JR CLANCY
QUALITY SINCE 1885

Design, Manufacture and Installation of Theatrical Equipment Worldwide

PowerLift® Installation Manual

IMPORTANT SAFETY INFORMATION

- The procedures in this manual are for use by qualified personnel only. See Operations and Maintenance Manuals for user serviceable parts and procedures.
- Read this manual carefully before installing or using this product. Failure to do so can result in injury or death.
- An Identification Label is attached to controls enclosure on each unit and contains important model number, speed, and capacity information that is necessary for safe installation and use.
- User must be warned of these hazards. Deliver a copy of this manual to the user along with all other product documentation for future reference.

WARNING! Improper installation or maintenance can cause the load to fall.

- Hoisting machines impose significant loads on the structure to which they are attached. The installer is responsible for verifying that an engineer or other qualified person has determined that this structure can withstand the loads.
- Equipment must be installed by qualified personnel.
- Do not substitute or modify components provided with this equipment.
- Do not exceed the total capacity of the hoist. It varies by model and is marked plainly on the Identification Label.
- Do not exceed 500 lbs [228 Kg] on any one wire rope.
- Do not lift or support people or animals with the PowerLift hoist.
- PowerLifts weigh up to 800 lbs [363 Kg] each, plus the weight of any packaging. Use appropriate handling equipment and safe work practices.

DANGER! Electrocution Hazard

- Remove power source before opening electrical panels.
- Electrical equipment must be installed by qualified electricians.

WARNING! Moving parts can cut or crush

- Keep body parts away from machinery in motion.
- Remove power source before working on machinery.
- Machines with moving parts within 106 inches (2.7m) vertically from the floor and less than 60 inches (1.5m) horizontally from a safety barrier must be fitted with machine covers.

PRODUCT USE REQUIREMENTS

- Installation of this equipment must comply with local building codes.
- Equipment must be installed according to manufacturer's drawings. Individual component information is listed in the bill of materials of these drawings.
- PowerLift hoists must be inspected by qualified personnel every year, or more frequently depending on use and local, state, and federal laws. Do not install in locations that prohibit access or prevents removal of any machine covers.
- PowerLifts are designed for indoor use only in buildings with temperatures between 50º and 100º F (10º- 38ºC).
- Do not expose machines to rain or extreme humidity.
- PowerLift machines are approximately 168 inches (430 cm) long, 11 inches (28 cm) wide, and 30 inches (79 cm) tall. Units weigh 800 lbs. (363 kg) or less.
- The recommended working load and duty cycle of each machine is marked on the Identification Label on the controls enclosure. Do not exceed.
- The hoist machinery must be protected from oil, dust and other contaminants.
- Installation of PowerLift hoists must be coordinated with the location of loft blocks as well as electrical power and control devices. Installation should be designed by a qualified person.
- PowerLift units are pre-programmed at the factory with set and channel numbers. Both of these numbers are marked on the machine, and also marked at the power and control receptacles. Machines must be installed so that the channel and set numbers on the hoist match the channel and set numbers on the receptacle. These are also shown on the installation drawings.
- The Certificate of Inspection that is included with this manual must be completely filled out and returned to JR Clancy along with the completed installation checklists after the installation is complete. Proof of inspection is required to activate and maintain the warranty period for this product.

INSTALLATION PROCEDURE

Follow these steps carefully to help provide a safe and efficient installation of the PowerLift.

NOTICE: PowerLift machines are pre-programmed at the factory with a channel and a set number. Before removing the machinery from its packing, look at the channel and set numbers on the machine, the installation drawings, and the electrical receptacles. They must all match.

1. UNLOAD THE PACKAGED MACHINERY

PowerLift machines are shipped in crates or on pallets. While packaged for shipment you must:

- Protect crates and pallets from rain and humidity.
- Keep equipment upright and prevent from tipping.
- Follow instructions and use safe material handling practices. The center of gravity and lifting points are marked on the crates and pallets.
- Store packaged machinery in clean and dry locations that are protected from impact or other abuse.

2. ASSEMBLE THE BEAM CLAMPS ONTO THE MACHINE

The PowerLift beam clamps are typically shipped loose in the bottom of the crate. Follow these steps to install beam clamps onto the machines.

1. Remove the packaging to expose the top of the machine.
2. Identify on which end of the machine the clamp is to be installed. Clamp assemblies are labeled with their part numbers. Refer to the data block on the installation drawing to determine which clamp goes on which end of the PowerLift. (See Figure 1)

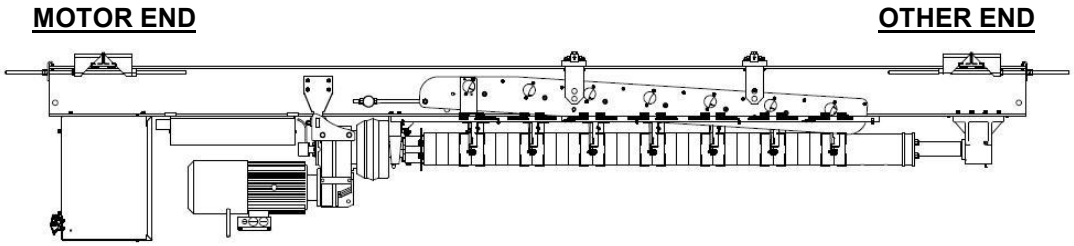


Figure 1: Beam Clamp Mounting Positions

3. Slide clamp assembly over top flange of PowerLift beam until the thrust plate is against the end of the beam. (See Figure 2)
4. Drive (2) 3/8” x 1” roll pins into the two holes at the end of the top flange of the beam.

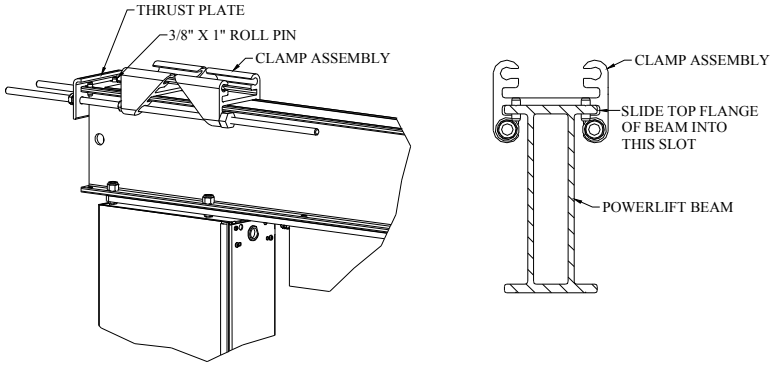


Figure 2: Beam Clamp Assembly

3. HOIST THE MACHINERY INTO POSITION

WARNING! Make sure roll pins are installed in the top flange of the beam before hoisting the PowerLift or the beam clamps can slide off and fall.

PowerLift machines weigh up to 800 lbs [363 Kg]. During and after removal from the packaging, the machine is designed to be handled in several ways. See Figure 3.

- Before you lift the machine out of its packaging be sure to identify the channel number marked on the top and on the control cabinet of the machine. It is essential that you install the units with the correct numbering as shown on the installation drawings.
- The last 1.5” (38 mm) of the lower flange of the main beam are used as bearing points onto which the machine can be set down.
- There is a pattern of 3/8” bolt holes on both the upper and lower flange of the main beam at each end. These can be used to attach steel legs that allow the unit to be free standing. A typical design for these legs is available from JR Clancy by request. Note that the upper holes are used to insert roll pins that prevent the beam clamps from sliding off of the beam. These pins may be driven out of the beam if temporary legs are employed. They should be reinstalled at the time the machine is to be hoisted into position.

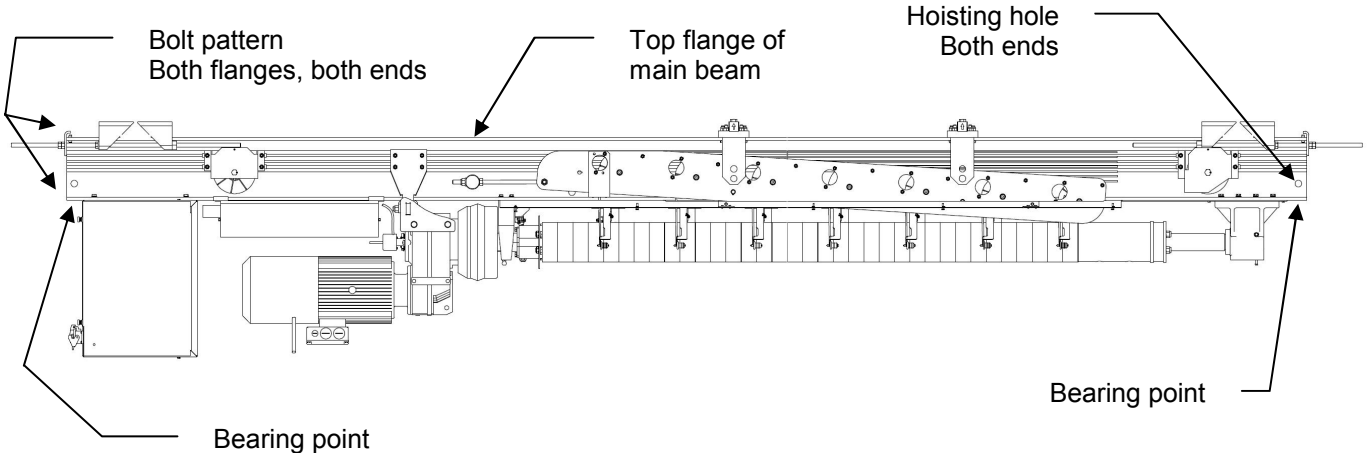


Figure 3: PowerLift Handling Features

- Beam Clamps can be attached on the upper flange of the main beam for hoisting. Note that the shape of the main beam will prevent many commercially available beam clamps from working. Clamps that are designed to fit specifically to this machine are available from JR Clancy.

- 7/8” holes through the web of the main beam are provided at each end. These can be used to hoist the unit vertically.

  NOTICE: The cover of the PowerLift is not structural. Do not set the machine down on the cover, or wrap slings around it to lift the unit. Covers may be removed after unit is unpacked and replaced after the machine is installed.

- The most efficient way to install the PowerLift unit is to hoist it out of its crate or pallet and directly to the point where it is to be installed. The center of gravity is marked on the top of the main beam for use while hoisting.

- Often in smaller theaters the roof structure is placed directly above the beams onto which the PowerLift is to be mounted, making it very hard to rig chain hoists or other standard rigging equipment to lift the units into place. JR Clancy has created a set of rigging tools specifically for this application. Please contact us to make arrangements to obtain them.

