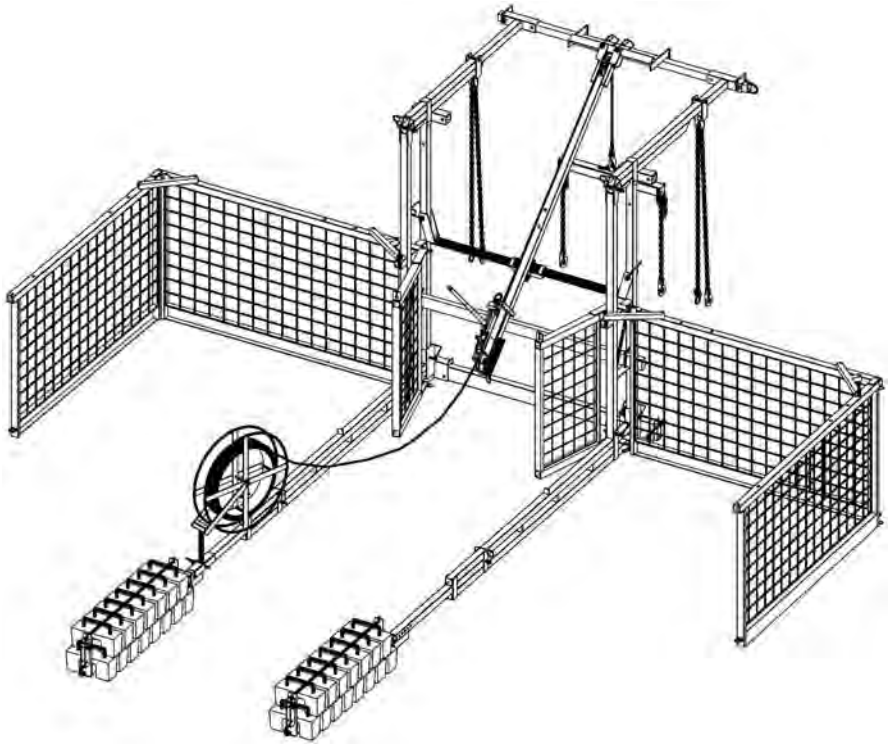
SUPERCHUTE® DEBRIS REMOVAL SYSTEM

CHUTE HOIST INSTALLATION MANUAL



Hoister Model N° SC-2000-cb

SUPERCHUTE® FACTORY

- toll free: 800-363-2488
- telephone: 514-365-6121
- facsimile: 514-365-8987
- internet: www.superchute.com
- e-mail: info@superchute.com
- address: 8810 Elmslie Road, Montreal, Canada, H8R 1V6

Edition of August 30, 2004

IMPORTANT REFERENCE DOCUMENT

IMPORTANT NOTICE:

IT IS THE RESPONSIBILITY OF COMPANIES THAT SELL, RENT OR USE THE SUPERCHUTE® PRODUCT TO FREELY SUPPLY THE LATEST EDITION OF THIS MANUAL TO THE FOLLOWING PERSONS:

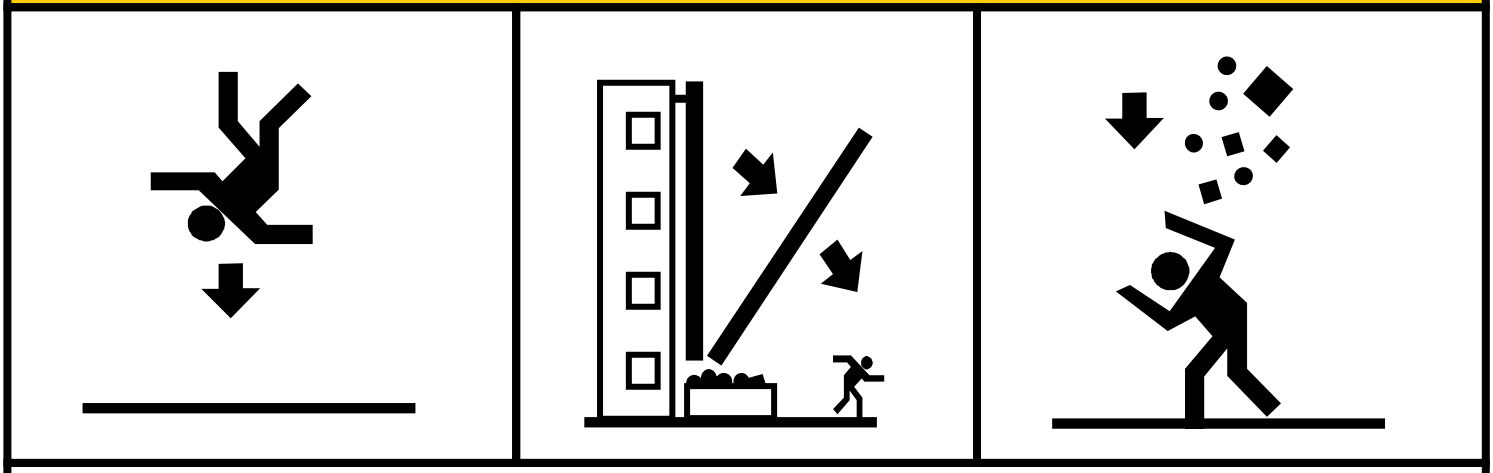
- **THE PLANNERS AND SUPERVISORS OF THE CHUTE SYSTEM**
- **THE INSTALLERS OF THE CHUTE SYSTEM**
- **THE USERS OF THE CHUTE SYSTEM**

