

# **SOUTHWORTH**

Owner's Manual

## **Powered Dandy Lifts**

**PLM-100, PLM100W, PLM150, PLM-150W**

**(See separate manual for PLM-250)**



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

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

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# INTRODUCTION

Southworth's Powered Dandy Lift has been designed to take the effort out of lifting and carrying. The Powered Dandy Lift 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 Powered Dandy Lift. You should ensure that this manual is available to personnel working with the Powered Dandy Lift.

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

The Powered Dandy Lift 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.

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# SAFETY

The safety of all persons operating, maintaining, repairing, or in the vicinity of the Powered Dandy Lift Series is of paramount concern to Southworth. Therefore, throughout this manual, Southworth has identified certain hazards which may occur in the use of the Powered Dandy Lift Series and provided appropriate instructions or precautions which should be taken to avoid these hazards. In some cases, Southworth has also pointed out the consequences that may occur if these instructions or precautions are not followed. Southworth uses the following system of identifying the severity of the hazards associated with its products:



Immediate hazard which will result in severe personal injury or death.



Hazardous or unsafe practice which could result in severe personal injury or death.



Hazardous or unsafe practice which could result in minor personal injury or property damage.

Please read and follow the instructions in this manual, including all safety instructions and precautions, carefully and completely.



While performing maintenance do not work on a raised lift. Lay the lift on its side when working on the Powered Dandy Lifts.

# 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 POWERED DANDY LIFTS

- 1) Cut the banding straps and remove the Powered Dandy Lift Series from the box. (Make sure all of the parts are included before the box is discarded. Figure 1.)
- 2) Attach the handle to the Powered Dandy Lift Series 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) After the handle is attached to the frame the two electrical connections will need to be attached under the lift.

## TRANSIT DAMAGE

Inspect the Powered Dandy Lift Series for signs of damage in transit, paying

## SPECIFICATIONS

Model	PLM -100	PLM-100W	PLM-150	PLM-150W
Capacity	220 lbs	220 lbs	330 lbs	330 lbs
Table Size	20" x 31.5"	24" x 36"	20" x 31.5"	24" x 36"
Raised Height	51"	51"	33.25"	33.25"
Low Height	13"	13"	14.75"	14.75"
Vertical Travel	38"	38"	18.5"	18.5"
Handle Height	37.5"	37.5"	37.5"	37.5"
Overall L x W	20" x 40"	24" x 42"	20" x 40"	24" x 42"
Casters	(2) Rigid 5"	(2) Rigid 5"	(2) Rigid 5"	(2) Rigid 5"
Casters (handle end)	(2) Swivel 5"	(2) Swivel 5"	(2) Swivel 5"	(2) Swivel 5"
Floor Lock	Yes	Yes	Yes	Yes
Rise Time Empty	21 sec	21 sec	14 sec	14 sec
Rise Time Loaded	26 sec	26 sec	17 sec	17 sec
Lowering Time Empty	21 sec	21 sec	14 sec	14 sec
Lowering Time Loaded	20 sec	20 sec	13 sec	13 sec
Actuator	Linear	Linear	Linear	Linear
Battery	24 Volt DC	24 Volt DC	24 Volt DC	24 Volt DC
Charger	115/1/60	115/1/60	115/1/60	115/1/60
Weight	170 lbs	175 lbs	140 lbs	145 lbs

particular attention to the electrical cabling. If there is evidence of damage, contact your Southworth dealer before using the Powered Dandy Lift Series .

## HAZARDOUS ENVIRONMENTS

The Powered Dandy Lift Series' electrical equipment is not suitable for use in flammable or explosive environments and must never be used when such hazards exist.

## HIGH CYCLE APPLICATIONS

The Powered Dandy Lift Series is designed for intermittent use. For high cycle operations, the following should be observed:

- 1) The Powered Dandy Lift Series is designed to achieve a minimum life of approximately 10,000 cycles. For intermittent use, this equates to many years of service.
- 2) The Powered Dandy Lift Series linear actuator should not exceed six 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 POWERED DANDY LIFT SERIES

### PLATFORM CONTROL

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

### **WARNING**

As the Powered Dandy Lift Series 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 Powered Dandy Lift Series, be careful to ensure that nobody becomes caught in the moving parts.

