

# **OPERATOR'S INSTRUCTIONS**UPPRO P2514, P2314 HOIST



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- ▶ All persons operating this equipment must read and completely understand this manual.
- ▶ All persons must be thoroughly trained in the use of this equipment, its operational and safety features, and they must also be capable of carrying out the daily inspections.
- ▶ Only authorized persons shall operate this equipment.
- ► Any operation in violation of these instructions is at the **operator's own risk** and **may result in serious injuries**.
- ► Keep this manual with the hoist at all times.
- ▶ Use only spare parts and recommended steel wire rope from Spider®.
- ▶ It is the responsibility of the user to determine whether this hoist is suitable to be used in conjunction with any other equipment. The user must also determine that this hoist and other components used will be in strict conformity with governing regulations.



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#### 1. ABOUT THIS MANUAL

Before using the Spider<sup>®</sup> UpPro P2514 or P2314 Hoist, learn the procedures described in this manual. Any operation in violation of these instructions may result in bodily injury or death.

This manual is included with each Spider® UpPro P2514 or P2314 Hoist. Additional copies are available from your hoist supplier. Keep a current copy of this manual with the hoist at all times. It is the duty of the employer to provide each operator with a copy of this manual. Spider® reserves the right to make changes or modifications to its hoists. Users of this equipment must request current operating information prior to using this equipment. Call your local hoist supplier for additional information.

The design and manufacturing of the Spider® UpPro P2514 or P2314 complies with UL1323 standards. The use of these Spider® hoists within the United States is governed by OSHA CFR 29. Consult OSHA CFR-1926 for temporary applications and OSHA CFR 29-1910 for permanent applications.

#### SYMBOLS USED IN THIS MANUAL

This manual includes symbols that denote information that is important for hazard avoidance. Read carefully and follow all instructions when you see these symbols.

Symbol	Term	Meaning
STOP	STOP	Stop action and follow instructions before continuing.
!	WARNING	Warns against possible immediate death or serious injury.
!	CAUTION	Warns against possible injury.
4	ELECTRICAL HAZARD	Warns against possible electrical shock hazard.
	READ	Must read this before performing any action that follows.
i	NOTE/TIP	Remember and take what follows into account.

The following symbols found on some pages of this manual are used to categorize important tasks related to operation and maintenance of this hoist:





#### A) TERMS AND ABBREVIATIONS

**Systems** refer to facilities into which the components described in these operating instructions are installed, e.g. service cabins, suspended access equipment, material handling equipment, etc.

The **system operator** is the person/company responsible for correct operation.

The system operator is to appoint a **supervisor** who is responsible for the correct operation of the system on site. The supervisor is also authorized to issue instructions.

The **operator** is an individual appointed by the system operator who has received instructions concerning the tasks entrusted to him and the potential hazards of incorrect operation. The operator's knowledge and practical experience puts him in a position to perform operations safely using the requisite information. If the work is performed using SAE (see below), this person must be appropriately trained in working at heights.

SAE - Suspended Access Equipment

**Users** are operators and manufacturers

**Competent Person** - One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

A **Qualified Person** is **defined** by **OSHA** as one who, "by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated his ability to solve or resolve problems relating to the subject matter, the work, or the project."

PAE (Personnel Access Equipment) is part of an SAE system that lifts persons and loads.

Temporary Suspended Access Equipment (**TSAE**) is SAE mounted onto a building or structure for a temporary period.

A **VFD** is a Variable Frequency Drive.

PPE - Personal Protective Equipment



#### 2. SAFETY



#### A) SAFETY INSTRUCTIONS

#### **WARNING**

NEVER operate equipment that you do not understand. You may cause accidents, which may result in the injury or death of yourself or people around you. Know how to use this equipment and prevent accidents.

This operator's manual is not all-inclusive. It is impossible to anticipate every possible way this equipment may be used or all possible hazardous situations. It is very important that you determine for yourself whether it is safe to use the equipment. You must understand the operating characteristics of this hoist and how it operates in your application. You must be certain not to put yourself or others in danger, or cause damage to property or other persons. Call your hoist supplier if you have any questions concerning this equipment.

- 1. Read and understand this manual **BEFORE** using this equipment.
- 2. Setup and use must comply with Spider® instructions and local codes.
- 3. Use the "Troubleshooting" guide referenced in Section 12 of this manual to solve problems that may develop while using the hoist. Repairs must be made only by people trained and authorized to do so. **NEVER** service or repair the equipment while the unit is suspended (above ground level).

#### **Operating the Hoist**

- 4. The Spider® UpPro P2514 or P2314 Hoist is NOT suitable for the following applications:
  - Operation in extreme weather conditions, corrosive surroundings, explosive environments, or in the immediate vicinity of strong magnetic fields;
  - Moving dangerous loads, such as molten metal, acids/bases, or radioactive substances:
  - On work platforms suspended from cranes;
  - Silo entry equipment;
  - Suspended access equipment designed for underground installation;
  - Suspended access used in confined places without taking necessary precautions.
- 5. The Spider® UpPro P2514 or P2314 Hoist may only be operated when the ambient temperature is between -13° F (-25° C) and 158° F (70° C).
- 6. Take extra care when operating the hoist in high winds. Consider stopping work or adding stabilization at wind speeds of 25 mph (40 kph) or more when working on a 2-line suspended platform. When working on a single-line platform, stabilization should be used in winds above 20 mph (30 kph). Avoid carrying large panels of material that can act like a sail in high winds.



- 7. If you hear any strange noises, or if the hoist does not appear to work normally, stop using it immediately. Do not continue to use the equipment until it is repaired.
- 8. Do not remove any parts from the hoist without replacing them. Do not change or substitute any approved hoist parts for parts that do not meet manufacturer's specifications. Do not modify this hoist without prior approval from Spider<sup>®</sup>. Modifications can put you in danger if not done correctly. Making modifications can also void any manufacturer's warranty and make you liable for any damage.
- 9. All service related work must be performed by Spider®, or a workshop authorized by Spider®.
- 10. Maintain clearances and make sure no obstructions can interfere with vertical travel.