If you have any questions or comments concerning this manual, please feel free to contact Superchute Ltd.

This manual refers to the following products, which are protected by international patent laws:

Door Sections	Wraparound® Regular Sections	Chute Hoists
U.S. Pat. No. Des. 328,174 Can. Ind. Des. 1990 RD 66842	U.S. Pat. 5,472,768 Can. Pat. 2,119,108 U.K. Pat. 2,276,151	U.S. Pat. 5,934,437 Can. Pat. Application 2,177,741

⚠ WARNING



- The installation and use of a Superchute Chute System involves many hazards, for example, the risk of:

  - a worker falling off a building
  - a blockage in the chute causing the chute system to collapse
  - a person being struck by falling debris

- Failure to follow Superchute's instructions may result in serious injury or death.

- Planners, Supervisors, Installers, and Users must read, understand, and follow the instructions found in these manuals before rigging or using a chute system:

  1. The "Chutes Manual"
  2. The applicable "Chute Hoist Installation Manual(s)"

- For copies of these manuals contact Superchute® Ltd:
  or download them from www.superchute.com

  1-800-363-2488

HOW TO USE THIS MANUAL

Many people read this manual from beginning to end when they first receive their chute hoist. The manual explains the hoist's features and the procedures for using it safely.

In this manual, you'll find that pictures and words work together to explain things quickly.

A) USE THE MOST RECENT EDITION

- Each new edition of the SC-2000-cb Chute Hoist Installation Manual contains important new information.
- ALWAYS USE THE MOST RECENT EDITION: Compare the edition date of this booklet (printed at the bottom of every page) to the edition available for download on the Superchute website: www.superchute.com. Use the edition with the most recent date. If you do not have access to the internet, call Superchute (1-800-363-2488) and ask a representative for assistance.
- The instructions in a new edition supersede any instruction found in a prior edition.
- Avoid confusion: discard any old SC-2000-cb Chute Hoist Installation Manuals.

B) IF USING THIS MANUAL EDITION WITH AN OLDER HOIST

Over time, improvements have been made to the Hoister. If you are using this manual with an older hoist, you may find some of the sketches do not match the product you have. If you are unsure of how to proceed, call the Superchute® Factory: 1-800-363-2488.

Older hoists can be upgraded to reflect the latest improvements. Contact the Superchute® factory for details.

C) USE THE TABLE OF CONTENTS

A good place to look for what you need is the Table of Contents located on page 6 of the manual. It's a list of all that's in the manual along with the page number where you'll find it.

D) SAFETY WARNINGS AND SYMBOLS

You will find a number of safety warnings in this book. Safety warnings tell you about things that could hurt you, or others, if you were to ignore the warning. We use the following symbol to attract your attention to the warning:

⚠ WARNING

A warning indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

Here is an example of a Superchute® warning:

⚠ WARNING

Hazard

- A ramp resting on the hoist frame could greatly increase the loading on the hoist frame.

Consequence

- The load increase could cause the hoist frame to fail.