### 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.

### **CAUTION**

The brake is an important safety device. Please ensure it is engaged when the Powered Dandy Lift Series is unattended. Attempt to find level ground whenever possible.

## CASTER CONFIGURATION

The Powered Dandy Lift Series 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.

## DIRECTION LOCK

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

## BATTERY

The Powered Dandy Lift Series is supplied with a 24 volt battery pack, two 12 volt batteries in series.

### NOTICE

These units ship with batteries disconnected in the battery box. Please connect as shown in the diagram on the battery box before attempting to charge unit.

### 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.

### CAUTION

Because the batteries self-discharge over time you can

not expect the battery to be fully charged. When you receive your Powered Dandy Lift Series it is recommended that you charge the battery immediately. See Figure 5 on page 9 for charging instructions.

### CAUTION

Do not overload the Powered Dandy Lift Series, 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 Lift to tip over.

Figure 1. Operating the Powered Dandy

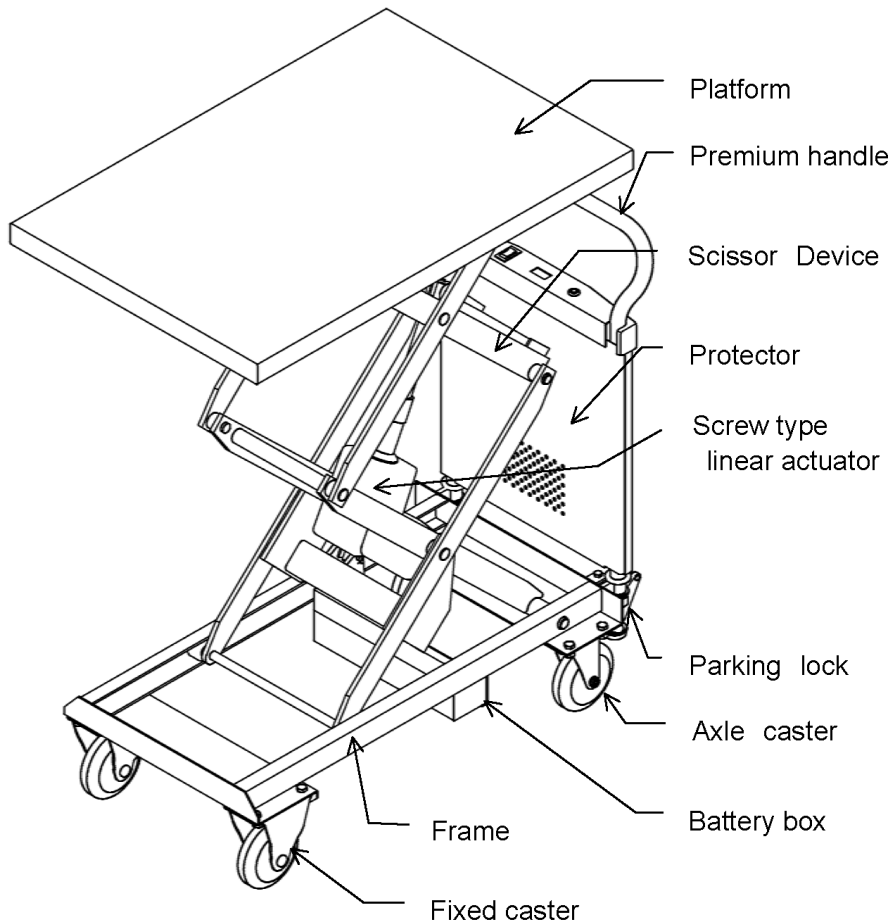
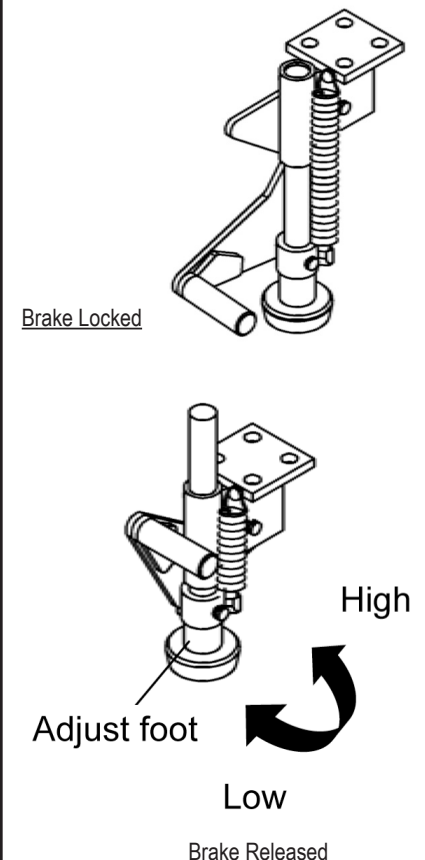


