

# Engineered Solutions For Your Tank Equipment Needs



## Product Brochure

World Leader in Tank Protection



Flame & Deflagration Arresters  
Detonation Arresters  
Level Gauges  
Emissions Monitoring  
Conservation Vents  
Emergency Vents  
Tank Blanketing Valves

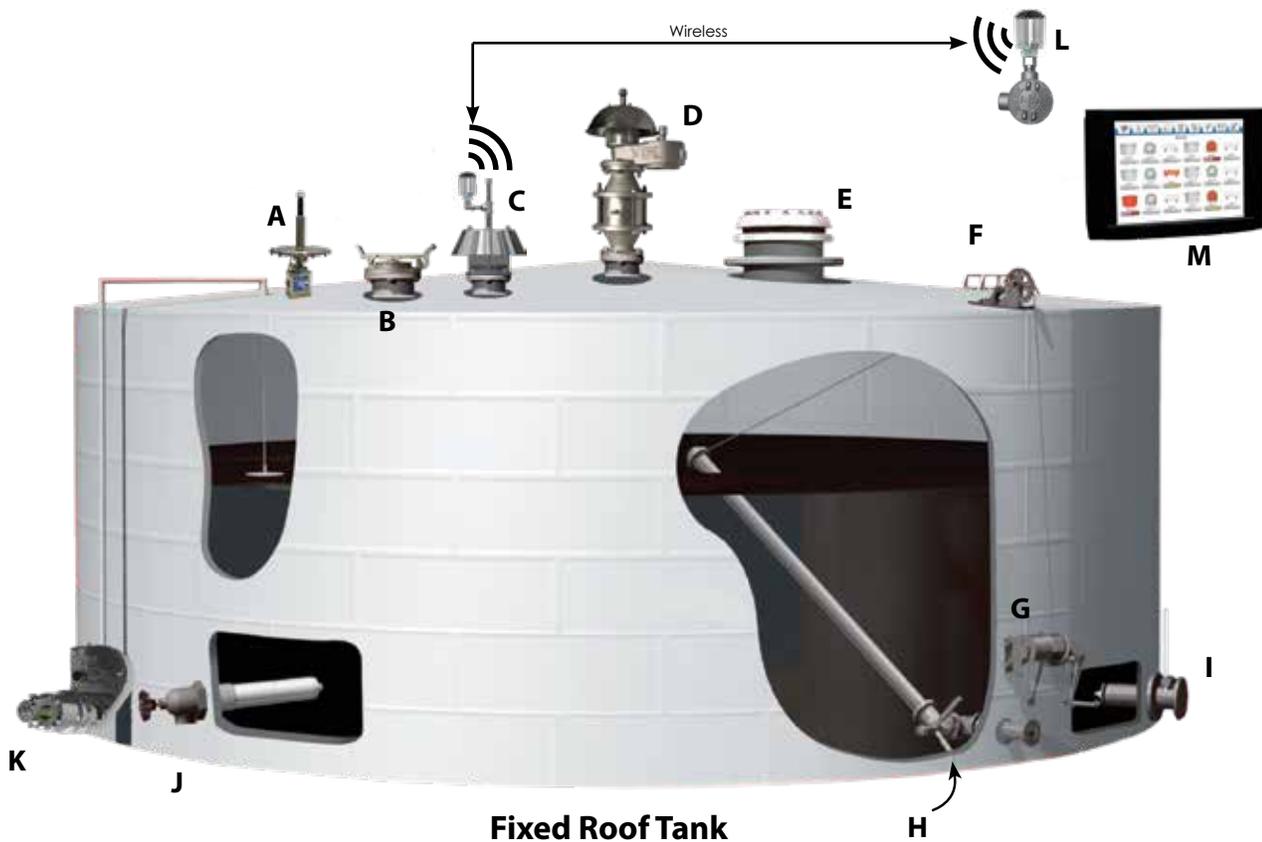
# SHAND & JURIS

an *L&J TECHNOLOGIES* company

# Engineered Solutions For Your Tank Equipment Needs by Shand & Jurs

For over 95 years Shand & Jurs is committed to bringing advanced, yet affordable products to our customers through our complete line of Conservation Vents, Vapor Recovery Systems, Specialty Valves, Tank Blanketing Valves, Tank Fittings, as well as Flame, Deflagration, and Detonation Arresters. All products are backed by our company's USA made founding principle: a commitment to supplying only top quality, reliable and durable products – able to withstand the harshest environments. Since 1922, Shand & Jurs equipment has set the industry standard for quality, safety, precision, and accuracy.

