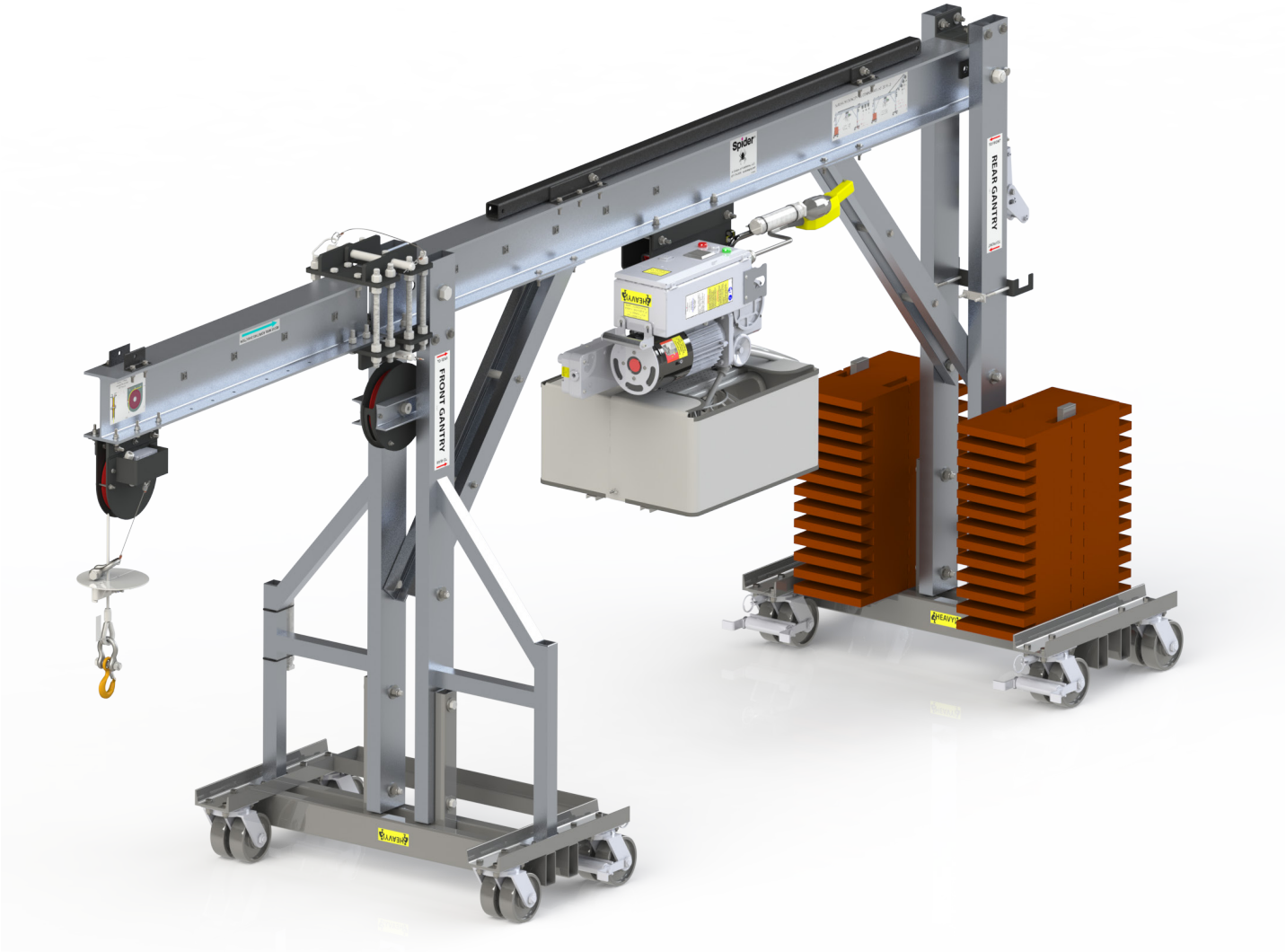
Spider®

BY BRAND SAFWAY

OPERATOR'S MANUAL
SPIDER GLAZIER 2200



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WARNING

- **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 equipment at all times.
- Use only spare parts and recommended steel wire rope from Spider®.
- It is the responsibility of the user to determine that this equipment is suitable to be used in conjunction with any other equipment.
- It is the responsibility of the user to determine whether this equipment, and all other components used with it, will be in conformity with the provisions of federal, state, and local ordinances and regulations.

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1. SAFETY

A) Instructions for Safe Operation

Before using the Spider Glazier 2200, learn the procedures described in this manual. Any operation in violation of these instructions may result in bodily injury or death.

> Every year, workers are injured, become disabled, or are killed because of carelessness or because they did not understand how to correctly operate the equipment they were using. Do not become one of them. Know how to use this equipment and prevent accidents.
>
> NEVER operate equipment that you do not understand. You may cause accidents, resulting in injury or death to you or people around you.

This instruction manual is not all inclusive. It is impossible to anticipate every conceivable way this equipment may be used, or every hazardous situation. It is very important that you determine for yourself whether the situation is safe. You must understand the operating characteristics of both the hoist and gantry. You must understand how the equipment will operate in your application. Before use, you must be certain you are not creating a situation that may endanger yourself or others, or cause damage to property. Call your supplier if you have any questions concerning this equipment.

1. Read and understand this manual **BEFORE** using this equipment.
2. Additional copies of this manual are available from your Spider operations center. It is the duty of the employer to provide each operator with a copy of this manual.
3. Setup and use must comply not only with the instructions in this manual but also with federal OSHA 29 CFR standards, as well as applicable state and local codes in force at the location of application. It is the user's responsibility to review applicable state or local codes or regulations pertaining to general safety or use of this equipment, and it is the user's responsibility to resolve any conflicts between codes and/or regulations.
4. The Spider Glazier 2200 is designed to be assembled by a minimum of three workers and typically operated by three: a loader (on the lowest level), a positioner (who operates the remote from an intermediary level above the loader) and a spotter (stationed at the hoist on the top level).
5. The Spider Glazier 2200 is designed to lift a maximum load of 2,000 lb. **Do NOT operate without adequate counterweights.** Refer to "Section 5. Working Configurations" on Page 22 for information on the amount of counterweights required with specific loads.
6. Secure the foot-operated caster brakes before loading counterweights. The caster brakes are designed to maintain the position of the Spider Glazier 2200 **on a level surface**. **Do NOT operate the Spider Glazier 2200 on a slope.**
7. The Spider Glazier 2200 is powered by a DualLift M1009 material handling hoist, which is NOT rated for manlifting. **Do NOT use hoist for lifting personnel.**
8. Do NOT allow personnel in the hoistway or within 10 feet on either side of it. Clearly mark and cordon off the hoistway.

2. OSHA CFR 29 REGULATIONS

Selected portions of OSHA Code of Federal Regulations Title 29 have been reproduced in this section for the convenience of Spider Glazier 2200 users. Spider assumes no responsibility for the accuracy, completeness, or currentness of the regulations quoted. Obtain additional regulations from the nearest office of the Department of Labor.

A) 1926 Subpart C: General Safety and Health Provisions, Standard 1926.20: General Safety and Health Provisions

(a) Contractor Requirements

1. Section 107 of the Act requires that it shall be a condition of each contract which is entered into under legislation subject to Reorganization Plan Number 14 of 1950 (64 Stat. 1267), as defined in 1926.12, and is for construction, alteration, and/or repair, including painting and decorating, that no contractor or subcontractor for any part of the contract work shall require any laborer or mechanic employed in the performance of the contract to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health or safety.

(b) Accident-prevention Responsibilities

1. It shall be the responsibility of the employer to initiate and maintain such programs as may be necessary to comply with this part.
2. Such programs shall provide for frequent and regular inspections of the job sites, materials, and equipment to be made by competent persons designated by the employers.
3. The use of any machinery, tool, material, or equipment that is not in compliance with any applicable requirement of this part is prohibited. Such machine, tool, material, or equipment shall either be identified as unsafe by tagging or locking the controls to render then inoperable or shall be physically removed from its place of operation.
4. The employer shall permit only those employees qualified by training or experience to operate equipment and machinery.

B) 1926 Subpart C: General Safety and Health Provisions, Standard 1926.21 Safety Training and Education

(a) General Requirements

1. The Secretary shall, pursuant to Section 107(f) of the ACT, establish and supervise programs for the education and training of employers and employees in the recognition, avoidance and prevention of unsafe conditions in employments covered by the act.

(b) Employer Responsibility

1. The employer should avail himself of the safety and health and training programs the Secretary provides.
2. The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate any hazards or other exposure to illness or injury.
3. Employees required to handle or use poisons, caustics, and other harmful substances shall be instructed regarding the safe handling and use, and be made aware of the potential hazards, personal hygiene, and personal protective measures required.

c) 1926 Subpart C: General Safety and Health Provisions, Standard 1926.28: Personal Protective Equipment

(a) The employer is responsible for requiring the wearing of appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions or where this section indicates the need for using such equipment to reduce hazards to employees.

(b) Regulations governing the use, selection, and maintenance of personal protective and lifesaving equipment are described under Subpart E below.

d) 1926 Subpart E: Personal Protective and Life Saving Equipment, Standard 1926.104: Safety Belts, Lifelines, and Lanyards

(a) Lifelines, safety belts, and lanyards shall be used only for employee safeguarding. Any lifeline, safety belt, or lanyard actually subjected to in-service loading, as distinguished from static load testing, shall be immediately removed from service and shall not be used again for employee safeguarding.

(b) Lifelines shall be secured above the point of operation to an anchorage or structural member supporting a minimum dead weight of 5,400 lb.

(c) Lifelines used on rock-scaling operations, or in areas where lifeline may be subjected to cutting or abrasion, shall be a minimum of 7/8-inch wire core manila rope. For all other lifeline applications, a minimum of 3/4-inch manila or equivalent, with a minimum breaking strength of 5,400 pounds shall be used.

(d) Safety belt lanyard shall be a minimum of 1/2-inch nylon, or equivalent, with a maximum length to provide for a fall of no greater than 6 feet. The rope shall have a nominal breaking strength of 5,400 lb.

(e) All safety belt and lanyard hardware shall be dropped forged or pressed steel, cadmium plated in accordance with Type 1, Class B plating specified in Federal Specification QQ-P-416. The surface shall be smooth and free of sharp edges.