4. ATTACH THE MACHINE TO THE MOUNTING STRUCTURE

- The PowerLift has been provided to you with beam clamps that are designed to fit beam flange widths of up to 11” (27.9 cm) wide and 1” (2.5 cm) thick. Flanges must be at least 4” (10 cm) wide and 1/4” (6 mm) thick.

- The threaded rods that secure the clamps to the main beam have been made to a specific length to suit the needs of you particular installation. See the engineering drawings.

- The threaded rods are turned to open and close the clamps. The rods can be turned either by turning the fixed nut (welded to the threaded rod adjacent to the beam clamp), or by using the clamp rod driver (a long nut with a set screw in one end shipped on the end of one of the clamp rods). The clamp rod driver should be removed after installation.

Use the following procedure to secure the hoist to the building structure.

1. Before hoisting the unit out of the shipping cradle, mark out the position of the roof beams on to the top of the hoist frame. Turn the threaded rods to open the beam clamps wide enough to receive the flange of the roof beam. Make sure that the ends of the threaded rod are long enough to pass through the thrust plate and both a nut and jam nut.

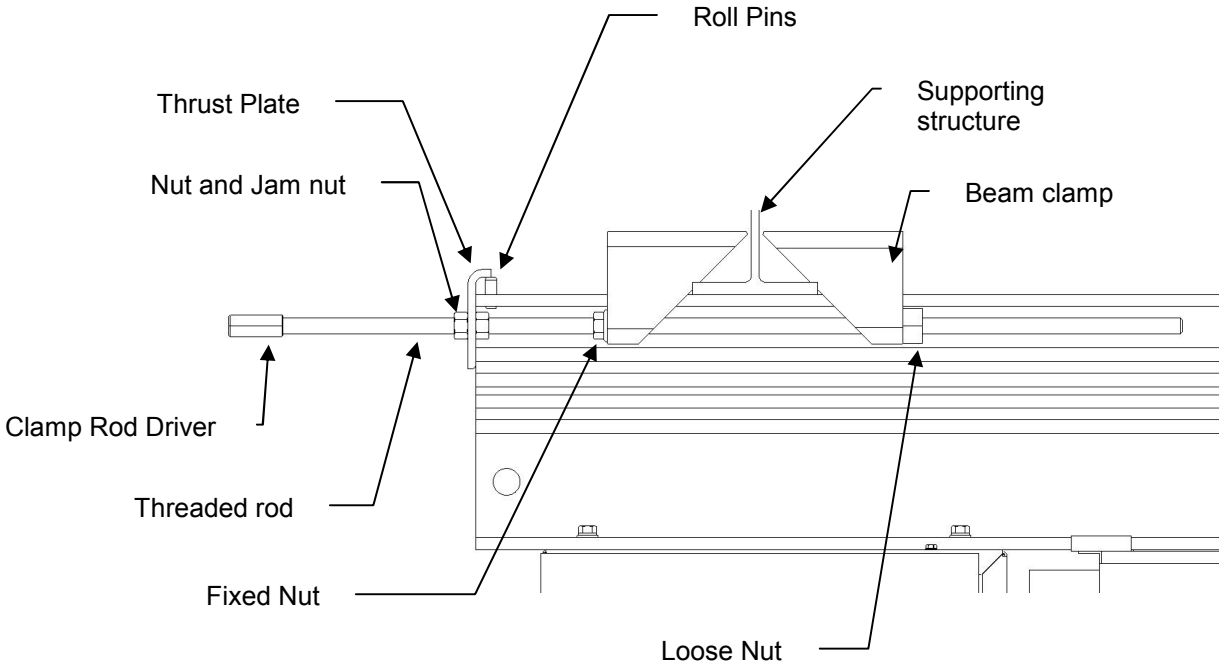


Figure 4: PowerLift Mounting Clamp

2. Open the clamps wide enough to pass the flange of the mounting beams, and hoist the unit until the top of the main beam contacts the underside of the mounting beam.
3. Make sure that the pin of the loose clamp nut engages the slot in the beam clamp to prevent the loose nut from rotating. See Figure 4.
4. Turn the threaded rod to close the beam clamps onto the roof beam. Tighten the rods to approximately 50 ft-lbs (67.8 Nm). Note that some bending of the threaded rod will be observed after tightening.
5. Once the clamps are tightened onto the mounting steel, tighten the nuts and jam nuts at the thrust plate. Make sure that both thrust plate nuts are properly tightened at both ends of the main beam.

5. INSTALL THE CABLES ONTO THE DRUM

PowerLift hoists are typically provided with cables already terminated at the drum and with only the three standing ("dead") wraps wound onto the drum. PowerLift hoists are designed for use with 3/16" diameter 7x19 Small Diameter Specialty Cord as defined by ASTM standard A1023. If a line is damaged, or needs to be installed for some other reason, the following procedure should be used.

WARNING! Do not use wire ropes of different dimensional or structural characteristics.

1. Remove the machine cover to expose the entire drum assembly.
2. Rotate the drum so that the cable termination holes are visible.

WARNING! Unplug the power before working on the machinery.

3. Reeve the end of the cable from the loft blocks thru the PowerLift head block, making sure that the cable rests on the sheave and not on the head block spacer bolts.

4. Swage a Nicopress stop onto the end. Inspect the swage using the manufacturer's recommended gauge. The end of the cable *must* protrude from the compressed sleeve, but by no more than 1/16" (1.5 mm).
5. Wrap the cable around the drum enough times to match the number of wraps on the other lines of the hoist. Note that a minimum of three standing (dead) wraps MUST be maintained on the drum when the machine is at the lowest limit of travel.
6. Insert the swaged stop into the keyhole in the drum. Make sure the cable lays properly into the grooves on the drum.

6. INSTALL THE CABLES INTO THE HEAD AND LOFT BLOCKS

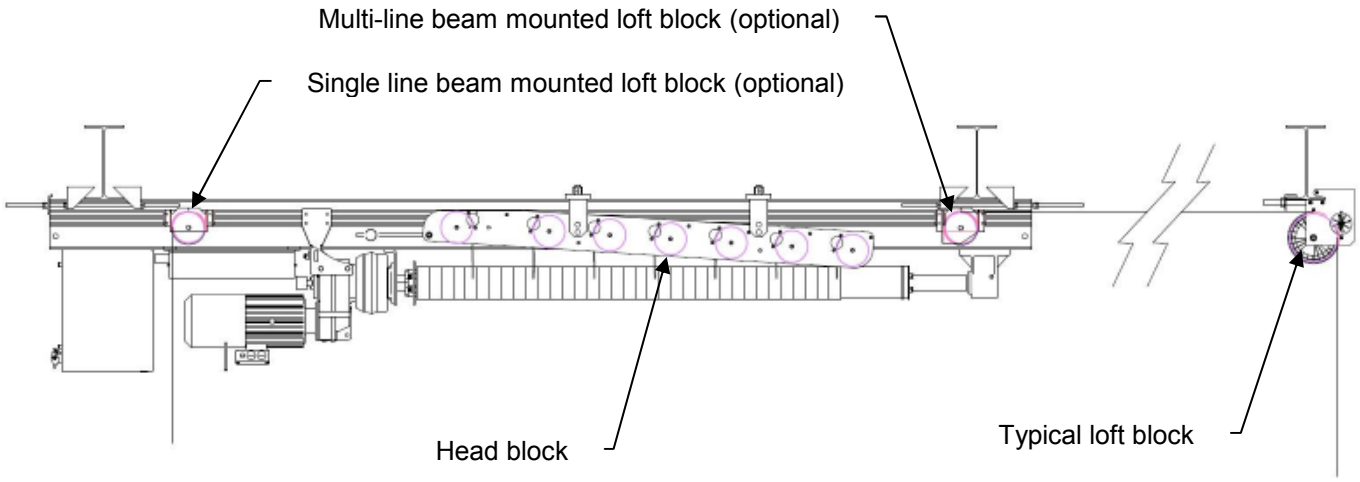


Figure 5: Typical arrangement of blocks

1. The hoists are typically provided with cables already reeved through the integral head blocks and beam mounted loft blocks (if provided). See Figure 5.
2. A wide variety of other blocks can be used in conjunction with the PowerLift to create rigging systems specific to your application. Use only blocks that are grooved for 3/16" wire rope and of sufficient load rating for the demands of your system.
3. As the wire rope is reeved into the hoist and blocks, the following rules must be obeyed:
   - Cables must not rub the side plates of any block or any other stationary object.
   - Cables should not touch other cables.
   - Cables must lay neatly in the groove of the sheave and be underneath all block spacers.
   - In no case may the fleet angle (the angle of the cable with respect to the plane of the pitch circle of the sheave) exceed 1.5 degrees. Minimize the fleet angle of all lines for the best performance.
   - Only one lift line can wrap around the multi-line beam mounted loft block sheave by 90 degrees and drop as a lift line. That lift line must be in the indicated groove. No other cables may wrap the block at any time. See Figure 6.
4. Cables are coiled by machine at JR Clancy and the coils are attached to the hoist prior to shipment. Carefully unroll the coils or otherwise take precautions to prevent imparting a twist to the cable as it is unwound and reeved.

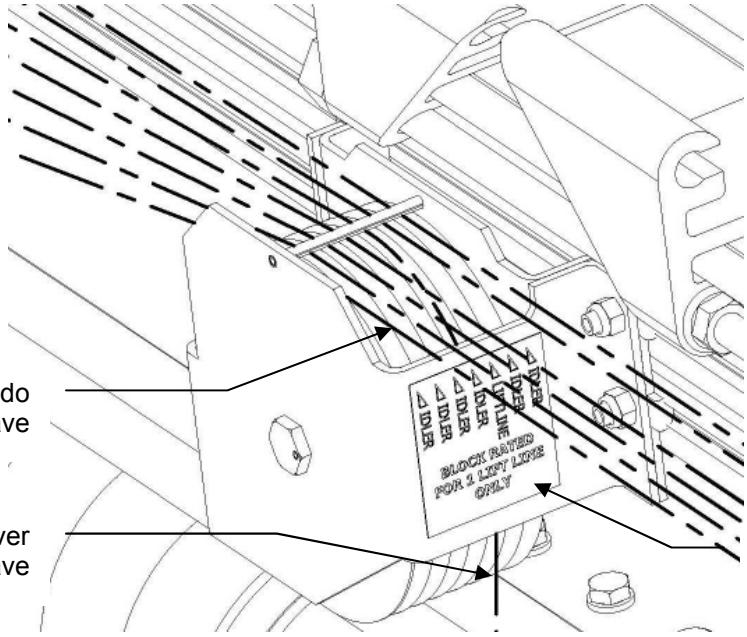


Figure 6: Detail of the seven line beam mounted loft block

7. TERMINATE THE CABLES AT THE BATTEN OR LIFTED LOAD

1. Prior to terminating the lift lines, inspect the reeving and check the following:
   - The cable should be fully paid out from the machine and there must be at least three standing (dead) wraps remaining on the drum.
   - Cables must lie smoothly in the grooves of the drum.
   - Double check that the cables are reeved properly through the blocks.
2. Cut the lines to length and terminate at the batten.
   - Install a trim chain, turnbuckle, or other load leveling device on each lift line connection.
   - Use terminating hardware that is properly rated for the load. Follow hardware manufacturers' instructions carefully, e.g. use inspection gages for swaged sleeves.
   - Swaged sleeves are recommended for most installations. If wire rope clips are used, follow the manufacturer's tightening instructions. Installation and annual maintenance must include checking the clip nuts with a torque wrench.

