

SOUTHWORTH

PalletPal 360 *Air Load Leveler*

For machines shipping no earlier than July, 2024



Model: _____
Serial Number: _____
Date placed in service: _____

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**Owner
Manual**

Contents

If viewing this manual electronically, just left click any section below to immediately view that area.

To get back to the table of contents, just click in area to the outside of the left border.

1	INTRODUCTION.....	4
1.1	Responsibilities of Owner and Users	4
1.2	Responsibilities of Operators	5
2	SAFETY	7
2.1	Safety Alert Symbols	7
2.2	Signal Words.....	7
3	LABELING	8
3.1	Label Placement Diagram.....	8
3.2	Labels	9
4	INSTALLATION	10
4.1	Machine Specifications	10
4.2	Equipment Video.....	11
4.3	Key Components	11
4.4	Machine Setup	13
5	OPERATION	14
5.1	Operation Video	15
5.2	Loading & Unloading.....	15
5.2.1	Manually	15
5.2.2	Fork Truck or Stacker	16
5.3	Transporting the Machine	16
5.3.1	Fork Truck or Stacker	16
5.3.2	Portability Kit - Casters.....	17
5.3.3	Portability Kit - Leveling Feet.....	18

6	MAINTENANCE & REPAIR	19
6.1	Maintenance Devices.....	19
6.2	Periodic Maintenance	20
6.2.1	Weekly.....	20
6.2.2	Semi-Annually (Every Six Months).....	21
6.3	Replacement Parts	22
7	TROUBLESHOOTING.....	23
8	WARRANTY & CONTACT INFORMATION	24

⚠ WARNING
Cancer and Reproductive Harm - www.P65Warnings.ca.gov

This label (part # 10095524) is required by California Law. For more information visit: www.P65Warnings.ca.gov

1 INTRODUCTION

1.1 Responsibilities of Owner and Users

Basic Principles - Owners/users shall apply sound principles of safety, training, inspection, maintenance to the expected operating environment. It shall be the responsibility of the owner/user to advise the manufacturer where deflection may be critical to the application.

Manuals - Owners/users shall keep and maintain a copy of the operating and maintenance manual(s) and ensure its availability to operating and maintenance personnel.

Inspection and Maintenance - It shall be the responsibility of the users to inspect and maintain the machine as required to ensure proper operation. The frequency of inspection and maintenance shall be based upon the manufacturer's recommendations and be compatible with operating conditions and the severity of the operating environment. Machinery that is not in proper operating condition shall be immediately removed from service until repaired. Maintenance and repairs shall be made by a qualified person and the repairs shall be in conformance with the manufacturer's recommendations.

Maintenance Safety Precautions - Before adjustments and repairs are started on the machine, the following precautions shall be taken as applicable:

1. Remove the load from the platform.
2. Relieve air pressure from all circuits before loosening or removing any components.
3. All controls in the "off" position and all operating features secured from inadvertent motion by brakes, blocks, or other means.
4. Follow precautions and directions as specified by the manufacturer.

Replacement Parts - When parts or components are replaced, they shall be replaced with parts or components approved by the original manufacturer.

Maintenance Training - The user shall ensure only qualified personnel inspect and maintain the machine in accordance with the manufacturer's recommendations.

Operator Training - An owner/user, who directs or authorizes an individual to operate the machine shall ensure that the individual has been:

1. Trained in accordance with the manufacturer's operating manual.
2. Made aware of the responsibilities of operators as outlined in section 1.2 of this manual.
3. Retrained, if necessary, based on the owners/user's observation and evaluation of the operator.

Modifications and additions shall not be performed without the manufacturer's prior written approval. Where such authorization is granted, capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.

1.2 Responsibilities of Operators

Basic Principles - Operators shall apply sound principles of safety and good judgment in the application, and operation of the machine with consideration given to its intended use and expected operating environment. Since the operator is in direct control of the machine, conformance with good safety practices is the responsibility of the operator. The operator shall make decisions on the use and operation with due consideration for the fact that his or her own safety as well as the safety of other personnel on or near the machine is dependent on those decisions.

General Training - Only personnel who have received general instructions regarding the inspection, application, and operation of machine, including recognition and avoidance of hazards associated with their operation, shall operate the machine. Such topics covered shall include, but not necessarily be limited to, the following issues and requirements:

1. A pre-start inspection
2. Responsibilities associated with problems or malfunctions affecting the operation of the machine
3. Factors affecting stability
4. The purpose of placards and decals
5. Workplace inspection
6. Safety rules and regulations
7. Authorization to operate
8. Operator warnings and instructions
9. Actual operation of the machine. Under the direction of a qualified person, the trainee shall operate the machine for a sufficient period of time to demonstrate proficiency in actual operation of the machine.

Pre-start Inspection - Before use each day or at the beginning of each shift, the machine shall be given a visual inspection and functional test including but not limited to the following:

1. Operating and emergency controls
2. Safety devices
3. Loose or missing parts
4. Nameplates, precautionary and instructional markings and/or labeling
5. Guarding system
6. Items specified by the manufacturer

Problem or Malfunctions - Any problems or malfunctions that affect the safety of operations shall be repaired prior to the use of the machine.

Before Operations - The operator shall:

1. Read and understand the manufacturer's operating instruction(s) and user's safety rules or have them explained.
2. Understand all labels, warnings, and instructions displayed on the machine or have them explained.

Workplace Inspections - Before the machine is used and during use, the operator shall check the area in which the machine is to be used for possible hazards such as, but not limited to:

1. Bumps, floor obstructions, and uneven surfaces
2. Overhead obstructions and electrical hazards
3. Presence of unauthorized persons
4. Other possible unsafe conditions as noted in the operating manual.