(f) All safety belt and lanyard hardware, except rivets, shall be capable of withstanding a tensile loading of 4,000 pounds without cracking, breaking, or permanently deforming.

e) 1926 Subpart H: Materials Handling, Storage, Use, and Disposal, Standard 1926.251: Rigging Equipment for Material Handling

(a) General Requirements

1. Rigging equipment for material handling shall be inspected prior to use on each shift and as necessary during its use to ensure that it is safe. Defective rigging equipment shall be removed from service.
2. Employers must ensure that rigging equipment:
   i. Has permanently affixed and legible identification markings as prescribed by the manufacturer that indicate the recommended safe working load;
   ii. Not be loaded in excess of its recommended safe working load as prescribed on the identification markings by the manufacturer; and
   iii. Not be used without affixed, legible identification markings, required by paragraph (a)(2)(i) of this section.

f) 1926 Subpart M: Fall Protection, Standard 1926.501: Duty to have Fall Protection

(b) Leading Edges

2. Each employee on a walking/working surface 6 feet (1.8 m) or more above a lower level where leading edges are under construction, but who is not engaged in the leading edge work, shall be protected from falling by a guardrail system, safety net system, or personal fall arrest system. If a guardrail system is chosen to provide the fall protection, and a controlled access zone has already been established for leading edge work, the control line may be used in lieu of a guardrail along the edge that parallels the leading edge.
3. Each employee in a hoist area shall be protected from falling 6 feet (1.8 m) or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems, [or chain, gate, or guardrail] or portions thereof, are removed to facilitate the hoisting operation (e.g., during landing of materials), and an employee must lean through the access opening or out over the edge of the access opening (to receive or guide equipment and materials, for example), that employee shall be protected from fall hazards by a personal fall arrest system.

g) 1926 Subpart N: Helicopters, Hoists, Elevators, and Conveyors, Standard 1926.552: Material Hoists, Personnel Hoists, and Elevators

(a) General Requirements

2. Rated load capacities, recommended operating speeds, and special hazard warnings or instructions shall be posted on cars and platforms.
3. Wire rope shall be removed from service when any of the following conditions exists:
   i. In hoisting ropes, six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay;
   ii. Abrasion, scrubbing, flattening, or peening, causing loss of more than one-third of the original diameter of the outside wires;

iii. Evidence of any heat damage resulting from a torch or any damage caused by contact with electrical wires;

iv. Reduction from nominal diameter of more than three sixty-fourths inch for diameters up to and including three-fourths inch; one-sixteenth inch for diameters seven-eights to 1-1/8 inches; and three thirty-seconds inch for diameters 1-1/4 to 1-1/2 inches.

(b) Material Hoists

1. i. Operating rules shall be established and posted at the operator's station of the hoist. Such rules shall include signal system and allowable line speed for various loads. Rules and notices shall be posted on the car frame or crosshead in a conspicuous location, including the statement "No Riders Allowed."

ii. No person shall be allowed to ride on material hoists except for the purposes of inspection and maintenance.

h) 1926 Subpart R: Steel Erection, Standard 1926.760: Fall Protection

(a) General Requirements

1. Except as provided by paragraph (a)(3) of this section, each employee engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge more than 15 feet (4.6 m) above a lower level shall be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.

(b) Connectors, each connector shall:

3. Be provided, at heights over 15 and up to 30 feet above a lower level, with a personal fall arrest system, positioning device system or fall restraint system and wear the equipment necessary to be able to be tied off; or be provided with other means of protection from fall hazards in accordance with paragraph (a)(1) of this section.

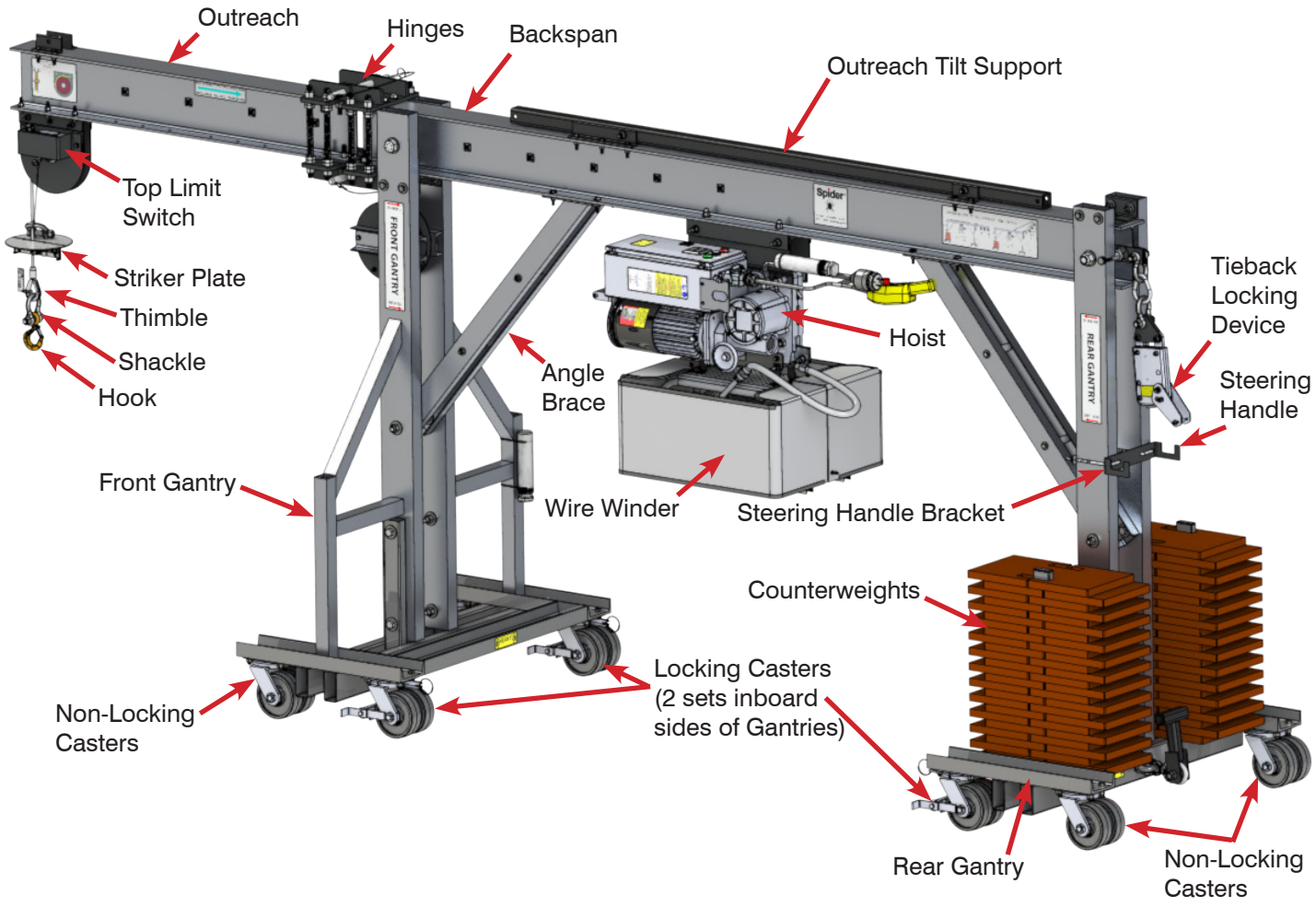
3. THE SPIDER GLAZIER 2200

The Spider Glazier 2200 is used to lift and position curtain wall panels for installation. **Maximum rated load is 2,000 lb.**

A) Features of the Spider Glazier 2200

Feature	Function	Benefit
230 V, 60 Hz, 16 A Dual Lift M1009 Material Handling Hoist	• Maximum rated load is 2,000 lb. • Variable Frequency Drive for speeds of 20 ft/min., 30 ft/min., 40 ft/min., and 70 ft/min. • Overspeed Safety Device.	• Allows single line operation to 2,000 lb. • Variable Frequency Drive compensates for fluctuating power supply.
Pendant or Wireless Remote Control	• 8 ft cord. • Optional multiple wireless pendants. • Emergency stop on both types of remote control.	• Easy monitoring of emergency stop. • Allows operation of hoist from multiple locations.
Adjustable Front Sheave Position	• Front sheave height manually adjusts by repositioning the outreach to one of three configuration: raised (9 ft 9 in.), flat and stowed (6 ft 6-1/2 in.). • Front sheave can be positioned at 18 in., 33 in., and 48 in. from leading edge of front gantry base.	• Flexible. • Easy to position.
Adjustable Tieback	• Uses reliable, secure, Dual Lift Inclination Safety Lock suspended from shackle with sling link.	• Locks securely. • Easy to position and reposition.
Heavy-Duty Dual-Lock Casters	• Pin-activated Swivel Locks keep casters in one of four positions. • Step-on Wheel Locks prevent casters from rolling.	• Easy to position. • Easy to lock in place.
Stowable Outreach	• Footprint in stowed position is 12 ft. long x 4 ft. wide x 6 ft. 7 in. tall.	• Fits in standard construction elevator. • Easy transportation to job site.
Top Limit Switch	• Striker plate below front sheave opens shrouded switch at angle tangent to sheave.	• Stops upward travel of load. • Activates hoist overload safety so load can be lowered. • Prevents sheave damage.
3/8" XIP Wire Rope	• Maximum downward reach is 300 ft. from bottom of front sheave. • Wire winder attached to hoist.	• Allows single line operation to 2,000 lb. • Meets ANSI 7:1 safety factor.
Uses Standard Spider Counterweights	• Space for 50 x 50-lb counterweights (largest capacity of counterweights required is 2,420 lb).	• Easy to stagger-stack to minimize pinch points. • Readily available from Spider service centers.

B) Parts of the Spider Glazier 2200



4. ASSEMBLY

A) Attaching Steering Handle

Step 1:

Identify the Front Gantry (refer to Figure 1) by the presence of the sheave between the uprights and by the pushing handles. Ensure the Caster Brakes are on the side of the Front Gantry that will face the Rear Gantry (inboard side). Lock Caster Brakes.

Step 2:

Orient the Rear Gantry (refer to Figure 2) so that the Caster Brakes are on the side of the Rear Gantry that will face the Front Gantry (inboard side). Leave Rear Gantry Caster Brakes unlocked at this point.

Step 3:

Remove pin from outboard shackle of Steering Handle and place the two ears of the shackle over the pad eye at the base of the Rear Gantry (refer to Figure 3). Replace pin and secure in place with cotter pin.

