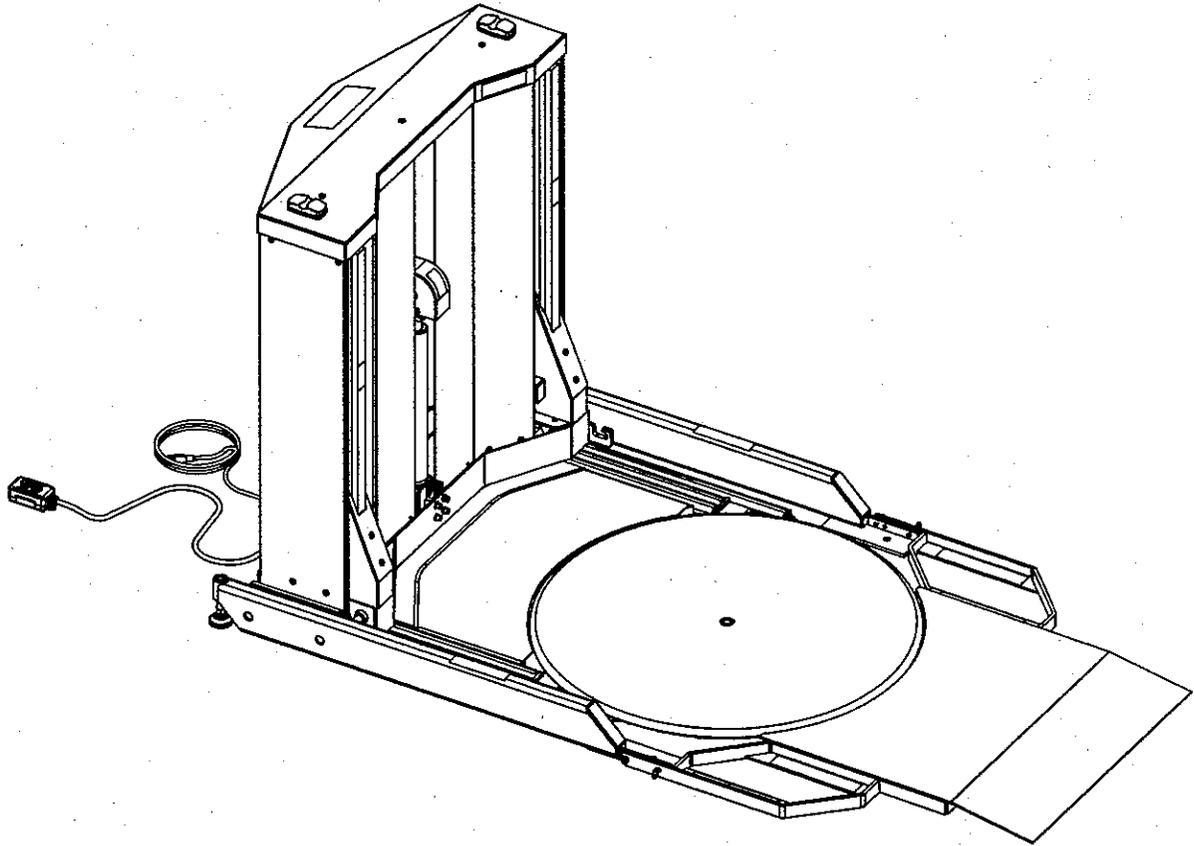


EZ OFF LIFTER™



Service **MANUAL**

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PATENT PENDING

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Date Placed in Service _____

Serial Number _____

Dealer _____

GETTING STARTED

PLEASE READ THIS MANUAL CAREFULLY BEFORE USING THE EZ Off Lifter™ Hydraulic Load Positioner. The safety of all persons installing, using or servicing the EZ Off Lifter is of utmost importance to Bishamon. The EZ Off Lifter lift is capable of supporting heavy loads and is capable of causing **SEVERE PERSONAL INJURY** if used improperly or certain safety precautions are not taken. When properly used and maintained, the EZ Off Lifter will provide many years of safe, trouble free service. If you have any questions about any of the instructions in this manual or about the use of this product, **PLEASE** contact your **DEALER** or **Bishamon Industries Corporation**.

EZ Off Lifter™ is a trademark of Bishamon Industries Corporation. Throughout this service manual the EZ Off Lifter may be referred to as the "load positioner" or the "lifter".

INSPECTION

IMMEDIATELY upon receipt of the load positioner, remove all packing and strapping material and visually inspect the unit for damage. Any damage to the unit **MUST BE NOTED** on the delivery receipt. After the preliminary inspection is conducted, the unit should be thoroughly inspected for any concealed damage that was not readily apparent during the preliminary inspection. Any concealed damage found that was not noted on the delivery receipt should be **IMMEDIATELY** reported in writing **TO THE DELIVERING CARRIER**.

SAFETY DEFINITIONS

Bishamon uses the following system to identify the degree of risk associated with hazards and unsafe practices:

- DANGER** - Immediate hazard which will result in **SEVERE PERSONAL INJURY** or **DEATH**.
- WARNING** - Hazard or unsafe practice which could result in **SEVERE PERSONAL INJURY** or **DEATH** and **PROPERTY DAMAGE**.
- CAUTION** - Hazard or unsafe practice which could result in **MINOR PERSONAL INJURY** and **PROPERTY DAMAGE**.

GENERAL DANGERS, WARNINGS, AND CAUTIONS

DANGER

READ THIS MANUAL COMPLETELY BEFORE USING. THOROUGHLY UNDERSTAND AND FOLLOW ALL SAFETY INSTRUCTIONS.

A falling platform can cause **SEVERE PERSONAL INJURY** or **DEATH**. **NEVER** go under the elevated work platform. All maintenance should be performed with the platform in the fully lowered position.

NEVER place hands or feet under the platform. Entrapment could occur and cause **SEVERE PERSONAL INJURY** or **DEATH**.

NEVER place feet on ramp or base frame while in use. Feet could be **CRUSHED** by the load and cause **SEVERE PERSONAL INJURY** or **DEATH**.

NEVER sit, stand or ride on the platform. Moving components could cause loss of balance. **SEVERE PERSONAL INJURY** or **DEATH** could result.

The lifter's electrical circuits use voltages, which can cause **SEVERE PERSONAL INJURY** or **DEATH**. **DO NOT** work with the electrical components unless you are a **QUALIFIED ELECTRICIAN**.

The lifter's electrical components can create sparks. **DO NOT** install the lifter in an area where potentially explosive dusts, gases, or vapors may be present. Failure to comply may result in an explosion and cause **SEVERE PERSONAL INJURY** or **DEATH**.

WARNING

The EZ Off Lifter™ is designed for use with stable, uniformly distributed, palletized loads on a solid level floor. **DO NOT** concentrate the load at one point on the pallet. **ALWAYS** center the pallet over the platform's rotating disk and uniformly distribute each layer of load over the pallet surface. **DO NOT** use the lifter for any purpose other than its intended use.

DO NOT use the lifter with an unstable, unbalanced or loosely stacked load. Unbalanced loads may become unstable and fall. **SEVERE PERSONAL INJURY** and **PROPERTY DAMAGE** could result.

DO NOT overload the EZ Off Lifter. **ALWAYS** stay within the designated capacity ratings. **SEVERE PERSONAL INJURY** and **PROPERTY DAMAGE** could result.

SHEARING HAZARD. ALWAYS keep hands and feet clear of all moving components. **SHEARING HAZARDS**, as shown in Figure 1, are created as the platform moves up and down. **DO NOT** place hands or fingers on the frame or under the platform when in use. **SEVERE PERSONAL INJURY** could result.

CRUSHING HAZARD. ALWAYS keep hands and feet clear of the load and all moving components. **CRUSHING HAZARDS**, as shown in Figure 1, are created as the platform moves up and down. **SEVERE PERSONAL INJURY** could result.

PINCH POINT HAZARD. ALWAYS keep feet, hands and fingers away from the underside of the platform and all moving components. **PINCH POINT HAZARDS**, as shown in Figure 1, are created as the platform rotates and moves up or down. **SEVERE PERSONAL INJURY** could result.

BEFORE removing the palletized load with a pallet truck, **ALWAYS** ensure that other persons are well clear of the Pallet Truck Runway Zone, as shown in Figure 4. To prevent entrapment by the loaded pallet truck, **ENSURE** the Pallet Truck Runway Zone is free of obstacles or obstructions. **SEVERE PERSONAL INJURY** could result.

Use extreme care when removing a palletized load with a pallet truck. **ALWAYS** keep hands and feet clear of the pallet truck wheels and **ALWAYS** be prepared to lower the load in the event the pallet truck becomes uncontrollable. **SEVERE PERSONAL INJURY** could result.

NEVER leave the loaded lifter unattended unless the platform is in the fully lowered position.

DO NOT change the relief valve setting. The relief valve is installed to protect the operator and the lifter. Changing the relief valve setting may cause the platform to suddenly fall. **SEVERE PERSONAL INJURY** and **PROPERTY DAMAGE** could result.

ALL lifter servicing must be performed by qualified personnel only. Unauthorized modifications to the lifter, its hydraulic power unit or its control system may compromise the performance and safety of the system. **UNDER NO CIRCUMSTANCES** should you attempt any repair or service that is not covered in this manual.

The release of hydraulic fluid under high pressure can cause **SEVERE PERSONAL INJURY**. Before servicing the lifter, **ALWAYS** remove the load and **RELEASE THE HYDRAULIC PRESSURE**.

