

SOUTHWORTH

Owner's Manual PalletPal™ 360 Air Level Loader

For products shipped after January 2014



Serial # _____

Placed in Service _____

Southworth Products Corp

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This manual was current at the time of printing.
To obtain the latest, most updated version, please contact Southworth's Customer Service Department or go to our website: www.SouthworthProducts.com under Parts & Service you will find a complete list of current owner's manuals to print.

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INTRODUCTION

The PalletPal 360 Air Level Loader is a simple device that will automatically maintain a load at the ideal height for manual loading and unloading. If a palletized load is placed on the unit, the unit gradually rises as boxes or parts are removed. This automatically maintains the top of the load at the correct working height.

The unit may also be used for the reverse application. An empty pallet may be placed on the PalletPal 360 Air. The unit gradually lowers as boxes or parts are added. Again, this keeps the top of the load at the correct height. Complete pallets may be loaded or unloaded using a stacker or fork lift. See page 13.

This manual contains information to help you to learn about the safe and proper installation, use, and upkeep of your PalletPal 360 Air unit. Please be sure that this manual is available to anyone who uses or services the unit.

PalletPal 360 Air units may be used in a wide variety of industrial settings. The instructions in this manual are not necessarily all-inclusive, as Southworth cannot anticipate all conceivable or unique situations.

In the interest of safety, please read this whole manual carefully. Be familiar with the contents of this manual before you install or use the PalletPal 360 Air unit. If you are not sure of the proper procedure to be followed, please call Southworth Products Corp for more information.

Southworth's product warranty is shown on the rear cover of this manual. This instruction manual is not intended to be or to create any other warranty, express or implied, including any implied warranty of merchantability or fitness for a particular purpose, all of which are hereby expressly excluded. As set forth more specifically in the product warranty, Southworth's obligation under that warranty is limited to the repair or replacement of defective components, which shall be the buyer's sole remedy, and Southworth shall not be liable for any loss, injury, or damage to persons or property, nor for any direct, indirect, or consequential damage of any kind resulting from the PalletPal 360 Air unit.

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 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 lift.

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.

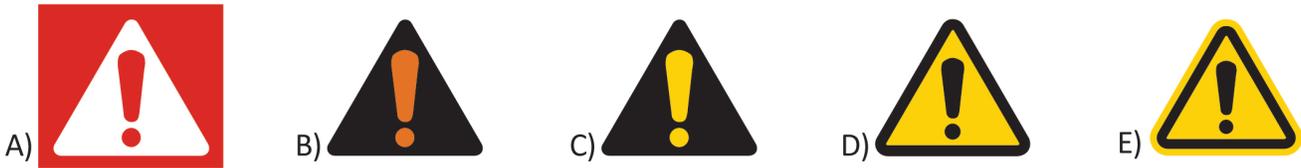
Modifications or Alterations

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.

4.11 Safety Alert Symbols: A symbol that indicates a hazard. It is composed of an equilateral triangle surrounding an exclamation mark. The safety alert symbol is only used on hazard alerting signs. It is not used on safety notice and safety instructions signs.



A): for use with DANGER signal word; (safety white triangle, safety red exclamation mark, safety red background)

B): for use with WARNING signal word; (safety black triangle, safety orange exclamation mark)

C): for use with CAUTION signal word; (safety black triangle, safety yellow exclamation mark)

D) and E): for use with DANGER, WARNING, or CAUTION signal word; (D: is a safety yellow triangle with a black border and safety black exclamation mark; E: is a safety yellow triangle with a safety black exclamation mark and a safety yellow border around a safety black band)

NOTE: D and E are provided to allow for consistency with certain ISO standards such as ISO 3864-1 and ISO 3864-2.

4.14 Signal Words: The words used in the signal word panel. The signal words for hazard alerting signs are “DANGER,” “WARNING,” and “CAUTION.” Safety notice signs use the signal word “NOTICE.” Safety instruction signs use signal words that are specific to the situation.



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



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



CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to physical injury.



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

NOTE: DANGER, WARNING or CAUTION should not be considered for property damage accidents unless personal injury risk appropriate to these levels is involved.

⚠ WARNING

Do not inflate the system to more than 30 PSI at the fully raised position with no load. If the actuation system pressure is higher than 65 PSI under any circumstance it may cause the failure of the air actuation system thus resulting in severe injury.

⚠ WARNING

Never try to service or troubleshoot the machine without carefully reading the maintenance section of this manual and reviewing "Safe Servicing of the Lift", figure 8 on page 14. Otherwise severe personal injury may result.



