SKY CLIMBER®

"Access Innovations Since 1955"

OPERATOR'S INSTRUCTION MANUAL

LNX 750, 1000, 1250, 1500 & 2000
Single & 3PH Electric Powered Hoists

TO EMPLOYER AND/OR RENTAL AGENCY

It is imperative that this manual be given to the operator of Sky Climber equipment and that they read, fully understand, and follow all instructions contained herein.

WARNING

Any use of this equipment, other than in strict accordance with these instructions, shall be at the Operator's risk and may result in serious injury to themselves or others.

REMEMBER SAFETY IS THE RESPONSIBILITY OF BOTH THE OWNER AND THE OPERATOR.

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OPERATOR'S INSTRUCTION MANUAL
LNX 750, 1000, 1250, 1500 & 2000 Hoists

Welcome to the ever-growing group of Sky Climber Hoist Operators. This manual will guide you through the features and the operation of your Sky Climber Hoist and Secondary Over-Speed Brake.

Sky Climber Hoists and Secondary Over-Speed Brakes are an integral part of a total Suspended Platform System made up of Rigging, Wire Rope, a Power Supply, the Platform, Fall Arrest/Safety Equipment and Accessories. Understanding the complete system, as well as the Hoist operation, will help you in the safe use of a Suspended Platform.

This information is a *guide only,* and is not a complete list of safety rules, installation or operation instructions.

Sky Climber Hoists, Secondary Over-Speed Brakes and Accessories are designed and manufactured to the highest standards in the industry. It is impossible, however, for Sky Climber, LLC to know, evaluate, and advise in every conceivable way our products are used or serviced and of all possible hazardous consequences.

Therefore, all Operators must satisfy themselves that the procedure they use will not jeopardize their safety, the safety of others, or cause product or component damage.

Sky Climber, LLC reserves the right to continually improve its products. Every effort has been made to make this manual as accurate as possible at the time of publication; however, there may be product changes that are not detailed in this manual.

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HOIST SPECIFICATIONS & CHARACTERISTICS

LNX 750, 1000, 1250, 1500 & 2000
Single & 3PH Electric Hoists

ELECTRICAL SPECIFICATIONS

	Single Phase	3 Phase
Power:	1.9 HP / KW 0.95	1.9 HP / KW 0.95
Line Current:	9.5 Amps	5.8 Amps
Power Cable:	14/3	14/3
Voltage:	208 VAC / 60 Hz 1 PH	208-230 VAC / 60 Hz 3PH
Hoist Weight:	115 lbs.	115 lbs.
Secondary brake:	Integral with Hoist	Integral with Hoist
Wire Rope:	5/16”	5/16”
Ascent Speed:	32 fpm	32 fpm
Descent Speed:	35 fpm	35 fpm
Pendant Control:	Available	Available
Part #:	LNX-750-208	LNX-1000-220-3PH
	LNX-1000-208	LNX-1250-220-3PH
	LNX-1250-208	LNX-1500-220-3PH
	LNX-1500-208	LNX-2000-220-3PH
RPM:	1725	1725
		*includes a phase monitor

Integral Secondary Over-Speed Brake

“No Power”
Emergency Controlled Descent

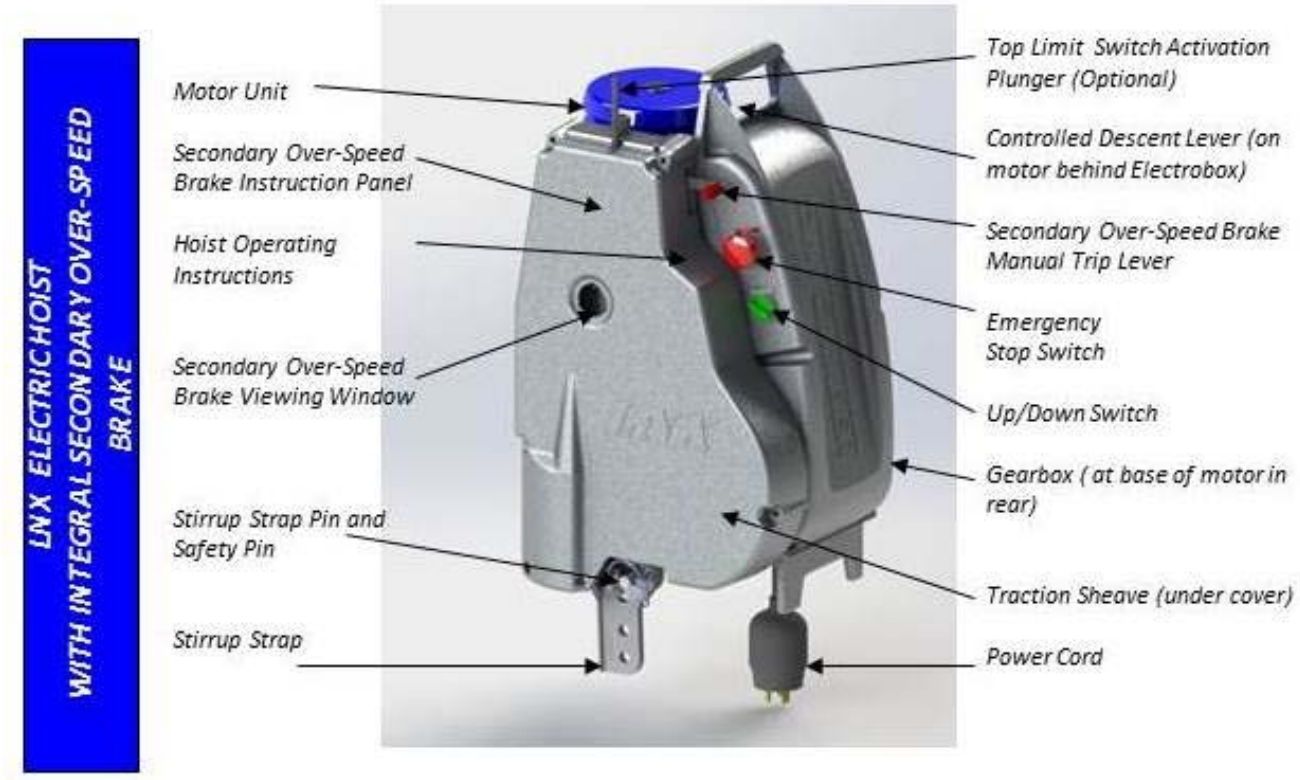
Meets or Exceeds
OSHA requirements

Maximum Rated Capacity (MRC)
is total load supported by Hoist

It includes the combined weights of the stirrup, platform, work cage, bosun chair, personnel, work tools or materials, operating accessories, power cord, wire rope, and hoists.