## Typical Configurations<sup>†</sup>



- |                                                         |                                                                 |
|---------------------------------------------------------|-----------------------------------------------------------------|
| A. 94270 "Vapor Guard" Tank Blanketing Valve            | G. 95600 Cable Winches                                          |
| B. 95021 Gauge Hatch                                    | H. 95661 Swing Joints                                           |
| C. MCG 1097 <b>WirelessHART</b> Relief Alarm            | I. 96311 Internal Safety Valve                                  |
| D. 94570 Combination Conservation Vent & Flame Arrester | J. 96181 Water Drain Valve                                      |
| E. 94221 Emergency Vent-Manhole Cover Pressure & Vacuum | K. 92021/ 92500 Mechanical Tape Gauge & MCG 2000MAX Transmitter |
| F. 95500 Cable Sheave                                   | L. MCG 5200 <b>WirelessHART</b> Gateway                         |
|                                                         | M. MCG 7030 Touch Panel Alarm Monitor                           |

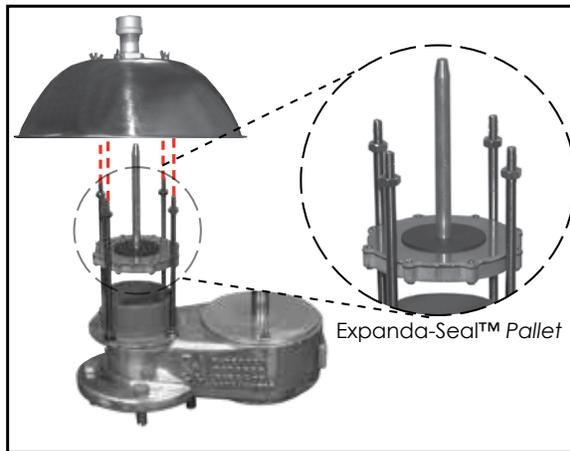
All Product Images and Descriptions May Include Optional Features That Are Not Included in Standard Model. Consult Factory for Exact Configuration. Specifications Can Change at Any Time Without Notice.

## Expanda-Seal™†

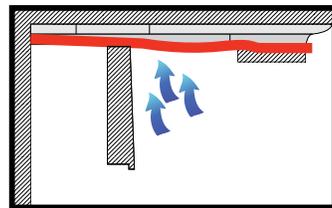
To reduce emissions, Shand & Jurs designed and patented a high performance valve sealing technology called Expanda-Seal™, which offers reduced tank emissions and odors for every process environment imaginable.

This innovative design actually uses the internal tank pressure to create a tighter seal the closer the pressure gets to the set point. The Expanda-Seal pallet design of 0.5 SCFH @ 95% of set pressure far exceeds the API 2521 published guidelines for leakage of weight loaded venting devices.

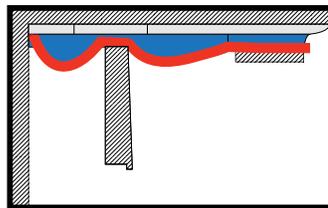
This technology is available for normal pressure relieving devices, as well as emergency/fire case venting devices. The end result is a nearly bubble tight seal.



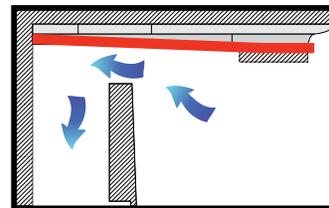
Shand & Jurs 94020 Conservation Vent (Pressure/Vacuum) with Expanda-Seal™ Pallet



When pressure inside the tank is below the set point, the deflated diaphragm rests on the seat ring in a typical manner, as with any normal valve, retaining internal pressure.



As the pressure approaches the set point, the Expanda-Seal™, diaphragm inflates and wraps around the mating seat to achieve this unique sealing effect.



When the pressure in the tank is at or above the set point, the pallet lifts to relieve the overpressure.