Figure 1 (beginning on page 10) shows all the labeling on this unit. Please be sure that all of the labels are in place, and are visible to the machine operators. Never paint over the labels. If any of the labels are missing, please contact Southworth for replacements. **Labels and precautionary markings on the machine help to protect your workers.**

INSTALLATION INSTRUCTIONS

Unpacking the Unit

1. Before you put the unit in service, check for local codes and ordinances that may apply. It is your responsibility to obtain any necessary permits.
2. Please read all of these instructions carefully. Be sure to read and understand all of the warnings.
3. Inspect the shipping pallet carefully for any damage which may have affected the unit. If you see signs of damage, notify the shipper immediately. Also make a note of this on the shipping papers that you are asked to sign.
4. Choose the place where you want to set the unit. It is very important that the PalletPal 360 Air be located on a level, smooth and flat surface. Check the floor surface carefully and make sure that it is free of all loose debris and dirt.
5. Remove the banding that secures the unit to the pallet. Remove all packing material. Shift the unit to the floor. Support the base as you do this.
6. Check to see that the base frame of the unit is sitting firmly on the floor. Try to move or rock the frame of the unit. The base frame should be stable, and should not move. Check to see that the base frame is level. If any part of the base frame is more than $\frac{1}{2}$ " out of level in relation to any other part, reposition to a flatter, more level surface area.
7. If you have any questions about the steps in the installation process, please call Southworth Customer Service at 1-800-743-1000.

Overview

The PalletPal 360 Air can be setup to position pallet loads ranging from approximately 300 lbs to 4500 lbs (140kg to 2025kg). Once air is inflated into unit's air actuation system load capacity can be set. The gauge must never be more than 30 PSI (2.1 BAR) when the unit has no load on it and is in the fully raised position. The unit will then lower or rise as the load is being added or removed from the unit, (see quick setup section below), and thus works as an automatic level loader holding the top layer of goods at a convenient height.

*NOTE: The actuation system of the PalletPal 360 Air contains captive air much like an automotive tire and may lose small amounts of air over time. Therefore, air may have to be occasionally added to the system to compensate for the loss.

