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## **SAFETY WARNINGS**

**THIS SECTION IS AN OVERVIEW OF SAFETY GUIDELINES THAT SHOULD BE FOLLOWED DURING THE INSTALLATION, OPERATION AND MAINTENANCE OF THE LAMOT END OF LINE STACK VENT VALVE. TO UNDERSTAND THE CONTEXT OF THESE INSTRUCTIONS AND WARNINGS, IT IS NECESSARY TO COMPLETELY READ AND UNDERSTAND THE CONTENTS OF THIS MANUAL.**

**THE PURPOSE OF THE END OF LINE STACK VENT VALVE IS TO PREVENT EXCESSIVE PRESSURE OR VACUUM BUILDUP IN A TANK OR PROCESS SYSTEM. THE VALVE MUST BE DESIGNED FOR THE PROPER MAXIMUM ALLOWABLE WORKING PRESSURE (MAWP) AND FLOW REQUIREMENTS OF THE SYSTEM. CONSULT API STANDARD 2000, ISO 28300, OR LOCAL REGULATIONS FOR TANK PROTECTION SIZING PROCEDURES. AN IMPROPERLY SPECIFIED OR FUNCTIONING RELIEF VALVE MAY RESULT IN STRUCTURAL DAMAGE TO THE TANK OR SYSTEM, AND CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.**

**VALVES ARE SET AT THE FACTORY ACCORDING TO PURCHASE ORDER SPECIFICATIONS. DO NOT CHANGE PRESSURE RATINGS BY ADDING ADDITIONAL WEIGHTS TO THE PALLET ASSEMBLY WITHOUT CONSULTING THE FACTORY OR YOUR LOCAL LAMOT REPRESENTATIVE. ADDING WEIGHTS TO A VALVE MAY RESTRICT PALLET LIFT AND REDUCE THE VALVE'S RATED FLOW CAPACITY.**

**DO NOT MIX PRESSURE/VACUUM PALLET ASSEMBLIES. FAILURE TO ENSURE THAT BOTH PALLET ASSEMBLIES ARE INSTALLED IN THE CORRECT LOCATION CAN CHANGE THE PRESSURE AND VACUUM RELIEF SETTINGS OR RESTRICT LIFT OF THE PALLET. THIS CAN CAUSE A TANK FAILURE.**

**DO NOT ATTEMPT TO REMOVE THE VALVE FROM THE TANK OR PROCESS VESSEL WITHOUT FIRST BLEEDING ALL PRESSURE FROM THE SYSTEM. ALTERNATIVE MEANS OF PRESSURE RELIEF MUST BE PROVIDED WHEN THE VALVE IS OUT OF SERVICE.**

**IF THE VALVE HAS BEEN EXPOSED TO PROCESS VAPORS WHILE IN SERVICE, OBSERVE ALL PLANT PROCEDURES AND MATERIAL SAFETY DATA SHEETS (MSDS) FOR THE PRODUCTS IN THE SYSTEM WHEN INSPECTING, ADJUSTING OR SERVICING THE VALVE. TAKE APPROPRIATE SAFETY PRECAUTIONS REGARDING EYE PROTECTION, RESPIRATION AND SKIN CONTACT.**

**THE TANK PRESSURE REQUIRED TO DISCHARGE THE NORMAL OR EMERGENCY VENTING REQUIREMENTS OF THE TANK WILL BE INCREASED BY THE AMOUNT OF BACK PRESSURE IN THE DISCHARGE HEADER, ON A PIPE AWAY VALVE CONFIGURATION. MAXIMUM POSSIBLE DISCHARGE HEADER PRESSURE MUST BE CONSIDERED WHEN SIZING THE PRESSURE RELIEF VALVE.**

## INTRODUCTION

This manual is intended to provide recommended procedures and practices for installation, operation and maintenance of the LaMot Model L10E End of Line Stack Vent Valve. Any standard procedures and practices developed for a specific plant or process should supersede this manual. Although this manual cannot cover all possible contingencies, following these guidelines will provide safe, reliable end of line stack vent valve service.

The vent valve shall be treated as a safety device and must be maintained by a knowledgeable repair technician. Carefully read and understand this manual before installing or servicing this product.