NOTICE: The JR Clancy 8" x 3/16" groove molded nylon loft block can be distinguished from the 1/4" version by looking between the side plates to the outside diameter of the sheave. On the 3/16" grooved blocks there is a line molded in on both sides of the cable groove. On the 1/4" sheave, this area is smooth. See Figure 7.

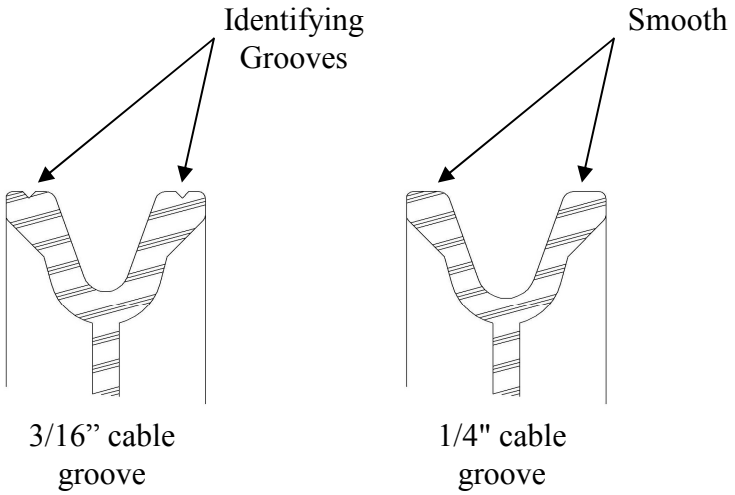


Figure 7: Identifying grooves on JR Clancy 3/16” groove molded nylon sheaves

8. CHECK THE POSITION OF THE CABLE KEEPER ROLLERS

- PowerLift hoists are typically provided with cable keeper rollers already installed.
- Cable keeper rollers may be removed as necessary to aid the installation process.
- Cable keeper rollers need to be inspected after the cables are reeved and before energizing the machine.

Use the following procedure to replace and/or inspect the proper placement of the cable rollers.

WARNING! Unplug the power before working on the machinery.

1. Attach one end of the spring to a long-arm roller guide and the other end to a short-arm roller guide. The roller portion of the guides should face away from each other with the hooks at the top pointing towards each other. See Figure 8.

2. Start with the roller set closest to the motor and brake. Place the hooks of the long-arm roller guide in the slots in the cap and the roller against the drum. Slide the short-arm roller guide over the drum and gently pull tension in the spring until the short roller guide hooks can be placed into the slots on the opposite side of the cap. See Figure 8.

3. Pull gently on the long arm where it hooks into the cap slot and slide the roller left or right until the cable roller guide wheel rests in the groove next to where the cable leads off of the drum. See Figure 9A.

4. Then pull gently on the short arm where it hooks into the cap slot and slide the roller over until the roller rests as shown in Figure 9B.

5. Repeat steps 1 thru 4 for each of the cables on the machine. Rollers are not necessary where no cables are present.

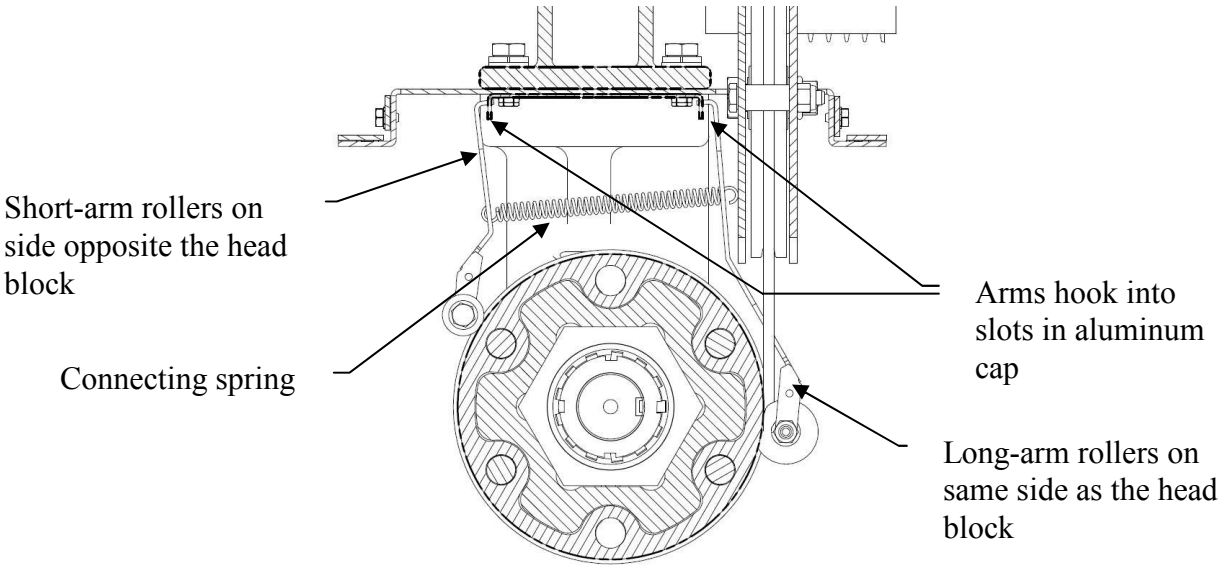
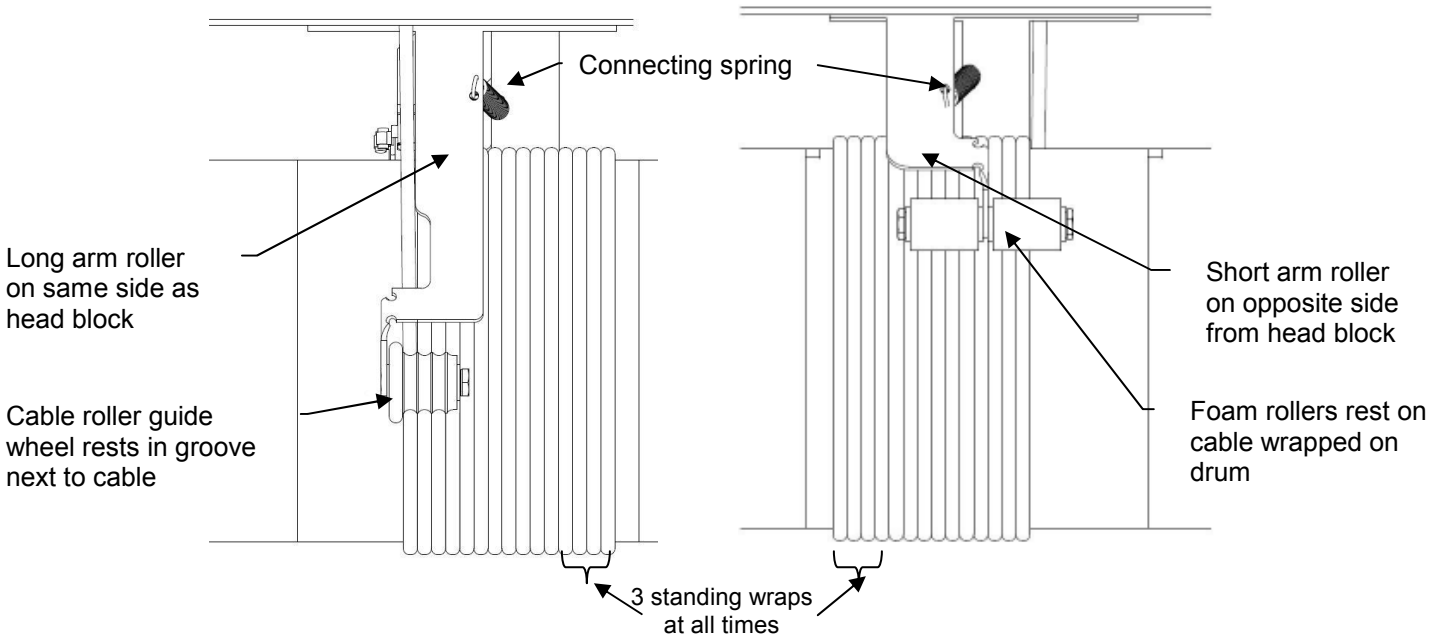


Figure 8: Position of long and short armed cable rollers



A. View from head block side **B. View from opposite side**

Figure 9: Position of cable keeper rollers on the cable drum

9. ACTIVATE THE POWER AND CONTROL TO THE HOIST

WARNING! Machinery and loads can collide with surroundings when operated before limit switches are set. Operate machine at slow speed only. Operator or observer must be in sight of all obstacles in the path of the machine or load. Do not operate over the heads of people.

WARNING! Operating hoist while not connected to an energized permanent control system (i.e, using Maintenance Control Pendant) WILL corrupt load position within the control system computer and can cause load to crash. Verify position readout matches actual position of load each time control system is reconnected or restarted.