ALWAYS ensure all safety warning labels are in place and legible. If not, remove the lifter from service and replace the required labels. Refer to Figure 2 for label descriptions and locations.

CAUTION

DO NOT continue to operate the pump if a squealing noise is heard coming from the pump. The pressure relief valve is operating. Continued use of the pump with the relief valve operating will cause permanent damage the pump. **REDUCE** the load to prevent the relief valve from operating.

If the EZ Off Lifter is equipped with the optional semi-live portability, **ALWAYS** remove the load before engaging the portability dolly.

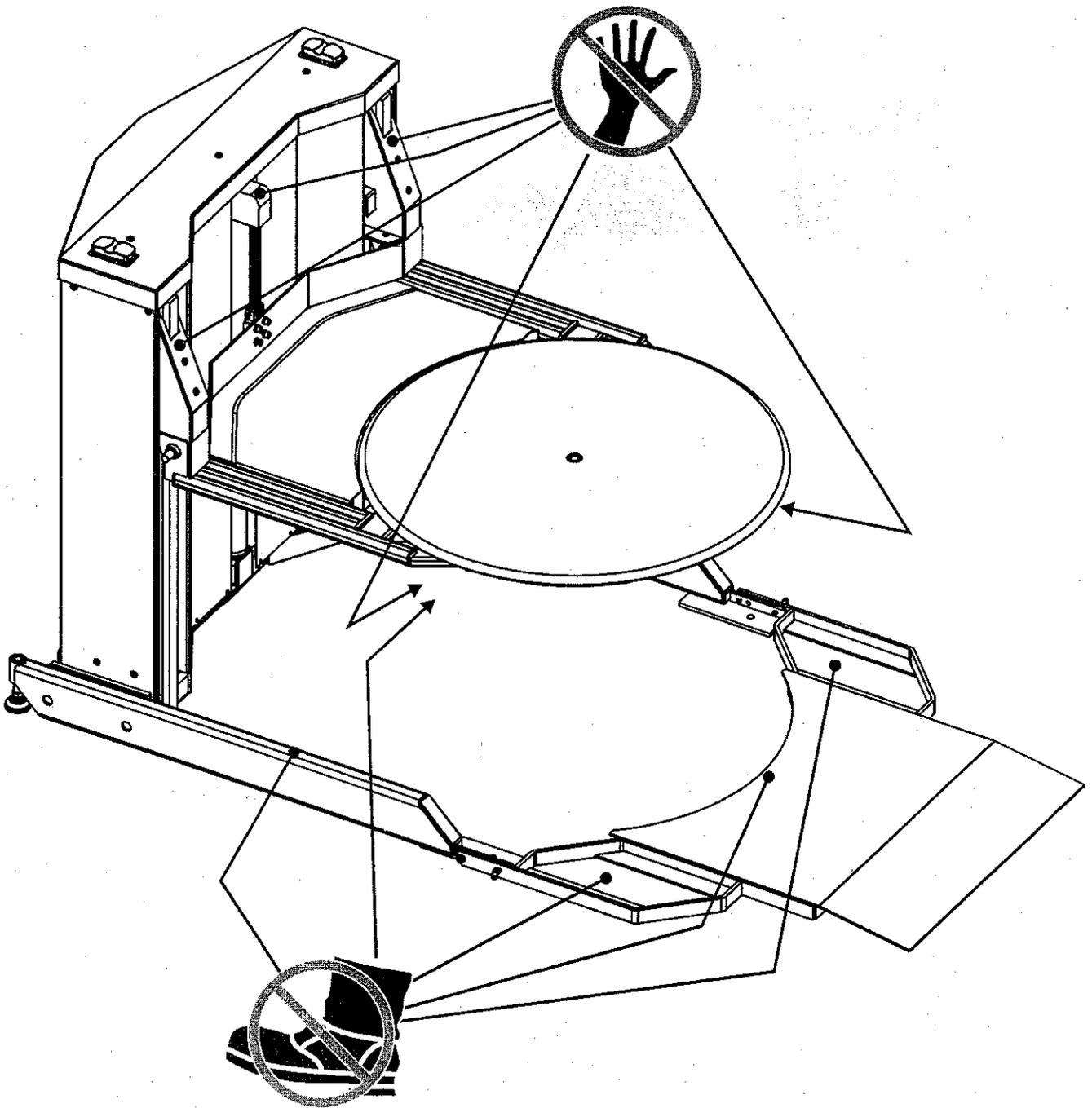


Figure 1 - Hazard Locations

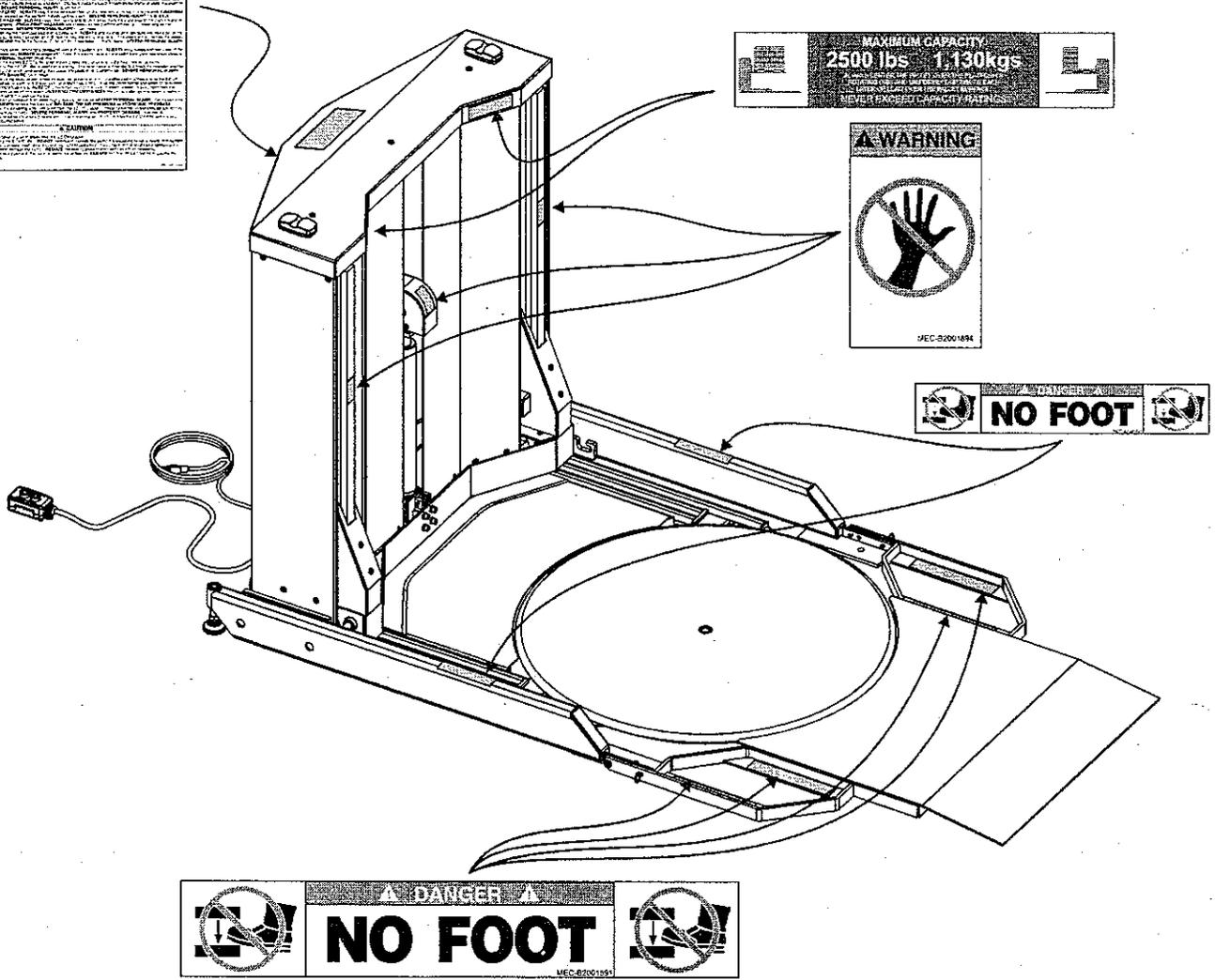


Figure 2 - Safety Warning Label Locations

RESPONSIBILITIES OF OWNERS/USERS

It is the responsibility of the Owners/Users to:

1. Ensure the lifter is inspected and maintained in proper working order in accordance with the operation/maintenance instructions provided in this manual.
2. Ensure any lifter not in safe operating condition such as, but not limited to excessive leakage, missing rollers, pins or fasteners, bent or cracked structural members, cut or frayed hydraulic lines, damaged or malfunctioning controls or safety devices, etc. shall be removed from service until it is repaired to Bishamon's standards.
3. Ensure all repairs are made by qualified personnel in conformance with the instructions provided by Bishamon Industries Corporation.
4. Ensure only trained and authorized personnel are permitted to operate the EZ Off Lifter and that all operators understand the operating instructions, safety rules and hazards associated with this lifter.
5. Ensure the lifter is used in accordance with the guidelines provided in this manual.
6. Ensure modifications or alterations of any EZ Off Lifter are made only with the written permission of Bishamon Industries Corporation.