#### **Suspended Scaffolds**

- 11. WARNING! Do not use suspended scaffolds unless:
  - a. You are wearing a personal fall arrest system that meets or exceeds your application requirements.
  - b. You have personally made sure that:
    - i. the scaffolding support system or rigging is complete, properly assembled, counterweighted (or otherwise anchored), tied off, and not overloaded; and,
    - ii. hoists and platforms are not overloaded.
  - c. The wire rope is free of defects and is the size and type specified for the hoist;
  - d. Guardrails and toe boards are properly installed;
  - e. The main suspension wire rope is vertical.
- 12. Use approved PPE personnel harnesses, lanyards, rope grabs, and independent lifelines at all times. Attach the lifelines to a structural member of the building or structure, never to part of the rigging unless specifically designed for this purpose.
- 13. Comply with all local, providential, and federal safety codes and equipment instructions.
- 14. Do not allow anyone under suspended equipment. If necessary, provide protection below the suspended equipment to prevent injury to people from falling objects. Use lanyards to secure tools and materials so they do not fall on personnel below.
- 15. Lock all electrical connections and support with strain relief devices.
- 16. Make sure that the electrical cord and wire rope are long enough to allow full travel of the work platform.

#### Wire Rope

- 17. Use only wire ropes approved by Spider<sup>®</sup>. Use only wire ropes that are in an undamaged, tangle-free condition.
- 18. Inspect the wire rope before rigging. Handle and inspect wire rope carefully during and after each job. Use protective gloves when handling wire rope. Do NOT lubricate the wire rope.



19. Do not use visibly worn, kinked, bird-caged, undersized, or damaged wire rope. Protect wire rope from sharp or abrasive edges of the building. Do not use wire rope that has been exposed to fire, excessive wear, corrosive atmosphere, chemicals, passage of electric current, or temperatures above 203° F (95° C). For additional wire rope cautions, refer to the wire rope section in Section 3.

#### **Welding/Electrical Cautions**

- 20. When welding from a suspended scaffold, provide proper electrical grounding for the hoist and ensure the platform is grounded to the structure.
- 21. Insulate wire rope 4 feet (1.25 m) above and below the platform. Insulate the wire rope at the suspension point and ensure that the wire rope cannot come in contact with the structure at any point along its length, including the tail line. Welding protection kits are available from Spider<sup>®</sup>.
- 22. Cover the hoist with an insulating material.
- 23. Avoid power lines. Make sure the platform or hand tools cannot swing or be blown within a minimum of 10 feet (3 m) of an electrical power line. Check your local codes for minimum distances. Never, under any circumstances, rig a platform above electrical power lines.

#### **Corrosive/Explosive Environments**

- 24. Never operate an electric hoist in an explosive atmosphere or around explosive organic vapors or dust.
- 25. Never use hoists and aluminum platforms around caustic materials, acids, or acid fumes. Use hoist covers when corrosive materials are present. Hoist covers are available from Spider<sup>®</sup>.

#### B) HAZARD WARNINGS

The following is a list of potential hazards that may be encountered when working on a suspended scaffold. This list is not complete! It is provided to increase safety awareness on the job site.

#### **Mechanical Hazards**

- ► Crushing between the platform and the building or structure.
- ► Cutting or severing of body parts between moving machine parts.
- ▶ Loss of rigging stability because of one or more of the following:
  - Insufficient counterweight or counterweights not properly secured;
  - Inadequate mechanical strength;
  - Platform becomes overloaded when it encounters an obstacle while being raised and the suspension wire rope breaks;



- Platform catches on overhang and tilts while being raised.
- Falling:
  - from the platform;
  - ◆ as a result of using a wire rope that is too short;
  - ◆ if the platform is not strong enough for the weight and breaks;
  - if wire rope or platform interconnections fail;
  - rigging failure.
- ► Hoist idling due to loss of traction.
- Damaged wire rope becoming jammed in the hoist.

#### WARNING

If the platform is suspended in the air and the hoist motor runs but the wire rope does not move through the hoist, **push the Emergency Stop Button immediately!** Damaged wire rope may be jammed inside the hoist. Any attempt to move the platform up or down could damage equipment or cause injury or death.

#### **Electrical Hazards**

- ► Failure of the electrical supply may delay travel of the platform.
- ► Control system failure can cause unwanted/unexpected movement of the platform.
- ▶ Improper power supply (voltage or frequency) may damage the hoist.

#### **Environmental Hazards**

- ▶ Prepare for the effects of climate: heat/cold/ice/wind.
- Sandblasting and acid wash procedures may introduce special concerns. These procedures may adversely affect the immediate health of an operator and may pose serious risks to the hoist and other equipment being used.

#### C) HAZARD PREVENTION

- ▶ All electrical connections must be locked and supported by strain relief devices.
- ► Make sure the electrical cord and wire rope are long enough to allow full travel of the suspended equipment.

#### D) WIRE ROPE WARNINGS

- ▶ Use protective gloves to handle the steel wire ropes.
- ▶ Use only Spider® approved steel wire rope.
- ▶ Refer to the next section for more detailed instructions on wire rope care and use.

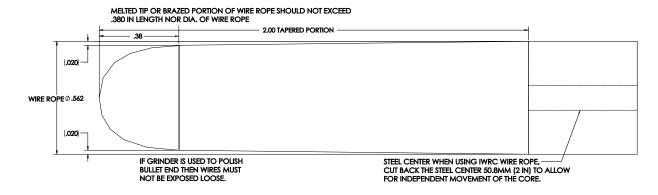


#### 3. WIRE ROPE

#### A) WIRE ROPE TERMINATIONS

#### 9/16" Wire Rope Termination

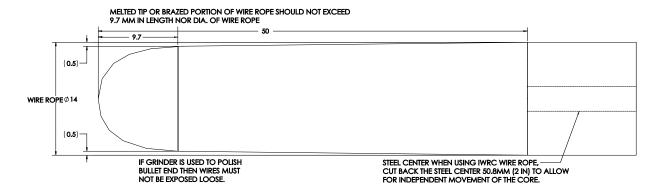
1. To prepare the end of IWRC wire rope for insertion, cut back the steel center at least 2" (51 mm) to allow for independent movement of the core. Braze and rough shape the end of the wire rope to form a smooth, bullet shape no more than .38" (9.7 mm) long. Do NOT cool the end of the hot wire rope in water or oil as this makes the end brittle and may cause it to break off. Oil the bullet after it cools to prevent rusting. Refer to "Wire Rope Inspection" on Page 13 for replacement criteria.