Quick Setup

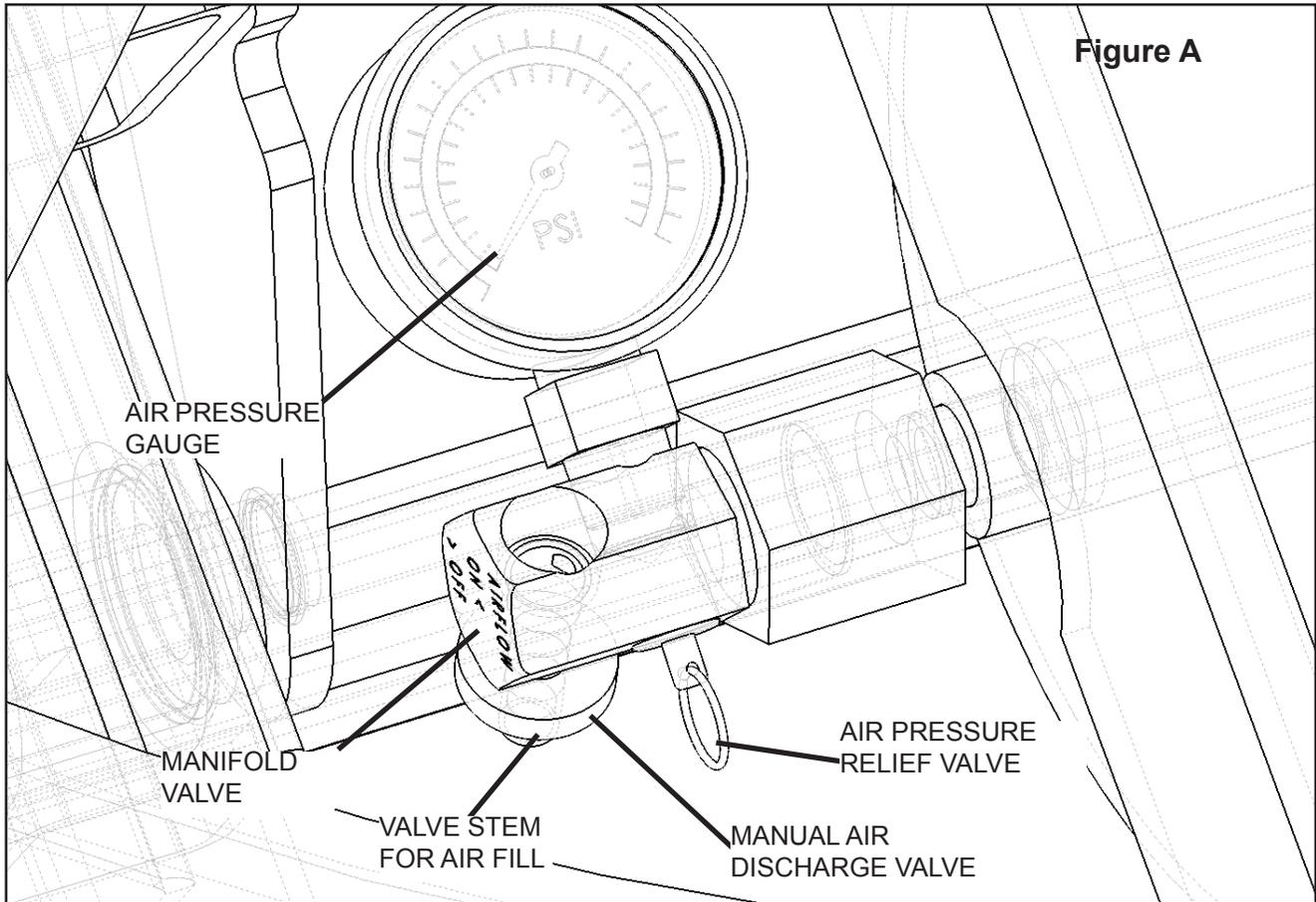
WARNING

Read and understand entire manual before performing quick setup.

With no load on the unit, pressurize the actuation system with 30 PSI (2.1 BAR) of air via the air fill valve stem, see Figure A on next page. Using a fork lift or stacker place the heaviest, complete pallet load on the unit, (maximum weight 4,500 lbs). Slowly open the Manual Air Discharge Valve allowing air to escape. When the unit is fully lowered, close the Air Discharge Valve. The PalletPal 360 Air is now set for that pallet load.

As the upper layers on the pallet are removed in even layers the unit will rise. When the pallet is near empty the unit will be at the top of its travel.

Setting the ideal load height is subjective. Some operators prefer to have the load held slightly higher. If so increase the air pressure slightly. If the load is being held too high slightly discharge some air. ***Air pressure must never exceed 30 PSI when the lift is unloaded or 65 PSI when the lift is loaded.***



OPERATION NOTES

⚠ WARNING

Never sit or ride on the turntable or operate the unit if anyone is on it.

⚠ WARNING

Never operate the unit if the load is off center. The load may shift, and you may be injured. This can also damage the unit.

⚠ WARNING

Keep the area around the unit clean. Do not allow any dirt, debris, spilled oil, or excess grease to collect. These materials may cause you to slip while the unit is operating, and you may be injured.

⚠ WARNING

Stay clear of the turntable when it is moving. As the pallet turns, a part of the load may rotate around and hit you. Never turn the load when anyone is standing beside the unit.

⚠ WARNING

Do not try to use this unit with damaged or broken pallets. Broken pallets may have boards or nails which hang down below the main part of the pallet. As the pallet is turned, these boards or nails may catch on the frame of the unit. This can cause the pallet to stop turning suddenly, causing the load to shift.

