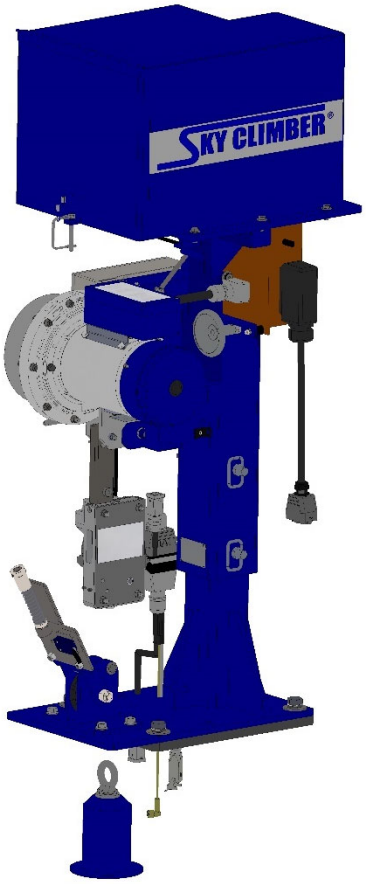
Tower Hoist Operation Manual



Base-mount and Crown-mount Tower Hoists

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SAFETY NOTICE

TO OWNERS AND DISTRIBUTORS

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 or death to themselves or others.

SAFETY IS THE RESPONSIBILITY OF BOTH OWNERS AND OPERATORS OF THIS EQUIPMENT.

OPERATOR'S INSTRUCTION MANUAL
Sky Climber Tower Hoist

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 Tower Hoist and Sky Lock™ Secondary Over-Speed Brake.

Sky Climber Hoists and Sky Lock™ Brakes are an integral part of a total Suspended Platform System made up of Rigging, Wire Rope, a Power Supply, the Platform or Work Cage, 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 Access Platform or Work Cage.

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

Sky Climber Hoists, Sky Locks™ 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 may be 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.

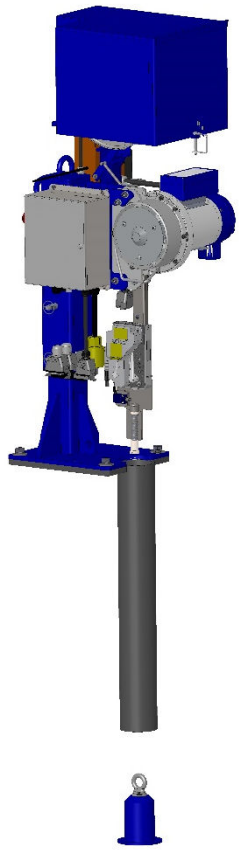
Sky Climber, LLC reserves the right to continually improve its products. Every effort has been made to make this manual as accurate as possible at the time of publication; however, there may be product changes that are not detailed in this manual.

TOWER HOIST FEATURES

The Tower Hoist is a man rated hoist specifically designed for drilling rigs. The operator/rider controls their own ascent and descent with a wireless remote control and is no longer forced to rely on hand signals or a relay person to control work cage movement.

Safety features of the tower hoist include patented Sky Lock™ technology for overspeed conditions, emergency descent function for lowering during power failure, and an upper limit switch to prevent rider from ascending into overhead structures. A small footprint allows the tower hoist to be used in close quarters on the crown or the base of a drilling rig. The Tower Hoist is portable and compact for easy mobility and installation and has a variety of features that makes it ideal for derrick applications.