HOIST OVERVIEW

LNX 750, 1000, 1250, 1500 & 2000 ELECTRIC HOISTS WITH INTEGRAL SECONDARY OVER-SPEED BRAKE



NOTICE – Select proper source voltage (208v) to match hoist voltage BEFORE connecting power.

Up/Down Switch/Lever – This activates and operates the hoist. Select UP direction to move unit upward. Select DOWN direction to move unit downward. Release the switch to cut power to motor and set primary brake.

Emergency Stop Switch – Push to stop power to hoist and set primary brake. Turn *clockwise* to reset. Up/Down Selector green light will flash slowly if E-stop is activated.

Controlled Descent Lever – Do not use for normal lowering operations. For non-powered descent, the Controlled Descent Lever manually releases and re-engages primary hoist brake. Disconnect power at power connection ***before*** using the Controlled Descent Lever.

Phase monitor indicator light (**3PH hoists only**) – All three phase hoists are equipped with an out of phase indicator light (not shown) on the electrobox cover adjacent to the directional switch.

ELECTRICAL HOISTS

WARNING ***Do not use an electric hoist in an explosive environment.***

Secure cord to Platform so cord weight is on Platform and ***NOT*** *on connection. At end of work shift, disconnect power cord from the main outlet. Protect power cords from rain and water at all times. Ground connector of building receptacle must be grounded.*

- For 208 Volt applications, use one cord in combination with a yoke to the Hoists.
- Use a yoke off Platform line with two lengths of 10-3 SOW electric cord.
- Normally a 250 ft. 600 Volt 10-3 SOW electric cord is used.
- Use a booster transformer when low voltage is encountered.

Note: The hoist is equipped with a voltage meter. If the voltage meter indicates a voltage below 190v for single phase hoists or 210v for 3 phase hoists, and remains in this state, install a booster transformer at the source to increase voltage to the hoists.

Electrical Pendant Part # 41021752 – *(length)*

HOIST OPERATION

The LNX electric hoist is activated by movement of the directional switch/lever.

- Hoist is activated by turning directional switch/lever in desired direction of travel - results in engagement of motor and release of brake
- Directional switch/lever is spring loaded & returns to OFF when released - results in engagement of brake and disengagement of motor

CAUTION: Always allow hoists to come to a full stop before changing direction of travel. Rapidly changing position of directional switch may result in damage to the electrical components of the hoist.

The hoist is equipped with an Emergency Stop or E-stop Button.

- Pressing the **RED** Emergency Stop Button immediately interrupts power to the hoist motor and engages the brake (causing the hoist to immediately stop)
- Turn the red Emergency Stop Button clockwise to reset switch and restore power to hoist

The 3 phase hoist is equipped with a phase monitor and out of phase indicator light (red LED located adjacent to the directional switch). If the indicator light is flashing, incoming power has reverse phasing for proper hoist operation and the hoist will not operate in the up or down direction.

EMERGENCY OPERATION – POWER FAILURE

In the event of loss of power, the hoist may be raised by using the Emergency Hand wheel. The hoist may be lowered using the Controlled Descent Brake Release Lever.

WARNING: **Always disconnect power at the power supply connector plug before using the emergency handwheel or controlled descent lever. Failure to do so may result in serious injury or death.**

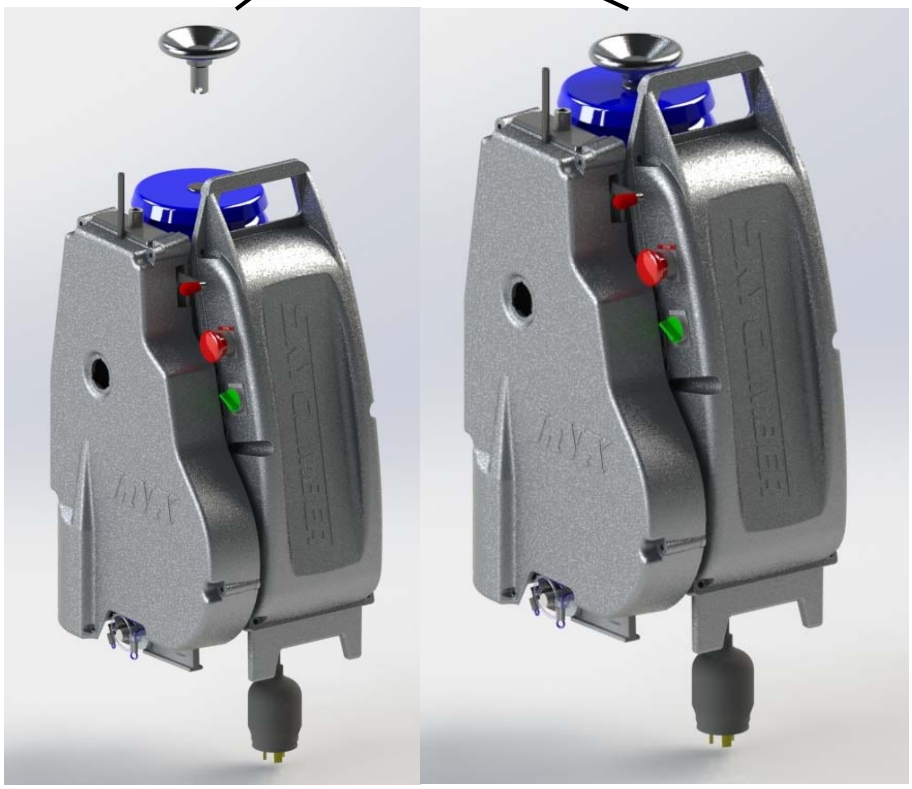
EMERGENCY ASCENT – EMERGENCY HANDWHEEL

If power fails and you want to raise suspended equipment (hoist, platform and its load):

- Disconnect the power supply connector plug and actuate the E-stop.
- Remove the Emergency Handwheel from its position underneath the hoist by unscrewing it (see figure).

- ❖ Remove plastic dust cap and insert the Emergency Handwheel in the motor shaft access hole in the fan cover at the top of the hoist.
- ❖ While tightly holding the Handwheel with one hand, pull Brake Release Lever as far as it will go with the other hand (releasing brake), and begin cranking in a counter-clockwise direction.

Emergency handwheel



- After emergency ascent, replace the handwheel to its original position

WARNING: ***Release controlled descent lever to engage hoist brake before releasing the emergency handwheel. Failure to do so may result in serious injury.***

EMERGENCY DESCENT – CONTROLLED DESCENT LEVER

The controlled descent lever is used to lower the hoist in the event of power interruption. If power fails and you want to lower the suspended equipment (hoist, platform and its load).