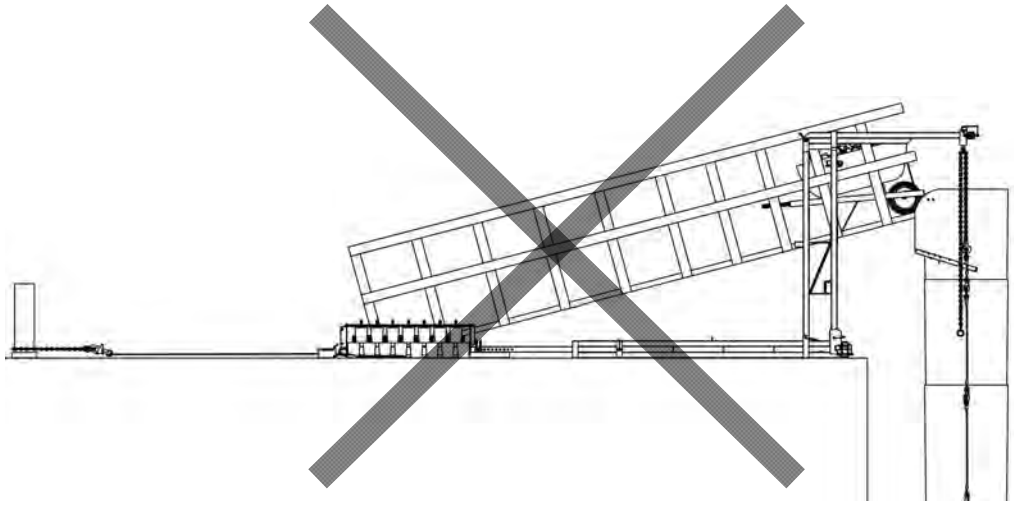
Instruction

- Do NOT rest ramps on the hoist frame. Do NOT attach ramps to the hoist frame. Ramp designs must be approved by a structural engineer.

Pictorial (optional)

WRONG:

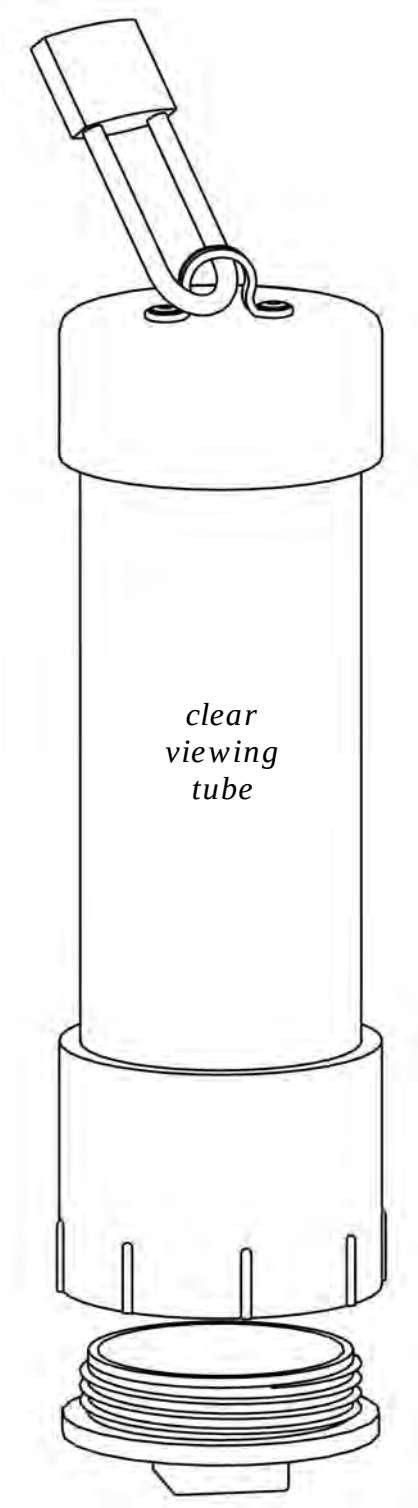
The wheelbarrow ramp increases the load on the hoist frame.



E) STORE THE MANUAL IN THE SUPERCHUTE DOCUMENTS CANISTER

Use a canister at the jobsite to:

- protect and store the manual.
- make the manual readily available to users of the Hoist.



The canister is virtually indestructible and weatherproof. It features a clear plastic viewing tube that allows users to see its contents. The canister is supplied with a brass padlock to allow it to be locked to the hoist.

An on-site canister protects your workers and your company by ensuring greater jobsite safety. Use the canister as part of your overall safety program.

Color pictures with more explanations are provided on the Superchute website: www.superchute.com.

TABLE OF CONTENTS

1. INTRODUCTION

Welcome to safer, quicker, and easier chute installations!