Operator Warnings and Instructions - The operator shall ensure the operation of the machine is in compliance with the following:

1. **Guarding system** - Guarding shall be installed and positioned, and access gates or openings shall be secured per the manufacturer's instructions (If applicable).
2. **Distribution of load** - The load and its distribution on the platform shall be in accordance with the manufacturer's rated capacity for that specific configuration.
3. **Maintaining overhead clearance** - The operator shall ensure that adequate clearance is maintained from overhead obstructions and energized electrical conductors and parts.
4. **Point of Operation** - The operator shall not place any part of their body under the platform.
5. **Precaution for moving equipment** - When other moving equipment or vehicles are present, special precautions shall be taken to comply with the safety standards established for the workplace.
6. **Reporting problems or malfunctions** - The operator shall immediately report to a supervisor any problem(s) or malfunction(s) that become evident during operation. The operator shall ensure all problems and malfunctions that affect the safety of operations are repaired prior to continued use.
7. **Capacity limitation** - Rated capacity shall not be exceeded when loads are transferred to the platform.
8. **Work area** - The operator shall ensure the area surrounding the machine is clear of personnel and equipment before lowering the platform.
9. **Securing the machine** - The operator shall comply with the means and procedures provided to protect against use by an unauthorized person(s).
10. **Altering safety devices** - Safety devices shall not be altered or disabled.
11. **Modifications** or alterations of the machine or the fabrication and attaching of frameworks or the mounting of attachments to the machine or the guarding system shall only be accomplished with prior written permission of the manufacturer.
12. **Assistance to the operator** - If an operator encounters any suspected malfunction or any hazard or potentially unsafe condition relating to capacity, intended use, or safe operation, the operator shall cease operation of the machine and request further instruction from the owner/user.
13. **Problems or malfunctions** - Any problem(s) or malfunction(s) that affect the safety of operations shall be repaired prior to the use of the machine.

2 SAFETY

All personnel installing, operating, and maintaining this machine shall read and understand this manual. For questions or concerns contact the manufacturer.

This machine shall be installed, operated, and maintained by trained and/or qualified personnel only.

2.1 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 – For use with **DANGER, WARNING, or CAUTION** signal words; (**D** is a safety yellow triangle with a safety black border and safety black exclamation mark)

2.2 Signal Words



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



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



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

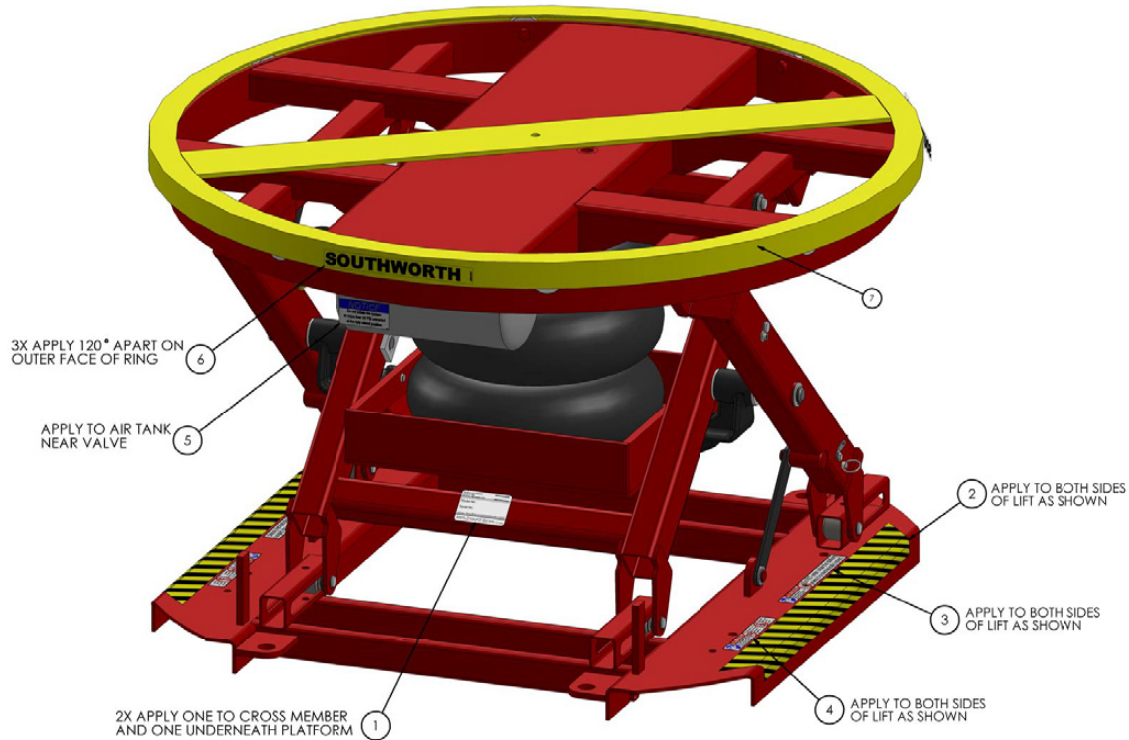


NOTICE Indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

3 LABELING

This machine has labeling to indicate potential hazards this machine may pose when operating and/or maintaining the machine. All labels must be legible. If any label is missing, damaged, or otherwise illegible contact the manufacturer for replacement labels.

3.1 Label Placement Diagram



Item	Part Number	QTY.
1	10079929	2
2	10088222	2.5 ft
3	10089457	2
4	10089458	2
5	2991041	1
6	5900191	3
7	10095524	1

3.2 Labels

1

Southworth Products
PO Box 1380
Portland, ME 04104-1380



Model No:

Serial No:

www.SouthworthProducts.com

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

10079929

2



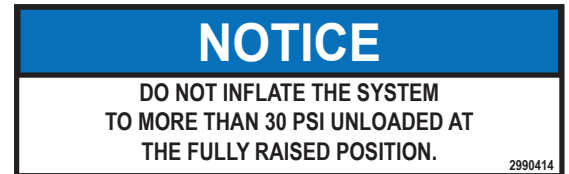
3



4



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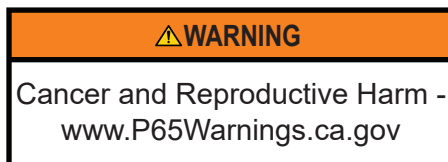


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SOUTHWORTH

5900191

7



10095524

4 INSTALLATION

Remove all packaging. Inspect the machine for damage. Verify all components were received. If damage is found or components are missing do not continue to the setup procedure; contact customer service. Review **Key Components** section.