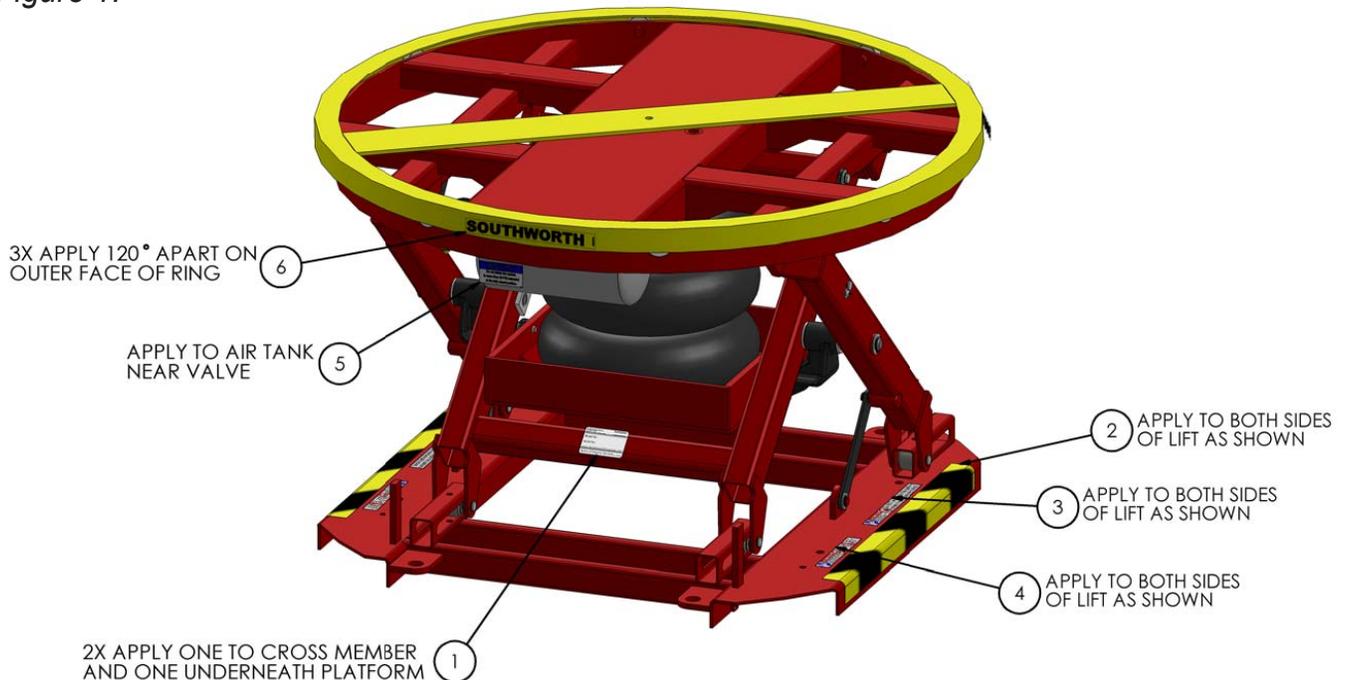
You may be injured, and the unit may be damaged. The boards or nails on the bottom of the pallet should not extend down more than 1/8 inch.

Specifications

	Imperial	Metric
Load capacity	300 to 4500 lbs.	180kg to 2025kg
Load size	50" x 50" l x 72" high	1270mm x 1270mm x 1800mm high
Base frame	36" x 36"	915mm x 915mm
Compressed height	9-1/2 inches	240mm
Extended height	27-3/4 inches	705mm
Air source	80 PSI	5.5 BAR
Maximum system air pressure	30 PSI without load	2.1 BAR
Maximum system air pressure	65 PSI with full load	4.5 BAR
Safety relief valve setting	125 PSI	8.6 BAR
Rotating ring, outer diameter	43-5/8 inches	1,110mm
Rotating ring, inner diameter	40-5/8 inches	1,030mm
Ship weight	375 lbs	170kg
Operating environment	indoor	indoor
Operating temperature	-0F to +120F	-18° to 50° c

OPERATING INSTRUCTIONS Labels and Precautionary Markings

Figure 1.



Label Location Drawing - #60041394

①

Item 10089457

Southworth Products
PO Box 1380
Portland, ME 04104-1380



SOUTHWORTH

Model No:

Serial No:

www.SouthworthProducts.com

Sales, Parts and Service
800-743-1000 or 207-878-0700

②



③

SAFETY YELLOW TRIANGLE WITH SAFETY BLACK BORDER AND EXCLAMATION MARK

SAFETY RED BACKGROUND WITH SAFETY WHITE TEXT

SAFETY RED "NO" SYMBOL WITH SAFETY BLACK DIAGRAM AND SAFETY WHITE BACKGROUND

SAFETY WHITE BACKGROUND WITH SAFETY BLACK TEXT

SAFETY BLUE SYMBOL WITH SAFETY WHITE BACKGROUND

8.50

1.00

Item 10089457

④

SAFETY YELLOW TRIANGLE WITH SAFETY BLACK BORDER AND EXCLAMATION MARK

SAFETY RED BACKGROUND WITH SAFETY WHITE TEXT

SAFETY RED "NO" SYMBOL WITH SAFETY BLACK DIAGRAM AND SAFETY WHITE BACKGROUND

SAFETY BLUE SYMBOL WITH SAFETY WHITE DIAGRAM

6.00

1.00

Item 10089458

⑤

Item 2990414

SAFETY BLUE BACKGROUND WITH SAFETY WHITE ITALICIZED TEXT

SAFETY WHITE BACKGROUND WITH SAFETY BLACK TEXT

NOTICE

Do not inflate the system to more than 30 PSI unloaded at the fully raised position.