- ❖ Disconnect power supply connector plug from the hoist and actuate the E-stop.
- ❖ Release hoist brake by gently pulling the Controlled Descent Lever toward the fan end of the motor as far as it will go (see figure).

WARNING: ***Before descending, be sure that the Emergency Handwheel is not installed in the shaft access hole at the top of the hoist. Failure to do so may result in serious injury or death.***

CAUTION: ***Partial release of hoist brake may result in over-heating and premature brake wear .***

NOTE: Whenever using the non-powered controlled descent feature, the hoist's **E-stop** MUST be actuated and the power to the hoist disconnected prior to descending

SUSPENDED ACCESS INSTALLATION

GUIDELINES

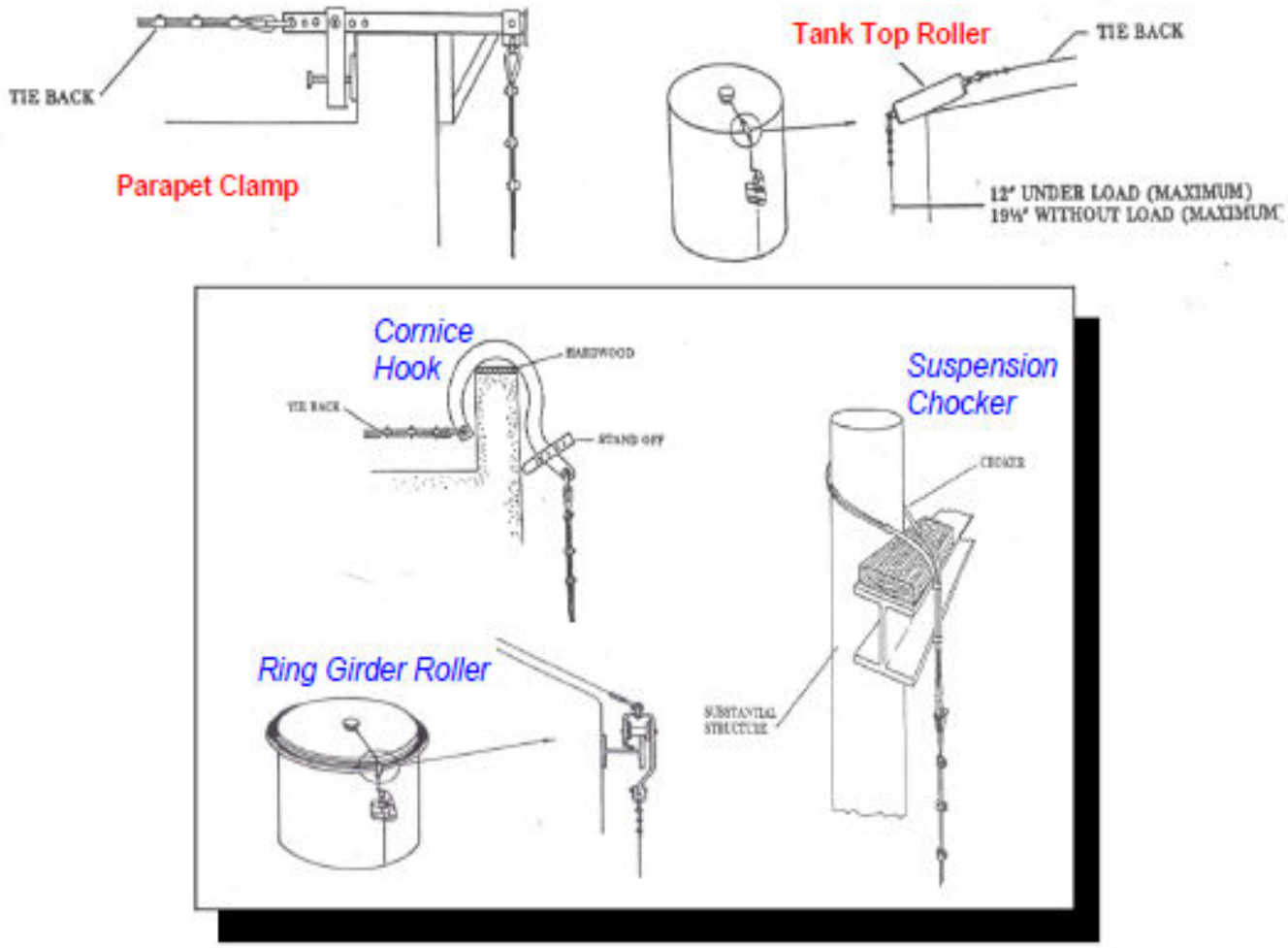
Safety is of the utmost importance when installing and using Suspended Access equipment. **This section covers general guidelines. Follow Manufacturer's Instructions for proper equipment assembly. Understand and follow all applicable Federal, State, and Local rules and regulations before installing and/or using equipment.**

- Test your system *before* going aloft.
- Continue to check to be sure your system remains safe throughout the entire time it is used on a job.
- Make certain there are no obstructions to the vertical travel of equipment (above and/or below).

TOP SIDE RIGGING

WARNING ***Rigging is the responsibility of the user. Do not attempt to rig a job unless you are qualified. Failure of rigging will result in serious injury or death.***

- All rigging including cornice hooks, parapet clamps, and outrigger beams must be tied back to an adequately sized structural member with a wire rope that is equal or greater in ultimate strength than suspension lines.
- Tie backs must be tied taut to an anchorage point that can support at least 4 times the rated Hoist load capacity. Tie back to vent pipes or other non-structural protrusions is not acceptable. Tie backs must be straight back and each to a separate anchor point.
- Use parapet clamps and cornice hooks *only* on steel reinforced concrete structures. Do not use parapet clamps on non-reinforced brick, concrete block, or stone structures.
- Consult a professional engineer or the building owner to verify parapet construction and strength.
- Use 3/4 inch plywood under roof rigging to spread load on roof. If parapet is used for support, use hardwood to spread out load.
- Rolling Roof Rig chocks, jacks or similar devices must be securely in place to prevent any lateral movement.



SECONDARY BRAKE

WARNING ***A Secondary Over-Speed Brake safety device must be used at all times with each Sky Climber Hoist. For LNX units, the secondary brake is integral to the hoist.***

Failure to use a secondary over-speed braking device is a violation of OSHA regulations, and may result in serious injury or death.

