

# Powered Dandy Owner's Manual

## PLM 250™ Elevating Powered Helper



Model# \_\_\_\_\_

Serial# \_\_\_\_\_

**For equipment manufactured after May 1999.**

**SOUTHWORTH**

Southworth Products Corp  
P.O. Box 1380/Portland, Maine 04104-1380  
Phone 800-743-1000 • FAX 207-797-4734

[www.southworthproducts.com](http://www.southworthproducts.com)  
[service@southworthproducts.com](mailto:service@southworthproducts.com)

# INTRODUCTION

Southworth's PLM 250 has been designed to take the effort out of lifting and carrying. The PLM 250 conforms to ergonomic guidelines in order to make them as comfortable and safe as possible. The battery that powers the platform is sealed for safety and can be recharged many times.

This manual contains information to acquaint you with the safe, proper use and upkeep of the PLM 250. You should ensure that this manual is available to personnel working with the PLM 250.

In the interest of safety please read the entire manual carefully and be familiar with its contents before you use or service the PLM 250. If you have any questions about any instructions in this manual, please contact your dealer or Southworth Products Corporation.

The PLM 250 is fitted with an identification plate located on the central cross member at the base of the actuator. The identification plate is stamped with the model number, capacity and serial number; this information should be provided when seeking spare part inquiries or technical support.

# TABLE OF CONTENTS

INTRODUCTION .....	2
RESPONSIBILITY OF OWNERS AND USERS .....	4
SAFETY ALERT SYMBOLS AND SIGNAL WORDS .....	5
UNPACKING .....	6
Transit Damage .....	6
Hazardous Environments.....	6
High Cycle Applications .....	6
SPECIFICATIONS.....	6
PARTS BREAK DOWN .....	6
OPERATION 6	
Platform Control.....	6
Caster Configuration.....	6
Brake.....	6
Direction Lock .....	6
Battery.....	6
BATTERY LIFE.....	7
CONTROL BOX .....	7
ACTUATOR 7	
LOAD CAPACITY .....	8
MAINTENANCE .....	8
Monthly .....	9
Annually .....	9
TROUBLE SHOOTING .....	9
ORDERING REPLACEMENT PARTS.....	10
RETURN MATERIALS AUTHORIZATION (RMA).....	11
WARRANTY 12	

## LIST OF FIGURES

Figure 1	PLM 250.....	7
Figure 2	Pinch Points .....	7
Figure 3	Battery Pack & Control Box .....	8
Figure 4	Labels and Precautionary Markings.....	9

# Responsibility of Owners and Users

## **Inspection and Maintenance**

The device shall be inspected and maintained in proper working order in accordance with Southworth's owner's manual.

## **Removal from Service**

Any device not in safe operating condition such as, but not limited to, excessive leakage, missing rollers, pins, or fasteners, any bent or cracked structural members, cut or frayed electric, hydraulic, or pneumatic lines, damaged or malfunctioning controls or safety devices, etc. shall be removed from service until it is repaired to the original manufacturer's standards.

## **Deflection**

It is the responsibility of the user/purchaser to advise the manufacturer where deflection may be critical to the application.

## **Repairs**

All repairs shall be made by qualified personnel in conformance with Southworth's instructions.

## **Operators**

Only trained personnel and authorized personnel shall be permitted to operate the equipment.

## **Before Operation**

Before using the device, the operator shall have:

- Read and/or had explained, and understood, the manufacturer's operating instructions and safety rules.
- Inspected the device for proper operation and condition. Any suspect item shall be carefully examined and a determination made by a qualified person as to whether it constitutes a hazard. All items not in conformance with Southworth's specification shall be corrected before further use of the equipment.

## **During Operation**

The device shall only be used in accordance with this owner's manual.

- Do not overload.
- Ensure that all safety devices are operational and in place.

## **Modifications or Alterations**

Modifications or alterations to any Southworth industrial positioning equipment shall be made only with written permission from Southworth.

