

94103



Shand & Jurs Co.

A COGNESSENSE BRAND

Static Pressure Vacuum Vent

The Shand & Jurs® Model 94103 provides vacuum relief for pressure-rated storage tanks where the vent must withstand elevated internal static pressure when not relieving. Designed for static pressures up to 150 PSIG, the 94103 protects against structural damage caused by rapid product withdrawal, cooling contraction, or vapor removal in petroleum and chemical storage services.

A peripheral and stem-guided vacuum pallet ensures stable lift and controlled reseating during high-differential vacuum events. A cushion-seated Buna-N-coated nylon diaphragm enhances sealing integrity, limiting nuisance air infiltration under non-vacuum conditions. Standard vacuum settings range from 1.0 to 16 oz/in², with extended settings up to 32 oz/in² available, accommodating both low- and high-vacuum tolerance requirements. The vent body is self-draining and incorporates a drip ring to reduce condensate accumulation at the seating surface. Operating temperature range is -50°F to +200°F (-46°C to 93°C).

Sizing and selection are supported using Shand & Jurs WinSize software based on anticipated flow rates and allowable pressure drops. Available in 4" nominal size with ANSI Class 150 raised-face flange connection.



Key Features

150 PSIG Static Pressure Capability

Maintains structural integrity under elevated internal pressure.

Peripheral and Stem-Guided Vacuum Pallet

Controls lift alignment and reseating during repeated high-differential vacuum events.

Cushion-Seated Diaphragm

Limits nuisance air infiltration while maintaining consistent seat contact.

Vacuum Setting Range (1.0–16 oz/in². Extended to 32 oz/in²)

Supports low-to- elevated vacuum tolerance requirements in pressure-rated tanks.

Self-Draining Body with Drip Ring

Directs condensate away from seating surfaces to preserve sealing integrity.

ANSI Class 150 RF Interface (4")

Integrates directly into pressure-rated piping systems without transition hardware.



Benefits



PREVENTS VACUUM-INDUCED STRUCTURAL DAMAGE

Protects tank shell and roof from deformation during rapid drawdown events.



MAINTAINS VESSEL PRESSURE INTEGRITY

Allows vacuum protection without reducing rated internal pressure capability.



REDUCED NUISANCE AIR ADMISSION

Improved sealing minimizes unnecessary tank breathing and vapor dilution.



PREDICTABLE VACUUM ADMISSION

Guided pallet geometry reduces chatter and uncontrolled airflow spikes.



REDUCED MAINTENANCE FROM CONDENSATE EXPOSURE

Self-draining design limits corrosion and seating contamination.



DEFENSIBLE ENGINEERING SELECTION

WinSize sizing support provides documented calculations for vacuum capacity.

Available Options



Stainless Steel Screen (30-mesh)

Meets U.S. Coast Guard requirements when specified.



Cast Stainless Steel Body

Enhances corrosion resistance in aggressive vapor service.



Elevated Vacuum Settings

Supports vacuum tolerances beyond the standard range when specified.



Alternate Diaphragm Materials

Improves compatibility with specific vapor compositions.



Custom Flange Drilling

Supports project-specific piping standards.