The Secondary Over-Speed Brake senses the speed of the wire rope traveling through it. If there is sudden acceleration due to a falling condition, or if the factory pre-set trip speed is exceeded, the brake's jaws clamp onto the wire rope, arrest any descent, and support the descending load. The wire rope releases *only after* the Secondary Over-Speed Brake's load is relieved.

Manual Trip Lever – Pull the red handle downward to lock the jaws onto the wire rope.

Reset – Use the Hoist Directional Switch UP to move Hoist in an upward direction. This will automatically reset the jaws of the Secondary Over-Speed Brake.

Testing – Before reeving any hoist, test the operation of the Secondary Over-Speed Brake:

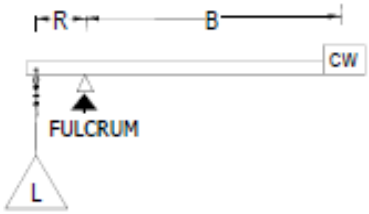
- Manually insert a wire rope about 12 inches into the hoist (until it stops by hitting the sheave).
- Holding the wire rope vertical, attempt to rapidly remove the wire rope from the hoist.
- The Brake should lock onto rope.
- Push the rope back into the hoist to get the brake to release from the wire rope.
- Repeat procedure.
- The Secondary Over-Speed Brake **must** lock onto rope within 4 inches or less. If it does not, the Secondary Over-Speed Brake **must** be replaced.
- After successful testing, proceed with hoist installation.

TYPICAL TOP SIDE RIGGING SYSTEMS

Counterweighted and Non-Counterweighted

- Outrigger beams require counterweights.
- Counterweights must be secured to the outrigger beam and must be of a non-flowable material.
- To calculate the needed counterweights, use the following formula:

FORMULA: $$CW = \frac{4 \, x \, R \, x \, L}{B}$$



CW = Counterweight (in lbs.) per outrigger beam

4 = 4:1 Safety Factor (required by OSHA)
R = Reach (Distance from Front Support center line to Hanging Load)
L = Load ((Rated Working Load (RWL) of Hoist))
B= Backspan (Overall distance from fulcrum to center of counterweights)

WIRE ROPE

WARNING ***Wire rope is an expendable item. It begins to wear when it is put into use. Do not use kinked, bird-caged, excessively worn or damaged wire rope. Such use may result in injury or death to yourself or others.***

Wire Rope Handling and Storage

- Always wear gloves to protect your hands when working with wire rope.
- Store wire rope in a coil or on a spool.
- Protect rope from physical abuse, inclement weather, and corrosive materials.
- Do not drop wire rope from any height.
- Uncoil wire rope carefully to avoid kinking or inducing a twist.
- Do not uncoil by tossing coil over the edge of a structure.
- Avoid dragging wire rope in dirt or around objects that could scrape, crush, bend or damage it.
- Galvanized wire rope specified by Sky Climber, LLC is lubricated at the factory and under normal conditions does not require further lubrication.

Wire Rope Preparation

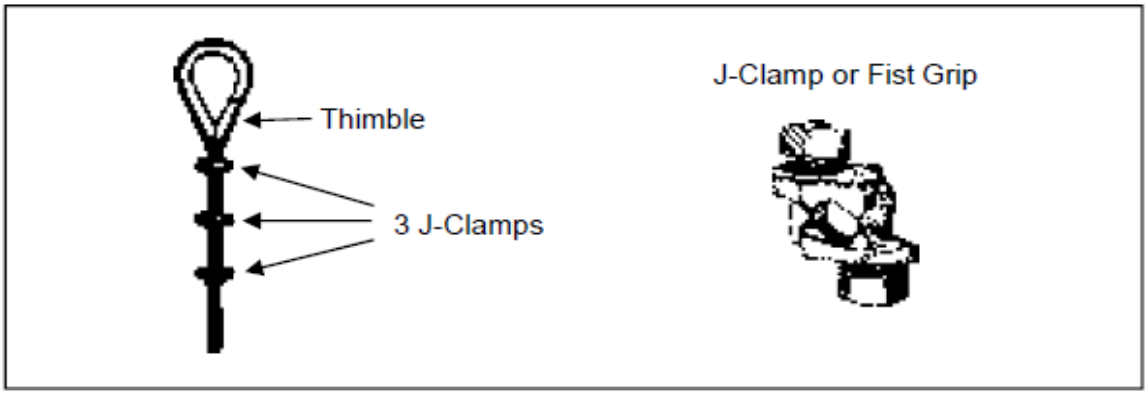
- Always use 5/16 inch wire rope of the proper length and construction.
- 5/16 inch, G, XIP, RL, PRF **
- Braze both ends a maximum of 1/2 inch in length.
- Air cool, then grind the tip to a blunted point.

** G = Galvanized XIP = Extra Improved Plow
RL = Right Lay PRF = Preformed

Wire Rope Rigging

Always use correct size and type of rope clamps. Wire rope will slip through oversize clamps. Undersize clamps will damage wire rope.

- Use only 5/16 inch J-type wire rope clamps with a minimum of three clamps spaced from 2-4 inches apart.
- Do **NOT** use U-type clamps which can crush wires and reduce wire rope strength.
- Torque J-clamps to 30ft.-lb. at first loading. Check for tightness at the start of each work shift. **Clamps do loosen with use!**
- After all J-clamps are placed, test for 100% proof load. Retighten clamps to specifications.
- Use a 5/16 inch thimble and a 5/8 inch shackle.
- Use insulated thimbles when welding from platform.
- Wire rope must support 6:1 safety factor.
- A properly made 5/16 inch wire rope will have, depending on type of construction, a breaking strength ranging from 6,700 to 12,500lbs. (Sky Climber recommends the use of wire rope with strength greater than 10,500 pounds).
- Rig from the top of structure. Allow an extra 10 feet of wire rope to reeve hoist. Store extra rope on roof neatly coiled, tied, and protected from the weather.
- Wire rope must be rigged to remain vertical with suspension points directly above the hoist entrance guide or lead-in device.
- CAUTION: If the wire rope length is less than required to LAND the platform on a safe surface, after reeving the hoist, loop the bitter end of the wire rope and secure with a J-clamp. Failure to do so may result in personal injury or death. Remove J-clamp before de-reeving hoist.



Wire Rope Replacement

- Wire rope is critical to safe and trouble-free operation.
- Replacement rope shall be to Sky Climber's specifications. Use of wire rope obtained from sources other than those specified by Sky Climber could result in serious personal injury, property damage, and/or equipment breakdown.

Four Wire System

Four Wire Systems can be used when it is necessary to protect workers where platforms, canopies or other obstructions are above them (vertical lifelines cannot be used). Contact your Sky Climber representative when Four Wire Systems are needed.