# SAFETY ALERT SYMBOLS AND SIGNAL WORDS

The safety of all persons operating, maintaining, repairing, or in the vicinity of this equipment is of paramount concern. This is a powerful machine with moving parts, and is capable of causing personal injury if proper precautions are not taken. Therefore, throughout this manual, certain hazards have been identified which may occur in the use of the machine, and there are appropriate instructions or precautions which should be taken to avoid these hazards. In some cases, there are consequences which may occur if instructions or precautions are not followed. Below are the symbols and signal words along with their definitions referenced from ANSI Z535.4 - Product Safety Signs and Labels.

## Safety Alert Symbols

These are the safety alert symbols.. They are used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



For use with **DANGER** signal word  
(Red Background)



For use with **WARNING** signal word  
(Orange Background)



For use with **CAUTION** signal word  
(Yellow Background)

## Signal Words

The meaning of different signal words as defined by ANSI Standard Z535.4 indicates the relative seriousness of the hazardous situation.



(Red Background)

**DANGER** indicates a hazardous situation which, if not avoided, will result in death or serious injury.



(Orange Background)

**WARNING** indicates a hazardous situation which, if not avoided, could result in death or serious injury.



(Yellow Background)

**CAUTION**, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



(Blue Background)

**NOTICE** is used to address practices not related to personal injury.



(Green Background)

**SAFETY INSTRUCTIONS** (or equivalent) signs indicate safety-related instructions or procedures.

# UNPACKING AND SET-UP OF THE PLM 250

- 1) Cut the banding straps and remove the PLM 250 from the box. (Make sure all of the parts are included before the box is discarded. Figure 1.)
- 2) Attach the handle to the PLM 250 by sliding the two threaded ends of the handle into the pockets that are welded to the base frame. Using the lock washers and the nuts, secure firmly.
- 3) Locate the battery control box assembly. Attach the assembly to the handle using the 4 self tapping screws, making sure the control box is to the right and the battery box is to the left. This allows the actuator to plug into the control box.
- 4) Make all the correct electrical connections (figure 3).

## TRANSIT DAMAGE

Inspect the PLM 250 for signs of damage in transit, paying particular attention to the electrical cabling and connections. If there is evidence of damage, contact your Southworth dealer before using the PLM 250.

## HAZARDOUS ENVIRONMENTS

The PLM 250's electrical equipment is not suitable for use in flammable or explosive environments and must never be used when such hazards exist.

## SPECIFICATIONS

Capacity	500 lbs
Platform Size	19-5/8" x 31-1/2"
Lowered Height	14-1/4"
Raised Height	32-1/2"
Vertical Travel	19"
Weight	20 lbs
Dimensions (L x H x W)	38" x 37" x 19-5/8"
Casters	5"
Rise Time	36 Seconds

## HIGH CYCLE APPLICATIONS

The PLM 250 is designed for intermittent use. For high cycle operations, the following should be observed:

- 1) The PLM 250 is designed to achieve a minimum life of approximately 10,000 cycles. For intermittent use, this equates to many years of service.
- 2) The PLM 250 linear actuator should not exceed six (6) full cycles per hour. The recommended duty cycle for the actuator motor is 10%. This means that the motor should not be operated for more than 6 minutes of every hour.

## OPERATING THE PLM 250

### PLATFORM CONTROL

The position of the platform is controlled with a push button switch located on the hand control. The PLM 250 can be raised by pressing the UP button on the switch or lowered by pressing the DOWN button on the switch.



As the PLM 250 platform moves up and down, "pinch points" are created where the scissor legs cross, where the legs meet the base and platform and in the path on which the rollers travel. When operating the PLM 250, be careful to ensure that nobody

becomes caught in the moving parts. (Figure 2)

## CASTER CONFIGURATION

The PLM 250 is supplied with four swiveling casters. One of the rear casters is fitted with a brake and the other rear caster has a direction lock.

## BRAKE

The brake prevents the caster from both swiveling and rolling. Press the lever located on the top of the caster to engage the brake.



The brake is an important safety device. Please ensure it is engaged when the PLM 250 is unattended. Attempt to find level ground whenever possible.