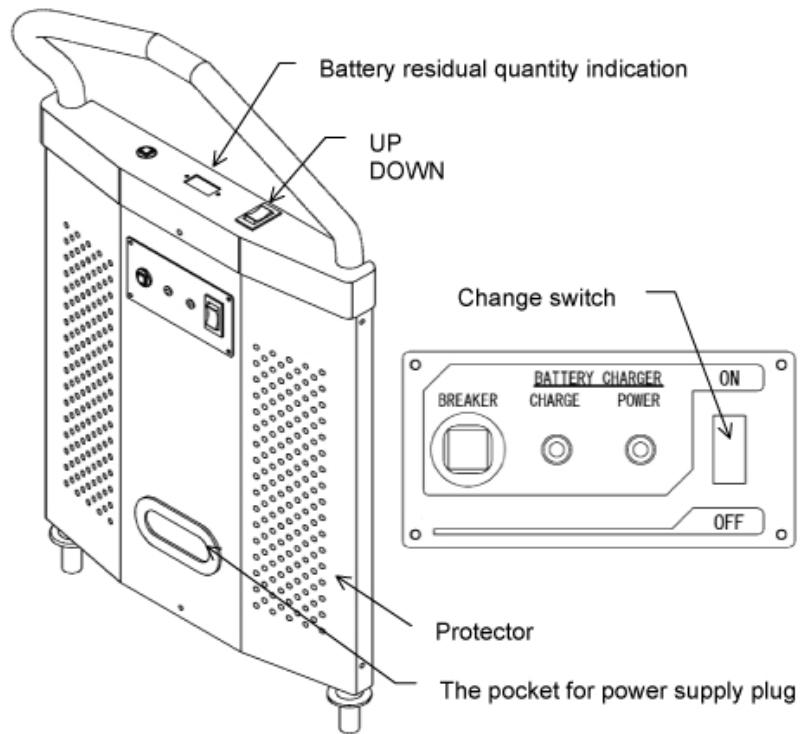
Figure 1. Component Identification

Figure 2. Brakes





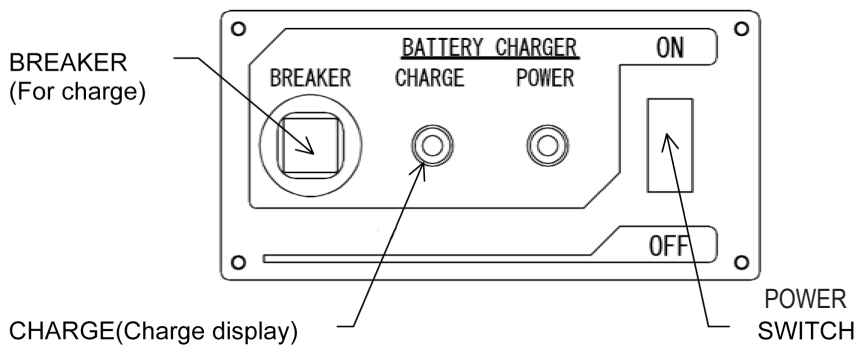
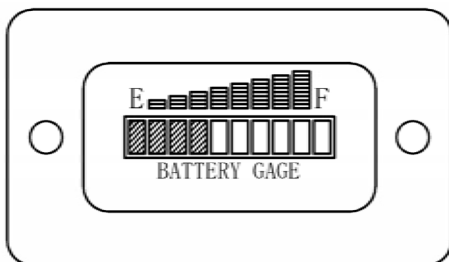
**Figure 3. Operating the Powered Dandy**



**Figure 4. Battery Charger Specifications**

Model	Application Battery		Input	Output	Current	Charge System	Outside Dimension	Weight (kgs)
	Voltage	Capacity						
PS2450HA	24V	7Ah	AC120V 60Hz	31VA	500mA	Smart Charger	4.2 x 5.3 x 3.1 (107 x 136 x 79)	0.6

**Figure 5. Battery Gauge**



## Charging the Battery

1. Plug the cord into a 120 volt AC wall outlet. Place the power switch ON.
2. Ensure that the power switch is ON.
3. The power light is always “Green” when the charger cord is plugged in and switch is in the “ON” position. The Charge light will always be “Red” and it will glow until the batteries are at full-charge. When at full-charge, the “Red” charge light will go out. A full charge will require about 15 hours.
4. Unplug the cord and place the switch to the OFF position. Place the charge cord back into its storage position.
5. The unit is ready for use, the Battery Gage will display the battery level.

