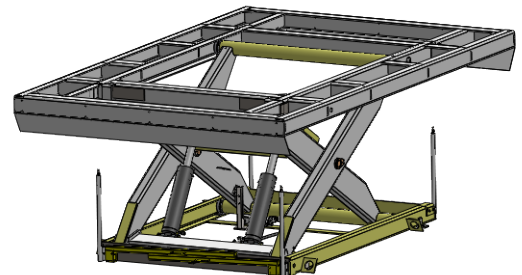
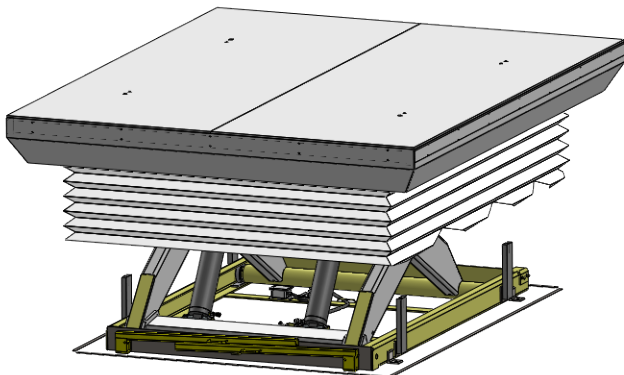
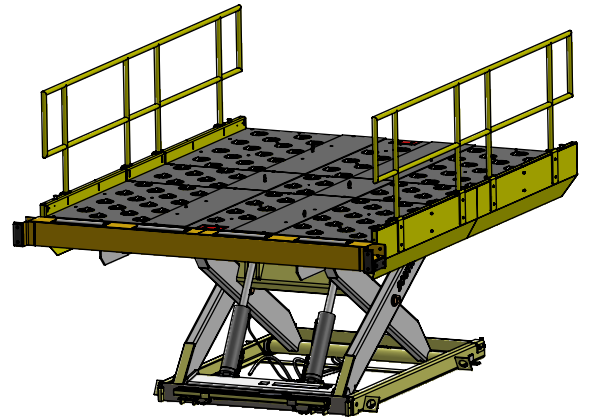
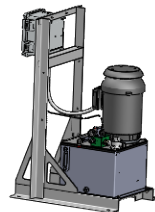
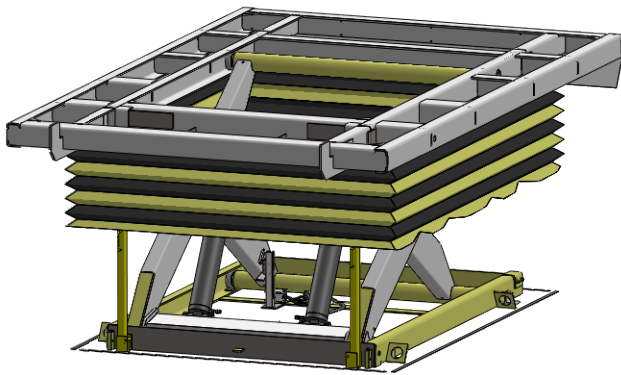


SOUTHWORTH

Air-Cargo Lift (ACDL15-49)



The information in this manual mostly represents our standard machines, if you have questions regarding the specifications and dimensions of your actual lift table, contact Southworth Customer Service or Southworth Sales if your order is being quoted or is in process.

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

SOUTHWORTH PRODUCTS CORP.
P.O. Box 1380, Portland, ME 04104-1380W
TF +1.800.743.1000 | D +1.207.878.0700 | F +1.207.797.4734
www.SouthworthProducts.com

**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.

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⚠ 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. Lower platform to the full down position.
3. Relieve system pressure from all circuits before loosening or removing any components.
4. All controls in the "off" position and all operating features secured from inadvertent motion by brakes, blocks, or other means.
5. Disconnect power and follow established owner/user lockout/tag out policies.
6. 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 1.4 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. Hydraulic system leaks
4. Electrical cables and wiring harness
5. Loose or missing parts
6. Nameplates, precautionary and instructional markings and/or labeling
7. Guarding system
8. 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.

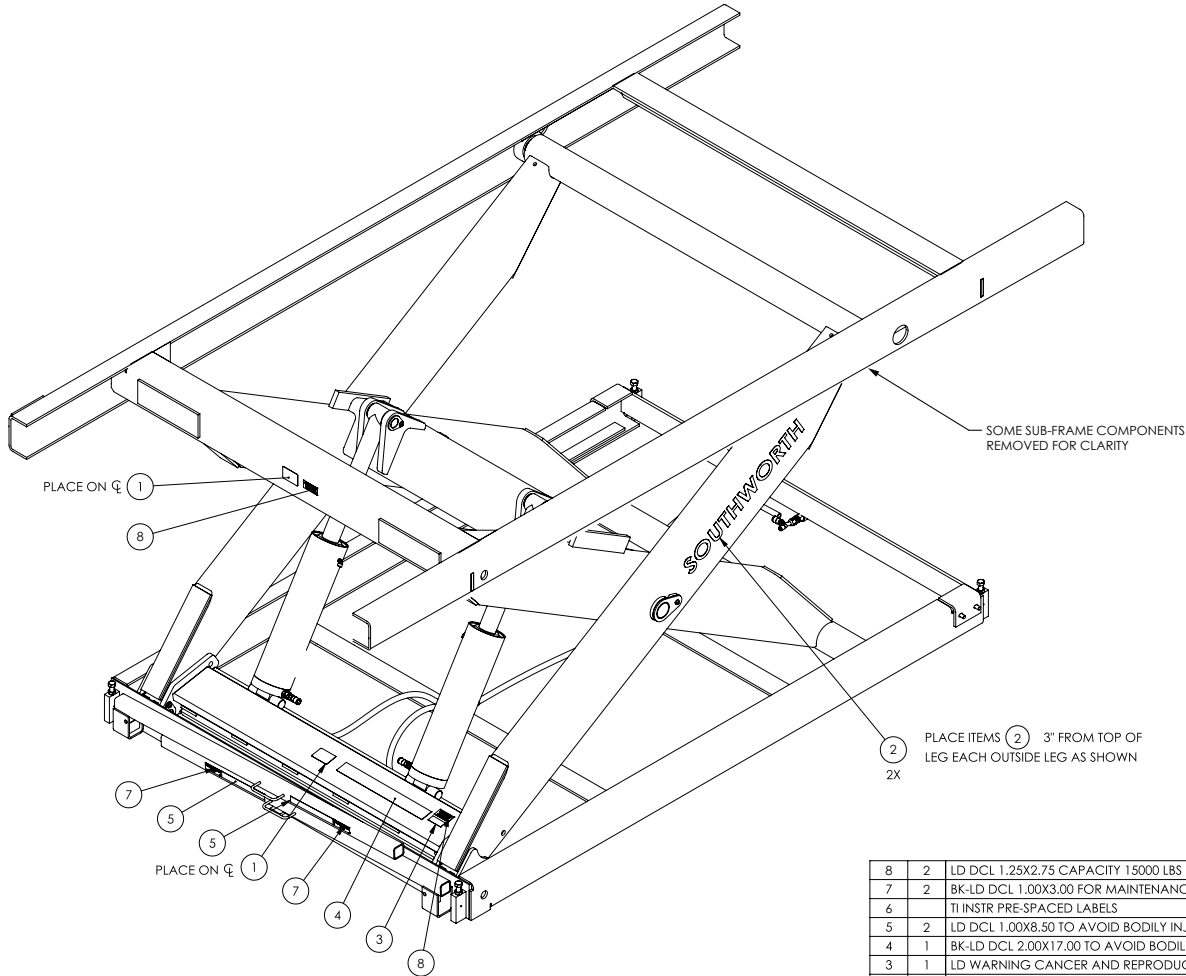


NOTICE Indicates information considered important, but not hazard-related (e.g., messages relating to property damage).

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



8	2	LD DCL 1.25X2.75 CAPACITY 15000 LBS	10089670
7	2	BK-LD DCL 1.00X3.00 FOR MAINTENANCE ONLY	2991927
6		TI INSTR PRE-SPACED LABELS	60048393
5	2	LD DCL 1.00X8.50 TO AVOID BODILY INJURY.	10089457
4	1	BK-LD DCL 2.00X17.00 TO AVOID BODILY INJ	2986306
3	1	LD WARNING CANCER AND REPRODUCTIVE	10095524
2	2	LD DCL 3.00X21.00 SOUTHWORTH	10074137
1	2	LD DCL 2.00X3.00 SOUTHWORTH SERIAL ID BL	10079929
ITEM NO.	QTY.	DESCRIPTION	PART NO.

4 SPECIFICATIONS

Model:	ACDL15-49
Max Capacity:	20,000 lb. uniform live load or 15,000 lb. uniform live load with Southworth castered deck
Raised Height of Platform:	61-3/4" available, without castered deck
Lowered Height of Platform:	12-3/4", without castered deck
Horsepower:	7.5 hp
Usable Tank Capacity:	Up to 10 gallons
Primary Voltage:	460/3/60
Control Voltage:	115/1/60
Elevating Time:	35 seconds for full 49" travel
Lowering Time:	30 seconds with pressure compensated flow control
Max Motor Current Load:	9.9 amps
Excess Flow Protection:	Included
Standard Accessory Options:	
Castered Deck:	Option with 2 or 4 manually actuated stops, fork lift lanes, shipped loose or installed
Stop Deck:	Option for building end, shipped loose
Accordion Bellows:	Option - for all 4 sides, shipped installed
Floating Bumper Assembly:	Option for truck end, shipped loose
I-Beam Bollards:	Option for truck end, shipped loose
Surface Mount I-Beam Bollards:	Option for truck end (includes wheel chocks), shipped loose
Bolt-On Bevel Toe Guards:	Option - 1 or more sides, shipped installed
Handrails:	Option - either side, shipped loose
Operator Walkway with Grating:	Option - either side, shipped loose
HPU Weatherproof Cover:	Option, shipped installed
HPU Immersion Heater:	Option, shipped installed
Controls:	Handheld Pushbutton or Stanchion mounted
Limit Switches:	Upper, lower, and/or intermediate, shipped installed With or without Maintenance Bypass Key Switch
Container Winch:	Option - either side, shipped loose
<p>Note: The HPU Motor is powered and runs only when raising the platform. The motor is not powered when lowering.</p>	

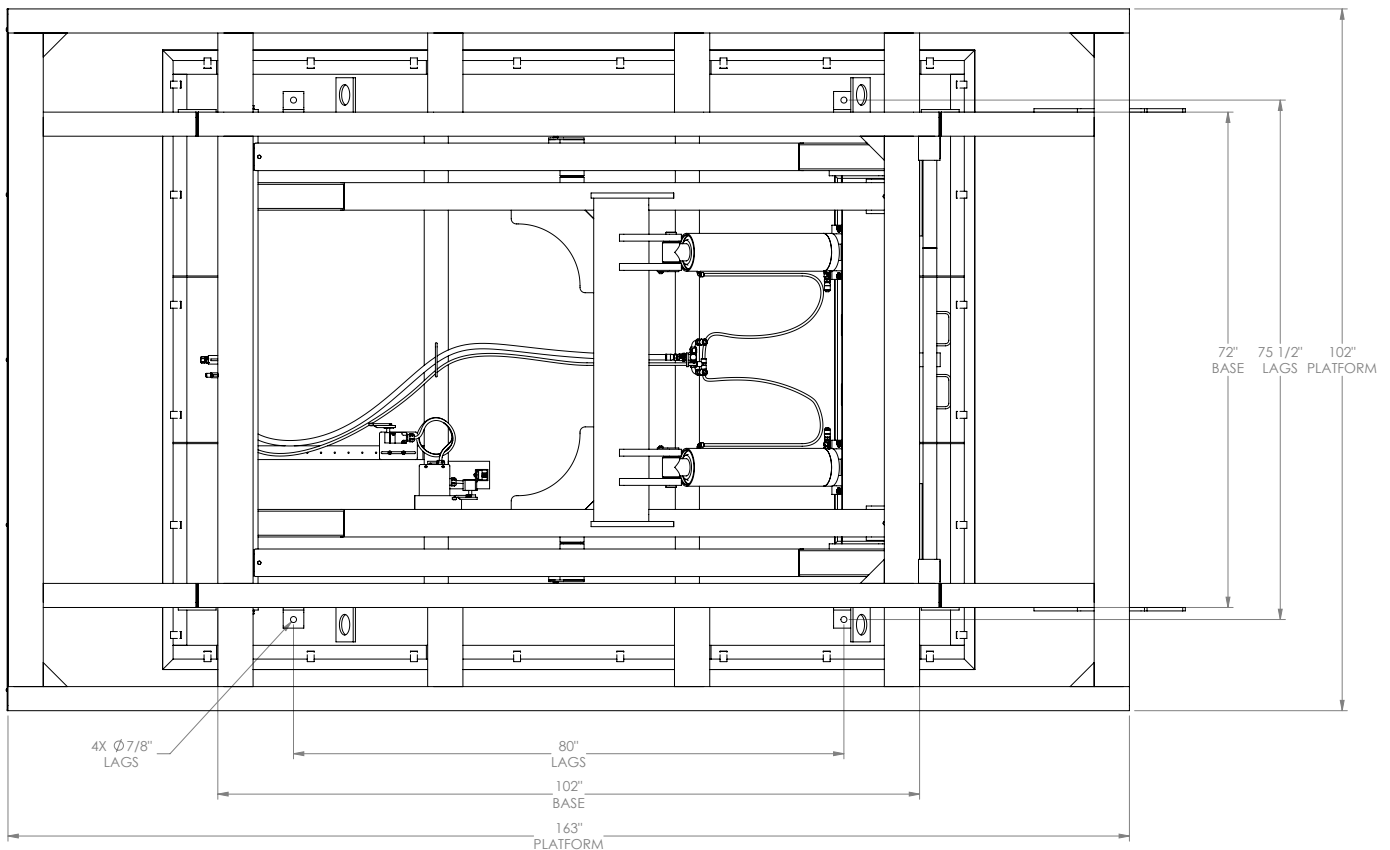
NOTICE

A substantial number of feature and function combinations exist when custom equipment is provided by a manufacturer. Images illustrated throughout this manual are only representative samples of designs that may or may not exist in the machine this general manual was provided for. When questioning whether any part of this manual applies specifically to your machine, you may contact customer service with your order number and/or the serial number for your machine, and we will provide the specific drawing(s) that combined with this manual will provide sufficient information to install, test, operate and maintain the equipment.

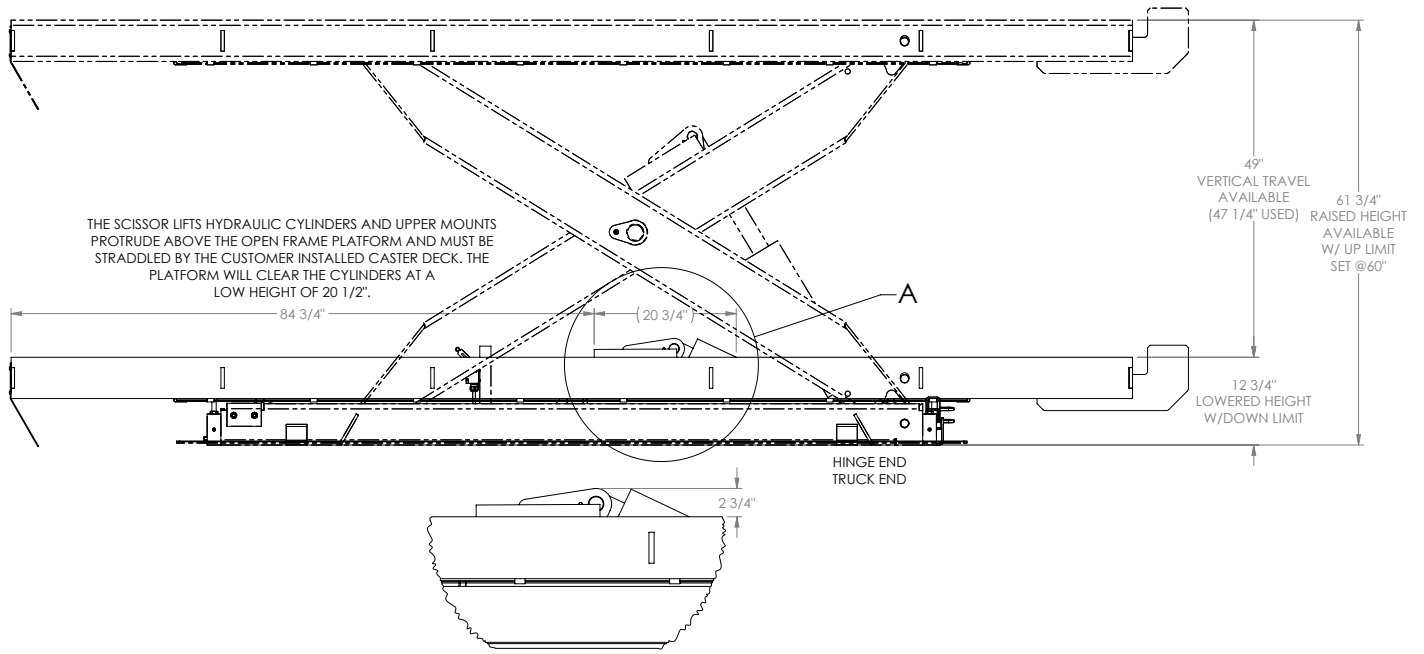
4.1 Non-Standard Machines

The images on the cover of this manual represent various applications and include features not common to all the machines shown. Non-standard machines may have features not covered in this manual and can include but are not limited to such accessories as castored decks, accordion bellows, floating bumpers, I-beam bollards, stop decks, bevel toe guards, hydraulic power unit covers, hydraulic fluid immersion heaters, handrails and operator platforms, container winches, etc. If your air cargo lift has anything other than standard specifications, **contact Southworth Customer Service for further assistance.**

4.2 Dimensions - Plan View



4.3 Dimensions - Elevation View



DETAIL A

THE SCISSOR LIFTS HYDRAULIC CYLINDERS AND UPPER MOUNTS PROTRUDE ABOVE THE OPEN FRAME PLATFORM AND MUST BE STRADDLED BY THE CUSTOMER INSTALLED CASTER DECK. THE PLATFORM WILL CLEAR THE CYLINDERS AT A LOW HEIGHT OF 20 1/2".

5 INSTALLATION

Installation of this machine shall be performed by trained and/ or qualified personnel only. The owner/ installer is responsible obtaining any necessary permission and/ or permits. The owner/ installer is responsible for compliance with all applicable codes and ordinances. Read and understand all safety and installation information in this manual.

This machine shall be installed and operated on a solid, level surface capable of supporting the machine and its maximum rated capacity.

Before installation, remove all shipping materials and verify all components on the packing list were received. Inspect the machine, all components, wiring and electrical connections, and hydraulic hoses and fittings for damage. If components are missing or damage is found contact the manufacturer before continuing installation.

DANGER

High Voltage: Electrical service and installation must be performed by trained and/ or qualified personnel. Lock-out/ tag-out the power source before installation.

Never enter beneath the platform unless the machine is unloaded and secured against lowering using the maintenance devices.

Pressurized fluids can penetrate skin and cause severe injury or death. Always use proper personal protective equipment when working with pressurized systems.

Pinch points and Crush Hazards exist when moving and transporting the machine. Do not enter under any equipment while moving or transport. Keep hands, feet, and loose clothing away from moving equipment.

The lift table is to be lifted by designated lifting points only. Do not attempt to pick up, move the lift table, or manually raise the lift table using the platform section lifting eyes. The lifting eyes may fail and lead to severe injury or death.

Electric motors can create sparks. Do not install the power unit in an area where flammable gases may be present.

Bevel toe guards should be present on any side exposed to a vertical surface no more than 3/4" away from the edge of the platform.

This lift table must be installed on a flat level surface capable of supporting the lift and it's maximum load. Do not install on asphalt.

This machine must be properly anchored before standard operation or the machine may be damaged. Anchor bolts are to be supplied by the installer and must be sufficient for securing the machine.