FALL ARREST EQUIPMENT

OSHA requires an independent life line for each person going aloft. A safety harness must be worn by each worker and be attached by a lanyard and rope grab to an independent life line while a worker is on a suspended platform.

Life Lines

Only one person may be attached to a life line. The life line must be:

- Sized for and compatible with the rope grab (e.g., 5/8 inch line for a 5/8 inch rope grab).
- Certified minimum breaking strength of 5,000 lbs.
- Seized or whipped at the ends.
- Tied off to a separate attachment point different from the wire rope attachment point capable of supporting 5,000 lbs.
- Do not allow life line to come in contact with rough or sharp edges.
- Life line must extend to the ground or the next lower safe surface.

Rope Grab

Inspect all parts of the rope grab prior to each use. Perform a documented rope grab inspection at least twice a year.

- *The rope grab should always be mounted on the life line as far above the operator as possible.*

Body Harness

Harnesses must comply with the latest edition of ANSI A10.14.

- Position a body harness D-ring in the center of the back rib cage.
- Follow the safety equipment manufacturer's instructions.

Lanyards

Lanyards must meet or exceed OSHA standards.

- Lanyards must be 4 feet long (or less with double snap locks).
- Minimum tensile strength is 5,000 lbs.

PLATFORMS

- Follow the platform load specification.
- Check stirrup bolts daily for soundness and tightness.
- Use toeboards, handrails and mid-rails on all open sides.
- Acids can destroy aluminum platforms. Replace platform immediately if exposed to acids or corrosive materials.
- Operate platform in level position only.
- Work from deck of platform only. Do not stand on guardrails, toeboards, platform/work cage supported objects or lean out from ends of the platform. Do not use ladders etc. to get at higher elevations.
- Do not bridge from one platform to another, nor to any structure or other equipment.
- Do not horizontally transfer a work platform while it is suspended in the air. Perform all transfer operations ONLY with the platform resting on a safe surface.
- Bosun chairs should carry only the operator. Do not hang loads from the seat or attach any device or support to seat or seat back.

WELDING

Use the following precautions when welding to prevent the possibility of electric shock to personnel and/or the possibility of welding current passing through the wire rope.

- Attach each wire rope to its suspension point with a suitable insulated thimble. Insulate extra rope stored on the roof to prevent grounding, or terminate the suspension rope at the insulated thimble.
- Cover the supporting wire rope with insulating material above and below the Sky Climber® Hoist. Use a length of split rubber tube taped in place around the cable as follows:
  - Extend above the top of the hoist for 4 to 5 feet (more if required by local codes).
  - Extend below the Sky Climber® Hoist, far enough to insulate the tail line from the platform. Guide and/or retain the portion of the tail line below the platform so that it does not become grounded.
- Cover each Sky Climber Hoist, Sky Lock Brake, and Wire Winder with protective covers made from insulating material.
- Connect a grounding conductor from the platform to the work piece. The size of this conductor must be equal to or greater than the size of the stinger lead.

NOTE: This must be a secondary conductor and must not be in series with the primary conductor between the welder and the work piece.

STEEL WIRE ROPE REQUIREMENTS

Recommended Wire Rope – LNX 750, 1000, 1250, 1500 & 2000

Sky Climber has found the 5/16”, (8.0 mm) 5-strand wire rope to be the most effective for trouble-free operation. Please use only that rope which is recommended by the manufacturer.

Product

5/16” (8.0 mm) 5 x 26 WS, PFC, G, XIP, RRL, performed, break strength of at least 10,500 lbs.

WS	Warrington Seal	PFC	Polypropylene Fiber Core
G	Galvanized	XIP	Extra Improved Plow
RRL	Regular Right Lay Steel		

Similar construction should be used for the 2,000 lb.rated hoist but breaking strength must exceed 12,000 lbs.

Compliance

Use only the specified wire rope with the correct diameter and specification in the LNX 750, 1000, 1250, 1500 & 2000 Hoist. If further information is needed, please contact Sky Climber at 740-203-3900 or 800-255-4629. All wire rope used must conform to Federal Specifications RR-W-410P Type 1, General Purpose, Class 2. The supplier should provide a Certification of Breaking Strength proving a minimum strength. The wire rope MUST have a breaking strength at least six (6) times the rated load of the hoist (6:1 Design Safety Factor). This rope is resistant to abrasion and crushing with medium fatigue resistance.

Tipping and Braising

Braze wire rope tip by applying braze to approximately 1/2 inch of tip (do not exceed 3/4 inch) and let it glow to all of the individual wires. It is very important to let the rope AIR COOL Grind the tip to a taper, but not a point. Tip should resemble a pencil with the lead broken.off.

How to Check for Proper Wrapping

Cut 50 to 100 feet from your new spool of specified wire rope. Braze both ends and run it through a hoist 10 times (no load needed). Check if the strands are separating above or below the hoist. If they DO appear to be opening, then the strands are improperly wrapped and will result in hoist jamming. Return the spool to your supplier.

Quality

Wire rope must be of good quality and free of damage or defects (see Wire Rope Inspection in this manual). The wire rope must be inspected every day by a competent person.

RIGGING AND REEVING

At the job site, rig from the top down. Lower wire rope until you have about 10 feet of rope on the ground (hoist is not yet reeved). Complete the tie point with 3 fist grips (or approved J-clamps), thimble and shackle (torque fist grips to manufacturer's recommendations) or using a the swaged end of the wire rope and a adequately sized shackle.. Store the extra wire rope in a coil on the roof.

NOTE: Adjust wire rope length as you change elevations. Reeve the hoist, form a 360° loop in the tail end and retain with a fist grip. Before dereeving the hoist, remove the fist grip.

HOIST INSTALLATION & TESTING

Suspended Platform Assembly

- Follow manufacturer's instructions.
- If used, install an electric yoke on the platform (wrapped around center guardrails) to provide power to each hoist.
- Secure source power line(s) to Suspended Platform by strain relief(s) or other load-bearing device. Plug the power line into yoke (if used).
- Allow sufficient power line length to permit free platform travel without undue strain to the power line and platform.

Secondary Over-Speed Brake Installation/Operation

- The hoist is equipped with an integral secondary over-speed braking device.
- The device can be seen through the viewing window in the side cover of the hoist.
- The secondary over-speed brake should be spinning when wire rope is reeved through the hoist.