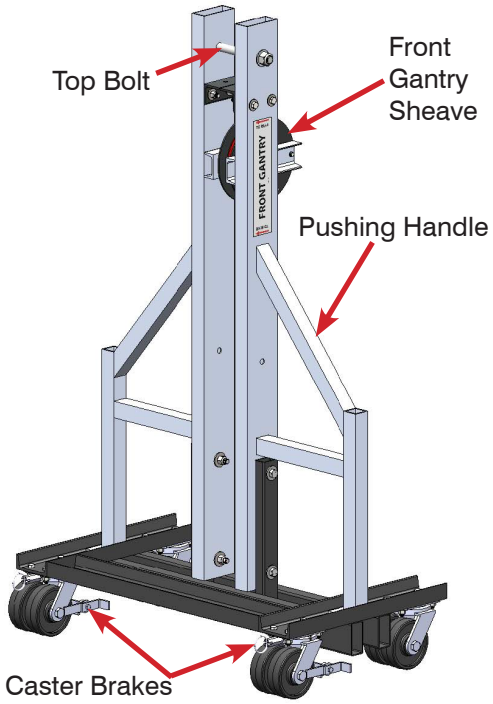


Figure 1: Front Gantry

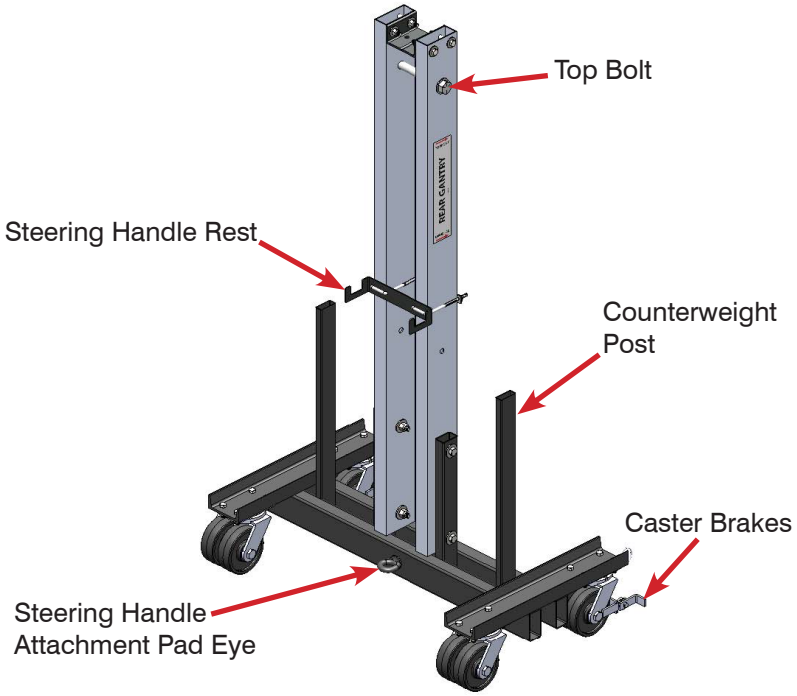


Figure 2: Rear Gantry

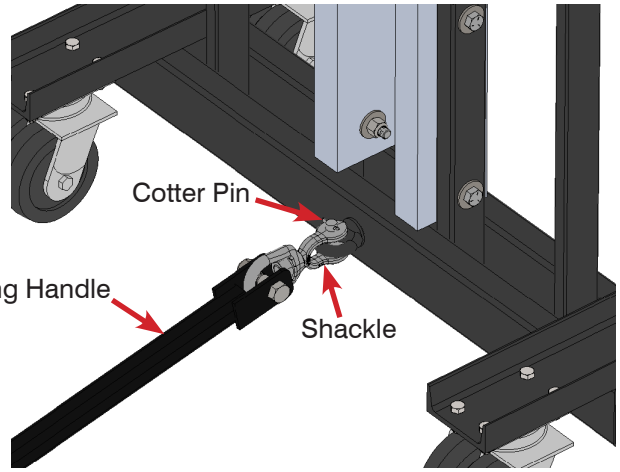


Figure 3: Steering Handle Attached

B) Installing Backspan

Step 1:
Remove the Top Bolt from both the Front Gantry and the Rear Gantry.

Step 2:
Remove the two **vertical** screws ONLY from the Front Gantry Support Brackets (refer to Figure 4).

Step 3:
Lift the Backspan and orient it so that the Outreach Tilt Support is on the top of the Backspan and the Outreach Hinge is toward the Front Gantry (refer to Figure 5).

Step 4:
Place the Backspan on the support above the Front Gantry sheave, with the Outreach Hinge forward of the Front Gantry.

Step 5:
Use the Steering Handle to maneuver the Rear Gantry into position and lift the other end of the Backspan to the top of the Rear Gantry. Refer to Figure 6 for positioning. Reinstall the Rear Gantry Top Bolt through both the gantry supports and the Backspan.

Step 6:
Reinstall the Front Gantry Top Bolt and the two vertical screws from the Front Gantry Support Brackets. Do NOT tighten until after Angle Braces have been installed (see Step 4 on Page 14).

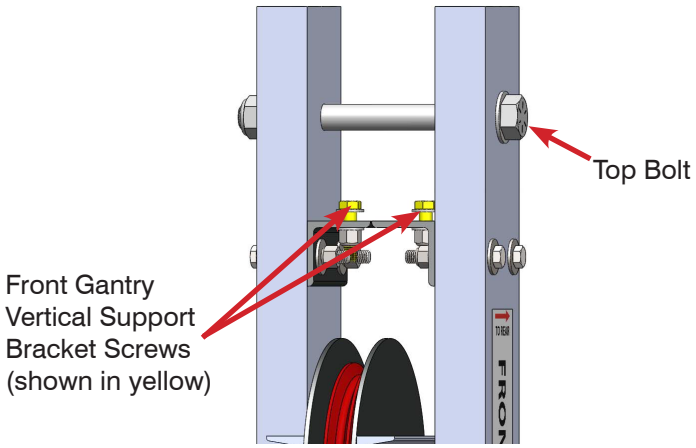


Figure 4: Vertical Bolts on Front Gantry Bracket

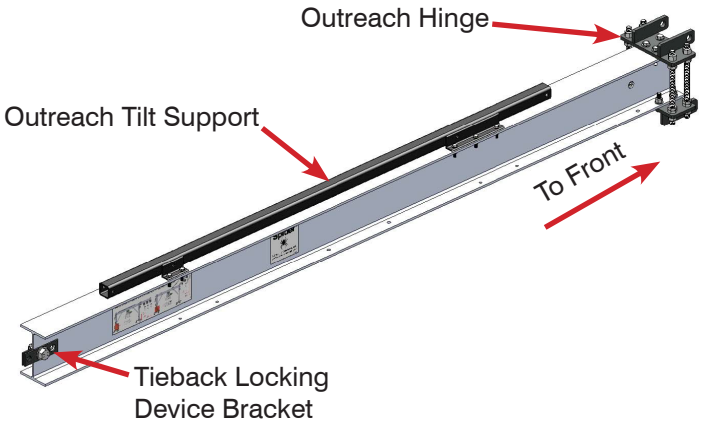


Figure 5: Backspan

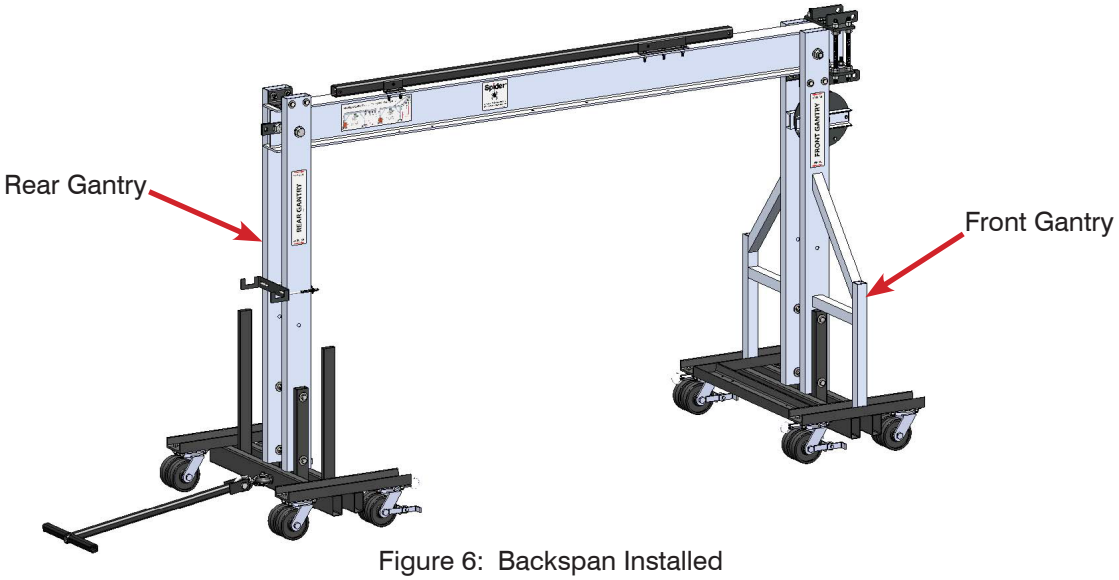


Figure 6: Backspan Installed

c) Angle Brace Installation

Step 1:

Remove nuts from the screws in the square end of one Angle Brace and insert the square end between the Front Gantry uprights, as shown in Figure 7. LOOSELY reinstall the nuts on the screws, as shown in Figure 8.

Step 2:

Remove the nuts and washers from the flanged end of the Angle Brace. Rotate the flanged end of the Angle Brace up to the Backspan and reinstall the nuts and washers on the ends of the screws once they are through the holes in the Backspan, as shown in Figure 9.

Step 3:

Repeat steps 1 and 2 for installing the other Angle Brace on the Rear Gantry.

Step 4:

Tighten all nuts on the Angle Braces, the Backspan Top Bolts, and both the vertical and horizontal screws on the Backspan Support Brackets, as shown in Figure 9. **Avoid making the walls of the uprights bow in when tightening screws.**