NOTICE

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· **A substantial number of feature and function combinations exist when custom equipment is provided by a manufacturer. Images illustrated throughout this manual are only representative samples of designs that may or may not exist in the machine this general manual was provided for. When questioning whether any part of this manual applies specifically to your machine, you may contact customer service with your order number and/or the serial number for your machine, and we will provide the specific drawing(s) that combined with this manual will provide sufficient information to install, test, operate and maintain the equipment.**

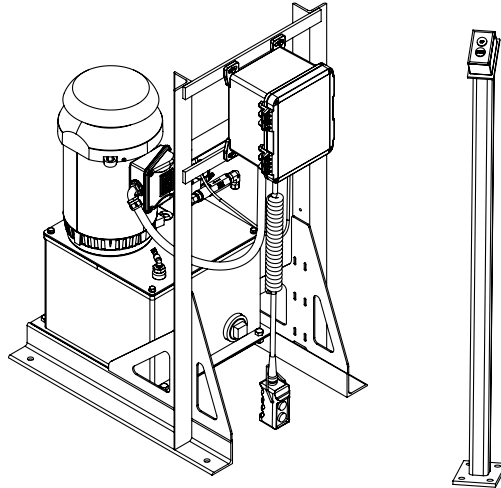
·
·
· **This machine must be installed in accordance with ANSI MH29.1-2020.**

·
·
· **It is recommended that this platform is to be raised by only the hydraulic power unit. Manually raising the platform can cause the cylinders to separate from the base frame. If it is absolutely necessary to manually raise the platform, see Manually Raising Platform section.**

·
·
· **Thoroughly read and understand these instructions before beginning installation. Contact Customer Service for assistance if needed.**

5.1 Hydraulic Power Unit

1. Position the hydraulic power unit (HPU) in the desired location. Twenty five feet of hydraulic hose is provided with this lift table.
2. Anchor the HPU using the four anchor holes located at each corner of the fluid reservoir.
3. If not previously completed, wire the controller into the control panel. See **Wiring Schematic** section.



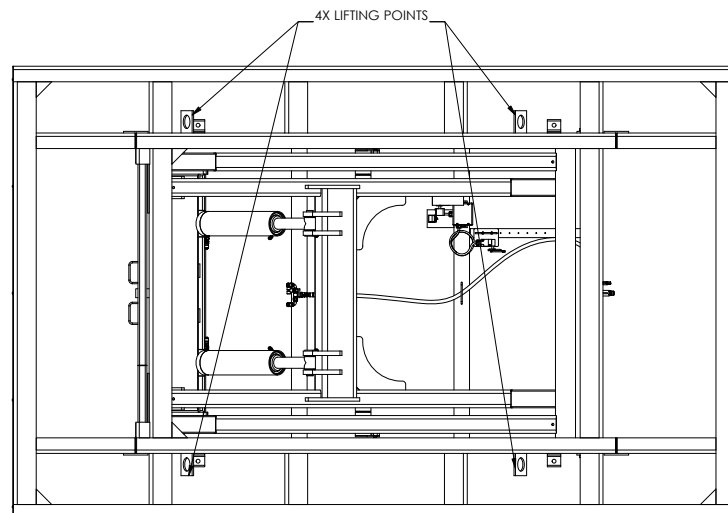
4. Connect the main power supply and ground into the control panel. See **Wiring Schematic** section.

5.2 General Lift Table

1. Unfasten the lift table from the shipping pallet/skid.
2. Carefully raise the machine off the pallet/skid using the four lifting points on the sides of the base frame. Use a load spreader system to evenly distribute the weight.

NOTICE

Machine weight: Approximately 4,800 lb.

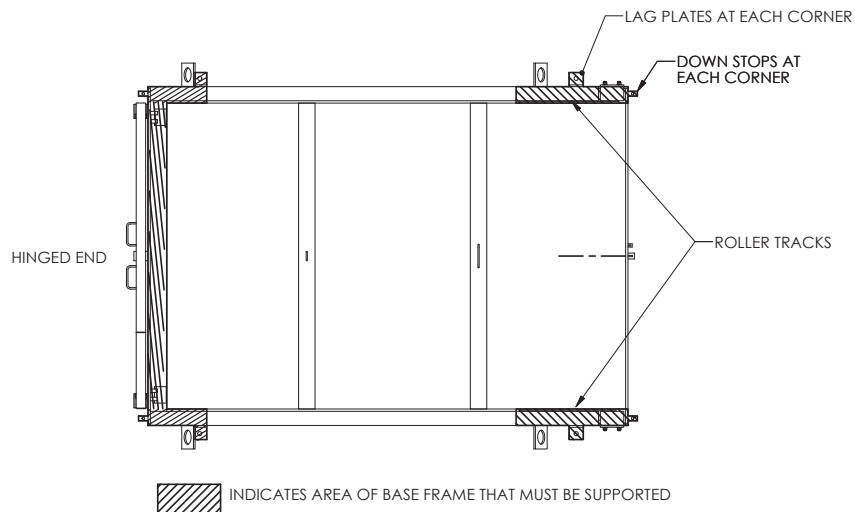


- Carefully transport the lift to the desired location and lower the lift table onto the floor.
- Level the base frame. Use steel shims and/or grout to fill gaps between the floor and the base frame in all load bearing points. See image below.

NOTICE

Shims must completely fill the gap between the floor and base frame/anchor plates/down stops and must fit tightly without causing deflection of the anchor plate. The lag bolts are not to be used to deflect the frame to compress the anchor plate onto the shim.

Do not yet lag down at this time. Additional shims may be needed once a castered deck has been added later in these instructions.

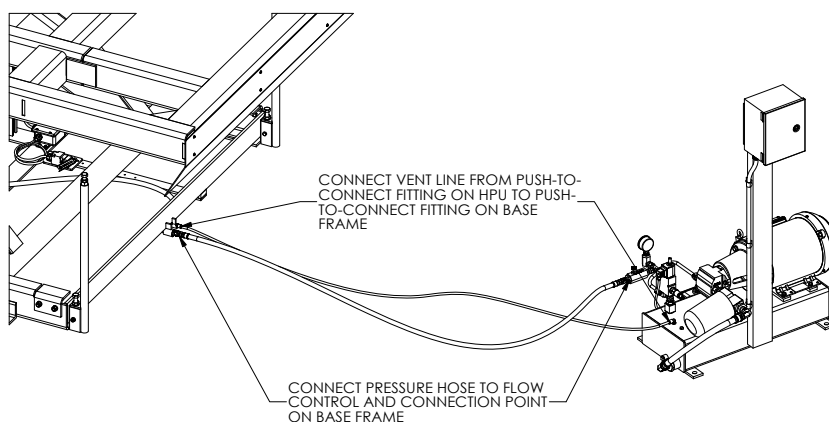


- Level the platform sub-frame using the leveling bolts at the top of each down stop. Secure the bolts with the locking nuts when adjustment is complete.

NOTICE

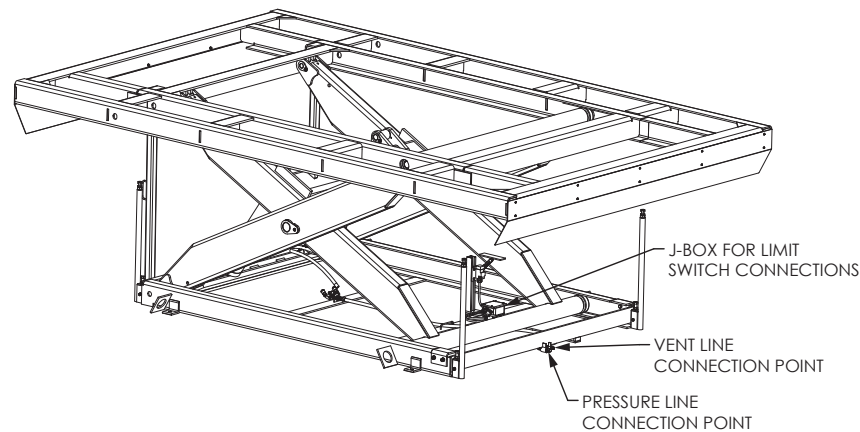
Leveling the platform sub-frame using the leveling bolts may need to be readjusted once the castered deck is installed.

- Connect the hydraulic pressure hose and vent line from the HPU to the hydraulic connections point on the roller end of the base frame.



Example power unit - connection points may be different on other power units.

7. Turn on the main power source to provide power to the control panel.
8. Press and hold the UP button on the operator controls. Raise the platform sub-frame only high enough to engage the maintenance devices. Engage the maintenance devices to secure the machine. See the **Maintenance Devices** section.
9. Slowly lower the platform sub-frame by pressing and holding the DOWN button on the operator controls until the maintenance devices are supporting the weight of the platform sub-frame. Continue to hold the down button for five seconds to relieve hydraulic system pressure.
10. Disconnect the main power source. Lock-out tag-out the disconnect switch to prevent accidentally energizing the control panel.
11. Make electrical connections from control panel to the limit switches located in the base frame. Connections are to be made in the provided junction box. Proper grounding is required. See the **Wiring Schematic** section.



12. While the platform is still being supported by the maintenance devices, continue to either of the next two sections, whichever is applicable.

5.3 Castered Deck Platform by Others (Optional Accessory)

Southworth understands that castered decks and bumpers are sometimes provided by others. The castered deck must be of rigid construction and evenly distribute the load on the open platform sub-frame.

1. Continuing from the previous section, ensure that the electrical supply to the machine is both disconnected and locked out to prevent unintended actuation of the machine.
2. See the castered deck manufacturer's documentation for installation instructions.
3. Ensure all stops are operational before putting into use.
4. Continue to the **Final Shimming and Leveling** section.

5.4 Castered Deck Platform (Optional Accessory)

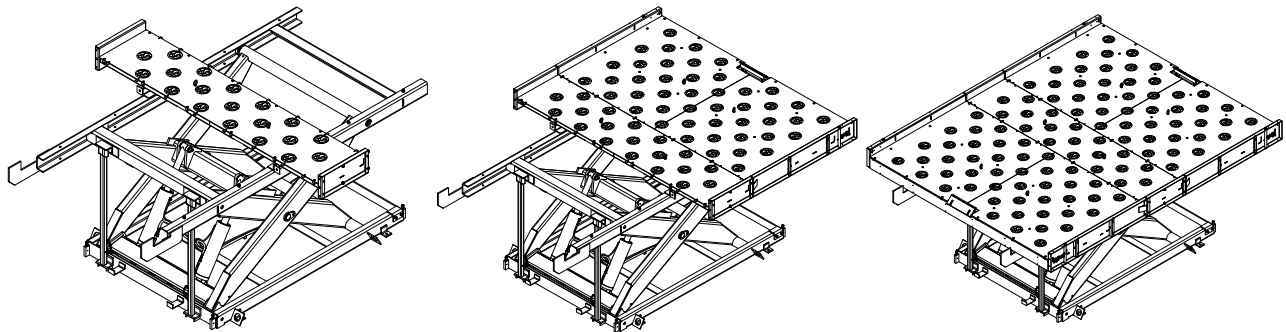
⚠ WARNING

When lifting the individual platform sections, use a load spreading device to ensure a vertical pull on the lifting eyes. Pulling the lifting eyes at an angle can lead to failure of the lifting eyes, damage to the component, and/or severe injury or death.

1. Continuing from the previous section, ensure that the electrical supply to the machine is both disconnected and locked out to prevent unintended actuation of the machine.
2. Lift the center section of the castered deck and position it on the open platform chassis rails. Align the holes in the center of the mounting angle with the holes in the center of the open platform chassis rails. Fasten the castered deck section using the supplied 1/2" x 1 3/4" socket head screws. Ensure section is precisely centered on the open platform chassis before tightening fasteners. Tighten fasteners to 75-80 ft-lbs.

NOTICE

Center section weight: Approximately 600 to 800 lbs



NOTICE

Two remaining sections' weight: Approximately 1,600 to 1,800 lbs each

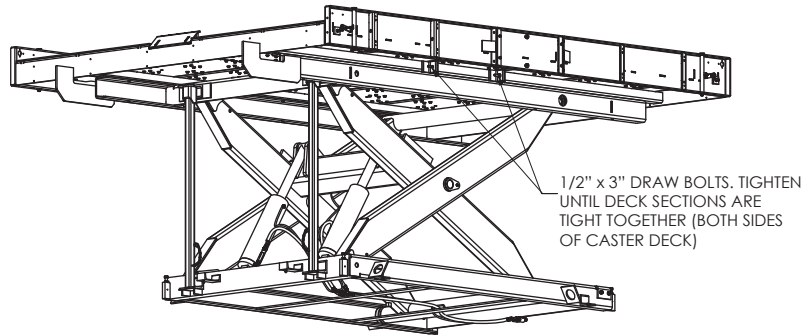
3. Lift one of the two remaining castered deck sections (both sections are identical) and position it on the roller end of the open platform chassis rails. Align the mounting holes on the mounting angle with the holes on the open platform chassis rails (2 per side). Fasten using the provided 1/2" x 1 3/4" socket head screws. Fasteners should be hand tight only.

NOTICE

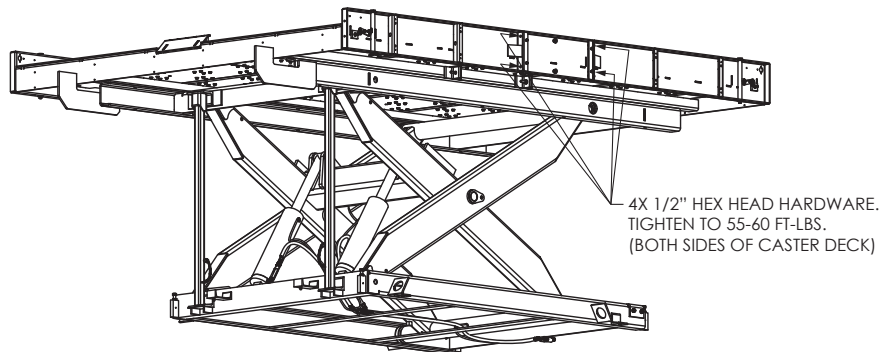
Tip: Use clamp near top of flange to act as a hinge forcing castered deck tabs into position as tilted platform is lowered. Use drift pin A/R for alignment. See Drawing 60073263 section.

4. Lift remaining castered deck section and position it on the hinged end of the open platform chassis. Align the mounting holes on the mounting angle with the holes on the open platform chassis rails (2 per side). Fasten using the provided 1/2" x 1 3/4" socket head screws. Fasteners should be hand tight only.

5. Remove the lifting eyes from all three castered deck sections. Store for future use, if desired.
6. Install the 1/2" x 3" fully threaded draw bolts into angles on the underside of the castered deck. These are used to draw the castered deck sections together. Tighten until deck sections are tight together.

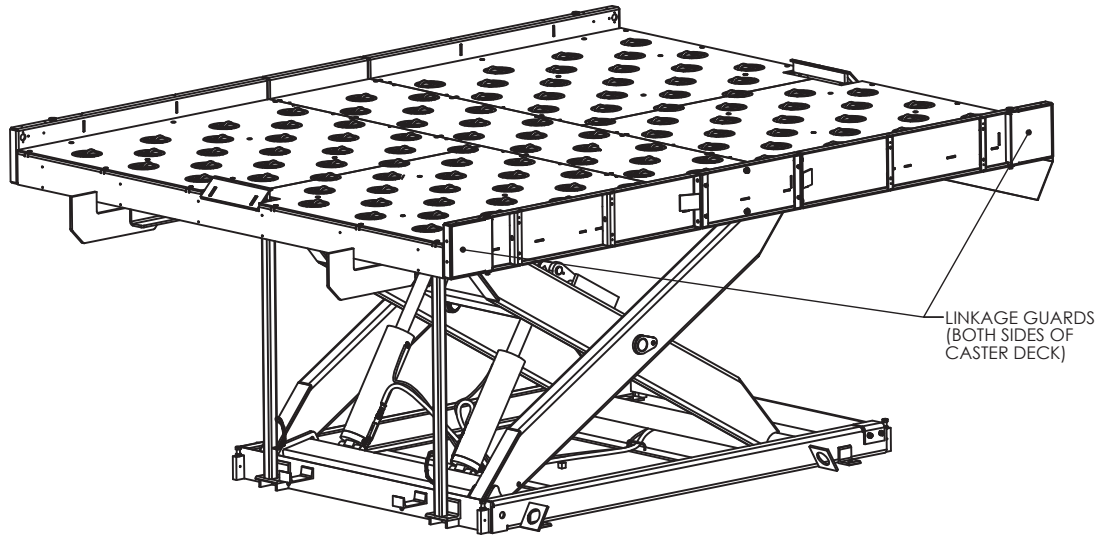


7. Fasten the castered deck sections together at the deck section flanges. Use the provided 1/2" hex head Bolts (4X per side, both sides of castered deck). Tighten fasteners to 55-60 ft-lbs.



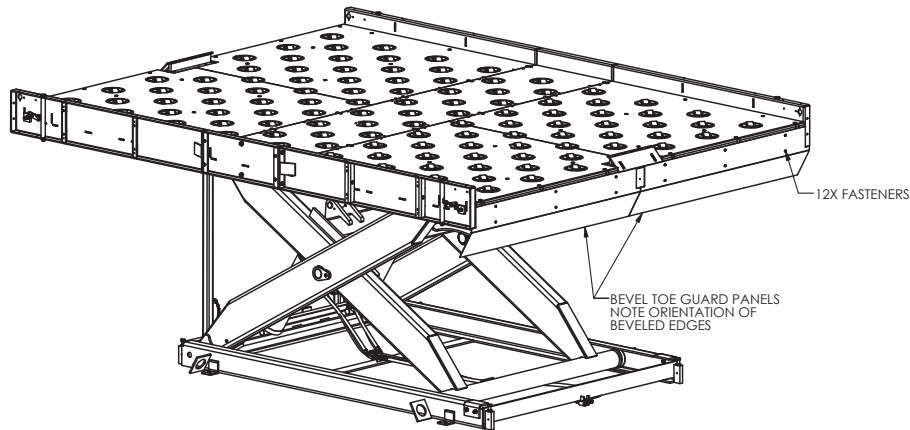
8. Tighten all castered deck section fasteners on the underside of the platform to 75-80 ft-lbs.

9. Install up to four guards for the platform bumper linkages. Guards will not be necessary on any side that also includes beveled toe guard as the upper part of that assembly serves the purpose of guarding the linkage.

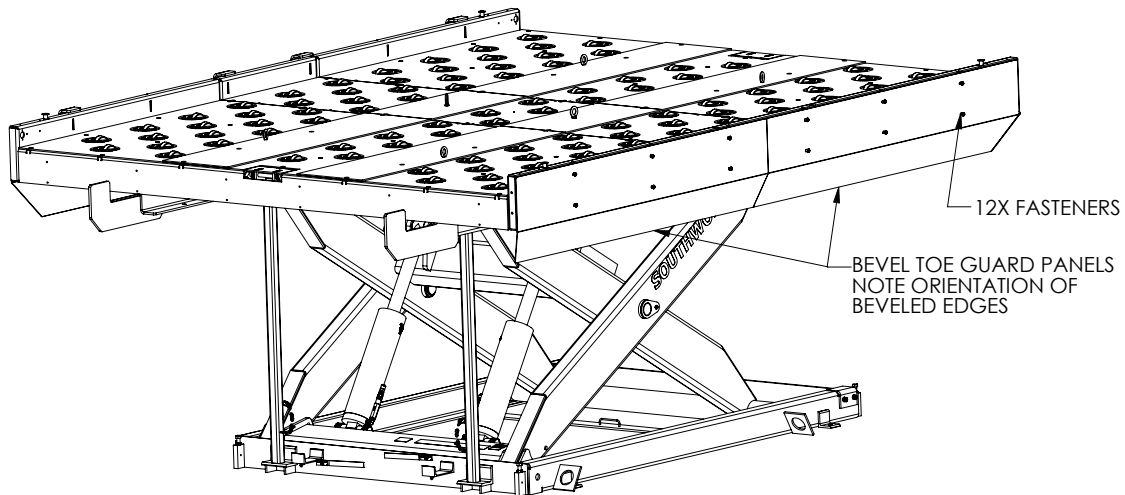


5.5 Beveled Toe Guard (Optional Accessory)

1. Install the beveled toe guard (if included) on the roller end of the castered deck. The beveled edge of the toe guard is to angle into the base frame.



2. Install the beveled toe guards (if included). Linkage guards shown in a previous section will not be necessary on any side that also includes beveled toe guard as the upper part of that assembly serves the purpose of guarding the linkage. The beveled edge(s) on the side toe guard(s) is/are to angle into the base frame as illustrated below.

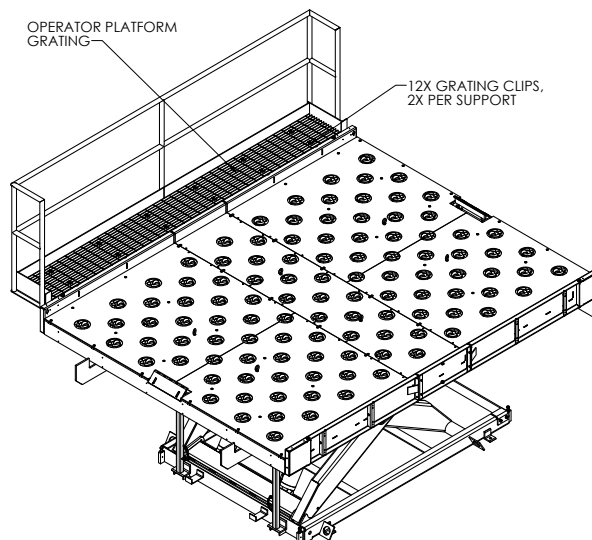


5.6 Operator Platform (Optional Accessory)

1. Install the operator platform(s) (if included) using the supplied 3/8" bolts. Tighten fasteners to 25-29 ft-lbs. The operator platform can be located on either side of the castered deck, as required.