9/16" Bullet Dimensions

#### 14 mm Wire Rope Termination

2. To prepare the end of IWRC wire rope for insertion, cut back the steel center at least 2" (51 mm) to allow for independent movement of the core. Braze and rough shape the end of the wire rope to form a smooth, bullet shape no more than 9.7 mm long. Do NOT cool the end of the hot wire rope in water or oil as this makes the end brittle and may cause it to break off. Oil the bullet after it cools to prevent rusting. Refer to "Wire Rope Inspection" on Page 13 for replacement criteria.

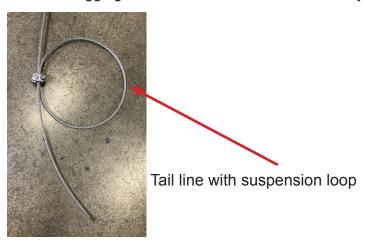


14.4 mm Bullet Dimensions

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- 3. Use a heavy-duty thimble for the primary suspension wire rope and follow the manufacturer's requirements for termination of the wire rope hardware that you are using.
- 4. In situations where it is not possible to lower the platform to the ground, secure the tail line with a suspension loop, as shown below, to prevent the platform from sliding off the suspension ropes. Before rigging in such a situation, consult a safety professional.



#### B) WIRE ROPE CAUTIONS

- Wire rope stretches when loaded, which reduces the diameter. Wire rope begins to wear the moment it is used. Regularly inspect wire rope to be sure it is in good condition. Wire rope must be removed from service when diameter loss of wire breakage occurs, as detailed in ANSI A10.4.
- 2. Do NOT expose the wire rope to fire, temperatures above 200° f (94° C), or passage of electrical current. Such exposure will damage the wire rope and make it unsafe.
- 3. Acids will corrode and reduce the strength of both inner and outer stands. If wire rope has been exposed to corrosive chemicals, it MUST be discarded upon completion of the project, or sooner if any damage is evident. Do NOT save wire rope that has been in contact with corrosive substances. When in doubt, replace the wire rope.

#### C) WIRE ROPE INSPECTION

The need for replacement of suspension wire ropes shall be determined by regular inspection and shall be based on the condition of the wire rope inspected. Wire rope in active service should be visually inspected once every working day. A thorough inspection shall be made once a month, or before each use if the suspension wire ropes have been inactive for 30 days or longer and are subsequently placed into service. Dated and signed monthly reports indicating the condition of the ropes found during inspections must be kept.

Any of the following conditions, or combination of conditions, shall be considered sufficient reason for the removal of the suspension wire rope from service:



- ▶ Wire rope with one or more of the following defects shall be replaced immediately:
  - Whenever there is severe corrosion. Any development of slight corrosion shall be noted and watched closely.
  - Whenever there are broken wires, such as:
    - ◆ When there is more than one valley break. A valley break is a wire break occurring in the valley between two adjacent strands.
    - ◆ When there are six (6) randomly distributed broken wires in one rope lay or three (3) broken wires in one strand in one rope lay. (A rope lay is the length along the rope in which one strand makes a complete revolution around the rope.)
  - Whenever there are broken wires in the vicinity of attachments. If this condition is localized in an operating rope, the section in question may be eliminated by making a new attachment. This may be done instead of replacing the entire rope.
  - Whenever there is abrasion, scrubbing, flattening, or peening that causes loss of more than one third of the original diameter of the outside wires.
  - Whenever there are severe kinks, crushing, bird caging, or other damage resulting in distortion of the rope structure.
  - Whenever there is evidence of any heat damage resulting from a torch or caused by contact with electrical wires.
  - For the specified DWH 14 mm wire rope, whenever the reduction from the nominal diameter of the wire rope is more than 0.02" (0.5 mm). For the specified 9/16" wire rope, whenever the reduction from the nominal diameter of the wire rope is more than .047 in (1.2 mm).
- ► Always inspect the wire rope termination and refer to the manufacturer's inspection procedures.
- ► Steel wires ropes must be replaced under any of the following conditions:
  - 6 broken wires randomly distributed in one rope lay;
  - 3 broken wires in one strand in one lay length;
  - Damage due to heat or corrosion;
  - Reduction of the nominal diameter by more than 10%;
  - Kinking, crushing, bird caging, or any other distortion of the wire rope structure.







ng Crushing

Bird Caging



#### 4. THE SPIDER® UPPRO P2514 OR P2314 HOIST



The Spider® UpPro P2514 or P2314 Hoist is used to raise, support, and lower suspended scaffolds, building maintenance units, and work cages on, or in, buildings and structures. If the hoist is used for any other purpose, you must take all necessary precautions to ensure that both the design and operation of the setup in which the hoist will be used will be hazard free, and that such use conforms to the specifications of the equipment manufacturers.