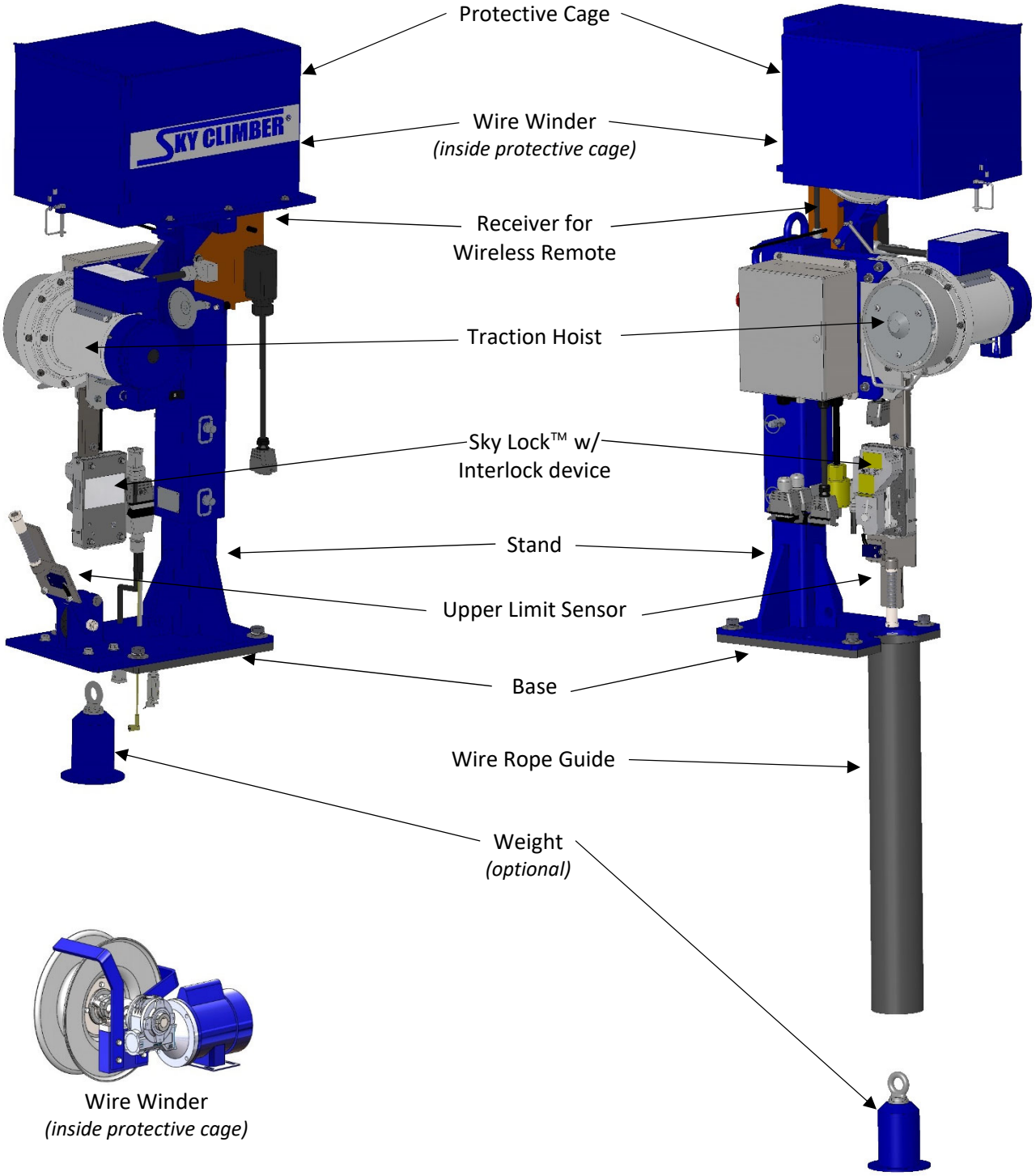
- Operator / Rider controls the hoist with wireless remote. Rider doesn't have to rely on hand signals or a relay person.
- Patented Sky Lock™ Technology for over speed condition
- Emergency Descent on hoist for lowering during power failure
- 35 fpm travelling speed is safe and OSHA compliant
- Upper limit switch prevents rider from ascending into structure
- Level wind of wire rope is hands free and prevents damage to valuable rotation resistant rope
- Remote is capable of receiving 1 of 16 discrete frequency channels
- Remote operates for 24-30 hours of continual use on one set of batteries
- Up to 300' wireless remote range
- End of rope detection sensor
- Easily installs on the crown or base of the drilling rig
- Weatherproof enclosures on all parts of hoist and electrical components
- Portable and compact for easy mobility
- Meets and exceeds all OSHA requirements and is UL® Approved



COMPONENTS

BASE MOUNT Tower Hoist
Product Number:
3590-750-110-B

CROWN MOUNT Tower Hoist
Product Number:
3590-750-110-C



Wire Winder
(inside protective cage)

SPECIFICATIONS

Crown Mount Tower Hoist	Base Mount Tower Hoist	Wireless Remote Control
Product # 3590-750-110-**C**	Product # 3590-750-110-**B**	Part # J3386-250
Hoist: Traction Motor Rated Capacity: 750 lbs	Hoist: Traction Motor Rated Capacity: 750 lbs	Three (3) AA alkaline batteries
Wire Rope: • 5/16" Rotation Resistant. • Reach: 250' standard or custom • Speed: 32.5 feet per minute	Wire Rope: • 5/16" Rotation Resistant • Reach: 250' standard or custom • Speed: 32.5 feet per minute	24-30 hours of continuous use
Power: Electric	Power: Electric	Low battery indicator
Voltage: 120V single phase (208V single PH & 220V three PH also available)	Voltage: 120V single phase (208V single PH & 220V three PH also available)	300' range
Weight: 600lbs	Weight: 600lbs	1 of 16 discrete frequency channels
Dimensions: • Height including stand: 60" • Width including cage: 21" • Depth including cage: 26"	Dimensions: • Height including stand: 60" • Width including cage: 21" • Depth including cage: 26"	Operates between -18 to 158 degrees F (-25 to 70 degrees C)
MIL-STD-810G Shock & Vibration Tested	MIL-STD-810G Shock & Vibration Tested	FCC, ISC, and CE Approved
UL Listed SA2861	UL Listed SA2861	Instantaneous controls
	Rated snatch block: 1.5 tons	Low maintenance
		License Free Wireless E-Stop

INSTALLATION

Before installing the Tower Hoist, the customer must make certain the crown of the derrick is on the ground and has adequate room to work on all sides. Inspect the crown to make sure it is supported on the derrick rack and is safe to work on and around.

INSTALLATION GUIDELINES

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

- Test your system before going aloft.
- Continue to check to be sure your system remains safe throughout the entire use on the job.
- Make certain there are no obstructions to vertical travel.
- Tower Hoist is wired at the factory according to standard electrical practices

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

Crown Mount Hoist Installation

The Sky Climber Tower Hoist uses a Weld-On method of installation. A minimum amount of tooling is required to install the Tower Hoist.