SPECIFICATIONS AND SPECIFICATION DRAWING

SPECIFICATIONS	
EZ Off Lifter	
1. Maximum Capacity	2500 lbs. (1134 kg)
2. Platform Lowered or Collapsed Height	1.75 in. (44.5 mm)
3. Platform Raised or Extended Height	30 in. (762 mm)
4. Approximate Weight	900 lbs. (408 kg)
5. Hydraulic Power Unit with Integrated Control Valves and Reservoir	
6. Electric Motor	1 HP, 115 V, 1PH
7. Controls -- Push Button Hand Control on 8 foot Cord	
8. Sound Pressure Level	< 70 dB(a)
9. Operating Environment	Indoors
10. Lighting Requirement	Good General Lighting
11. Operating Temperature	+40F - +150F (+4C - +66C)

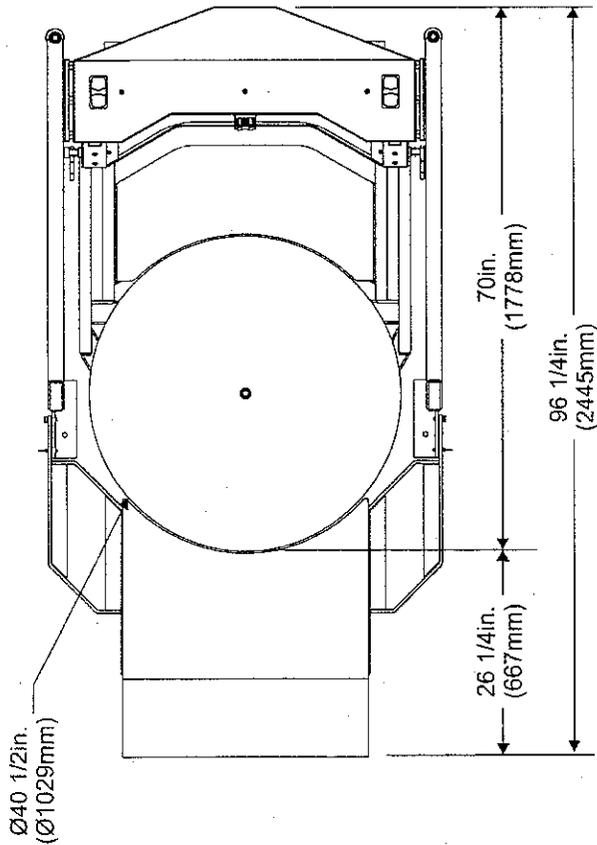
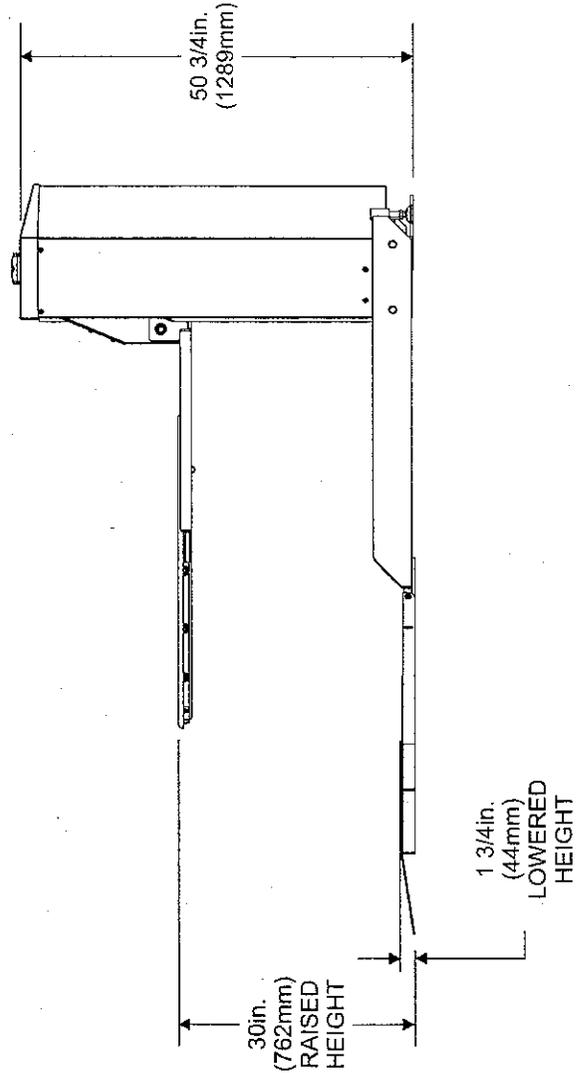
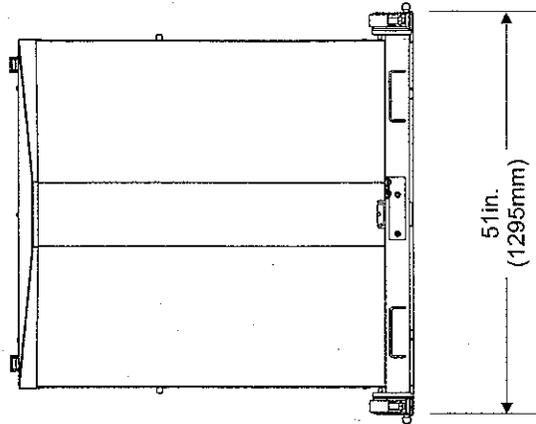


Figure 3 - Lift Specification Drawing

RECOMMENDED FLOOR AREA

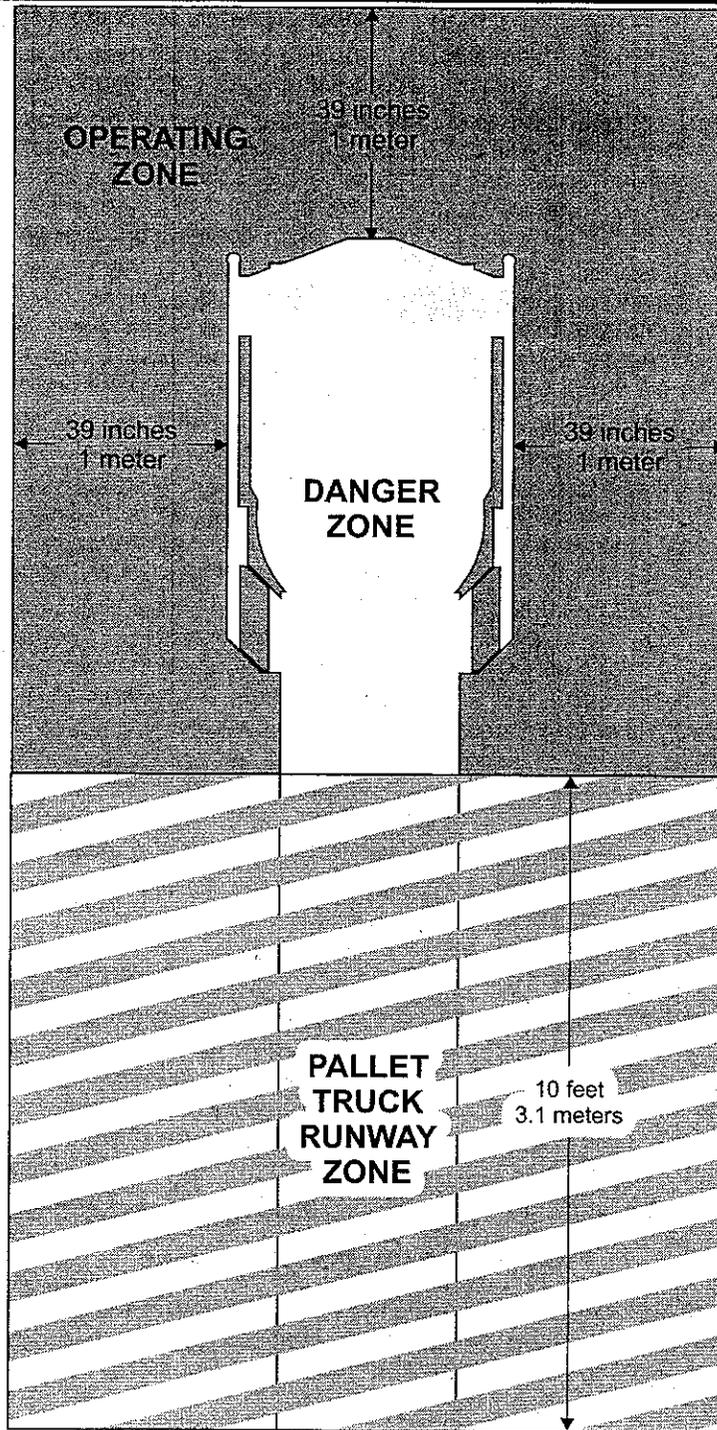


Figure 4 - Recommended Floor Area

The EZ Off Lifter's recommended floor area, shown in Figure 4, identifies the "Danger Zone", the "Operating Zone" and the "Pallet Truck Runway Zone". The Danger Zone is the area inside the perimeter of the frame including the ramp. To prevent PERSONAL INJURY or DEATH, workers must stay clear of the Danger Zone and observe all Dangers or Warnings. The recommended Operating Zone is a distance of 39 inches (1 meter) extending beyond the Danger Zone on the sides and end of the EZ Off Lifter. The recommended Pallet Truck Runway Zone extends 39 inches (1 meter) to each side of the Loader and a distance of 120 inches (3.1 meters) beyond the end of the ramp.