WARNING

Do not enter beneath the platform unless the platform is secured against lowering.

The machine must only be installed and used on flat, level surfaces. Uneven surfaces can cause instability when loading which could lead to the load falling and injuring the operator. See Portability Kit - Leveling Feet section.

During installation pinch points may exist. Keep hands, feet, and loose clothing away from moving parts.

Do not sit stand or ride on the platform/rotator ring.

This machine is not designed to be lagged to the floor.

4.1 Machine Specifications

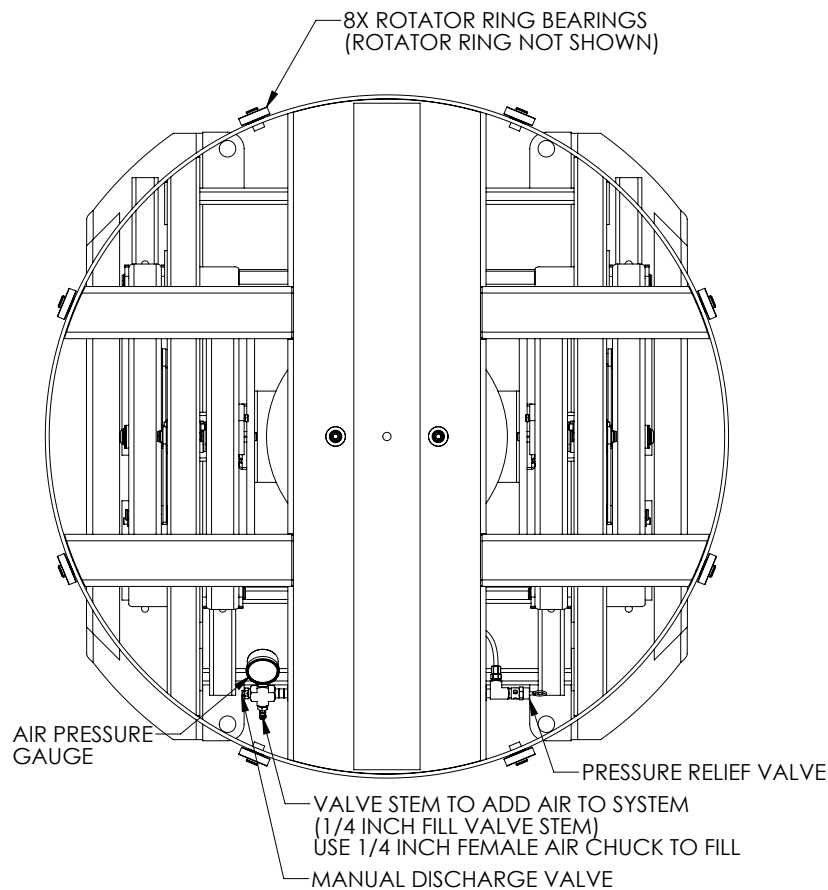
Load Capacity	400 to 4500 lb. / 180 to 2040 kg.
Load Dimensions	50" x 50" x 72" / 1270 mm x 1270 mm x 1800 mm
Base Frame	36" x 36" / 915 mm x 915 mm
Compressed Height	9 1/2" / 240 mm
Extended Height	27 3/4" / 705 mm
Air Source	80 PSI / 5.5 BAR
Maximum System Pressure (Unloaded)	30 PSI / 2.1 BAR
Maximum System Pressure (Loaded)	65 PSI / 4.5 BAR
Pressure Relief Valve Setting	80 PSI / 8.6 BAR
Rotating Ring, Outer Diameter	43 5/8" / 1110 mm
Rotating Ring Inner Diameter	40 5/8" / 1030 mm
Shipping Weight	450 lb. / 205 kg. (Approximately)
Operating Environment	Indoor Only
Operating Temperature	0°F to 120°F / -18°C to 50°C

4.2 Equipment Video

To supplement the instructions on the following pages, the QR code below may be scanned to access Southworth's Pallet Pal 360 Air video illustrating the initial step to set up the pallet pal and its actual use. This video is a supplement to the following instructions.