## MCG 1097 WirelessHART Relief Alarm



- For pressure/vacuum vapor relief indication
- Remote monitoring
- Extended life lithium battery powered
- Available for 94210 emergency vent & manhole cover

## MCG 7030 Touch Panel Alarm Monitor



- Continually monitors pallet status
- Instantaneously sends back alarm conditions
- Stores records of relief scenarios

## L&J engineering - Tank Level Gauging Solutions for Bulk Storage

The L&J Technologies family of companies are global manufacturers of tank level gauging and tank fitting equipment, control systems, custom engineering services and related products.

# L&J engineering



Transmitters



Inventory Management



Radar Level Gauges



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† See back cover.

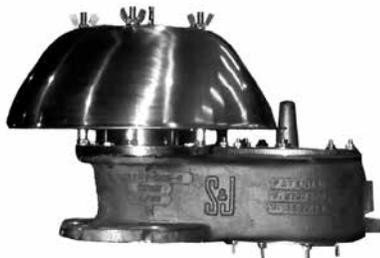
## Conservation Vents<sup>†</sup>



**94020**

### Weight Loaded Conservation Vent

- Sizes 2" through 12"
- Provides Pressure and Vacuum Relief
- Options: Open Vent, Closed Vent, Cryogenic Hood, Steam Jacketed, Limit and Proximity Switch, Insulation Jackets, All Weather
- Innovative "Expanda-Seal™" available
- ATEX Approved



**94040**

### Spring Loaded Conservation Vent

- Sizes 2" through 12"
- Provides Pressure and Vacuum Relief
- Settings: 1 PSI to 15 PSI
- Options: Open Vent, Closed Vent, Steam Jacketed, Limit and Proximity Switch, Insulation Jackets, All Weather
- Innovative "Expanda-Seal™" available
- ATEX Approved (Max Set Pressure 7.25 PSI)



**94640**

### Pilot Operated Relief Vent with 94110 Vacuum Vent

- Pilot Operated Relief Vent
- Full Flow @ 10% Overpressure
- Greater Flow Characteristics Allowing for Reduced Sizing Compared to Conventional Weight and Spring Loaded Pressure Relief Valves
- Setting Options of 0.11 PSI to 15 PSI Using Sensitive Springs for Discrete Ranges
- Bubble Tight Seat To Set Pressure
- Accessories: Backflow / Vacuum Preventer, Field Test Connection

## Pressure Vents<sup>†</sup>

**94140**

### Spring Loaded Pressure Relief Vent

- Sizes 2" through 12"
- Pressure Range Between 1 and 15 PSI, 12 PSI Max. For 12" Size
- All-Weather Teflon Coating Available
- Guided Pressure Pallet Assures Smooth Lift and Closure



**94160**

### Pressure Relief/Emergency Vent

- Sizes 2" through 24"
- Maximizes Flow Capacity and Efficiency
- All Weather Option
- "Expanda-Seal™" Optional
- CE/ATEX Approved



<sup>†</sup> See back cover.



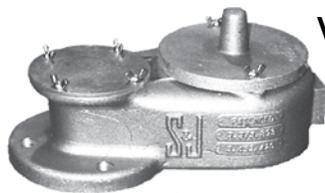
## 94100 Vacuum Vent

- Sizes 6" or 10"
- Factory Tested High Back Pressure: 125 PSI for 6" and 75 PSI for 10"
- Low Temperature Service of -20°F



## 94103 Vacuum Vent

- 4" Aluminum or Stainless Steel Valve
- Factory Tested High Back Pressure 150 PSI Capability
- Meets USCG Requirements with Stainless Steel Screen Option
- Low Temperature Service of -50°F Option
- Self Draining Body



## 94110 Vacuum Vent

- Sizes 2" through 12"
- Peripheral and Stem Guided Vacuum Pallet Assures Reliable Operation
- ATEX Approved
- Spring Loaded Available
- Self Draining Body



## 94115 Vacuum Vent (Side Mounted)

- Sizes 2" through 12"
- Side Mounted
- Peripheral and Stem Guided Vacuum Pallet
- Pallet Design Contributes to High Flow
- Self Draining Body



## 94116 Snap Action Vacuum Breaker

- Sizes 16" through 42"
- High Flow Capacity at Low Differential Pressure
- Snap Action Requires No Over Pressure
- Vacuum Settings as Low as 0.4" w.c.
- Static Pressure to 1.0 PSI (MAWP)
- Light Weight, High Strength Design

## 99060 Duracator



A visual pallet lift indication device for conservation vents that will allow you to visually detect the percentage of pallet lift that has occurred. Available with and without memory.