Special Coatings

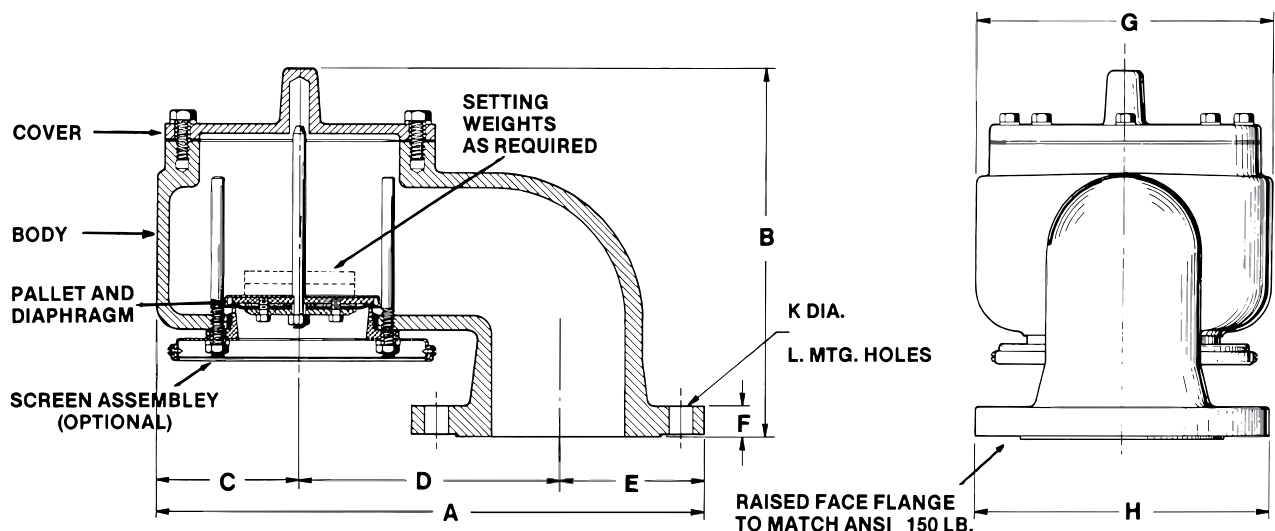
Supports project-specific nozzle configurations.



Key Performance Data

Parameter	Value
Standard Set Vacuum	Min 1.0 oz/in ² (Al trim). 1.75 oz/in ² (SS trim). Std Max 16 oz/in ² (Lead). 12 oz/in ² (SS). Ext Max 32 oz/in ² (Lead). 20 oz/in ² (SS).
Static Pressure Capability	Up to 150 PSIG (recommended service pressure 20 PSIG max). CE available for 0.5 barg max service pressure.
Sealing Method	Cushion-seated diaphragm
Loading Method	Vacuum pallet
Nominal Size	4"
Flanged Connection	ANSI Class 150 Raised Face
Temperature Range	-50°F (-46°C) to +200°F (+93°C)
Materials	<ul style="list-style-type: none"> • Body: Cast Steel or Cast Stainless Steel • Seat: Cast Aluminum (normal). Cast Stainless Steel (severe service). • Pallets: Aluminum. Stainless Steel available. • Diaphragm: Buna-N-coated nylon • Screen: Galvanized Steel (normal). Stainless Steel (severe service). 30-mesh SS (Coast Guard option). • Weights: Lead (standard). Stainless Steel available. • Hardware: Stainless Steel • Pallet Guide and Stem: Stainless Steel

Dimensions





Model Number Selection

The model number will consist of a base number 94103 followed by 4 digit numbers. These digits will represent 2 option tables

94103 - AB - CD

Ordering Information

Specify:

1. Model 94103 Vacuum Vent
2. Material (Service Type)
3. Setting
4. Screen Type

Table AB - Material and Setting

Option AB	Material	Setting	Service
45	Cast Steel	Standard	Normal
46	Cast Steel	> 2 oz.	Normal
35	Cast Steel	Standard	Severe
36	Cast Steel	> 2 oz.	Severe

* Max. Setting = 32 oz. (Lead loading Weights). Higher settings available.
 Stainless Steel Weights available by special request. Max. Settings 20 oz.

Table CD - Inlet Screen

Option CD	Description
03	Severe Service: 6-Mesh X 20 Gauge (.035) Stainless Steel
04	Coast Guard Stainless Steel: 30-Mesh to Comply with U.S. Coast Guard Requirement

Vacuum Settings in oz/in2

Minimum	Standard Maximum	Maximum with Vacuum Extension
1.0 (Aluminum Trim)	16.0 (Lead Weights)	32.0 (Lead Weight)
1.75 (SS Trim)	12.0 (SS Weights)	20.0 (SS Weight)

Summary

The Shand & Jurs® 94103 provides vacuum protection for pressure-rated storage tanks operating under elevated static pressure. Guided pallet geometry, defined vacuum settings, and condensate management features support predictable vacuum admission without compromising vessel pressure integrity. With WinSize sizing support and ANSI Class 150 compatibility, the 94103 is specification-ready for high-pressure storage applications.

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