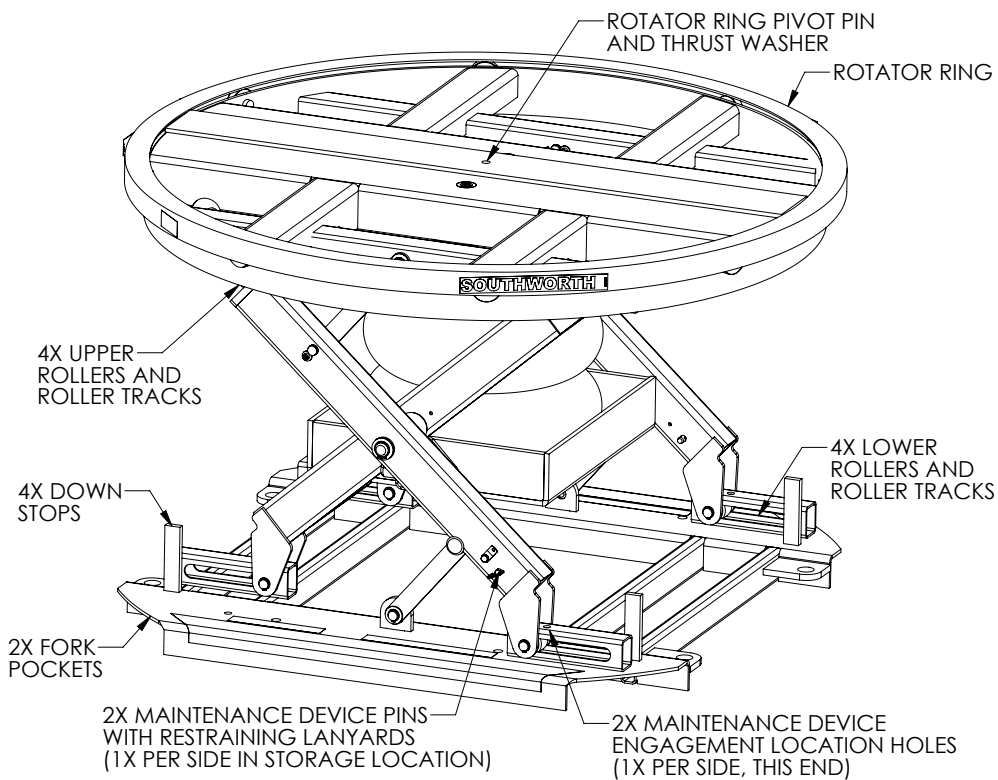
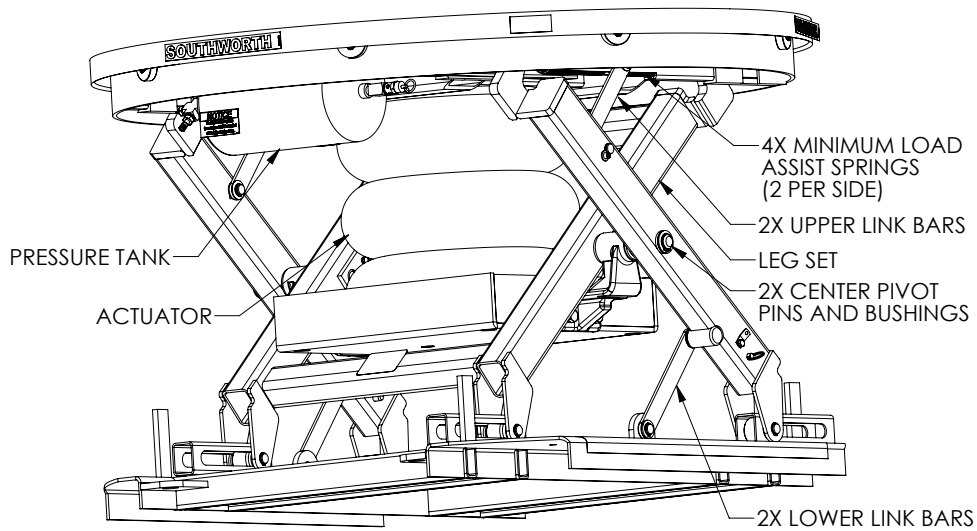


4.3 Key Components



NOTICE

• The rotator ring may be ordered as a solid round, square or rectangular top, or with
• a rotation locking device. A stationary (non-rotating) platform may also be ordered.
•



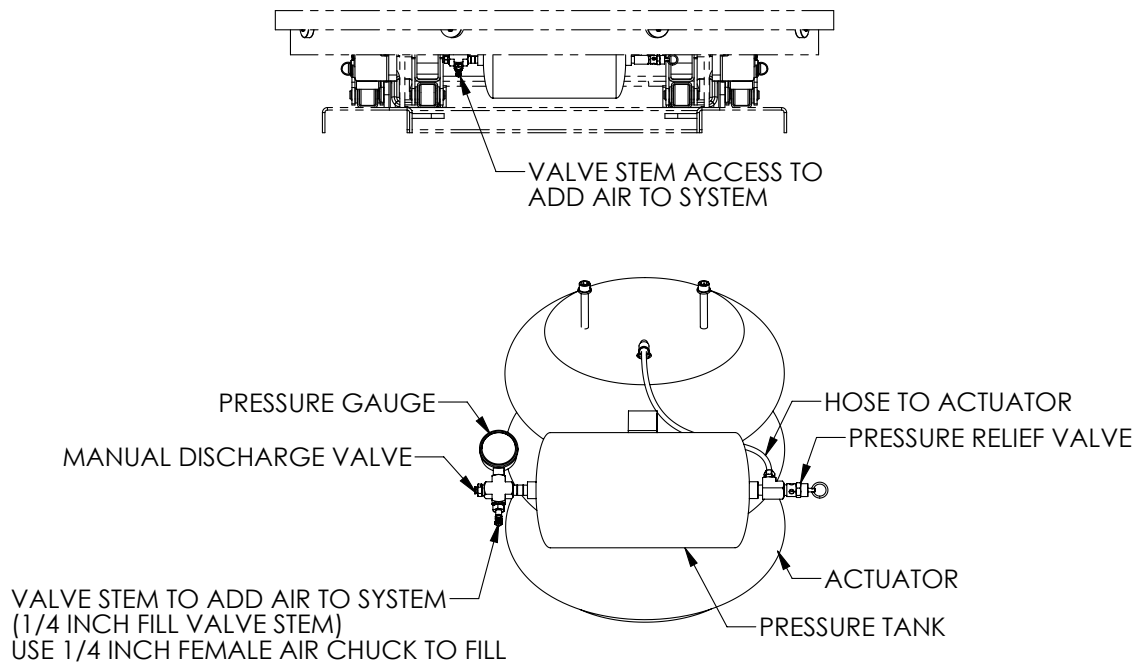
NOTICE

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The purpose for the minimum load assist springs in the upper roller tracks is for assisting the machine to reach the fully raised height with a minimal airbag pressure loading (approximately 5 psi) to accommodate a less than 400 lb. load.

4.4 Machine Setup

1. Clear area of all packing material and other debris.
2. Carefully insert the forks of fork truck or stacker into the fork pockets of the machine. Raise the machine off of the shipping skid and remove the skid. Lower the machine onto the floor and/or transport to desired location.
3. Place the machine on a structurally sound level floor. Leveling feet are required for an irregular/unlevel floor. See QR video.
4. With no load on the machine, pressurize the system to 30 PSI/2.1 Bar via the valve stem on the pressure tank. Do not exceed 30 PSI /2.1 Bar.