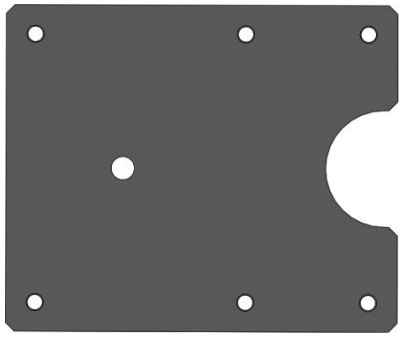
REQUIRED TOOLS FOR INSTALLATION:

- Welder (to weld base plate to derrick and guide tube to welded base)
- 1-1/8" wrench
- Forklift or Pole Truck
- Wheel Grinder (to clean surfaces as needed)
- Cutting Torch (to cut the floor plate for guide tube clearance)

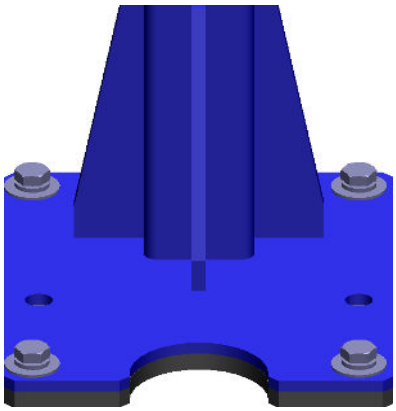
Crown-mount Tower Hoist installation

INSTALLATION STEPS

- Locate Tower Hoist position
- Mark location to weld Welded Base
- Weld base to derrick and rope guide to base
- Bolt the Tower Hoist to the base
- Hook up Tower Hoist to appropriate power
- Test Tower Hoist



Welded Base

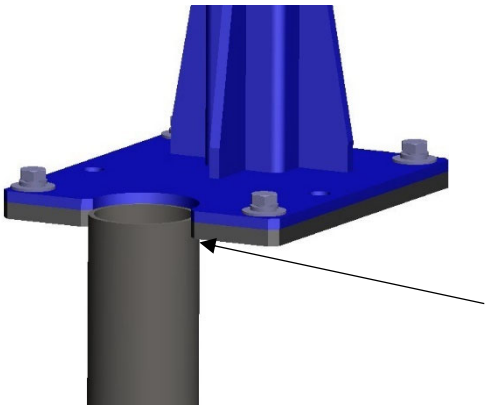


Tower Hoist frame shown bolted to welded Base

Connection to the base uses:

- 4x 3/4"-10 HHCS
- 4x 3/8 lock washer
- 4x 3/8 flat washer
- Torque to 128-132 ft-lbs

Be sure that the lock washer is installed and bolts are properly torqued.



Weld rope guide to welded base as shown for crown-mount applications.

Rope Guide

Important Note: the tower hoist is designed to run inside the derrick structure, not outside of the derrick.

Base Mount Hoist Installation

Base-mount Tower Hoist installation

Just like the Crown-Mount version, the provided base gets welded to the derrick structure and the Base-Mount Tower Hoist bolts to that. However, the Base Mount hoist is installed at the **bottom** of the derrick structure and the wire rope goes through a redirect sheave, then up to a pulley at the top of the derrick and down to the work cage.

REQUIRED TOOLS FOR INSTALLATION:

- Welder (to weld base plate to derrick)
- 1-1/8" wrench
- Forklift or Pole Truck
- Wheel Grinder (to clean surfaces as needed)

INSTALLATION STEPS

Please note: User is responsible for installing the pulley at the top of the derrick.

- Locate Tower Hoist position
- Mark location to weld Welded Base
- Weld base to derrick
- Bolt the Tower Hoist to the base
- Hook up Tower Hoist to appropriate power
- Reeve wire rope through hoist and redirect sheave, then up to the pulley.
- Test Tower Hoist

Sky Lock Overspeed Device

The Sky Lock™ is an overspeed safety brake designed to stop downward travel in the event of an overspeed condition. The Sky Lock™ 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 Sky Lock™ Jaws clamp onto the wire rope, stop further descent, and support the descending load. The wire rope releases ***only after*** the Sky Lock™ Brake load is relieved.

WARNING: A Sky Lock Secondary Over-Speed Brake safety device must be used at all times with each Sky Climber Hoist. Failure to do so is in violation of OSHA, and may result in serious injury or death.

SKY LOCK™ OPERATION:

Sky Lock™ Manual Trip Lever – Turn lever ***counterclockwise*** to clamp the Sky Lock™ Jaws onto the wire rope.

Sky Lock™ Reset Lever – First use Hoist Directional Switch UP to move Hoist in an upward direction approximately one inch to relieve the load from Sky Lock™ Jaws. Turn Sky Lock™ Reset Lever ***clockwise*** to reset. If you don't go up before resetting, the Sky Lock™ Jaws will not open, and the Sky Lock™ Reset Lever pin will shear. This will make the Sky Lock™ inoperable and require factory-authorized repair.