NOTICE

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• **Section weight: Approximately 400 lbs**
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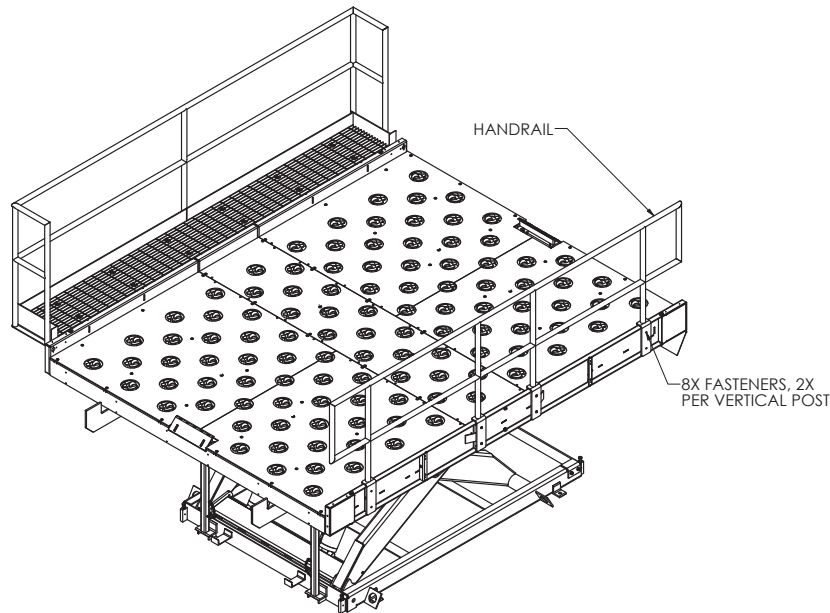


5.7 Handrails (Optional Accessory)

1. Install the handrail(s) (if included) using the supplied 3/8" bolts. Tighten fasteners to 25-29 ft-lbs. The handrail is located on the side opposite the operator platform.

NOTICE

Section weight: Approximately 90 lbs



5.8 Final Shimming, Leveling and Lagging

1. Turn on the main electrical disconnect switch and raise the lift to the fully raised position. Remove and stow the maintenance devices. See **Maintenance Devices** section.
2. Verify the lift will reach the necessary raised height. If the lift is unable to reach the necessary raised height, use steel shims to increase the raised height.
3. Lower the lift to the fully lowered position. Verify the height of the lift's castered deck and that the lift's castered deck is level. Note that this is a fine platform leveling and assumes that the base frame is level. Adjust the deck height and level as necessary using the four platform leveling bolts (if included) located at the corners of the base frame. Adjusting these will allow changing the lowered height.

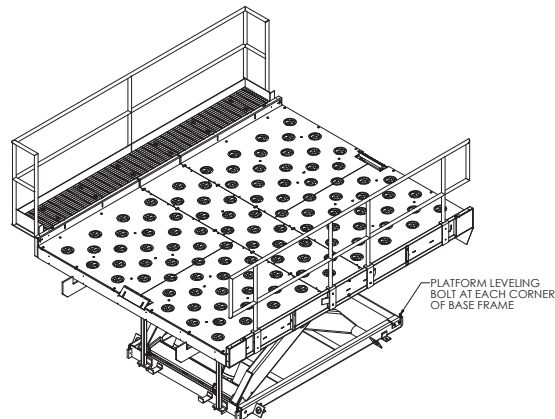
NOTICE

If unable to gain access to shim, level, or lag, raise platform to engage maintenance devices. See Maintenance Devices section.

The platform leveling bolts (if equipped) provide approximately one inch of adjustment for lowered height only. If more adjustment is needed to increase lowered height, shims will need to be used under the base frame. Ensure lift shimmed evenly and all load bearing areas of the base frame are fully supported.

Shimming of the base frame to increase the raised height will also increase the lowered height.

Ensure all load bearing areas of the base frame are fully supported using steel shims and/or grout. See General Lift Table section.

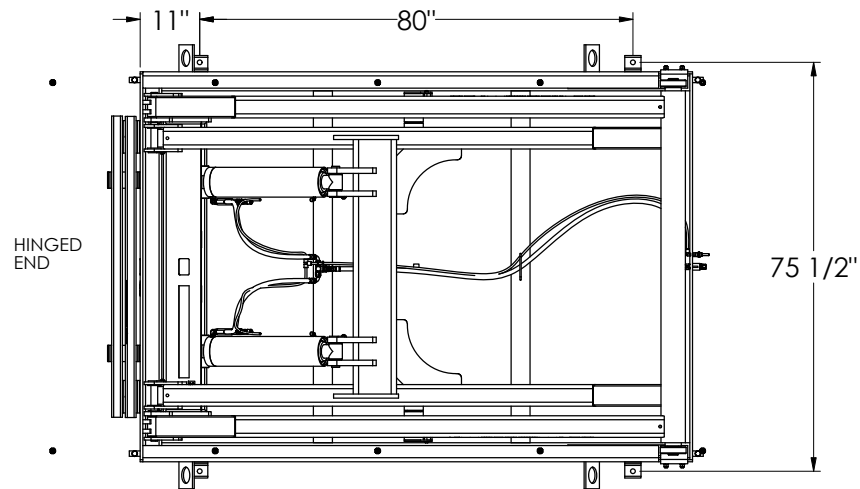


4. Install additional optional accessories (if equipped) at this time. See **Floating Bumper & Bollard Installation** and **Stop Deck Installation** sections that follow.
5. Once any additional optional accessories from step 4 have been installed, verify the raised and lowered heights and that the lift's base frame and castered deck are level. Verify all clearances in the lowered and raised positions, with building side stop deck (if equipped) or castered deck, and with floating bumper and bollards (if equipped).

WARNING

Disconnect and lock out the electrical supply, before working under or around the lift, to prevent unintended operation of the lift.

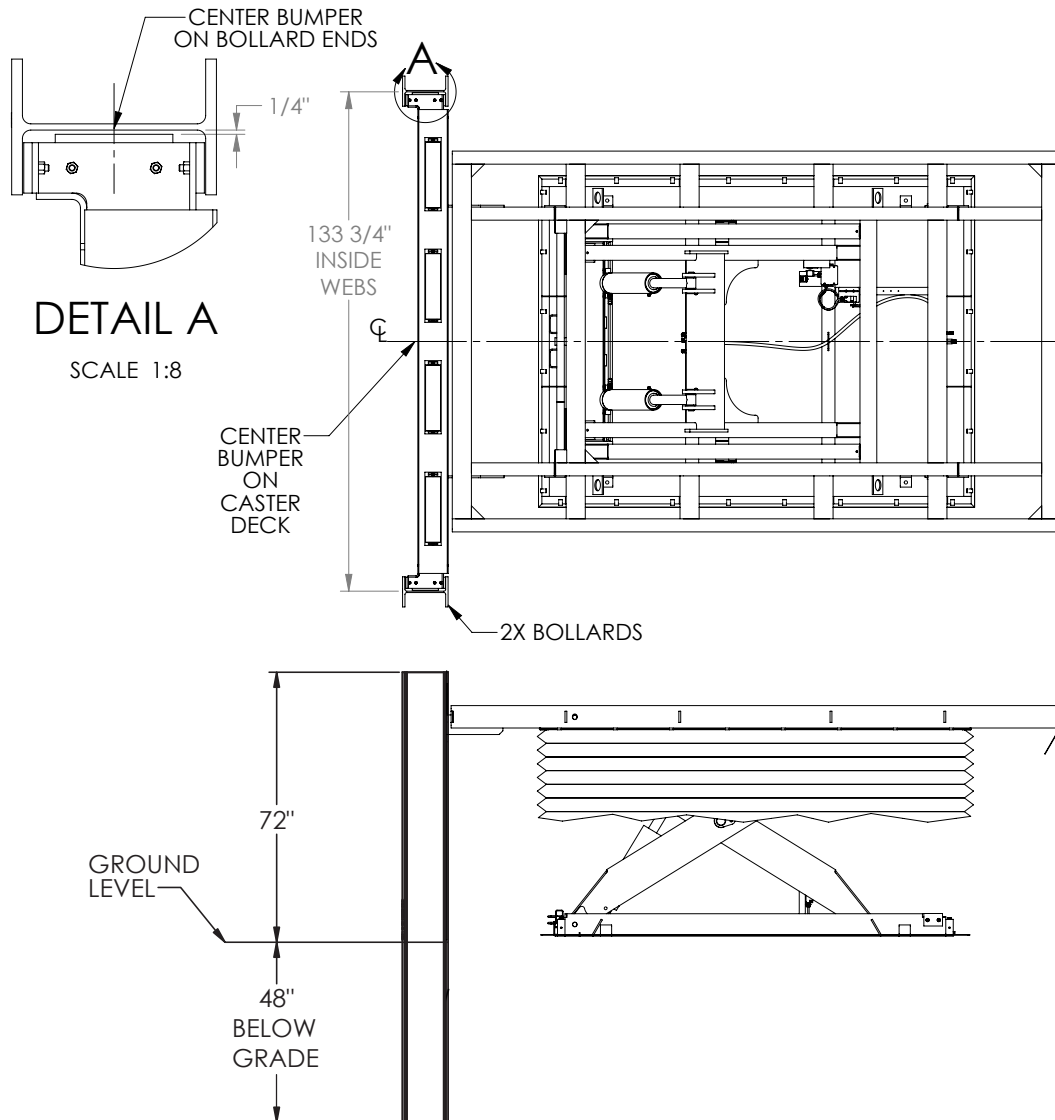
6. Press and hold the UP button on the operator controls. Raise the lift to the fully raised position. Engage the maintenance devices to secure the machine. See **Maintenance Devices** section.
7. Disconnect electrical supply and lock out the machine to prevent unintended actuation of the machine.



8. Mark and drill holes for the anchors. The anchor plates include 7/8" dia through holes. All four anchors must be used. Install anchors according to anchor manufacturer's specifications.
9. Turn on the main electrical disconnect switch and raise the lift to the fully raised position. Remove and stow the maintenance devices. See **Maintenance Devices** section.
10. Lower the lift to the fully lowered position.
11. Lift is now ready for testing. See **Testing** section.

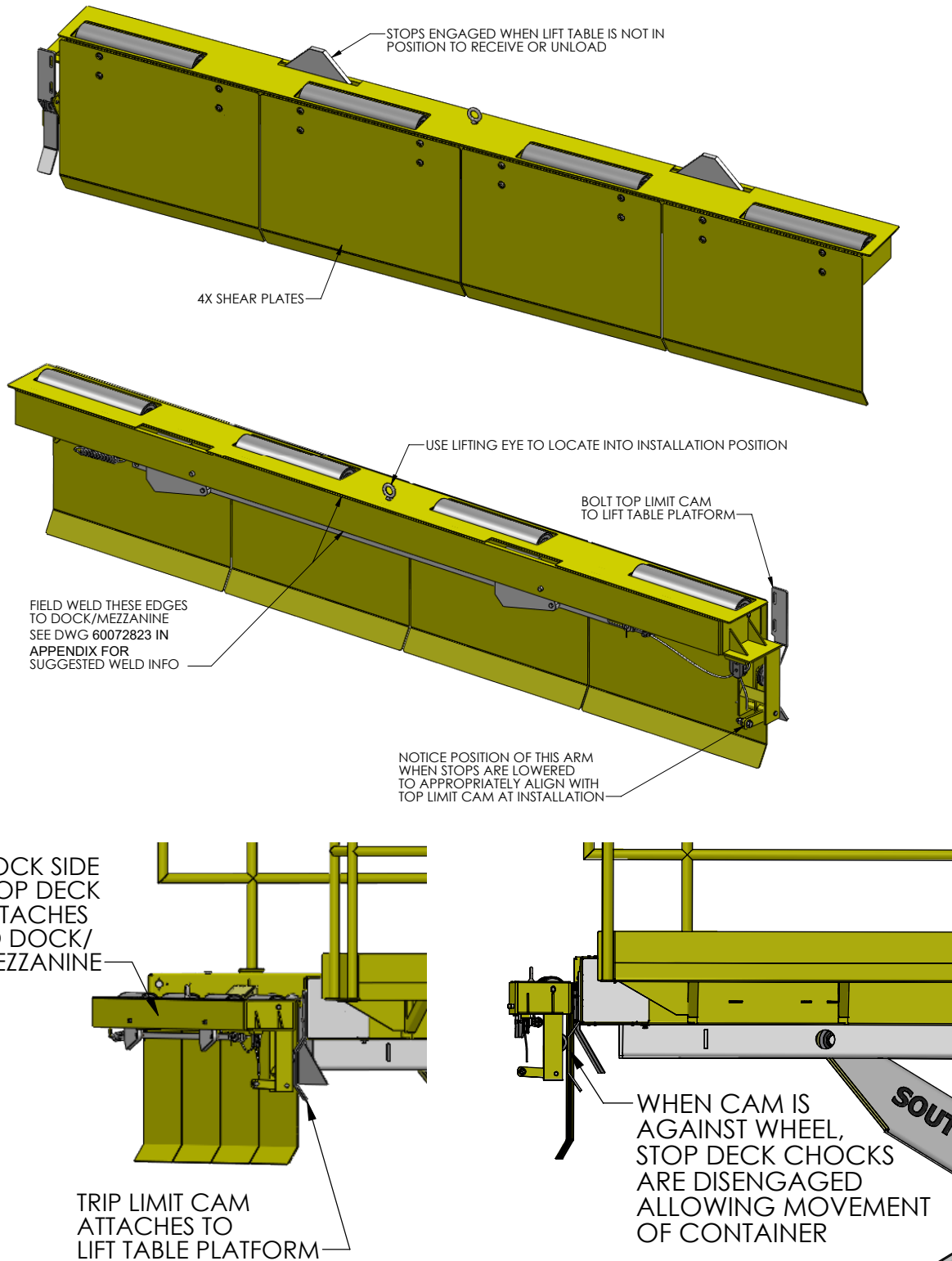
5.9 Floating Bumper & Bollard (Optional Accessory)

Place the floating bumper onto the brackets on the truck end of the lift. Center the bumper on the castered deck. Position and mark the locations for the bollards as shown below. Install bollards as required. Replace the floating bumper onto the brackets once bollards are completely secured. The bumper ends are to be inside the I-beam bollards to prevent sideways movement and resting on the brackets.



5.10 Stop Deck (Optional Accessory)

If it is desired to keep a container unit from accidentally rolling off the dock while the air cargo lift is not in a position to receive it, a stop deck is available to mount to an existing dock and integrate with the air cargo lift. This would be field mounted at time of installation. See the **Drawing 60073263** section for more information. Specify shear plate height at time of order. 24" or 28" are current options.

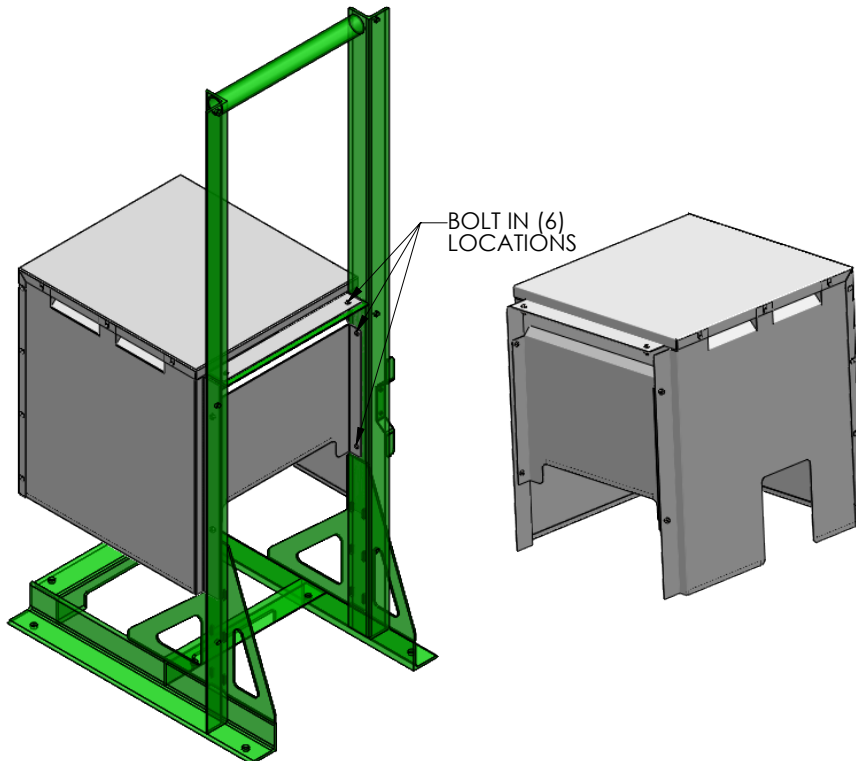


5.11 Winch Assembly and Detection Photo Eye Sensor (Optional Accessory)

The air cargo lift table may include a container winch assembly which would allow the operator the option to pull a container unit horizontally from a truck onto the castered deck. A container detection photo eye sensor and reflector would also be included to stop the winch from retracting once the cargo unit is in place on the platform. Contact Customer Service for instructions for this accessory, if equipped.

5.12 Hydraulic Power Unit Cover (Optional Accessory)

A water resistant cover is available as an option for the hydraulic power unit if total protection from weather is not possible. The cover bolts onto the frame as illustrated below.



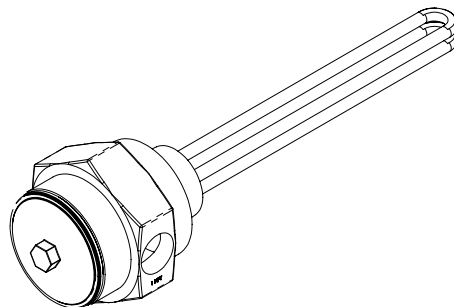
5.13 Immersion Heater Installation (Optional Accessory)

For colder weather climates, an immersion heater is available to be installed into the hydraulic fluid tank. Drain fluid out of reservoir before exchanging the immersion heater port plug with the actual heater assembly. Make electrical connections and replace hydraulic fluid before testing.

HYDRAULIC RESERVOIR IMMERSION HEATER

MANUFACTURER: HOTSTART
MODEL: HAZARDOUS LOCATION IMMERSION HEATER
PART NO: E01043E-108A-00

CLASS 1 GROUP D
1000WATT
480/3/60
1.2 AMP
2" NPT THREAD FITTING
THERMOSTAT TEMP RANGE: 80°F - 100°F



NOTICE

Do not continue to power the lift once it reaches the fully raised position or damage may occur.

Starting with the platform in the fully lowered position:

1. Ensure all tools, debris, and personnel are clear of the area. Verify the roller tracks are clear of debris and tools.
2. Verify positioning of the lift table. Ensure the platform movement will not interfere with adjacent equipment and structures.
3. Turn on the main electrical disconnect switch to energize the control panel.
4. Using the UP and DOWN buttons of the handheld pushbutton controls, fully raise and lower the platform five or six times to ensure all air has been bled from the system.

NOTICE

Air in the hydraulic system may cause the machine to stutter or bounce during operation. If this occurs, raise and lower the platform until the effect subsides. Verify hydraulic fluid level. Fluid should be at 1/4" from the top of the sight glass when the lift is fully lowered.

5. Press and hold the UP button. The primary motor should start and the platform should begin to raise.
6. Raise the platform approximately one foot then release the button. The motor should turn off and the platform should come to a stop and hold its position.
7. Press and hold the UP button. If not equipped with an upper travel limit switch, jump to step 8. If equipped, raise the platform to the adjustable upper travel limit switch position, the motor should turn off once the platform has reached this height, without actually releasing the UP button. The platform should come to a stop and hold its position. Release the UP button if the platform is at full travel height and the adjustable upper travel limit switch has not yet cut off the motor.

NOTICE

Regarding the raised height of the lift table, the fully raised height is the highest position the platform can physically raise to, whereas the adjustable upper travel limit switch height is the highest position the platform can raise to using the adjustable upper travel limit switch to limit the travel. The adjustable upper travel limit switch height may be the same as the fully raised height or it may be lower, but it may not be higher. See Adjusting the Limit Switches subsection in the Maintenance & Repair section.

8. Raise the platform to fully raised height then release the button. The motor should turn off and the platform should come to a stop and hold its position.