## Insulation Jackets



Shand & Jurs insulation jackets provide heat retention for equipment in cold weather environments. Construction of the insulating jacket is silicone impregnated woven glass cloth lining with 1" thick fiber glass material. The jacket is easy to install and remove in the field.



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## Emergency Vent/Manhole Covers<sup>†</sup>

### 94200/94201

#### Emergency Vent & Manhole Cover



- 16", 20", 24", 30" and 36"
- Construction: Aluminum, Steel and Stainless Steel
- Manholes for Tank Inspection
- ATEX Approved
- 94201 Features "Expanda-Seal™"
- Deep Pallet Guide for Proper Re-seating

### 94210

#### Emergency Vent & Manhole Cover



- Sizes 8" through 36"
- Construction: Aluminum, Steel and Stainless Steel
- Hinged Cover for Easy Maintenance
- ATEX Approved
- Limit and Proximity Switches available

### 94221

#### Emergency Vent & Manhole Cover



- Pressure and Vacuum
- 20" and 24" Diameter Manhole for Tank Inspection
- Construction: Aluminum, Steel and Stainless Steel
- "Expanda-Seal™" Standard

### 94225

#### Emergency Vent & Manhole Cover (Pressure & Vacuum)



- Pressure and Vacuum
- 16" through 24"
- Construction: Aluminum, Steel and Stainless Steel
- "Expanda-Seal™" Optional
- No Unbolting of Vent for Seal Replacement and Tank Access
- Hinged Cover for Easy Maintenance

### 94510

#### Emergency "Magnavent"



- Size: 4" through 12"
- Construction: Aluminum, Steel and Stainless Steel
- Patented Alnico Magnetic Latch Opens Fully, Instantly at Pressure Settings
- "Expanda-Seal™" Standard
- Settings: 0.5 PSI to 2.75 PSI
- CE/ATEX Approved

### 94520

#### Emergency Vent & Manhole Cover



- 10", 16" and 20" Diameter Manhole for Tank Inspection
- Construction: Aluminum, Steel and Stainless Steel
- "Expanda-Seal™" Optional
- Magnetically Latched for Instant Relief

## Tank Blanketing Valve<sup>†</sup>



### 94270

#### "Vapor-Guard" Tank Blanketing Valve

- ½", 1" and 2" Sizes
- 304 or 316 Stainless Steel Bodies
- Set points available (opening) ½" w.c. to 15.0 PSI
- Pressure Balanced Main Valve Design Ensuring Constant Settings
- Remote Sensing Dip Tube, and Internal Pressure Sensing
- Buna, Teflon, Viton, EPDM and Kalrez Seals
- Minimal Dead Band of 1" WC

<sup>†</sup> See back cover.



Closed Vent

### 94060 FRP Conservation Vent

- Sizes 2" through 12"
- Provides Pressure and Vacuum Relief
- Pressure only sizes Exceed to 16" - 24"
- 470 Derakane standard, 411 Derakane and Furan Available
- Acid & Caustic Services
- Four Configurations: Pressure/Vacuum (Open), Pressure/Vacuum (Closed), Vacuum Only, Pressure Only
- CE Approved



### 94063 FRP Emergency Vent

- Sizes 16", 20" and 24"
- 470 Derakane Standard, 411 Derakane and Furan Available
- Acid & Caustic Services
- Relieves Excessive Tank Pressure



### 94065 FRP Emergency Vent & Manhole Cover (Pressure & Vacuum)

- Sizes 16" - 24"
- 470 Derakane Standard, 411 Derakane and Furan Available
- Acids & Caustic Services
- Relieves Excessive Tank Pressure



### 94069 FRP Gauge Hatches

- Sizes 4", 6" and 8"
- 470 Derakane Standard, 411 Derakane and Furan Available
- Acids & Caustic Services
- Corrosion Resistant Fiberglass Construction
- Manual or Lock Down Self-Closing Designs
- Additional Pressure Relief Available

## Free Vents<sup>†</sup>



94240 Free Vent



94241 Free Vent (Hooded)

### 94240/94241 Free Vent

- Sizes 2" Through 10" for 94240
- Sizes 2" Through 30" for 94241
- For Non-Hazardous, Non-Volatile Liquid Storage Tanks
- Protects Contents from Foreign Objects
- Allows Vapors to Flow Freely In and Out

## Weather & Chemical Resistant Coatings



Shand & Jurs offers a wide range of internal and external coatings for chemical and hazardous weather applications. Coatings include Teflon, PTFE, Kynar, etc. Coatings for vents can be ordered in sizes 2" through 12". External coatings also available.

