

94160

Pressure Relief Vent

The Shand & Jurs® Model 94160 Pressure Relief Vent provides high-capacity, economical overpressure protection for atmospheric storage tanks and low-pressure vessels where vacuum relief is not required. Designed for applications that do not require vacuum relief, the 94160 delivers efficient venting performance with simplified mechanical architecture, supporting reliable operation and reduced maintenance exposure.

The flange-mounted design accommodates frequent pressure cycling and is available in sizes from 2" to 24" to support a wide range of tank capacities. Peripheral and center stem-guided pressure pallets maintain alignment and sealing stability, while cushion-seated FEP diaphragms resist adhesion from ice or gum formation during operation. Standard set pressures begin at 0.5 oz./in², with higher settings available depending on configuration.

Optional Expanda-Seal™ technology increases sealing force as pressure approaches setpoint. Compared to standard pallet designs (~1.0 SCFH at 90% of setpoint), Expanda-Seal™ (<0.5 SCFH at 95%) reduces evaporative losses, translating into thousands of dollars in annual product retention per tank, depending on volatility and operating conditions.

Sizing and selection are supported using Shand & Jurs WinSize (EZ-Flow) software based on anticipated flow rates and allowable pressure rise.



Key Features

Weight-loaded pressure pallet design.

Provides stable setpoint control under thermal expansion conditions.

Peripheral and center stem pallet guidance.

Maintains alignment during lift and reseating cycles.

Cushion-seated FEP diaphragm.

Reduces adhesion from ice or gum formation at the seat interface.

Range of sizes including 2" to 24".

Accommodates a wide range of tank nozzle configurations.

Optional Expanda-Seal™ pallet configuration.

Increases sealing force as pressure approaches setpoint.

Field-Replaceable Seat Rings

Supports in-place maintenance without full vent replacement.

Benefits



RELIABLE OVERPRESSURE PROTECTION

Supports higher working pressures without reliance on emergency vent activation.



REDUCED VAPOR LOSS

Enhanced sealing minimizes continuous leakage near the setpoint.



FAST FINANCIAL PAYBACK & ROI

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



LOWER MAINTENANCE EXPOSURE

Simplified pressure-only architecture reduces service complexity.



STABLE TANK PRESSURE CONTROL

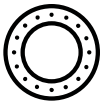
Guided pallet design supports repeatable relieving performance.



WINSIZE-SUPPORTED SIZING

EZ-Flow software supports defensible vent selection and documented capacity calculations.

Available Options



Expanda-Seal™ pallet assembly

Expands the diaphragm sealing force as pressure approaches the setpoint to minimize leakage.



FKM, NBR, or PFA diaphragm materials

Extends chemical compatibility and temperature range beyond those of standard FEP.



ATEX hazardous location certification

Allows installation in classified European explosive atmospheres.



ANSI, EN1092-1, or API-650 flange drilling

Matches regional tank flange standards for global installations.



Stainless steel hood construction

Improves corrosion resistance in aggressive outdoor environments.



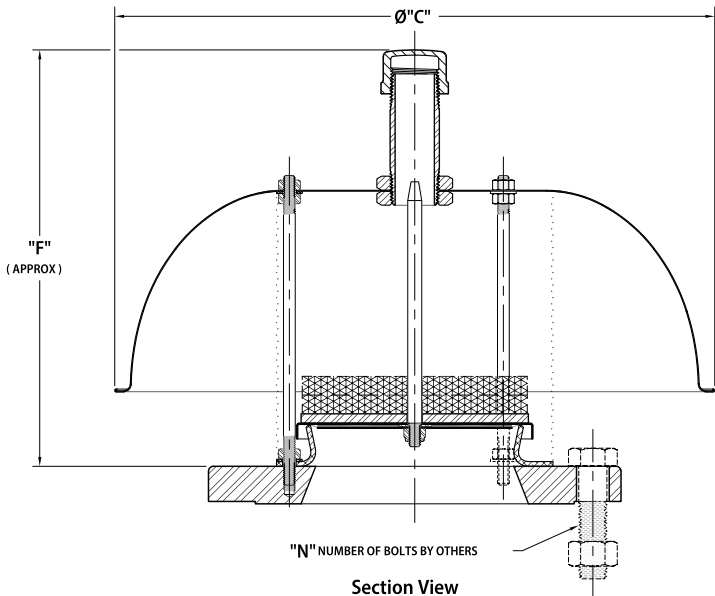
Pressure limit switch

Provides remote indication when the vent is in the relieving position.