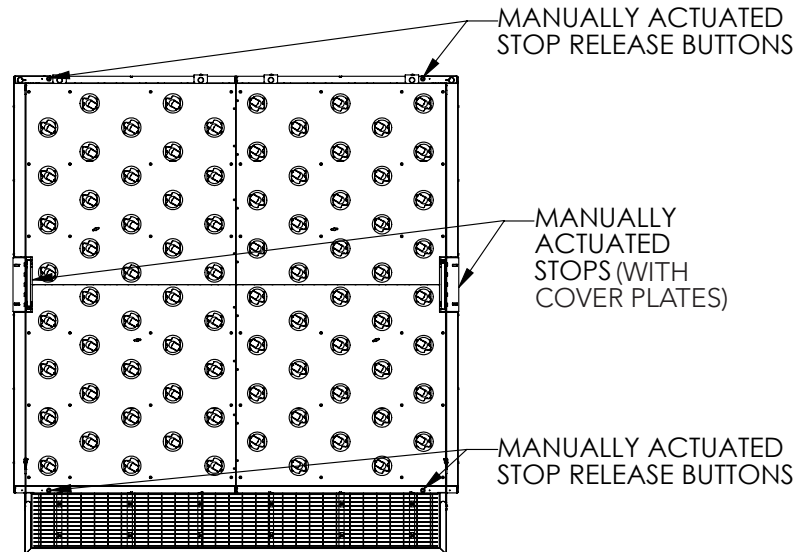
9. If the optional floating bumper has been installed, verify that the bumper is freely moving up and down between the guides. Ensure all rollers turn freely.
10. Press and hold the DOWN button. The down valve solenoid should energize and the platform should begin to lower.
11. Lower the platform approximately one foot, then release the button. The down valve solenoid should deenergize and the platform should come to a stop and hold its position.
12. Press and hold the DOWN button. Lower the platform to the fully lowered position.

NOTICE

⋮
⋮ **If equipped with down limit switch and adjustable down stops - If the platform stops before reaching the down stops, the down limit switch will need to be adjusted. See the Adjusting the Limit Switches section. The platform must come to rest on the down stops when lowered. If the platform is not at the correct height when resting on the down stops, adjust the lowered height using the leveling bolts on top of each of the down stops. Verify the platform is level after adjustment.**
⋮
⋮

13. Press and hold the UP button and raise the platform to the adjustable upper travel limit switch height, if not equipped, than to the fully raised height..
14. Press and hold the DOWN button and lower the platform to approximately one foot above the fully lowered position.
15. If not equipped with a manual down valve override, jump to step 16, otherwise lower the platform to the fully lowered position using the manual override on the down valve. Turn the override screw counterclockwise. Reset the override by turning the override screw clockwise when the platform reaches the fully lowered position. See the **Down Valve Manual Override** section.
16. Lower the platform to the fully lowered position.
17. If an immersion heater is included, observe that the temperature gauge reads not less than 80 degrees and not more than 100 degrees. If this is true, it is likely that the immersion heater (if included) is working properly.
18. Verify hydraulic fluid level. Fluid should be at 1/4" from the top of the sight glass when the lift is fully lowered.
19. Verify that no leaks of hydraulic fluid exist at the power unit, the lines, or in and around the lift table. See **Relieving Hydraulic Pressure** section.
20. Test the function of the castered deck using the manufacturers guide (if by others).

21. If a Southworth castered deck has been provided, ensure the manually actuated stops function properly by pressing down on the release buttons, located on the sides of the castered deck aligned with their respective stops. When the release buttons are pressed down, the stops should raise. To lower the stops press down on the stop cover plate until the latch clicks into place. The stop release buttons should return to the original position. There are two release buttons per pair of stops, ensure all release buttons function properly.



22. Transfer a load onto the platform and repeat steps 5 through 16, and steps 18 and 19.
23. Remove the load and test the function of the maintenance devices. See **Maintenance Devices** section.
24. Testing is now complete.
25. Refer to the **Air Cargo Lift Table - Operational Inspection Check Off Form** section on the next page for the installer and the company rep that “accepts” the install as complete.

5.15 Air Cargo Lift Table - Operational Inspection Check Off Form

Air Cargo Lift Table - Operational Inspection Check Off Form

Site Name: _____

Date: _____

Serial Numbers: _____

Test Items	Expectations	Lift 1	Lift 2	Lift 3
Physical Inspection of power unit	Inspect for mechanical and electrical defects, such as burrs and rough edges, sharp corners, hydraulic fluid leaks, loose connections / hardware, or exposed wires, etc.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Physical inspection of lift	Ensure no hydraulic leaks, loose bolts, misalignment damaged or broken wires. Torque bolts marked.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Lift lagging	Ensure the lift is level and properly lagged. Roller tracks properly shimmed/grouted.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Power and run the lift to its fully raised position	Does the lift raise & operate to design? Record times.	Pass Fail	Pass Fail	Pass Fail
Notes:				
If equipped, does the unit stop on an upper limit switch?	Verify lift stops at correct height required.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Lower lift to fully lowered position	Verify lift stops at correct lowered height on the stops.	Pass Fail	Pass Fail	Pass Fail
Notes:				
If equipped, does the unit stop on a lower limit switch?	Verify the lift stops at the correct lowered height required.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Inspect casters & caster deck	All casters operate correctly & deck not damaged?	Pass Fail	Pass Fail	Pass Fail
Notes:				
Inspect container stops	Ensure container stops work correctly.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Inspect operator platform (if equipped)	Mounted properly and on correct side. Bed mounting bolts properly torqued and marked.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Ensure truck bumper is installed	Is truck bumper located and mounted at correct location? Check horizontal movement of bumper when raising or lowering.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Control panel and handheld control operation	Selector switches (if equipped) on control panel and handheld controls are all functioning properly.	Pass Fail	Pass Fail	Pass Fail
Notes:				
Spare parts and documentation	Hydraulic and electrical schematics and spare fuse kit are present in control panel.	Pass Fail	Pass Fail	Pass Fail
Notes:				

6 OPERATION

This machine is to be operated by trained qualified personnel only.

Before operating this machine, read and understand this manual. Inspect the machine for excessive wear and/ or damage. **If excessive wear or damage is found, remove the machine from service and contact maintenance personnel. Do not operate this machine until all necessary repairs are completed.** Inspect all precautionary labeling. If any label is missing or illegible contact the manufacturer for replacement labels. Ensure area is free of debris.

DANGER

Do not enter beneath the platform until the load has been removed and the machine has been secured against lowering with the maintenance devices. See Maintenance Devices section.

Personnel are not permitted on the platform unless ANSI MH29.1 compliant personnel guarding is provided. Guarding must be installed and operational before use.

All manually actuated stops shall be in raised position before raising or lowering the casted deck platform and before loading air cargo units onto the platform. Only release the stops on the accessed end when unloading, and ensure the stops are raised after unloading.

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

During operation, operator must be in view of the lift at all times.

Machine to be in the fully lowered position when not in use.

...
A substantial number of feature and function combinations exist when custom equipment is provided by a manufacturer. Images illustrated throughout this manual are only representative samples of designs that may or may not exist in the machine this general manual was provided for. When questioning whether any part of this manual applies specifically to your machine, you may contact customer service with your order number and/or the serial number for your machine, and we will provide the specific drawing(s) that combined with this manual will provide sufficient information to install, test, operate and maintain the equipment.
...

6.1 Loading

The Center of Gravity (CG) of all loads must be centered on the platform when lift is in motion. Uneven loading can lead to excessive wear and premature failure. Any regular, uneven loading must be offset by a counterweight installed on the opposite side of the platform. The combined load must not exceed the rated capacity.

NOTICE

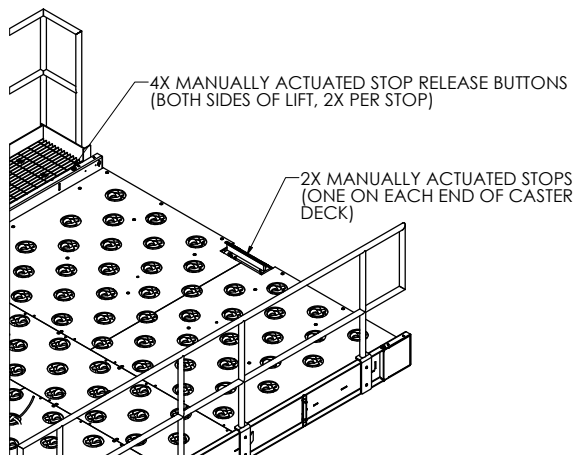
Do not load or unload the lift while moving.

Always secure loads that may roll or shift during operation.

Maximum Load Capacity: 15,000 lb.; Do not exceed.

6.2 Manually Actuated Stop Operation

Manually actuated stops are spring loaded devices designed to prevent the container from rolling off the ends of the castered deck. They allow passage of the container onto the platform and prevent the container from rolling off the platform during raising and lowering.



To lower the manually actuated stops, press down on the stops' cover plates until the latch clicks into place. To raise the stops press down on either of the release buttons aligned with the respective stops until the latch releases. There are two release buttons aligned with each (or pair) of manually actuated stops: one on each side of the castered deck platform.

6.3 Raising & Lowering the Platform

To raise the platform, press and hold the UP button on the operator controls. Release the button when the lift is at the desired height.

NOTICE

Do not continue to power the lift once the platform reaches the fully raised position or damage may occur. If an up limit switch is installed and adjusted properly, this situation will not likely occur.

The up limit switch (if equipped and properly adjusted) will turn off the motor once the set level has been reached.

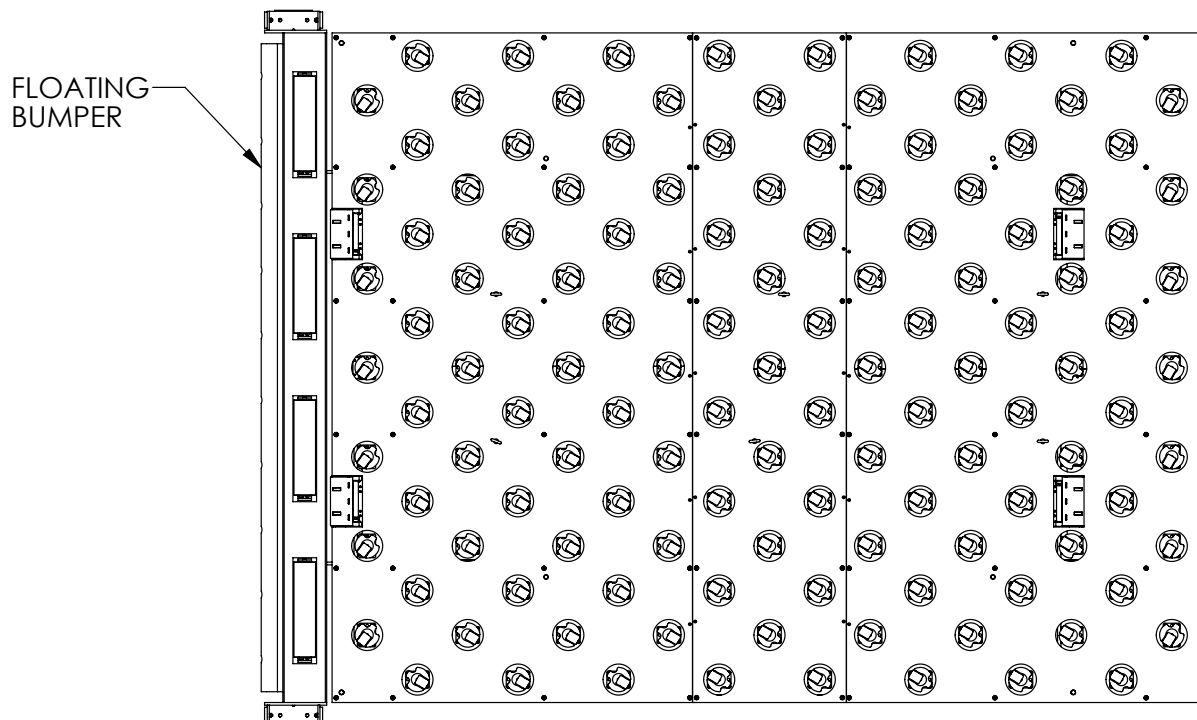
The down limit switch (if equipped and properly adjusted) will turn off the down valve once the set level has been reached.

Do not rapidly jog/increment the platform up excessively, as rapid excessive jogging of the motor can affect the motor contactor and create excessive motor heating and blown fuses.

To lower the platform, press and hold the DOWN button on the operator controls. Release the button when the platform is at the desired height.

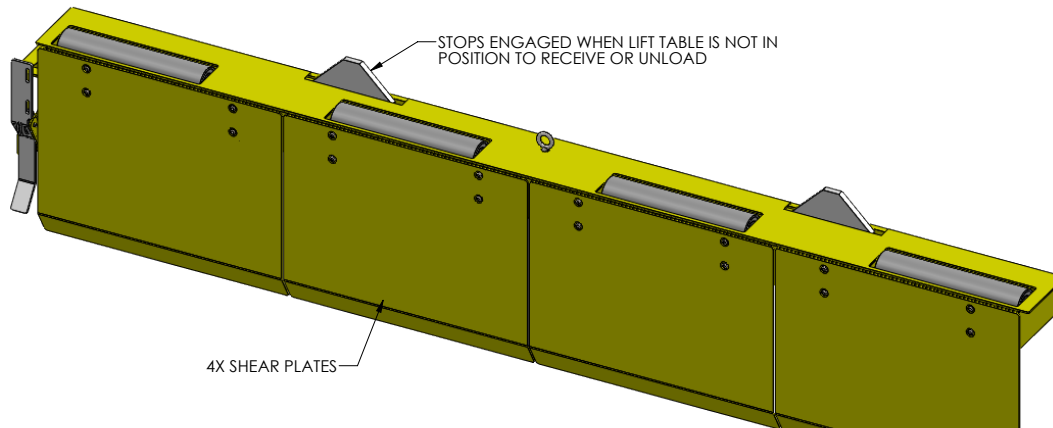
6.4 Floating Bumper (Optional Accessory)

The purpose of the floating bumper is to protect the lift table from damage from a container carrier approaching the lift table. Each end of the floating bumper will be contained in a bollard assembly to allow the bumper to float between as the lift platform raises and lowers.



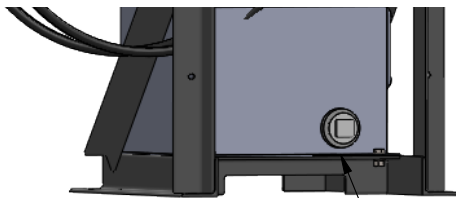
6.5 Stop Deck (Optional Accessory)

The stop deck includes stops that actuate anytime the lift platform is at the receiving/unloading height of a container from/to the mezzanine/dock level. If the lift platform is not at appropriate height for container transfer, the stops will be in a raised position. If the lift platform is at an appropriate height for container transfer the stops will be in a lowered position.



6.6 Immersion Heater (Optional Accessory)

The purpose of an immersion heater is to keep the hydraulic fluid in the tank at a reasonable temperature in cold environments. If after reviewing the HPU assembly below, it is determined that the immersion heater is installed, make sure that the heater switch on the control panel is set to ON.



POWER UNIT WITHOUT HEATER



POWER UNIT WITH HEATER

 DANGER

High Voltage: Electrical service and installation must be performed by trained and/or qualified personnel. Disconnect and lock out electrical supply before performing any maintenance or repair.

Electric motors create sparks. Do not service the power unit in an area where flammable gases may be present.

All electrical components and the hydraulic power unit must be protected from wet and/or dirty environments unless specifically configured for such environments.

Never enter beneath the platform unless the machine is unloaded and secured against lowering using the maintenance devices. See Maintenance Devices section.

Pressurized fluids can penetrate skin and cause severe injury or death. Always use proper personal protective equipment when working with pressurized systems. Relieve hydraulic system pressure before performing any maintenance on the hydraulic system.

Only trained and/or qualified personnel shall perform maintenance or repair of this machine.

Pinch points and Crush Hazards exist when moving and transporting the machine. Do not enter under any equipment while moving or transport. Keep hands, feet, and loose clothing away from moving equipment.

This machine must be installed on a solid, stable, level surface or machine will be unstable and can lead to injury. Do not install on asphalt or other unstable surface.

Always use appropriate Personal Protective Equipment when performing and maintenance or repair.

-
- **Do not adjust the hydraulic pressure relief valve. This valve is pre-set and adjustment may cause damage to the machine.**
-
-

NOTICE

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A substantial number of feature and function combinations exist when custom equipment is provided by a manufacturer. Images illustrated throughout this manual are only representative samples of designs that may or may not exist in the machine this general manual was provided for. When questioning whether any part of this manual applies specifically to your machine, you may contact customer service with your order number and/or the serial number for your machine, and we will provide the specific drawing(s) that combined with this manual will provide sufficient information to install, test, operate and maintain the equipment.
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DANGER

Both supplied maintenance devices must be used. Failure to properly engage both maintenance devices may lead to machine failure and injury.

Maintenance devices supplied with this machine are designed to support only the unloaded machine and are not to be used while the platform is loaded.

To engage the maintenance devices:

1. Remove the load from the platform.
2. Verify that all personnel and debris are clear of the work area.
3. Raise the platform high enough to engage the maintenance devices.
4. If the raised height is limited by an UP limit switch that does not allow the platform to raise high enough to engage the maintenance device(s), the UP limit switch will need to be electrically bypassed, continue to next step. If the platform is high enough, jump to step 11.

NOTICE

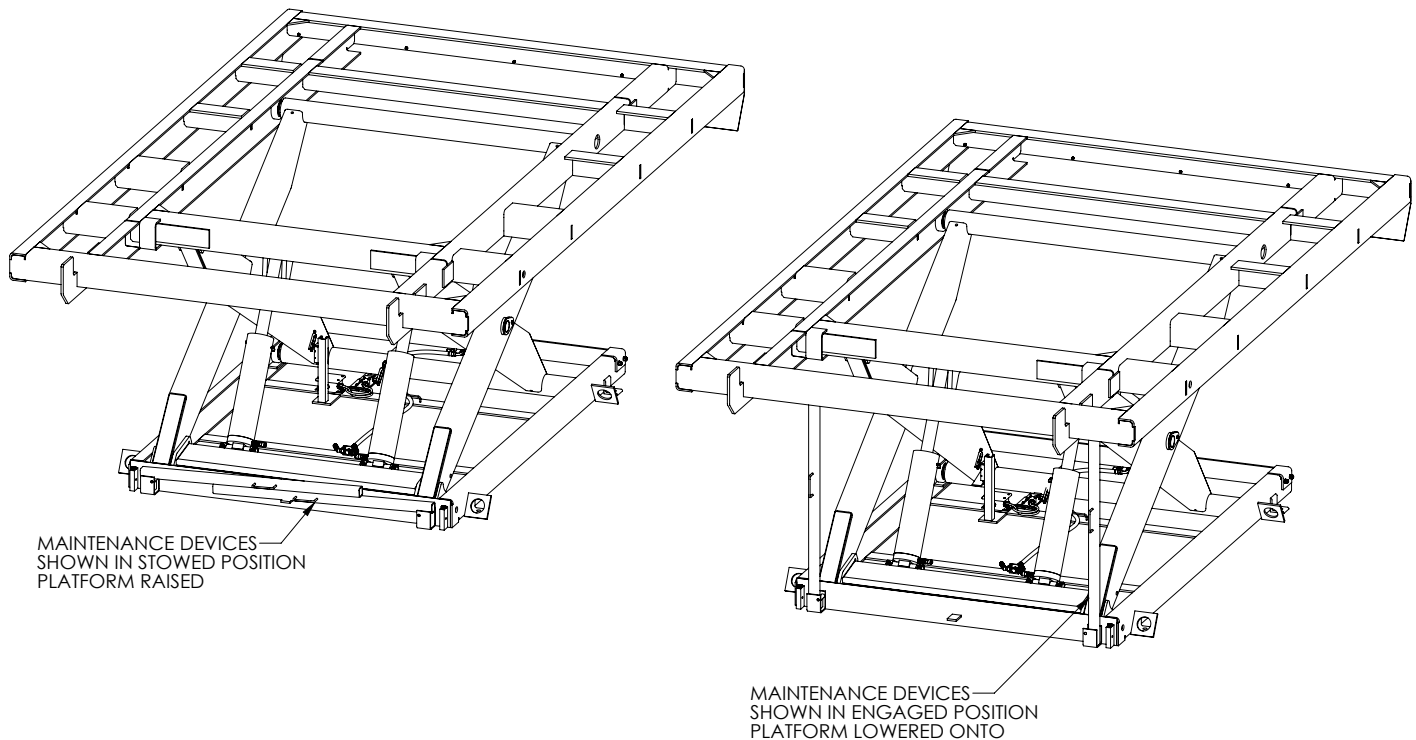
Before raising the platform to fully raised height, ensure there are no obstacles in the way that may be damaged or damage the machine while raising.

Raising the platform to fully raised height typically allows more space to more easily engage the maintenance device(s), though raising the platform just high enough to do this would be sufficient.

Keep in mind that if the platform is at fully raised position, it will not be able to be raised to release any temporary support other than the machine's standard maintenance device(s).