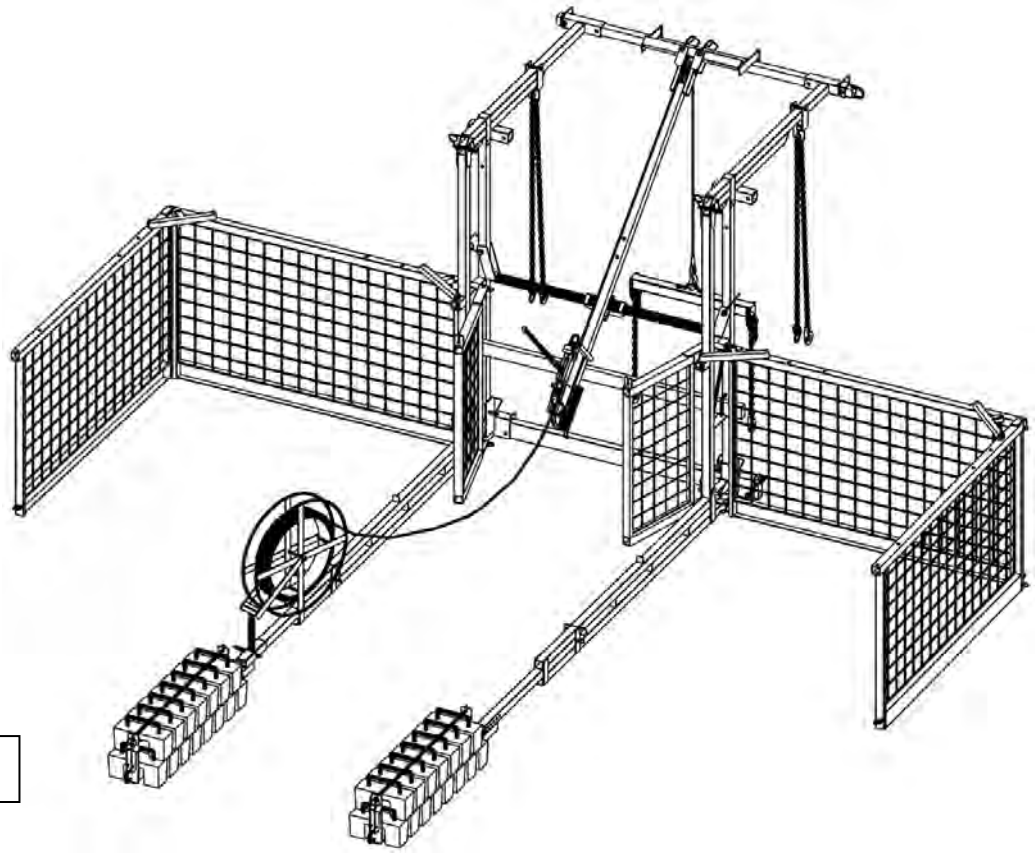
The Superchute® Hoister is a heavy-duty chute hoist that is installed on concrete roofs or concrete floors. The frame is secured using either counterweights or expansion anchor bolts.

Superchute Ltd. manufactures three models of Hoister: the SC-610-cb, SC-900-cb, and SC-2000-cb. This installation manual concerns model SC-2000-cb, which will raise, support, and lower up to 1700 lb. or 200 ft. of chute (whichever is reached first). The length of chute that can be created depends on the diameter of chute to be used, and must be calculated (refer to Section 7 in this manual entitled: **Assess Chute Height & Weight**).

The entire unit assembles in 10 minutes with just a few locking pins. No tools are needed. The design features a 3:1 safety factor.

A removable Fishpole is available for lifting and lowering the chute. A single Fishpole can serve many SC-2000-cb frames.

A Hoister consists of a dozen compact pieces, all of which are small enough to fit in an elevator car. For added fall protection, OSHA compliant guardrails & gates are available.