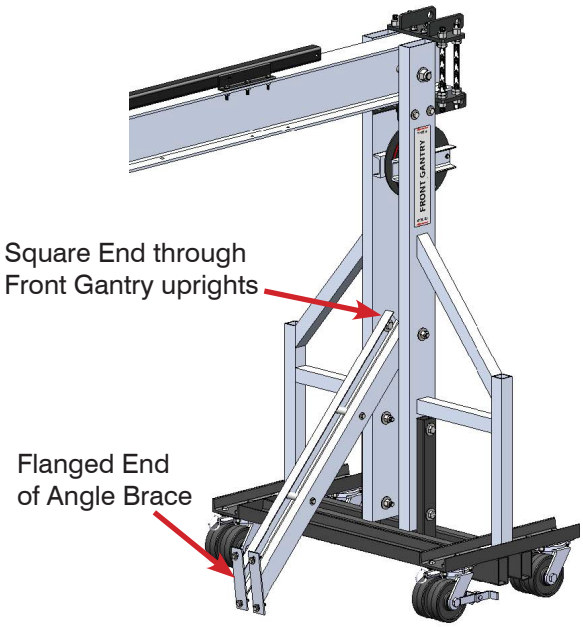


Figure 7: Angle Brace Hardware

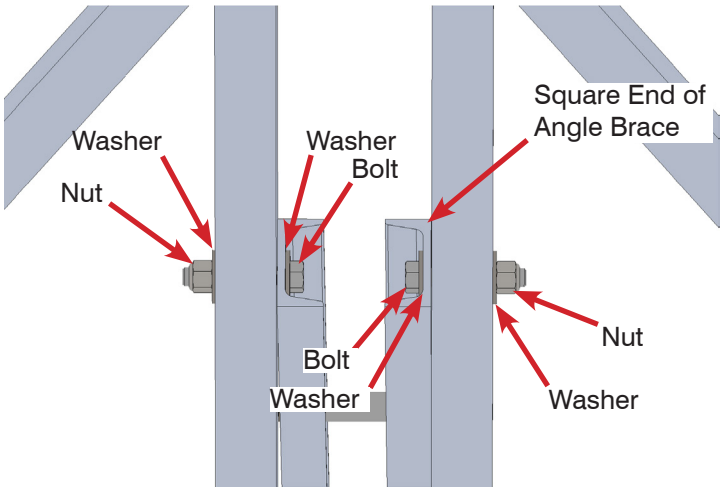


Figure 8: Angle Brace Blunt End Installed

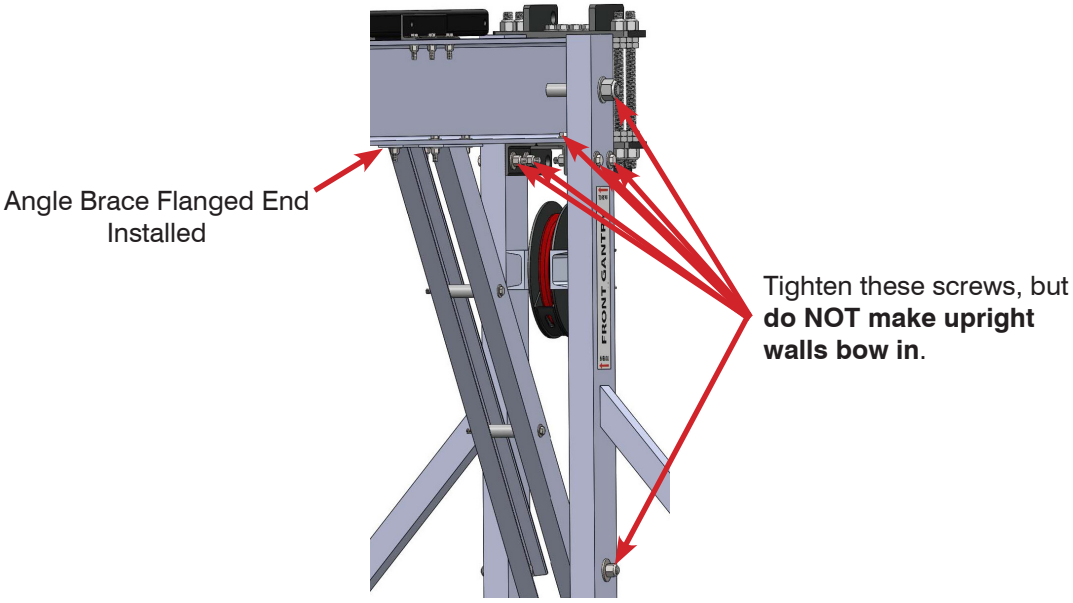


Figure 9: Angle Brace Installed

D) Outreach Installation

Step 1:
Lift the Outreach so that the lower Outreach Hinges are adjacent to the lower Backspan Hinges, and the holes for the pin line up.

NOTE: Do NOT tighten hinges on Outreach or Backspan so that the distance between the upper and lower beam flanges is reduced below 8 inches.

Step 2:
Insert pin through lower holes and secure with hairpin clip attached on lanyard, as shown in Figure 10.

Step 3:
Uncoil the top limit switch cable from the Outreach and route across the Outreach and the Backspan. Secure with tie wraps through the tie wrap holders attached to the Outreach and Backspan.

Step 4:
Pivot the Outreach up so that the upper holes in the Outreach Hinges line up with the upper holes in the Backspan Hinges.

Step 5:
Insert pin through upper holes and secure with hairpin clip attached on lanyard, as shown in Figure 10.

Step 6:
Remove tie wrap from Limit Switch lanyard so that the shackle hangs free, as shown in Figure 11.

Step 7:
Once hoist is installed (see Page 19), connect Limit Switch below pendant connection on the electrical box.

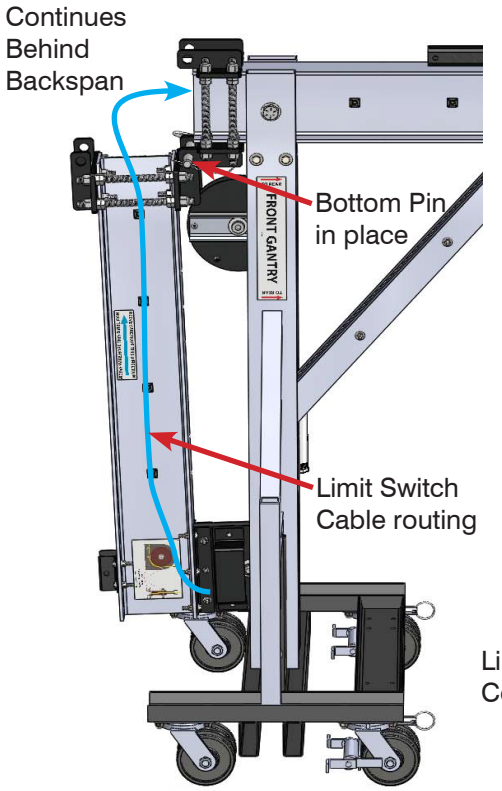


Figure 10: Outreach Bottom Pin Installation and Limit Switch Power Cord Routing

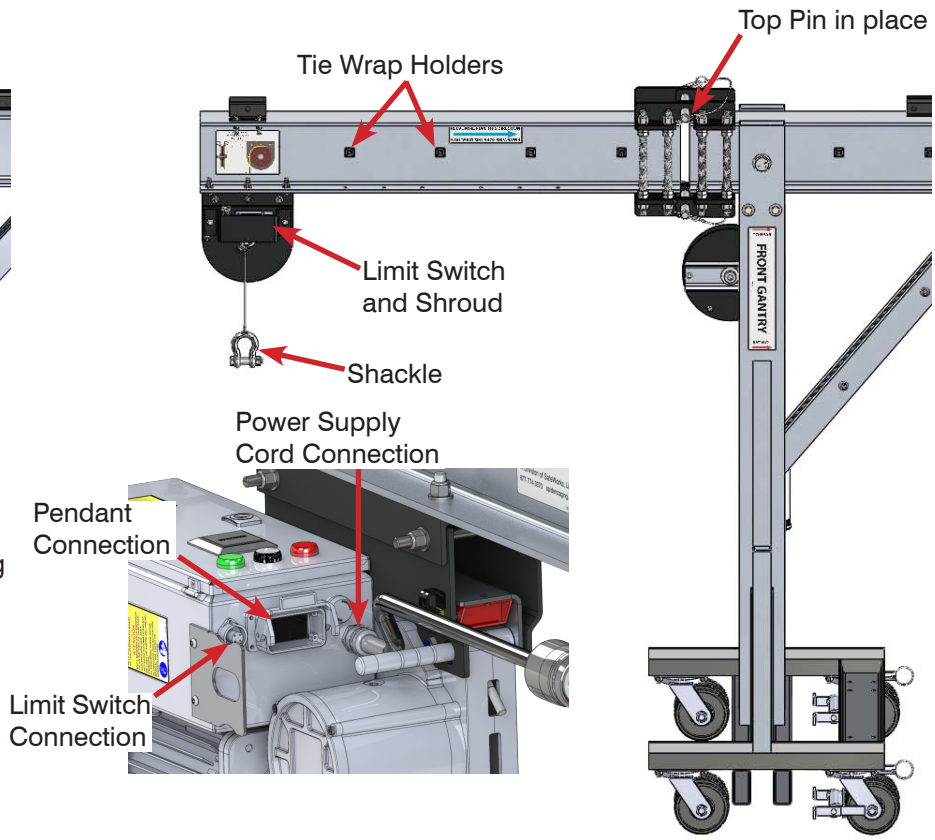


Figure 11: Outreach Top Pin Installation

e) Counterweight Installation

CAUTION! Each counterweight weighs 50-53 lbs. Wear Personal Protective Equipment while loading.

Step 1:

Lock Rear Gantry Caster Brakes.

Step 2:

Install slot in first counterweight over post in Rear Gantry, as shown in Figure 12. Slide counterweight so that the center post is toward one end of the slot.

Step 3:

Install slot in second counterweight over post. Slide counterweight so that post is toward the opposite end of the slot from the first counterweight, as shown in Figure 13.

Step 4:

Continue to load counterweights, offsetting them from one another to minimize pinch hazards.

Step 5:

Consult Table 1 on Page 22 for the correct number of counterweights to use for each configuration.

Step 6:

Do NOT load counterweights higher than the top of the Rear Gantry posts. Maximum weight of counterweights is approximately 2,420 lbs.

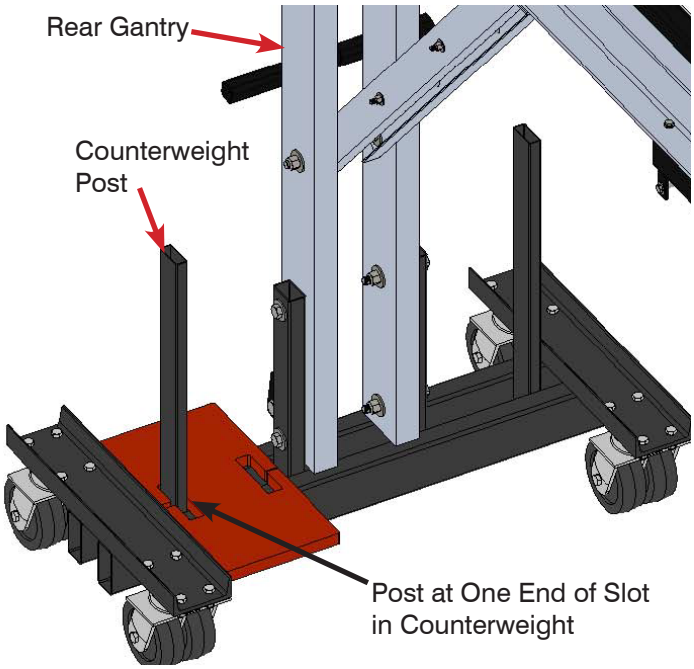


Figure 12: Counterweight Installation

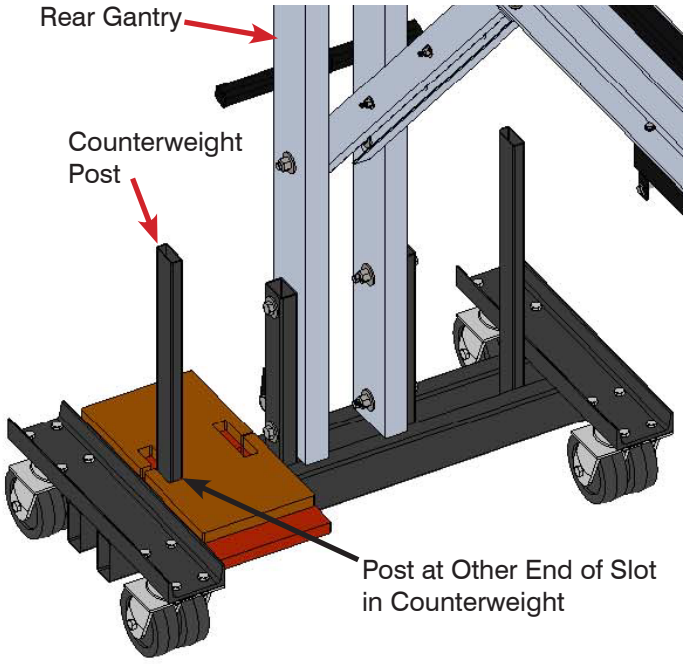


Figure 13: Second Counterweight Offset from First

f) Installing Tieback Locking Device

Step 1:
Install 5/8" Shackle on bracket at end of Backspan, as shown in Figure 14.