#### A) FEATURES OF THE SPIDER® UPPRO P2514 OR P2314 HOIST

Feature	Function	Benefit
Operating range 460V 60 Hz unit, +10%/-15%, range of 414V - 506V	<ul> <li>Proven reliable performance from 414V to 506V run volts</li> <li>Tested in 75 min. continuous run tests</li> </ul>	<ul> <li>Reduces service calls</li> <li>Extends electric component life</li> <li>Eliminates power-induced down time</li> <li>Allows longer Power Cord drops.</li> </ul>
Spring and Dual Roller Traction	Applies constant force to the wire rope	Allows 5500 Lbs /2500 kg capacity.
Controlled Descent	Levers operate brake manually for controlled descent during power failure	Allows self-rescue of workers and platforms
Remote Operation	<ul> <li>Pendant control two-stage with emergency stop button</li> <li>Pendant Control two-stage with emergency stop &amp; run button</li> </ul>	<ul> <li>Allows greater visibility of surroundings during operation</li> <li>Full power cutoff emergency stop</li> </ul>
Low Voltage Indicator	Indicates whether the hoist is receiving adequate power	<ul> <li>Alerts workers to poor site conditions.</li> <li>With VFD, hoist will still function at reduced voltage</li> </ul>
Hour Meter	Indicates hours of hoist operation	Helps determine hoist service intervals
Variable Speeds (GHS Model)	<ul> <li>5000 lb load: 15, 30, 40, 60 ft/min (2300 kg load: 5, 9, 12, and 18 m/min)</li> <li>5500 lb load: 15, 30, 40 ft/min (2500 kg load: 5, 9, and 12 m/min)</li> </ul>	<ul> <li>Facilitates load positioning</li> <li>Allows faster movement of platform increasing site productivity</li> <li>Speed Adjustability can allow optimization, matching to the needs of the jobsite</li> </ul>

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Variable Speeds	• 5000 lb load: 15, 35 ft/min	Facilitates load positioning
(Standard Model)	(2300 kg load: 5, 11 m/min)	Speed optimization

#### FEATURES OF THE SPIDER® UPPRO P2514 OR P2314 HOIST, CONTINUED

Feature	Function	Benefit
Built-in Overload with Sounder	<ul> <li>Alerts operators to loads greater than the rated working load or an obstruction above</li> <li>Deactivates UP button so that only downward operation is possible</li> <li>Alerts operator to loads greater than the rated working load or</li> </ul>	<ul> <li>Reduces damage to equipment from excess loads</li> <li>Sounder encourages immediate attention to overload situation</li> </ul>
	than the rated working load or an obstruction above	

## B) OPTIONAL FEATURE OF THE SPIDER® UPPRO P2514 OR P2314 HOIST

Feature	Function	Benefit
Optional Cart or Box	Ergonomic transport of hoist to work location	Makes installation easier and safer

# C) Specifications of the Spider® UpPro P2514 or P2314 Hoist

HOIST	UpPro P2514 Hoist UpPro P2314 Hoist	
Lifting Speeds	5000 lb load: 15, 30, 40, 60 ft/ min (2300 kg load: 5, 9, 12, & 18 m/min) 5500 lb load: 15, 30, 40 ft/min (2500 kg load: 5, 9, & 12 m/min)	5000 lb load: 15, 35 ft/min ( <i>2300 kg load:</i> 5, 11 m/min)
Maximum Working Load Limit (WLL)	5,500 lb / 2,500 kg (For use in the US) 5,000 lb / 2300 kg (For use in Canada)	
Power Supply 460V + 10%/-15%; 50 Hz; 3 Phase (414V - 50		lz; 3 Phase (414V - 506V)
Amperage at Working Load Limit	16 Amps	

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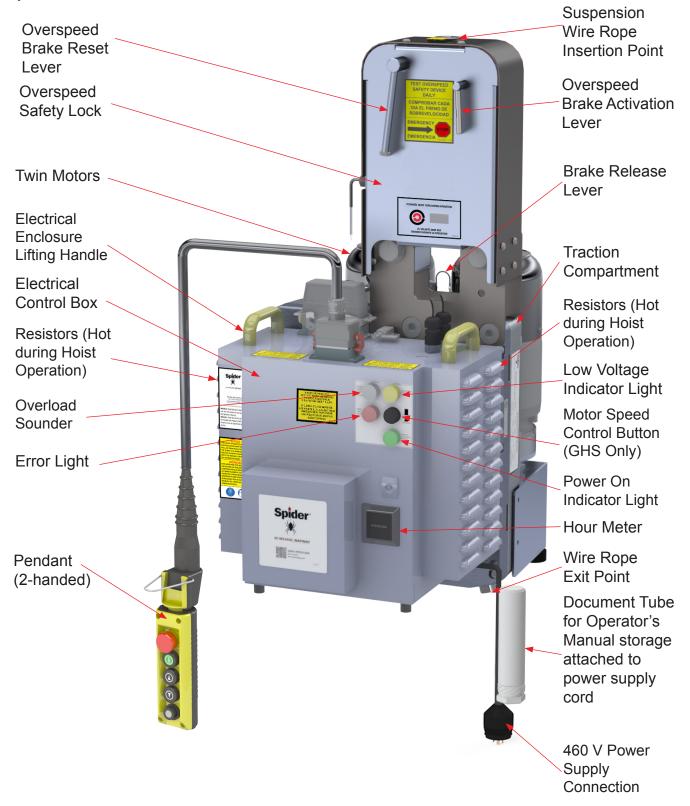
Hoist Weight	Hoist weight 275 lb (125kg); Contol unit 73 lb (33kg); Overspeed Safety Lock 42 lb (19 kg)	
Drive Type	Variable Frequency Drive	
Wire Rope Diameter	(9/16") / 14 mm	
Wire Rope	14mm Wire Rope  Taurus 6 WS-V; meets CUL Requirements; Zinc-plated; Right Lay; Nominal Resistance 2450 N/mm2; Min Breaking Strength 224.25 kN approximately 1.01 kg/m [50,000 lb (22,680 kg]	
Specifications	9/16" Wire Rope 9/16" 6x26WS-IWRC Flex-X U SZ meets UL Requirements; Right Lay; Min Breaking Strength [38,000 lb (17,230 kg)] User must verify that the wire rope used meets or exceeds applicable codes for breaking strength safety factor.	

## **WARNING**

For Use in Canada, the Taurus 6 WS-V wire rope must be used on the UpPro hoist to meet 10:1 breaking strength requirements.