- Each hoist features separate electrical connections for power and control. See Figure 10. Each of these must be plugged into hard-wired receptacles that match the particular motor voltage and control scheme of your system.
- If your system features a SceneControl 500, Altus or SureTarget 10 computerized control system, you will need to run the machines individually using the Maintenance Control Pendant in order to adjust and verify the installation of the machinery and the setting of the limit switches. Three phase motor power must be available. Once that is complete the computerized control system can be activated.
- If your system features pushbutton control instead of computerized operator control screen, the Maintenance Control Pendant is an option available by order. As long as three phase motor power is available, the pendant can be used to run the machines before the installation of the permanent control station is complete.
- If your system features pushbutton control with a SureTarget system, the control system incorporates soft limits. During initial operation, the soft limits may have to be bypassed to allow the winch to move through its full range. Operating the winch with the Maintenance Control pendant will bypass the soft limits. It is also possible to bypass the soft limits while operating the winch from the SureTarget winch's control panel. Refer to the SureTarget Operation manual for information on bypassing the soft limits from the winch control panel. This manual also contains information needed to set the soft limits, once the winch's hard limits have been set.
- The speed on the pendant not adjustable. It is set to approximately 15% of the full speed of variable speed machines and to the full speed of the fixed speed machines.
- An AC power cable for the Maintenance Control Pendant is only required if the SceneControl system is not supplying control power to the machine. If the PowerLift is connected to the SceneControl system, and the SceneControl system is supplying power (console key switch turn ON and Emergency Stop system healthy), then the maintenance pendant should NOT be plugged into local power. The maintenance pendant pushbuttons and toggle switch may still be used to run the machine, using the SceneControl system as the control power source.
- Your PowerLift model is equipped with an encoder which provides load position data to the SceneControl system. If the machine is run from the Maintenance Control Pendant while disconnected from the permanent control wiring, the SceneControl position data for that machine will be corrupted. Similarly, if the hoist is run from the maintenance pendant while the SceneControl system power is turned off, the position data for that machine will be corrupted. After operating the hoist with the maintenance pendant, always verify that the load position is being accurately reported in the SceneControl system. If the position is not being accurately reported, see the SceneControl operation manual for the procedure to re-set the current position to the proper value.
- A temporary three phase power cord is available for order. If the permanent power receptacles are not yet installed, the cord can be used to run power from a suitable three phase source to the hoists. The power cord and the Maintenance Control Pendant can be used together to temporarily activate the hoists and set limit switches before the permanent wiring is complete.

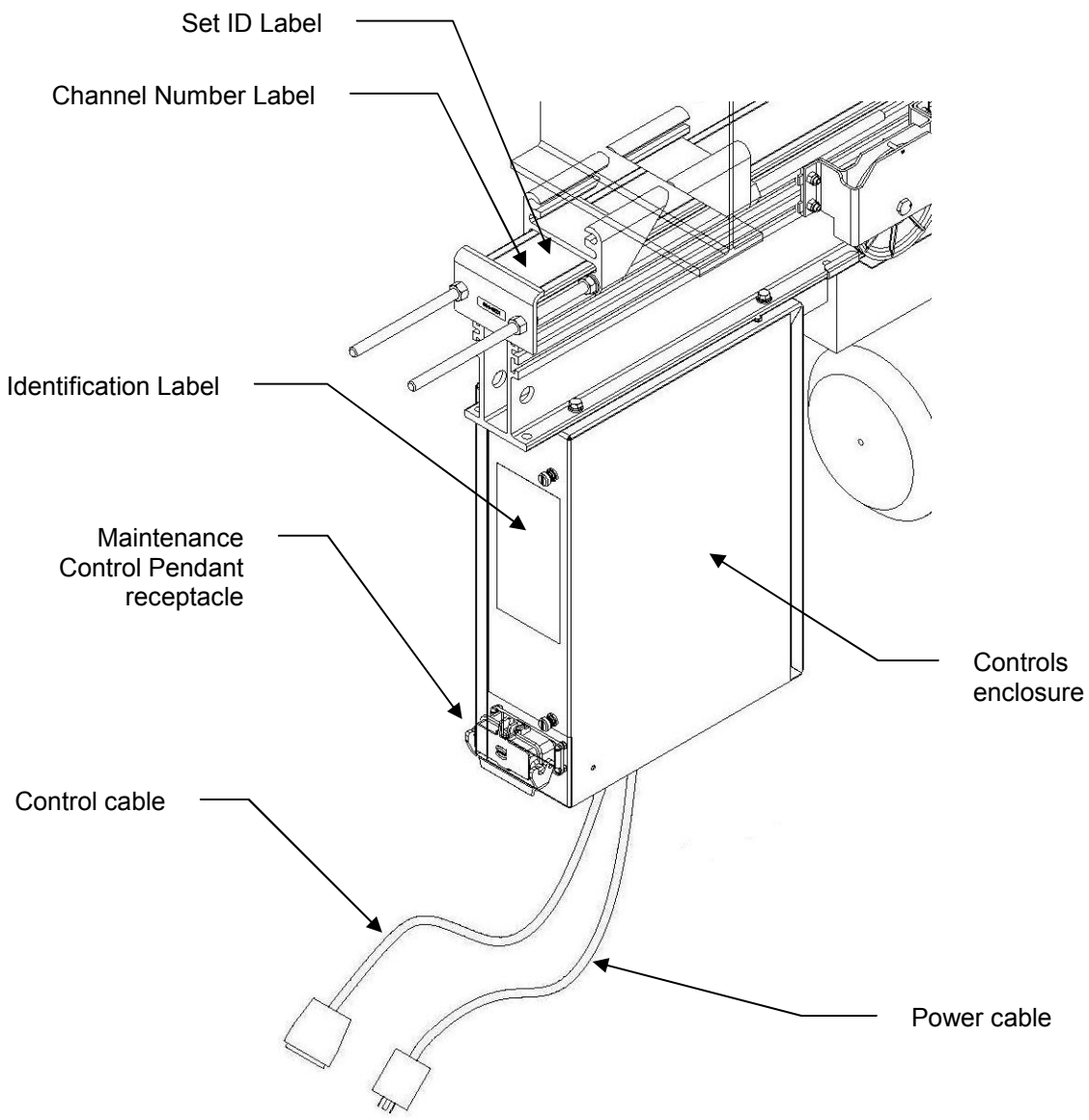


Figure 10: Power and Control Connections

Follow the procedure below to connect the hoist to power and control:

1. Prior to connecting the hoist power the electrician should double check that the supply voltage matches the motor voltage indicated on the Identification Label. Check voltage across all three phases.
2. Plug the hoist power cable into the matching power receptacle on the electrical raceway or wall-mounted plug box, depending on your installation. The power receptacle should be marked with the

hoist channel number. Consult the system drawings to confirm power receptacle locations. Gently twist the plug clockwise to lock it into place.

3. *If you are NOT using the Maintenance Control Pendant*, plug the control cable into the control receptacle that is marked with the same channel number as the hoist control cabinet and skip to Section 10. Note that all receptacles in the raceway should be either connected to a Powerlift or filled with the provided shunt plug, or the central control system **WILL NOT** operate.

4. *If you ARE using the Maintenance Control Pendant,* follow these steps:

   4.1 Make sure that the hoist control cable is connected to the permanent control system receptacle.

   WARNING! Operating hoist while not connected to an energized permanent control system (i.e., using Maintenance Control Pendant) WILL corrupt load position within the control system computer and can cause load to crash. Verify position readout matches actual position of load each time control system is reconnected or restarted.

   4.2 Plug the control cable of the Maintenance Control Pendant into the receptacle on the hoist control enclosure.

   4.3 Plug a standard AC power cable into the Maintenance Control Pendant and into local power (120 V, 60 Hz). Note that this cable powers to the control circuits only, not the hoist.

5. When the pendant is plugged into the PowerLift hoist, and the hoist has been supplied with three phase power, the controls on the face of the pendant will operate as follows. See Figure 11.

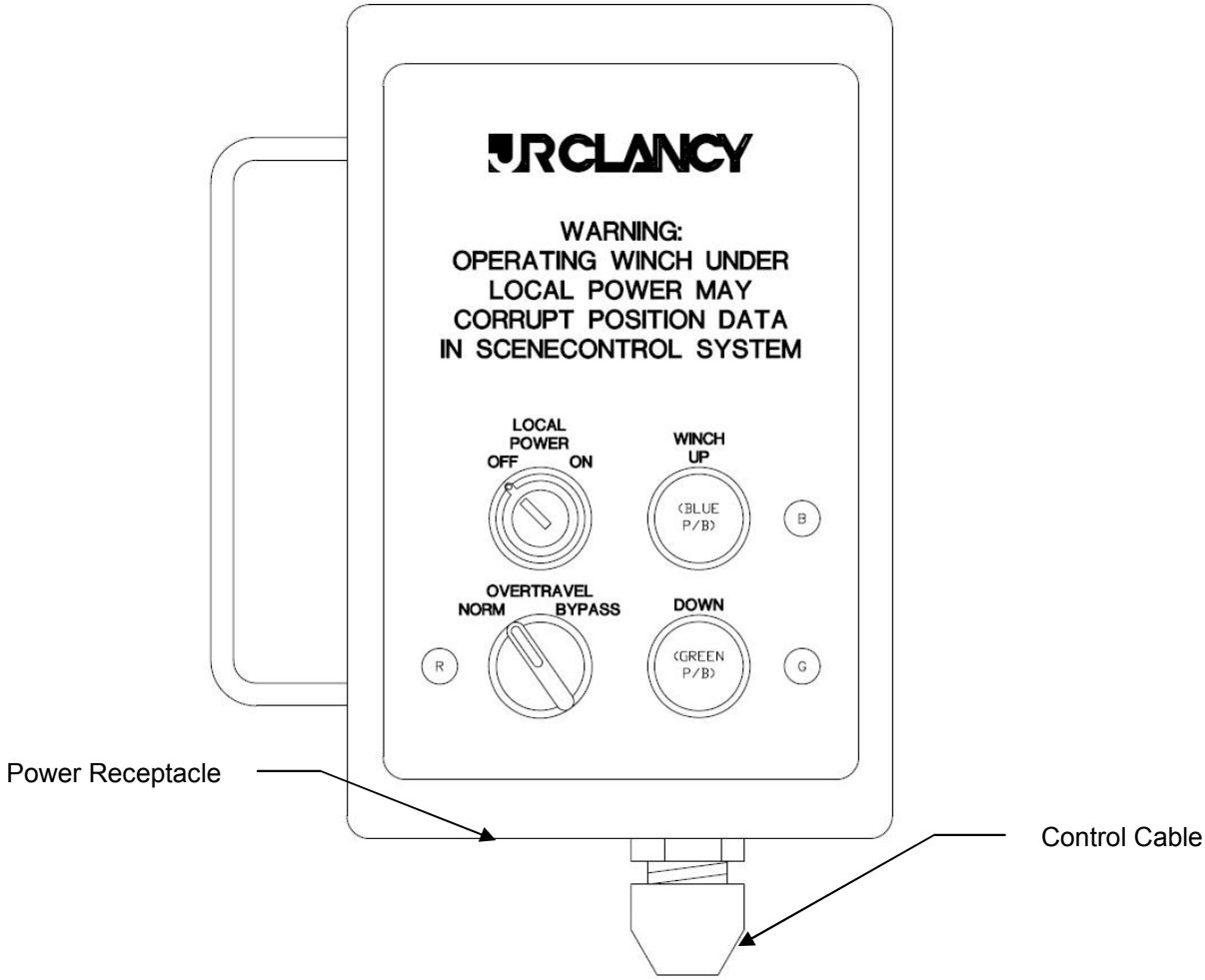


Figure 11: Face plate of the Maintenance Control Pendant

NOTICE: For variable speed units, striking a limit switch will actually cause the machine to stop and then drive backwards by approximately 4 inches. This is part of the hoist's normal operation.