## DIRECTION LOCK

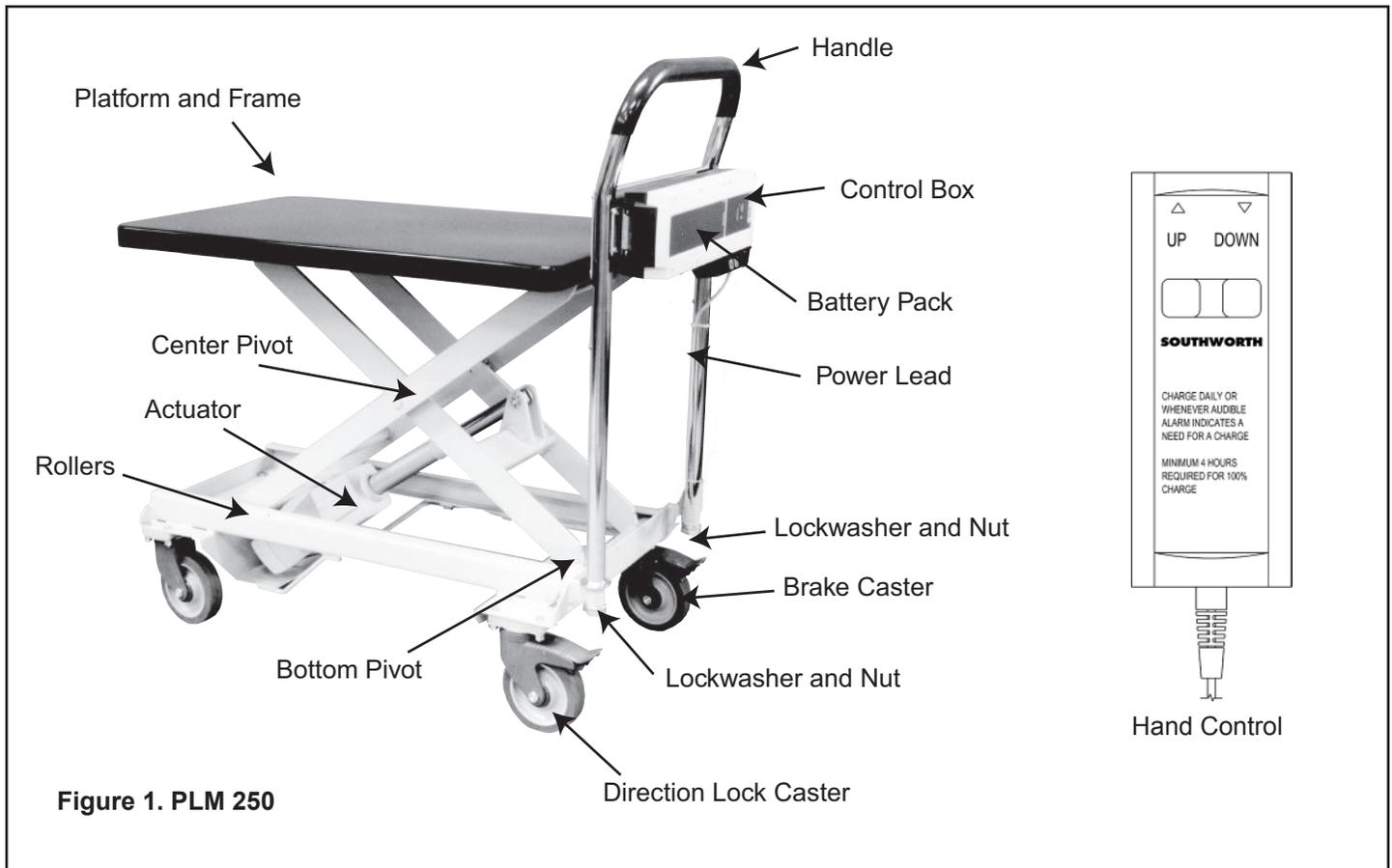
The direction lock prevents the caster from swiveling but allows the caster to roll as usual. Use it when pushing the PLM 250 in a straight line to provide greater stability.