## Battery Life

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.

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

## MAINTENANCE

The Powered Dandy Lift Series requires minimal maintenance. The Powered Dandy Lift Series 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.

## MONTHLY MAINTENANCE

- 1) Check all welds, making sure they are intact, no cracks or broken spots.
- 2) Turn the Powered Dandy Lift Series 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

caster 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

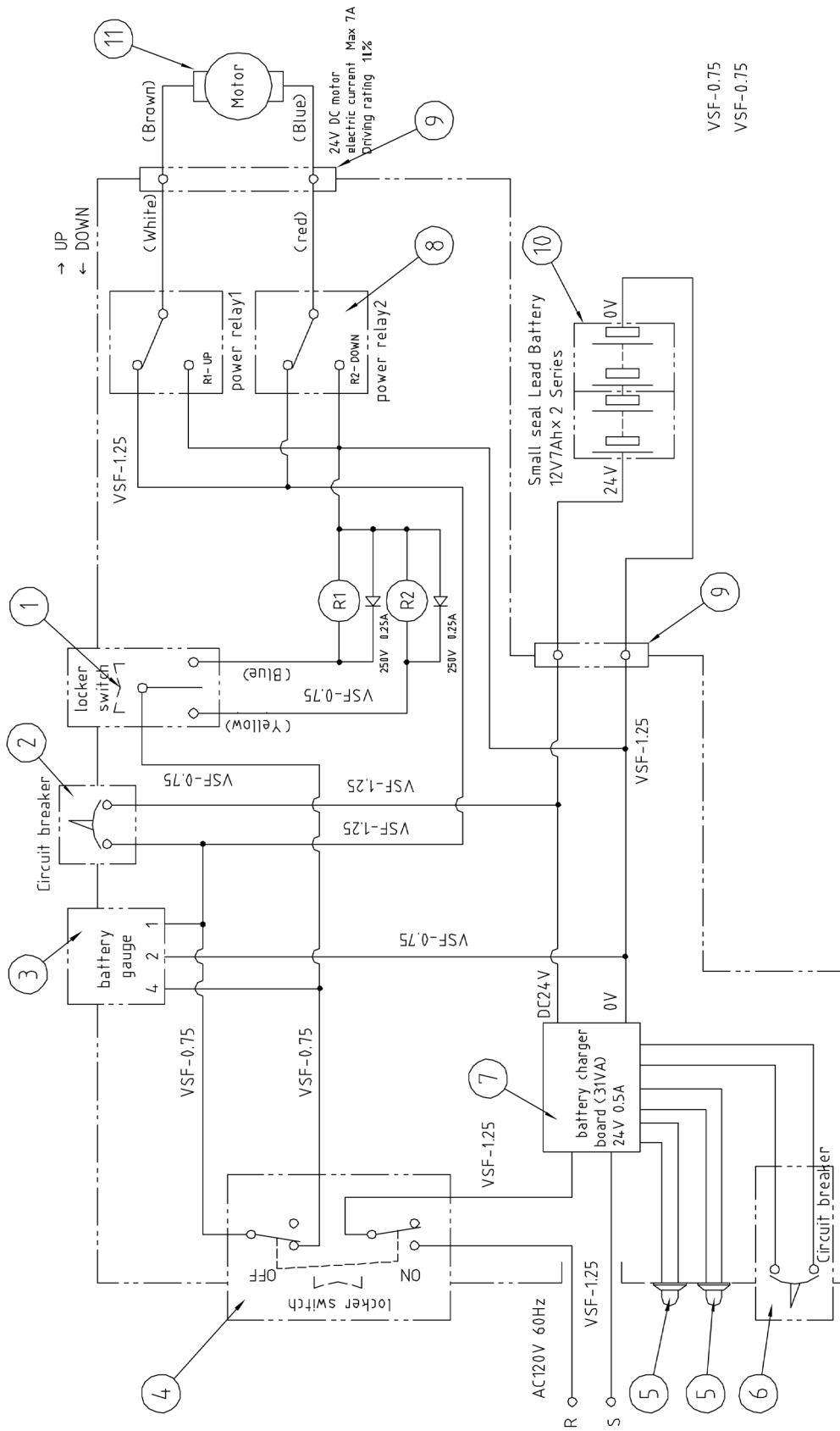
The Powered Dandy Lift Series should provide years of trouble-free service. However, in the event you experience difficulties with the Powered Dandy Lift Series, the chart below may help you identify the problem.