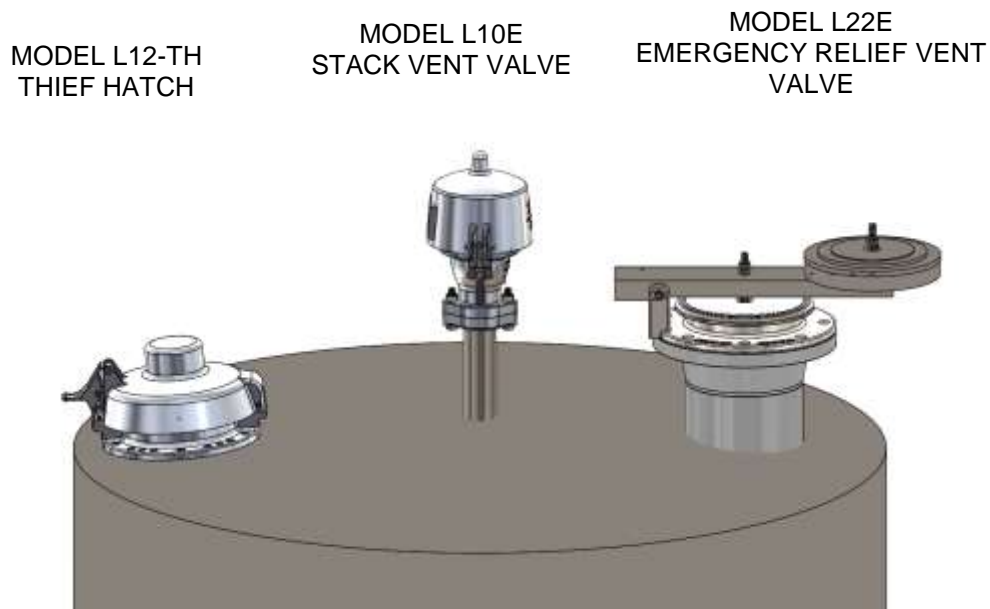
For information not contained in this manual, please contact:

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## INSTALLATION

A typical End of Line Stack Vent Valve installation on a tank or vessel is illustrated in Figure 1. LaMot's end of line vent valves are designed to provide tank protection for both pressure and/or vacuum, or pressure only. The valve is marked with a rated flow capacity at 100% over-pressure. Consult factory for performance under other conditions.

**Figure 1: Typical Tank Installation**



**WARNING: The valve must be installed in a vertical position as shown in Figure 1. To achieve nominal flow capacity, the pipe must be at least the same nominal dimension as the relief valve inlet body.**

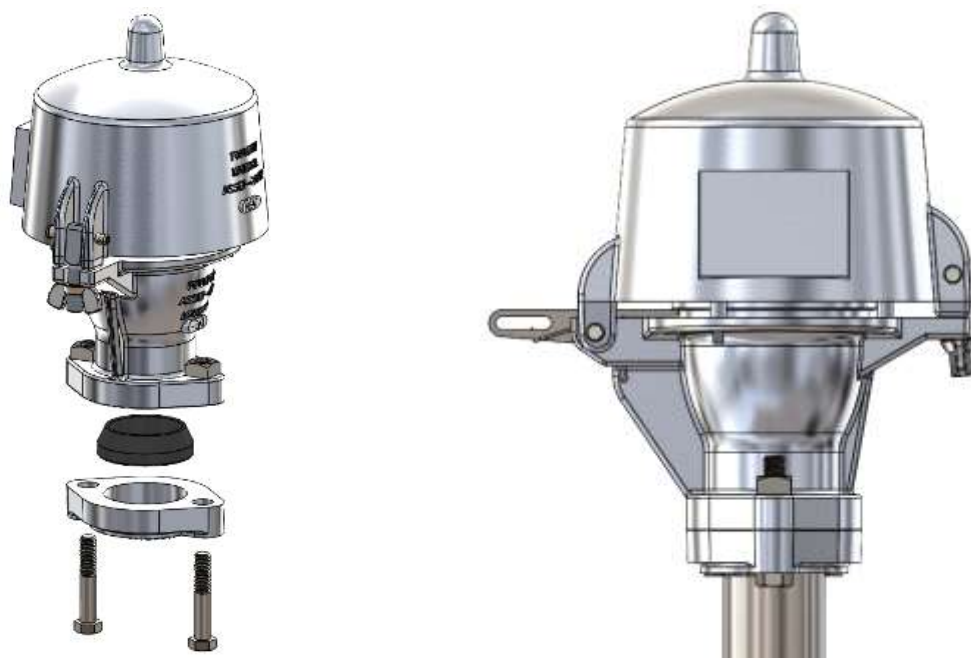
The vent valve is carefully packaged to prevent damage or contamination during shipping. Inspect all equipment when it is received; report any damage to the carrier immediately. The valve should be protected during handling and storage. Before installation, inspect the unit for indications of physical damage or internal contamination. If these are observed, the valve must be disassembled, cleaned and repaired before installation.