WARNING ***Serious injury or death may result if the secondary over-speed braking device is not present. Assure the device is present and operating properly.***

- Before reeving wire rope through the hoist, the secondary over-speed brake should be tested.
- To test for proper operation of the secondary over-speed brake:
  - With the hoist sitting on a flat, level surface, insert a length of wire rope approximately 12 inches into the hoist.
  - Rapidly pull the wire rope upward, attempting to remove it from the hoist.
  - The secondary over-speed brake jaws should lock onto the wire rope within 3", not allowing it to be removed from the hoist.
  - To unlock the secondary over-speed brake from the wire rope, gently push the wire rope back into the hoist. The secondary over-speed brake should release from the wire rope.
  - Repeat procedure.
  - Test all hoists to be used on a project before use.
  - If a hoist/secondary over-speed brake fails this test, return the failed unit to Factory Authorized Service Center for repairs or replacement.

Hoist Installation

- Place hoist next to Suspended Platform Stirrup.
- Connect Power.
- Reeve wire rope through hoist.
  - ***Keep hands clear of pinch point where wire rope enters hoist.***
  - Feed brazed and pointed end of wire rope into hoist entrance guide at top of hoist and gently feed it in until the wire rope stops.
  - To start self-reeving, move Directional Switch to UP direction.
  - Wire rope must be free to travel without interference.
  - **Exit guide at the base of the hoist must be clear.** Wire rope must run freely **away** from the hoist. Damage can occur if the wire rope cannot freely exit the hoist.
  - As the hoist begins to climb up the wire rope, guide it to the stirrup level.

- Attach hoist to Suspended Platform Stirrup.
  - Release hoist stirrup strap by removing safety pin, removing latch pin and allowing strap to rotate into a vertical position. Replace latch pin and safety pin.
  - Insert hoist stirrup strap into platform stirrup recess.
  - Use either Grade 5 nuts/bolts or shoulder bolts and nuts provided by manufacturer.
  - Tighten nuts securely.
  - Make sure wire rope exits outward, away from platform's work area.
- Secure Wire Rope End.
  - Limit wire rope bitter end to a few feet. Store excess wire rope at top on suspension end.

WARNING ***Serious injury or property damage may result from objects falling during hoist load test. Be alert and prepared to quickly move from the likely impact zone.***

- Test Hoist Load and Secondary Brake.
  - Place load equal to weight of workers, tools and materials on one end of the platform. Have co-worker check rigging for slippage/malfunction during the test.
  - Inspect all rigging/platform connections. Tighten or adjust as needed.
  - Select Hoist Directional Switch UP direction to raise the platform **6-12 inches** off surface.
  - Pull the red lever to actuate the integral Secondary Over-Speed Brake.
    - Holding the red lever in the actuated position, use the Controlled Descent Lever to manually release the primary brake. **Hoist/platform should not descend.**.
    - Again with the red lever held in the actuated position, operate the Hoist Directional Switch in the DOWN direction. **Hoist should not operate and platform should not descend.**
  - Operate Hoist Directional Switch in the UP direction and raise the platform approximately **one inch.** This should reset the secondary over-speed brake.
  - Repeat procedure.
  - Repeat the same hoist load test procedure at the other end of the platform.
  - If hoist or over-speed brake fails test, return unit to Factory Authorized Service Center.

- Test Emergency Stop Button.
  - Select Hoist Directional Switch in the UP direction to raise platform **6 inches**. While ascending, press the Emergency Stop Button. Power to hoist should stop and primary brake should engage.
  - Turn Emergency Stop Button Switch *clockwise* to reset.
  - Repeat test.
  - If Emergency Stop fails, return hoist to Factory Authorized Service Center.

- Test Controlled Descent System.
  Partial Hoist Brake Release may result in overheating and premature wear.
  - Raise suspended equipment **2 feet** off the ground.
  - Use the Controlled Descent Lever to manually release the primary hoist brake

NOTE: Whenever using the non-powered controlled descent feature, the hoist's **E-stop** MUST be actuated and the power to the hoist disconnected prior to descending

  - For non powered descent, pull the controlled descent lever as far as it will go toward the end of the motor.
  - The hoist/platform should lower at approximately 35 feet per minute..

Do NOT use any equipment that has failed testing!

TROUBLESHOOTING

Mechanical portions of Sky Climber Hoists and Secondary Over-Speed Brakes must **not** be repaired in the field. Perform only those repairs for which you are qualified and trained. If a problem condition still exists, contact your Sky Climber representative. For electrical issues, the LNX has been designed with a fully removable electrobox. The entire electrobox can be removed by removing the cover screws and disconnecting 4 quick-connect harnesses and the grounding wire. This allows the hoist to be rapidly returned to service by installing a replacement electrobox. Off-line evaluation of electrical issues in the suspect electrobox can then be done.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION HOIST
Hoist won't come down	Secondary Over Speed Brake tripped	Over speed Condition: **Get off platform!** Nuisance Tripping: Run system up 1", Over Speed Brake resets automatically.
Electric Motor runs slow or hums and will not lift	Low source voltage On long drops, too much voltage is lost in electric cord. Badly "pitted" points Brake not releasing Defective contactor Capacitor	Use booster transformer or run separate drop cords to each unit Use booster transformer or run separate electric cord to each unit Return to Factory Authorized Service Center
Motor Overheats	Incorrect Voltage	Motors overheat at less than 190V and greater than 230V for 208V motor.
"Popping" Circuit Breaker	Breaker undersized Short in electric cord	Connect to proper size breaker Replace cord
Runs in only one direction	Defective contactor	Return to Factory Authorized Service Center
Motor does nothing	No Power Thermal protector tripped (motor is usually hot) Emergency Stop Switch engaged	Restore power After one hour cooling period, restart Disengage
Hoist drifts when stopping is in DOWN direction	Primary brake worn	Return to Factory Authorized Service Center

Secondary Over Speed Brake	
Engages due to over-speed conditions	Remove personnel from platform. Lower platform to ground or raise to roof by means other than the hoist. Contact Sky Climber representative. DO NOT release or reset brake!

MAINTENANCE

Return Sky Climber Hoists as indicated to Factory Authorized Service Center for maintenance.

- Sky Climber Hoists are lubricated for normal usage and life. If an oil leak is seen, return hoist to Factory Authorized Service Center.
- Keep rope housing drain holes at bottom of hoist open.

FLUSHING: Keep Hoist and Secondary Over Speed Brake free of contaminants. Perform the following steps when using equipment in a contaminated environment using gunite, hydroblasting, or sand-blasting:

- Lower equipment to ground. De-reeve the hoist.
- Disconnect power.
- Hold hose at wire rope entrance, flush Sky Lock with fresh water.
- Repeat flushing on the Hoist while running hoist in the UP and DOWN direction until no further contaminants exit from drain holes.
- Reeve the hoist and continue operations.