FUNCTIONAL DESCRIPTION

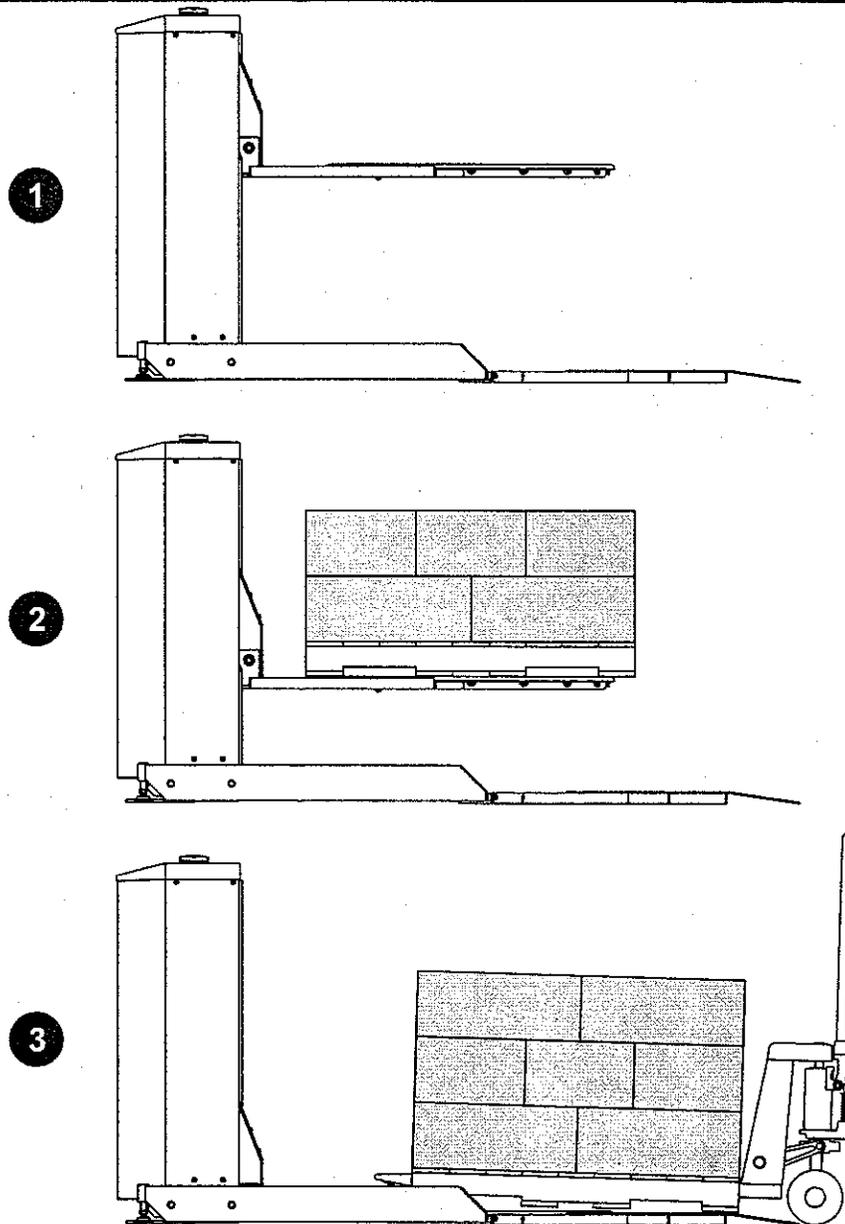


Figure 5 – Functional Drawing

The EZ Off Lifter™ is a hydraulic load positioner designed to improve palletizing productivity and worker safety. The EZ Off Lifter is the modern way to manually load pallets in applications where the loaded pallets are transported with a pallet truck. The EZ Off Lifter provides full hydraulic control of the platform allowing the load to be positioned at a convenient height. By bringing the load closer to the worker, the EZ Off Lifter substantially reduces the time to load or unload pallets and eliminates excessive bending and stretching that can lead to worker injuries.

The EZ Off Lifter™ has a maximum capacity of 2500 lbs (1136 kg) and has a platform raised height of 30.00 in. (762 mm). The platform position is completely variable in height between the upper and lower travel limits. The minimum lowered height is 1.75 in. (44.5 mm) and is flush with the approach ramp. At this height, the load is easily removed with a hand pallet truck.

INSTALLATION

The EZ Off Lifter™ is shipped on a pallet and only requires minor assembly before it is ready for use. Although installation of the EZ Off Lifter is a simple process, certain precautions must be taken to ensure years of trouble free service.

Before you begin, locate and identify the components detailed in Figure 6. These components will be referred to throughout the "Installation" and "Operating" procedures. Make sure you understand the function of each component before proceeding.

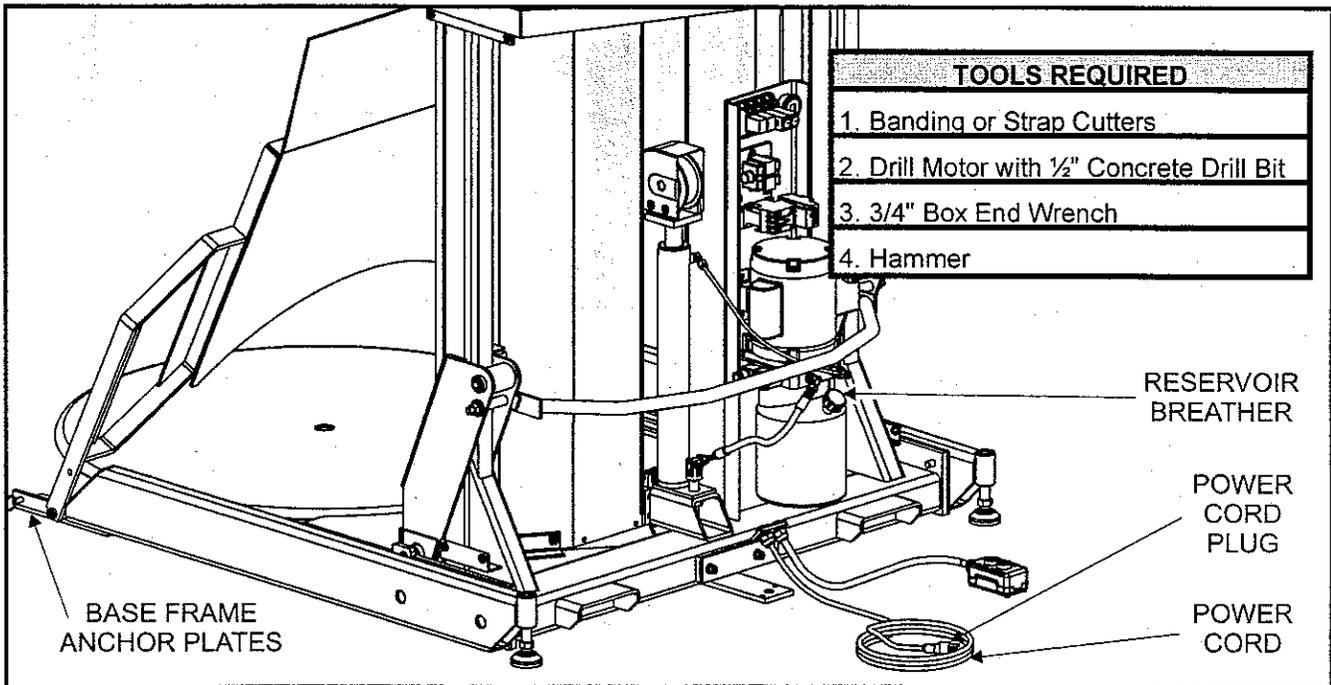


Figure 6 – EZ Off Lifter Installation Components

Power Cord - All EZ Off Lifters are supplied with an 8 ft (2.5 m) power cord of the proper size and rating for the hydraulic power unit.

Power Cord Plug – A power cord plug is supplied with all 115 V 1PH power units. Note: A power cord plug is not supplied with all other non-standard power unit voltages due to the many different types of electrical receptacles and installation options. A QUALIFIED ELECTRICIAN must install an electrical plug of the proper style and rating on the power cord or hard wire the cord to an electrical panel. All electrical installation aspects must conform to the National Electrical Code or the proper governing agency for the area.

Reservoir Breather - All EZ Off Lifters are supplied with hydraulic fluid in the reservoir. The breather is located on top of the reservoir and must be removed to check the fluid level or to add hydraulic fluid.

Base Frame Anchor Plates – Three pre-drilled frame anchor plates are provided to secure the lifter to the floor or installation surface.

Installation Instructions

1. Using a fork lift or similar equipment, move the palletized lifter to the location it is to be installed. The installation area should be clean and have good general lighting.
2. Next, using the strap cutter, remove the bands securing the lifter to the pallet. Remove all packing material and place it off to the side.
3. Locate the two (2) adjustable leveling feet at the rear of the frame. If required, adjust each leveler downward until the leveling foot contacts the pallet surface. Further adjustments will be required later during the installation process.
4. Engage the platform lock on each side of the platform. As detailed in Figure 7, rotate each lock to the vertical position. Ensure both locks completely engage the protruding pins.