#### D) PARTS OF THE SPIDER® UPPRO P2514 OR P2314 HOIST





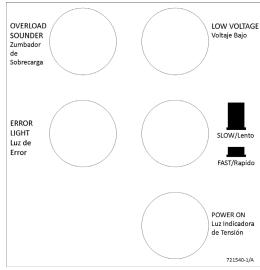
#### E) LABELS





720351-1

IF ROPE STOPS MOVING, SHUT OFF POWER IMMEDIATELY TO AVOID A DANGEROUS SITUATION OR BODILY INJURY. SI CUERDA DEJA DE MOVERSE, INTERRUMPE EL FLUJO ELÉCTRICO INMEDIATAMENE PARA EVITAR UNA PELIGROSA SITUACIÓN O



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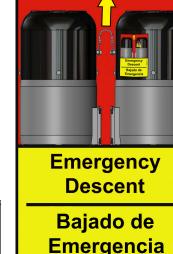
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**DAÑO CORPORAL** 

HANDLES ARE FOR LIFTING CONTROL BOX ONLY

LAS MANIJAS SON PARA LEVANTAR LA CAJA DE CONTROL SOLAMENTE

721393-1



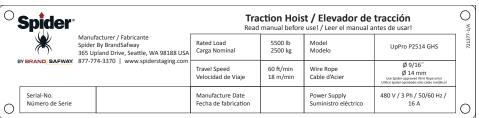
721376-1

AVERÍA DEL FRENO PRINCIPAL. EL DESCENSO PUEDE ESTAR

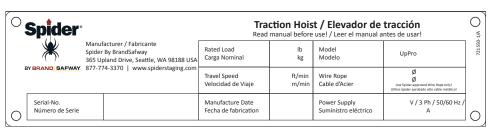
BLOOUEADO POR ACTIVACIÓN MANUAL DEL FRENO DE

SOBREVELOCIDAD.

721549-2



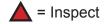
721377-1 (GHS Models)



wire rope 9/16" (14)

721375-1

721550-1 (Standard and Canadian Models)







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#### 5. PREPARING TO USE THE HOIST



#### A) ELECTRICAL SUPPLY

For trouble-free operation of the Spider® UpPro P2514 or P2314 Hoist, the electrical supply must have sufficient capacity and the circuit breakers must be properly rated. If startup is sluggish, have a certified electrician determine the voltage at the female end of the electrical cable coming from the power source. Voltage must be 414-506 VAC.

If the voltage is less than 414 VAC at the hoist connection, do the following:

- ◆ Install a 3-phase booster transformer at the power source;
- ◆ Select the electrical supply cable based on the hoist's amperage rating, which is 16 Amps;
- ◆ Use separate but identical electrical cables for each hoist; if applicable.
- ◆ In applications where two hoists are used in tandem, do NOT start both hoists at the same time to ensure better hoist performance; and,
- ◆ Maintain a level platform.

#### B) INSTALLING HOIST ONTO PLATFORM

Follow the manufacturer's instructions for platform assembly.

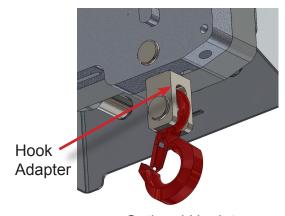
Lift the hoist into position under power.

**NOTE:** The hoist MUST be oriented so that the suspension wire rope enters the wire rope inlet on the top of the traction compartment in a straight line that deviates no more than 2° from vertical or horizontal.

Attach the hoist stirrup bar to the platform stirrup using Grade 5 or better bolts OR attach the hoist using optional hook to hook adapter.

Connect the hoist to the power supply.

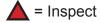
The power indicator light will come on when the hoist receives power.



Optional Hook to Hook Adapter



Pin View and Side View of 460 V Hoist Power Supply Connector







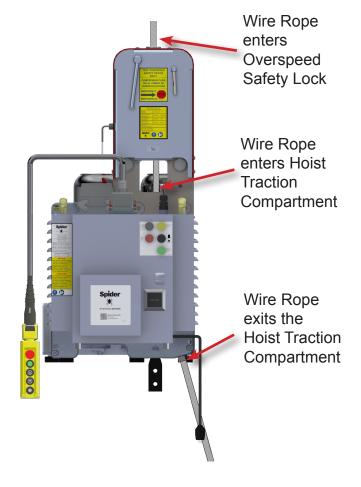


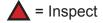
#### 6. REEVING

#### A) SUSPENSION WIRE ROPE

Push the suspension wire rope through the wire rope inlet of the overspeed safety lock and guide it into the wire rope inlet of the hoist's traction compartment.

When you cannot push the wire rope into the hoist's traction compartment any further, operate the hoist in the 1UP direction until the wire rope exits from the bottom of the hoist's traction compartment.











#### 7. OPERATING THE HOIST

#### **WARNING**

BEFORE operating this hoist, you must understand and follow the instructions in this manual. You must be properly trained, physically fit and authorized to operate the hoist. Failure to comply with these instructions could result in serious injury or death.

- ▶ DO NOT OPERATE THE HOIST IF you hear unusual noises.
- ▶ DO NOT OPERATE THE HOIST IF adjustments or repairs seem necessary.
- ▶ DO NOT OPERATE THE HOIST IF any warning, operating, or capacity instructions are unclear, missing, illegible, or damaged.
- ▶ DO NOT OPERATE THE HOIST IF you cannot see the flywheel turning through the rectangle window on the overspeed.
- ► Report any problems to your supervisor and also notify the next operator when changing shifts. Tag the hoist "DO NOT USE UNTIL REPAIRED".
- ▶ NEVER operate an electric hoist or any electrical equipment in an explosive atmosphere. Explosive atmospheres exist around refineries, chemical plants, grain elevators, distilleries, inside silos and mines or around coal handling equipment. This is not a complete list! Consult an expert if you are in doubt about the safety of your immediate surroundings.