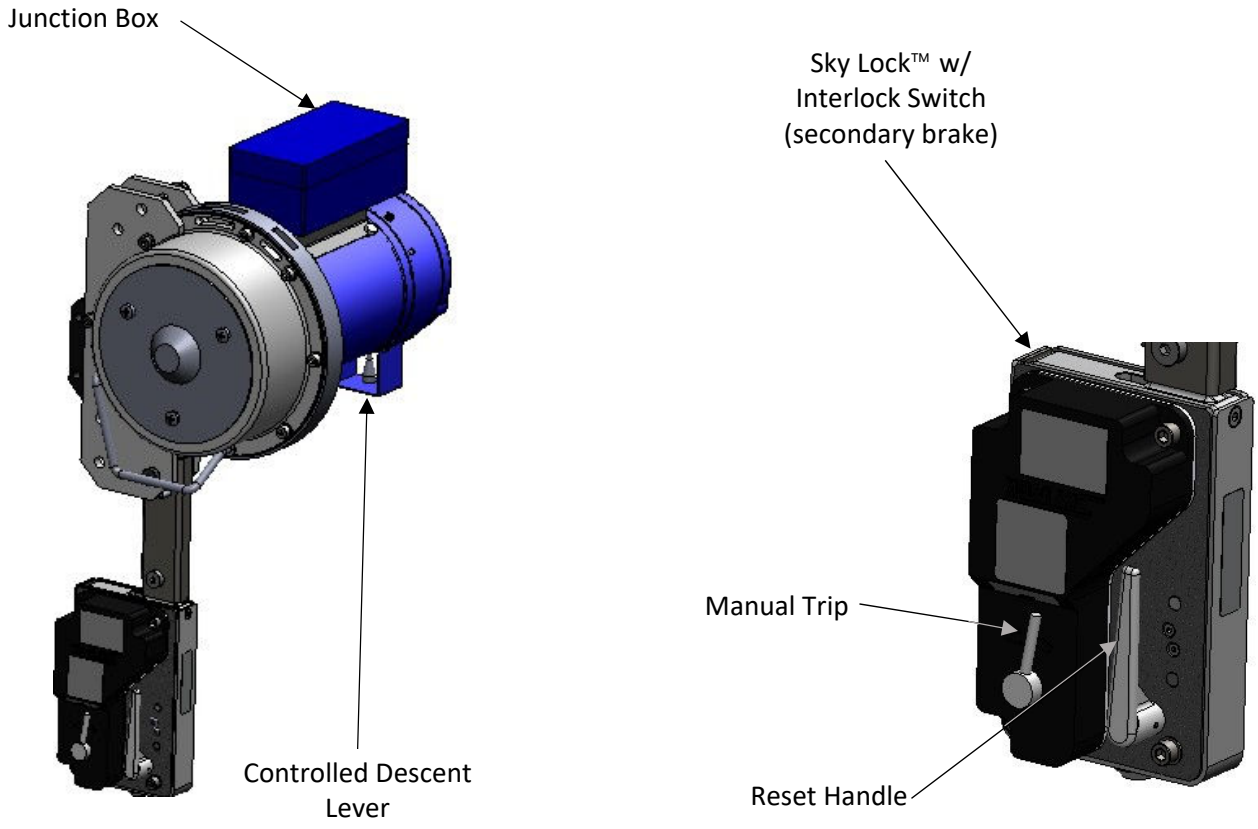
WIRE ROPE INSTALLATION into SKY LOCK

Insert the end of wire rope through Sky Lock™ to test.

- Pull wire rope down away from Sky Lock™ with quick motion.
- Sky Lock should lock onto rope within 3 inches or less.
- Slide rope back into Sky Lock™ by at least 1 inch.
- Turn Reset Handle clockwise to reset Sky Lock.
- Repeat procedure **twice**. Leave Sky Lock™ on line for hoist reeving.
- Sky Lock must lock onto rope within 3 inches or less. If it does not, Sky Lock **must** be replaced.

Assemble Sky Lock™ to Hoist with Coupling Link.
Coupling Link must provide clearance for straight passage of wire rope.

- Line up Coupling Link with hole in the top of Hoist.
- Attach with shoulder bolt. Tighten nut securely.
- Slide Sky Lock™ up one inch, then turn Sky Lock Reset Lever clockwise to open jaws, letting Sky Lock™ slide down wire rope.
- Line up hole in Sky Lock™ with the top of the Coupling Link.
- Attach shoulder bolt. Tighten nut securely.



TESTING

Test Preparation

- Mount Hoist on derrick.
- Connect Power
- Reeve wire rope through hoist.
- Keep hands clear of pinch point where wire rope enters hoist.
    - Feed brazed and pointed end of rope through Sky Lock™ and then into hoist entrance guide until rope stops.
    - To start self-reeving, move Directional Switch to UP direction.
    - Wire rope must be free to travel without interference.
    - Exit guide must be clear. Wire rope must run freely away from the hoist.
    - Feed excess wire rope onto wire winder. Make sure rope sits in front of Slack Rope Sensor arm (as shown on page 15)

Testing Hoist Functions

TEST HOIST LOAD

- Place load equal to weight of workers, tools and materials on the work cage. 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.
- Turn Manual Trip Lever counterclockwise to set the Sky Lock Brake.
- On the control panel select Hoist Directional Switch DOWN direction. System should not descend. Wire rope will loop out between the hoist and the Sky Lock.
    - This portion of the test may only be performed from the main control panel. The remote control will not work in this instance.
- Select Hoist Directional Switch in the UP direction to relieve the load from Sky Lock™ Jaws.
- Turn Sky Lock Reset Handle clockwise to reset Sky Lock™.
- Repeat procedure twice.
- If hoist or Sky Lock™ fails test, return failed unit to Factory Authorized Service Center.