5. If the lift table control panel includes a maintenance bypass switch, turn it on and jump to step 10. If the lift table does not include a maintenance bypass switch, continue to the next step.
6. The limit switch may be bypassed at the external control panel.
7. Disconnect electrical supply and lock out and tag out the machine to prevent unintended actuation of the machine.
8. Open the control panel and insert an UP limit switch jumper while referencing the **Electrical** section.
9. Re-energize the machine.
10. Raise the platform high enough to engage the maintenance devices.
11. Engage the maintenance devices by rotating them from horizontal until they stand vertically.

12. Lower the platform onto the maintenance devices.
13. Continue to hold the down button for 10 seconds to relieve hydraulic system pressure.
14. Disconnect and lock out electrical supply before performing maintenance.



To disengage the maintenance devices:

15. Verify all tools, debris, and personnel are clear of the machine.
16. Re-energize the machine.
17. Raise the platform high enough to disengage the maintenance devices.
18. Disengage the maintenance devices by rotating them down to their stowed position.
19. Lower the platform until it is resting on the down stops.
20. If the lift table control panel includes a maintenance bypass switch, turn it off and jump to step 24. If the lift table does not include a maintenance bypass switch, continue to the next step.
21. If the lift table is limited by an UP limit switch, continue to next step. Otherwise jump to step 25.
22. If the lift table does not include a maintenance bypass switch, disconnect electrical supply and lock out and tag out the machine to prevent unintended actuation of the machine.
23. Open the control panel and remove the UP limit switch jumper (inserted in step 8) while referencing the **Electrical** section.
24. Re-energize the machine.
25. You may now resume testing and/or operation of the machine.

7.2 Relieving Hydraulic Pressure

DANGER

Pressurized fluids can penetrate skin and cause severe injury or death. Always use proper personal protective equipment when working with pressurized systems. Relieve hydraulic system pressure before performing any maintenance on the hydraulic system.

If the platform is stuck in the raised position the platform must be blocked up before relieving pressure to prevent it from falling, uncontrolled, when the pressure is released. Do not enter beneath the raised platform unless properly supported.

Relieving hydraulic pressure can be done with the platform either in the fully lowered position or in a raised position with the maintenance devices engaged.

If the platform is in the fully lowered position, just hold the DOWN button for five to ten seconds to relieve the pressure.

If the platform is being fully supported with the maintenance devices engaged, continue to hold the DOWN button for five to ten seconds after the platform stops to relieve hydraulic system pressure.

If the platform is in any other position and/or there is no power to allow for lowering to engage maintenance devices or to fully lowered position:

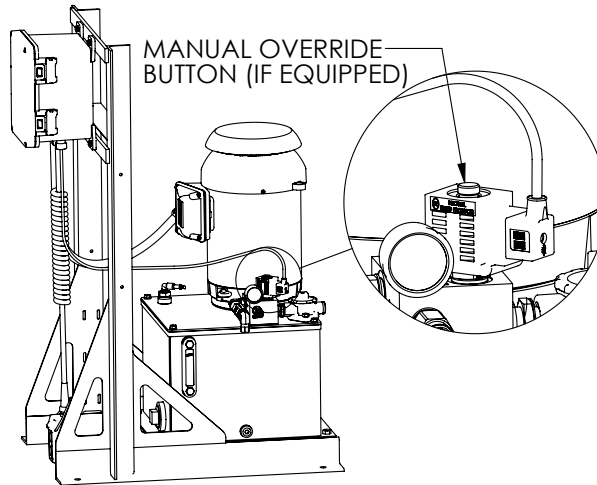
1. Turn the main disconnect switch to the OFF position.
2. Provide an alternate means of support at the level necessary to prevent the platform from falling once pressure is relieved.
3. The down valve manual override (if equipped) is an additional way to relieve system pressure and works regardless of whether the machine controls are powered up. See **Down Valve Manual Override** section.
4. Another option for relieving system pressure when other means are not successful is to very slowly loosen the pressure hose fitting at the fixed down speed flow control valve no more than 1/4 turn at a time, while using rags and a container to capture any released fluid.
5. After performing required maintenance/repair, verify that all connections are tight.
6. Turn the main disconnect switch to the ON position.
7. Raise and lower the platform to test for correct operation.
8. Check for leaking around fittings and in hoses.
9. Continue to raise and lower through the full cycle five to six times to bleed any air from the hydraulic system. Check the fluid level in the reservoir after the machine has been cycled and is in the fully lowered position. Refill with clean fluid as necessary.

7.3 Down Valve Manual Override (Optional)

⚠ WARNING

Always verify all personnel are clear of the area before lowering the platform.

The down valve manual override (if equipped) is located on the top of the down valve. To manually open the valve, push the button in, twist counterclockwise and release. In this position, the valve will remain open in a detented condition.



If the maintenance devices are engaged and the platform is resting on them or if the platform is at fully lowered height, or if an alternate means of support is preventing the platform from falling once pressure is relieved, the manual opening of this valve also serves to relieve the pressure in the system. See **Relieving Hydraulic Pressure** section.

Always verify that the valve is manually closed before returning the lift table to service. To close, push the button in, twist clockwise and release. The override will be detented in this position for normal operation.

7.4 Replacing Hydraulic Fluid

Before replacing the hydraulic fluid, ensure that the container to be used to empty the used fluid into can handle up to 10 gallons, and there is an equal amount of new fluid to replace it with.

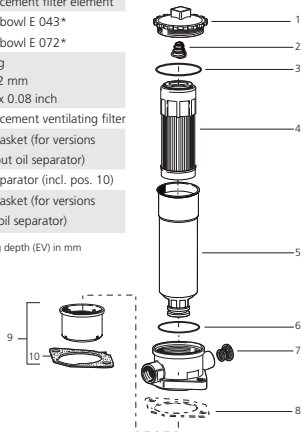
1. Begin by lowering the platform to the fully lowered height.
2. Relieve the hydraulic system pressure, see **Relieving Hydraulic Pressure** section.
3. Observe the level in the reservoir. The fluid level should be approximately 1/4" from the top of the fluid level/temperature sight gauge (if equipped) on the HPU reservoir or 3/4" from the top of the HPU reservoir (for units without a sight gauge) when the lift table is fully lowered.
4. Turn off house power.
5. The fluid in the reservoir may be drained out by removing the drain plug at the bottom. Totally drain the used fluid and reinstall the drain plug. Clean up any spills.
6. Alternately, the fluid may be drained out by removing the vent line and fill port at the top of the reservoir and siphoning the fluid out accordingly.

7. The fluid in the pressure hose may be drained by loosening connections at the base of the lift table and at the HPU. Blow out the hose with air. Attach the hose back to the lift table and the HPU.
8. Fill the reservoir until the fluid level is at the top of the fluid level/temperature sight gauge on the HPU reservoir.
9. Replace the vent line connection and fill port fitting.
10. Turn on house power.
11. Raise and lower the platform through the full cycle five to six times to bleed any air from the hydraulic system.
12. Lower the platform to the fully lowered height and relieve the hydraulic system pressure.
13. Check the fluid level in the reservoir after the machine has been cycled and is in the fully lowered position. Refill with clean fluid as necessary. Add fluid until approximately 1/4" from the top of the fluid level/temperature sight gauge (if equipped) on the HPU reservoir or 3/4" from the top of the HPU reservoir (for units without a sight gauge) when the lift table is fully lowered.
14. Repeat steps 11 through 13 until fluid level remains at 1/4" from the top of the sight gauge.

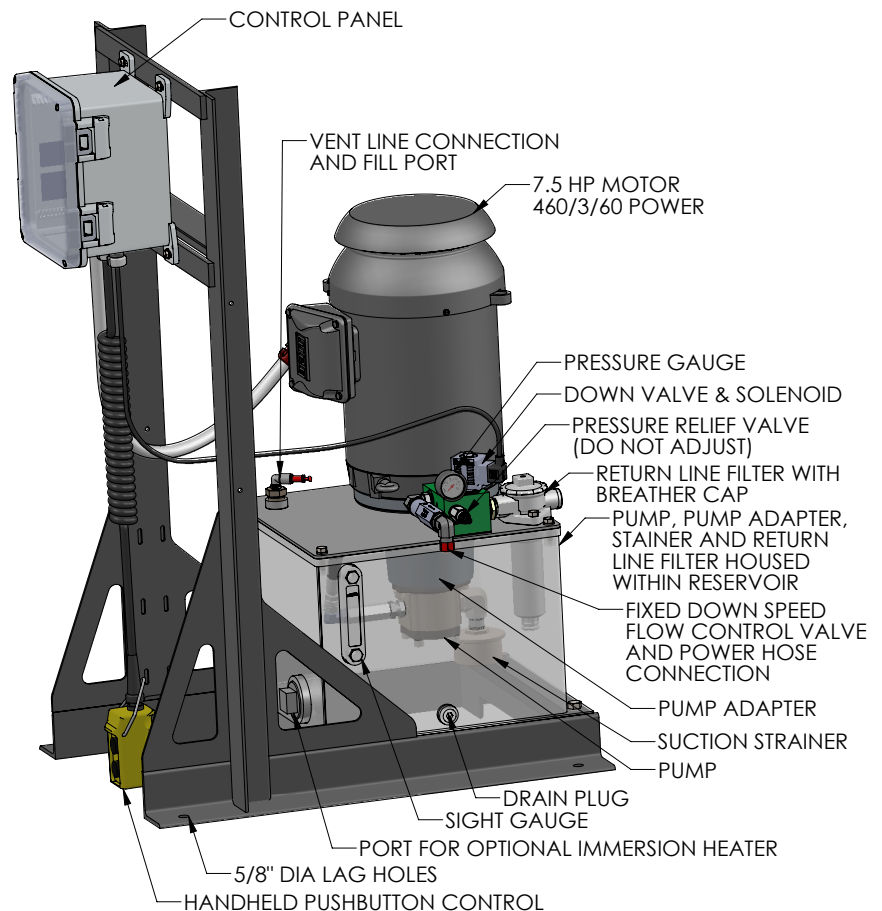


Pos.	Designation
1	Screw-on cap
2	Compression spring
3	O-ring 57 x 3 mm 2.24 x 0.12 inch
4	Replacement filter element
5	Filter bowl E 043*
5	Filter bowl E 072*
6	O-ring 50 x 2 mm 1.97 x 0.08 inch
7	Replacement ventilating filter
8	Flat gasket (for versions without oil separator)
9	Oil separator (incl. pos. 10)
10	Flat gasket (for versions with oil separator)

*Specify mounting depth (EV) in mm



**HYDRAULIC FLUID RETURN
FILTER/RESERVOIR
VENT/BREATHER
ASSEMBLY**



7.5 Manually Raising Platform

At some point, it may be necessary to manually lift the platform to get the leg set positioned to engage the maintenance devices. The following steps will be necessary to accomplish this task. The lift table must be lagged down for this procedure.

DANGER

All supplied maintenance devices must be used. Failure to properly engage all maintenance devices may lead to machine failure and injury.

Supplied maintenance devices for this cargo lift table are designed to support only the unloaded machine and are not to be used while the platform is loaded. Failure to remove the load before engaging the maintenance devices may result in failure and allow the machine to fall unexpectedly.

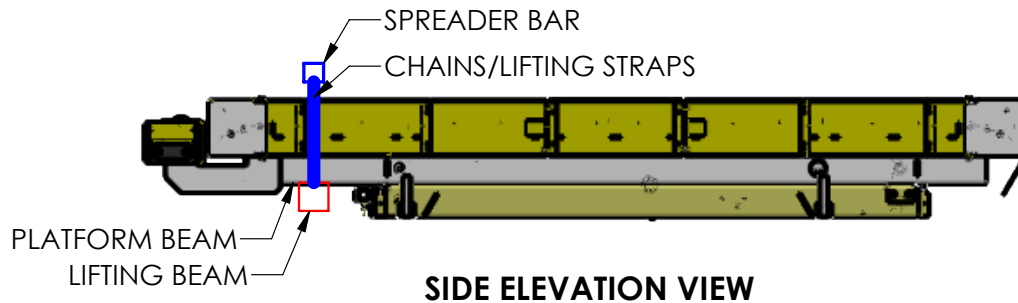
Avoid stepping under platform when maintenance devices are not engaged, do not relocate maintenance devices until the platform is securely held in place using a suitable means for interim support. The upper section of the lift table weighs approximately 6,500 lbs. with the castered deck, floating bumper, and 1/2 the leg set weight included.

Pressurized fluids can penetrate skin and cause severe injury or death. Always use proper personal protective equipment when working with pressurized systems. Relieve hydraulic system pressure before performing any maintenance on the hydraulic system. In cases where fittings must be loosened where relieving pressure by any other means did not work, do so slowly and do not completely disconnect until all pressure is relieved.

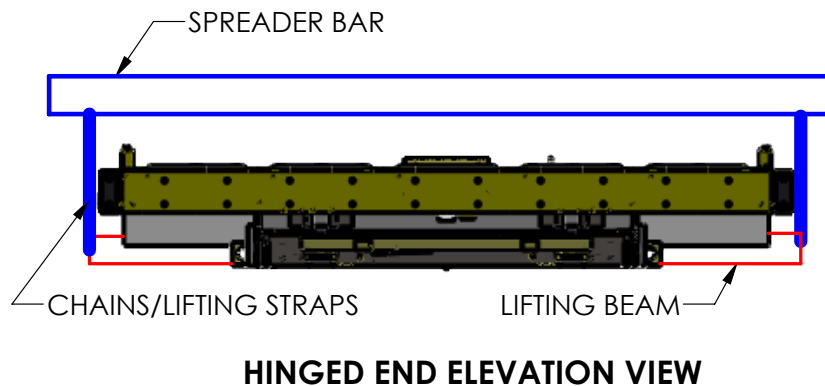
1. Remove the load from the platform, refer to danger messages above.
2. Verify that all personnel and debris are clear of the work area.
3. If house power, controls and a functioning HPU down valve are available, press and hold the down button for 5 seconds to relieve the hydraulic pressure.
4. Disconnect electrical supply and lock out the machine to prevent unintended actuation of the machine.
5. If hydraulic pressure was not able to be relieved by means described in step 3, the hydraulic pressure may be manually released. See **Relieving Hydraulic Pressure** section.
6. Disconnect pressure hose connection at HPU and use a container and rags collect any fluid that drains out of the hose.
7. Place a lifting beam bar beneath the hinged end (end where maintenance devices are stored) of the lift table that is long enough to accommodate the width of the castered deck and allows clearance for the lifting straps/chains. You will have only approximately 6" of clearance beneath each platform beam. Connect straps or chains to a spreader bar above. Make sure the lifting straps/chains are not up against either side of the lift platform when lifting.

NOTICE

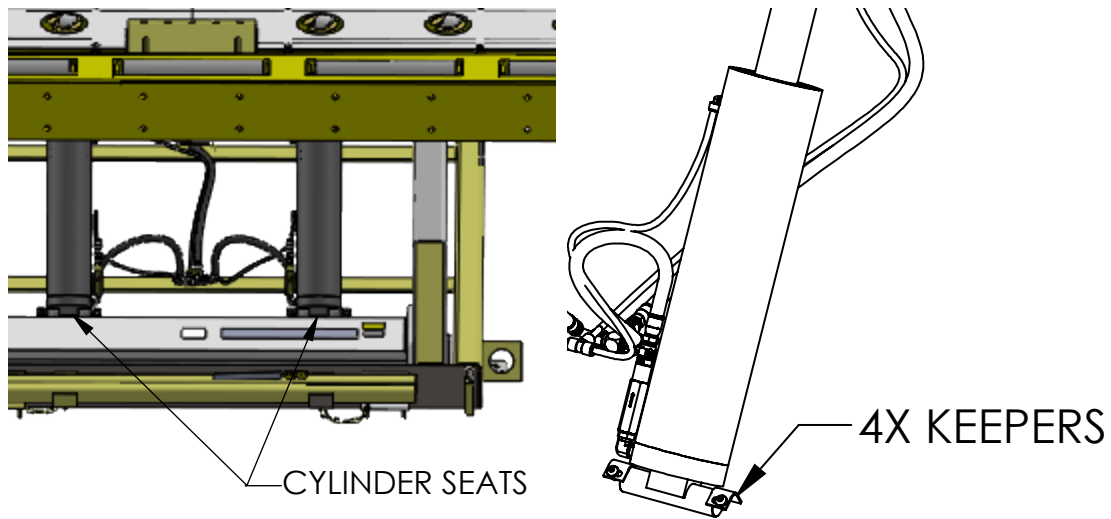
Section weight: Approximately 6,500 lbs



SUPPORT AND LIFT HINGED END ONLY BENEATH PLATFORM BEAMS WITH FULL WIDTH LIFTING BEAM. PULL UP STRAIGHT USING SPREADER BAR WITH CHAINS OR LIFTING STRAPS. LIFTING BEAM AND SPREADER BAR SHOULD BE LONG ENOUGH TO AVOID CONTACT WITH THE SIDES OF THE PLATFORM. WIDTH TO CLEAR IS OVER 13 FEET.



8. Slowly begin raising the platform to fully raised height where the maintenance devices may be put into place.
9. Using a suitable means for interim support, engage the maintenance devices. See **Maintenance Devices** section.
10. Lower the platform until the maintenance devices are fully engaged and the weight of the machine is supported accordingly, and make repairs as necessary.
11. Inspect all upper and lower rollers, hinge points and cylinder mountings to ensure all are in place after the manual raising of the machine. It is likely that the lower ends of the cylinders will be out of their seats, ensure the "U" shaped cylinder base elements are seated on the lower pins before powering up. The keepers may have been bent or destroyed during lifting. Replace if necessary.



12. Inspect all structural members as well to ensure no damage is evident.
13. After maintenance or repair is complete, verify all tools, debris, and personnel are clear of the area. Clean up any spills.
14. Reconnect pressure hose at the hydraulic power unit.
15. Re-energize the machine.
16. Raise the machine to the fully raised position.
17. Using a suitable means for interim support, disengage the maintenance devices and stow them in their storage locations for future use.
18. Lower the machine to the fully lowered position.
19. Verify hydraulic fluid level. Fluid should be at 1/4" from the top of the sight glass when the lift is fully lowered. Add if needed.
20. Test for proper operation. See **Testing** section.

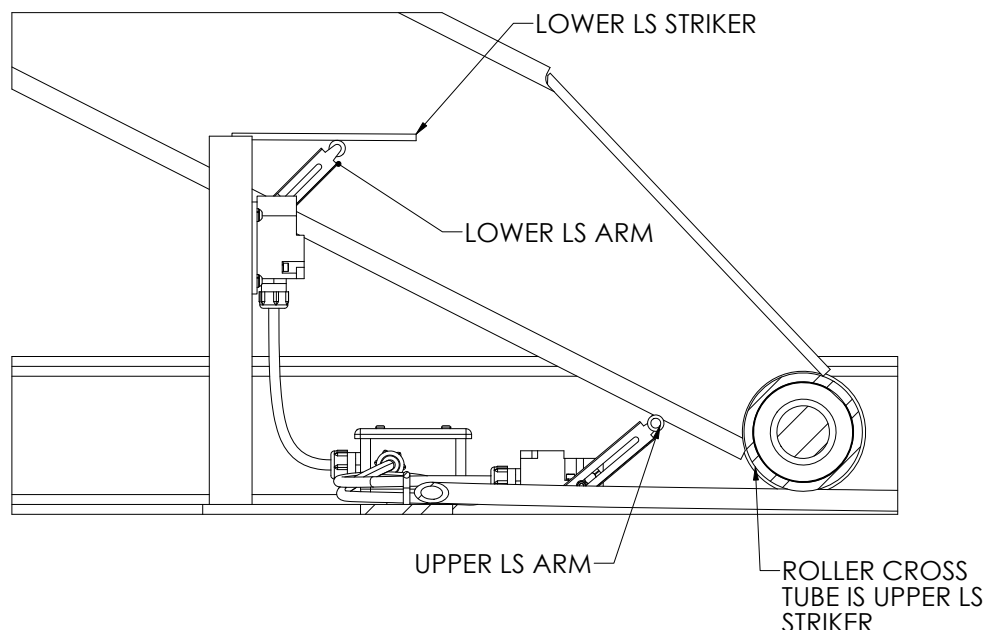
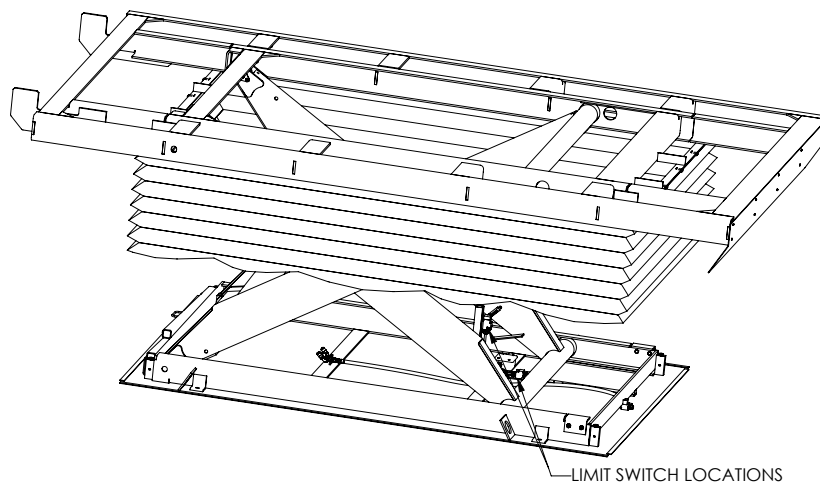
7.6 Adjusting the Limit Switches (If Equipped)

⚠ DANGER

Do not enter beneath the platform until the load has been removed and the machine has been secured against lowering with the maintenance devices. See Maintenance Devices section.