2990414

3.00

1.50

PART NO. IN LOWER RIGHT CORNER

⑥

SOUTHWORTH

Decal 5900191

OPERATING INSTRUCTIONS (continued)

⚠ WARNING

Ensure that loading and unloading of the PalletPal 360 Air is done in even layers. Loading or unloading a load on one side may cause the load to tip over and you may be injured. This can also damage the unit. See Figure 4.

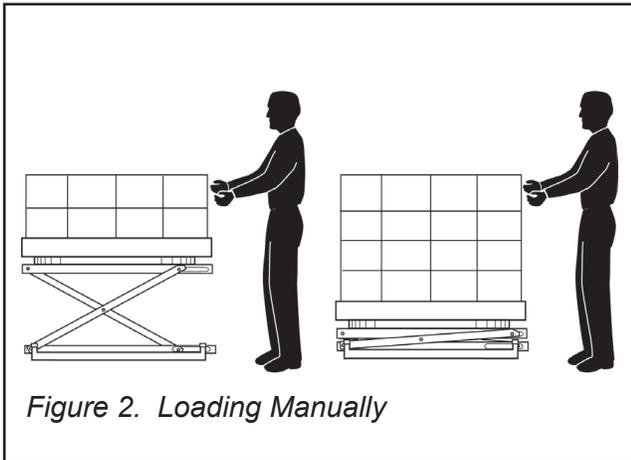


Figure 2. Loading Manually

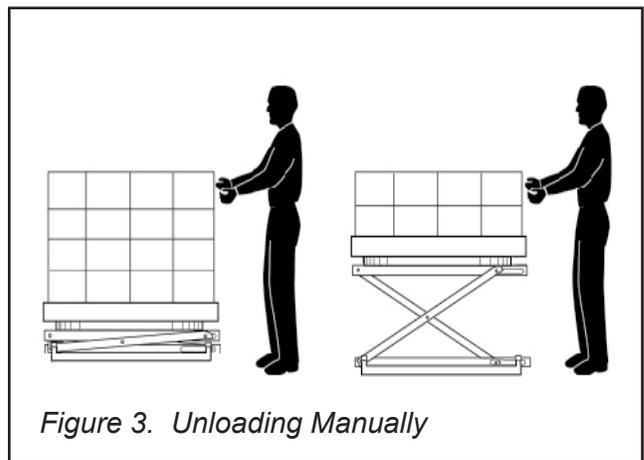


Figure 3. Unloading Manually

Loading Manually

Add boxes or parts in even layers until the pallet is full. The unit will gradually lower the pallet until it reaches the bottom. See Figure 2.

Removing Loads Manually

Remove boxes or parts in even layers until the pallet is empty. The unit will gradually raise the pallet. See Figure 3.

Operating Safely -- Manual Use

1. Never push the load off of the side of the unit. If you do this, the frame of the unit may jump upward.

2. Never use the unit when anyone is sitting or riding on the turntable.

3. Do not try to use this unit with damaged or broken pallets. Broken pallets may have boards or nails which hang down below the main part of the pallet. As the pallet is turned, these boards or nails may catch on the frame. The pallet may stop turning suddenly and this can cause the load to shift. You may be injured and the unit may be damaged. If the boards or nails on the bottom of the pallet extend down more than 1/8 inch, they will interfere with the turning action.

4. Stay clear of the turntable when it is moving. As the pallet turns, a part of the load may rotate around and hit you.

5. Keep the area around the unit clean. Do not allow any dirt, debris, spilled oil, or excess grease to collect. These materials may cause you to slip while the unit is operating and you may be injured.

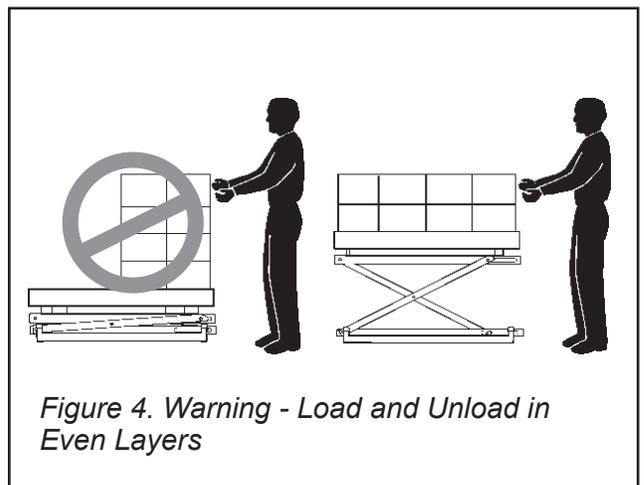


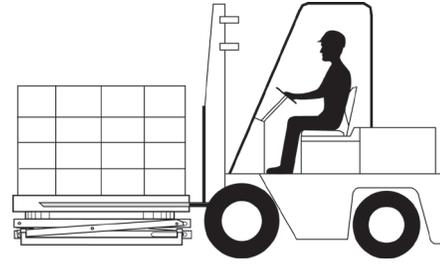
Figure 4. Warning - Load and Unload in Even Layers

Loading with a Fork Lift

1. Place the evenly layered load on the unit. Be sure the load is centered on the turntable, then slowly lower the fork lift.