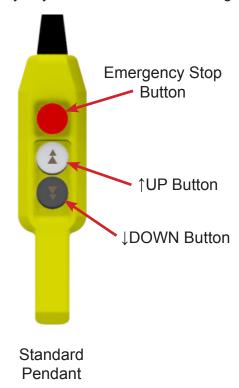
# A) Normal Operation - Standard Pendant

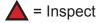
Switch the control unit on by turning the red emergency stop button in the clockwise direction until it pops out. The **GREEN**Power On Indicator Light on the front of the electrical box comes on.

For travel in the 1UP direction, push in the 1UP operation button.

For travel in the \$\dipOWN\$ direction, push in the \$\dipOWN\$ operation button.

NOTE: Both buttons are spring-loaded and will return to the OFF position and apply the brake when released. If the hoist does not immediately stop the platform, press the emergency stop button AND turn the overspeed brake ACTIVATION lever in the LOCK direction. Unplug the power supply cable. Contact your supervisor.







= Perform process



#### B) Normal Operation - Optional Two Stage Pendant

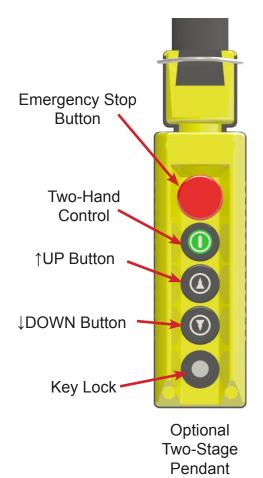
Unlock the Pendant.

Switch the control unit on by turning the red emergency stop button in the clockwise direction until it pops out. The **GREEN** Power On Indicator Light on the front of the electrical box comes on.

For travel in the 1UP direction, push in BOTH the green power button and the 1UP operation button.

For travel in the \$\frac{1}{2}DOWN direction, push in BOTH the green power button and the \$\frac{1}{2}DOWN operation button.

NOTE: Both buttons are spring-loaded and will return to the OFF position and apply the brake when released. Releasing the green power button will also stop operation of the hoist If the hoist does not immediately stop the platform, press the emergency stop button AND turn the overspeed brake ACTIVATION lever in the LOCK direction. Unplug the power supply cable. Contact your supervisor.







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#### NORMAL OPERATION, CONTINUED

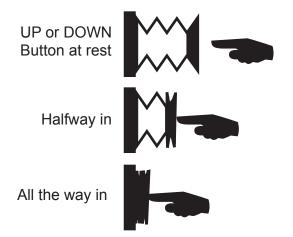
The †UP/↓DOWN buttons on the pendant have two pressure points. The first pressure point is for the slower speed. The second pressure point is for the faster speed (GHS Models Only):

- When lifting loads of 5000 lb (2300 kg) or less, push the ↑UP button halfway in for a lifting speed of 15 ft/min (5 m/min). Push the ↑UP button all the way in for 40 ft/min (12 m/min). To access higher speed capability, push the black Motor Speed Control Button on the front of the electrical control box and then push the ↑UP button halfway in for 30 ft/min (9 m/min), and all the way in for 60 ft/min (18 m/min).
- When lifting loads of up to 5500 lb (2500 kg), push the ↑UP button halfway in for a lifting speed of 15 ft/min (5 m/min). Push the ↑UP button all the way in for 40 ft/min (12 m/min). For a lifting speed of 30 ft/min (9 m/min), push the black Motor Speed Control Button on the front of the electrical control box and then push the ↑UP button.

NOTE: A lifting speed of 60 ft/min (18 m/min) is not possible when raising loads greater than 5000 lb (2300 kg). If this is attempted, the low voltage indicator will light up and the hoist will the hoist will travel at 15 ft/min (5 m/min).

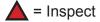
# C) Cautions for Cold Weather Operation

When operating the hoist in cold weather, test the secondary overspeed brake frequently to make sure it is not frozen. If the hoist will not climb or descend while you are trying to test the overspeed brake, DO NOT USE THE HOIST unless this is corrected during the thaw-out process outlined blow.





Black Motor Speed Control Button (GHS Model Only)









#### 8. DAILY TESTING AND INSPECTION



#### **WARNING**

Perform all daily tests to ensure correct operation! Do NOT use the hoist for lifting until it has passed all daily tests.

The following tests must be performed at the start of each work shift. If the hoist fails any test, **DO NOT USE THE HOIST UNTIL IT IS REPAIRED**. Refer to "Parts of the Spider® UpPro P2514 or P2314 Hoist" on Page 18in Section 4d to identify components. All tests must be performed at, or near, ground level.

#### A) INSPECT AFTER PREVIOUS USE

 7. 201 7.1 12K 1 K2V1000 <b>3</b> 02
Before operating the hoist, inspect the following:

- ◆ Wire rope
- ◆ Power supply cable
- Rigging
- Platform
- ◆ Hoist

(DIN 933) are used.

- ◆ Emergency Stop
- Manual Descent
- ◆ Limit Switch, if applicable
- Verify that all parts are present, in proper working order, and are not damaged.

  Verify bolts, nuts, and clamps are well secured.

  Verify that the hoist is secured to the stirrup with Spider® certified hardware that are properly installed. If the hoist is mounted by the traction compartment, verify that at least four M16 bolts
- Verify that hoistway is clear of obstructions.

= Inspect

- With pendant connected to control unit, press the emergency stop button on the pendant. Verify that the **RED** error light comes on. Reset the emergency stop button by turning it clockwise and verify that the **RED** error light goes off.
- When using the hoist in a dirty environment that contains epoxy, paint, cement, sand blast residue, or corrosive material, inspect the operation of the secondary overspeed brake several times a day. Protective hoist covers are recommended in these environments. Contact your hoist supplier.