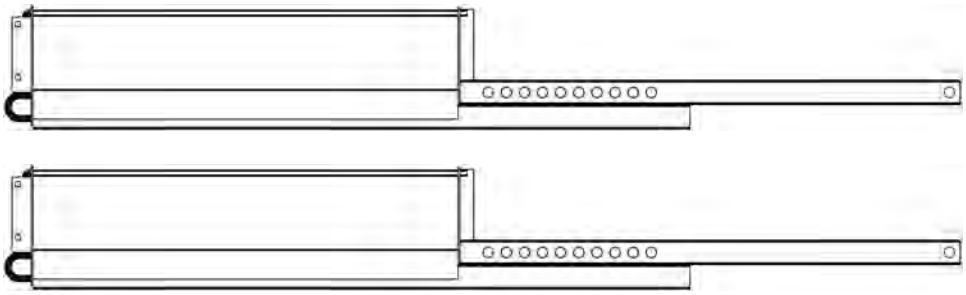


U.S. Pat. 5,934,437

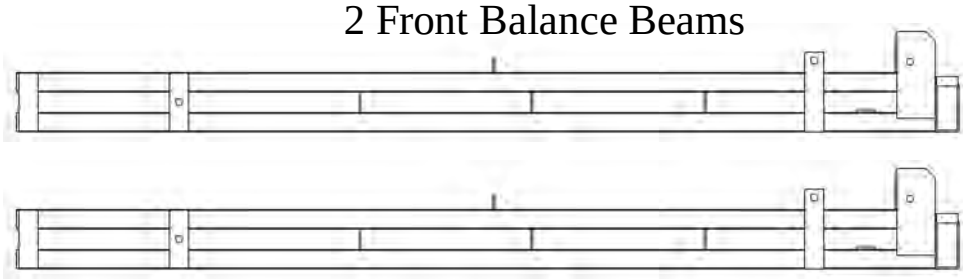
2. IDENTIFY THE PIECES

Frame Components

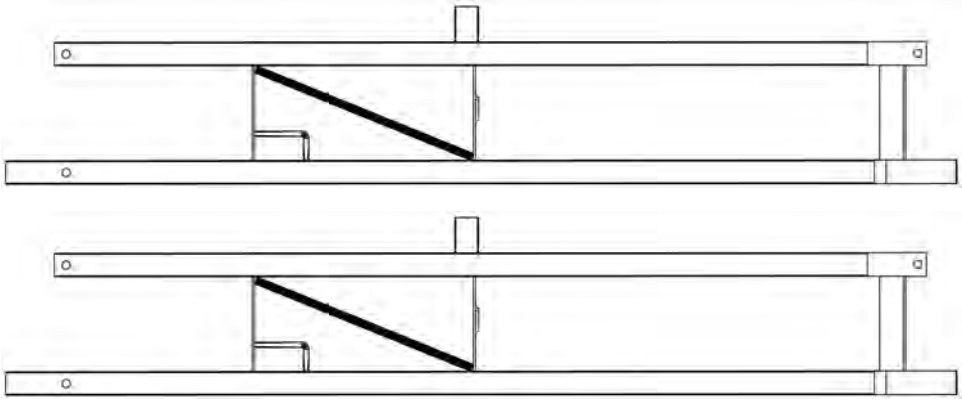
2 Back Balance Beams
(shown with built-in Pin Racks)



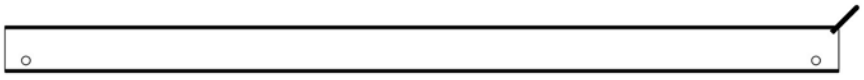
2 Front Balance Beams



2 Masts

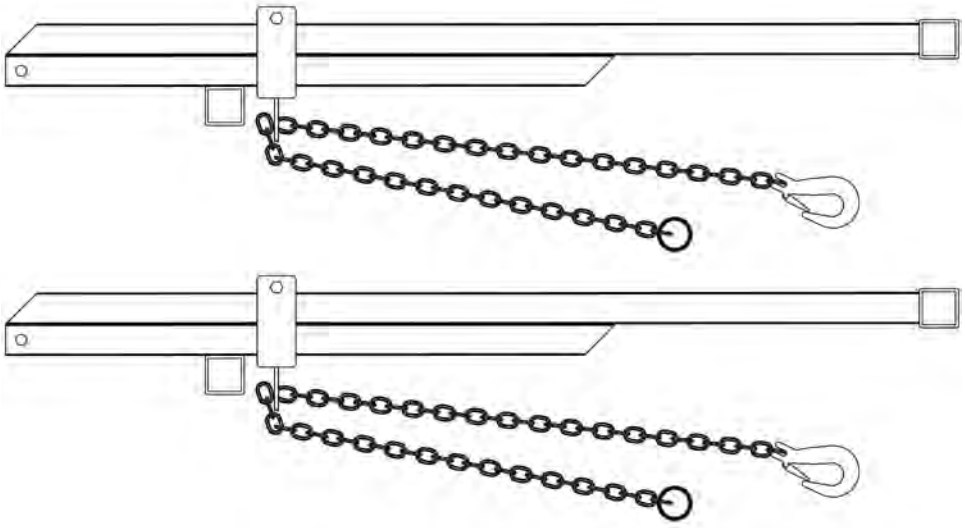


1 Toeboard



Frame Components (continued)

2 Booms with Chains

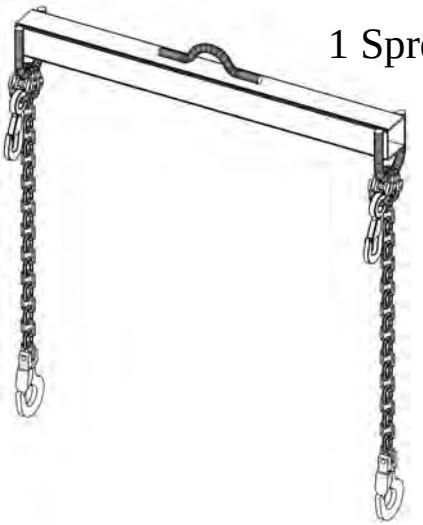


1 Toprail

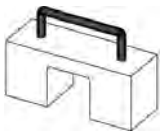
18 Pins
(9 pins per Pin Rack)