WINCH UP (Blue pushbutton). Pushing the UP button will drive the machine in the up direction, until the operator releases the button or the hoist strikes its up limit switch. Note that this button will work as long as the hoist is receiving control power, whether from the SceneControl system or from the maintenance pendant.

DOWN (Green pushbutton). Pushing the DOWN button will drive the hoist in the down direction, until the operator releases the button or the hoist strikes its down limit switch. Note that this button will work as long as the hoist is receiving control power, whether from the SceneControl system or from the maintenance pendant.

UPPER LIMIT INDICATOR (Blue LED). The blue indicator light is activated when the hoist strikes the upper limit switch. Note that for variable speed units, striking a limit switch will actually cause the machine to stop and then drive backwards by approximately 4 inches. The indicator will go dark once the limit switch is no longer activated.

LOWER LIMIT INDICATOR (Green LED). The green indicator light is activated when the hoist strikes the lower limit switch. Note that for variable speed units, striking a limit switch will actually cause the machine to stop and then drive backwards by approximately 4 inches. The indicator will go dark once the limit switch is no longer activated.

LOCAL POWER (2-position key switch). When the pendant power cable is plugged in, this key switch may be turned to “on” to supply control power to the Powerlift. The key may only be removed from this key switch when the switch is in the “off” position.

OVERTRAVEL BYPASS (2-position toggle switch). When the machine strikes an overtravel limit switch, it will not move in either direction. Striking an overtravel limit switch is not a normal occurrence, and may have been attended by some damage to the machine. After carefully examining the system and determining the cause of the overtravel fault, the maintenance pendant OVERTRAVEL switch may be turned to the BYPASS position, and the hoist may be run off the struck overtravel limit. Note that this switch will work as long as the hoist is receiving control power, whether from the SceneControl system, or from the maintenance pendant. This is a maintained position switch; the operator must take care to return this switch to the NORMAL position after use.

WARNING! Bypassing overtravel limit may cause hoist or load to collide with surroundings. Keep bypass switch in NORMAL position when bypass function is not required for service.

OVERTRAVEL INDICATOR (Red LED). The red indicator light is activated when the hoist strikes the overtravel limit switch (either upper or lower). The indicator will go dark once the overtravel limit switch is no longer activated.

10. CHECK THE BASIC MACHINE FUNCTIONS

WARNING! Machinery and loads can collide with surroundings when operated before limit switches are set. Operate machine at slow speed only. Operator or observer must be in sight of all obstacles in the path of the machine or load. Do not operate over the heads of people.

Follow the procedure below to confirm that the hoist is operating correctly.

1. Position the operator or an observer so they can see both ends of the cable drum.
2. “Jog” the UP button by pressing it for just long enough to see the direction that the drum is rotating. Confirm that the load moves upward.
3. “Jog” the DOWN button by pressing it for just long enough to see the direction that the drum is rotating. Confirm that the load moves downward.
4. If the load moves down when the UP button is pressed take the following steps:

a. Examine the Identification Label of the hoist.

b. If the machine is a fixed speed unit, an electrician must swap two legs of the three phase power supply to the receptacle.

NOTICE: Do not modify the wiring of the hoist or power cord.

c. If the machine is a variable speed unit, contact the JR Clancy factory for assistance.

11. SET THE LIMIT SWITCHES

NOTICE: The limit switch indicator lights on the Maintenance Control Pendant (see Section 9) should be used to facilitate setting the limit switches.

WARNING! To avoid injury or damage to machinery, read warning above about collisions prior to setting limit switches.

- The PowerLift features adjustable switches that limit the normal travel of the hoist in both the up and down directions. The machine also features redundant “overtravel” switches, but unlike some other machines, these are rigidly linked to the normal end of travel switches, so they are automatically set when the normal limits are set. The distance between the normal stopping position and the overtravel stopping position is not adjustable in the field. In order to leave enough room for an emergency stop of the lifted load at full speed, the switches must be set so that striking the normal, hard limit will stop the load with sufficient clearance from any obstruction. (See step 3 for clearance measurements.)
- Limit switches must be set in the same way regardless of whether the hoist will be controlled by a computerized control system or by push buttons.
- Limit switches must be properly set before the computerized controller can be activated.
- Hoists are typically shipped with the cable paid out, and the limit switches set to give the greatest amount of travel possible in both the up and down directions. This amount of travel may not correspond to the confines of any particular installation, so great caution must be used until the limit switches are reset by the installer.

WARNING! Cables must have at least three complete wraps around the drum at all times to avoid failure of the termination.

Follow the procedure below to set the hard-wired limit switches.

1. Position the operator or an observer so that the limit switches and both ends of the cable drum can be seen. (See Figure 17)

2. Position the operator or an observer so that all parts of the lifted load can be seen.

NOTICE: Do not allow hoist drum to hit the machine frame. Observe during operation prior to setting limit switches.

3. Start with the batten at the desired lower limit of travel. For all PowerLift hoists, the hard limit switch should stop the batten no less than 6 inches (15 cm) from any obstruction.

WARNING! Load can hit surrounding structure and fall if clearance to obstruction is not maintained.

4. Confirm that the hoist has at least three (3) standing “dead” wraps on the drum at all times.

NOTICE: Carefully observe the movement of the limit switches while adjusting. Do not drive limit switch arms into the machine frame or the drum limit striker plate.

5. Loosen the locking nut on the down limit adjustment bolt and use a hex (Allen) key to turn the end fitting to move the limit as indicated in Figure 13. Move the limit switch until the switch arm is activated against the striker plate. There is a soft audible “click” when the switch is activated. When using the Maintenance Control Pendant, the Lower Limit Indicator will also light up when the switch is activated (see Figure 11). Tighten the locking nut when adjustment is complete.

6. Drive the hoist upward a few feet, and then down again until the switch stops the machine. Confirm that the hoisted load stops at the desired position.

NOTICE: For variable speed, striking a limit switch will actually cause the machine to stop and then drive backwards by approximately 4 inches. The stop position is considered to be where the load first stopped, before it drove backwards.

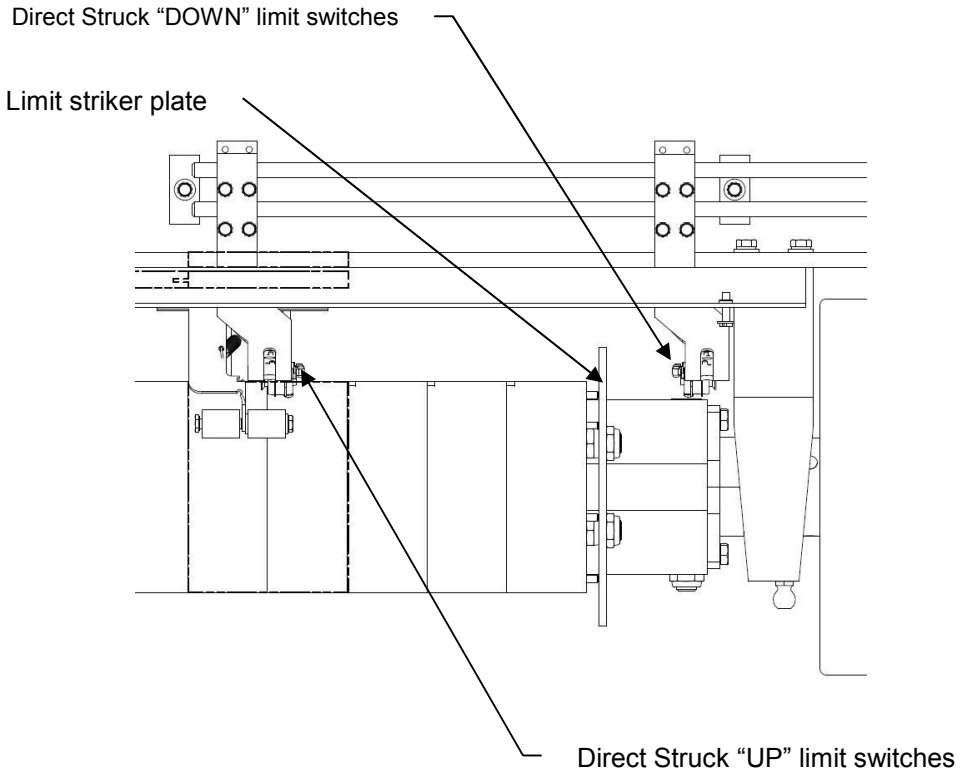


Figure 12: Limit Switches and Striker Plate

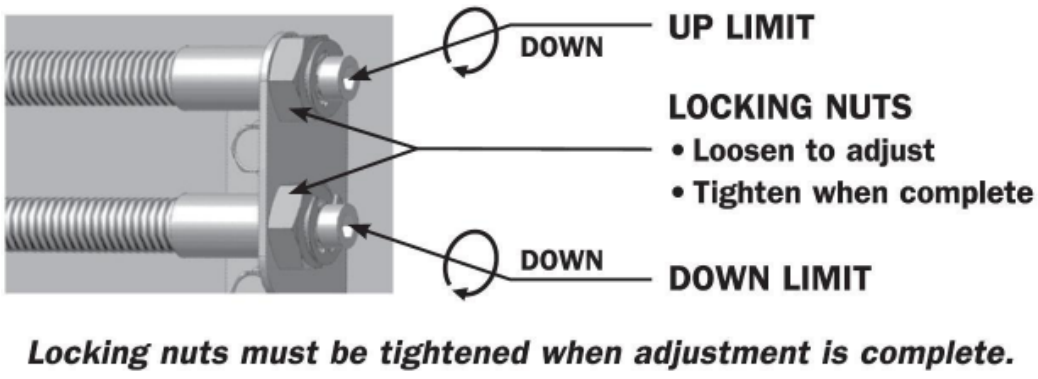


Figure 13: Limit switch adjustment fittings

7. If the switch requires further adjustment, repeat steps 4 through 6 until the lower limit switch is set in the desired position.

