

# 94100

## High Pressure Vacuum Vent (Vacuum)

The Shand & Jurs® Model 94100 provides vacuum relief for pressure-rated storage tanks where the vent must tolerate elevated internal static pressure when not relieving. Designed for tanks rated up to 125 PSIG (6" size) and 75 PSIG (10" size), the 94100 protects against damaging vacuum conditions without compromising vessel operating pressure integrity in petroleum and chemical storage service.

A balanced vacuum pallet ensures controlled lift during vacuum events and consistent reseating under cyclic conditions. A cushion-seated Buna-N seal disc enhances sealing at the seat interface, limiting the nuisance of air infiltration during normal operation. Standard vacuum settings are 1.5–4 oz/in<sup>2</sup>, with higher settings available for applications requiring increased vacuum tolerance. The vent body is rated for operation from –20°F (–29°C) to +200°F (+93°C).

Sizing and selection are supported using Shand & Jurs WinSize software based on anticipated flow rates and allowable pressure drops. Available in 6" and 10" sizes with ANSI Class 150 flat-face flange connections.



### Key Features

#### High static pressure design

Withstands 125 PSIG (6") and 75 PSIG (10") when not relieving vacuum.

#### Balanced vacuum pallet

Assures smooth lift and closure during vacuum relief, leaving predictable reseating behavior.

#### Cushion-seated Buna-N seal disc

Improves sealing at the seat interface to limit nuisance airflow during cycling.

#### Vacuum setting range

Provides 1.5–4 oz/in<sup>2</sup> settings; higher vacuum provisions available for specialized requirements.

#### Removable bolted cover

Allows direct access to internal components for inspection and service without replacing the full vent.

#### Temperature capability

Published operating range supports demanding storage environments without special materials.

## Benefits



### PROTECTS AGAINST VACUUM DAMAGE

Prevents tank deformation by admitting air when internal vacuum exceeds the specified setting.



### MAINTAINS HIGH-PRESSURE READINESS

A high static pressure rating supports tank operation when vacuum protection is required, without sacrificing pressure integrity.



### PREDICTABLE OPERATING BEHAVIOR

Balanced pallet action helps reduce chatter and supports stable reseating during transient vacuum events.



### REDUCED MAINTENANCE BURDEN

Bolted cover access simplifies inspection and component replacement planning during scheduled outages.



### BROAD SERVICE SUITABILITY

–20°F (–29°C) to +200°F (+93°C) operating range supports varied storage conditions without ambiguous temperature assumptions.



### SPEC DEFENSIBILITY

WinSize (EZ-Flow) supports engineered documentation and review packages.

## Available Options



### 6" size selection

Supports compact installations with published 125 PSIG static pressure capability.



### 10" size selection

Provides larger vacuum admission capacity with published 75 PSIG static pressure capability.



### Higher vacuum settings

Ordering provisions exist for vacuum settings > 4 oz/in<sup>2</sup> where required.



### Alternate seat material by size

Seat material is specified as phenolic (6") or aluminum (10") per the datasheet construction.



### Screen holder material by size

Screen holder specified as carbon steel (6") or brass (10") per datasheet construction.