### 94050 PVC Conservation Vent



- Provides pressure and vacuum relief to tanks containing corrosive products
- Sizes 2" through 12"
- Options: pressure only, vacuum only, pressure & vacuum
- Styles: open vent, closed vent



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## 94306 Vertical Flame Arrester

- Sizes 2" through 12"
- Construction: Cast Aluminum, Cast Iron, Cast Steel, 316 Stainless Steel
- During a Flashback, the Arrester Serves as a Barrier Between the External Flame and Internal Vapors
- Optional Steam Jacketing Available
- FM Approved



## 94307 Horizontal Flame Arrester

- Sizes 2" through 12"
- Construction: Cast Aluminum, Cast Iron, Cast Steel, 316 Stainless Steel
- During a Flashback, the Arrester Serves as a Barrier Between the External Flame and Internal Vapors
- Asymmetrical Design Allows for Easy Drainage



## 94308 Miniature Flame Arrester

- Sizes 1" and 2"
- Heavy Gauge Metal Plates Provide Precision Flame Arresting
- Available in Aluminum or Stainless Steel
- Function for Small Storage Tanks and Drums
- FM Approved



## 94309 Flame Arrester (Plate Element)

- Sizes 2" through 12"
- Easy Access to Plate Element
- Clean and Inspect in Place
- High Flow Rates
- Vertical or Horizontal Configuration
- FM Approved



## 94550 Flame Arrester/Free Vent

- Sizes 2" through 12"
- Serves as a Barrier Between External Flame and Internal Vapors
- Free Vent Weather Hood Vents to Atmosphere



## 94560 Combination Conservation Vent Flame Arrester

- Sizes 2", 3" and 4"
- Construction: Cast Aluminum, Cast Iron, Cast Steel, 316 Stainless Steel
- Simple Removal of Flame Arrester 2-in-1 Device
- Positive Flame Stop on Low Pressure Tanks
- "Expanda-Seal™" Optional
- FM Approved



## 94570 Combination Conservation Vent Flame Arrester

- Sizes 2" through 12"
- Construction: Cast Aluminum, Cast Iron, Cast Steel, 316 Stainless Steel
- Cost Effective, Dual Purpose
- Provides Pressure & Vacuum Relief
- During a Flashback, the Arrester Serves as a Barrier Between the External Flame and Internal Vapors
- "Expanda-Seal™" Optional
- Open or Closed Vent Configurations



## 94580 Combination Pressure & Flame Arrester

- Sizes 2" through 6"
- Positive Acting Magnetic Latch
- "Expanda-Seal™" Optional
- During a Flashback, the Arrester Serves as a Barrier Between the External Flame and Internal Vapors
- Opens Fully at Setpoint

<sup>†</sup> See back cover.

## Deflagration Arresters<sup>†</sup>

**94406**

### Vertical Inline Deflagration Flame Arrester



- Available in Sizes 2" through 12"
- Construction: Cast Aluminum, Cast Iron, Ductile Iron, Cast Steel, 316 Stainless Steel
- Mounts Inline Per Data Sheet
- Unitized Tube Bank Design
- Maximum Protection and Efficiency with Minimum Pressure Drop
- **ATEX EN 12874 Approved, ISO 16852 Approved**

**94407**

### Horizontal Inline Deflagration Flame Arrester



- Available in Sizes 2" through 12"
- Construction: Cast Aluminum, Cast Iron, Ductile Iron, Cast Steel, 316 Stainless Steel
- Mounts Inline Per Data Sheet
- Unitized Tube Bank Design
- Maximum Protection and Efficiency with Minimum Pressure Drop
- **ATEX EN 12874 Approved, ISO 16852 Approved**

**94450**

### Combination Deflagration Flame Arrester and Free Vent



- Available in Sizes 2" through 12"
- One Compact Fitting for Flame Arrester & Maximum Flow Venting
- Easily Accessible, Unitized Tube Bank
- **ATEX EN 12874 Approved, ISO 16852 Approved**