8. Raise the load slowly and then stop it at 6 inches (15 cm) from any obstruction above the load, as indicated in Step 3.
9. While directly observing the striker plate and limit switch, loosen the locking nut and move the UP limit switch until the switch activates against the striker plate. See Figure 12. There is a soft audible "click" when the switch is activated. When using the Maintenance Control Pendant, the Upper Limit Indicator will also light up when the switch is activated (see Figure 11). Tighten the locking nut when adjustment is complete.
10. Drive the hoist down a few feet, and then up again until the switch stops the machine. Recall that for variable speed units, striking a limit switch will actually cause the machine to stop and then drive backwards by approximately 4 inches.
11. Observe the position of the load and decide if the limit switch stops the load in the desired position. The stop position is considered to be where the load first stopped, before it drove backwards.

WARNING! Specified clearance to structure must be maintained or the load can fall. See above.

12. If the switch requires further adjustment, repeat steps 8 though 11 until the upper limit switch is set in the desired position.
13. Retighten the locking nuts that hold the adjusting bolts on both the lower and upper limits.
14. Test the overtravel switches in both directions by manually triggering the switch and confirming that the motor stops. Note that when an overtravel switch is activated, the machinery cannot be moved again until the switch is no longer pressed, or the overtravel bypass switch in the control cabinet is activated.

12. CHECK THE FLEET ANGLE OF THE CABLES TO THE DRUM

- The fleet angle of the drum has been given an initial adjustment at the factory, but it must be verified once installed.

Use the following procedure to inspect and adjust the head block fleet angle.

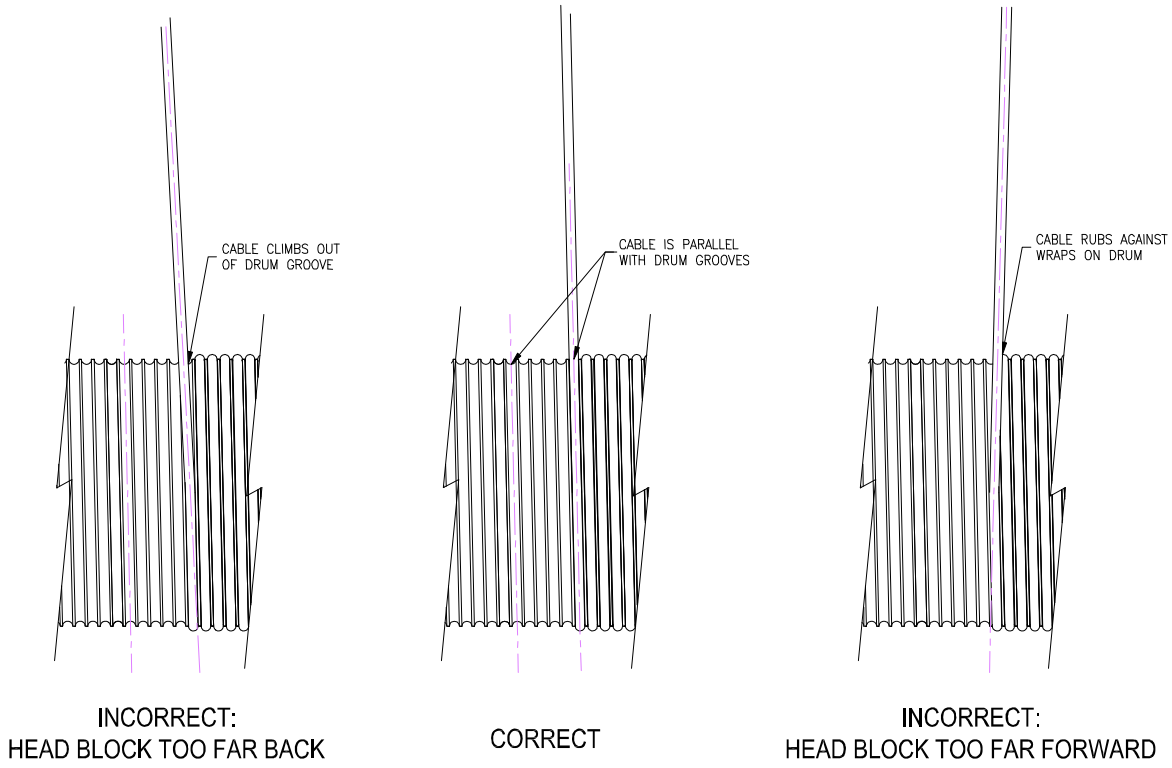


Figure 14: Inspecting the fleet angle at the drum

1. Observe the angle of the drum grooves and determine if the cable is parallel to the drum grooves. See Figure 14. If the fleet angle is correct, skip to Section 13. If adjustment is required, proceed to Step 2.

WARNING! Improper adjustment of the constraint bolt can result in failure. The Adjusting Nut must remain fully threaded on the bolt at all times

2. Loosen but do not remove the locking nut on the axial head block constraint. See Figure 15. Hoist does not need to be unloaded as long as nuts remain fully engaged with the threaded fastener.

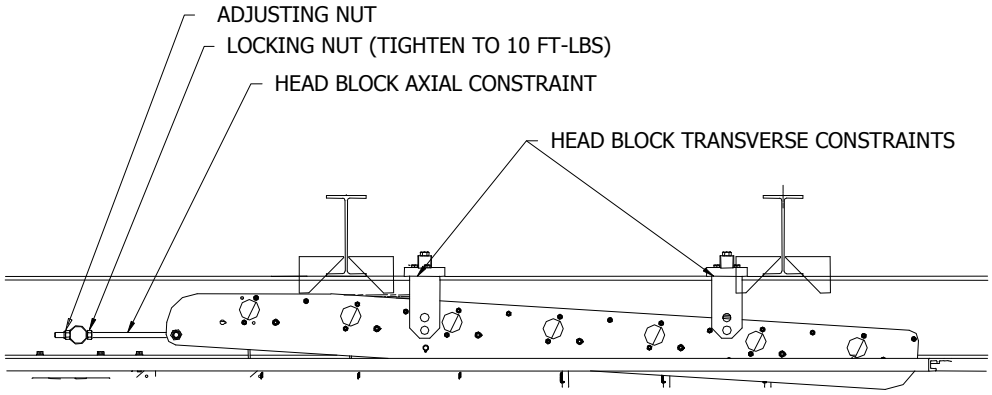


Figure 15: Head block constraints and adjustment nuts

3. Adjust appropriate nut on axial head block constraint to correct the fleet angle according to Figure 14.

NOTICE: Adjustment is limited by clearance at head block bracket. Stepped pin must not contact head block side plate. See Figure 16.

WARNING! Do not over-tighten the constraint bolt.

4. Tighten the locking nut to 10 ft-lbs (13.5 Nm).

5. Test the operation of the machine. Cables entering the drum should not rub on the drum wraps or skip drum grooves.

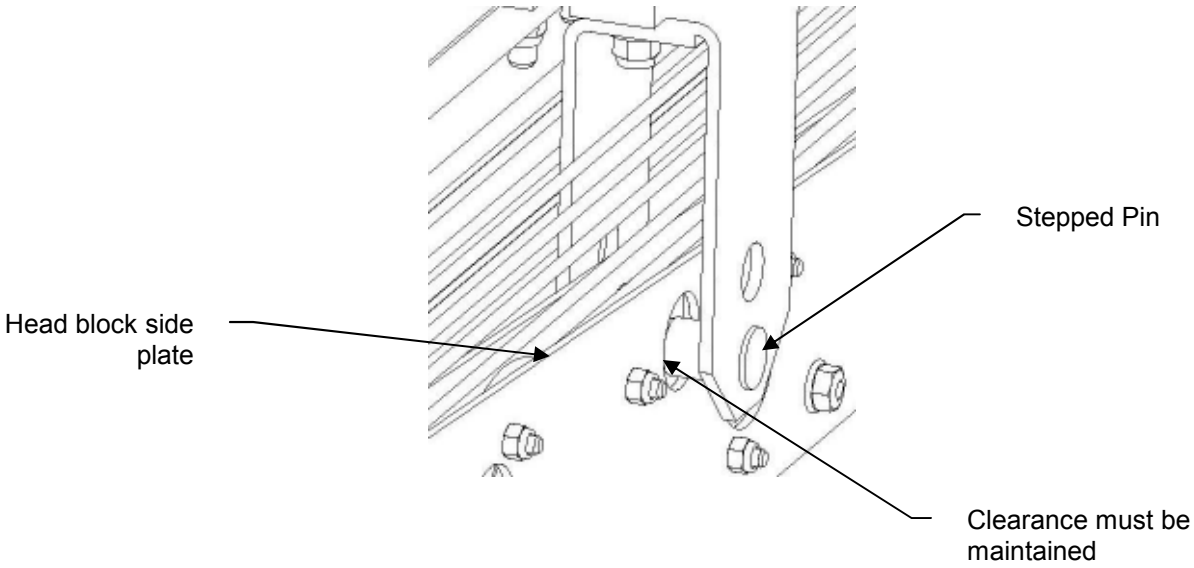


Figure 16: Clearance at head block bracket

13. CHECK DRUM SCREW LUBRICATION

The drum screw and the exposed portion of the drive shaft are typically lubricated at the factory, but they must be checked at the time of installation.

Use the following procedure to inspect the lubrication.

1. Confirm that a film of grease covers the entire exposed area of the drum screw and the exposed portion of the drive shaft, as seen in Figure 17.

2. If the grease is contaminated with debris or excessive dust, wipe all of the contaminated grease off and re-lubricate with a thin even film of Castrol Inc Pyroplex Red NLGI #2 EP High Temperature Grease. Contact JR Clancy if you cannot locate a dealer with the specified grease in your area.

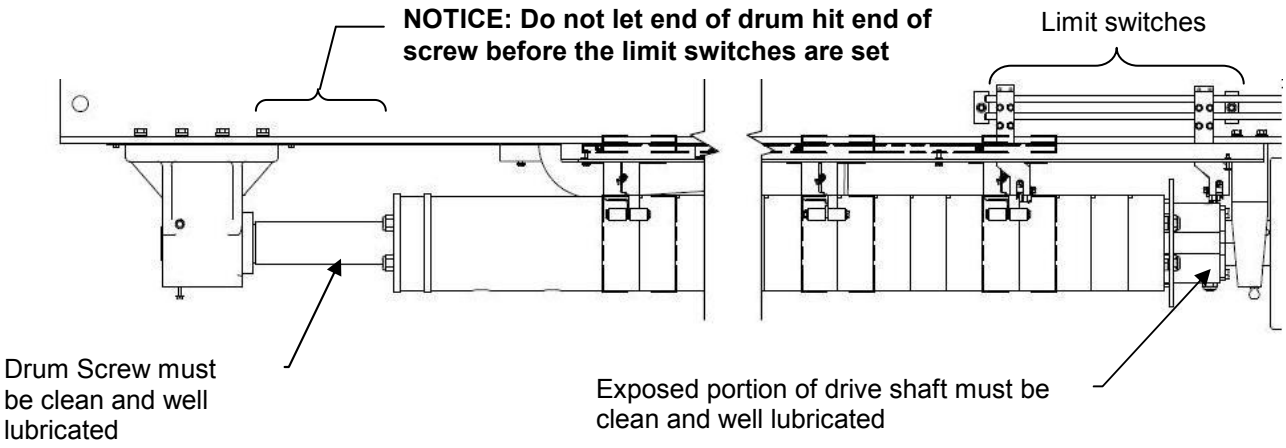


Figure 17: Drum Screw and exposed portion of Drive Shaft

14. CHECK REDUCER LUBRICATION AND VENT

The gear reducer unit is typically filled with oil when shipped from the factory. The oil level is determined by what position the machine will be operating in. Because the orientation of the machines are sometimes changed during installation, the oil level must be checked when the machine is installed in its final operating position to ensure that the reducer is properly lubricated. Check the oil level using the chart in Figure 19. Contact JR Clancy if lubrication level is incorrect. Use the chart to locate the reducer breather valve and make sure that the protective rubber band is removed and discarded. See Figure 18.