TEST EMERGENCY STOP BUTTON

- Select Hoist Directional Switch in the UP direction. While operating, press the Emergency Stop Button.
- Power should stop to hoist 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.
- For non-powered descent, pull the Controlled Descent Lever as far as it will go toward the end of the motor.
- The hoist should lower at about 35 feet per minute.

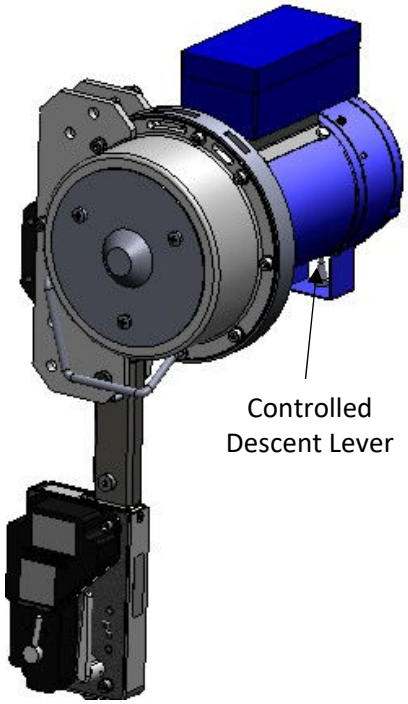
⚠ Do NOT use any equipment that has failed testing!

NOTICE – Select proper source voltage to match hoist voltage BEFORE connecting power.

Directional 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.

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. Press the E-stop and disconnect power at power connection before using the Controlled Descent Lever.



HOIST OPERATION

Electric Hoist Operation

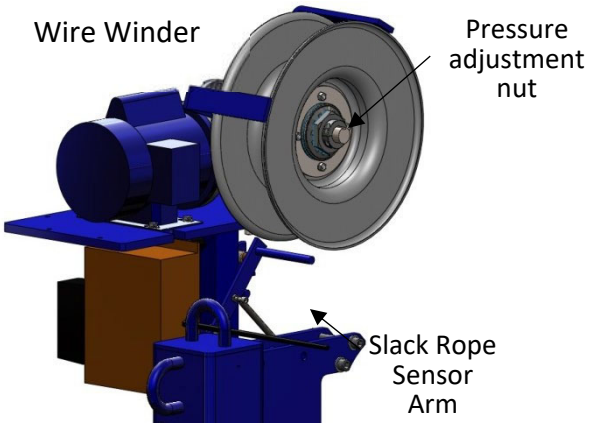
Do NOT use electric hoists in an explosive environment

- Connect Power or (turn on if hoist is hard-wired to power source)
- Reeve wire rope through hoist.
- Keep hands clear of pinch point where wire rope enters hoist.
    - Feed brazed and pointed end of rope through Sky Lock™ and then into hoist entrance guide until rope stops.
    - To start self-reeving, move Directional Switch to UP direction.
    - Wire rope must be free to travel without interference.
    - Exit guide must be clear. Wire rope must run freely away from the hoist.
    - Feed excess wire rope onto wire winder.

At end of work shift, disconnect power cord from the main outlet or de-energize system. Protect power supply cords from rain and water at all times. Ground connector of building receptacle must be grounded.

WIRE WINDER OPERATION

Wire Winder Coupling Adjustment

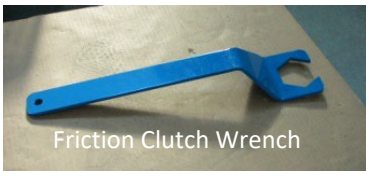


Each wire winder drum is fitted with a friction clutch. A Friction clutch wrench or "spanner" is provided with each unit.

The drums are driven as a result of the pressure applied by the clutch through the friction pad onto the drum.

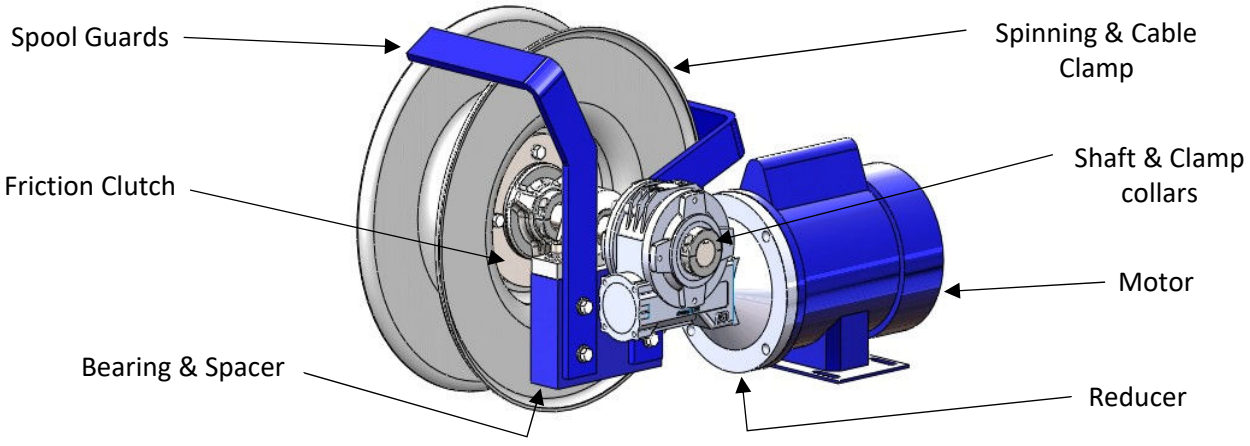
The pressure on the drum is adjusted by turning the large nut on the clutch. When the correct pressure (17 ft-lbs.) is applied the large nut should be locked in position by turning the tab washer over the side of the nut.