Step 2:
Install Sling Link on Shackle.

Step 3:
Loop second 5/8" Shackle through Sling Link and bolt Tieback Locking Device Bracket to Shackle.

Step 4:
Bolt Tieback Locking Device to Tieback Locking Device Bracket.

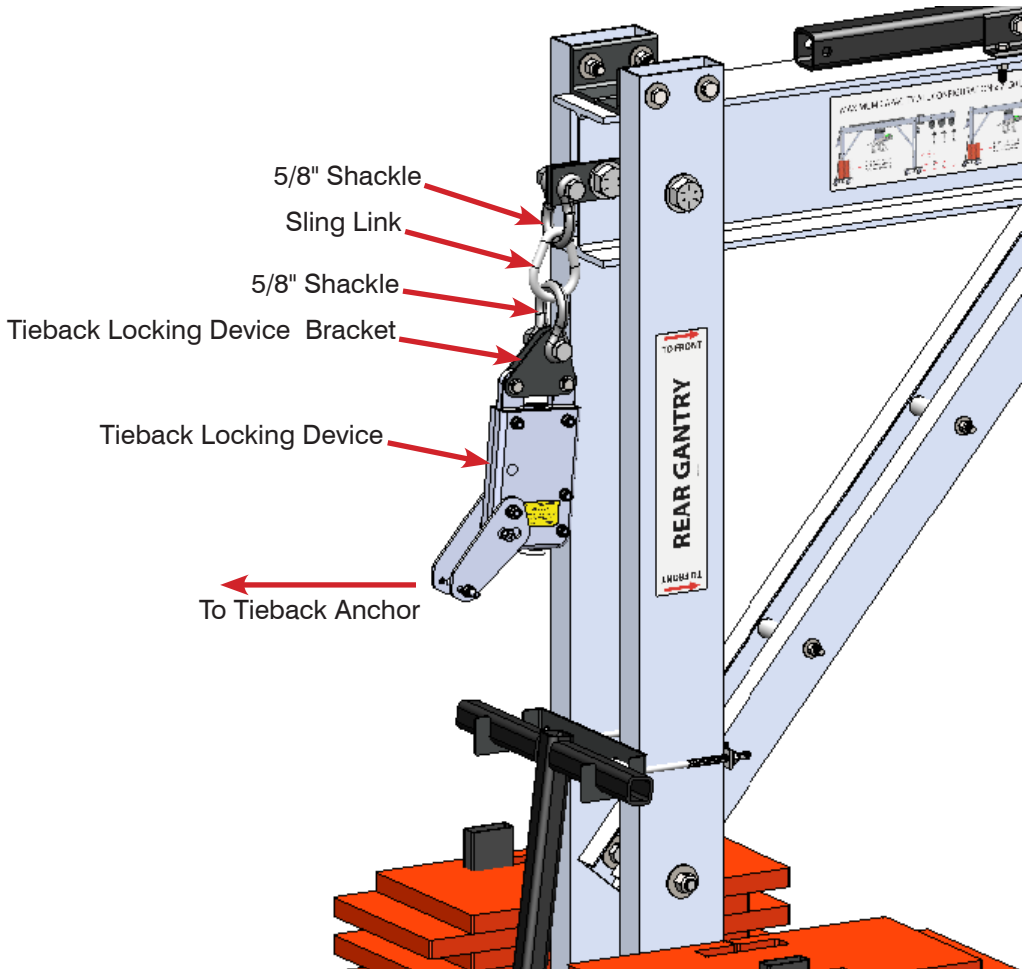


Figure 14: Installing Tieback Locking Device

g) Using a Tieback

Step 1:

A site engineer must determine a suitable tieback anchorage point. Tieback anchorage points must be capable of resisting 4,000 lbs.

Step 2:

Tieback wire rope and cable clamps must be equal in strength to the suspension wire rope.

NOTE: If the tieback cannot be installed at right angles to the structure face, two tiebacks, without slack, shall be attached to each rope-supporting device to prevent movement in any direction.

Step 3:

Attach the tieback to the Spider Glazier 2200 at the Tieback Locking Device, as shown in Figure 15. Pull DOWN on the handle to insert the end of the tieback wire rope. Once the handle is released, the tieback wire rope will remain inside the Tieback Locking Device until the handle is again pulled down.

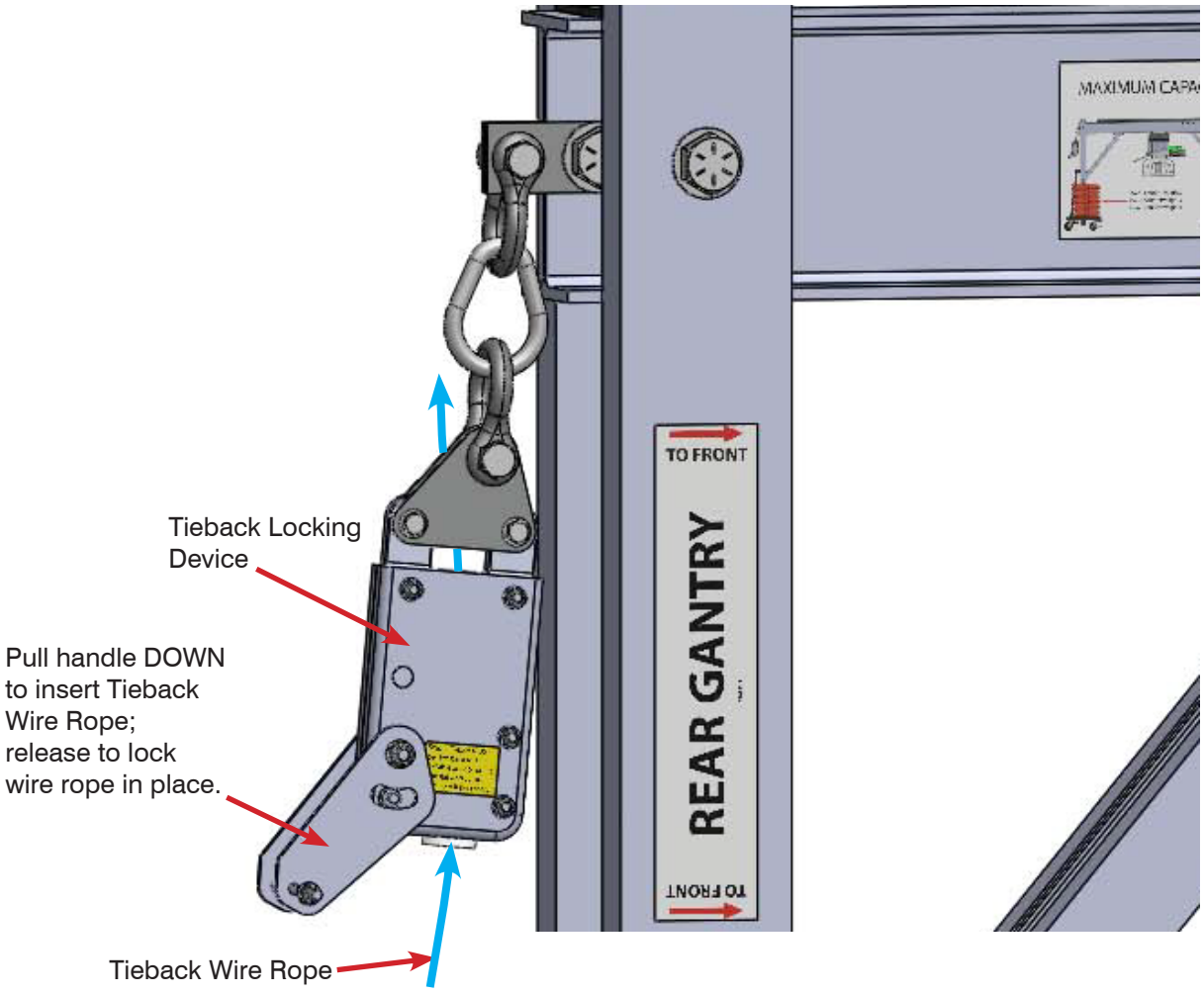


Figure 15: Using the Tieback Locking Device

H) Hoist Installation

NOTE: The Spider Glazier 2200 is reeved front to back, which means the hoist must be oriented so that the wire rope enters the Overspeed Safety Device before it enters the hoist's Rope Drive. Hoist weight is approximately 160 lbs.

Step 1:

Remove the two sets of screws, washers, and nuts that retain the resistor on the Hoist Rope Drive. Install a Gantry Bracket on each side of the resistors, **taking care to fit the Gantry Bracket that has the cutout bottom flange to the contours of the Hoist Rope Drive**, as shown in Figure 16. Secure with the two sets of hardware removed previously.

Step 2:

Insert a washer on the end of each of the four 1/2-inch screws that attach both Hoist Brackets to the Backspan. Insert the four 1/2-inch screws **upwards through the holes in the top of the Hoist Brackets**, as shown in Figure 17. Secure each 1/2-inch screw with another washer and a nut.

Step 3:

Insert a washer on the end of each of the two 3/4-inch screws and lift the Hoist and Gantry Bracket to the Backspan. Insert the two 3/4-inch screws **through the holes in the side of the Hoist Brackets**, as shown in Figure 18. Secure each 3/4-inch screw with another washer and a nut.