The L10E End of Line Vent Valves all have slip-on flange connections. The valves are NOT rated for full flange pressure and do not require high bolting torque. Consult factory for special applications.

## INITIAL INSTALLATION

The following guidelines should be observed at installation:

1. Remove any flange protectors and discard all packing material.
2. Inspect the vent pipe. It must be clean and free of corrosion.
3. Inspect the gasket; make sure that the material is suitable for the application.
4. Remove the hex bolts and square nuts. Then remove the slip-on flange and gasket.
5. Place the slip-on flange onto the vent pipe. Then position the gasket onto the pipe with the angled face of the gasket pointing toward to the vent valve.
6. Lubricate all hex bolts and square nuts with an appropriate thread lubricant.
7. Install the square nuts and hex bolts. Tighten the hex bolts until the slip-on flange is flush against the body.



## DESIGN AND FUNCTION

Tank protection equipment typically includes an operating valve which is designed to provide pressure/vacuum relief under normal pump in/out and thermal breathing conditions. An emergency relief valve can also provide both pressure and vacuum relief and is normally sized to provide pressure relief if there is a fire in the immediate vicinity of the tank. It may also be sized by the tank designer to provide protection in the event of equipment failure (such as the rupture of a process steam line or an inert gas blanketing system failing “wide open”) or operator error.

A typical tank installation is shown in **Figure 1** which includes the following LaMot products:

Model L12-TH or L12-TL Spring Loaded Thief Hatch

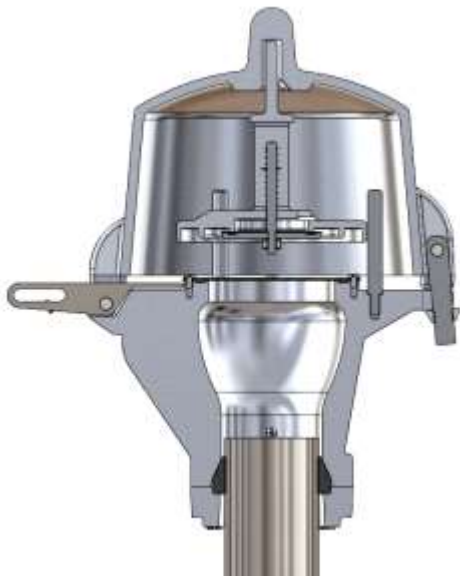
Model L10E End of Line Vent Valve

Model L22E Emergency Relief Vent Valve

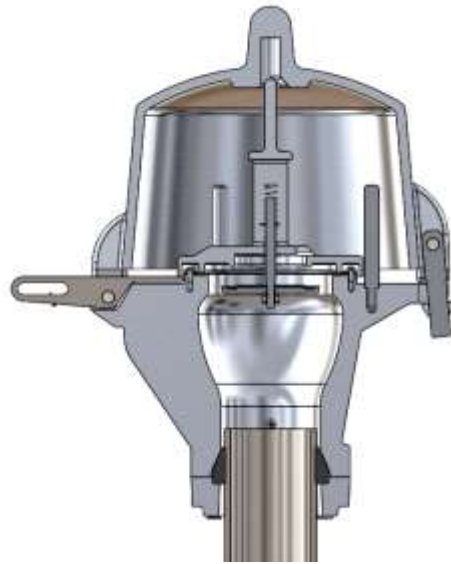
### PRESSURE RELIEF CONDITION:

As the pressure in the storage tank increases, the vacuum pallet is held shut along with the pressure pallet assembly. When the set pressure is reached, the pressure pallet lifts and relieves tank pressure to the atmosphere. See

Figure 2.