- Lower the load until the airbag on the PalletPal 360 Air is fully compressed.
- Be sure the forks on the lift are clear of the inside of the pallet and ensure unit is carrying the weight - not the fork lift, see figure 5.

Figure 5. Loading with a Fork Lift



⚠ WARNING

If you skip these steps, the load may drop suddenly when you remove the fork lift. You may be hurt or the unit or load may be damaged.

⚠ WARNING

Never drop the load on the turntable. If you do this while the turntable is moving, the load may shift. You may be injured or the unit may be damaged.

⚠ WARNING

If the load is off-center, it may shift when the turntable is turned. You may be hurt or the unit or load may be damaged.

Unloading with a Fork Lift

1. Insert the forks into the evenly loaded pallet, and slowly lift the pallet clear of the top of the unit. See Figure 6.

- Be sure the pallet clears the top of the turntable before you move the fork lift.

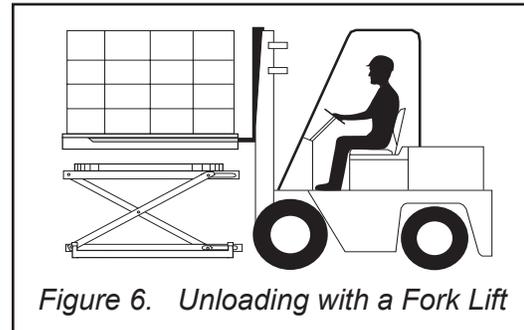


Figure 6. Unloading with a Fork Lift

⚠ WARNING

If you skip these steps, the unit may jump up suddenly when you remove the pallet. You may be hurt or the unit or load may be damaged.

Moving the PalletPal 360 Air

It can be moved loaded or empty. When moving a loaded PalletPal 360 AIR be sure to secure the load (stretch film or strapping) to avoid spillage.

There are three ways to move it.

1. Use a forklift inserting the forks into the pockets in the base frame, as shown in Figure 7.

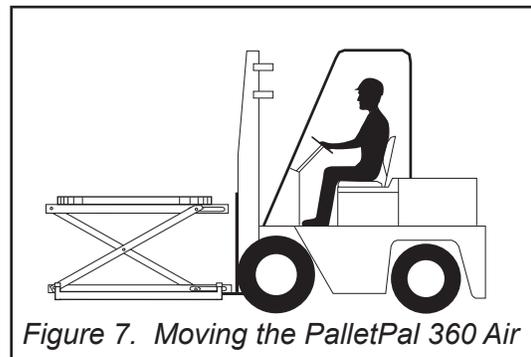
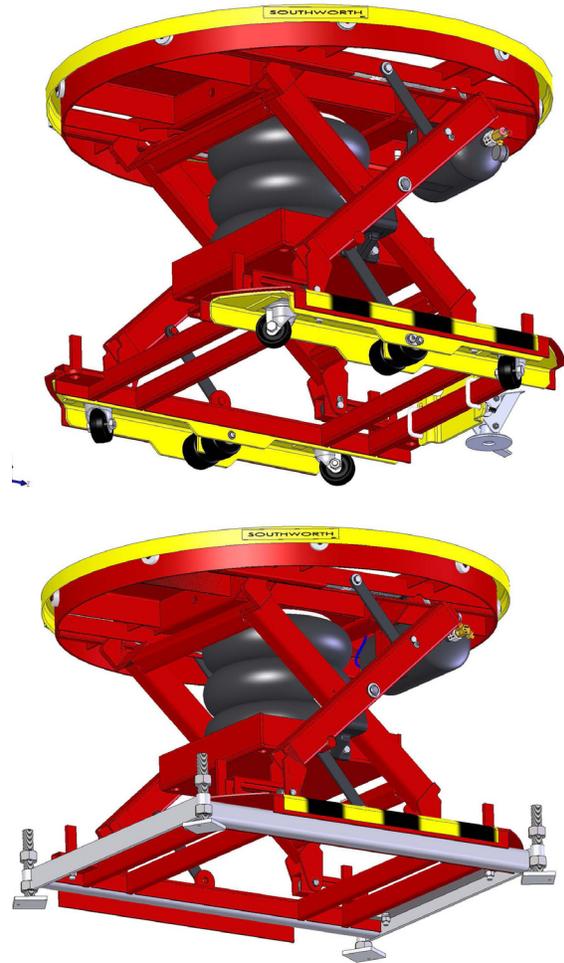


Figure 7. Moving the PalletPal 360 Air

2 When equipped with the optional Portability Set release the floor lock and move the unit. Be sure to engage the floor lock once the PalletPal 360 AIR is re-located.