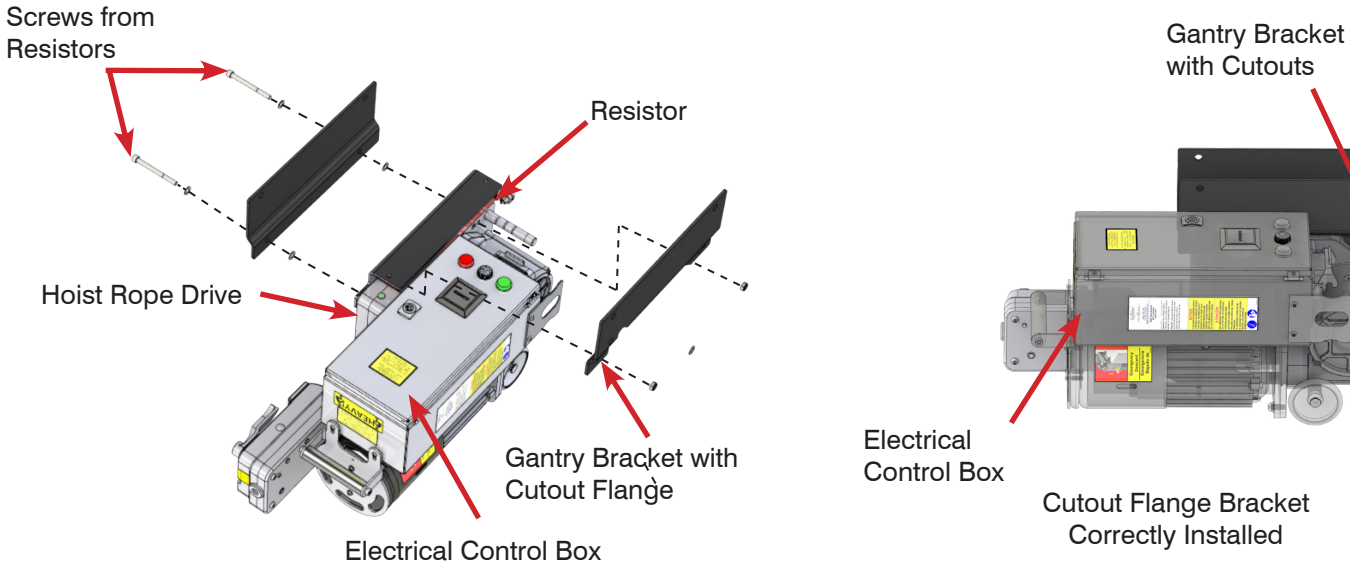


Figure 16: Installing Hoist Brackets

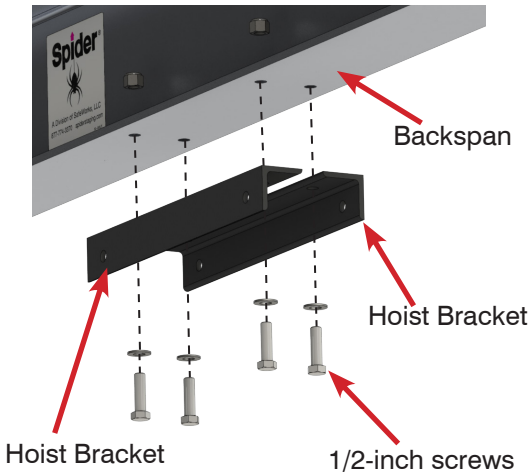


Figure 17: 1/2-inch Screws Installed

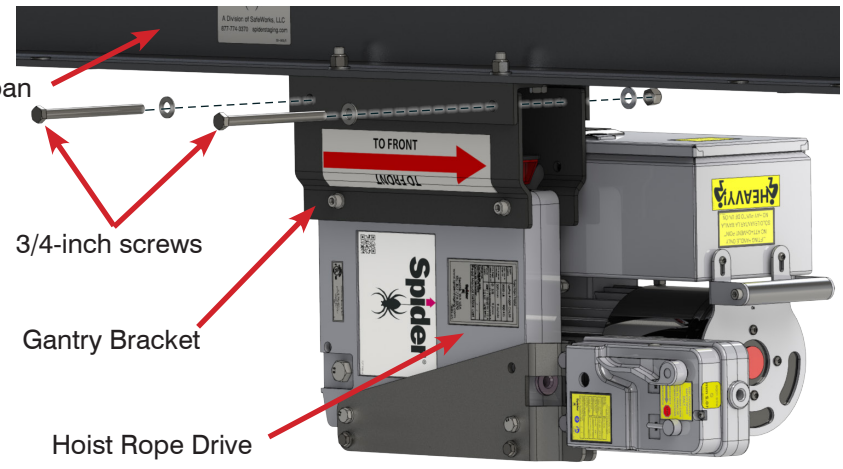


Figure 18: 3/4-inch Screws Installed

i) Wire Winder and Overspeed Safety Device Installation

Step 1:

Lift the Wire Winder up to hoist rope drive and align the screw holes on the wire winder brackets with the lower holes on the triangular overspeed bracket, as shown in Figure 20.

Install a washer on the ends of both 9/16-inch screws and insert into bracket. Install a second washer and a nut on the ends of both 9/16-inch screws and tighten until snug.

Step 2:

Locate the Stirrup Hole just above the triangular overspeed bracket on the hoist's rope drive (refer to Figure 19). Insert the brackets for the Wire Winder Entrance Tube into the square hole in the side of the Hoist Rope Drive (see Figure 19). Insert M16 screw into Stirrup hole and secure with nut.

Step 3:

Insert the tabs of the Overspeed Safety Device between the tabs on Hoist Rope Drive as shown in Figure 21.

Step 4:

Install a washer on the end of both screws and insert into bracket. Install a second washer and a nut on the ends of both screws and tighten until snug.

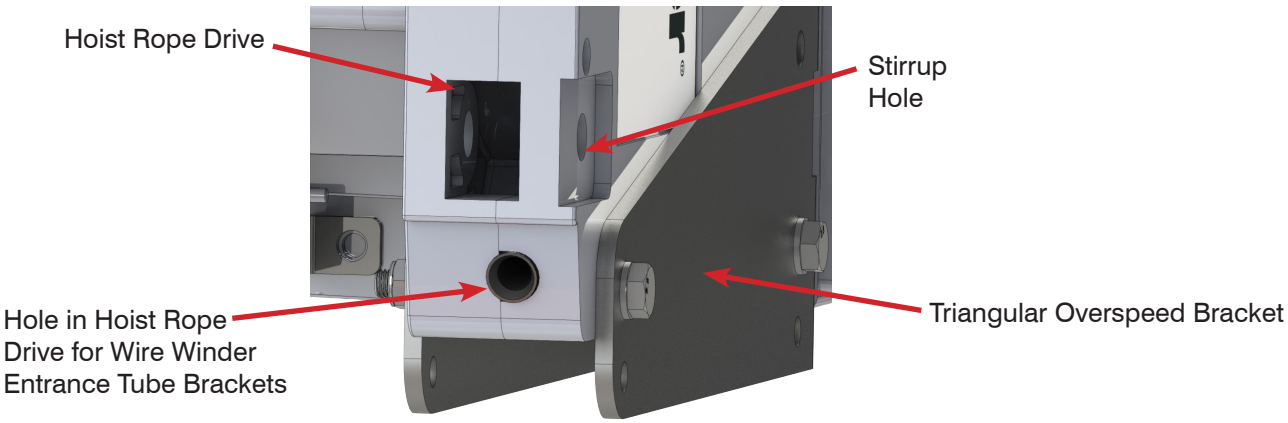


Figure 19: Hitch Pin Removal

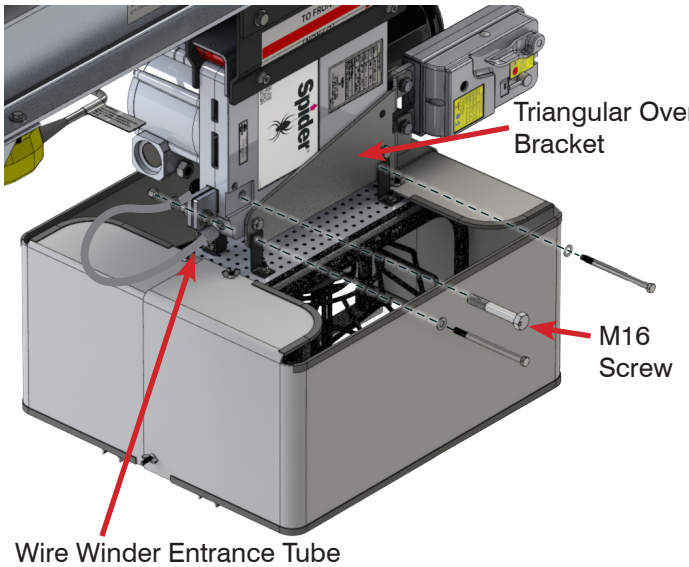


Figure 20: Wire Winder Installation

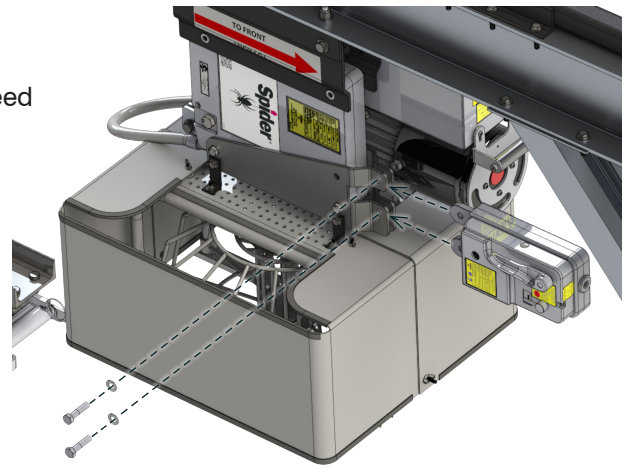


Figure 21: Overspeed Safety Device Installation

J) Reeving

NOTE: One end of the wire rope supplied with the Spider Glazier 2200 is bulleted and the other has a thimble and shackle on which the load hook is installed. Do NOT attempt to reeve with the thimble end. Length of wire rope supplied is 300 feet. Use ONLY the recommended wire rope (see "Wire Rope" on Page 26).

Step 1:

Connect hoist to power supply.

Step 2:

Feed the **bulleted end** of the wire rope in the following order past the following parts of the Spider Glazier 2200, as shown in Figure 22:

1. Through the Limit Switch Shackle,
2. Between the Front Sheave and the shroud bolts,
3. Into the front slot of the Gantry Sheave Wire Shroud, down between the sheave and shroud bolt, and out through the Wire Shroud rear slot,
4. Into the Overspeed Safety Device on the Hoist until you feel the traction roller inside grip it,
5. Run the Hoist in the UP direction to send the wire rope all the way through the Hoist Rope Drive, and
6. Directly into the Wire Winder Entrance Tube.