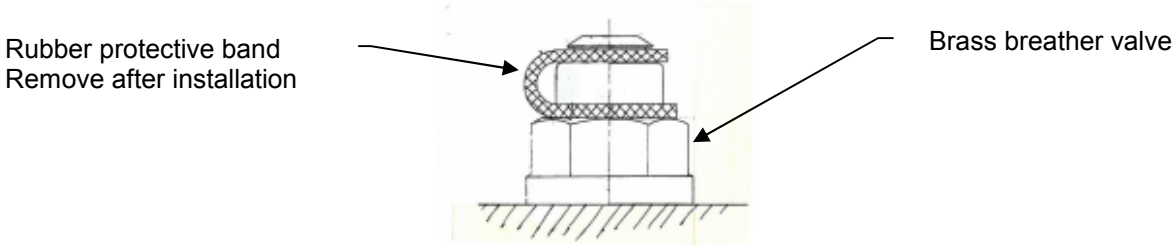


Figure 18: Reducer breather valve with protective band

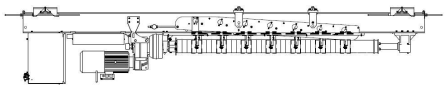
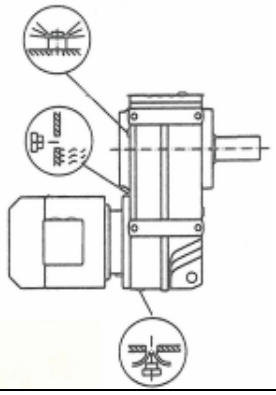
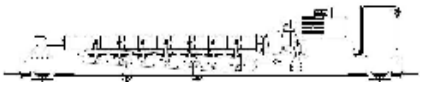
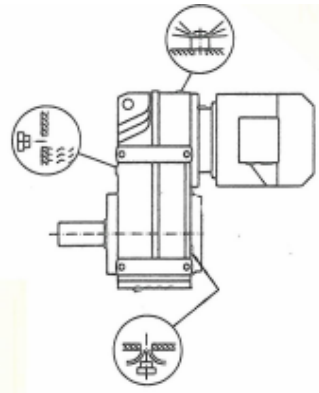
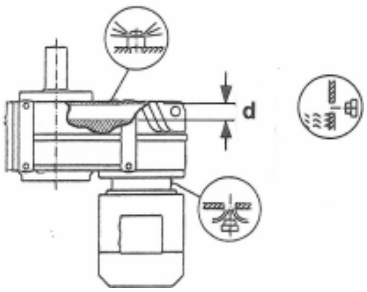
Mounting Position	Lubrication Ports
 **Underhung Hoist Reducer Position M3**	
 **Upright Hoist Reducer Position M1**	
Wall Mounted Reducer Position M2 	 **Dimension d = 1 1/8" (28 mm) for all models**
 **FILL LEVEL**  **BREATHER VALVE**  **DRAIN PLUG**	

Figure 19: Reducer lubrication

15. CHECK THE LOAD BRAKE.

The PowerLift is equipped with two brakes: a primary motor brake and an electrically operated secondary load brake.

WARNING! The primary and secondary brakes must be properly adjusted or the load can fall if the hoist loses power.

The secondary brake is calibrated at the JR Clancy factory, but the following procedure should be used to check the brake once it is installed. See Figure 20.

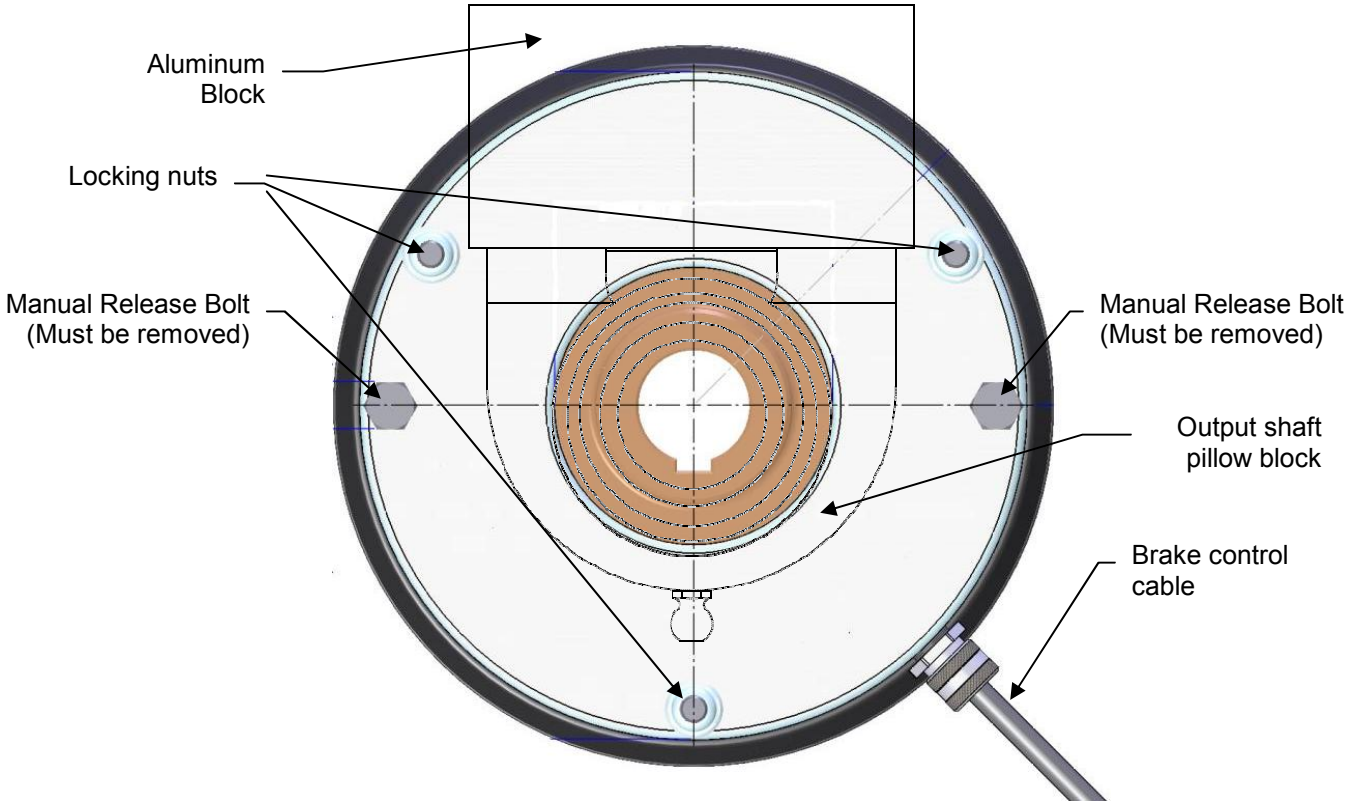


Figure 20: Secondary load brake face and bolt locations

1. Locate the three locking nuts on the face of the brake. Confirm that all three nuts are in place.
2. Locate the manual release bolt holes in the face of the brake. Confirm that the release bolts have been removed.
3. Slide the protective rubber boot back to expose the air gap between the brake magnet and the armature assembly. The edge of the paper disk will be visible. See Figure 21A and 21B.
4. Check the gap between the paper disk and magnet at at least three locations around the brake. This gap should be set to 0.9 mm (0.035 inches). A mechanic's feeler gauge is recommended to inspect this gap.
5. Adjust the nuts on the face of the brake as necessary to maintain the proper clearance. The nuts must remain fully threaded on the studs at all times.
6. Replace the rubber boot around the brake when adjustment is complete.