3. When equipped with the optional leveling feet the base frame can be raised approximately 3" from the floor allowing access for a hand (or powered) pallet jack to be positioned under the center of the base frame.

Note that certain Southworth supplied and approved portability kits installed on the PalletPal 360 Air allow the unit to be rolled around on smooth level surfaces when loaded.



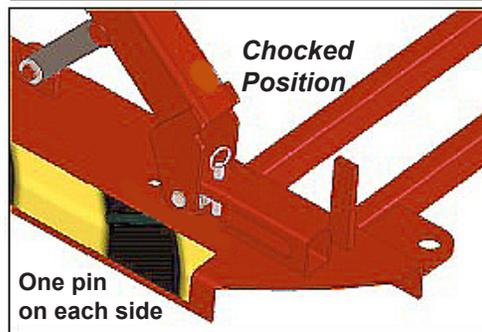
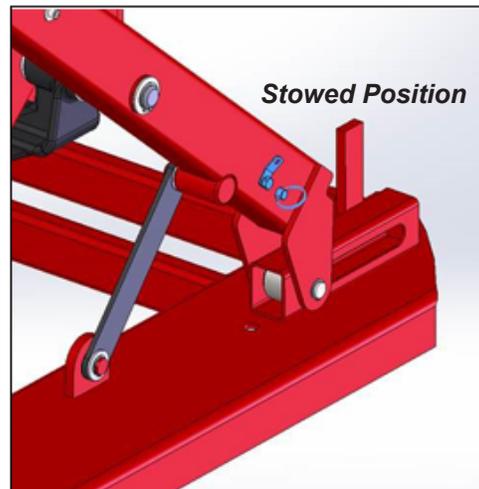
Chocked

Safe Servicing of the Lift

The two holes in the base roller tracks, one on each side (see ~~Choked~~ Stowed Position image) are intended for 3/8 inch diameter pins to be utilized to chock up the lift whenever maintenance or under lift troubleshooting is performed. When chocks not in use place in the Stowed Position, see image on the right.

Note: Earlier designs may not have had these pins or the stowed position holes. If your unit was not supplied with these, use two 3/8 x 3" long bolts.

Figure 8. Safe servicing of the Lift



Maintenance

⚠ WARNING

- The lack of maintenance may result in catastrophic failure.
- See Figure 8 on page 14: Safe Servicing of the Lift before performing maintenance.

Routine Periodic Maintenance

Every 90 days -

- Inspect all rollers, pins and bushings for excessive wear.
 - > 8 Ball bearings supporting the rotator ring.
 - > 1 center pin on rotator ring
 - > 2 main axle pins on the leg set
 - > 4 rollers with bushings on lower ends of leg
 - > 4 ball bearing rollers on upper ends of legs
 - > 8 connection points on leg set centering linkages
- Inspect rotating ring, some units have a solid disk rotating platform
- Check for loose hardware and signs of excessive wear.
- Check to be sure that the unit is placed on a firm level surface.
- Ensure labels and precautionary markings are in place and legible.
- Inspect all components of the air actuation system, note the actuation system of the PalletPal 360 Air contains captive air much like an automotive tire and will lose small amounts of air over time. Therefore, air may have to be occasionally added to the system to compensate for the loss.