The down limit switch to be adjusted such that the switch opens as the platform comes to rest on the down stops. To adjust the down limit switch, rotate the switch arm up or down as necessary to achieve the desired height. Rotating the switch arm up will increase the lowered height. Rotating the switch arm down will decrease the lowered height.

The up limit switch should be adjusted such that the switch opens at the raised height (60" from top of platform sub-frame to floor or to a lower desired height for the application). To adjust the up limit switch, rotate the switch arm up or down as necessary to achieve the desired height. Rotating the switch arm up will increase the raised height. Rotating the switch arm down will decrease the raised height.



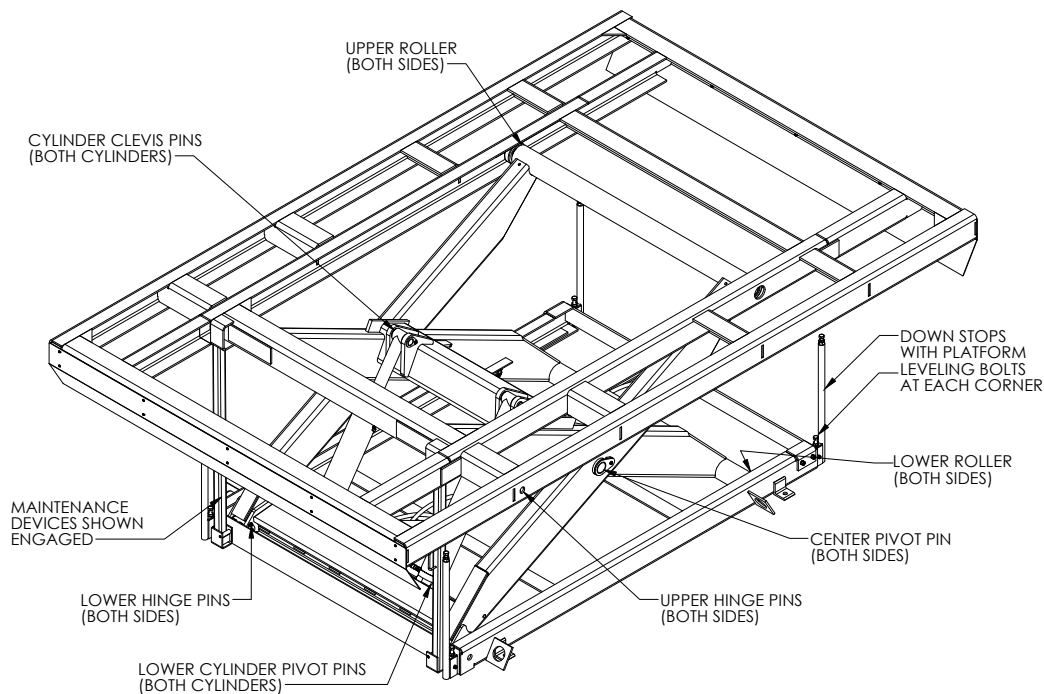
7.7 Periodic Maintenance

NOTICE

• If castered deck and bumpers are supplied by others, see supplier's documentation for maintenance requirements.

7.7.1 Weekly

- Inspect bellows (if equipped) for tears and overall satisfactory operation.
- Strap up bellows (if equipped) for inspections and maintenance of lift table components listed below.
- Inspect leg rollers, center pivot pins and bushings, and leg hinge pins and bushings for excessive wear or damage. Repair or replace as necessary.
- Inspect the cylinder clevis and hinge pins. Verify lower cylinder hinge pins are properly seated.
- Inspect machine for loose or broken fasteners. Repair or replace as necessary.
- Verify operation and serviceability of the hydraulic power unit pressure gauge.
- Inspect labeling. If any label is damaged or otherwise illegible contact the manufacturer for replacement labels.



- Inspect all hydraulic hoses and fittings for leaks. Repair or replace as necessary.
- Inspect all electrical wiring and connections. Repair or replace as necessary.
- Inspect control switches and cords. Verify proper operation. Repair, replace as necessary.
- Ensure all manually actuated stop release buttons actuate their respective stops on each end of the castered deck platform of the lift.
- Ensure all manually actuated stops latch down properly.

- Inspect the optional floating bumper assembly (if equipped) to make sure the bumper is not getting caught in the bollards/guides as the lift platform is raised and lowered. Also ensure all rollers are turning freely.
- Inspect the optional stop deck (if equipped) to ensure all rollers are turning freely, and that the stops are lowered only when the lift platform height is at the same height as the castered deck height in the facility. Also lubricate all moving parts and ensure all lubricants are removed from walking surfaces.
- Inspect the condition of the down stops (if equipped) at each corner to ensure no damage is evident.

7.7.2 Monthly

- Inspect the appearance of the hydraulic fluid by removing the filter cap and filter element housing. The fluid should be transparent and clear of debris and have no burnt odor. Replace as necessary. When fluid has been replaced, ensure filter element is replaced before returning the lift to service. Also clean, blow out, or replace tank breather element. (A component in the return filter head on some hydraulic power units, see the tank assembly drawing **in the Replacing Hydraulic Fluid** section)
- Ensure the fluid level is approximately 1/4" from the top of the fluid level/temperature sight gauge on the HPU reservoir or approximately 3/4" from the top of the reservoir (if no sight gauge) when the lift table is fully lowered.
- Inspect all hydraulic hoses and fittings. Repair or replace as necessary.
- Inspect all electrical wiring and connections. Repair or replace as necessary.
- Inspect control switches, cords, and limit switches (if applicable). Verify proper operation. Repair, replace as necessary.
- Inspect the hydraulic cylinders and return vent line. If excessive fluid exists in the vent line, the cylinders may need to be repacked or replaced.
- Inspect all deck casters for damage in the castered deck platform. Replace as necessary.
- Test down valve manual override (if equipped) for proper operation. See **Down Valve Manual Override** section.
- Lubricate all stops of the castered deck platform using a high quality penetrating spray lubricant on all accessible pivot points. Verify proper operation of them latching and releasing. Clean up any oil that ends up on surfaces where someone could slip.
- Test for down drift of the lift.
 - Raise the lift to the fully raised position and accurately measure the distance from the ground to the top of the castered deck.
 - Allow the lift to rest for thirty minutes then measure again. The lift should not drift down more approximately 1/2" during this period of time.
 - ANSI MH29.1 allows for 0.5% of the maximum vertical travel during a 15 minute period.
- Inspect the optional floating bumper assembly (if equipped) to make sure the bumper is not getting caught in the bollards/guides as the lift platform is raised and lowered. Also ensure all rollers are turning freely.

- Lubricate optional floating bumper assembly (if equipped) using a high quality penetrating spray lubricant on all accessible wear points. Clean up any oil that ends up on surfaces where someone could slip.
- Ensure the optional immersion heater (if equipped) is working. The heater switch on the control panel should be on. If the temperature sight gauge on the power unit reservoir reads below 80 degrees fahrenheit, the heater should be energized to warm it up. If the temperature is higher than 100 degrees, the heater should no longer be energized.

7.7.3 Annually

- While in the process of changing the hydraulic fluid, replace the return line filter and clean the suction screen.
- Clean, blow out or replace tank breather element. (A component in the return filter head on some hydraulic power units, see **Replacing Hydraulic Fluid** section for the filter head illustration.)
- Ensure the fluid level is approximately 1/4" from the top of the fluid level/temperature sight gauge on the HPU reservoir or approximately 3/4" from the top of the reservoir (if no sight gauge) when the lift table is fully lowered.

7.8 Removing and Repacking a Cylinder

7.8.1 Removing a Cylinder

1. Raise the lift and engage the maintenance devices. See **Maintenance Devices** section.
2. Press and hold the down button for 5 seconds to relieve the hydraulic pressure.
3. Disconnect the cylinder supply line at the power unit. Place this end into a container to collect the used oil.
4. Disconnect the vent line near the top of the cylinder.
5. At the upper end of the cylinder rod, remove the keeper bolt and lock washer. These will be reused when reinstalling.
6. The keeper is welded to the pin. Drive the pin towards the inside of the lift to remove this assembly. There is a thrust washer on either side of the cylinder rod that will need to be put aside to use when reinstalling.
7. Support the cylinder so it stays upright. The cylinder weighs approximately 80 lbs. This step may require two people to fully support it.
8. Push the rod back into the cylinder to drive out any remaining hydraulic fluid through the hose and into the container.
9. Disconnect the cylinder supply line from the fixed flow control valve near the base of the cylinder. Install caps on the cylinder supply line at the flow control and on the loose hose end near the cylinder.
10. Remove the lower keeper bolts, washers, and keepers and save for re-installation. The cylinder and lower pin are connected and can now be lifted out of the strongback.

7.8.2 Repacking a Cylinder

1. At the upper end of the cylinder, remove the snap ring. Pull the rod and piston all the way out of the cylinder.
2. Remove the press-fit bushing from the hole at the upper end of the cylinder rod.
3. Look for deformation around the hole at the clevis end of the cylinder rod. If necessary, clean up the rod diameter with a file to allow the rod bearing to slide off without damage.
4. Remove the rod bearing from the cylinder rod. Observe how the wiper ring sits in the rod bearing. Remove the wiper ring and the O-ring from the rod bearing. Do not try to remove the aluminum piston from the cylinder rod, as this will damage the assembly. Remove the poly U-cup and the fiber wear ring from the piston.
5. Clean the vent port at the top of the cylinder.
6. Clean the piston surfaces and install a new fiber wear ring.
7. Install a new poly U-cup seal, with the open part of the seal facing down.
8. Clean all of the surfaces on the rod bearing. Install a new O-ring and wiper. Replace the rod bearing assembly on the rod.
9. Clean the bore of the cylinder tube thoroughly. Inspect the bore of the tube for scratches that run up and down, along the length of the cylinder. If any scratches are present, hone the inner surface of the cylinder. Be sure to clean the tube thoroughly after.

10. Lubricate the seal and piston with clean hydraulic oil. Carefully insert the piston and rod back into the cylinder. Be very careful not to pinch or tear the poly U-cup as the piston passes the shoulder inside the cylinder. It may be helpful to tip the rod assembly and twist it as you slide it into the cylinder. Once the piston is inside the cylinder, it should slide easily.
11. Slide the rod bearing into the cylinder. Install a new snap ring to hold the rod bearing in place. Replace the bushing or install a new one in the top of the cylinder rod.

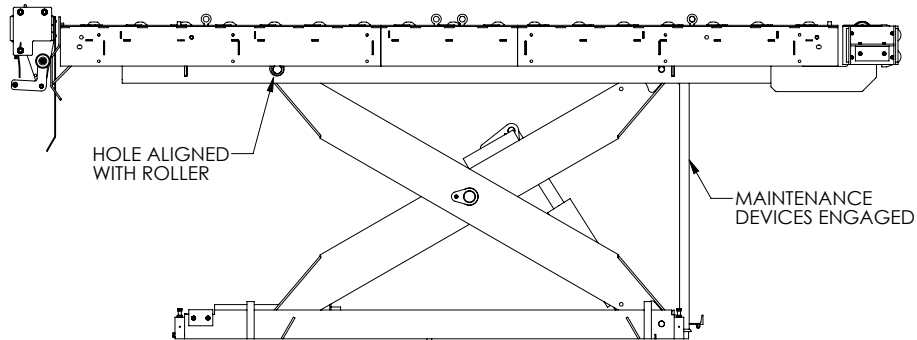
7.8.3 Reinstalling a Cylinder

1. Place the pin on the bottom of the cylinder between the 2 blocks on the strongback. Ensure the hydraulic fittings are facing the center of the lift.
2. Reinstall the lower keepers and associated hardware. Both keepers should be pushed towards the cylinder before tightening hardware.
3. Support the cylinder and slowly pull the rod out until it is aligned with the holes in the upper clevis.
4. Reinstall the pin and keeper assembly. Make sure the thrust washers are reinstalled on either side of the cylinder rod.
5. Reinstall the keeper bolt and lock washer.
6. Reconnect the cylinder supply line to the fixed flow control valve.
7. Reconnect the vent line near the top of the cylinder.
8. During the removal of the cylinder, the hydraulic oil in the cylinder was drained into a container. Replace the used oil with an equal amount of fresh oil. Be sure to reinstall the fill plug on the tank when completed.
9. Turn on the electrical power and press the “up” button. The pump will self-prime. After a few seconds, the unit should lift off the maintenance devices. Remove the maintenance devices.
10. Cycle the lift up and down a few times to ensure proper operation.
11. Ensure the fluid level is approximately 1/4” from the top of the fluid level/temperature sight gauge on the HPU reservoir when the lift table is fully lowered.
12. Check for hydraulic leaks and clean up any spilled hydraulic oil.

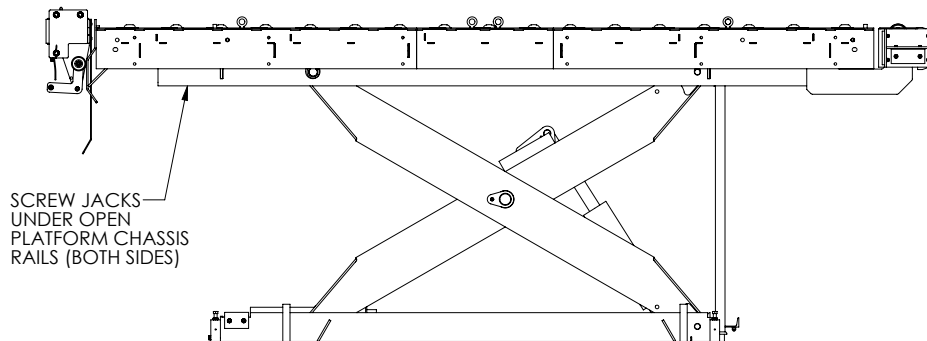
7.9 Replacing the Rollers

7.9.1 Replacing the Upper Rollers

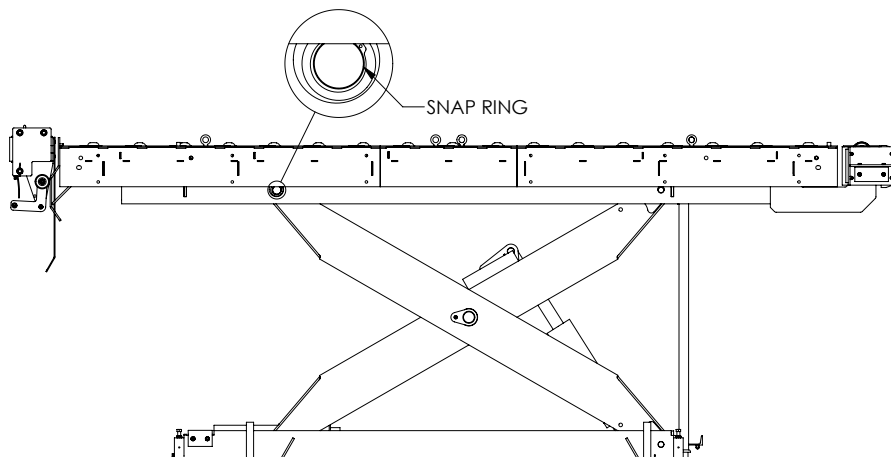
1. Raise the lift and engage the maintenance devices. See **Maintenance Devices** section. The roller should align with the hole in the side of the open platform chassis.



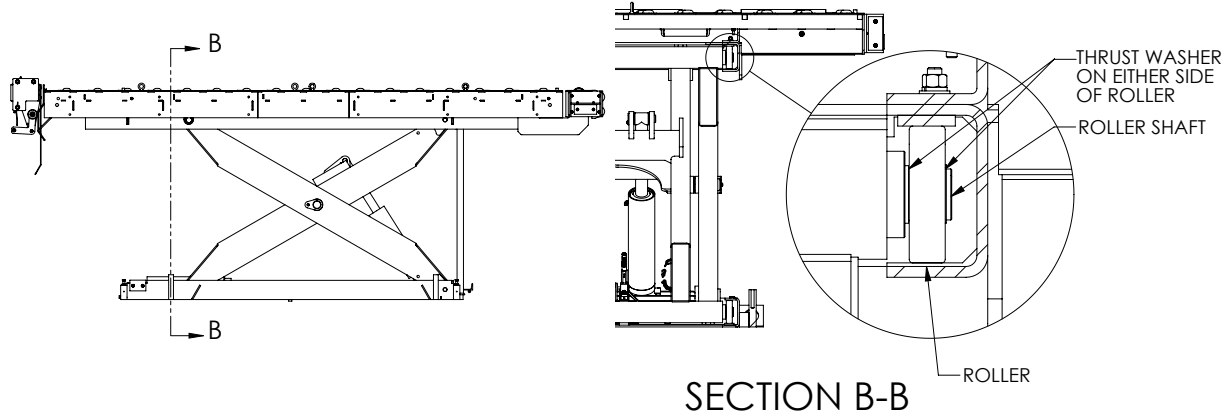
2. Using screw jacks or similar tools under both open platform chassis rails, jack up the platform just until the weight of the platform is no longer resting on the roller and the rollers can spin freely. Weight approx. 2500 lbs.



3. Remove the snap ring retaining one of the rollers on the roller shaft. Snap rings can be discarded as they will be replaced during reassembly.



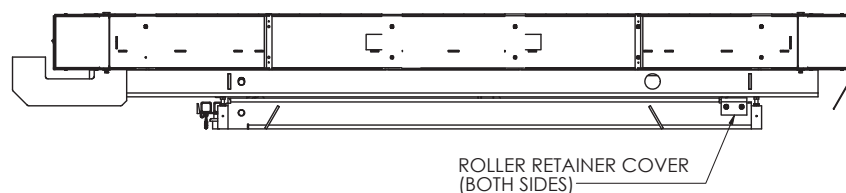
- Using a brass drift or other soft material, drive the roller shaft toward the center of the lift. Take care not to damage the end of the shaft. Only drive the shaft far enough to remove the roller from the shaft and out of the roller track.



- Remove the roller from the shaft. Use care not to damage or lose the thrust washer on either side of the roller.
- Replace the new roller and thrust washers onto the shaft. There should be one washer on either side of the roller.
- Drive the shaft back to the original position and install the new snap ring.
- Repeat steps 2-6 for the second roller.
- Ensure the shaft is centered on the lift and the rollers are centered on the wear strips located on the top of the roll retainers.
- Lower and remove the screw jack.
- Disengage and stow the maintenance devices.
- Test operation. See **Testing** section.

7.9.2 Replacing the Lower Rollers

- Raise the lift and engage the maintenance devices.
- Remove the lower roller retainer covers from both sides of the lift.

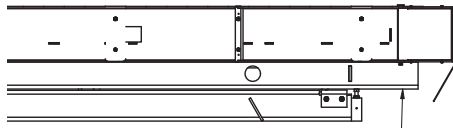


- Raise the lift off the maintenance devices, stow them in their storage locations and lower the lift to the fully lowered position.
- Disconnect and lock out the power supply to prevent unintended operation of the lift.
- Using a three ton (or larger) automotive jack (or similar tool) under the open platform chassis rails (one on both sides of lift), jack the roller end of the platform up until the lower rollers rise out of the roller tracks. Weight approx. 2500 lbs.

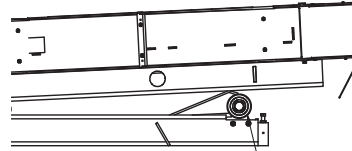
NOTICE

Ensure both sides are jacked up simultaneously to avoid twisting the platform.

6. Support the platform using jack stands, or other secure blocking, under the open platform chassis to ensure the platform can not fall unexpectedly. Do not rely on the jacks to support the lift while working under the platform.



PLACE JACKS UNDER
OPEN PLATFORM CHASSIS
RAIL (BOTH SIDES)



JACK PLATFORM UP ONLY
ENOUGH TO ALLOW
ACCESS TO THE ROLLERS

7. Remove the snap ring from the end of the roller shaft on either side of the lift. Snap rings can be discarded as they will be replaced during reassembly.
8. Remove the roller and outside thrust washer from the shaft. Do not discard the washers, they will be needed during reassembly.
9. Replace the new roller and thrust washers onto the shaft. There should be one washer on either side of the roller. Secure the roller onto the shaft using a new snap ring.
10. Repeat steps 7-9 for the other side of the lift.
11. Raise the platform off the supports and lower the platform until the rollers are resting in the roller tracks. Ensure rollers are centered on the wear strips on the bottom of each roller track.
12. Turn on the power supply, raise the lift and engage the maintenance devices.
13. Replace the roller retainer covers.
14. Test operation. See **Testing** section.