SAFETY

Accidents will be prevented if you follow the instructions in this manual. Once the equipment leaves Sky Climber's control, the Operator is responsible for the safe use, operation, and maintenance.

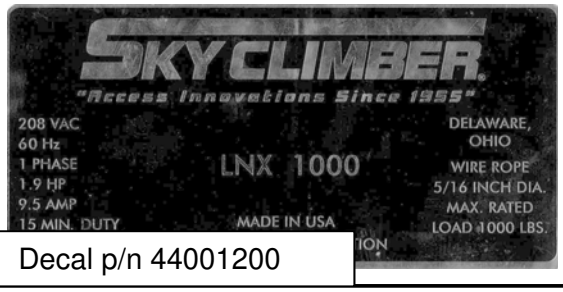
Safety Prevents Accidents

- Know and understand the operation of this equipment.
- All Federal, State, and local codes and regulations that apply to this equipment and its safe use **must** be followed.
- Do **not** alter any Sky Climber Hoists, Secondary Over Speed Brake or Accessories. Use ***only*** Sky Climber original parts in your Sky Climber equipment.
- Thoroughly inspect **all** equipment **before** use. Do **not** use any equipment that has any apparent difficulty.
- **Wear hard hats** at all times when servicing, erecting, disassembling, or using equipment.
- Secure suspended platform to building face/structure while at workstation. Disconnect platform from building face (other than platforms using continuous engagement) **before** it is moved.
- Provide protection for workers from falling objects both **above** and **below** the equipment.
- Keep all persons from **beneath** suspended equipment.
- **Never** work alone on a suspended platform, and ensure help is available in an emergency.
- Do **not** overload the equipment or exceed the maximum rated capacity as noted in this manual.
- Do **not** wear loose clothing while operating this equipment.

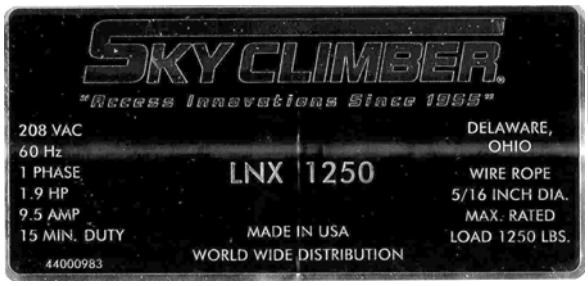
SAFETY IS IMPORTANT.
Use Common Sense … Do NOT Take Chances!

SAFETY DECALS & INSTRUCTIONS

Decal p/n 44001199 for LNX 750 not shown

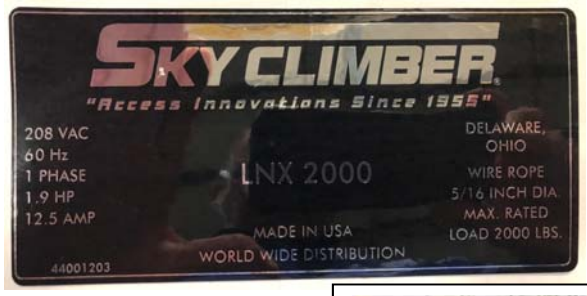


Decal p/n 44001200



Decal p/n 44001201

Decal p/n 44001202 for LNX 1500 not shown



Decal p/n 44001203

For 3 phase versions add -3PH to single phase p/n

Decal p/n 600-115

Decal p/n 44000985

SKY CLIMBER® HOIST OPERATING INSTRUCTIONS

USE ONLY 5/16" diameter WIRE ROPE approved by Sky Climber

TEST OVERSPEED BRAKE at the start of each work shift by inserting wire rope and quickly reversing rope direction. The brake should lock onto the rope before 4" is extracted. Replace the overspeed brake if it doesn't. Reset brake by pushing rope into hoist to relieve pressure on jaws.

TO REEVE, thread the prepared end of the rope into the hoist. Operate the directional switch in the UP direction. Hoist will self-reeve.

TO OPERATE hoist motor, move the UP-DOWN switch in the desired direction of travel.

USE SAFETY HARNESS with independent safety lines whenever going aloft.

INSPECT wire rope, rigging, hoist, platform and overspeed brake at the start of each work shift to ensure they are in proper working order.

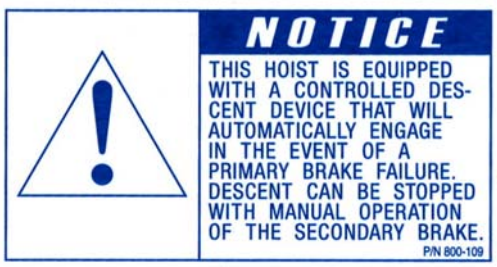
COMPLY fully with all federal, state, and local REGULATIONS that apply to this equipment.

IF POWER FAILS and you desire to descend, disconnect power at the cord and release hoist brake by pulling the Controlled Lowering Lever as far as it will go toward top of motor.

REFER to owners INSTRUCTION MANUAL for more details or if difficulty is encountered in operation.

P/N 44000985

Decal p/n 800-108



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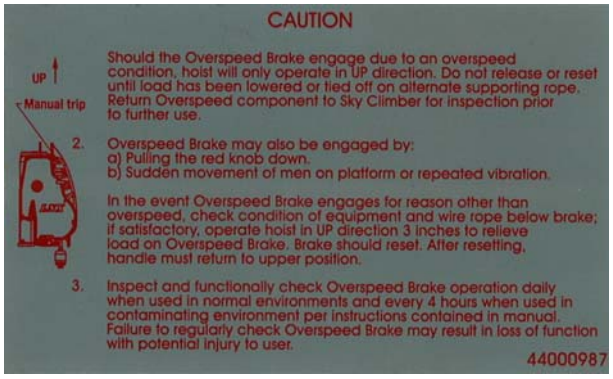

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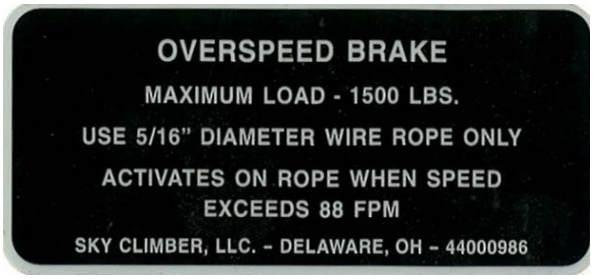

Decal p/n 12009182

INSPECTION FREQUENCY & MAINTENANCE

WARNING ***Failure to comply with Periodic Inspection and Factory Authorized Service Maintenance may result in a malfunction and/or in serious personal injury, property damage, or death.***

Field Inspection

Inspection **must** be performed by a designated qualified person or operator.