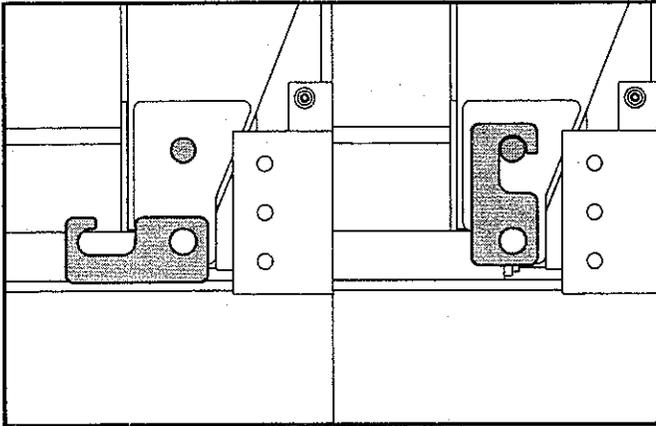


Figure 7 – Platform Lock Operation

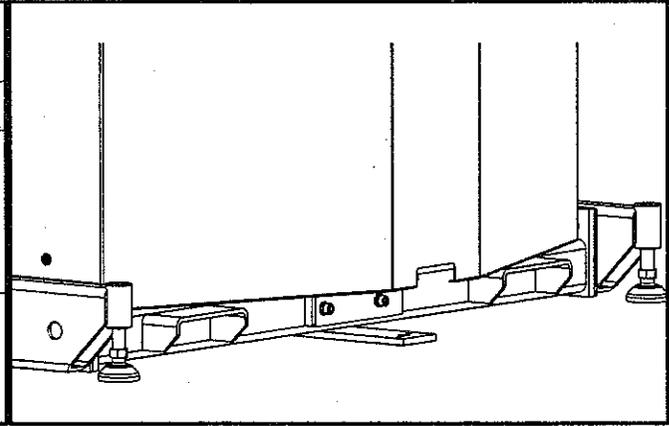


Figure 8 – Fork Pockets

5. Next, adjust the fork spacing on the forklift to 24 in. (610 mm) between the forks. This fork spacing is required to properly engage the fork pockets, as shown in Figure 8. The lifter is designed to accommodate 5.50 – 6.00 in. (140 – 152 mm) wide forks at this fork spacing. Insert the fork tips completely into the fork pockets on the rear of the lifter. Slowly lift the rear of the unit until there is approximately 3.00 in. (76 mm) of clearance between the rear leveling feet and the pallet surface. At this time, with the rear of the unit elevated, adjust each leveler downward 0.50 in. (13 mm). This corresponds to 5 (five) complete revolutions.
6. Place a block approximately 2.0 in. (51 mm) thick under each of the rear leveling feet. Lower the forks completely. The blocks will provide sufficient clearance for the forks to be inserted under the base structure and platform of the lifter. Slowly insert the forks under the rear frame and platform. Be sure to leave sufficient clearance between the forklift's carriage and the lifter's rear cover. Be careful not to damage the power cord and the hand control cord that exit the frame below the cover.
7. Tilt the fork mast to the rear to level the lifter and slowly lift the unit until the base structure is completely clear of the pallet, as detailed in Figure 9. Next, remove the pallet and place it off to the side. Position the EZ Off Lifter in the desired location.
8. With the lifter in the desired location, reposition the blocks under the rear leveling feet and completely lower the forks. Tilt the mast forward and slowly back up until the tip of the forks are able to completely engage the rear fork pockets. Lift the rear of the unit and remove the blocks. Slowly lower the unit until the rear of the lifter is supported by the

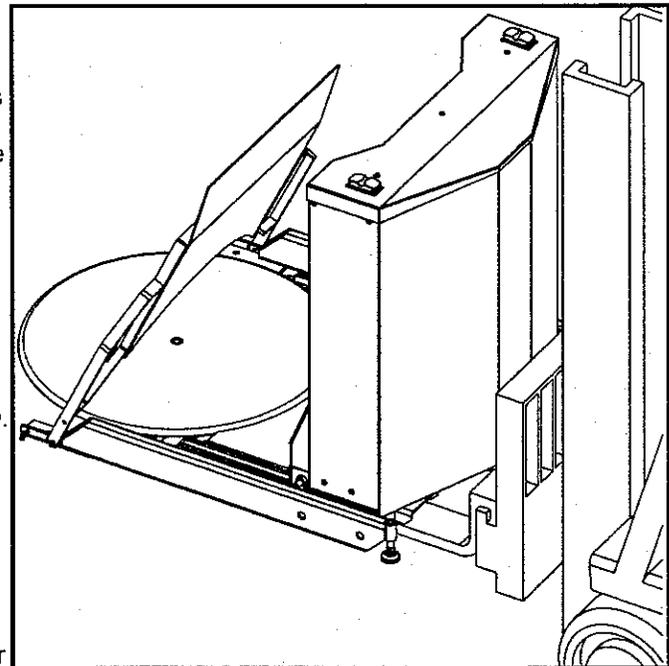


Figure 9 – Handling the EZ Off Lifter

DANGER

The lifter's electrical circuits use voltages which can cause **SEVERE PERSONAL INJURY** or **DEATH**. **DO NOT** work with the electrical components unless you are a **QUALIFIED ELECTRICIAN**.

rear leveling feet. **DO NOT** remove the forklift at this time.

9. Check the levelness and stability of the lifter. If required, slightly lift the rear of the unit and independently adjust each leveler. Repeat this process until the lifter is level and stable. When properly adjusted, the gap between the floor and the rear frame should be approximately 0.50 in. (13mm). The rear anchor plate should be approximately 0.13 in. (3.3 mm) off the floor.
10. Disengage both platform locks. As detailed in Figure 7, rotate each lock to the horizontal position.
11. Next, rotate the ramp to its operating position. As shown in Figure 10, remove the spring detent pins that are securing the ramp in the stored position. Carefully grab the end of the ramp and rotate the ramp to the operating position. The ramp is heavy. Use **CAUTION** not to pinch fingers or toes under the ramp. Reinstall the detent pins to secure the ramp in the operating position.
12. Locate the 8 ft power cord that extends from the rear of the lifter below the cover. All EZ Off lifters are supplied with a 115 V 1 power unit as standard equipment. These power units have a power cord with a molded plug. All non-standard power units are supplied with a power cord only. A power plug is not supplied with non-standard power units due to the many different types of electrical outlets available. In this case, have a **QUALIFIED ELECTRICIAN** install an electrical plug of the proper style and rating on the power cord. Ensure both the power source and the outlet have the proper amperage rating for the lifter's electric motor. Finally, insert the plug into the electrical outlet.
13. The EZ Off Lifter's base frame has three (3) 5/8 in. holes for lagging the unit securely to the floor. Using the three (3) holes as a template, drill a 1/2 in. diameter hole, 3 in. minimum depth at each location. The floor surface should be level and the drilled holes perpendicular to the floor. Depending on the floor conditions, the bottom of the rear anchor plate should be approximately 0.13 in. (3.3 mm) off the floor. This gap should be shimmed to prevent distorting the rear frame.
14. As detailed in Figure 11, prepare the 1/2 in. diameter x 4 in. long anchor bolts (*USE type SUP-R-STUD #26-12400 or equivalent*) by assembling the washer and nut on the anchor bolt. The nut should be screwed onto the anchor bolt approximately 1/2 the nut height. Drive the assembled anchor through the mounting holes into the concrete until the washer is flush with the top of the anchor plate. Expand the anchor shield by tightening the nut three (3) to five (5) turns. Repeat for the remaining anchors.
15. The EZ Off Lifter is now ready for operation. Refer to the following section for complete operating instructions.

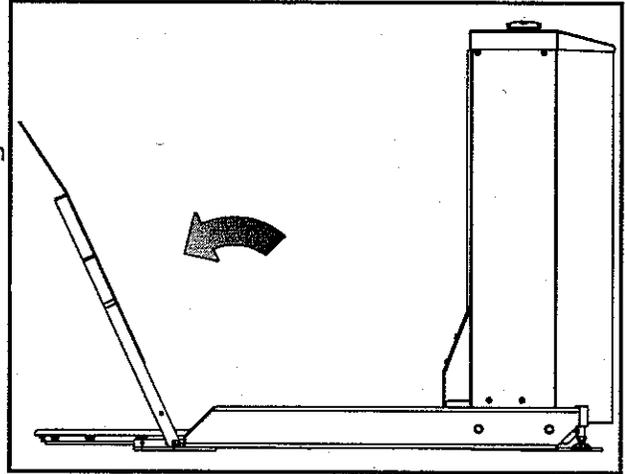


Figure 10 – Ramp Operation

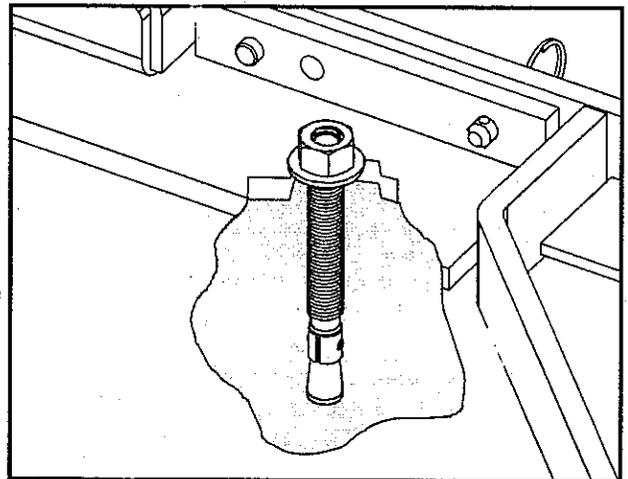


Figure 11 – Anchor Bolt Detail

OPERATING INSTRUCTIONS

Raising the Platform

1. Before raising the platform, **BE SURE** that all others are well clear of the lifter. If the platform is loaded, **RECHECK** the position and condition of the load.
2. As shown in Figures 12 and 13, depress the raise button or pedal to raise the platform to a convenient height. **CONTINUOUSLY WATCH** the condition of the load as the platform is raised. If the load appears to be shifting, **STOP**, lower the platform and adjust the load.

