

97570

Combination Conservation Vent & Flame Arrester

SHAND & JUR'S

97570 Combination Conservation Vent & Flame Arrester

The Shand and Jurs Model 97570 is a combination of our 94020 Conservation Vent and 94306 Flame Arrester in 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.

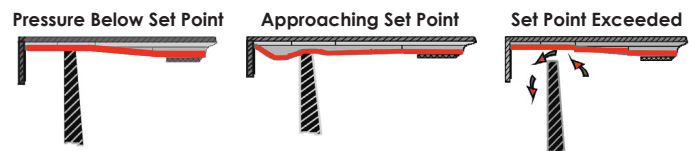
Continued design improvements provide the 94020 conservation vent with high efficiency, maximum flow capacity and minimum leakage. Standard materials of construction are low copper aluminum, cast iron, ductile iron, cast steel and 316 stainless steel for body materials. The conservation vent features air 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. Conservation Vents are available in a full range of sizes and configurations, such as open or closed vent (pipe-away). Standard pressure and vacuum settings are 1/2 oz./sq. in.

The 94306 not only provides exceptional protection against fire from external ignition, but also offers maximum flow capacity. The unitized tube bank provides maximum flow while minimizing pressure drop. 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. A complete range of sizes from 2" through 12" are available with flat face or raised face flanges to match ANSI 150 lb. connections.

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

- Sizes 2" thru 12" ANSI, EN1092-1, JIS 10K
- Cost effective, dual purpose
- Provides pressure & vacuum relief
- Serves as a barrier between external flame and internal vapors
- Provides protection against flame propagation
- Optional "all weather" coating and insulation jackets available
- Open or closed vent configurations

SHAND & JUR'S

5911 Butterfield Road Hillside, IL 60162 • tel: (708) 236-6000 • fax: (708) 236-6006
sales@ljtechnologies.com • www.ljtechnologies.com • ISO 9001:2015 Certified

Rev: 97570-3H

94020 Specifications

Sizes:

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

Settings:

Standard Pressure & Vacuum: 1/2 oz./in.² (.865 in. W.C.)

Expanda-Seal Pressure Setting:

1.5 oz./in.² Minimum (Consult Factory for lower settings)

Maximum Setting W/O Modification:

| | (Pressure) | (Vacuum)** |
|------|-------------------------|-------------------------|
| 2": | 16 oz./in. ² | 8 oz./in. ² |
| 3": | 16 oz./in. ² | 9 oz./in. ² |
| 4": | 16 oz./in. ² | 11 oz./in. ² |
| 6": | 12 oz./in. ² | 12 oz./in. ² |
| 8": | 10 oz./in. ² | 14 oz./in. ² |
| 10": | 8 oz./in. ² | 16 oz./in. ² |
| 12": | 6 oz./in. ² | 16 oz./in. ² |

Temperature Range:

Body and Seal -40°F to 220°F. Options for Process
Temperature Ranges of -300°F to 500°F

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 Iron, Ductile Iron, Cast Steel, Cast 316
Stainless Steel
Integral Seats: Same as body; AL, 316 SS, CS with 316
Stainless Steel seat overlay

Replaceable Seats:

Aluminum, 316 Stainless Steel, 316 SS Teflon Coated

Type of Flange Connection:

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

Options Available:

Flame Snuffer for all sizes (open vent) and material, except low
temperature service. Closed vent for all sizes and materials.
Material substitutions as required. Cleaning for LOX/LIN service.