## BATTERY

The PLM 250 is supplied with a 24 volt battery pack which snaps easily on to the control box. This allows for a quick exchange of battery packs if needed. The control box is mounted to the handle of the PLM 250 for easy access. The control box

## PARTS BREAK DOWN

PARTS	Part #
Platform & Frame	3060649
Directional Caster	5905969
Brake Caster	5905970
Front Caster	5905968
Battery Pack	5905918
Battery Mounting Bracket	5905920
Control Box	5905917
Hand Control	5905958
Actuator	5905916
Decal Kit	3055607



**Figure 1. PLM 250**

includes a quick disconnect hand control, and an internal charger.

The battery is a VRLA sealed lead acid battery. It is exempted from DOT Hazardous Material. VRLA batteries can be shipped by traditional carriers such as UPS or FEDEX.

**WARNING**

The battery contains lead acid and should not be punctured or damaged. Seek urgent medical advice if acid contacts skin or clothing. Ensure that the battery is disposed of safely and according to local regulations.

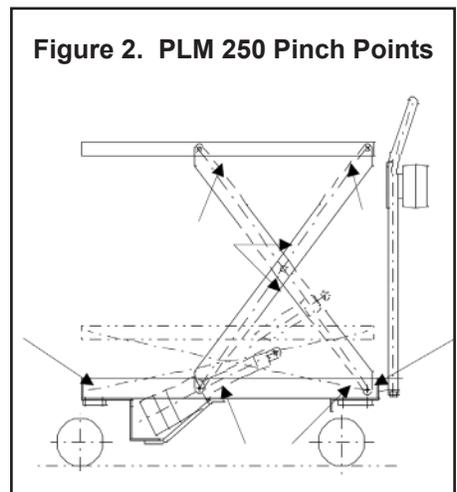
**BATTERY LIFE**

Because of the batteries self-discharge, over time you can not expect the battery to be fully charged. When you receive your PLM 250 it is recommended that you charge the battery immediately. The initial charge needs to be for a minimum of 24 to 48 hours. After this first initial charging, there is a maximum charging time of 6 hours to reach the batteries full charge capacity.

The life of the battery is determined on the

amount of usage between charging. This is best explained as follows:

- 100% discharging depth: If the battery is totally discharged, there is approximately 180 charging cycles available.
- 50% discharging depth: If the battery is 50% discharged, there is approximately 400 charging cycles available.
- 30% discharging depth: If the battery is 30% discharged, there is approximately 1200 charging cycles available.



**Figure 2. PLM 250 Pinch Points**

Therefore it is recommended to recharge the battery as frequently as possible. Doing this will ensure the longest battery life available.

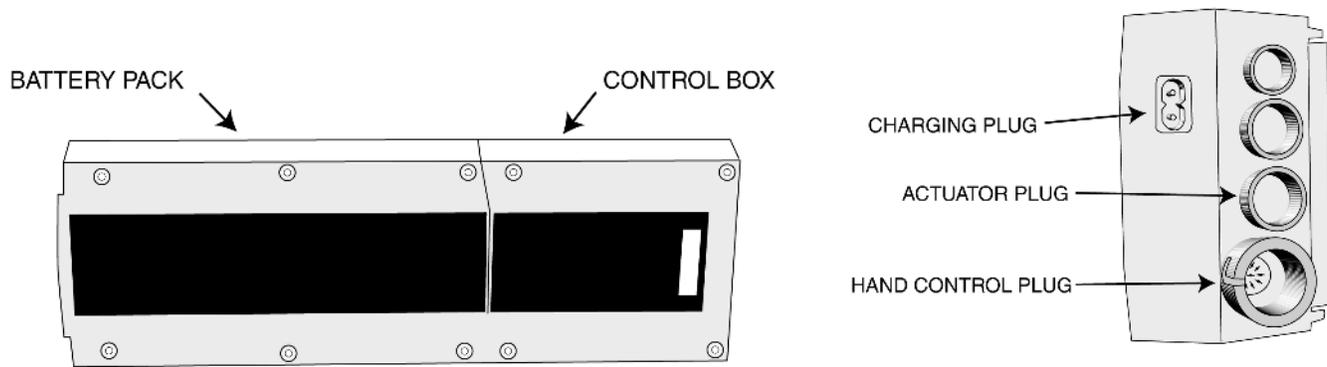
**CONTROL BOX**

Your control box is equipped with some special features. It has an internal charger with a 10 ft. charging cord, a soft start and stop function which eliminates jumping of the actuator and table. There is a unique acoustic alarm feature that tells you when the battery is at 50% capacity. The hand control, which is clearly marked with UP and DOWN buttons, comes with a 24" coil cord.