1 Outer Cross Bar (also known as the OCB)

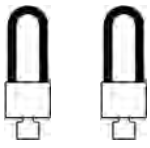
1 Spreader Bar



30 Weights
(55 lb. each)



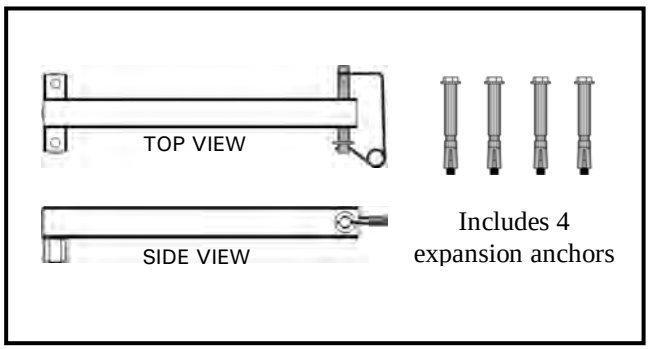
2 Padlocks

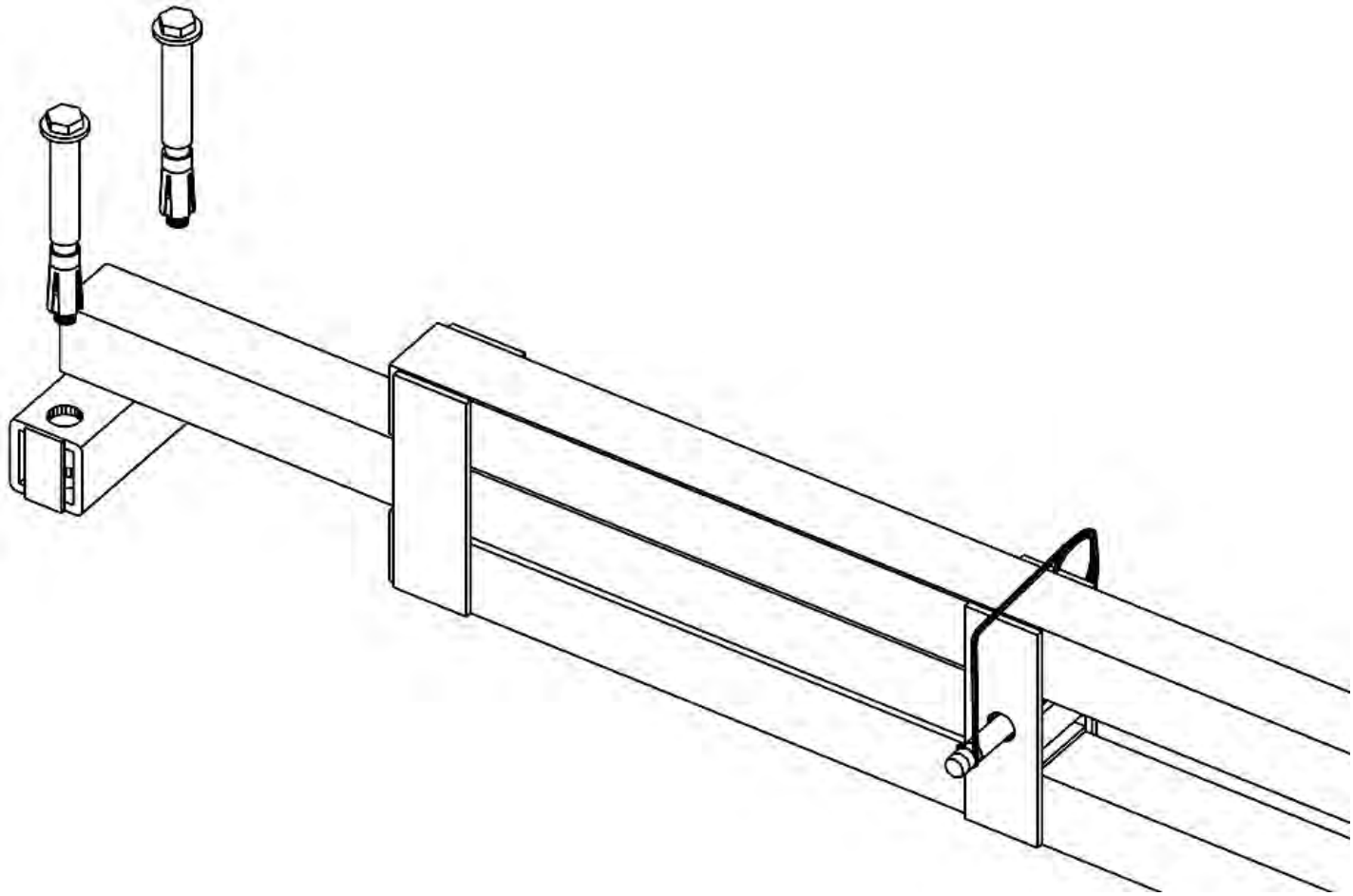


Optional Components (Sold Separately)

Bolt-Down Kit

Replaces the 2 back balance beams and 30 counterweights.
(See page 34 for more information).