From time to time the pressure will have to be adjusted as the friction pad wears. To do so use the following procedures:



READJUSTING THE CLUTCH

1. Open Tab Washer
2. Release large nut with Friction Clutch Wrench ("spanner").
3. Tighten nut by hand (turn nut to make contact with tab washer)
4. Turn the nut 75 – 90 deg further with Friction Clutch Wrench ("spanner").
5. Check the adjustment by turning the drum by hand. For correct adjustment a pull of 17 ft-lbs. is required at the rim to turn the drum.
6. Close the tab washer.



NOTICE: The wire winder is a device for storing wire rope. This component does not perform any lifting function.

Upper Limit Sensor and Flag

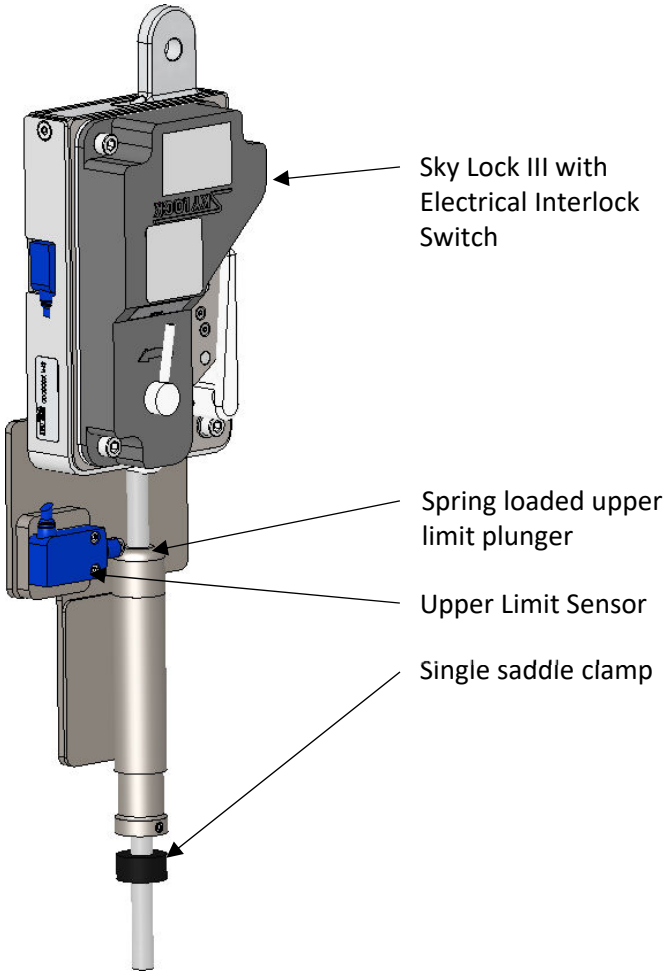
Upper Limit Sensor Operation

The Upper Limit Sensor is designed to prevent the rider from hitting the topside rigging as he or she ascends.

In order for this component to operate correctly, the single saddle clamp must be affixed to the wire rope in the correct position.

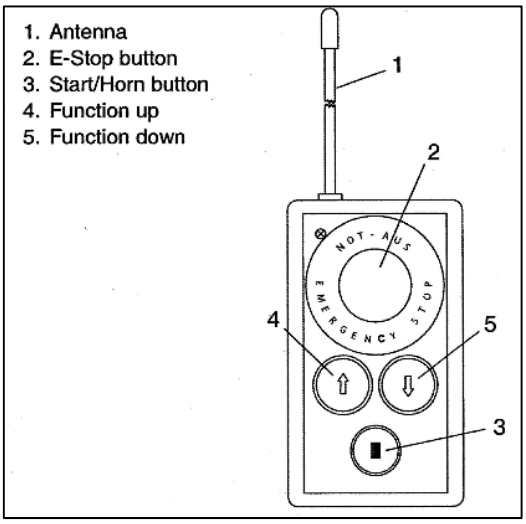
The saddle clamp must be inspected daily and at the beginning of each shift to verify that it cannot slip down the wire rope.

Interlock Switch is designed to prevent the wire rope from becoming slack in an overspeed condition.



WIRELESS REMOTE CONTROL

Operating Instructions



START-UP PROCEDURE

1. Insert Battery into the transmitter.
2. Be sure no motion push buttons are depressed.
3. Press the Start/Horn (green) button. The transmitter completes its self-checks and is activated. The transmitter is now transmitting and ready for use.
    a. Important: If any function of the remote activates with the E-STOP engaged, the radio remote must not be used until repaired.
    b. To avoid accidental start-up, always switch the transmitter "OFF" by pressing the E-stop button and remove the battery when not in use. When the transmitter is not attached to the operator, the battery should be stored in a secure place.