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

## Quick Reference Trouble Shooting Chart

PROBLEM	POSSIBLE CAUSES	REMEDY
Lift 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>
Lift 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 Customer Service Dept. 1-800-743-1000.</p>
Lift 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>

Figure 6. Wiring Diagram PLM 100 & 150 Models



VSF-0.75  
VSF-0.75

LED (Green) | Turn on in charge power supply ON.  
 Power supply OFF time lights out.  
 LED (Red) | Turn on in power supply ON.  
 | Turn off the light at charge completion time.

## 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 can supply all replacement parts for your Southworth lift. We have identified key replacement parts for your 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 worn or damaged 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

Telephone: (207) 878-0700

FAX: (207) 797-4734

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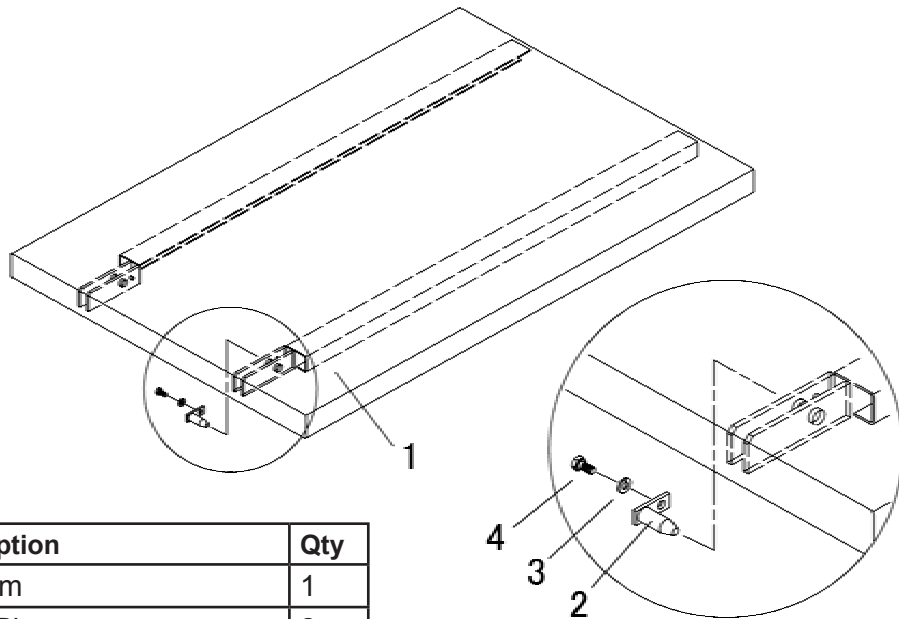
# Parts List

