	Cast Aluminum	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32			316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
30	6	Cast Aluminum	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32			316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
30	8	Cast Aluminum	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32			316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
30	10	Cast Aluminum	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32			316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
30	12	Cast Aluminum	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
32			316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel

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

**Table GH - FA Body, Tube Bank & Hardware Material\***

Option GH	Size (Inches)	Body Material	Tube Bank Material Shell / Element	Hardware Material
00	2	Carbon Steel	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22		316 Stainless Steel	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
00	3	Carbon Steel	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22		316 Stainless Steel	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
00	4	Carbon Steel	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22		316 Stainless Steel	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
00	6	Carbon Steel	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22		316 Stainless Steel	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
00	8	Carbon Steel	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22		316 Stainless Steel	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
00	10	Carbon Steel	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22		316 Stainless Steel	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel
00	12	Carbon Steel	Carbon Steel / 304 Stainless Steel	304 Stainless Steel
22		316 Stainless Steel	316 Stainless Steel / 316 Stainless Steel	316 Stainless Steel

\* Other Material Combinations Available.