

## 94115 Vacuum Vent (Side Mounted)

The Shand & Jurs 94115 Vacuum Vent has been designed utilizing over 90 years experience in the development of quality safety and conservation fittings. The function of this vent is to relieve vacuum conditions in liquid product storage tanks, and also withstand the pressure of the stored product when not operating under a vacuum.

Vacuum breathing requirements of some products may vary so much from pressure breathing, that it is sometimes desirable and more economical to have separate vents to perform these respective functions.

A minimum number of model options are required to cover the wide variety of fluids and temperatures encountered in the petroleum, chemical and general process industries. Many trims, body materials and settings are standard options for those few conditions where standard construction is unsuited.

Standard materials of construction include low copper aluminum, steel, stainless steel, cast iron or ductile iron body. Specially designed seats are provided to withstand high pressures to which the vent may be subjected and to provide maximum flow efficiency.

The body is self-draining and drip rings keep condensates from the seating surfaces. The FEP diaphragm of the pallet has high resistance to adhesion by ice and gum formation, thus preventing sticking to the seat ring.



### Features

- Side Mounted
- Wide selection of materials for most corrosive and temperature needs
- Unique floating diaphragm construction assures tight seal
- Peripheral and stem guided vacuum pallet assures reliable operation
- Pallet design contributes to high flow
- Heavy duty construction, yet compact enough for easy handling

## Standard Materials of Construction:

Service	Body	Vacuum Cover	Seat		Pallets	Stem Guides	Screen
			2, 3, 4	6, 8, 10 & 12			
Normal Alum	Cast Alum.	Aluminum	Aluminum	Aluminum	Aluminum	Galv. Steel	Galv. Steel
Severe Steel	Cast Steel	Steel	316 SS	316 SS	316 SS	Galv. Steel	304 SS
Severe 316 S.S.	Cast 316 SS	316 SS	316 SS	316 SS	316 SS	316 SS	316 SS

Service	Pallet Stem	Diaphragm	Spacer	Cover Gaskets	Size Guides	Hardware
Normal Alum	***Aluminum	FEP	Fiber	Fiber	316 SS	Stainless Steel
Severe Steel	316 SS	FEP	Fiber	Fiber	316 SS	Stainless Steel
Severe 316 SS	316 SS	FEP	Fiber	Fiber	316 SS	316 SS

\*\*\* 316 SS for elevated settings > 2.9 oz/in<sup>2</sup>

FEP = Fluorinated Ethylene Propylene  
 FKM = Fluoroelastomer  
 NBR = Nitrile-Butadiene  
 PFA = Fluoroplastic Film

Materials of construction in this equipment have been selected as representing the most suitable commercially available material for use in the service intended. However, they do not constitute a guarantee against corrosion since processes vary from plant to plant and concentration of harmful fluids, gasses or solids vary from time to time in a given process. Empirical experience by users should be the final guide and alternate materials based on this are generally available.

## Standard Max Pressure (PSIG)

Size	Aluminum Pallet	S.S. Pallet
2"	15	17.5
3"	15	8
4"	8.5	4
6"	4.0	2.25
8"	2.3	1.25
10"	1.4	1.2
12"	1.2	1.2

\*Higher maximum pressures available. Consult Factory.

## STD Vacuum Setting:

0.5 oz/in<sup>2</sup> (2" Stainless Steel Pallets .608 oz/in<sup>2</sup>)

## Max. STD Vacuum Setting:

16 oz/in<sup>2</sup>

\*Higher settings available. Consult Factory

**Principle of Operation:**

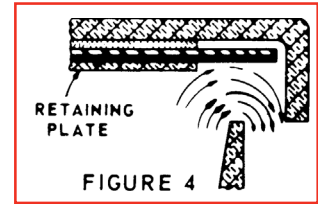
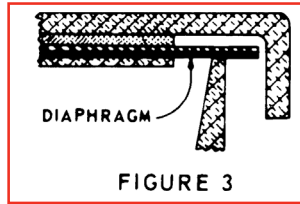
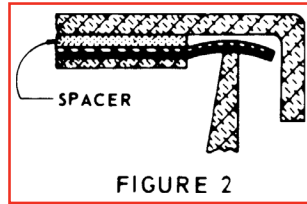
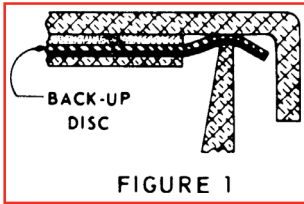


Figure 1 shows the relation of the vacuum pallet assembly to the seat when atmospheric and tank pressures are equal. The "wrap around" effect of the resilient diaphragm on the edge of the seat and the resulting high ratio of seating force to seating area affords a tight seal.

As the vacuum increases, the pallet begins to rise as shown in Figure 2. Because there is still a wrap around effect on the edge of the seat, good sealing is maintained. Teflon diaphragm memory and lapped seating surface further enhance sealing characteristics.