7.10 Replacement Parts

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

Southworth Products will gladly supply you with replacement parts for your Southworth Products lift. With your order, please include the model number and the serial number of the lift. You can find these numbers on the name plate, which is located on the crossbar at the base of the cylinder(s). When you are ordering parts for a cylinder, also include the cylinder number. This is stamped on the base of the cylinder housing.

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

8 TROUBLESHOOTING

When attempting to inspect/troubleshoot and/or repair electrical, hydraulic or structural problems, keep in mind the following:

DANGER

High voltage can cause severe injury or death. Disconnect lockout electrical power before performing maintenance or repair. In the event of a malfunction, disconnect and do not return to service until the cause of the malfunction has been determined and remedied. See Electrical section.

Pressurized fluids can penetrate skin and cause severe injury or death. Always use proper personal protective equipment when working with pressurized systems. Relieve hydraulic system pressure before performing any maintenance on the hydraulic system. See Relieving Hydraulic Pressure section.

Never enter beneath the platform unless the machine is unloaded and secured against lowering using the maintenance device. See Maintenance Devices section.

Contact Customer Service when in doubt about servicing this lift table.

For any hydraulic fluid losses, see Replacing Hydraulic Fluid and Hydraulic Fluid sections.

A substantial number of feature and function combinations exist when custom equipment is provided by a manufacturer. Images illustrated throughout this manual are only representative samples of designs that may or may not exist in the machine this general manual was provided for. When questioning whether any part of this manual applies specifically to your machine, you may contact customer service with your order number and/or the serial number for your machine, and we will provide the specific drawing(s) that combined with this manual will provide sufficient information to install, test, operate and maintain the equipment.

Problem	Possible Cause	Check
Platform will not raise	Lift not receiving power	Check main disconnect switch. Turn the disconnect switch to the on position.
		Check all fuses, replace if tripped.
		Inspect all wiring for damage, loose connections, or short circuits.
	Operator controls are malfunctioning	Inspect the operator controls and cord for damage. Check for continuity through switches when pressed. Verify all connections within the control panel are correct and secure.
	Motor may be rotating in wrong direction	Verify motor direction. If motor is rotating in wrong direction, swap any two phases of the motor power leads.
	Up limit switch (if equipped) is open	If lift is at the raised height the limit switch will open and disable the UP button. If lift is not at raised height the limit switch should be closed. Check for continuity through the switch.
	Hydraulic fluid low	See Hydraulic Fluid section.
	Hydraulic fluid too cold	Check immersion tank heater (if equipped). Check voltage and determine if working properly.
	Motor voltage low	Supply voltage must be $\pm 10\%$ of the rated voltage at the motor terminals.
	Suction filter may be clogged	Inspect filter. Clean and/or replace.
	External hydraulic leak	Inspect all hoses and fittings for damage. Verify all fittings are tight.
Platform raises too slowly	Down valve is energized	The down valve should not be energized when raising the lift.
	The down valve manual override (if equipped) is open	Verify manual override is closed.
	Voltage may be low	Check voltage at motor. Supply voltage must be $\pm 10\%$ of the rated voltage at the motor terminals.
	Suction filter, breather cap, or pressure line may be clogged	Remove necessary components and clean.
Platform raises too slowly	Insufficient oil	Check fluid level. See Hydraulic Fluid section.
	Down valve manual override may be open	Verify the manual override is closed.

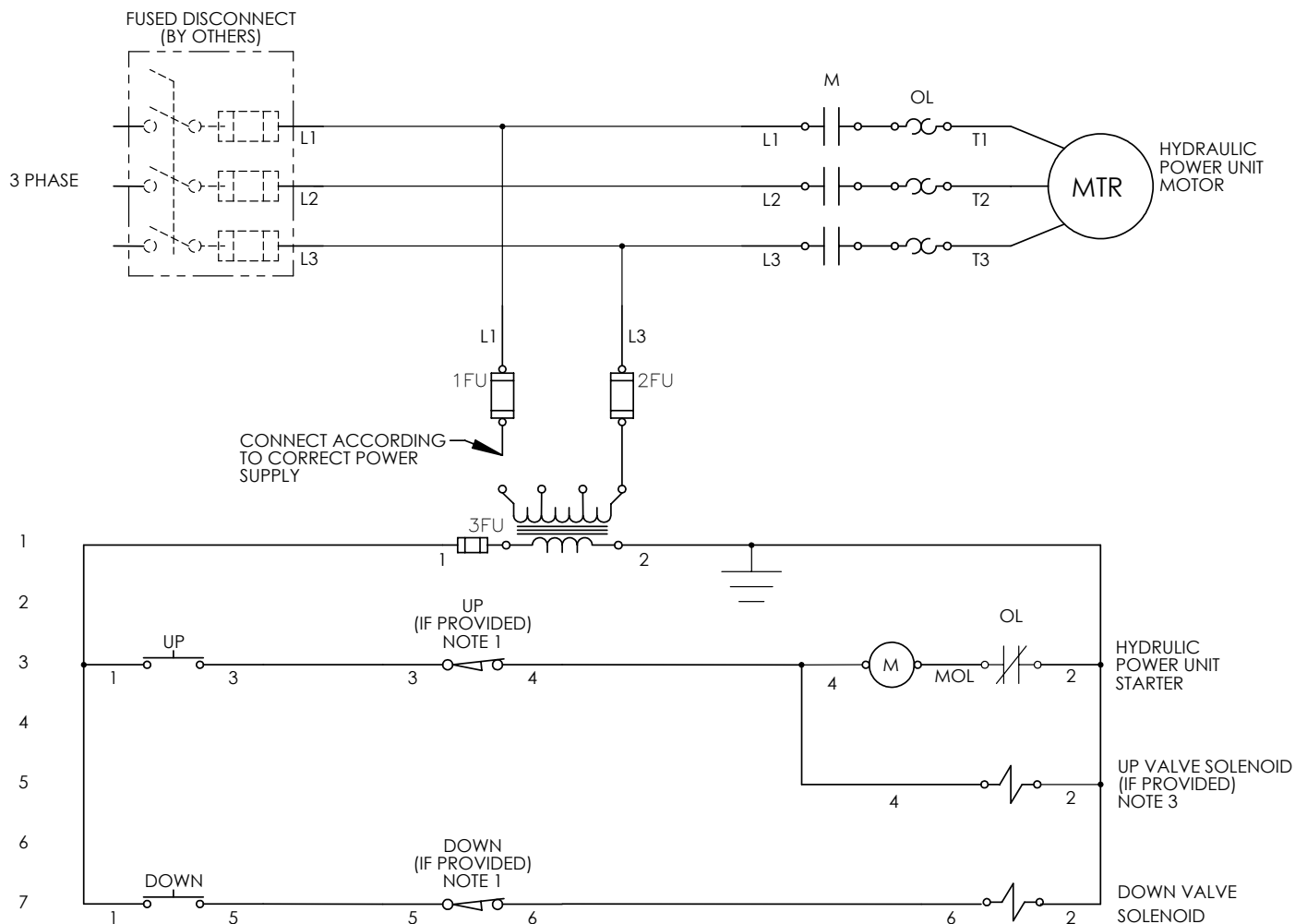
Problem	Possible Cause	Check
Platform will not lower	Down valve solenoid not energized	Check if down valve solenoid is energized while pressing the DOWN button.
	Operator controls are malfunctioning	Inspect the operator controls and cord for damage. Check for continuity through switches when pressed. Verify all connections within the control panel are correct and secure.
	Maintenance devices are engaged	Verify the maintenance devices are not engaged.
	Fixed flow control valve may be clogged	Clean the fixed flow control valve as necessary.
	Mechanical binding in the pivots, hinges, and/or cylinders	Inspect the machine for damage or debris that may cause binding.
	Down limit switch open	If lift is at the lowered height the limit switch will open and disable the DOWN button. If lift is not at lowered height the limit switch should be closed. Check for continuity through the switch.
The lift will not stay elevated (drifts down)	Some drift is normal.	ANSI MH29.1 Allows for 0.5% of the maximum vertical travel of the platform of a period of 15 minutes.
	Down valve may be leaking internally.	Remove the down valve and inspect for debris which may be preventing it from closing. Contact Customer Service for procedure.
	Down valve may be energized	Check the solenoid with a volt meter.
	Cylinder may be leaking	Check for fluid leaks.
	Down valve manual override may be open	Verify the manual override is closed.
Platform lowers too slowly	Down valve may not be fully opening or may be partially blocked or stuck closed.	Remove the down valve and clean. - Contact Customer Service for procedure.
	Fixed flow control valve may be clogged	Clean the fixed flow control valve as necessary.
	Return line filter may be clogged.	Replace return line filter.

9 ELECTRICAL

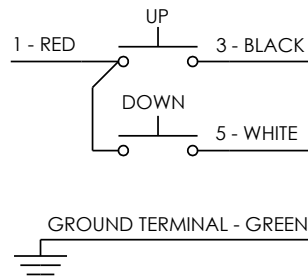
NOTICE

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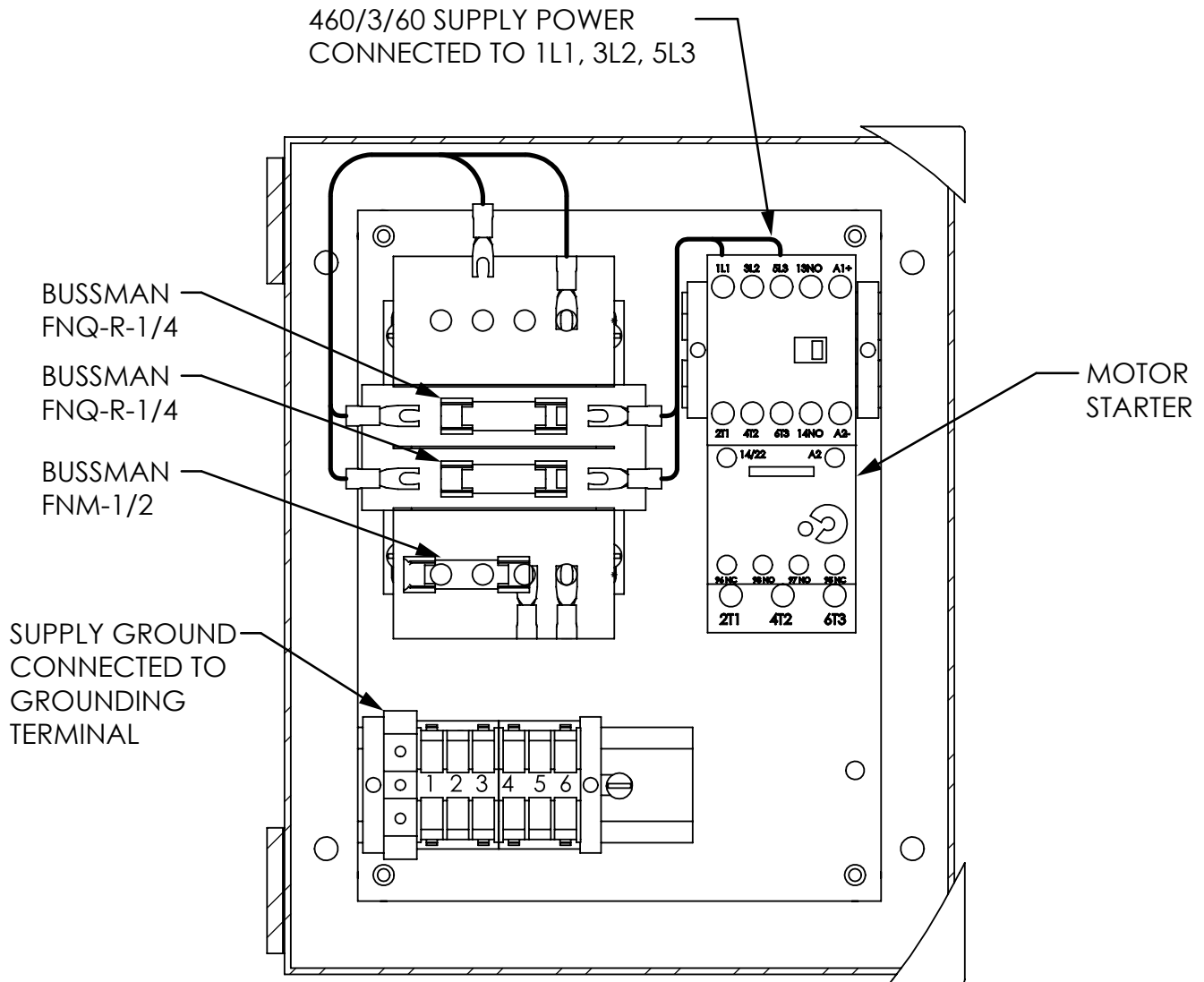
9.1 Wiring Schematic



9.2 Handheld Pushbutton Connections



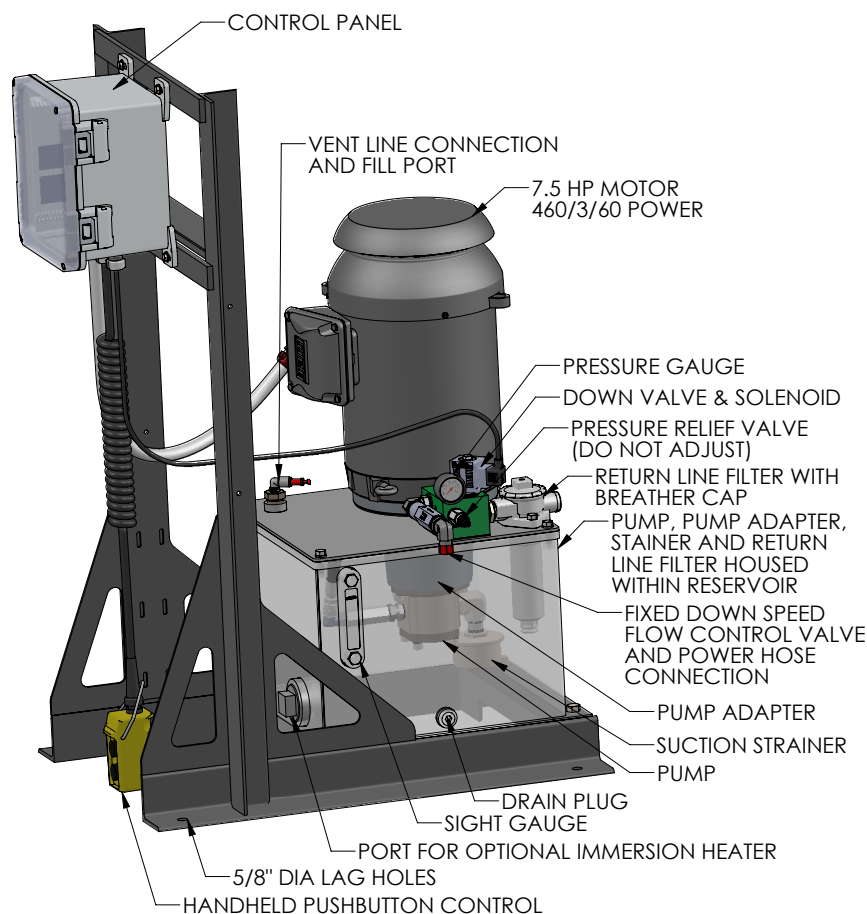
9.3 Control Panel



NOTICE

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10.1 Hydraulic Power Unit

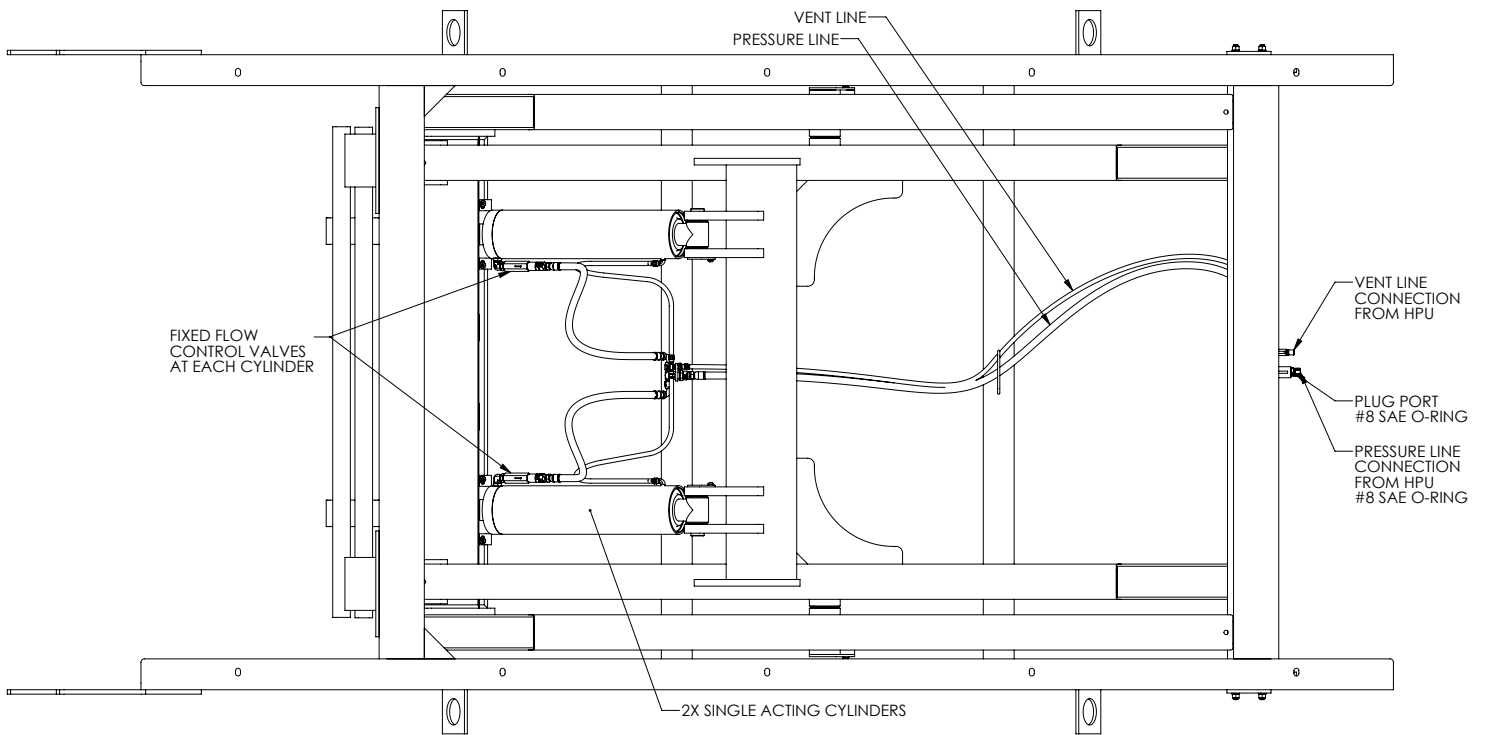


10.2 Hydraulic Fluid

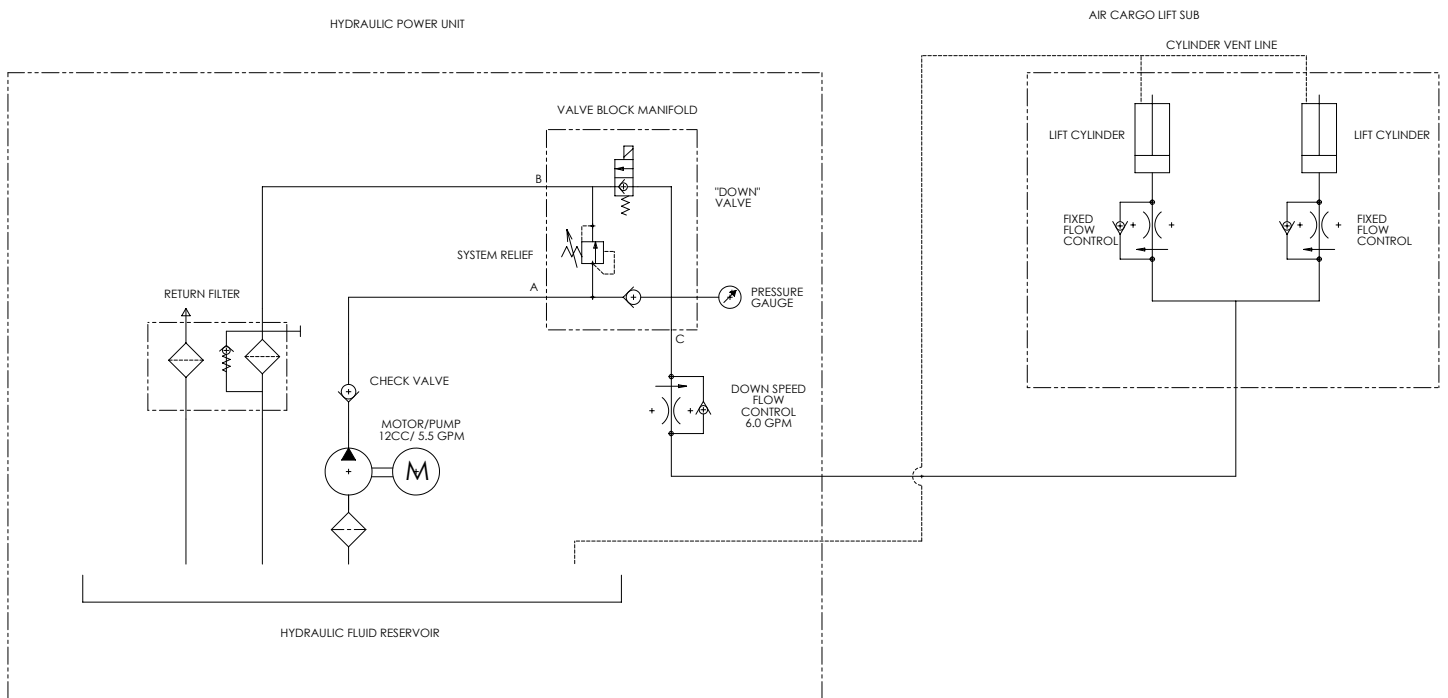
This lift is typically supplied with Conoco AW32 all purpose hydraulic fluid. Use the same or equivalent. For colder climates on hydraulic units without heaters, aircraft hydraulic fluid (contact customer service) may be necessary. The fluid reservoir requires up to ten gallons to fill.