94020 Standard Materials of Construction

| Component | Normal Aluminum | Low Temperature | Severe | | |
|--------------------|-----------------------------------|-----------------------|-----------------------------------|-----------------------------------|---------------------|
| Body | Cast Aluminum | Cast Aluminum | Cast Iron/Ductile Iron | Cast Steel | 316 Stainless Steel |
| Cover | Aluminum | Aluminum | Carbon Steel | Carbon Steel | 316 Stainless Steel |
| Hood | 18-8 Stainless Steel ¹ | Aluminum ² | 18-8 Stainless Steel ¹ | 18-8 Stainless Steel ¹ | 316 Stainless Steel |
| Seats ³ | Aluminum | Aluminum | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel |
| Stem Guide | Galvanized Iron | 316 Stainless Steel | Galvanized Iron | Galvanized Iron | 316 Stainless Steel |
| Pallets | Aluminum | Aluminum | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel |
| Pressure Stem | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel |
| Vacuum Stem | Aluminum ⁴ | Aluminum ⁴ | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel |
| Screens | Galvanized Steel | 304 Stainless Steel | 304 Stainless Steel | 304 Stainless Steel | 316 Stainless Steel |
| Retainer | Aluminum | Aluminum | 316 Stainless Steel | 316 Stainless Steel | 316 Stainless Steel |
| Hardware | Zinc Plated Steel | 316 Stainless Steel | 316 Stainless Steel | Zinc Plated Steel | 316 Stainless Steel |
| Diaphragms | FEP | FEP | FEP | FEP | FEP |

NOTES: 1. 18-8SS for 2", 3", 4", 6" & 8" sizes; spun alum. for 10" & 12" sizes.
2. 2", 3", 4", 6", 8", 10" & 12" sizes ; alum. enclosure w/flapper.

3. Material same as body except CI and DI.
4. 316SS for elevated settings.

94306 Flame Arrester Specifications:

Sizes:

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

Max. Static Pressure:

10 PSIG.

Max. Operating Pressure:

1 PSIG.

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).

94306 Materials of Construction

Body:

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

Hardware:

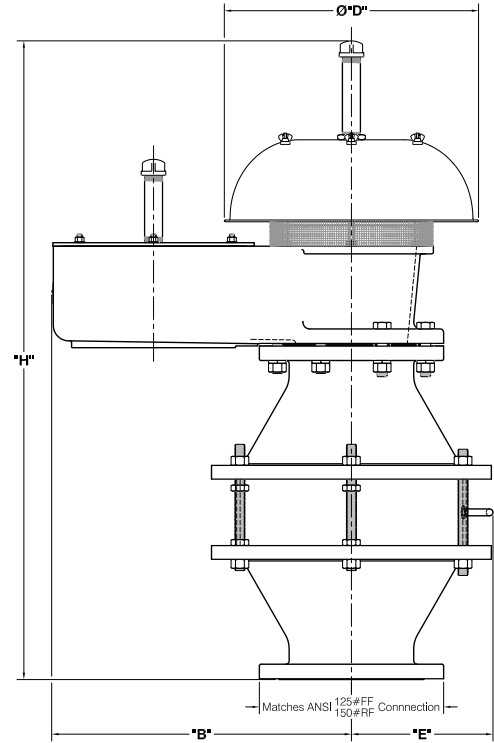
18-8 Stainless Steel Standard, 316 Stainless Steel

