

# 94225



Shand & Jurs Co.

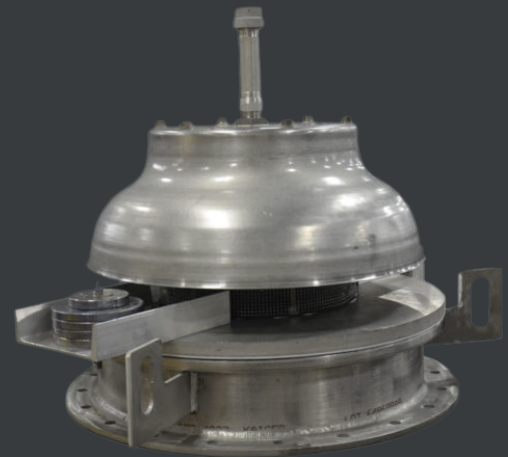
A COGNESENSE BRAND

## P&V Emergency Vent and Manhole Cover (Hinged)

The Shand & Jurs® Model 94225 provides integrated pressure relief, vacuum relief, emergency venting, and tank access within a single hinged manhole assembly for atmospheric storage tanks and fixed digester covers. By consolidating multiple functions into one roof penetration, the 94225 reduces nozzle count, minimizes fugitive emissions sources, and simplifies tank-top hardware. In applications subject to API 2000 normal and emergency venting requirements, the 94225 fulfills this role through a weight-loaded pressure pallet, independently adjustable spring vacuum assembly, and full-lift hinged emergency cover.

During normal operation, the vent regulates pressure settings from approximately 2.5 oz/in<sup>2</sup> to 16 oz/in<sup>2</sup>, and adjustable vacuum settings from 0.57 to 2.9 oz/in<sup>2</sup>. During abnormal overpressure events, the hinged cover opens to provide high-capacity emergency discharge, achieving roughly 60% flow efficiency at 40% overpressure and approximately 75% at higher excess pressure. Optional Expanda-Seal™ technology reduces vapor emissions and leakage to <0.5 SCFH at 95% of setpoint.

Designed in accordance with API 2000 and supported by Shand & Jurs WinSize (EZ-Flow) software, the 94225 provides predictable normal and emergency vent sizing. Available in 16", 18", 20", 24", 30", 36", 42" sizes with ANSI Class 150; 20" and 24" also available for API-650 manway mounting.



## Key Features

### Integrated P/V and Emergency Relief Assembly

Combines routine breathing control and emergency venting within one tank opening

### Hinged Full-Lift Emergency Cover

Provides high-capacity discharge during abnormal overpressure conditions

### Adjustable Vacuum Relief Assembly

Vacuum setting is adjustable without affecting the pressure setpoint

### Serviceable Manway Design

Inspection and maintenance are performed without removing bolting

### Expanda-Seal™ Pressure Pallet Option

Self-energizing diaphragm reduces pre-lift vapor leakage

### Wide Pressure Setting Range

Supports operating envelopes from low to elevated tank pressures



Benefits



CONSOLIDATED TANK HARDWARE

Eliminates separate vent and manway installations



CONTROLLED EMERGENCY RESPONSE

Limits structural stress during fire exposure events



STABLE TANK BREATHING

Independent vacuum adjustment maintains proper operating balance



REDUCED VAPOR LOSS AND EMISSIONS

Expand-Seal™ reduces evaporative losses, translating into thousands of dollars in annual product retention per tank, depending on volatility and operating conditions.



LOWER MAINTENANCE LABOR

Service access without unbolting reduces downtime and gasket replacement



DEFENSIBLE COMPLIANCE

Supports API 2000 normal and emergency vent sizing documentation

Available Options



Expand-Seal™ Pallet

Reduced leakage near setpoint



API-650 Manway Mounting

Direct installation on the tank roof manway



Stainless Steel Construction

Corrosion resistance



Raised Face Flange

Special option (CS and SS bodies only; not available for aluminum units)



Adjustable Vacuum Spring Range

Site-specific operating tolerance



Limit Switches

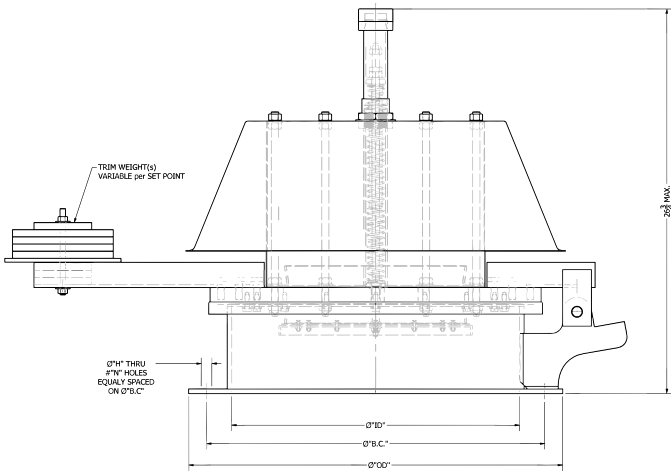
Remote indication of vent cover opening for monitoring or alarm systems.