= Perform process

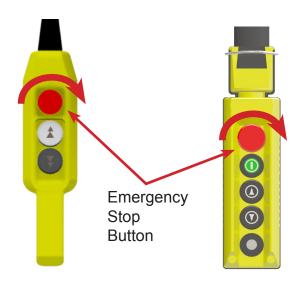
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= Verify



#### B) Testing the Emergency Stop Button

- Conduct a test run with the hoist's maximum working load 5500 lb (2500 kg).
- Press the red emergency stop button while running the hoist in either direction.
- Once the emergency stop button has been pressed, the hoist should not move at all and the **RED** error light on the front of the electrical box should light up. If the hoist keeps running or the error light does not come on, the hoist must be repaired.
- To reset the emergency stop button, turn the button clockwise until it pops out. The **RED** error light should go off.



#### C) Testing the Controlled Descent

- Raise the platform approximately 3 ft (1 meter).
- Disconnect the power supply.
- Reach between the two motors and pull up on the brake release.

NOTE: The brake release opens the motor brakes, which will allows the platform to be lowered in a controlled descent. The platform will move quickly.

#### **WARNING**

If the overspeed brake trips while testing the controlled descent, the controlled descent system is not working properly and THE HOIST SHOULD NOT BE USED.









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#### D) TESTING THE OVERSPEED BRAKE

While powering the hoist 1UP and 1DOWN approximately 3 feet (1 meter), look through the rectangle window into the OSL to see whether the flywheel is turning.

#### **WARNING**

Do NOT operate the hoist if you cannot see the flywheel turning.



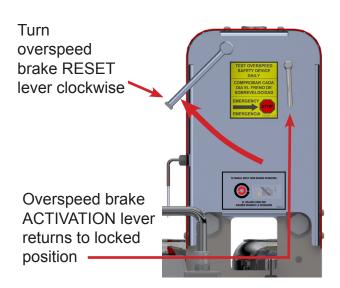
De-reeve the wire rope:

Re-insert the rope about 12" (30 cm) into the hoist.

Holding the wire rope firmly, pull it out *quickly*. If the overspeed brake is working correctly, it will grip and hold the wire rope in less than 4" (10 cm).

Run the hoist †UP and release the overspeed brake by turning the overspeed brake RESET lever clockwise in the UNLOCK direction. The overspeed brake ACTIVATION lever should return to its vertical, locked position.

Repeat this test at least 3 times. If the overspeed brake does not operate correctly every time, DO NOT USE THE HOIST. Return the hoist to your supplier.











#### E) TESTING THE OVERSPEED BRAKE ACTIVATION LEVER

While raising or lowering the hoist, activate the overspeed brake by turning the overspeed brake ACTIVATION lever on the overspeed safety lock counterclockwise in the LOCK direction.

The hoist should NOT travel in the ↓DOWN direction.



Release the overspeed brake by turning the overspeed brake RESET lever on the overspeed clockwise in the UNLOCK direction. The overspeed brake ACTIVATION lever should return to its vertical, unlocked position.









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#### 9. DE-REEVING

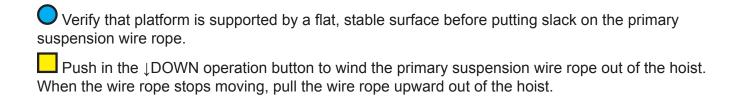


#### A) REMOVING THE PRIMARY SUSPENSION WIRE ROPE

For hoists equipped with a secondary wire rope, the secondary wire rope must be removed before the primary wire rope is removed.

#### **WARNING**

To prevent platform from tipping and avoid injuries, ensure that the platform is properly supported on a flat, stable surface before putting slack on the primary suspension wire rope.



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#### 10. HOIST MAINTENANCE



#### A) REGULAR MAINTENANCE

The hoist should be returned to a certified Spider® service center for periodic maintenance at least once a year from the date it was placed into service, or after 250 working hours since last maintenance.

More frequent service may be required if the hoist is subjected to dirty environments.

#### B) Special Maintenance

If the hoist fails any inspection or operation, it should be returned for service.



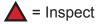




#### 11. STORAGE



- \* When not in use, store hoist and work platform in such a way as to protect from unauthorized use. Always unplug power cord when not in use and equipment is left unattended.
- \* Store the Spider® UpPro P2514 or P2314 Hoist in an indoor facility where the ambient temperature is between -40° F to 158° F (-40° C to 70° C) and relative humidity does not exceed 60%. Guard against temperature fluctuations of more than 30° over the course of 24 hours. Protect the hoist from dust and dirt, but do NOT pack the hoist in an airtight container.
- \* Do NOT store the hoist for long periods in areas where the brake or other parts may become corroded, such as in salty coastal air or enclosed areas that contain corrosive vapors. Hoist functionality cannot be guaranteed under such circumstances.







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# 12.TROUBLESHOOTING



**STOP!** Read **ALL** troubleshooting guidelines before attempting any solution. Consult your supervisor to correct problems.

Problem	Possible Cause and Solution
A) No Power to Platform and GREEN Voltage Indicator Light is OFF	<ul> <li>Power at junction box is off.</li> <li>Circuit breaker is tripped.</li> <li>Not enough power is being supplied to hoist.</li> <li>Plugs are not connected; check hoist, yoke, power cord, and power source.</li> <li>Damaged electrical cord.</li> <li>A Power on light is burnt out.</li> </ul>
B) Hoist does not Run and GREEN Voltage Indicator Light is ON	If the motor is hot, thermal overload protection may have been tripped. Allow motor to cool and see if it resets. This may take 30 minutes or more.  Frequent stops and starts, high outside temperature, a dragging brake, or overloading can cause the motor to heat up.  Determine if overspeed device has been activated.
C) Power to Platform is ON and RED Error Light is ON	<ul><li>Verify pendant is properly connected.</li><li>Verify emergency stop button is in the reset position, that is, pulled out.</li></ul>

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Problem	Possible Cause and Solution
D) Hoist Hums, Starts Slowly and is Sluggish and YELLOW Voltage Indicator Light is ON	<ul> <li>Check run voltage. If not correct (see "Operating range" on Page 15in section 4a), do any or all of the following:</li> <li>▶ Run separate power supply cords for each hoist.</li> <li>▶ Use shorter power supply cords.</li> <li>▶ Use short power supply cord with larger wires.</li> <li>▶ Add a booster transformer at the power source.</li> </ul>