**Figure 2: Pressure Relief Condition**



**Figure 3: Vacuum Relief Condition**

#### VACUUM RELIEF CONDITION:

As a vacuum is drawn in the storage tank (for example, when fluid is being pumped out), the pressure pallet is held shut. When the vacuum setting is reached, the vacuum pallet opens and air is drawn into the tank from the atmosphere. See Figure 3.

#### **MAINTENANCE**

For maximum operating efficiency, the end of line vent valve must be inspected and maintained at regular intervals. Frequency of inspection should be based on the experience gained in each application. Inspection of wetted components is recommended at least once per year or any time an excessive over pressure or vacuum condition is encountered.

It is important to regularly inspect the gasket, diaphragms, and seating surfaces to ensure the valve can open freely.

**WARNING: Before disassembling the valve, carefully read and understand the Safety Warnings listed in this manual. DO NOT attempt to remove the end of line vent valve from the tank or process vessel without first bleeding all pressure from the system.**

Maintenance is accomplished by loosening the wing nut and opening the weather-hood for inspection and cleaning or replacement.

1. Carefully remove the bird screen by lifting vertically. Do not touch the ends of the bird screen or overlapped area.
2. Remove the pressure pallet, or the pressure/vacuum assembly by lifting vertically.

#### **For the Pressure/Vacuum Assembly**

3. Remove the retaining clip and set the vacuum spring aside.
4. Remove the vacuum pallet sub-assembly from the pressure pallet subassembly.
5. Protect the pressure pallet seating surface so that it does not get nicked, gouged or scratched on the sealing surface, as this will cause leaks.
6. Remove the nylon lock hex nut from the vacuum stem and separate the vacuum pallet, vacuum diaphragm, retainer plate, and the pressure sealing washer from the vacuum stem.
7. Carefully inspect all metal sealing surfaces on the body, pressure pallet, and vacuum pallet for corrosion, damage or product build up. Also inspect the weather-hood locking system for product build up. Inspect the springs for any damage, corrosion or product build-up. It is recommended to replace all springs, and soft goods (gasket, diaphragms, and pressure sealing washer) at every maintenance interval and/or repair to the vent valve.

**NOTE: If the metal seating surfaces are damaged, they must be lapped using a flat ground metal disc and fine grit emery cloth attached to the disc, achieving a flatness better than 0.002". Wipe the seating surface clean before proceeding.**

8. It is recommended that the retaining ring and vacuum stem be replaced at every maintenance interval and/or repair to the vent valve to prevent wearing of the vacuum stem in the groove area, and to maintain a tight fit with the retaining ring.
9. After inspection of all the components for damage, and replacement as needed; clean all the components and sealing surfaces.
10. Assemble in reverse order, apply 4-10 complete wraps of fluoropolymer thread sealing tape to the vacuum stem, and apply 120 In-Lb of torque to the nylon lock nut on the vacuum stem.

**For the Pressure Only Assembly**

11. Carefully inspect all metal sealing surfaces on the body, and pressure pallet for corrosion, damage or product build up. Also inspect the weather-hood locking system for product build up. It is recommended that all soft goods (gasket, and diaphragm) be replaced at every maintenance interval and/or repair to the vent valve.

**NOTE: If the metal seating surfaces are damaged, they must be lapped using a flat ground metal disc and fine grit emery cloth attached to the disc, achieving a flatness better than 0.002". Wipe the seating surface clean before proceeding.**

12. Verify that the pallets are back in their proper location. Make sure that the pallet assembly sits flat on the seat and that it is not cocked when the weather-hood is tightened.