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

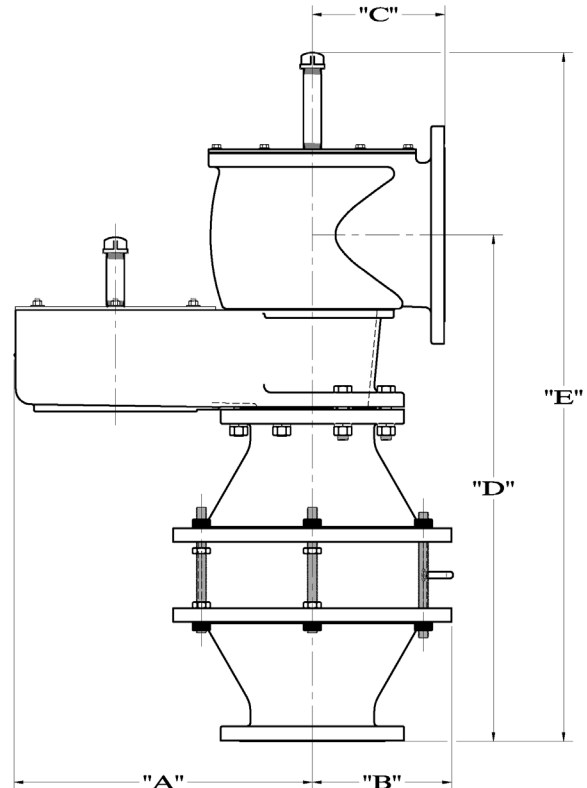
Open Vent Outline Dimensions

| Dimensions (Inches [mm]) | | | | |
|--------------------------|----------------|----------------|---------------|-----------------|
| Valve Size | "B" | Diameter "D" | "E" | "H" |
| 2 [50] | 8 13/16 [224] | 12 7/8 [327] | 7 5/8 [194] | 26 9/16 [675] |
| 3 [75] | 11 3/16 [284] | 13 9/16 [345] | 8 5/16 [211] | 29 7/16 [748] |
| 4 [100] | 13 9/16 [345] | 15 19/16 [405] | 6 13/16 [173] | 33 11/16 [856] |
| 6 [150] | 16 11/16 [424] | 18 5/8 [473] | 8 1/4 [210] | 38 11/16 [983] |
| 8 [200] | 20 1/2 [521] | 18 5/8 [473] | 10 1/4 [260] | 45 13/16 [1164] |
| 10 [250] | 24 11/16 [627] | 25 9/16 [649] | 12 1/4 [311] | 57 1/16 [1449] |
| 12 [300] | 29 1/16 [738] | 29 7/8 [759] | 14 3/8 [365] | 65 3/16 [1656] |



Closed Vent Outline Dimensions

| Dimensions (Inches [mm]) | | | | | |
|---------------------------|----------------|--------------|----------------|-----------------|----------------|
| Valve Size Inlet x Outlet | "A" | "B" | "C" | "D" | "E" |
| 2" x 2" | 8 29/32 [226] | 4 1/4 [108] | 4 1/4 [108] | 18 19/32 [468] | 24 9/16 [624] |
| 2" x 3" | | | 4 1/4 [108] | 18 7/16 [468] | 24 9/16 [624] |
| 3" x 3" | 11 1/8 [283] | 5 1/4 [133] | 5 1/4 [133] | 21 9/32 [540] | 29 7/16 [748] |
| 3" x 4" | | | 5 1/4 [133] | 21 5/8 [549] | 29 7/16 [748] |
| 4" x 4" | 12 15/16 [328] | 6 3/16 [157] | 6 1/2 [165] | 24 3/32 [633] | 38 5/16 [973] |
| 4" x 6" | | | 5 15/16 [151] | 24 1/16 [633] | 34 1/4 [870] |
| 6" x 6" | 17 13/16 [452] | 8 3/16 [208] | 8 3/8 [213] | 29 9/32 [743] | 41 3/16 [1046] |
| 6" x 8" | | | 8 1/4 [210] | 30 7/32 [767] | 41 1/4 [1048] |
| 8" x 8" | 21 31/32 [558] | 10 1/4 [260] | 9 3/4 [248] | 36 9/32 [920] | 50 3/4 [1289] |
| 8" x 10" | | | 9 3/4 [248] | 37 1/4 [946] | 50 3/4 [1289] |
| 10" x 10" | 26 3/8 [670] | 12 1/4 [311] | 11 19/32 [294] | 42 27/32 [1087] | 59 3/16 [1503] |
| 10" x 12" | | | 11 19/32 [294] | 43 23/32 [1110] | 59 3/16 [1503] |
| 12" x 12" | 30 11/16 [780] | 14 3/8 [365] | 12 13/16 [325] | 49 7/32 [1249] | 67 [1702] |
| 12" x 14" | | | 12 13/16 [325] | 49 3/4 [1264] | 66 3/4 [1696] |



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

97570 Ordering Guide

Model Number Selection

The model number will have a base number **97570** followed by 9 digit numbers. These digits will represent 8 sets of option tables.