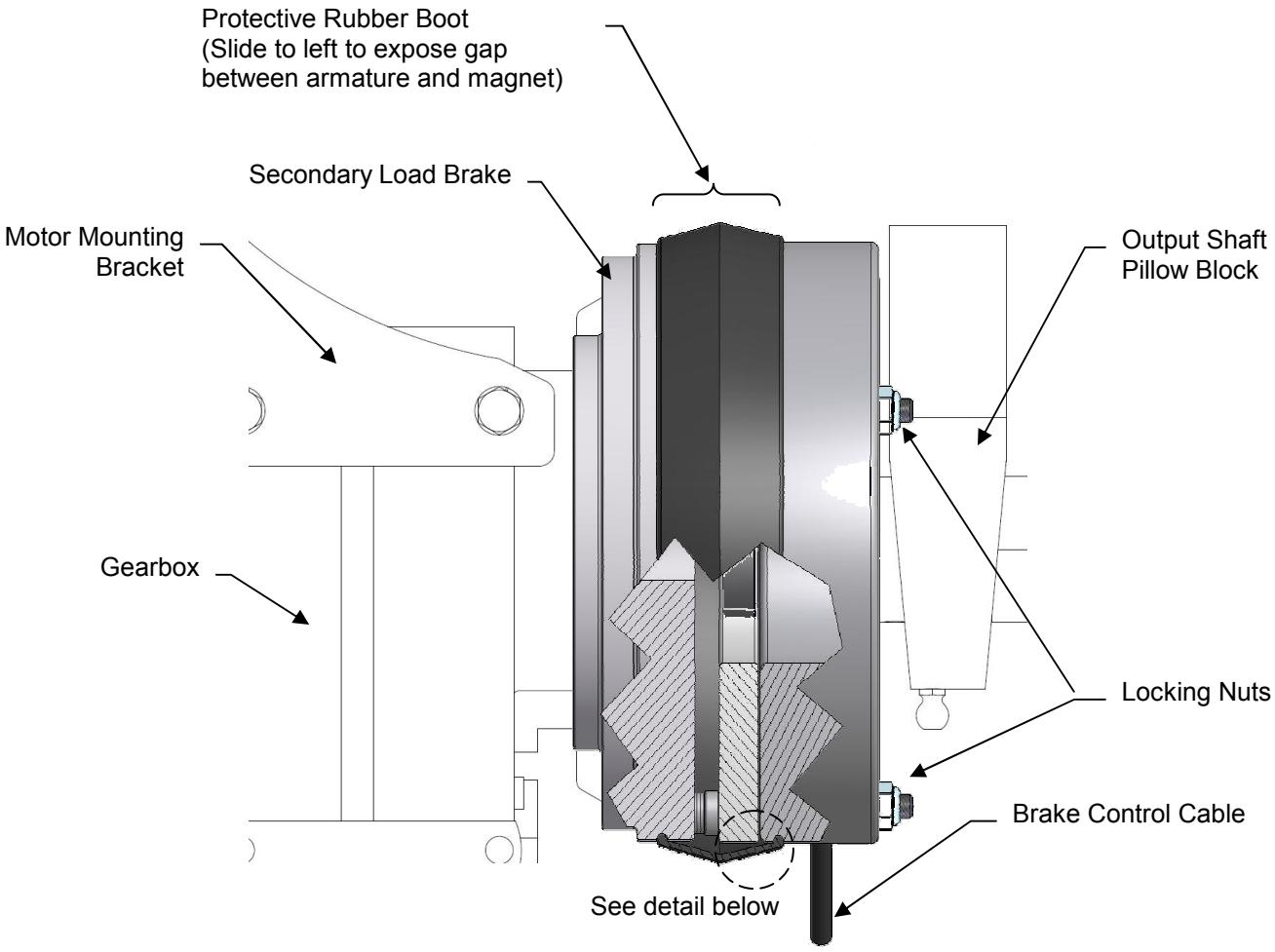


Figure 21A: Side view of brake with rubber boot

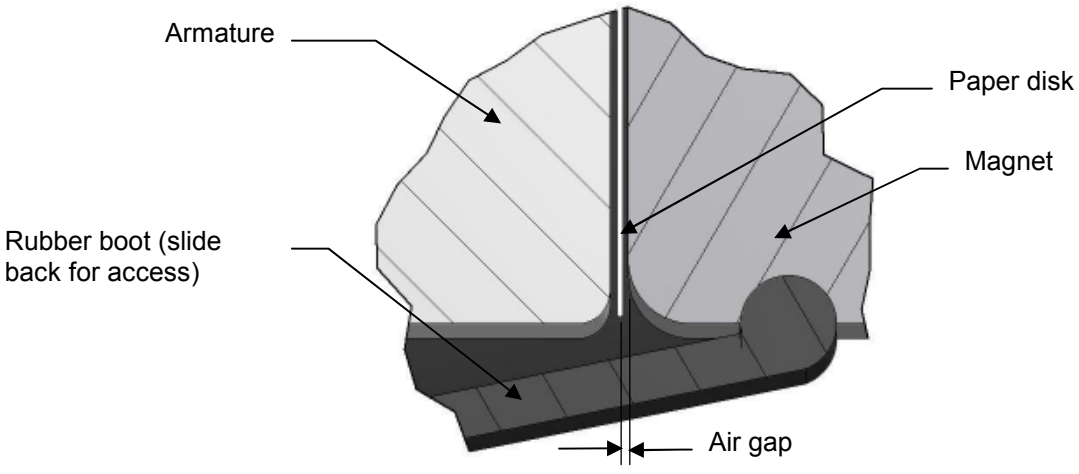


Figure 21B: Detail view of brake air gap

16. PROGRAM THE SCENECONTROL USER INTERFACE.

If a SceneControl computerized user interface has been provided with your equipment, it must be activated and programmed by JR Clancy factory personnel. All of the above steps of the installation must be complete prior to requesting activation of the controls.

17. INSTALL THE MACHINE COVERS

Follow this procedure to replace the machine covers. See Figure 22.

1. Make sure all of the cables are reeved properly through the headblock. Make sure roller guides are placed properly.
2. Start all of the attachment bolts in their appropriate holes, but leave them loose enough to accommodate the cover thickness.
3. Place the motor-end cover over the drum assembly. Align the bolts with the keyhole slots. Slide the cover towards the motor end until the cover is approximately 1/8" from brake face. Align the bolt heads with the smaller diameter of the keyhole slots. Tighten all the fasteners.
4. Place the tailstock cover over the drum assembly. Slide it towards the motor end until the cover is overlapping the motor end cover. Align bolt heads with the smaller diameter of the keyhole slots. Tighten all of the fasteners.
5. Install a machine screw through the cover and into the standoff in the tailstock casting and tighten.

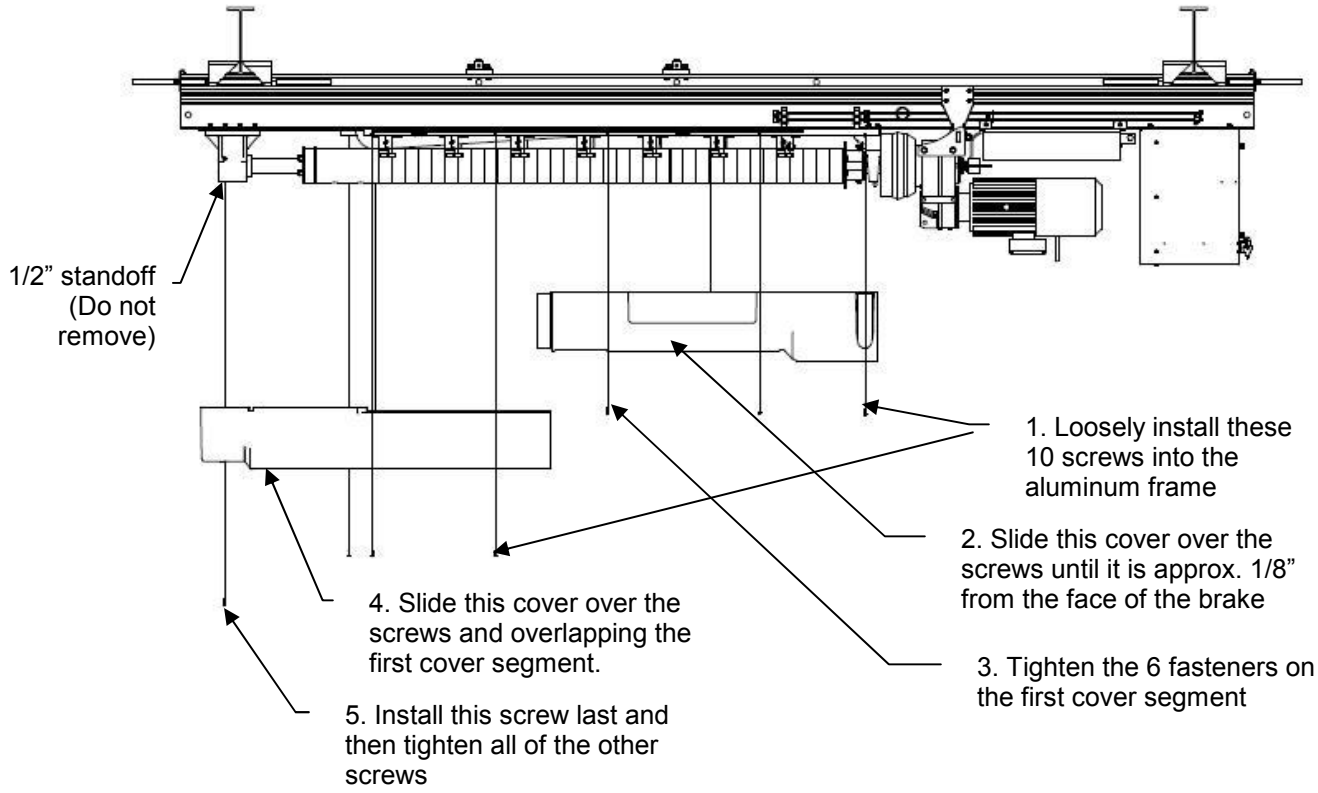


Figure 22: Machine covers and fasteners

18. ACTIVATE THE SERVICE LIGHT CIRCUIT

DANGER! Electrocution hazard. Disconnect power from the control station before removing cover.

1. Open the cover of the control station and locate the time accumulator module. See Figure 23.
2. Remove the jumper wire between terminals 5 and 6 of that module.

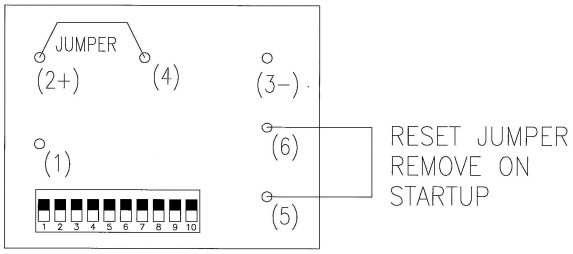


Figure 23: Time accumulator module

19. INSTALL SAFETY SIGNS AND CAPACITY LABELS

1. Install a capacity label on each batten. Make sure that the label capacity matches the capacity of the machine marked on the Identification Label. See Figure 10.
2. Install the “Motorized Winch Rigging” safety sign (Part # 002-WINSIGN). Fill in the set capacity information. Fill out or attach a business card to the designated area of the sign. Note the date of next required inspection.

20. TRAIN THE OPERATORS

The owner and users must be trained to operate this equipment, including:

1. Use of the machinery controls. Present and discuss the Operation and Maintenance Manual.
2. Basic safe operation of motorized rigging.
3. Basic maintenance and troubleshooting. Present and discuss the Maintenance Manual.
4. The requirements for regular Training, Inspection and Maintenance.
5. Use of the Maintenance and Inspection Log.

21. INSPECT THE COMPLETED INSTALLATION

NOTICE: Final inspection must be performed. The inspection checklist must be filled out, signed, and returned to JR Clancy to activate the warranty.

After the system is installed a final inspection is required.

1. Use JR Clancy part number 003-836 Powerlift Inspection Checklist. A copy was shipped with your order, or contact the factory to obtain a copy.
2. Follow the instructions on the checklist and fill out completely.
3. Fill out the attached Certificate of Inspection. You must mail or fax the signed document to JR Clancy to receive a letter of warranty for this product.

HOW TO CONTACT JR CLANCY

Contact the factory at any time with questions and comments concerning this product:

JR Clancy Incorporated
7041 Interstate Island Road
Syracuse, NY 13209 USA
Telephone (315) 451-3440
www.jrclancy.com