## MODEL NUMBER IDENTIFICATION

L	1	0	E	-	P	V	-	0	2	-	1	V	-	0	1	0	-	4	-	0							
L10E																											
End of Line Vent Valve																											
Operating Parameter 1:																											
P=Pressure																											
Operating Parameter 2:																											
O = Only (No Vacuum)																											
V = Vacuum																											
00 = Connection Nominal Size (2" Thru 4")																											
1 = Aluminum Castings																											
Soft Good Material:																											
B = Buna-N																											
V = Blue FKM																											
00 = Pressure Setting (osig)																											
Weight Material (1 osig increments)																											
3 = Carbon Steel																											
S = Stainless Steel																											
0 = No Weight (1 osig only)																											
Vacuum Setting:																											
4 = 0.4 osig																											
0 = No Vacuum Setting																											
Options Codes																											

## REPLACEMENT PARTS

Pressure Weights	
WT10E0251010	Weight 10E 2" 1 osig SS
WT10E0251020	Weight 10E 2" 2 osig SS
WT10E02M8010	Weight 10E 2" 1 osig CS
WT10E02M8020	Weight 10E 2" 2 osig CS
WT10E0351010	Weight 10E 3" 1 osig SS
WT10E0351020	Weight 10E 3" 2 osig SS
WT10E03M8010	Weight 10E 3" 1 osig CS
WT10E03M8020	Weight 10E 3" 2 osig CS
WT10E0451010	Weight 10E 4" 1 osig SS
WT10E0451020	Weight 10E 3" 2 osig SS
Pressure/Vacuum Pallet Assemblies	
MGPAL10E0235B	P/V Pallet Assy 10E 2" Alum/Buna-N
MGPAL10E02CJB	P/V Pallet Assy 10E 2" Alum/FKM
MGPAL10E0335B	P/V Pallet Assy 10E 3" Alum/Buna-N
MGPAL10E03CJB	P/V Pallet Assy 10E 3" Alum/FKM
MGPAL10E0435B	P/V Pallet Assy 10E 4" Alum/Buna-N
MGPAL10E04CJB	P/V Pallet Assy 10E 4" Alum/FKM
Pressure Pallets	
PLM10E0201BH00	Pressure Pallet 10E 2" Alum
PLM10E0301BH00	Pressure Pallet 10E 3" Alum
PLM10E0401BH00	Pressure Pallet 10E 4" Alum
Pressure Diaphragms	
DPH10E023530B	Diaphragm 10E 2" 30m Buna-N
DPH10E02CJ30B	Diaphragm 10E 2" 30m FKM
DPH10E033530B	Diaphragm 10E 3" 30m Buna-N
DPH10E03CJ30B	Diaphragm 10E 3" 30m FKM
DPH10E043530B	Diaphragm 10E 4" 30m Buna-N
DPH10E04CJ30B	Diaphragm 10E 4" 30m FKM



### **PRODUCT LIMITED WARRANTY**

A. Seller warrants that products which are manufactured by Seller, are manufactured in accordance with published specifications and free from defects in materials and/or workmanship for a period of (12) twelve months. Seller, at its option, will repair or replace any products returned intact to the factory, transportation charges prepaid, which Seller, upon inspection, shall determine to be defective in material and/or workmanship. The foregoing shall constitute the sole remedy for any breach of Seller's warranty.

B. THERE ARE NO UNDERSTANDINGS, AGREEMENTS, REPRESENTATIONS, OR WARRANTIES, EXPRESS OR IMPLIED, (INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING PRODUCTS) UNLESS SPECIFIED IN THE SALES CONTRACT. THIS CONTRACT STATES THE ENTIRE OBLIGATION OF SELLER.

Seller makes no warranties, either express or implied, except as provided herein, including without limitation thereof, warranties as to marketability, merchantability, for a particular purpose or use, or against infringement of any patent of products. In no event shall Seller be liable for any direct, incidental or consequential damages of any nature, or losses or expenses resulting from any defective new product or the use of any such product, including any damages for loss of time, inconvenience, or loss of use of any such product.

C. The original Manufacturer shall be solely responsible for the design, development, supply, production, and performance of its products hereunder, and the protection of its trade name or names, if any. It assumes no responsibility, for products modified or changed in any way by its agent or customer. Any such modifications or changes to products sold by Seller hereunder shall make the product limited warranty null and void.

D. The Manufacturer shall be under no obligation to manufacture, sell, or supply, or to continue to manufacture, sell or supply any of the Products.

LAMOT® Valve & Arrestor has representatives throughout North America.  
Contact us or visit us on the web for the authorized representative in your area.



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