Key Performance Data

Parameter	Value
Device Type	Weight-Loaded Pressure Relief Vent
Standard Set Pressure	0.5 oz/in ²
Adjustable Range	Up to 16 oz/in ² (consult factory for higher)
Leakage Performance	Standard pallet: <1 SCFH air at 90% of setpoint. Expanda-Seal™: <0.5 SCFH at 95% of setpoint (available for set pressures ≥1.5 oz/in ²)
Sealing Method	Diaphragm-sealed pallet
Loading Method	Weight-loaded
Nominal Sizes	2", 3", 4", 6", 8", 10", 12", 16", 20", 24"
Seat Size Note	Pallet seat is one nominal size smaller than the body
Flanged Connections	ANSI Class 150 FF/RF. EN1092-1 PN16 FF/RF. API-650. RF not available in Aluminum.
Body Materials	Aluminum • Cast Steel • 316 Stainless Steel
Pallets	Aluminum or 316 Stainless Steel
Weights	Lead (Standard). 316 Stainless Steel available.
Diaphragm Materials	FEP (standard). FKM, NBR, PFA available
Hardware	Stainless Steel
Temperature Range	• -65°F (-54°C) to +250°F (+121°C) (Aluminum) • -20°F (-29°C) to +350°F (+177°C) (Carbon Steel) • -65°F (-54°C) to +350°F (+177°C) (316 Stainless Steel)

Dimensions



Vent Size (In.)	Dimensions in Inches		"N" No. of Bolts*	Net Weight - Lbs.	
	"C"	"F"		Aluminum	Steel
2"	12 7⁄8	8 ½	4	4	10
3"	12 7⁄8	7 ¾	4	5	12
4"	13 5⁄8	7 ¾	8	7	16
6"	16	10 ¼	8	10	22
8"	18 5⁄8	14	8	13	34
10"	18 5⁄8	16	12	19	48
12"	25 ½	16	12	27	72
16"	46 ½	28	16	48	128
20"	46 ½	28	20	75	180
24"	46 ½	28	20	108	245

*ANSI Sizes Shown

Model Number Selection

The model number will consist of a base number 94160 followed by 9 digit numbers. These digits will represent 8 option tables.

94160 - AB - C - D - EF - G - H - I

Ordering Information

Specify:

1. Model 94160 Pressure Relief Vent

2. Size and Body Material

3. Pressure Set Point

4. Temperature Range
5. Flange Type

6. Hood Material

7. ATEX Certification for II 1 G Ex h II B T1...T6 Ga EU Locations if specified.

Table AB - Vent Size (Mounting Flange)

Option AB	Size
02	2"
03	3"
04	4"
06	6"
08	8"
10	10"
12	12"
16	16"
20	20"
24	24"

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 C - Base Material & Hood Material

Option C	Base Material	Seal Material	Pallet Type
A	Aluminum	FEP	Standard
B	Steel		
C	316SS		
D	Aluminum	FKM	
E	Steel		
F	316SS		
G	Aluminum	PFA	
H	Steel		
I	316SS		
J	Aluminum	FEP	Expanda-Seal
K	Steel		
L	316SS		
M	Aluminum	FKM	
N	Steel		
O	316SS		
P	Aluminum	PFA	
Q	Steel		
R	316SS		

Table D - Flange Type

Option D	Pallet Type
1	ANSI 125/150 F.F.
2	ANSI 125/150 R.F.
3	EN1092-1 PN16 F.F.
4	EN1092-1 PN16 R.F.
5	API-650

Table EF* - Vent Size

Option EF	Weight & Hood Size
02	2"
03	3"
04	4"
06	6"
08	8"
10	10"
12	12"
16	16"
20	20"
24	24"

* Option "EF" must be same as option "AB"

Table H - Certification

Option H	Description
1	Standard
2	ATEX

Table I - Options

Option I	Description
0	None
1	Limit Switch - Pressure

Summary

The Shand & Jurs® 94160 delivers economical, high-capacity pressure relief for atmospheric storage tanks requiring dedicated overpressure protection. Guided pallets, diaphragm sealing, and optional Expanda-Seal™ technology support stable setpoints and reduced vapor loss, while WinSize sizing tools provide defensible engineering validation. A broad size range and configurable materials support specifications across petroleum, chemical, and industrial storage environments.

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Table G - Setting, Weight & Hood Material

Option G	Set Point	Weight Material	Hood Material
A	Standard	Lead	Standard (18-8SS), Alum. for 12-24" Sizes
B	Low		
C	Medium		
D	High		
E	Standard	316SS	
F	Low		
G	Medium		
H	High		
I	Standard	Lead	316SS
J	Low		
K	Medium		
L	High		
M	Standard	316SS	
N	Low		
O	Medium		
P	High		

Standard = 0.5 oz/in2
Standard (Expanda) = 1.5 oz/in2

LOW = STD to 5 oz/in2
MEDIUM = 5.01 oz/in2 to 8 oz/in2
HIGH = 8.01 oz/in2 to 16 oz/in2