NOTICE

Do not inflate the system to more than 30 PSI/2.1 Bar while unloaded and at the fully raised position. If system pressure exceeds 65 PSI/4.5 Bar at any point during the operation of the machine, failure can occur and cause damage to the machine and/or injury to the operator.

5. Use a fork truck to gently place the heaviest expected load onto the platform. Load must not exceed 4,500 lb.
6. Slowly depress the manual air discharge valve button to release pressure from the system until the load is fully lowered, while carefully avoiding moving parts and pinch points.

As the load is removed from the pallet, the lift will raise to maintain proper ergonomic working height. Conversely, as a load is being built on a pallet, the lift will lower to maintain proper ergonomic working height. Actual working height can be adjusted by increasing or decreasing the system pressure. Do not exceed 30 PSI /2.1 Bar when unloaded and in the fully raised position.

5 OPERATION

Before each use check the machine for damage or excess wear. If damage or excessive wear is found do not use the machine, contact the manufacturer for repair information and/ or replacement parts.

WARNING

Do not enter under the platform unless the platform is secured against lowering.

Do not sit, stand, or ride on the platform.

Keep hands, feet, and loose clothing away from moving parts.

Do not push/roll a load off the edge of the platform. This may cause the machine to rebound quickly and could lead to injury or damage to the machine.

The platform should always be loaded and unloaded uniformly in even layers. Uneven loading can cause the load to become unstable and could lead to injury. Uneven loading can cause premature wear or damage to the machine.

When rotating the load, do not grab the rotator ring or hands/fingers may be caught in the moving parts and you may be injured. Rather, try to rotate the load by pushing or pulling the corner of the load, or corner of the base of the load closest to you.

Do not drop load onto the platform or the machine may be damaged.

Do not use this machine with broken pallets. Boards and/or nails in broken pallets may catch on the platform frame and cause damage.

This machine is to be operated and transported on flat, level surfaces only.

Do not exceed the rated capacity.

5.1 Operation Video

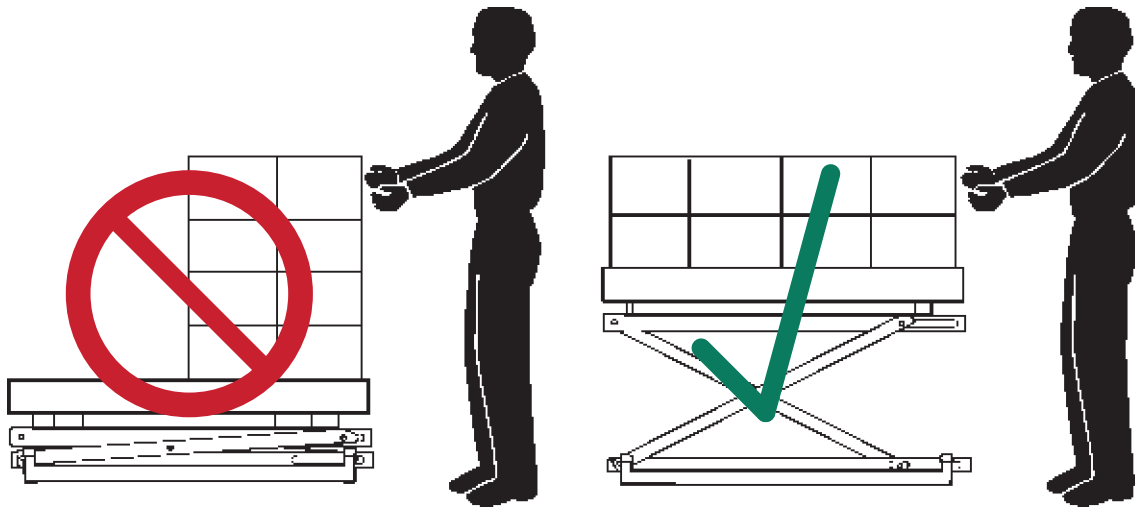
To supplement the instructions on these pages, the QR code below may be scanned to access Southworth's PalletPal 360 Air Pallet Positioner page to view videos illustrating the pallet being used. These videos should be considered a supplement to these instructions, not a replacement.



5.2 Loading & Unloading

5.2.1 Manually

When manually loading, always load the pallet uniformly in even layers. As the pallet is loaded the platform will lower, maintaining the proper working height. Do not reach over the load. Instead rotate the load by pushing or pulling on the pallet.



When manually unloading, always unload the pallet uniformly in even layers. As the pallet is unloaded the platform will raise, maintaining the proper working height in the ergonomic range. Do not reach over the load. Instead rotate the load by pushing or pulling on the pallet.

5.2.2 Fork Truck or Stacker

When loading with a fork truck or stacker lower the pallet onto the platform slowly until the actuator (air bag) is fully supporting the load or the platform is at fully lowered position. Only uniform loads should be placed on the platform.

When unloading with a fork truck or stacker raise the pallet off of the platform slowly until the actuator (air bag) is no longer supporting the load and the pallet is clear of the platform/turntable ring.

NOTICE

Do not drive the fork truck/stacker into the base frame or the machine may be damaged.

Do not slide the pallet onto/off of the platform/rotator ring or the machine may be damaged.

5.3 Transporting the Machine

WARNING

This machine may be moved while loaded, except when leveling feet are installed. If transporting while loaded, secure both the load and turntable before moving. Unsecured loads may fall and cause death or serious injury.

If equipped with a portability kit, always ensure the floor lock is engaged before using the machine.

Do not drop the machine onto the floor or damage may occur.

The machine can be transported with (except if leveling feet are installed) or without a load on the platform. If transporting the machine with a load on the platform, always secure the load to the platform and secure the turntable from rotating unintentionally.

The machine can be transported by an appropriately rated fork truck or stacker, or by the optional portability kit.