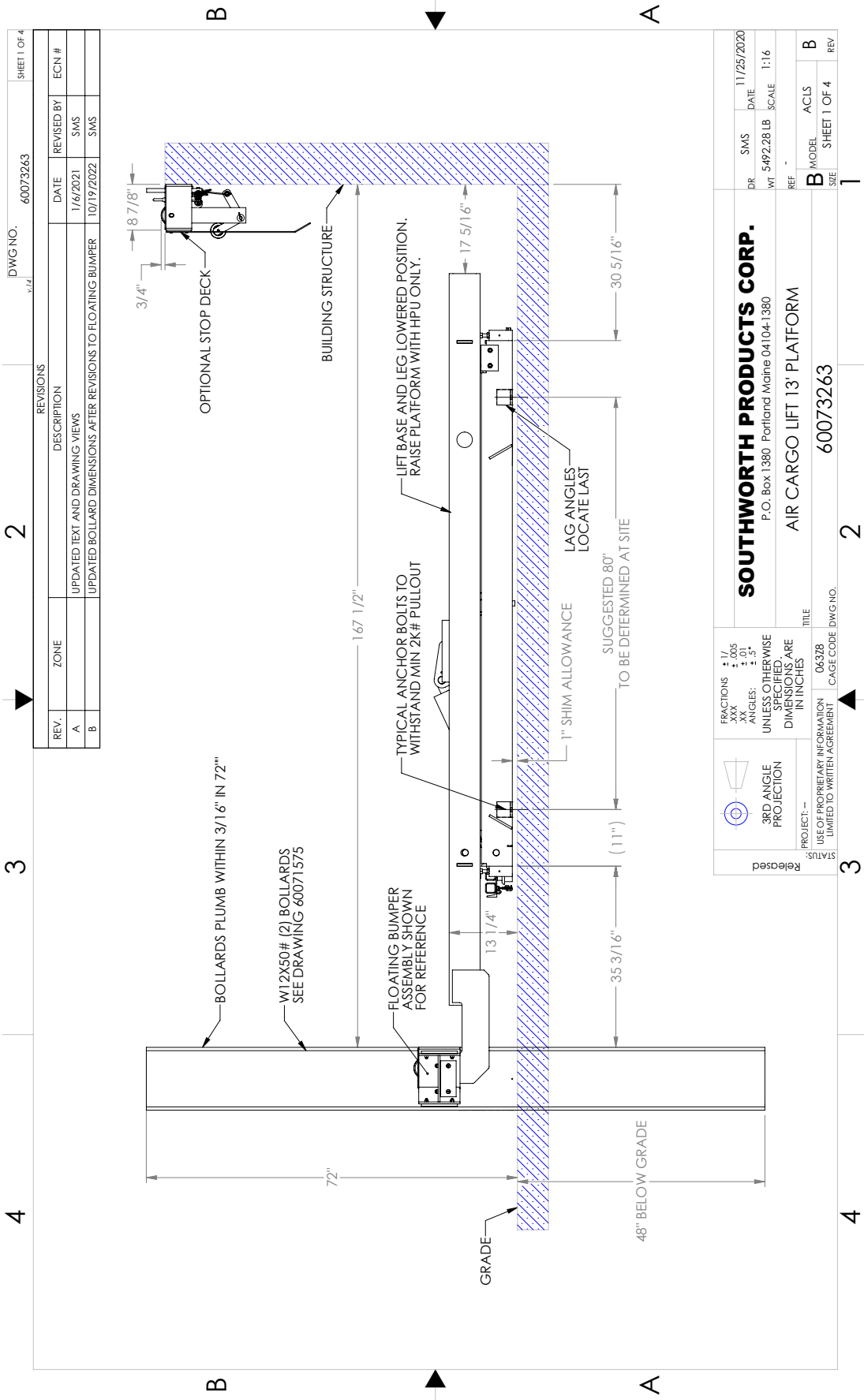
Ensure the fluid level is approximately 1/4" from the top of the fluid level/temperature sight gauge on the HPU reservoir or 3/4" from the top of the reservoir (when no sight gauge is included) when the lift table is fully lowered.

10.3 Hydraulic Arrangement



10.4 Hydraulic Schematic





REV.		ZONE	DESCRIPTION	DATE	REVISOR	ECN #
A			UPDATED TEXT AND DRAWING VIEWS	1/6/2021	SMS	
B			UPDATED BOLLARD DIMENSIONS AFTER REVISIONS TO FLOATING BUMPER	10/19/2022	SMS	

DWG NO. 60073263		SHEET 1 OF 4	
REV. 2		DATE 11/25/2020	
REV. 3		SCALE 1:16	
REV. 4		REF. -	

SOUTHWORTH PRODUCTS CORP.
 P.O. Box 1380 Portland Maine 04104-1380

AIR CARGO LIFT 13' PLATFORM

PROJECT: -
 TITLE: AIR CARGO LIFT 13' PLATFORM
 CAGE CODE: 60073263

STATUS: Released
 USE OF PROPRIETARY INFORMATION LIMITED TO WRITTEN AGREEMENT

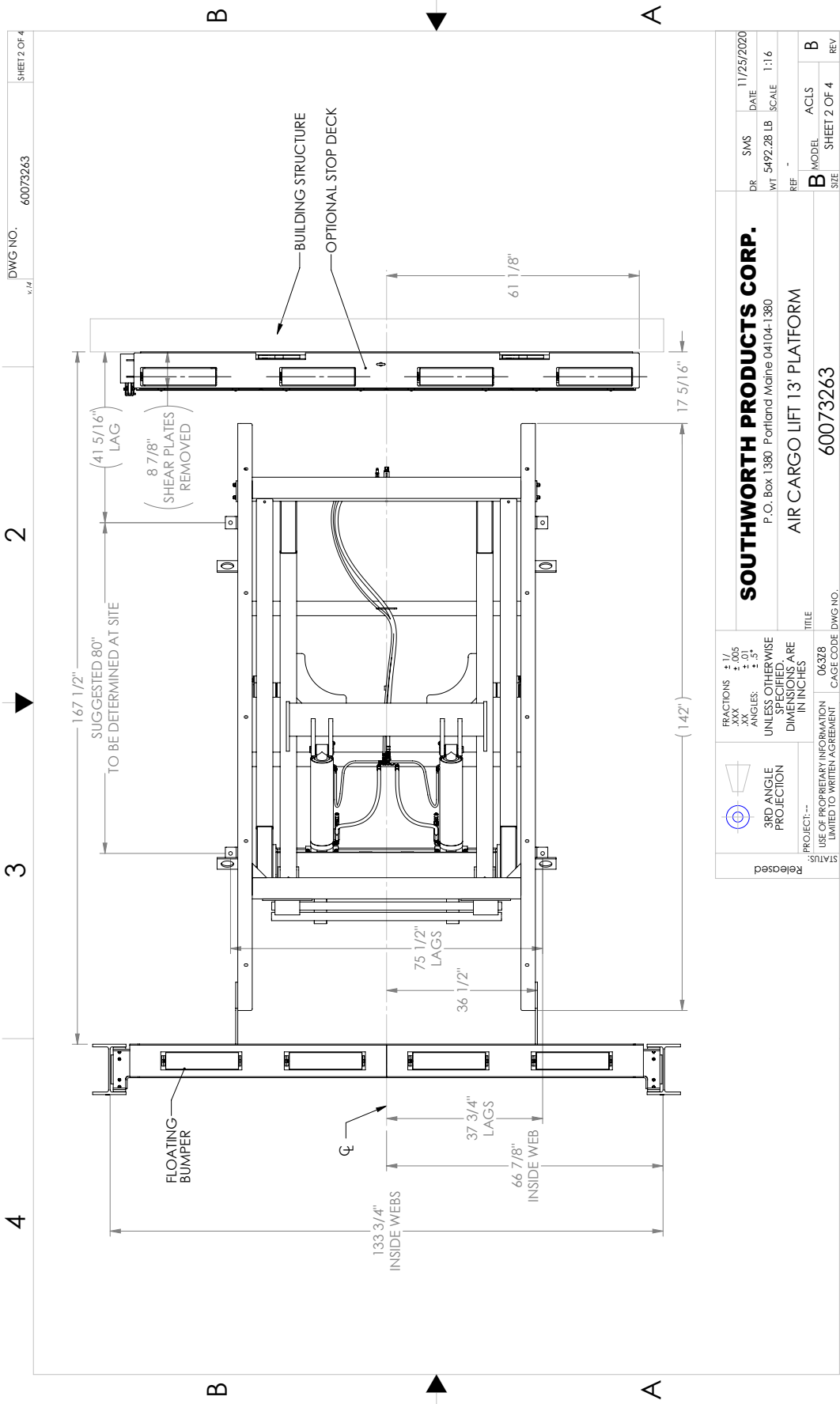
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UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES

DR: SMS DATE: 11/25/2020
 WT: 5492.28 LB SCALE: 1:16

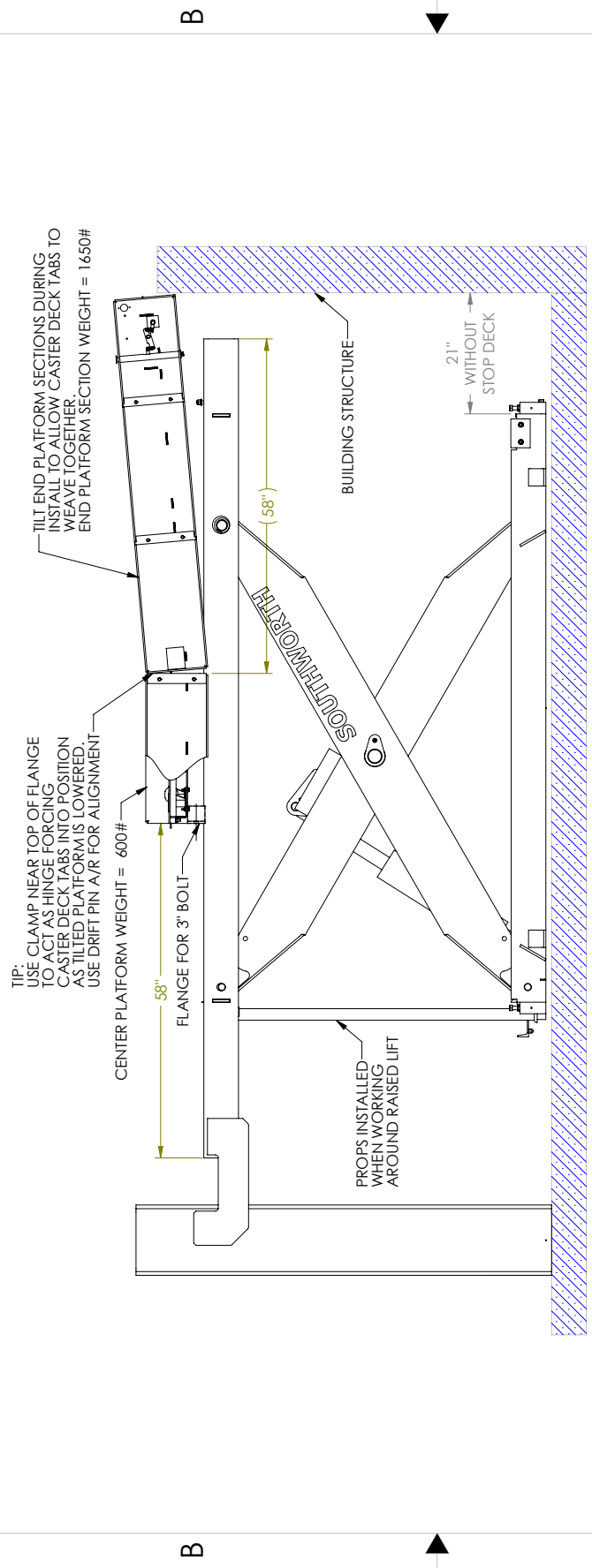
REF: -
 MODEL: B
 ACLS: B
 SHEET 1 OF 4
 REV: B

SHOWN WITHOUT CASTERED DECK



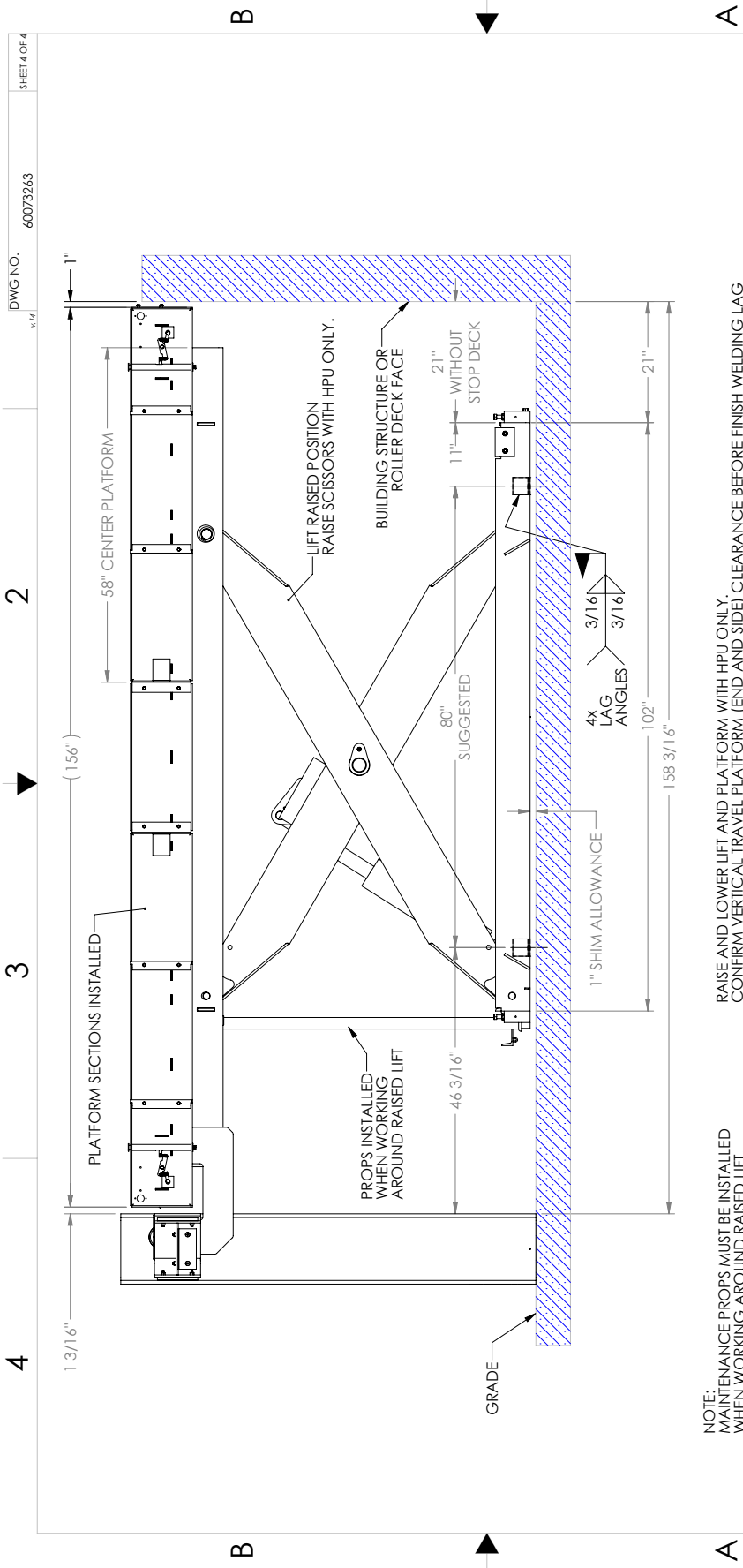
SOUTHWORTH PRODUCTS CORP. P.O. Box 1380 Portland Maine 04104-1380		DR. SMS WT 5492.28 LB REF. -	DATE 11/25/2020 SCALE 1:16
TITLE AIR CARGO LIFT 13' PLATFORM		MODEL SIZE SHEET 2 OF 4	ACLS REV B
PROJECT: -- USE OF PROPRIETARY INFORMATION LIMITED TO WRITTEN AGREEMENT		CAGE CODE DWG NO. 60073263	

SHOWN WITHOUT CASTERED DECK



- PLATFORM ASSEMBLY:**
1. LOCATE AND SECURE CENTER PLATFORM SECTION USING DIMENSIONS SHOWN. TORQUE CENTER BED MOUNTING BOLTS USING 75-80FT-LBS.
 2. DRAW END PLATFORM SECTION CASTER DECK PLATE TOGETHER WITH CENTER SECTION PLATE USING 1/2" X 3" BOLTS. NO SPECIFIED TORQUE.
 3. CONNECT OUTSIDE PLATFORM FLANGES WITH 1/2" X 1 1/2" HEX BOLTS. TORQUE TO 55-60FT-LBS.
 4. SECURE END PLATFORM BED MOUNTING BOLTS USING 75-80FT-LBS TORQUE.
 5. OPERATOR PLATFORM AND HANDRAIL MOUNTING 3/8" BOLT TORQUE WITH 25-29FT-LBS.
 6. MARK ALL BOLTS THAT HAVE BEEN TORQUED.

 3RD ANGLE PROJECTION		FRACTIONS: ± 1/8 ± .005 ± .01 ANGLES: ± .5°		DR SMS 11/25/2020 WT SCALE 1:16
PROJECT:-- STATUS: RELEASED USE OF PROPRIETARY INFORMATION LIMITED TO WRITTEN AGREEMENT		UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES		REF: - B MODEL SHT 3 OF 4 SIZE 1
SOUTH WORTH PRODUCTS CORP. P.O. Box 1380 Portland Maine 04104-1380		AIR CARGO LIFT 13' PLATFORM		ACLS B SHEET 3 OF 4 REV
PROJECT INFORMATION: 06328 CAGE CODE DWG NO. 60073263		TITLE: AIR CARGO LIFT 13' PLATFORM		B MODEL SHT 3 OF 4 SIZE 1



NOTE: MAINTENANCE PROPS MUST BE INSTALLED WHEN WORKING AROUND RAISED LIFT.

RAISE AND LOWER LIFT AND PLATFORM WITH HPU ONLY. CONFIRM VERTICAL TRAVEL PLATFORM (END AND SIDE) CLEARANCE BEFORE FINISH WELDING LAG ANGLES.

 3RD ANGLE PROJECTION	FRACTIONS: ± 1/8 XX ANGLES: ± .01 XX UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES	SOUTHWORTH PRODUCTS CORP. P.O. Box 1380 Portland Maine 04104-1380	DR: SWS DATE: 11/25/2020 WT: 5492.28 LB SCALE: 1:16
	PROJECT: -- USE OF PROPRIETARY INFORMATION LIMITED TO WRITTEN AGREEMENT	TITLE: AIR CARGO LIFT 13' PLATFORM	REF: -- MODEL: -- SIZE: --
STATUS: RELEASED	PROJECT INFORMATION: 06328 CAGE CODE DWG NO.: 60073263	1	1

12 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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www.SouthworthProducts.com

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(Find in Resource Library pull down menu)