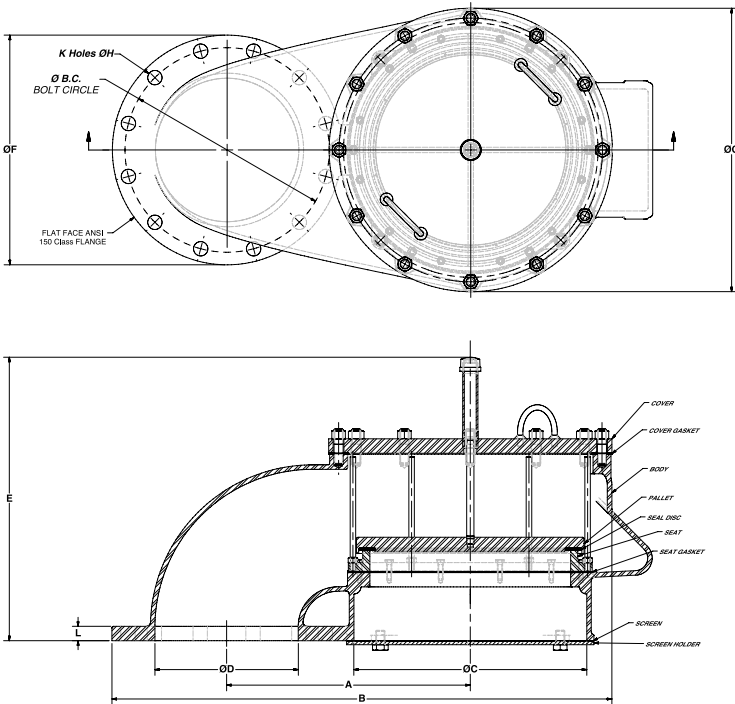
### Setting other than standard

Specify the vacuum setting during ordering to meet project-specific operating requirements.

Key Performance Data

| Parameter              | Value                                                                                                                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standard Set Vacuum    | 1.5–4 oz/in <sup>2</sup> (standard range shown)                                                                                                                                                                                                     |
| Adjustable Range       | > 4 oz/in <sup>2</sup> provisions available (by ordering option)                                                                                                                                                                                    |
| Sealing Method         | Cushion-seated seal disc                                                                                                                                                                                                                            |
| Loading Method         | Balanced pallet (vacuum relief)                                                                                                                                                                                                                     |
| Nominal Sizes          | 6" and 10"                                                                                                                                                                                                                                          |
| Flanged Connections    | ANSI Class 150 Flat Face                                                                                                                                                                                                                            |
| Max Operating Pressure | 125 PSIG (6") • 75 PSIG (10")                                                                                                                                                                                                                       |
| Temperature Range      | –20°F (–29°C) to +200°F (+93°C)                                                                                                                                                                                                                     |
| Materials              | <ul style="list-style-type: none"><li>• Body and Seat: Cast steel body; seat phenolic (6") or aluminum (10")</li><li>• Pallets: Aluminum</li><li>• Pallet Seat Ring: Steel</li><li>• Seal Disc: Buna-N</li><li>• Screen: Galvanized steel</li></ul> |

Dimensions



| Vent Size | Table of Dimensions - Inches |      |      |    |      |    |      |   |    |      |   | Net Wt. lbs. | Shipping Wt. lbs. |
|-----------|------------------------------|------|------|----|------|----|------|---|----|------|---|--------------|-------------------|
|           | A                            | B    | C    | D  | E    | F  | G    | H | K  | B.C. | L |              |                   |
| 6"        | 11 ¾                         | 26 ⅙ | 10 ⅞ | 6  | 15 ⅑ | 11 | 17 ⅜ | ⅞ | 8  | 9 ½  | 1 | 185          | 225               |
| 10"       | 17                           | 37 ¾ | 16 ¼ | 10 | 18 ⅜ | 16 | 19 ¾ | 1 | 12 | 14 ¼ | 1 | 385          | 445               |

# Model Number Selection

The model number will consist of a base number 94100 followed by 2 digit numbers. These digits will represent 1 option table.

## 94100 - AB

### Ordering Information

- Specify:**
- 1. Model 94100 Vacuum Vent
  - 2. 6" or 10" size
  - 3. Setting, if other than standard
  - 4. Product to be stored
  - 5. Optional materials of construction as required

Table AB - Size and Setting

| Option AB | Description                          |
|-----------|--------------------------------------|
| 03        | 6" Valve - Setting 1.5 - 4 oz./in.2  |
| 13        | 6" Valve - Setting > 4 oz./in.2      |
| 04        | 10" Valve - Setting 1.5 - 4 oz./in.2 |
| 14        | 10" Valve - Setting > 4 oz./in.2     |

## Summary

The Shand & Jurs® 94100 provides vacuum protection for high-pressure storage tanks where structural integrity must be maintained under both internal pressure and vacuum conditions. Balanced pallet operation, defined vacuum settings, and ANSI Class 150 flanging support predictable performance and specification-ready integration into petroleum and chemical storage systems.

info@cognesense.com

Tel: (708) 236-6000

5911 Butterfield Road Hillside, Illinois 60162 USA

This document is for information purposes only. All designs subject to change. Certified dimensions, specifications, and performance data available upon request