5.3.1 Fork Truck or Stacker

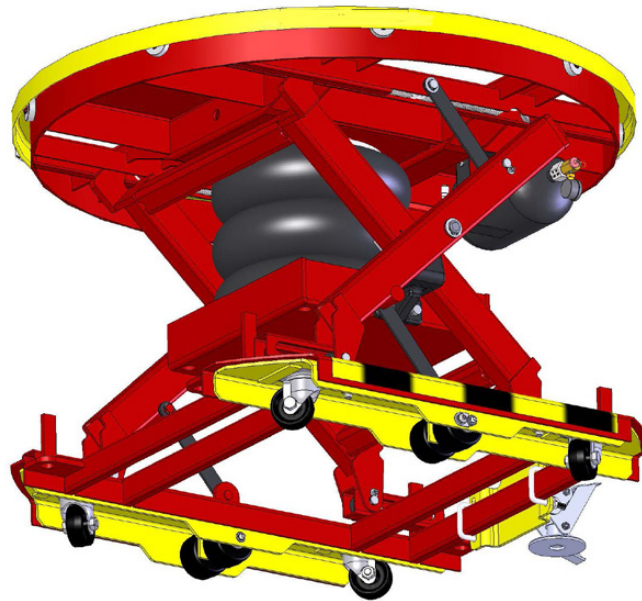
Carefully insert the forks into the fork pockets on the base frame. Carefully raise the machine off of the floor and transport the machine to the desired location. Carefully lower the machine onto the floor and remove the forks from the fork pockets.

CAUTION

If transporting the machine with a load, lock the turntable ring and secure the load.

5.3.2 Portability Kit - Casters

If equipped with the caster package, always engage the floor lock before loading and unloading. Disengage the floor lock to move the machine to the desired location.



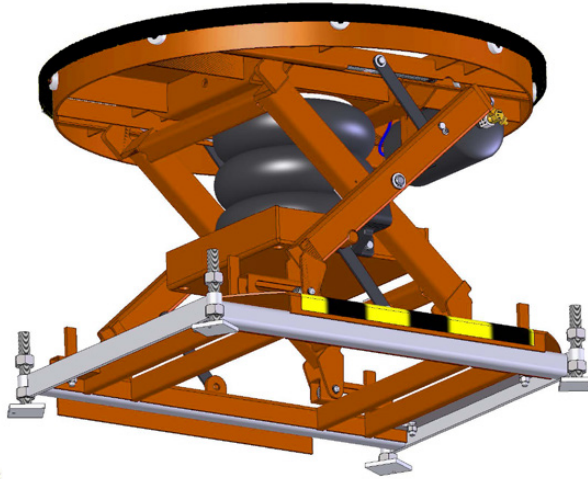
⚠ CAUTION

If transporting the machine with a load, lock the turntable ring and secure the load.

Due to the casters being mounted within the fork pocket cavity, the fork pockets for this option are not accessible for transporting the machine with a fork truck or stacker.

5.3.3 Portability Kit - Leveling Feet

If equipped with the leveling feet package, the machine can be raised approximately three inches to not only accommodate an uneven floor surface, but to also move the unit using manual/powered pallet jacks.



CAUTION

Do not move with a load if leveling feet are included.

Due to the framework of the leveling feet being mounted within the fork pocket cavity, the fork pockets for this option are not accessible for transporting the machine with a fork truck or stacker. However, a fork truck, stacker or pallet jack may be used with the forks being inserted beneath the framework of the leveling feet to transport the machine to the desired location.

6 MAINTENANCE & REPAIR

⚠ WARNING

Do not enter under the platform unless the platform is secured against lowering. See Maintenance Devices section.

High pressure air can cause severe injury. Always relieve the pressure in the system before performing maintenance

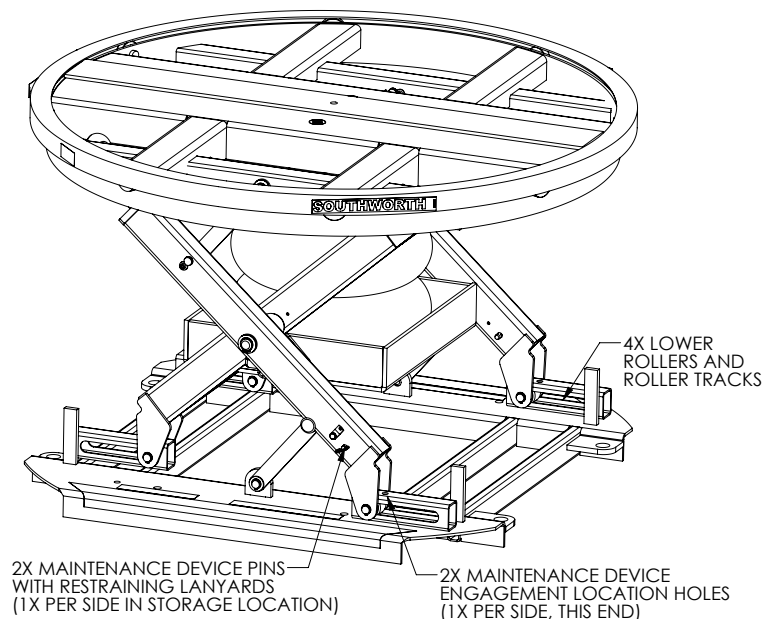
Remove load before performing any maintenance.

Actuator (air bag) and minimum load assist springs must be removed before performing any repair requiring disassembly of the leg set.

All inspections may be performed with the actuator (air bag) installed.

6.1 Maintenance Devices

With the machine in the raised position and the load removed, remove the supplied maintenance device pins from their stowed position on the legs, near the rollers (one each side).