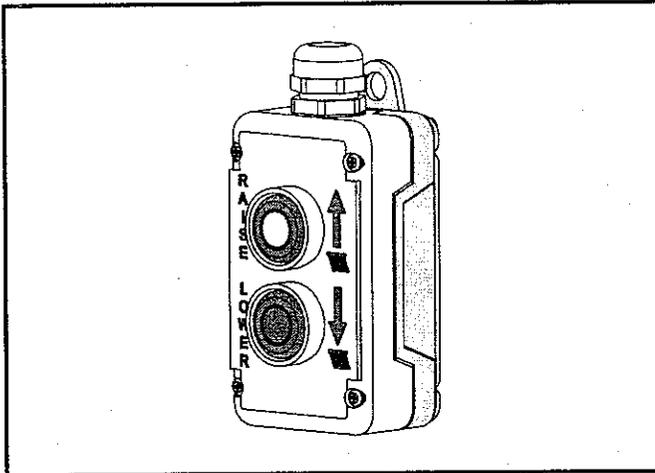


Figure 12 – Hand Control Operation

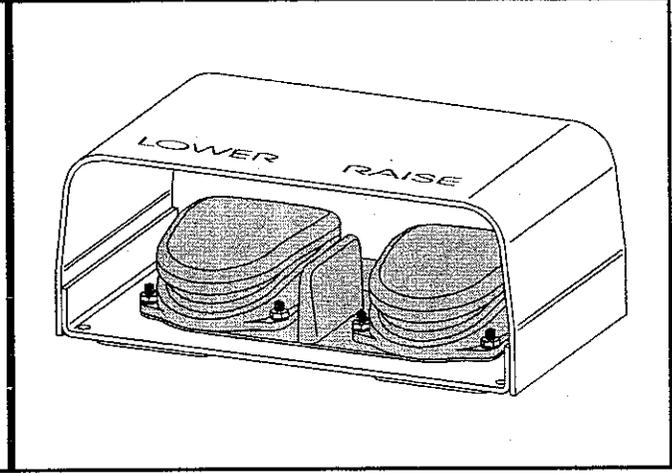


Figure 13 – Foot Control Operation

Lowering the Platform

1. Before lowering the platform, **BE SURE** that yourself, as well as, all others are well clear of the lifter. If the platform is loaded, **RECHECK** the position and condition of the load.
2. Depress the lowering button or pedal (see Figures 12 and 13) to lower the lift platform. **CONTINUOUSLY WATCH** the condition of the load as the platform is lowering. If the load appears to be shifting, **STOP** and adjust the load. All EZ Off Lifters are equipped with a feet clear safety circuit. When lowering the platform, this safety control feature automatically stops the platform descent at 9.00 in. (229 mm) above the floor. To continue lowering the platform, release the "LOWER" button and depress it a second time. At that time, the warning lights and beeper alert the operator and others to stay clear of the platform that is preparing to lower. After a three (3) second delay, the platform will lower to its minimum height.

Loading Operations

1. Depress the appropriate button or pedal to raise or lower the platform to a convenient working height. Next, place the empty pallet on the EZ Off Lifter's rotating disk. Be sure that the pallet is centered on the disk before beginning.
2. Begin the loading process. Always uniformly distribute each layer of load over the pallet surface. Before adding load, grab the pallet and rotate the disk's position to minimize the reach over and to simplify the loading process. **DO NOT** use the underside of the rotating disk's edge to rotate the load. As the load height increases, depress the "LOWER" button or pedal to lower the load and maintain the top of the load at a convenient working height.
3. During the loading process, use extreme care to stay in the operating zone. **DO NOT** place hands or feet in the danger zone. Always position the platform at a convenient height and rotate the pallet's position to minimize the reach over.
4. Typically before adding the last layer of load, the EZ Off Lifter should be lowered to the automatic stop height. Depress and hold the "LOWER" button or pedal. The platform will lower to the automatic stop height and stop. This feature prevents unintentional foot entrapment under the platform structure or pallet, and allows the load to be rotated during the final loading process.

WARNING

DO NOT use the lifter with an unstable, unbalanced or loosely stacked load. Unbalanced loads may become unstable and fall. **SEVERE PERSONAL INJURY** and **PROPERTY DAMAGE** could result.

PINCH POINT HAZARD. ALWAYS keep feet, hands and fingers away from the underside of the platform and all moving components. **PINCH POINT HAZARDS** are created as the platform rotates and moves up or down. **SEVERE PERSONAL INJURY** could result.

DANGER

NEVER place hands or feet under the platform. Entrapment could occur and cause **SEVERE PERSONAL INJURY** or **DEATH**. **NEVER** place feet on ramp or base frame while in use. Feet could be **CRUSHED** by the load and cause **SEVERE PERSONAL INJURY** or **DEATH**.

5. Upon completion of the loading process, rotate the pallet to a position that is suitable for the pallet truck forks to enter the pallet. Ensure all others are well clear of the EZ Off Lifter and the load. Depress and hold the "LOWER" button or pedal. After a three (3) second delay, the platform will lower to the floor and be flush with the integrated approach ramp.
6. **STOP**, before proceeding, **CHECK** the ramp runway zone for obstacles or obstructions. The floor surface must be clean and free of water, oil or grease. Ensure all others are well clear of the Pallet Truck Runway Zone.
7. **ALWAYS** operate the pallet truck in compliance with the manufacture's recommendations and **FOLLOW** all safety precautions.
8. Next, move the pallet truck to the end of the ramp. Check to ensure the pallet truck is centered with the ramp and the forks are completely lowered. Carefully push the pallet truck up the ramp and enter the pallet completely. The pallet truck's steering wheels should be completely on the top of the ramp and not on the sloped section. If not, use extreme caution when raising the load. The pallet truck will try to roll down the ramp as the load is raised.
9. Slowly pump the pallet truck handle and completely raise the pallet. Carefully pull the pallet truck rearward to start the truck down the ramp. At all times, **KEEP** one hand on the pallet truck lowering control. If the truck becomes uncontrollable or the load becomes unstable, **IMMEDIATELY** lower the load.
10. Stop the pallet truck in the ramp runway zone and check the condition of the load. If the load is stable, move the loaded pallet truck to the desired location.
11. Finally, check to ensure all others are well clear of the EZ Off Lifter. Depress the "RAISE" button or pedal to raise the platform to a convenient working height. The EZ Off Lifter is now ready for the next loading cycle.

WARNING

BEFORE removing the palletized load with a pallet truck, **ALWAYS** ensure that other persons are well clear of the Pallet Truck Runway Zone as shown in Figure 4. To prevent entrapment by the loaded pallet truck, **ENSURE** the Pallet Truck Runway Zone is free of obstacles or obstructions. **SEVERE PERSONAL INJURY** could result.

Use extreme care when removing a palletized load with a pallet truck. **ALWAYS** keep hands and feet clear of the pallet truck wheels and **ALWAYS** be prepared to lower the load if the pallet truck becomes uncontrollable. **SEVERE PERSONAL INJURY** could result.

Unloading Operations

1. Check the load or component weight and the pallet size to ensure the palletized load does not exceed the lifter's load specifications. The EZ Off Lifter is rated for 2500 lbs. (1136 kg.) with a maximum pallet size of 44 in. x 48 in. (1118 mm x 1219 mm).
2. Before proceeding, CHECK the Pallet Truck Runway Zone for obstacles or obstructions. The floor surface must be clean and free of water, oil or grease. Ensure all others are well clear of the Pallet Truck Runway Zone.
3. ALWAYS operate the pallet truck in compliance with the manufacture's recommendations and FOLLOW all safety precautions.
4. Check the condition of the palletized load. Ensure the load is tightly stacked and stable.
5. Next, move the loaded pallet truck to the end of the ramp. Check to ensure the pallet truck is centered with the ramp and the forks are completely raised. Carefully push the pallet truck up the ramp and stop. The pallet truck's steering wheels should be completely on the top of the ramp. Ensure the palletized load is centered over the platform's rotating disk; then, slowly lower the load onto the disk.
6. Carefully remove the pallet truck from the pallet. Park the truck in an area that is well clear of the EZ Off Lifter



WARNING

The EZ Off Lifter™ is designed for use with stable, uniformly distributed, palletized loads on a solid level floor. **DO NOT** concentrate the load at one point on the pallet. **ALWAYS** center the pallet over the platform's rotating disk and uniformly distribute each layer of load over the pallet surface. **DO NOT** use the lifter for any purpose other than its intended use.

DO NOT use the lifter with an unstable, unbalanced or loosely stacked load. Unbalanced loads may become unstable and fall. **SEVERE PERSONAL INJURY** and **PROPERTY DAMAGE** could result.