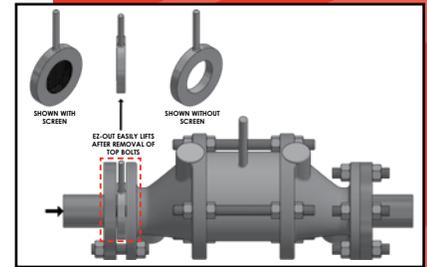
**94470**

### Combination Conservation Vent and Deflagration Flame Arrester



- Available in Sizes 2" through 12"
- Cost effective, Pressure & Vacuum Relief
- During a Flashback, the Arrester Serves as a Barrier Between the External Flame and Internal Vapors
- Open or Closed Vent Configurations
- **ATEX EN 12874 Approved, ISO 16852 Approved**

## 94390 Arrester Bank EZ-Out



Designed to assist plant personnel for the inspection & removal of spiral wound Flame, Deflagration and Detonation Arrester Tube Banks. This design allows Operators and Maintenance personnel to reduce time and labor expenses when inspecting and replacing arrester tube banks that show increased pressure drop over time. The 94390 Arrester Bank EZ-Out can be utilized in piping that contains all manufacturers spiral wound arresters, making it a universal solution. Once the EZ-Out is removed, the tube bank can be easily removed without disturbing the piping.

## Flame and Detonation Arresters



A flame arrester is designed to be used as a barrier between the tank and the vent to safeguard the tank contents from igniting if an outside ignition source is present. A detonation arrester isolates the potential ignition of vapors in closed piping systems to protect storage tanks and process units from detonation flame fronts.

## Detonation Arresters<sup>†</sup>

**9431x Series**

### Detonation Flame Arrester



Model Number	Service / Approval*	Standard Size**
94311	NEC Group D / Factory Mutual	2" - 12"
94312	NEC Group D Marine / Factory Mutual, U.S. Coast Guard	2" - 12"
94313	NEC Group C & D / Factory Mutual	2" - 6"
94314	NEC Group C & D Marine / Factory Mutual	2" - 6"

\*STEEL, 316, DUPLEX Stainless Steel

\*\*Other Sizes Available



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<sup>†</sup> See back cover.

## Tank Gauges†

**92021**

### Mechanical Tape Gauge



- Acutrak 90™ Cartridge Kit
- Atmospheric or Low Pressure Tanks (1'-90')
- Cast Aluminum Body and Parts
- Checker Knob
- Installation Kits Available for All Tank Types
- Accepts Any Transmitter
- ATEX Approved



**MCG 2000MAX**

### Level Transmitter

- Magnetic Absolute Xmitter
- Ultra Low Power
- Couples to Most Mechanical Gauges
- Easy Maintenance and Calibration
- Lightning and Surge Protection
- Not Affected by Power loss
- UL Listed, ATEX Approved

**92030**

### High Pressure Tape Gauge



- Cast Steel Construction
- Ground or Roof Level Readout
- Checker Knob
- Accepts Any Transmitter
- Magnetic Coupling
- Pressure Ratings 150-300 lbs



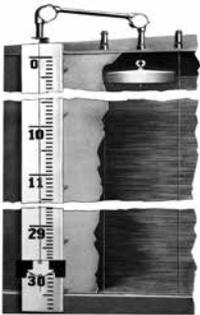
**92500**

### Retrofit Automatic Tank Gauge

- For Replacing Existing Varec 2500 Gauges and Mounts to Existing Gauge Piping
- Atmospheric or Low Pressure Tanks (1'-90')
- Reduces Maintenance
- Acutrak 90™ Cartridge Kit
- Cast Aluminum Body and Parts
- Checker Knob

**92302**

### Liquid Level Indicator



- Gauging Range of 55' (16.8 meters)
- Inexpensive Float-Operated Gauge
- Aluminum, Redwood or Stainless Steel Indicator Board
- Readings Accurate to ±1 Inch
- Calibration: Feet-Inches or Meters-Decimeters
- Options: Full, Half, One Third Travel
- Liquid Seal Available
- Limit Switches Available

**MCG 2420**

### Level Transmitter



- Couples with 92302 Liquid Level Indicator
- Ultra Low Power
- Absolute Magnetic Encoding for Level Detection
- Advanced Flash Memory Technology
- 2-Wire Loop Powered Analog and Digital Remote Communication

## Gauge Hatches†

**95021**

### Quick Clamp Gauge Hatch



- Easy Access for Product Gauging or Sampling
- "Quik-Clamp" Option Allows for Nearly Hands-Free Operation
- Available in Sizes from 4" to 12"
- Construction: Aluminum, Steel, 316 Stainless Steel and Bronze

**95000**

### Gauge Hatches



**95004**

**95010**



**95011**

**95014**

- Sizes 3" for 95004
- Sizes 6" and 8" for 95010 and 95011
- Sizes 4", 6" and 8" for 95014
- Easy Access for Gauging Product Level or Temperature
- Construction: Aluminum, Steel, 316 Stainless Steel
- Spark-Proof Model Available on 95004

† See back cover.