97570 - AB - CD - EF - GH - I

Table AB - Size and Body Material

| Option AB | Size | Type of Connection | Body Material |
|-----------|------|--------------------|------------------------|
| 11 | 2" | NPT | Aluminum |
| 12 | 2" | Flanged | Aluminum |
| 21 | 2" | NPT | Alum Cryo Hood |
| 22 | 2" | Flanged | Alum Cryo Hood |
| *31/41 | 2" | NPT | Cast Iron/Ductile Iron |
| *32/42 | 2" | Flanged | Cast Iron/Ductile Iron |
| 51 | 2" | NPT | Cast Steel |
| 52 | 2" | Flanged | Cast Steel |
| 71 | 2" | NPT | 316 Stainless Steel |
| 72 | 2" | Flanged | 316 Stainless Steel |
| 13 | 3" | NPT | Aluminum |
| 14 | 3" | Flanged | Aluminum |
| 23 | 3" | NPT | Alum Cryo Hood |
| 24 | 3" | Flanged | Alum Cryo Hood |
| *33/43 | 3" | NPT | Cast Iron/Ductile Iron |
| *34/44 | 3" | Flanged | Cast Iron/Ductile Iron |
| 53 | 3" | NPT | Cast Steel |
| 54 | 3" | Flanged | Cast Steel |
| 73 | 3" | NPT | 316 Stainless Steel |
| 74 | 3" | Flanged | 316 Stainless Steel |
| 15 | 4" | Flanged | Aluminum |
| 25 | 4" | Flanged | Alum Cryo Hood |

* 3X = Cast Iron 4X = Ductile Iron

| Option AB | Size | Type of Connection | Body Material |
|-----------|------|--------------------|------------------------|
| *35/45 | 4" | Flanged | Cast Iron/Ductile Iron |
| 55 | 4" | Flanged | Cast Steel |
| 75 | 4" | Flanged | 316 Stainless Steel |
| 16 | 6" | Flanged | Aluminum |
| 26 | 6" | Flanged | Alum Cryo Hood |
| *36/46 | 6" | Flanged | Cast Iron/Ductile Iron |
| 56 | 6" | Flanged | Cast Steel |
| 76 | 6" | Flanged | 316 Stainless Steel |
| 17 | 8" | Flanged | Aluminum |
| 27 | 8" | Flanged | Alum Cryo Hood |
| *37/47 | 8" | Flanged | Cast Iron/Ductile Iron |
| 57 | 8" | Flanged | Cast Steel |
| 77 | 8" | Flanged | 316 Stainless Steel |
| 18 | 10" | Flanged | Aluminum |
| 28 | 10" | Flanged | Alum Cryo Hood |
| *38/48 | 10" | Flanged | Cast Iron/Ductile Iron |
| 58 | 10" | Flanged | Cast Steel |
| 78 | 10" | Flanged | 316 Stainless Steel |
| 19 | 12" | Flanged | Aluminum |
| 29 | 12" | Flanged | Alum Cryo Hood |
| *39/49 | 12" | Flanged | Cast Iron/Ductile Iron |
| 59 | 12" | Flanged | Cast Steel |
| 79 | 12" | Flanged | 316 Stainless Steel |

Table C - Flange Type

| Option C | Description |
|----------|-----------------|
| 0 | FF ANSI 150 lb |
| 1 | *RF ANSI 150 lb |
| 2 | EN1092-1 16 FF |
| 3 | EN1092-1 16 RF* |
| 4 | JIS 10K FF |
| 5 | JIS 10K RF* |