**ACTUATOR**

The PLM 250's actuator is one of its best features. You can hardly tell it's running because of its low noise level that's below 45db. It has built-in end-stop switches for protection against dead heading or damaging the actuator. The operating mechanism is a simple screw jack that's driven by an internal DC motor.

**Figure 3. Battery Pack and Control Box**



## LOAD CAPACITY

The load capacity is stamped into the identification plate located on the central cross-member, at the base of the actuator and capacity stickers on either side of the table. (figure 4) The PLM 250 contains an overload protection device that may cut power to the unit if overloaded. If this occurs, make sure that the PLM 250 is not loaded beyond its capacity. The device will reset within a matter of seconds and power will be restored. The load capacity is based on the load applied centrally and uniformly to the platform.

### **CAUTION**

Do not overload the PLM 250, as this may damage the unit.

### **CAUTION**

Do not let loads significantly overhang the platform, as this could result in the platform being overloaded, and cause the PLM 250 to tip over.

## MAINTENANCE

The PLM 250 requires minimal maintenance. The PLM 250 is designed for a life of approximately 10,000 cycles after which a new actuator may be required.

Daily inspection: Make sure there are no foreign objects in the way of the rollers and the scissor legs. Make sure all wires are plugged into the control box.

## Quick Check Troubleshooting Chart

PROBLEM	POSSIBLE CAUSES	REMEDY
PLM 250 will not raise.	<ol style="list-style-type: none"> <li>1) Power is not supplied to the actuator.</li> <li>2) Batteries are discharged.</li> <li>3) An electrical fault may exist or the actuator may have burned out.</li> </ol>	<p>Check whether the power cable is plugged in.</p> <p>Recharge the batteries.</p> <p>Contact Southworth Customer Service Dept. 1-800-743-1000.</p>
PLM 250 is slow to raise or will not raise to the top.	<ol style="list-style-type: none"> <li>1) Batteries are discharged.</li> <li>2) A fault may exist with the motor/switch.</li> </ol>	<p>Recharge the batteries.</p> <p>Contact Southworth Service Dept. 1-800-743-1000.</p>
PLM 250 will not lower.	<ol style="list-style-type: none"> <li>1) Power is not supplied to the actuator.</li> <li>2) Batteries are discharged.</li> </ol>	<p>Check whether the power cable is plugged in.</p> <p>Recharge the batteries.</p>

## MONTHLY MAINTENANCE

- 1) Check all welds, making sure they are intact, no cracks or broken spots.
- 2) Turn the PLM 250 on its side and check that the caster bolts are tight. If the caster with the direction lock requires tightening, engage the direction lock and ensure that the castor is pointing straight ahead before tightening.
- 3) Check that the cotter pins on the actuator pivot bolts are in place.
- 4) Inspect the cable and plug for signs of damage.
- 5) Inspect the battery control box assembly for obvious signs of abuse.
- 6) Use a clean rag to wipe the paths along which the rollers travel.
- 7) Lubricate (WD-40) pivots and roller pins.