Inspection Frequency

Inspect **ALL** equipment as follows:

- When the system is reeved.
- At the start of each work shift.
- At least every 4 hours in abrasive, caustic, or adhesive conditions.
- At least every 2 hours in freezing conditions.

Factory Inspection, Maintenance, and Testing

Return Sky Climber Hoists and Secondary Over-Speed Brakes to a Factory Authorized Service Center for inspection, maintenance, and testing as follows:

- Every 12 months in non-contaminated and non-freezing environments.
- Every 6 months in contaminated or freezing environments.
- After every job for gunite, hydroblasting, or sandblasting.

WIRE ROPE INSPECTION

Field Inspection

Inspection **must** be performed by a competent person.

Inspection Frequency

Inspect **ALL** wire ropes at the start of each work shift and after any occurrence that could affect a wire rope's integrity. The entire length of the wire rope should be inspected.

Wire Rope Replacement (mandatory)

Wire ropes MUST be replaced if ANY of the following conditions exist.

- Any physical damage which impairs the function and/or strength of the wire rope.
- Kinks that might impair the tracking and/or wrapping of the wire rope around the drum or sheave of the hoist.
- Six randomly distributed wires broken in one rope lay, or three broken wires in one strand in one rope lay.
    - Although, OSHA regulations allow some broken wires, Sky Climber recommends that wire rope be replaced if a single broken strand is found.

- ❖ Loss of more than one-third of the original diameter of the outside wires due to abrasion, corrosion, scrubbing, flattening, or peening.
- ❖ Heat damage caused by a torch, or any damage caused by contact with electrical wires.
- ❖ Damage caused by improper grounding when welding from a suspended platform.
- ❖ Evidence that the secondary brake has been activated during an over speed condition and has engaged the suspension rope.

Examples of wire rope defects that require the rope to be replaced

Broken or damaged tips

Broken strands

Crushing

Kinking

"Milking"

Heat, Chemical or Electrical damage

Bird caging

CHECKLISTS

CHECK DAILY or before the start of each shift:

Cornice Hook
- ❖ Substantial structure for hook and tieback point
- ❖ Tieback at proper angle
- ❖ Check fist grip torque (5/16" – 30 ft. lbs.; 3/8" – 45 ft. lbs.)
- ❖ Bearing block in place
- ❖ Warning and rating labels in place and legible
- ❖ Capacity equal to or greater than hoist rated working load
- ❖ Spacing of hooks equal to hoist spacing

Parapet Clamp
- ❖ Substantial structure for clamp and tieback
- ❖ Wall surfaces parallel (vertical)
- ❖ Tieback at proper angle
- ❖ Check fist grip torque (5/16" – 30 ft. lbs.; 3/8" – 45 ft. lbs.)
- ❖ Warning and rating labels in place and legible
- ❖ Capacity equal to or greater than hoist rated working load
- ❖ Spacing of clamps equal to hoist spacing

Rolling Roof Rigs
- ❖ Tieback at proper angle to substantial structure
- ❖ Check fist grip torque (5/16" – 30 ft. lbs.; 3/8" – 45 ft. lbs.)
- ❖ Load on jacks – not casters
- ❖ All hardware in place and properly torque
- ❖ Warning and Rating labels in place and legible
- ❖ Counterweights – correct amount, properly attached
- ❖ Beam reach limit not exceeded for hoist rating
- ❖ Spacing of beams equal to hoist spacing

Tank Top
- ❖ Tieback to substantial structure
- ❖ Check fist grip torque (5/16" – 30 ft. lbs.; 3/8" – 45 ft. lbs.)
- ❖ Make sure roller is seated properly
- ❖ Warning and Rating labels in place and legible
- ❖ Make sure roller rating is equal to or greater than hoist capacity

Ring Girder Roller
- ❖ Tieback to substantial structure
- ❖ Check fist grip torque (5/16" – 30 ft. lbs.; 3/8" – 45 ft. lbs.)
- ❖ Make sure roller is seated properly
- ❖ Warning and Rating labels in place and legible
- ❖ Make sure roller rating is equal to or greater than hoist capacity

Rigging Slings
- ❖ Make sure sling is attached to a substantial structure (4:1 Safety Factor)
- ❖ Check fist grip torque (5/16" – 30 ft. lbs.; 3/8" – 45 ft. lbs.)
- ❖ Make sure rope is protected at chafing points
- ❖ Make sure rope is protected at break points

CHECKLISTS (Continued)

CHECK DAILY or before the start of each shift:

Permanent Davits – Daily Check

- ❖ Make sure davit has been inspected and tested prior to use
- ❖ Make sure davit is installed per manufacturer's instructions
- ❖ Make sure capacity is equal to or greater than hoist capacity
- ❖ Check fist grip torque (if used)

Counterweights – Daily Check

- ❖ Must be designed for use as counterweight
- ❖ Make sure they are securely attached to beam
- ❖ Make sure they are made from a non-flammable material
- ❖ Make sure they are labeled individually. Sky Climber counterweights are 50 lbs.

WARNING ***Do NOT use Sky Climber Hoists, Secondary Over-Speed Brakes, or any equipment that is damaged or worn beyond normal tolerances.***

Ascertain that:

- ✓ *Instructions are kept with the unit at all times. Additional copies are available – contact Sky Climber.*
- ✓ *All Warning and Rating labels are in place, legible, and have been read.*
- ✓ *Hoist Drain Holes on the bottom are open. Fasteners checked.*
- ✓ *Suspended Platform Hoist is connected to proper power source.*
- ✓ *Minimum of 3 J-Clamps are used and are tight. (4 J-Clamps are required for round thimbles).*
- ✓ *Cornice Hook, Parapet Clamps or Outriggers, and similar rigging are secured and tied back. Chokers or similar devices are securely in place. Tie backs are tight and straight back.*
- ✓ *Counterweights are non-flowable type, secure, and correct amount.*
- ✓ *Roof rigging load is spread using 3/4 inch plywood. Hardwood used for Load Spreader with Parapet.*
- ✓ *Wire rope inspected and is not kinked, bird-caged, or otherwise damaged.*
- ✓ *The wire rope bitter end is looped and secured with a J-Clamp.*
- ✓ *Secondary Over-Speed Brake, Hoist Load, Controlled Descent, and Emergency Stop tests performed and acceptable.*

SKY CLIMBER®
"Access Innovations Since 1955"