* RF not available in Aluminum

Table D - Vent Type

| Option D | Description |
|----------|--|
| 1 | Open Vent |
| 2 | Open Vent w/ Flame Snuffer |
| 3 | Closed, Standard Outlet > Inlet* |
| 4 | Pipe Away, P&V |
| 6 | Pipe Away, Same Size Inlet, Outlet, Seat |
| 7 | Open Vent with "All Weather" Coating |
| 8 | Open Vent with Flame Snuffer with "All Weather" Coating |
| 9 | Closed, Standard Outlet > Inlet with "All Weather" Coating |
| A | Pipe Away, Same Size Inlet, Outlet, Seat with "All Weather Coating |
| B | Open Vent with "All Weather" Coating with Insulation Jacket |
| C | Open Vent with Flame Snuffer with "All Weather" Coating & Insulation Jacket |
| D | Closed, Standard Outlet > Inlet with "All Weather" Coating & Insulation Jacket |
| E | Pipe Away, Same Size Inlet, Outlet, Seat with "All Weather Coating & Insulation Jacket |

* Standard closed vent (outlet is one size larger than the inlet).
Ex. 2" Inlet X 3" Outlet, 6" Inlet X 8" Outlet.

NOTE: Option 6 replaced Option 5. Dimensions are not identical. Consult Factory if replacement valve is required.

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 |

Table F - Pressure Range & Load Weight Material

| Option F | Description | Material |
|----------|--|----------|
| 1 | **Standard Pressure and Vacuum Setting = 0.5 oz/in ² | Lead |
| 2 | Over 2.9 oz/sq. in. to Maximum Setting | Lead |
| 3 | > Standard to 2.9 oz/in ² | Lead |
| 4 | **Standard Pressure and Vacuum Setting = 0.5 oz/in ² | 316 SS |
| 5 | Over 2.9 oz/in. ² to Maximum Setting | 316 SS |
| 6 | > Standard to 2.9 oz/in. ² | 316 SS |
| 7 | Incremental Weights Pressure Only 2.9 Oz. - 14 Oz. (5 in. W.C. - 24 in. W.C.) | Lead |
| 8 | Standard Incremental Weight Set Pressure Only 6" -16" W.C. in 1" Increments Including (1)-1/2 In. and (2)-1/4 In. W.C. Weights | Lead |

**Expanda-Seal min. pressure setting: 1.5 oz/in.²

Table G - Seat & Pallet Material

| Option G | Seat | Pallet |
|----------|------------------|---------------------|
| A | Standard* | Standard* |
| E | Stainless Steel | Standard* |
| F | Teflon Coated SS | Standard* |
| G | Standard* | 316 Stainless Steel |
| K | Stainless Steel | 316 Stainless Steel |
| L | Teflon Coated SS | 316 Stainless Steel |

*See Materials of Construction

Options G-L are applicable for Aluminum bodies only. 316 SS Pallet is standard on all other body options.

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 H - Cleaning & Trim

| Option H | Cleaning | Trim |
|----------|----------|---------------------|
| A | Normal | Standard |
| B | LOX | Standard |
| C | LIN | Standard |
| D | Normal | 316 Stainless Steel |
| E | LOX | 316 Stainless Steel |
| F | LIN | 316 Stainless Steel |

LOX = Liquid Oxygen

LIN = Liquid Nitrogen

Trim Includes Stem, Stem Guides, Side Guides, Nuts, Bolts and Screen.

NOTE: LOX/LIN cleaning for Cryogenic Breathers of aluminum construction includes degreasing before assembly only!

For LOX cleaning, use option 6 or 7 on Table E.

Table I - Flame Arrester, Tube Bank & Shell*

| Option I | Tube Bank Material | Shell Material |
|----------|---------------------|---------------------|
| 1 | Aluminum | Aluminum |
| 6 | 304 Stainless Steel | Cast Steel |
| 2 | 316 Stainless Steel | 316 Stainless Steel |
| 4 | 304 Stainless Steel | 304 Stainless Steel |

* Tie Rods and Nuts available in 18-8 SS Standard. If 316 SS required, please refer to Option H.