WARNING: FAILURE TO FOLLOW INSTRUCTIONS could result in personal injury and/or damage to equipment. Test the "EMERGENCY STOP" function as described in the machine manufacturer's operator manual before beginning any operation.

WARNING: FAILURE TO FOLLOW INSTRUCTIONS could result in personal injury and/or damage to equipment. Read and understand the safety instructions in all manuals provided.

E-STOP

1. In an emergency situation, push the E-Stop button. To restart, press the Start/Horn button.

LOW BATTERY

1. When the Power LED flashes red for about thirty seconds the transmitter shuts itself off and disables the receiver to block all machine commands. Shut down the machine according to the manufacturer's instructions. Insert fully charged batteries into the transmitter.

MOTION BUTTONS

1. The transmitter controls the up/down motion. Only one push button in each horizontal row should be activated at a time.
2. Hold down the Start/Horn (green) button #3 for a minimum of 1 second before operating the up/down keys #4 & #5.

SYSTEM SHUTDOWN

1. To shut down the remote, press the E-Stop button and remove the battery.

WIRE ROPE

Steel Wire Rope Requirements

RECOMMENDED WIRE ROPE

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

5/16" (8.0 mm) 7 x 19 WS, PFC, XIP, RRL, preformed, rotation resistant wire rope with a break strength of at least 8,600 lbs.

Definitions:

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

COMPLIANCE

Use only the specified wire rope with the correct diameter and specification in a Sky Climber 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. This rope is resistant to abrasion and crushing with medium fatigue resistance. 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).

Preparation and Initial Inspection

TIPPING AND BRAISING

Braze a wire rope tip by applying braze to approximately 1/2 inch of tip (do not exceed 3/4 inch) and let it flow to all of the individual wires. Let the rope AIR COOL. Then grind the tip to a taper. Tip should resemble a pencil with the lead broken off.

- Always use 5/16 inch wire rope of the proper length and construction.
- 5/16 inch, 19x7 RR XIP IWRC Rotation Resistant
- Braze both ends a maximum of ½ inch in length.
- Air cool, then grind the tip to a tapered point.

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. The wire rope must be inspected at the start of each shift by a competent person.

Rigging and Handling

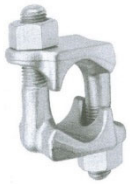
RIGGING

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 work cage.
- 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 8,600 pounds).
- Rig from the top of structure. Allow an extra 10 feet of wire rope to reeve hoist.
- Wire rope must be rigged to remain vertical with suspension points.
- CAUTION: If the wire rope length is less than required to LAND the work cage 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.

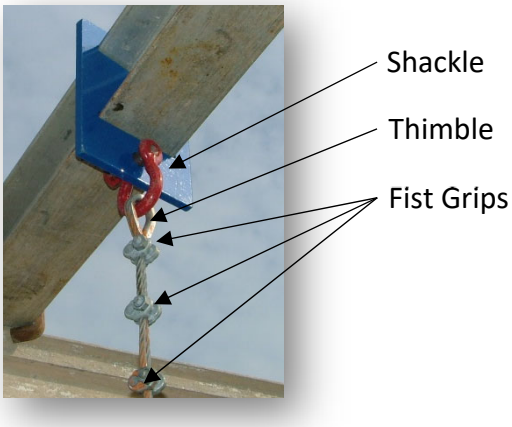
NOTICE: Always use proper hardware

Shackle



Fist Grips
(or J-clamps)

Thimble



⚠ 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

HANDLING AND STORAGE

- Always wear gloves to protect your hands when working with wire rope.
- 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.

Wire Rope Inspections

FIELD INSPECTIONS

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

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 or death, property damage, and/or equipment breakdown.

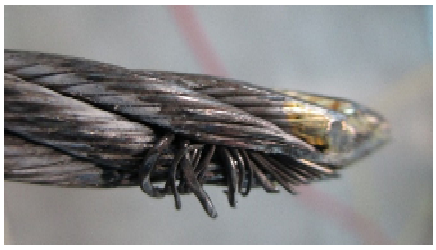
Wire ropes MUST be replaced if ANY of the following conditions exist.

- 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.

DEFECTS

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

Broken or damaged tips



Broken strands

Crushing

Kinking

"Milking"

Heat, Chemical or Electrical damage

Heat, Chemical or Electrical damage

Bird caging

PERSONAL FALL ARREST SYSTEMS (PFAS)

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 in the work cage.

PFAS (Personal Fall Arrest System)

- The Sky Climber Tower Hoist must be used in conjunction with a complete OSHA compliant Fall Arrest System.
- The harness and lanyard must be properly connected with appropriate hardware.

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

- Position a body harness D-ring in the center of the back rib cage.
- Harnesses must comply with the latest edition of ANSI Z359.
- Follow the safety equipment manufacturer's instructions.

Lanyards

- Lanyards must meet or exceed OSHA standards.
- Lanyards must be 6 feet long (or less) with double snap locks.
- Minimum tensile strength is 5,000 lbs.