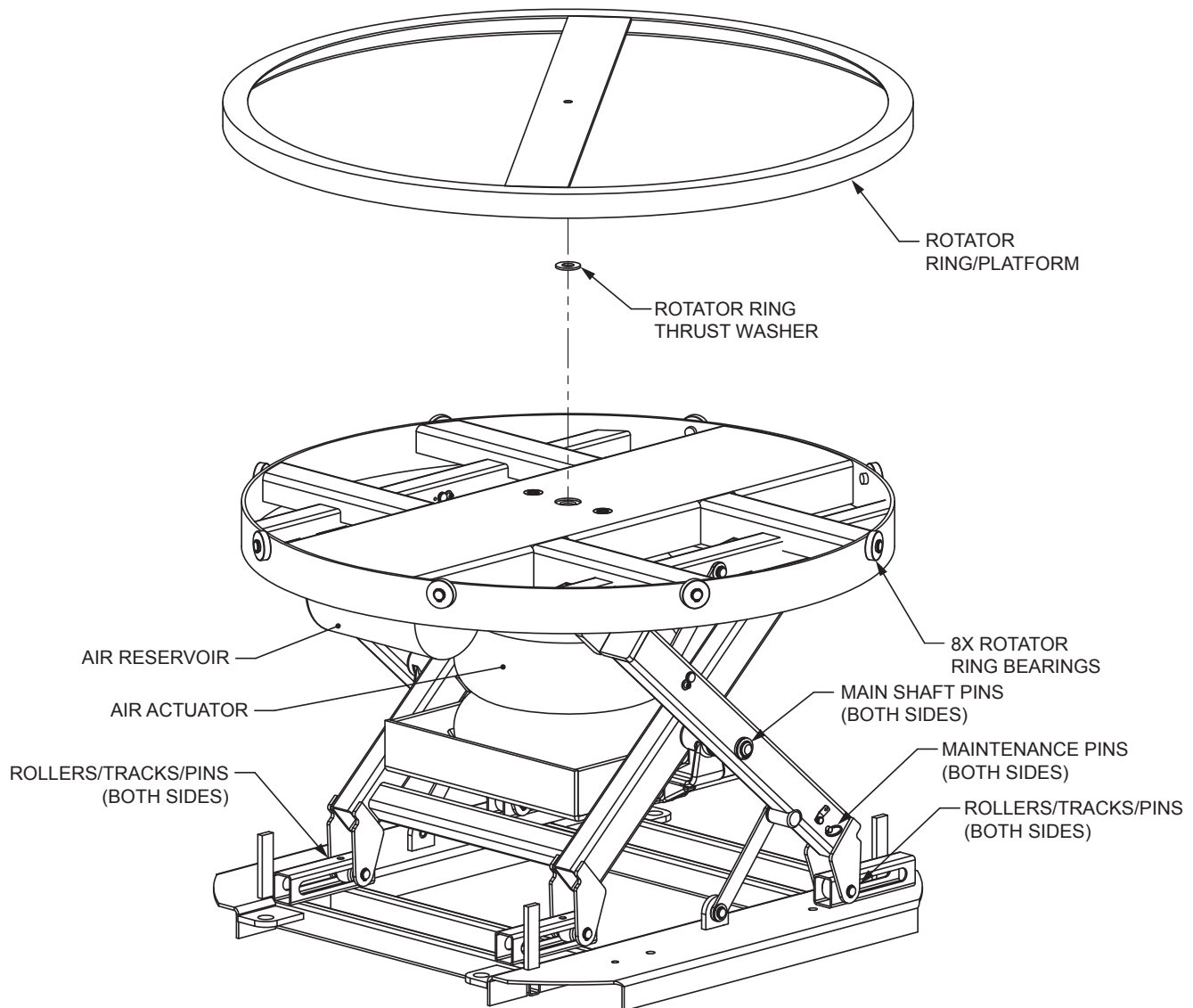
Insert the pins into the holes in the top of the roller track (both sides) to prevent rollers from going forward and lowering the platform.

NOTICE

If not supplied with maintenance pins, two 3/8" diameter by 3" long bolts may be used instead.