## ANNUALLY OR 3000 CYCLES

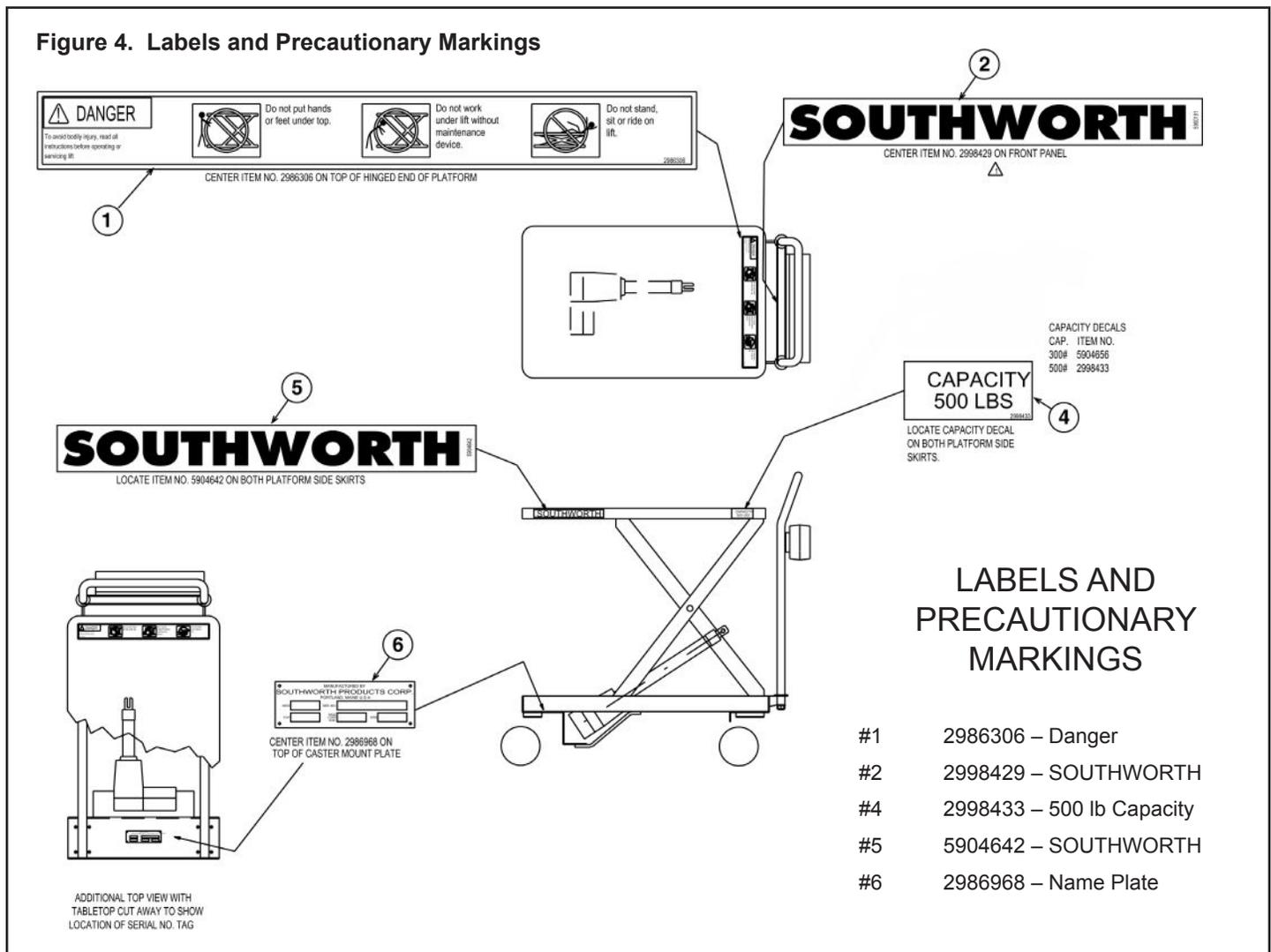
- 1) Dismantle.
- 2) Lubricate (WD-40) pivots and roller pins.
- 3) Clean.
- 4) Reassemble.

## TROUBLE SHOOTING

The PLM 250 should provide years of trouble-free service. However, in the event you experience difficulties with the PLM 250, the troubleshooting chart on page 8 may help you identify the problem.

You may, of course, contact Southworth's Customer Service Dept. at 1-800-743-1000.

**Figure 4. Labels and Precautionary Markings**



# Ordering Replacement Parts

Southworth has carefully chosen the components in your unit to be the best available for the purpose. Replacement parts should be identical to the original equipment. Southworth will not be responsible for equipment failures resulting from the use of incorrect replacement parts or from unauthorized modifications to the machine.

Southworth will gladly supply you with replacement parts for your Southworth lift. With your order, please include the model number and the serial number of the unit. You will find these numbers on the name plate.