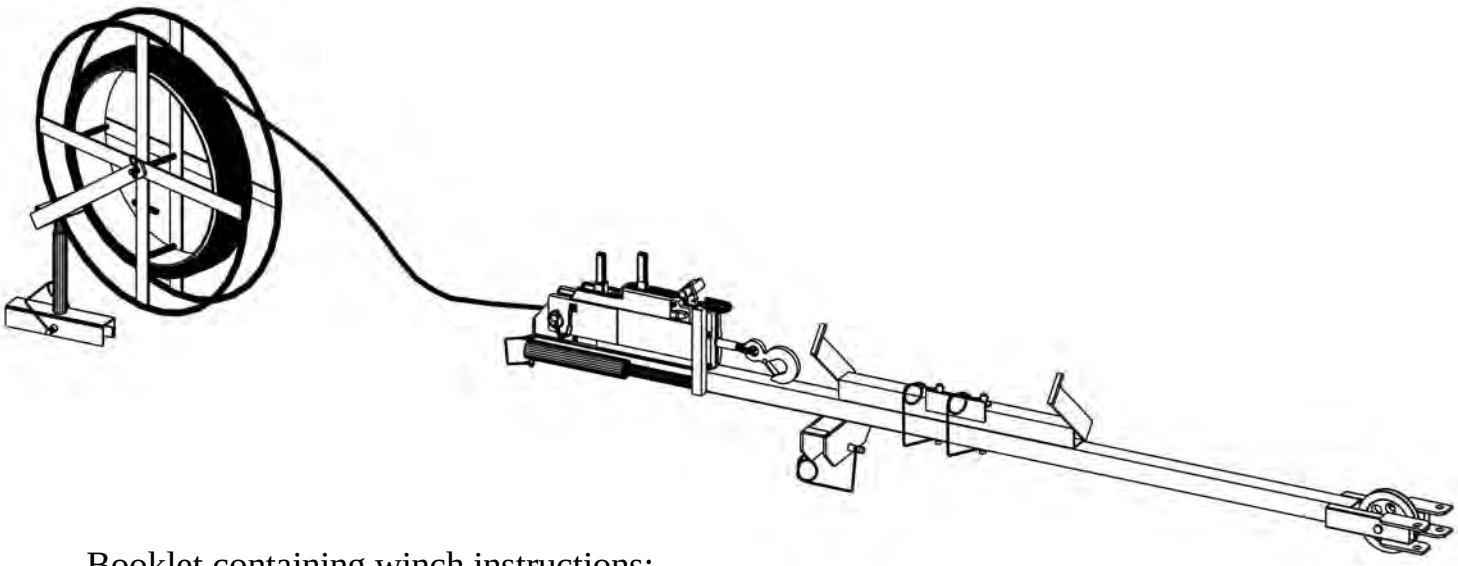
Hoisting Device

1 Fishpole equipped with:

- Griphoist®-Tirfor® winch model T-516
- Winch handle

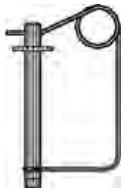
- 220 ft cable with hook
- Cable reeler

- T-bar
- Sheave wheel



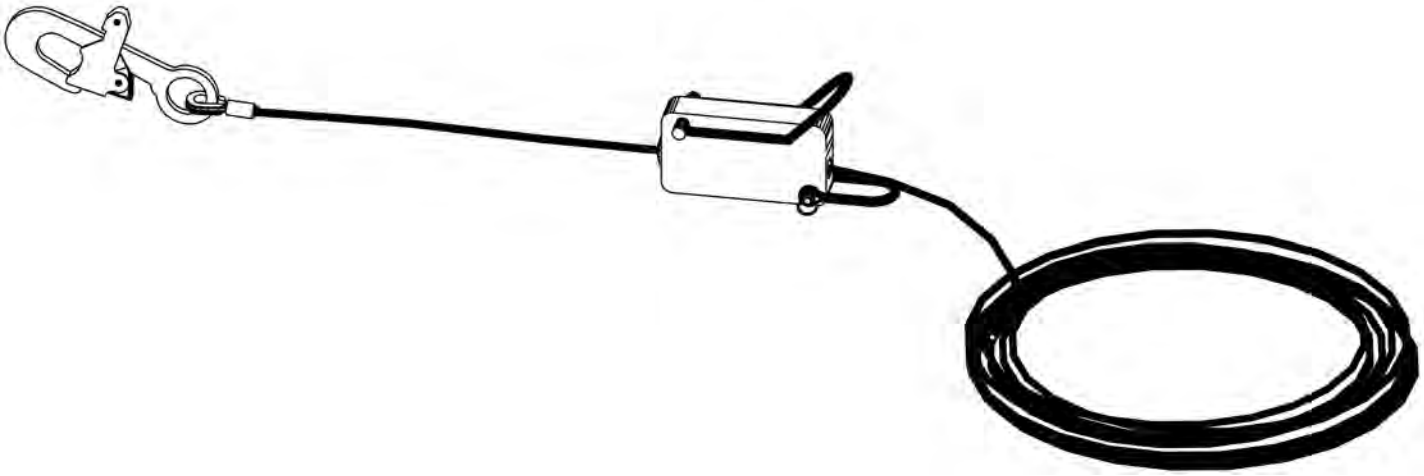
Booklet containing winch instructions:
"Tirfor – Operating and Maintenance Instructions"