Problem	Possible Cause and Solution
E) WIRE ROPE WILL NOT REEVE	Increase hand pressure on the wire rope while pressing the   †UP control button.
	Take the wire rope out, rotate it 180° and put it back into the hoist while pressing the ↑UP control button.
	Poor bullet: prepare new end. Refer to the wire rope section in Section 3a.
	End of wire rope is bent or kinked: prepare new end.
	Dirt or other material is obstructing the rope inside the hoist.
F) MOTOR RUNS NORMALLY, BUT HOIST WILL NOT	Make sure the bullet end of the wire rope has come out of the wire rope exit guide.
Raise Load	Inspect the wire rope for damage or wear. Replace if necessary.
	WARNING! WIRE ROPE MAY BE JAMMED. DO NOT OPERATE HOIST. CALL YOUR SUPERVISOR.



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Problem	Possible Cause and Solution	
G) Hoist will NOT Raise Load and Sounder is Audible	Verify that the hoistway above is clear and that there are no overhead obstructions.  Verify that load is no greater than the rated capacity of hoist [5500 lb (2,500 kg)]. Reduce load if necessary.  Push in the emergency stop button on the pendant and wait until the sounder is no longer audible. Switch the unit on again by turning the RED emergency stop button clockwise until it pops	
	out.	

Problem	Possible Cause and Solution
H) Hoist does not Stop Immediately when the  †UP or ↓DOWN Button is Released	Push the "Emergency Stop button" on the pendant.  Call your supervisor.  Return the hoist to a certified Spider® service center for servicing.





#### **Problem**

#### **Possible Cause and Solution**

I) OVERSPEED FLYWHEEL DOES NOT TURN WHILE HOIST MOVES TUP OR DOWN AND YOU ARE IN THE AIR

WARNING! DO NOT OPERATE HOIST. CALL YOUR SUPERVISOR.

Turn the overspeed BRAKE ACTIVATION lever on the overspeed clockwise in the LOCK direction and wait to be rescued.



J) OVERSPEED FLYWHEEL
DOES NOT TURN WHILE
HOIST MOVES TUP
OR DOWN AND
YOU ARE ON THE
GROUND

#### **WARNING!** DO NOT OPERATE HOIST.

▲ Check and correct the following:

- ► Clear obstructions such as dirt or other materials.
- ▶ Wire rope may be worn out. Call your supervisor.
- ► Hoist parts may be worn out. Call your supervisor.







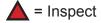
Problem	Possible Cause and Solution
K) You Hear Unusual Noises coming from THE HOIST AND YOU	WARNING! WIRE ROPE MAY BE JAMMED. DO NOT OPERATE. ANY ATTEMPT TO OPERATE THE HOIST MAY CAUSE SERIOUS INJURY OR DEATH.
ARE IN THE AIR	Push the emergency stop button.
	Push the overspeed brake test button and wait to be rescued.
	Unplug the hoist from the power cord.
	Call your supervisor.
	Return the hoist to a certified Spider® service center for servicing.
L) You hear Unusual Noises coming from THE HOIST AND YOU	WARNING! WIRE ROPE MAY BE JAMMED. DO NOT OPERATE.  Check for damaged wire rope and replace as necessary.
ARE ON THE GROUND	Check for dirt on the wire rope and clean/lubricate as necessary.
	Check the hoist for visible signs of damage.
	Call your supervisor.
	Return the hoist to a certified Spider® service center for servicing.

=	Inspect





## **Problem Possible Cause and Solution** M) CANNOT RESET THE WARNING! WIRE ROPE MAY BE JAMMED. DO NOT **OPERATE HOIST.** OVERSPEED BRAKE **RESET LEVER (HOIST** DO NOT RESET THE OVERSPEED UNTIL: HAS POWER) ► You have determined that there is enough wire rope to reach a safe landing surface. ➤ You know that the wire rope is not jammed in the hoist. ► You know the reason that the overspeed has been tripped and there will be no danger when it is reset. ➤ You have checked for and corrected the following situations: Undersized wire rope ■ Worn parts ■ Foreign contaminants that defeat traction, such as: lubricants ice ■ Improper use of the platform, such as overloading. Release the overspeed by turning the overspeed brake RESET lever on the overspeed counterclockwise in the UNLOCK direction. The overspeed brake ACTIVATION lever should return to its vertical, unlocked position. Turn overspeed brake RESET Overspeed lever brake counter-clockwise **ACTIVATION** lever in locked position







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#### **Daily Inspection Checklist**

#### **WARNING!**

Perform all daily test to ensure correct operation! Do NOT use the hoist for lifting loads until it has passed all daily tests. If the hoist fails any test do NOT use the hoist until it is repaired.

	Part/Function	Check for
1	Visual Inspection	Verify all parts of the system are present, in proper working, order and undamaged.
		<ul> <li>✓ Wire rope.</li> <li>✓ Rigging.</li> <li>✓ Platform.</li> <li>✓ Power Supply Cable.</li> <li>✓ Limit Switch(es), if applicable.</li> <li>✓ NO damaged, loose, or missing parts.</li> <li>✓ Hoistway clear of obstructions.</li> </ul>
2	Emergency Stop	Conduct a test run with the heaviest working load available [maximum 5500 lb (2500 kg)]. Press Emergency Stop Button.  ✓ Hoist stops immediately.  ✓ UP and DOWN Buttons disabled.  ✓ RED Error Light comes on.
		Reset Emergency Stop Button.
3	Manual Descent	Raise the platform approximately 3 feet (1 meter) and stop. Disconnect the power supply. Pull up the Controlled Descent Loop (between the two motors).
		<ul><li>✓ The platform descends at a slow, controlled speed.</li><li>✓ The Overspeed does NOT trip.</li></ul>