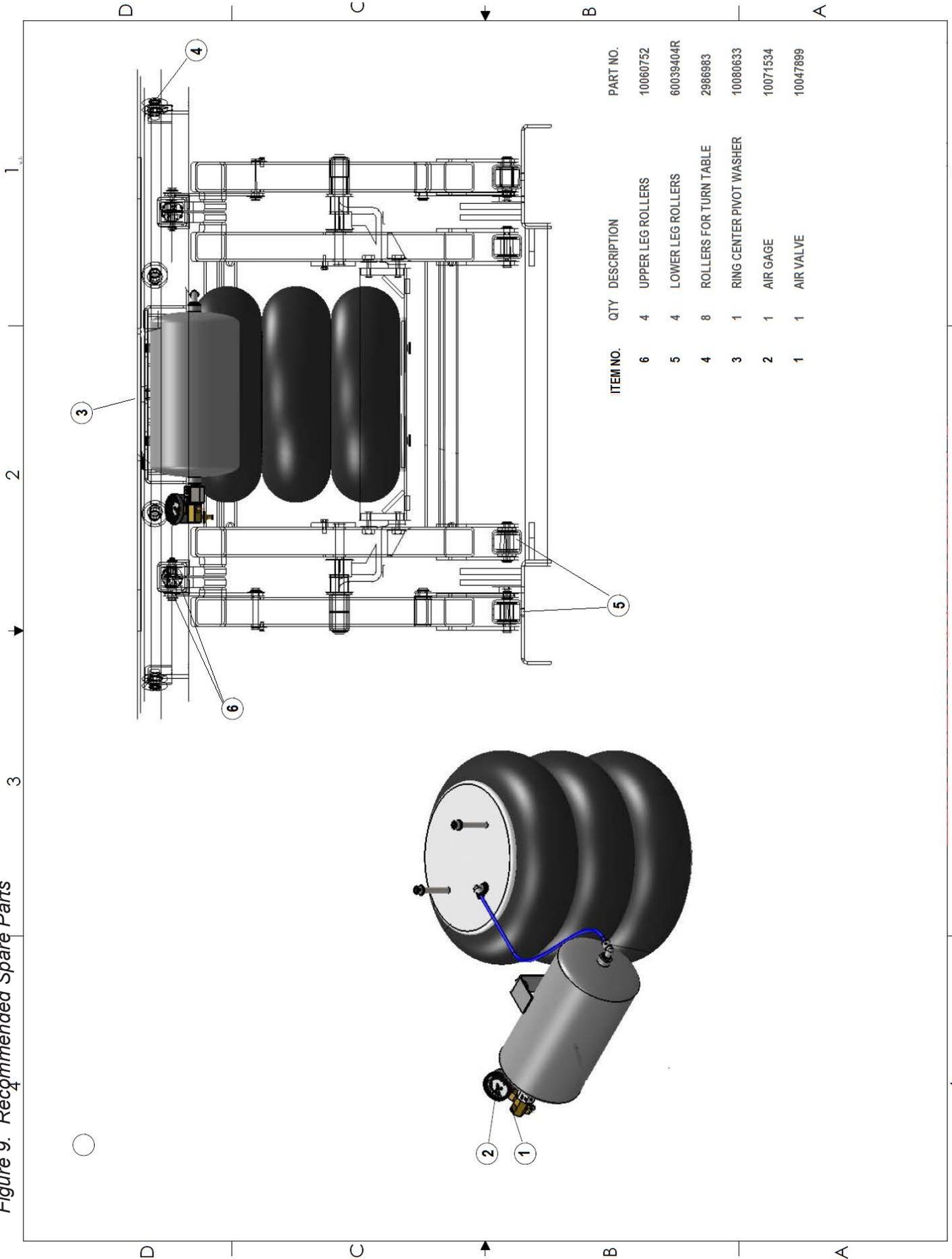
⚠ WARNING

See Figure 8 on page 14: Safe Servicing of the Lift before performing maintenance or troubleshooting under lift.

Troubleshooting

Troubleshooting Check List		
<i>Problem</i>	<i>Possible Cause</i>	<i>Check This</i>
The unit lowers too easily (too early)	Not enough air pressure	See set-up procedure page 8
The unit does not lower enough (too late)	Too much air pressure	See set-up procedure page 8
The top of the unit rotates from you.	The base frame of the unit may not be level.	Move the unit to a level surface or away install the optional leveling feet.
Excessive “rumble” when top rotating	One or more worn or broken bearings under turntable.	Remove turntable, replace bearings.
Wear on underside of turntable.	Normal condition caused by wear-hardening of metal.	No repair necessary.

Figure 9. Recommended Spare Parts



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 unit.

Southworth can supply all replacement parts for your PalletPal. With your order, please include the model number and the serial number of the unit. You can find these numbers on the name plate. This plate is located within the scissors mechanism.

To order replacement parts, please call the Parts Department at (207) 878-0700 or (800) 743-1000. 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.

Southworth Products Corp
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www.SouthworthProducts.com
Email: service@SouthworthProducts.com
Telephone: (800)-743-1000 or (207)-878-0700
Fax: (207)-797-4734

2 YEAR WARRANTY

Southworth Products Corp warrants this product to be free from defects in material or workmanship for a period of 2 years of single shift usage from date of shipment, providing claim is made in writing within that time period. The air bag has a lifetime warranty. 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

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