To order replacement parts, please call the Parts Department at (207) 878-0700. Parts are shipped subject to the following terms:

- FOB factory.
- Returns only with the approval of our parts department.
- Payment net 30 days (except parts covered by warranty).
- Freight collect (except parts covered by warranty).
- The warranty for repair parts is 30 days from date of shipment.

Parts replaced under warranty are on a "charge-credit" basis. We will invoice you when we ship the replacement part, then credit you when you return the assumed substandard part, and we verify that it is covered by our warranty. Labor is not covered under warranty for Parts orders.

Parts Department  
**Southworth Products Corp**  
P.O. Box 1380  
Portland, ME 04104-1380  
PH: 800-743-1000 or 207-878-0700  
FAX: 207-797-4734  
[repairparts@SouthworthProducts.com](mailto:repairparts@SouthworthProducts.com)

# RETURN MATERIALS AUTHORIZATION (RMA) PROCEDURES

The Southworth Return Authorization (RMA) Procedure is provided as a courtesy to our customers in the event a product or a component may need to be returned.

If a customer wishes to return a Southworth product, the first step in the process is to request an RMA number from the Customer Service Department. This request must be made on or before the thirtieth (30th) calendar day following the date of Southworth's invoice for the merchandise being returned.

The RMA number must appear on the outside of any packaging material for a return to be accepted and processed at Southworth manufacturing facility. Customers shipping returns back to Southworth, from the continental US, Canada or Mexico have thirty (30) days from the effective date of the RMA to have the merchandise arrive freight prepaid at Southworth. If the RMA number is missing or expired (beyond 30 days) it may be refused at Southworth. If any RMA is expired, contact the Customer Service Department before returning to Southworth.

All RMA's are subject to the appropriate restocking fees. All credits issued are less restocking fees as applicable, plus any assessed outbound/inbound in-transit damages.

Return addresses: please refer to your RMA for the specific address to which your product should be returned. Southworth has multiple facilities and returning goods to other than the designated location will result in goods being refused.

Please contact the Customer Service Department at anytime regarding questions to this procedure.

**Southworth Products Corp**  
P.O. Box 1380  
Portland, ME 04104-1380  
PH: 800-743-1000 or 207-878-0700  
FAX: 207-797-4734  
[www.SouthworthProducts.com](http://www.SouthworthProducts.com)

# 1 YEAR WARRANTY

Southworth Products Corp warrants this product to be free from defects in material or workmanship for a period of 1 year of single shift usage from date of shipment, providing claim is made in writing within that time period. This warranty shall not cover modified designs for special applications, failure or defective operation caused by misuse, misapplication, negligence or accident, exceeding recommended capacities, failure to perform required maintenance or altering or repairing, unless alteration is authorized by Southworth Products Corp. Except as set forth herein, there are no other warranties, express or implied, including the warranties of merchantability and fitness for a particular purpose, all of which are hereby excluded.

Southworth Products Corp makes no warranty or representation with respect to the compliance of any product with state or local safety or product standard codes, and any failure to comply with such codes shall not be considered a defect of material or workmanship under this warranty. Southworth Products Corp shall not be liable for any direct or consequential damages arising out of such noncompliance.

Southworth Products Corp's obligation under this warranty is limited to the replacement or repair of defective components at its factory or another location at Southworth Products Corp's discretion. The Southworth Warranty is for product sold with in North America. For products shipped outside of North America the warranty will be for replacement of defective parts only. Labor is not included. This is buyer's sole remedy. Except as stated herein, Southworth Products Corp will not be liable for any loss, injury or damage to persons or property, nor for direct, indirect, or consequential damage of any kind, resulting from failure or defective operation of said product.

This warranty may be altered only in writing by Southworth Products Corp, Portland, Maine.

## **SOUTHWORTH**

**SOUTHWORTH PRODUCTS CORP**

P.O. Box 1380, Portland, ME 04104-1380

Telephone: (800) 743-1000 • (207) 878-0700

Fax: (207) 797-4734

[www.SouthworthProducts.com](http://www.SouthworthProducts.com)