Step 3:

Continue running the hoist in the UP direction to run the wire rope into the wire winder **until the thimble end of the wire rope is approximately two feet from the bottom of the Front Sheave**.

Step 4:

Place the two halves of the striker plate around the wire rope just below the Limit Switch shackle and far enough from the Limit Switch to allow the lever to hang down in the closed position, as shown in Figure 23 on Page 22.

Step 5:

Remove cotter pin, nut and bolt from shackle on wire rope thimble and install load hook. Replace bolt, nut and cotter pin. Twist ends of cotter pin outward.

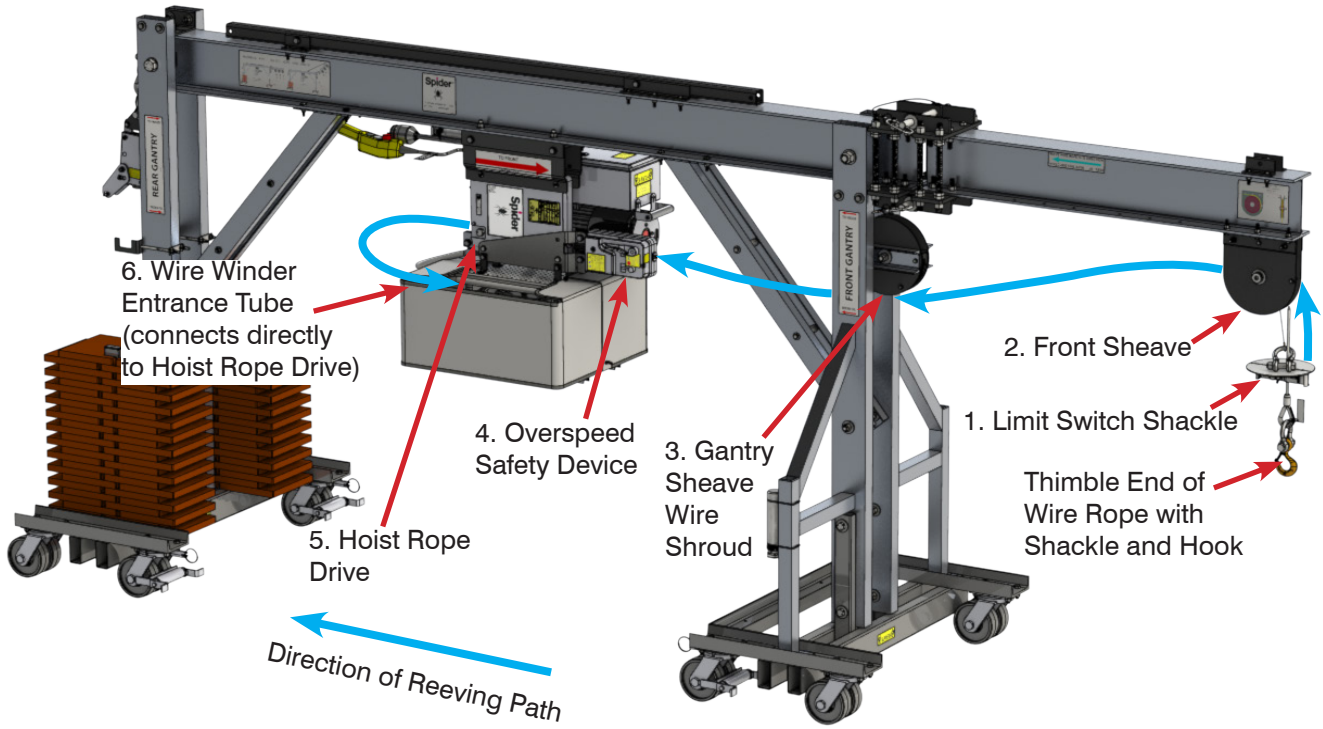


Figure 22: Reeving the Wire Rope

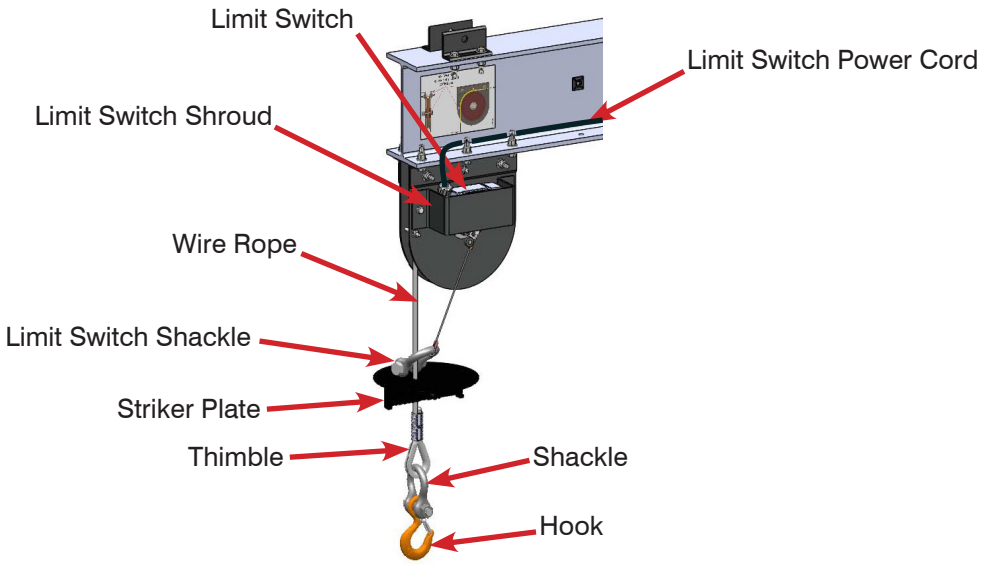


Figure 23: Striker Plate Installed

5. WORKING CONFIGURATIONS

The Spider Glazier 2200 can be configured in six different ways, using two vertical positions and three horizontal positions (refer to Figure 24 on Page 23 and Figure 25 on Page 24). **Each position requires a different number of 50-lb counterweights.** The rated load of 2,000 lb can be lifted from each configuration, **with the correct number of counterweights**. Refer to Table 1 below for the correct number of counterweights to use for each of the different configurations.

Table 1: Working Configuration Data

Vertical Position *	Horizontal Position **	Number of 50-lb ‡ Counterweights Required †	Hoist Capacity (C_H)	Reach (R) †	Safety Factor (S_F)	Overall Height	Overall Length
Flat	Inner	25	2000 lb	32 in.	2	78.5”	186"
	Mid	37		45.5 in.			
	Outermost	49		61.5 in.			
Raised	Inner	29		35.5 in.		117”	180"
	Mid	37		45 in.			
	Outermost	44		55 in.			

* Refers to the position of the Outreach.

** Refers to the position of the Front Sheave.

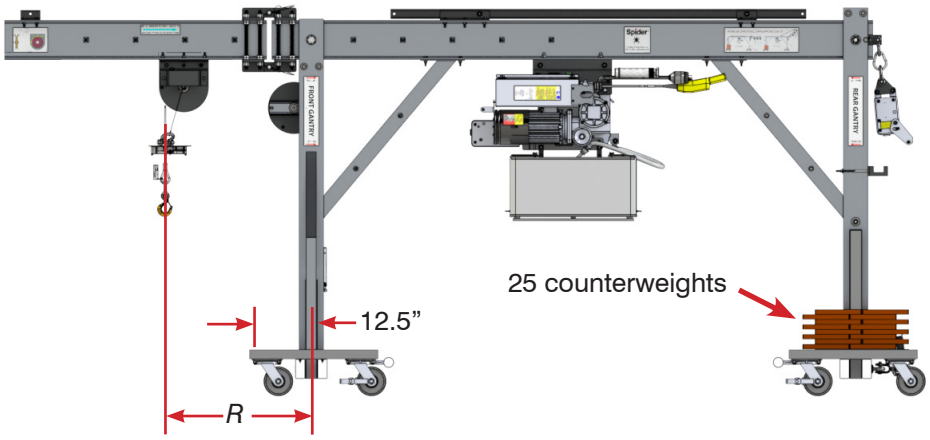
† Exact number has been rounded up.

‡ Weight of each counterweight is approximately 50 pounds.

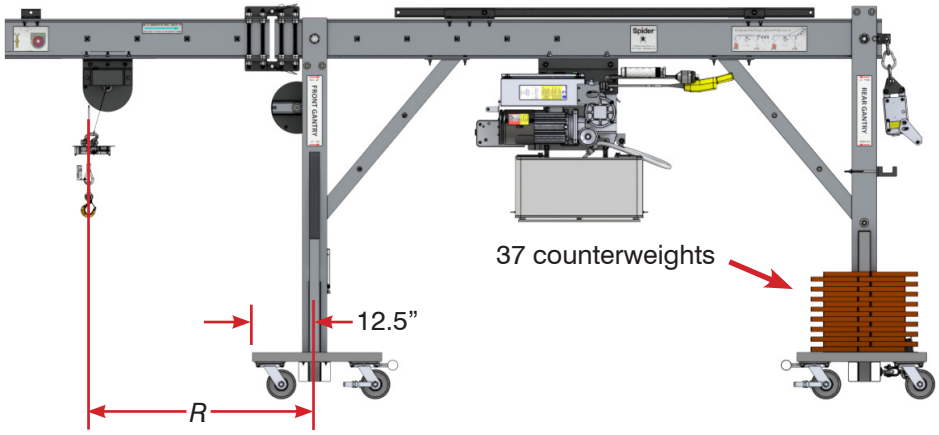
A) Flat Configurations

(Refer to Table 1 on Page 22)

Flat Inner Configuration



Flat Mid Configuration



Flat Outermost Configuration

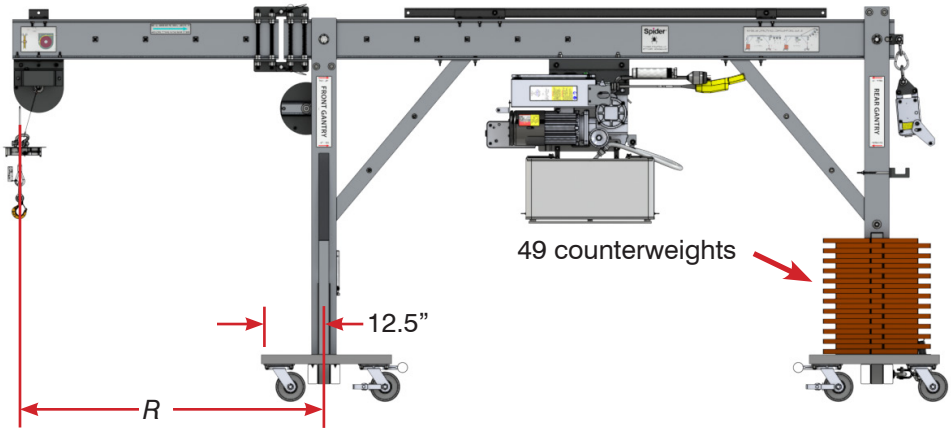


Figure 24: Configurations with the Outreach in Flat Position

B) Raised Configurations

(Refer to Table 1 on Page 22)