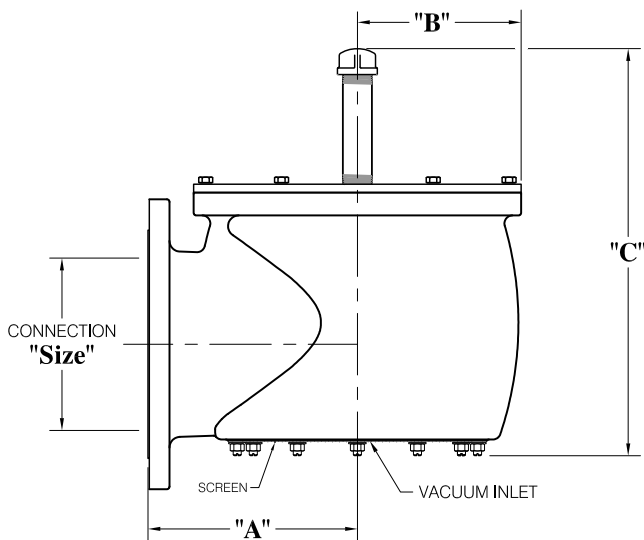
As increasing vacuum continues to lift the pallet (see

Figure 3) the diaphragm is held in close proximity to the seat by the flat plane memory of the diaphragm material. As set vacuum is reached, the diaphragm leaves the seat (see Figure 4) and the in-rushing vapor lifts the pallet even further.

The vacuum pallet lifts vertically permitting incoming air to enter the valve body. This relieves the vacuum condition.

In the closing cycle, incoming air on the pallet holds the Teflon diaphragm close to the pallet surface until peripheral seat contact is very near 100%, causing closure to occur at a value very close to the setting value.

**Dimensions:**



Vent Size	"A"	"B"	"C"
2"	4 1/4 (108)	2 13/16 (72)	8 3/4 (222)
3"	5 1/4 (133)	3 17/32 (90)	10 1/2 (267)
4"	6 1/2 (165)	5 7/16 (138)	16 (406)
6"	8 3/8 (213)	6 1/8 (156)	16 1/4 (413)
8"	9 3/4 (248)	7 19/32 (193)	20 1/4 (514)
10"	11 18/32 (294)	9 (229)	23 (584)
12"	12 13/16 (325)	10 1/2 (267)	25 1/2 (648)

**NOTES:**

1. Mounting holes straddle centerline.
2. Dimensions expressed in inches (millimeters).

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

## 94115 Ordering Guide

### Model Number Selection

The model number will consist of a base number **94115** followed by 8 digit numbers. These digits will represent 6 option tables.

**94115 - AB - CD - EF - GH**

### Ordering Information

Specify:

1. Model 94115 Pressure Relief Vent
2. Size and Body Material
3. Flange Type
4. Vacuum Setting Required
5. Cleaning for Oxygen Service or Other Special Cleaning
6. Optional Materials of Construction, If Required
7. To Specify CE for Ordinary EU Locations use 94115C AB CD EF GH
8. Maximum static pressure



**Table AB - Size and Body**

Option AB	Size	Body Material
12	2"	Aluminum
62	2"	316 Stainless Steel
52	2"	Steel
14	3"	Aluminum
64	3"	316 Stainless Steel
54	3"	Steel
15	4"	Aluminum
65	4"	316 Stainless Steel
55	4"	Steel
16	6"	Aluminum

Option AB	Size	Body Material
66	6"	316 Stainless Steel
56	6"	Steel
17	8"	Aluminum
67	8"	316 Stainless Steel
57	8"	Steel
18	10"	Aluminum
68	10"	316 Stainless Steel
58	10"	Steel
19	12"	Aluminum
69	12"	316 Stainless Steel
59	12"	Steel

### Table CD - Flange Type

Option CD	Flange Type
00	ANSI 125/150lb. FF
10	ANSI 125/150lb. RF*
20	EN1092-1 PN 16 FF
30	EN1092-1 PN 16 RF*
40	JIS 10K FF
50	JIS 10K RF*

\* RF not available in Aluminum

### Table E - Seal Type & Soft Goods

Option E	Description
0	FEP
1	PFA
2	FKM
3	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 - Vacuum Range & Load Weight Material

Option F	Description	Material
0	*Standard Setting = .5 oz/in <sup>2</sup>	Lead
1	Standard to 2.9 oz/in <sup>2</sup>	Lead
2	Over 2.9 oz/in <sup>2</sup>	Lead
4	*Standard Setting = .5 oz/in <sup>2</sup>	316 SS
5	Over 2.9 oz/in <sup>2</sup>	316 SS
6	Standard to 2.9 oz/in <sup>2</sup>	316 SS

\* 2" Stainless Steel pallet 0.608 oz/in<sup>2</sup> minimum.

### Table G - Seat & Pallet Material

Option G	Seat	Pallet
0	Standard*	Standard
2	Aluminum	
4	Stainless Steel	
5	Teflon Coated SS	
A	Standard*	316 Stainless Steel
C	Aluminum	
E	Stainless Steel	
F	Teflon Coated SS	

\* See Standard Materials of Construction.  
Option A-F are applicable for aluminum bodies only, 316 SS pallet is standard on all other body options.

### Table H - Trim

Option H	Description
0	Standard Trim
1	Stainless Steel Trim

Trim includes: Stem Guides, Side Guides, Nuts, Bolts and Screen