TROUBLESHOOTING

Mechanical portions of Sky Climber Hoists and Sky Lock™ should **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.

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTIONS
The hoist or wire rope slipped and secondary overspeed brake is tripped	Overspeed condition due to freefall	**Exit work cage or platform immediately!**
Hoist won't come down and secondary overspeed brake is tripped	No freefall involved: Nuisance Tripping	Run system up 3-4 inches to reset Sky Lock overspeed device
Hoist won't move up or down from remote	Rope came off of Spinning	Confirm rope is still attached to spinning
Electric motor runs slow or hums and will not lift	Low source voltage (look for rapidly flashing green light if unit equipped with low voltage detect)	Use booster transformer or separate drop cords
	On long drops, too much voltage is lost in electric cord.	Use booster transformer or separate electric cord to each unit
	Badly "pitted" points	Return to Factory Authorized Service Center
	Brake not releasing	Return to Factory Authorized Service Center
	Defective contactor Capacitor	Return to Factory Authorized Service Center
Motor overheats	Incorrect Voltage	Motor uses 120V power supply. Motors overheat at less than 108V or greater than 132V
Tripping Circuit Breaker	Breaker undersized	Connect to proper size breaker
	Short in electric cord	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)	After a one-hour cooling period, restart
	Emergency Stop Switch engaged	Disengage
Hoist drifts when stopping is in DOWN direction	Primary brake worn	Return to Factory Authorized Service Center
Hoist will not lift in upward direction	Upper limit is engaged	Disengage upper limit
Winder Motor is running hot	Incorrect voltage	Need to correct voltage. Motor is not thermally protected, overheating could damage the motor.
Winder Motor not running	Not plugged in	Make sure plug is properly connected.

MAINTENANCE

Lubrication and Drainage

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

Flushing

Keep Hoist and Sky Lock free of contaminants. Perform the following steps when using equipment in a contaminated environment using gunite, hydro blasting, or sand-blasting:

- Lower equipment to ground. De-reeve the hoist.
- 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 Sky Lock™. 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 its 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, Sky Locks™ or Accessories. Use only Sky Climber original parts in your Sky Climber equipment.
- Thoroughly inspect all equipment before use. If you have questions or concerns about the performance of this equipment, do not use.
- Wear hard hats at all times when servicing, erecting, disassembling, or using this equipment.
- Secure suspended work cage to structure while at workstation. Disconnect work cage from structure 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, 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.

Inspection Frequency And Maintenance

FIELD INSPECTION

Inspection must be performed by a designated competent person or operator.

INSPECTION FREQUENCY

Inspect ALL equipment as follows:

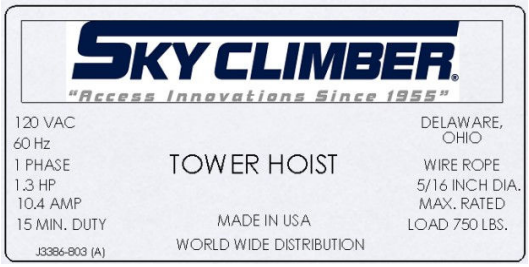
- When the system is reeved.
- At the start of each work shift.
- At least every 4 hours in abrasive, caustic, or adhesive conditions.
- At least every 2 hours in freezing conditions.

PRIOR TO USE

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 have been checked.
- Hoist is connected to proper power source.
- Minimum of three (3) J-Clamps / fist grips are used and are tight. (Four J-Clamps are required for round thimbles).
- Hoist is properly mounted to derrick.
- Wire rope inspected and is not kinked, bird-caged, or otherwise damaged.
- Sky Lock™, Hoist Load, Controlled Descent, and Emergency Stop tests performed and acceptable.

LABELS



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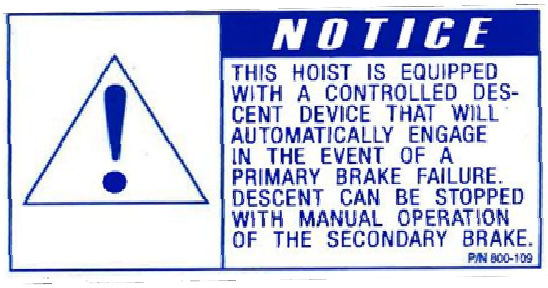

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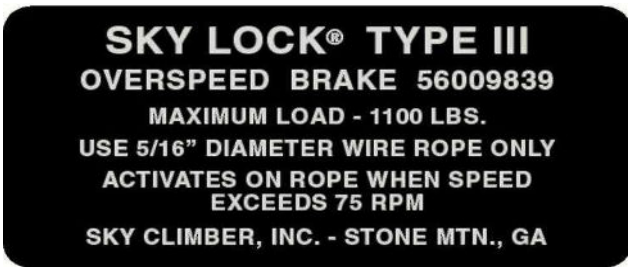

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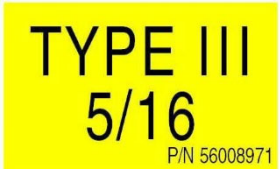
DECAL Part No. **305-388**

DECAL Part No. **12009202**

DECAL Part No. **600-8**



DECAL Part No. **56008971**

DECAL Part No. **305-394**