Platform

PLM 100/150

## 5. Parts list

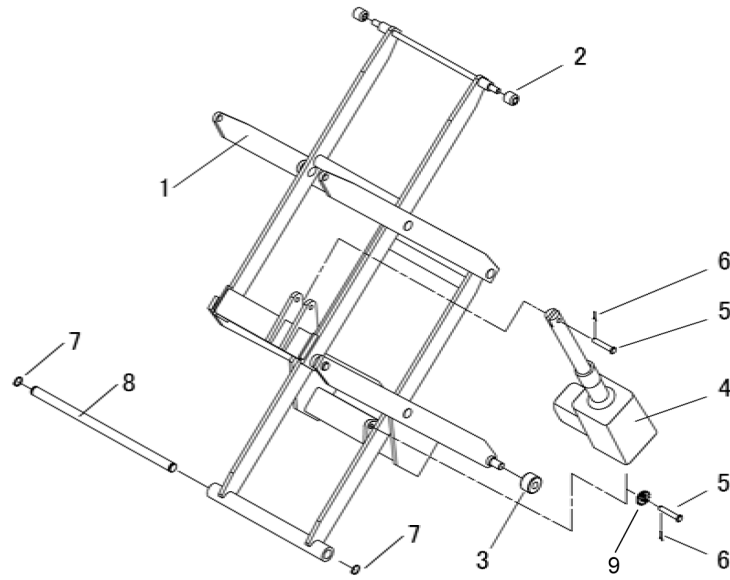
### 5-1 Platform



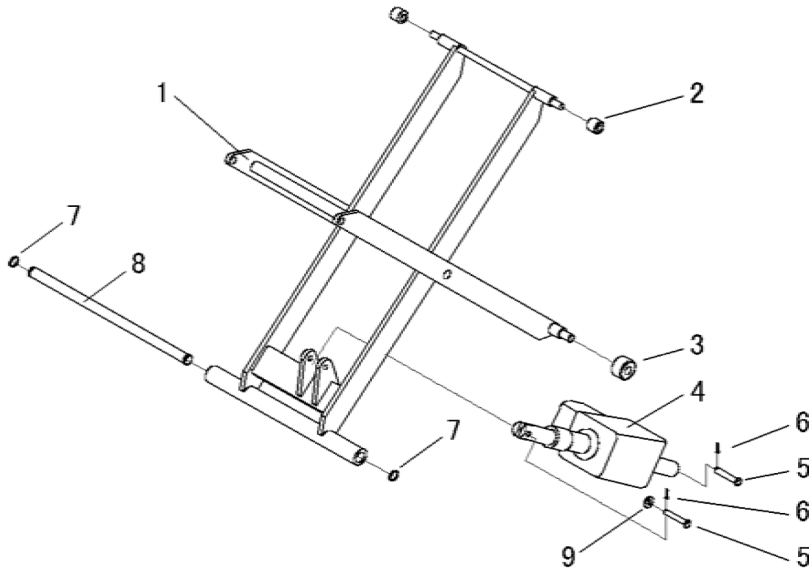
Item No	Description	Qty
1	Platform	1
2	Fixed Pin	2
3	Spring Washer	1
4	Hexagon head bolt M6x8	1

# Parts List

## 5-2 Scissor PLM-100W



## PLM-150

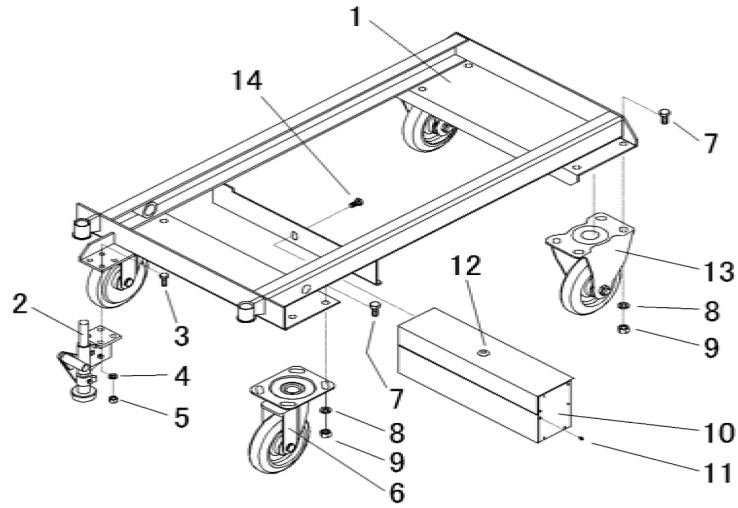


Item No	Description	Qty
1	Scissor	1
2	Roller (Upper) 25	2
3	Roller (Lower) 40	2
4	Screw type linear actuator	1
5	Pin	2