## Tank Valves<sup>†</sup>

**96181**

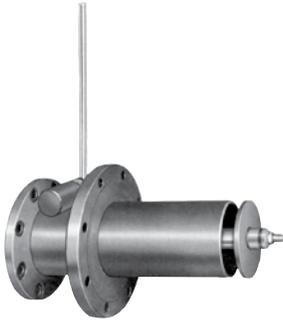
### Water Drain Valve



- Sizes: 2", 3" and 4"
- Drains Water from Storage Tanks
- Double Valve Construction Prevents Freezing
- Flushing Action Keeps Valve Seat Clean
- Options: Threaded or Flange Mounted

**96311**

### Internal Safety Valve



- Sizes: Standard 2" through 12"
- Closes Automatically when Fusible Link Releases
- Options: More Sizes and Special Mounting Configurations Available
- Releases at 212°F (Lower When Specified)

**96330/96330I**

### Internal Safety Shutoff and Operating Valve with Integral Position Indicator



**96330I with Integral Position Indicator**

- Sizes 2" through 10"
- Mounted in Tank or Pipeline
- Closes Automatically when Hydraulic Pressure Removed
- Type of Service: LP-Gas, Most Liquid Hydrocarbons, or Ammonia
- Tight Shutoff – Less than 1.0 SCFM Air Leakage at 100 PSI between Tank and Line
- Positive Position Indicator
- 250 PSI Service Pressure

## Services<sup>†</sup>

From the most complicated data highway interfaces to the simplest open vent, L&J Technologies has the expertise to keep your tanking operations running efficiently. For more than ninety years, L&J Technologies technical service specialists have repaired and maintained tank gauging, conservation vents, tank fittings and control system equipment. Let L&J Technologies help keep your operations running smoothly and profitably. Additionally, we can repair and rebuild equipment in our state-of-the-art, ISO 9001 factory located in Hillside Illinois.

### On-Site Services

- Emergency Repair
- Troubleshooting
- Field Surveys
- Equipment Evaluation
- Start-up
- Operator Training
- Maintenance
- Engineering Assistance
- Maintenance Training

### Factory Repairs

- Two Week Turnaround (Standard)
- 24 Hour Turnaround (Emergency)
- Rebuilds & Bench Testing
- Upgrades & Exchanges
- Equipment Loan Programs
- Training Seminars

### Request a Service:

[www.ljtechnologies.com/service](http://www.ljtechnologies.com/service)

## Hydraulic Safety Valves

The S&J hydraulically operated safety valves are designed for use in vessels and pipelines handling LPG or similar products. The valves are held securely closed by a spring and open only when hydraulic pressure is applied. When hydraulic pressure is removed manually by a control circuit or by release of a fusible link, the valve automatically closes. A balanced valve design is used.

## Swingline Equipment

S&J Swinglines provide great operating and maintenance convenience by permitting servicing or replacement of valves and changes in piping without having to empty the tank. Swinglines allow for withdrawal of product from any level in the tank – from top to bottom. They also offer an additional margin of tank safety. Placed in the up position, they can prevent loss from accidentally opened valves.



**95661**  
**Swing Joints**



*L&J Technologies*  
*Service Technician*



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<sup>†</sup> See back cover.

L&J Technologies offers a complete line of products that provide solutions for hundreds of industrial and commercial applications. Visit us at [www.ljtechnologies.com](http://www.ljtechnologies.com)

## L&J engineering



Tank Level Gauging Solutions for Bulk Storage



Liquid Level Switches



Point/Multi-Point Level Controls & Continuous Level Sensors



Tank Vents, Flame and Detonation Arresters, Fittings & FRP Equipment



Digester Gas Equipment Waste Gas Burners



Mold Level and Strip Guiding Measurement and Control Systems for Metals/Steel Industries



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