Key Performance Data

| Parameter              | Value                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pressure Settings      | 2.5 oz/in² to 16 oz/in²                                                                                                                                                                                                                                                                                                                                                                    |
| Vacuum Settings        | 0.57 to 2.9 oz/in² adjustable                                                                                                                                                                                                                                                                                                                                                              |
| Emergency Relief       | Hinged full-lift cover                                                                                                                                                                                                                                                                                                                                                                     |
| Flow Efficiency        | ~60% @ 40% overpressure; ~75% higher                                                                                                                                                                                                                                                                                                                                                       |
| Leakage (Expanda-Seal) | <0.5 SCFH @ 95% setpoint                                                                                                                                                                                                                                                                                                                                                                   |
| Sealing Method         | Diaphragm-sealed pressure pallet                                                                                                                                                                                                                                                                                                                                                           |
| Loading Method         | Weight-loaded pressure/spring vacuum                                                                                                                                                                                                                                                                                                                                                       |
| Nominal Sizes          | 16", 18", 20", 24", 30", 36", 42"                                                                                                                                                                                                                                                                                                                                                          |
| Connections            | ANSI Class 150 • API-650                                                                                                                                                                                                                                                                                                                                                                   |
| Standards              | API 2000                                                                                                                                                                                                                                                                                                                                                                                   |
| Materials              | <ul style="list-style-type: none"><li>• Body and Seat: Aluminum, Carbon Steel, 316 Stainless Steel</li><li>• Pallets: Aluminum or 316 Stainless Steel</li><li>• Diaphragm: FEP / FKM / PFA (Expanda-Seal optional)</li><li>• Spring: Stainless Steel</li><li>• Weights: Lead and Steel (standard). 316 Stainless Steel available.[ML1.1]</li><li>• Hardware: 316 Stainless Steel</li></ul> |

Dimensions



| Vent Size | Connection Matching Size | Diameter "BC" | Diameter "OD" | Diameter "ID" | Diameter "H" | "N" Holes |
|-----------|--------------------------|---------------|---------------|---------------|--------------|-----------|
| 18"       | 18" ANSI Class 150       | 22 ¾"         | 25"           | 17 ½"         | 1 ¼"         | 16        |
| 20"       | 20" API Roof Manhole     | 23 ½"         | 26"           | 20"           | ¾"           | 16        |
| 20"       | 20" ANSI Class 150       | 25"           | 27 ½"         | 20"           | 1 ½"         | 20        |
| 24"       | 24" API Roof Manhole     | 27 ½"         | 30"           | 24"           | ¾"           | 20        |
| 24"       | 24" ANSI Class 150       | 29 ½"         | 32"           | 24"           | 1 ⅜"         | 20        |
| 30"       | 30" ANSI Class 150       | 36"           | 38 ¾"         | 30"           | 1 ⅜"         | 28        |



Model Number Selection

The model number will consist of a base number 94225 followed by 7 digit numbers. These digits will represent 5 option tables

94225 - AB - CD - EF - G

Ordering Information

Specify:

- 1. Model 94225 Emergency Vent / Manhole Cover
- 2. Size Required
- 3. Base and Cover Material
- 4. Pressure and Vacuum Setting
- 5. ANSI or API Base
- 6. Seal Type Standard or Expanda-Seal

Table A/C/E - Size

| Option A | Mounting Flange, Pallet/Seal, Pallet Size |
|----------|-------------------------------------------|
| 2        | 18"                                       |
| 3        | 20"                                       |
| 4        | 24"                                       |
| 5        | 30"                                       |

Table B - Base Material & Flange Drilling, Pallet Material

| Option B | Base Material | Flange Drilling |
|----------|---------------|-----------------|
| A        | Aluminum      | ANSI-FF         |
| B        | Steel         |                 |
| C        | 316SS         |                 |
| D        | Aluminum      | API-650         |
| E        | Steel         |                 |
| F        | 316SS         |                 |

\*\* API-650 is only Available with 20" & 24" Size

Summary

The Shand & Jurs® 94225 integrates pressure relief, vacuum relief, emergency venting, and manway access into a single assembly, protecting atmospheric storage tanks and fixed digester covers during both routine and abnormal conditions. Optional Expanda-Seal™ reduces vapor emissions and retains product value during normal operation, while the hinged full-lift cover delivers high-capacity emergency relief. Adjustable vacuum control and wide pressure settings meet API 2000 normal and fire-case requirements for refinery, chemical, and industrial applications.

Table D - Pallet Type / Seal Material

| Option D | Description | Seal Material |
|----------|-------------|---------------|
| A        | Standard    | FEP           |
| B        | XOS         |               |
| C        | Standard    | FKM           |
| D        | XOS         |               |
| E        | Standard    | PFA           |
| F        | XOS         |               |

Table F - Pressure Set Point Range Pallet

| Table B | Pallet   | Weight   | Hood     | Range oz/in2 |
|---------|----------|----------|----------|--------------|
| A       | Aluminum | Aluminum | Aluminum | 2.5 to 4.0   |
| B       | 316SS    | Aluminum | Aluminum |              |
| C       | Aluminum | Aluminum | Aluminum | 4.0 to 8.0   |
| D       | Aluminum | 316SS    | Aluminum |              |
| E       | Aluminum | Steel    | Aluminum |              |
| F       | 316SS    | Steel    | 316SS    |              |
| G       | 316SS    | 316SS    | 316SS    | 8.0 to 12.0  |
| H       | Aluminum | Steel    | Aluminum |              |
| I       | Aluminum | 316SS    | Aluminum |              |
| J       | 316SS    | 316SS    | 316SS    |              |
| K       | 316SS    | 316SS    | 316SS    |              |
| L       | Aluminum | Steel    | Aluminum | 12.0 to 16.0 |
| M       | Aluminum | 316SS    | Aluminum |              |
| N       | 316SS    | 316SS    | 316SS    |              |
| O       | 316SS    | 316SS    | 316SS    |              |

Table G - Vacuum Set Point Range

| Option G | Description        |
|----------|--------------------|
| 0        | 0.57 to 2.9 oz/102 |

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