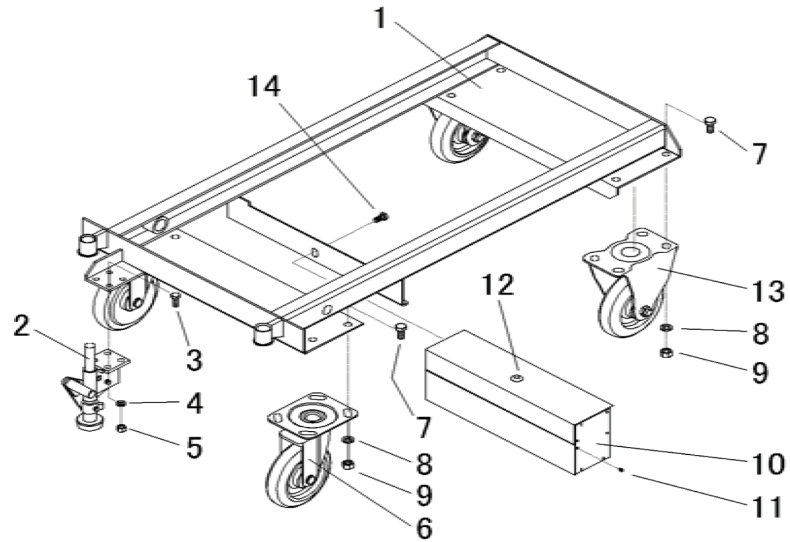
Item No	Description	Qty
6	Pin R type	2
7	Retaining ring C type	2
8	Rod	1
9	Washer	2

# Parts List

## Frame PLM-100W



## PLM-150

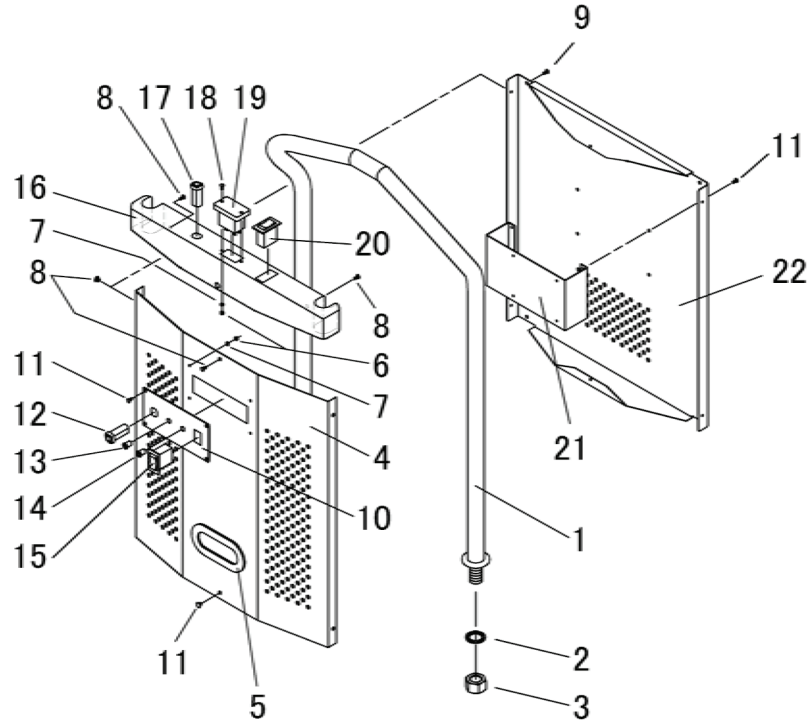


Item No	Description	Qty
1	Frame	1
2	Parking Lock	1
3	Hexagon head bolt M8x20	4
4	Spring washer size 8	4
5	Hexagon nut M8	4
6	Axle caster	2
7	Hexagon bolt M10x20	4
8	Spring washer size 10	16

Item No	Description	Qty
9	Hexagon nut M10	16
10	Battery box	1
11	Screw M3x5	17
12	Grommet	1
13	Fixed caster	2
14	Hexagon head bolt M8x16	1

# Parts List

## Handle Protector Switch relations



Item No	Description	Qty
1	Handle	1
2	Washer size 20	2
3	Hexagon nut M20	2
4	Handle Protector	1
5	Pocket	1
6	Hexagon nut M3	6
7	Spring washer size 3	6
8	Screw 4x6	8
9	Screw 4x13	4
10	Operation board for battery charger	1
11	Screw 3x8	4
12	Breaker switch for battery charger	1
13	Charge indication switch (red)	1

Item No	Description	Qty
14	Charge indication switch (green)	1
15	Switch for battery charger	1
16	Resin cover	1
17	Breaker switch for operation	1
18	Screw 3x15	2
19	Battery gauge	1
20	Switch for operation	1
21	Electrical transmission plate	1
22	Panel	1



# 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 PRODUCTS CORP**

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