DO NOT overload the EZ Off Lifter. **ALWAYS** stay within the designated capacity ratings. **SEVERE PERSONAL INJURY** and **PROPERTY DAMAGE** could result.

where it does not create a tripping hazard for others.

7. Depress the "RAISE" button or pedal to raise the top of the palletized load to a convenient working height or the platform to a height of 8 – 9 in. (200 – 230 mm). At this height the bottom of the pallet will clear the top of the base structure allowing full pallet rotation.
8. Begin the unloading process. Before removing any load, grab the pallet and rotate the disk's position to minimize the reach over and to simplify the unloading process. **DO NOT** use the underside of the rotating disk's edge to rotate the load. As the load height decreases, depress the "RAISE" button or pedal to raise the load and maintain the top of the load at a convenient working height.
9. Upon completion of the unloading process, carefully remove and store the pallet in the appropriate area where it will not create a tripping hazard. Ensure all others are well clear of the EZ Off Lifter and depress the "LOWER" button or pedal. When the platform stops at the automatic stop height, depress and hold the "LOWER" button or pedal again. After a three (3) second delay, the platform will lower to the floor and be flush with the integrated approach ramp. The EZ Off Lifter is now ready for the next unloading cycle.

HANDLING INSTRUCTIONS

Raising the Platform

Bishamon recommends securing the EZ Off Lifter to the floor to ensure positional stability. However certain applications may require the EZ Off Lifter to be occasionally relocated. Handling the EZ Off Lifter can be easily accomplished as follows:

1. Depress the "LOWER" button or pedal to completely lower the platform.

2. Position the ramp in the stored position. As shown in Figure 10, remove the spring detent pins that are securing the ramp in the operating position. Carefully grab the end of the ramp and rotate the ramp to the stored position. The ramp is heavy. Use CAUTION not to pinch fingers or toes under the ramp. Reinstall the detent pins to secure the ramp in the stored position.
3. Engage the platform lock on each side of the platform. As detailed in Figure 7, rotate each lock to the vertical position. Ensure both locks completely engage the protruding pins.
4. Next, adjust the fork spacing on the forklift to 24" (610 mm) between the forks. This fork spacing is required to properly engage the fork pockets as shown in Figure 8. The lifter is designed to accommodate 5.50 – 6.00 in. (140 – 152 mm) wide forks at this fork spacing. Insert the fork tips completely into the fork pockets on the rear of the lifter. Slow lift the rear of the unit until there is approximately 3.00 in. (76 mm) of clearance between the rear leveling feet and the floor.
5. Place a block approximately 2.00 in. (51 mm) thick under each of the rear leveling feet. Lower the forks completely. The blocks will provide sufficient clearance for the forks to be inserted under the base structure and platform of the lifter. Next, slowly insert the forks under the rear frame and platform of the unit. Be sure to leave sufficient clearance between the forklift's carriage and the lifter's rear cover. Be careful not to damage the power cord and the hand control cord that exit the frame below the cover.
6. Tilt the fork mast to the rear to level the lifter and slowly lift the unit until the base structure is completely clear of the floor, as detailed in Figure 9. Move the EZ Off Lifter to the desired location.
7. With the lifter in the desired location, reposition the blocks under the rear leveling feet and completely lower the forks. Tilt the mast forward and slowly back up until the tip of the forks are able to again completely engage the rear fork pockets. Lift the rear of the unit and remove the blocks. Slowly lower the unit until the rear of the lifter is supported by the rear leveling feet.
8. Check the levelness and stability of the lifter. If required, slightly lift the rear of the unit and independently adjust each leveler. Repeat this process until the lifter is level and stable. When properly adjusted, the gap between the floor and the rear frame should be approximately 0.50 in. (13mm). The rear anchor plate should be approximately 0.13 in. (3.3 mm) off the floor.
9. Disengage both platform locks. As detailed in Figure 7, rotate each lock to the horizontal position.
10. Next, rotate the ramp to its operating position. As shown in Figure 10, remove the spring detent pins that are securing the ramp in the stored position. Carefully grab the end of the ramp and rotate the ramp to the operating position. The ramp is heavy. Use CAUTION not to pinch fingers or toes under the ramp. Reinstall the detent pins to secure the ramp in the operating position.
11. Finally, plug the power cord into an electrical outlet with the proper amperage rating for the lifter's electric motor.

ROUTINE MAINTENANCE

The EZ Off Lifter is designed to provide years of trouble free service and requires very little maintenance. However, a routine inspection and maintenance program will prevent costly replacement of parts and/or downtime. All service should be performed by a qualified service person who has an understanding of load positioning equipment and electrical / hydraulic diagrams. This person should be thoroughly familiar with the operation and use of this type of equipment.



A falling platform can cause **SEVERE PERSONAL INJURY** or **DEATH**. **NEVER** go under the elevated work platform. All maintenance should be performed with the platform in the fully lowered position.

ALL lifter servicing must be performed by qualified personnel only. Unauthorized modifications to EZ Off Lifter or its electrical safety system may compromise the performance and safety of the lifter. **UNDER NO CIRCUMSTANCES** should you attempt any repair or service that is not covered in this manual.

Daily Inspection

1. Before use, visually inspect the lifter for worn, damaged or broken components. If any of these conditions exist, **REMOVE** the lifter from service and contact a qualified service person.
2. Visually inspect the hand or foot control, the control cord and the power cord for damage. If any damage such as, but not limited to, broken housing, cuts or worn insulation, **REMOVE** the lifter from service and contact a qualified service person.
3. Visually inspect the cylinder area and the rear of the lifter for fluid leakage. If fluid leakage exists, **REMOVE** the lifter from service and contact a qualified service person.
4. Visually inspect the frame, carriage and outriggers for stress cracks or breaks in welds. If any cracks or breaks exist, **REMOVE** the lifter from service and contact a qualified service person.
5. With the platform in the lowered position, check the operation of the platform's rotating disk locking mechanism. If the disk is free to rotate, **REMOVE** the lifter from service and contact a qualified service person.
6. Check the condition of the warning labels. The warning labels are for the safety of the operator. If the labels are worn, missing or unreadable, **REPLACE** them before placing the lifter back in service.

Monthly Inspection and Maintenance

The EZ Off Lifter's top cover and rear cover must be removed to perform the monthly inspection and maintenance. The top cover must be removed first and is secured to the frame by the three (3) screws. The rear cover, which is secured to the frame by eight (8) screws, can then be removed. After completing the monthly inspection and maintenance, reinstall the rear cover first and then the top cover. Use care not to damage the covers.

1. Inspect the mast rollers and axles for looseness or signs of wear. If worn and/or loose, replace or repair at once.
2. Inspect snap rings and roll pins at all pivot shaft and axle locations. If not in place and/or secure, replace or repair at once.
3. Inspect the chain wheel and the chain wheel pivot pin for signs of wear. If worn, replace at once. The chain wheel has lifetime-lubricated bushings; therefore they do not need grease or lubrication.
4. Visually inspect the **ENTIRE** length of the leaf chain and the chain end connections. Check for excessive wear on links, pins or side plates and deformed, bent, rusted or broken links and the presence of foreign material. Inspect the chain end connections for excessive corrosion, fatigue, excessive wear, connection hole elongation or deformation. Repair or replace as required. Wear on each component of the chain through repeated flexing movements over a long period results in elongation of the chain pitch and length. If the chain on the lifter exceeds 2% elongation, the chain must be replaced. To measure the chain elongation, raise the lifter with a load to its full raised height. At the rear of the lifter, count and measure 16 links. If the measurement exceeds 12.25 in. (311 mm), remove the lifter from service and replace the chain with a complete new chain.
5. Check for proper chain adjustment. Lower the carriage to its fully lowered position. Next ensure the cylinder is completely retracted. To do so, pull horizontally on the chain while depressing the lower button or pedal. Adjust the chain until all slack is removed and the chain is slightly tensioned. Ensure the chain is not twisted.
6. Inspect the hydraulic power unit and cylinder for signs of leakage. The presence of a small amount of fluid around the cylinder rod is normal. However, fluid flowing from around the top of the cylinder head cap indicates worn seals. Replace the cylinder seals at once.
7. Inspect the flexible hydraulic lines for chaffing and sign of wear. If worn, replace at once.
8. Inspect the hydraulic line connections for tightness. Tighten if necessary.
9. Check the level and appearance of the hydraulic fluid. To do so, remove the breather on the top of the reservoir. The filler cap has a dipstick that indicates the fluid level. The fluid level should be to the full line with the filler cap screwed in and the cylinder in the fully retracted position. If required, add oil to the reservoir. Unless otherwise specified, all EZ Off lifters are provided with Mobile DTE Light hydraulic fluid. Check the condition of the oil; it should appear light in color. The oil should be changed, if the color has darkened or if it feels gritty. Replace the reservoir breather.

Changing the Hydraulic Oil (Every 12 Months)

Change the hydraulic oil every 12 months of service or more often if conditions warrant. The frequency of fluid change will depend upon the general working conditions, severity of use and the overall cleanliness and care given to the lift.