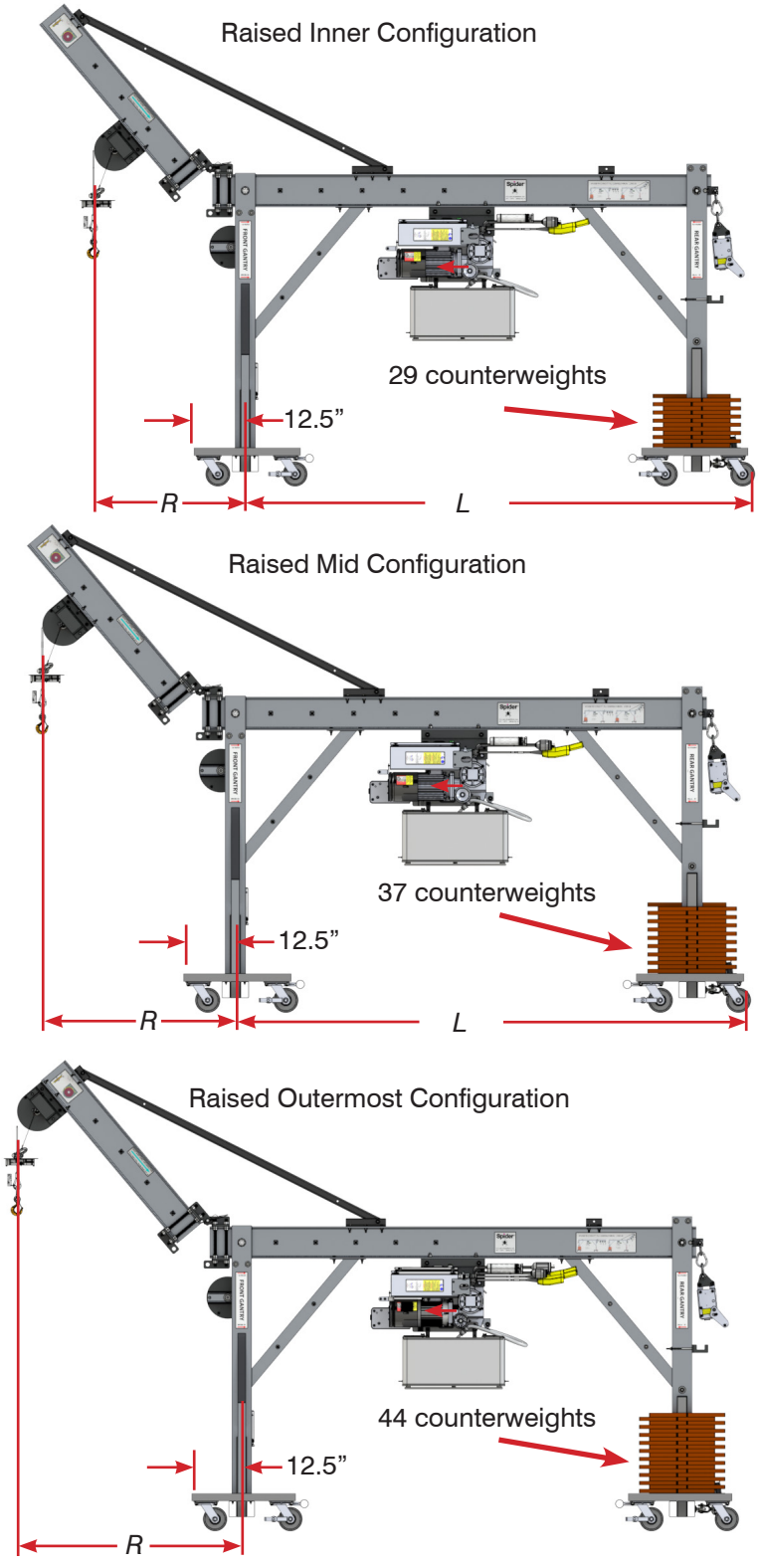


Figure 25: Configurations with the Outreach in Raised Position

6. TRANSPORTATION/STORAGE CONFIGURATION

The Outreach Beam can be positioned so that it is almost parallel to the Front Gantry upright. This reduces the overall length of the Spider Glazier to approximately 144 inches. To position the Outreach Beam for storage or transportation, perform the following steps:

A) Configuring for Storage or Transportation

Step 1:

De-reeve the wire rope.

Step 2:

Unplug the Limit Switch, if plugged into the Hoist Control Box, and put some slack into the Limit Switch power cord. Zip tie the Limit Switch Shackle to the shroud, or otherwise protect it.

Step 3:

Support the Outreach Beam and remove ONLY the **top** pin from the hinges. Support the Outreach Beam as the Front Sheave swings down between the Front Gantry uprights, as shown in Figure 26.

Step 4:

If transporting the Spider Glazier, zip tie the Outreach Beam to one of the Front Gantry uprights.

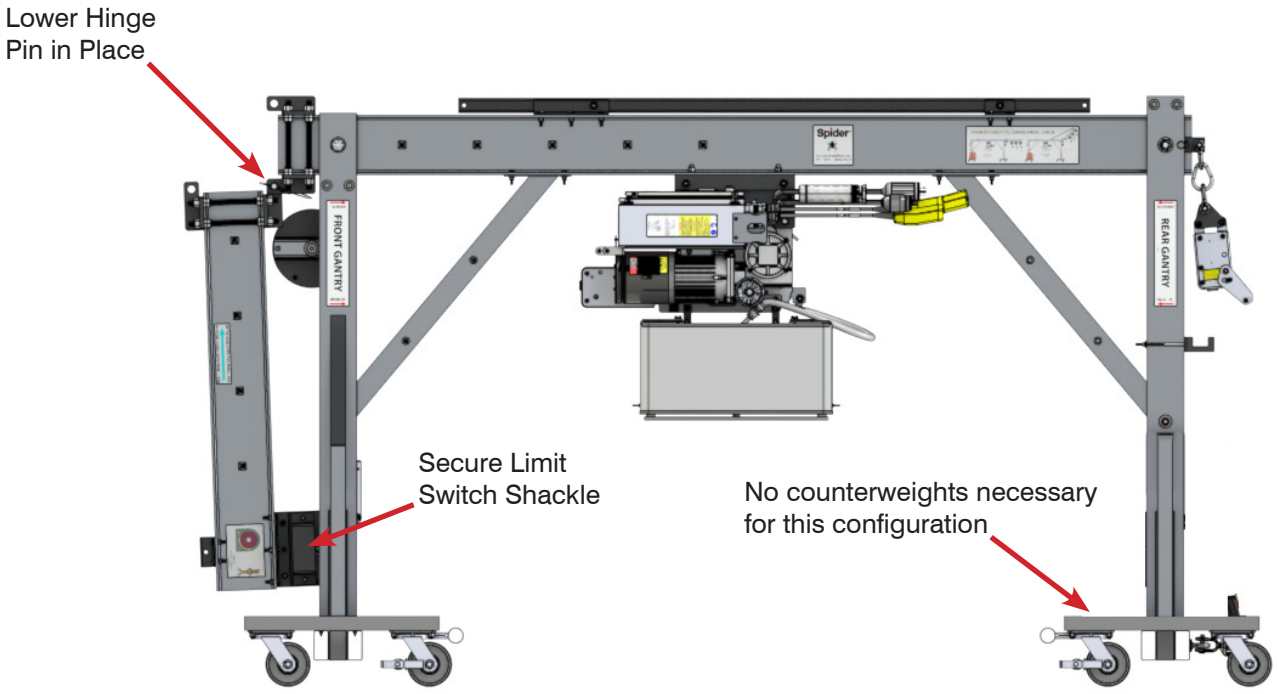


Figure 26: Transportation/Storage Configuration

7. WIRE ROPE

The wire rope recommended for the Spider Glazier 2200 is 3/8" diameter, 6x19, XIP grade, IWRC core, right regular lay, Warrington Seale construction, improved plow steel, with a rated breaking strength of 7.55 tons. Use only Spider-approved steel wire rope.

A) Important Points to Note

- Wire rope must be lubricated often to prevent rust.
- Do not kink or bend the wire rope over a sharp edge.
- Keep clear of all power lines, including arc-welding leads.
- Reeve properly to avoid damage to the wire rope. The wire rope should pass over both sheaves in the sheave groove. The Spider Glazier 2200 is reeved front to back. Refer to “Reeving” on Page 21 for specific reeving instructions.
- Do not use cable clips on the suspension wire rope. They are not as strong as a locked-in splice and can loosen.
- Length of wire rope provided with the Spider Glazier 2200 is 300 feet.

B) 30-Day Inspection

The wire rope should be examined by a person who is known to be trained and knowledgeable, and able to determine whether the wire rope still is safe to use. A written record should be kept with the equipment or at another convenient location indicating when a new wire rope is first installed. Use the “Wire Rope Inspection Report” on Page 27.

Replace the wire rope when it shows any of the following:

- Abrasion, corrosion, scrubbing, flattening, or peening that causes a reduction of more than 1/3 of the diameter of the outside individual wires.
- Kinking (see ① below), crushing (see ② below), bird caging (see ③ below) or any other distortion of the wire rope structure.

- Evidence of any heat damage from a torch or contact with electrical wires.
- Reduction of 0.0156" from the wire rope’s original diameter.
- More than one valley break (broken wire). This could mean that non-visible wires are fatigued or broken.
- Six randomly distributed broken wires in one rope lay or three broken wires in one strand within one rope lay.

WIRE ROPE INSPECTION REPORT

Machine:		Owned By:
Machine Location:		Manufacturer's ID#:
Rope Application:		
Rope Description:		
Date of Inspection:	Applicable Standards:	

Criteria for Removal of Wire Rope from Service:

Wire Rope	**Location on Wire Rope**				
Reduction of .0156 in. of the diameter (record measured diameter and location)					
6 Broken wires in 1 rope lay					
3 broken wires in 1 rope lay					
Excessive wear of 1/3 of outside wire diameter					
End Attachments					
1 broken wire					
Corrosion of rope—reduction of diameter of 0.0156 in.					
Splice and fitting—excessive wear of 1/3 of outside wire diameter					
Other					
Look for damage—rope must have 3-ton minimum strength.					
First signs of wear of wire rope guide					
Make sure rope is properly lubricated					