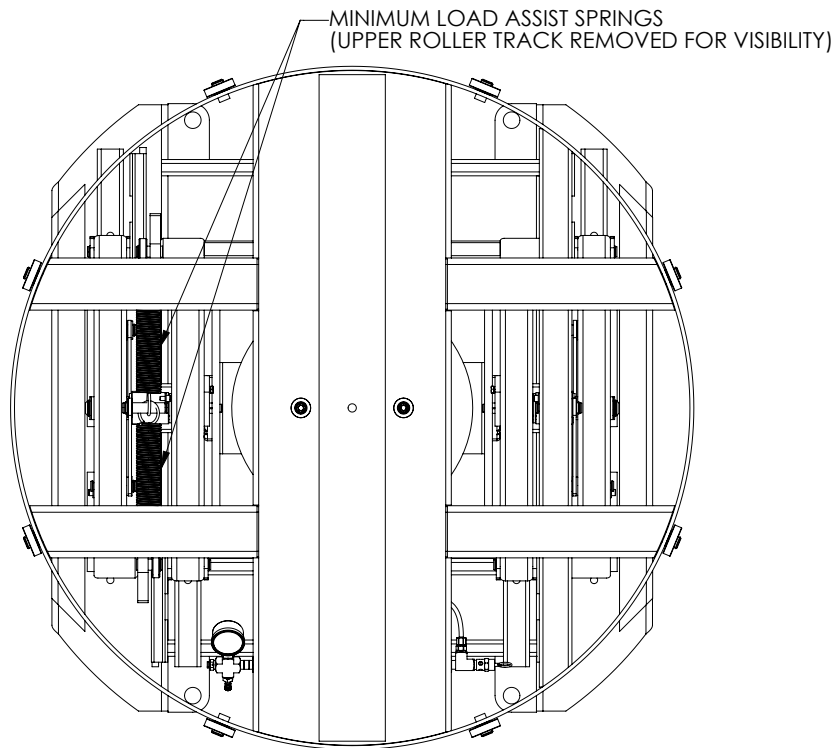
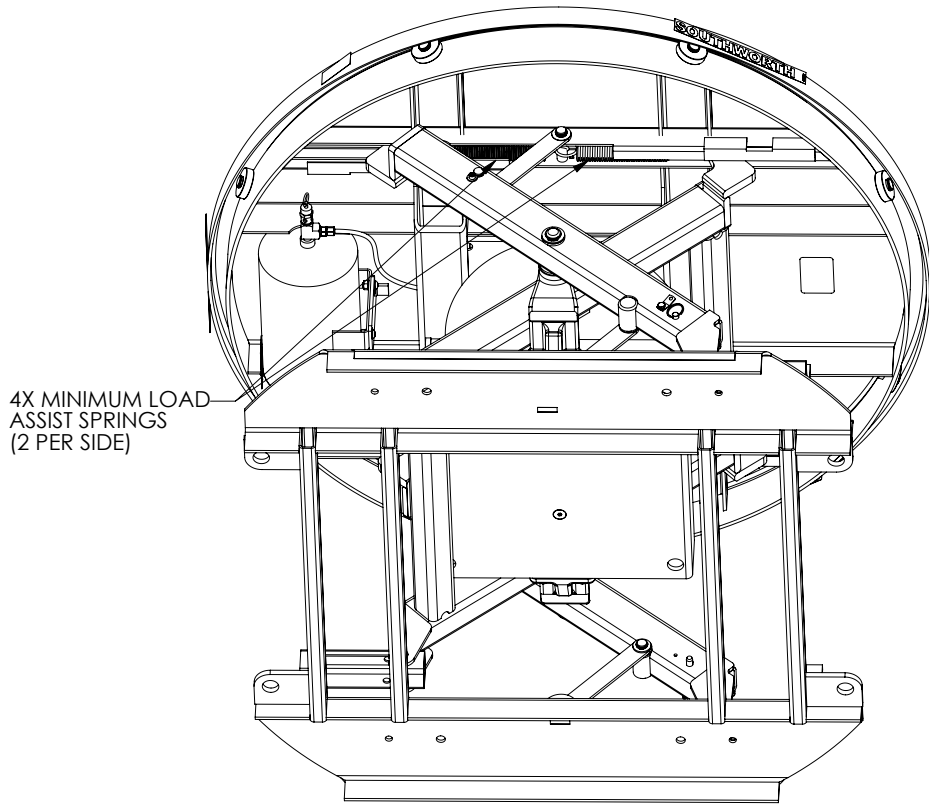
6.2 Periodic Maintenance

Before each use inspect the machine for damage or wear. If damage or wear is found remove the machine from service and repair before using.



6.2.1 Weekly

- Inspect upper and lower rollers, roller pins and bushings, minimum load assist springs and roller tracks. Replace as necessary.
- Inspect upper and lower link bars for signs of damage. Replace as necessary.
- Inspect center pins and bushings. Replace as necessary.
- Inspect rotator ring, rotator thrust washer, and bearings. Ensure the rotator rings rotates smoothly without binding. Repair or replace thrust washer or bearings as necessary.
- Inspect base frame, platform, and leg set for wear or damage.



6.2.2 Semi-Annually (Every Six Months)

- Perform weekly maintenance
- Apply PTFE lubricant to all pivot points, rollers, thrust washer and bearings.

6.3 Replacement Parts

Southworth has carefully chosen the components in your PalletPal 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 of the machine.

Southworth offers replacement parts for your Southworth machine. With your order, please include the model number and the serial number of the machine.

To order replacement parts, please call the Parts Department. See Warranty & Contact Information section.

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 collects (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.

7 TROUBLESHOOTING

Problem	Possible Cause	Check This
The unit lowers too easily (too early).	Not enough air pressure in tank.	Check for damage in the air lines/ fittings. Review Machine Setup section.
The unit does not lower enough (too late).	Too much air pressure in tank.	Release some air pressure. Review Machine Setup section.
The top of the unit rotates away from you.	The frame of the unit may not be level.	Move the unit to a level surface or install the optional adjusting feet.
Excessive vibration or noise when the ring rotates	Wear or lack of lubrication to bearings under rotating ring.	Remove turntable, lubricate or replace bearings. Lubricate rotator ring pivot pin and thrust washer. Replace thrust washer if worn.
Uniform wear or metal flaking from underside of rotating ring.	Normal condition caused by work-hardening of metal.	No repair necessary. This will stop once the rotator ring wears in.

8 WARRANTY & CONTACT INFORMATION

Southworth Products Corp. warrants this product to be free from defects in material or workmanship for the duration of the warranty period. Warranty periods vary and begin on the date of shipment. For specific warranty information, contact Southworth Products with the machine's serial number.

Any claim for breach of this warranty must be received in writing by Southworth within the warranty period. Warranties shall not cover failure or defective operation, caused by misuse, misapplication, negligence or accident, exceeding recommended capacities, or any alteration or repair of the item purchased which has not been authorized by Southworth. Except as set forth herein, Southworth makes no other warranties, express or implied, including THE WARRANTIES OF MERCHANTABILITY AND OF FITNESS FOR A PARTICULAR PURPOSE, all of which ARE HEREBY EXCLUDED.

Southworth's obligations under any warranty or for any other damages which may arise under any sale, agreement, or contract, are limited to the replacement or repair of defective components at its factory or another location at Southworth's discretion. This is buyer's sole remedy under any such warranty, sale, agreement, or contract. Southworth will not be liable for consequential, incidental, exemplary, or punitive damages of any kind resulting from a breach of any warranty that it has provided or for breach of any term of any sale, agreement, or contract. Any warranty may be altered only in writing by Southworth.

Southworth meets the labeling requirements of California's Proposition 65. Southworth makes no warranty or representation with respect to the compliance of any product with other 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 shall not be liable for any direct or consequential damages arising out of such non-compliance.

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service@southworthproducts.com

www.SouthworthProducts.com

SOUTHWORTH

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(Find in Resource Library pull down menu)