Fluid Type	Manufacturer	Fluid Temperature Range °F
DTE LIGHT	MOBILE	+40 - +150
DTE 13	MOBILE	0 - +160
SAE 10	PENNZOIL, MOBILE, ETC	0 - +150
SAE10W30	PENNZOIL, MOBILE, ETC	+20 - +170
SAE 20	PENNZOIL, MOBILE, ETC	+30 - +170
MIL 5606 (Aircraft Hydraulic Fluid)	PENNZOIL, MOBILE, ETC	-30 - +75

Table 1 - Operating Temperature / Recommended Hydraulic Fluid

1. To do so, completely lower the platform. Depress and hold the lowering button or pedal for several seconds to allow any residual hydraulic pressure to diminish. Next, disconnect the lifter from the power source.
2. Remove the four (4) screws that secure the reservoir to the pump housing. Carefully lower the reservoir and remove it from the pump.
3. The old hydraulic fluid is considered hazardous waste and should be handled and disposed of properly.
4. Next remove with suction line filter from the end of the pump's suction line. Carefully clean the suction line filter and the reservoir.
5. Reinstall the suction line filter and the reservoir. Use care not to over-tighten the reservoir mounting screws.
6. Completely fill the reservoir with the correct hydraulic fluid. Refer to the following chart for the proper fluid selection.
7. Clean all spilled oil and thoroughly inspect the lifter and all hydraulic components. Reconnect the power cord to the power supply and jog the motor by pressing the "UP" button to prime the pump and extend the hydraulic cylinder.
8. Completely raise and lower the lifter eight (8) to ten (10) times to remove any trapped air from the hydraulic system.
9. Completely lower the lifter's platform. Recheck the fluid level, as detailed in the "Monthly Inspection and Maintenance" section. Next, replace the rear housing cover. The lifter is now ready for use.

Cylinder Seal Replacement

In the event the pump or cylinder seals are leaking, detailed instructions and replacement part kits are available. Contact the DEALER or Bishamon Industries Corporation to obtain service kits and instructions for these items.

Trouble Shooting

Problem	Cause	Solution
Platform will not raise. (Pump will not run)	Power disconnected. Open wire in electric circuit.	Verify that power source is applied. Check for faulty wiring.
Platform will not raise. (Pump will run)	No hydraulic fluid in reservoir. Load too heavy (relief valve operating). Lowering solenoid valve stuck open. Platform locks engaged.	Fill reservoir. Reduce load. Clean or replace valve. Check for faulty wiring. Disengage platform locks.
Platform will not remain elevated.	Lowering solenoid valve stuck open. Pump check valve not seated.	Clean or replace valve. Check for faulty wiring. Flush outlet check.
Platform will not lower.	Platform obstruction. Lowering valve not opening. Obstruction in flow limiting valve.	Remove obstruction. Clean and/or replace lowering solenoid. Flush flow limiting valve.
Platform lowers too slowly.	Obstruction in solenoid valve. Obstruction in flow limiting valve.	Clean and/or replace lowering solenoid. Clean / Flush flow limiting valve.
Pump leaking.	Reservoir over-filled with oil. Hose or fitting loose.	Drain excess fluid. Tighten fittings or hoses.
Cylinder leaking.	Cylinder seals worn or damaged. Valves, fittings or hoses loose.	Re-pack cylinder. Tighten valves, fittings or hoses.

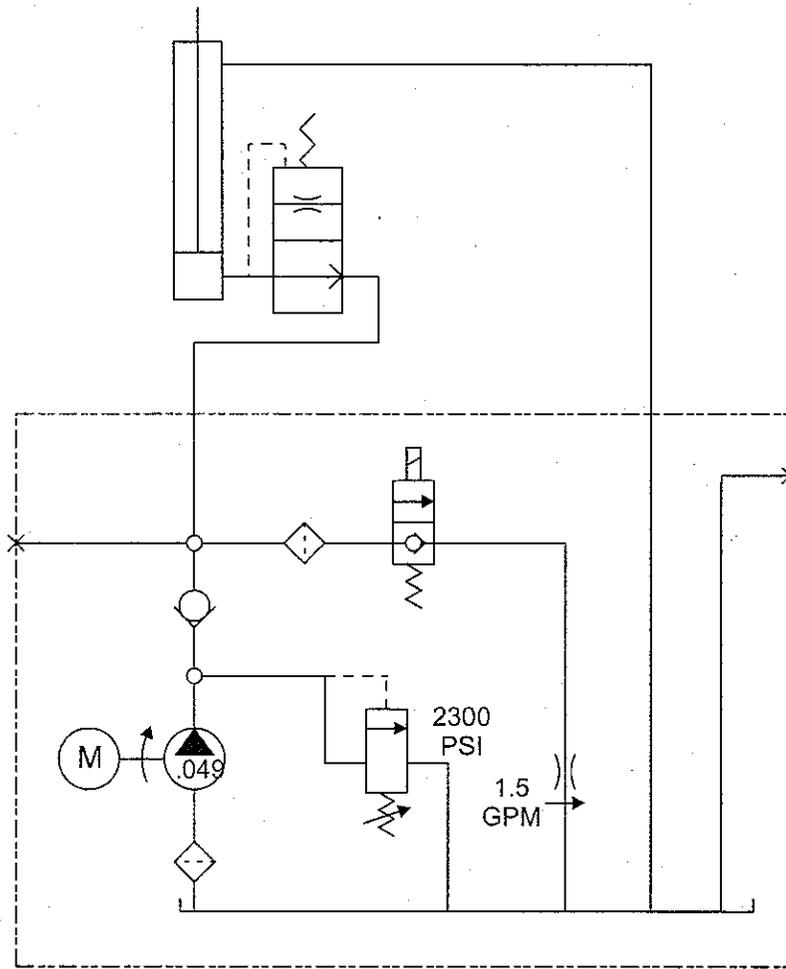


Figure 14 – Hydraulic Schematic

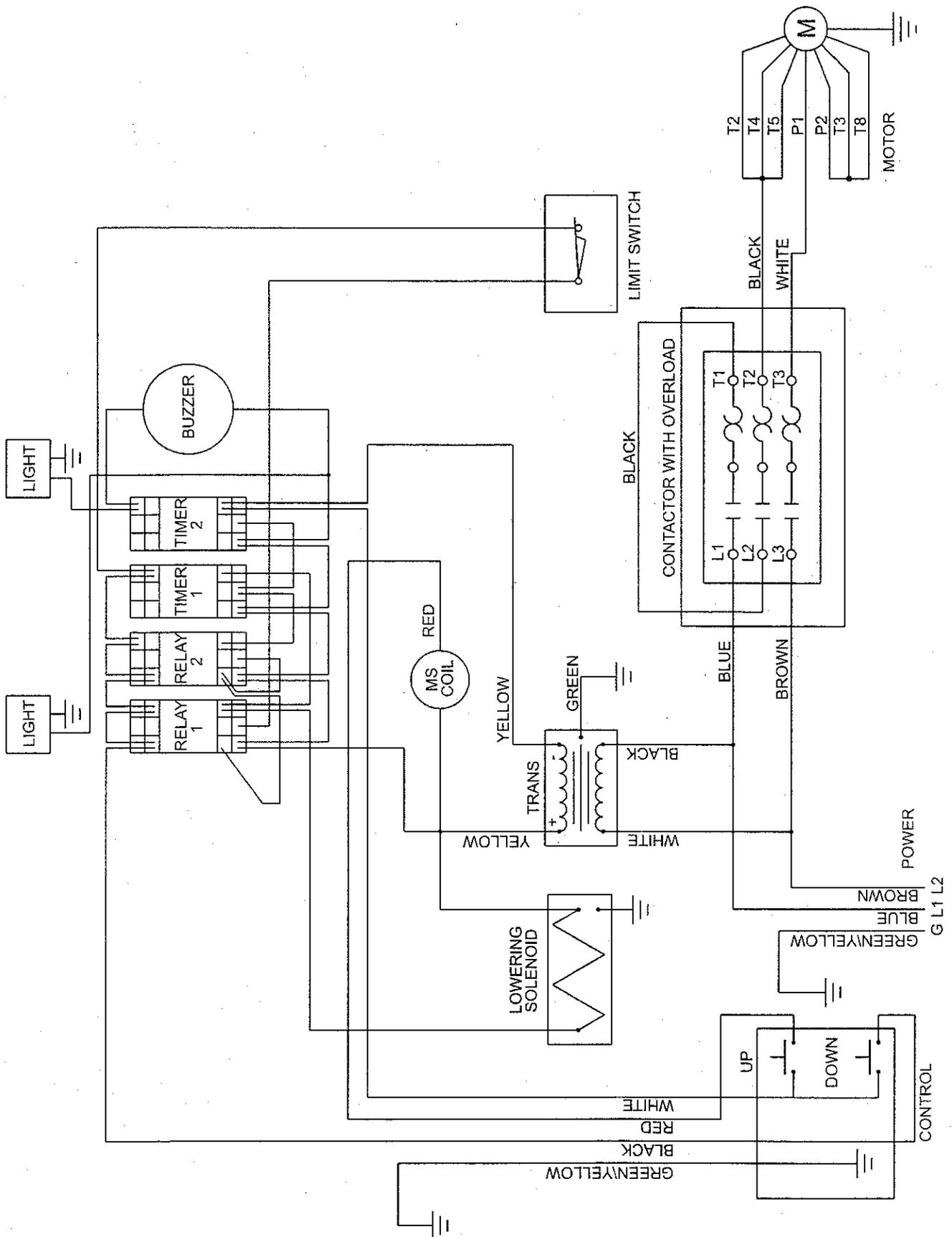


Figure 15 – Electrical Schematic