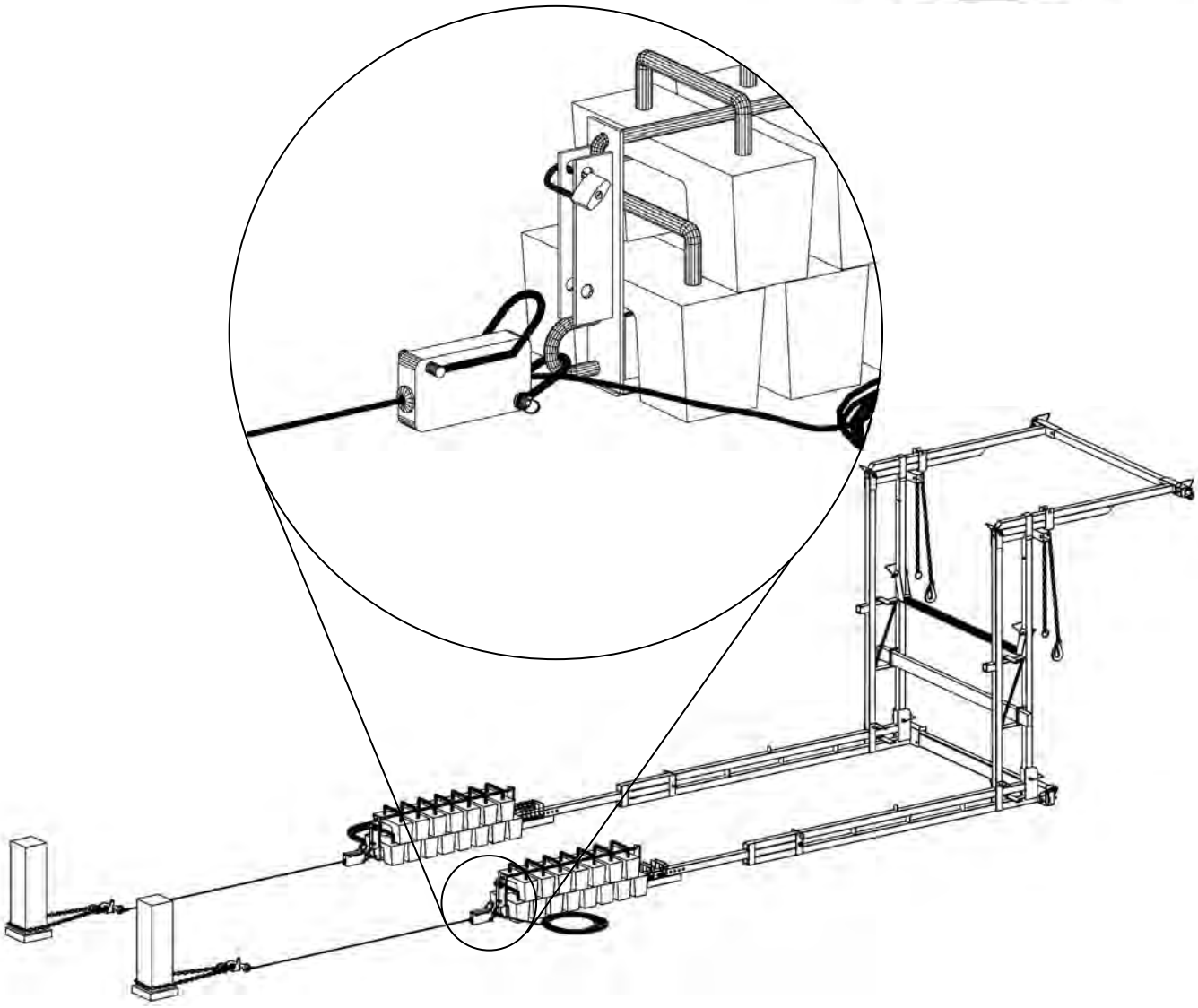
5 Pins



Tie-Back Kits

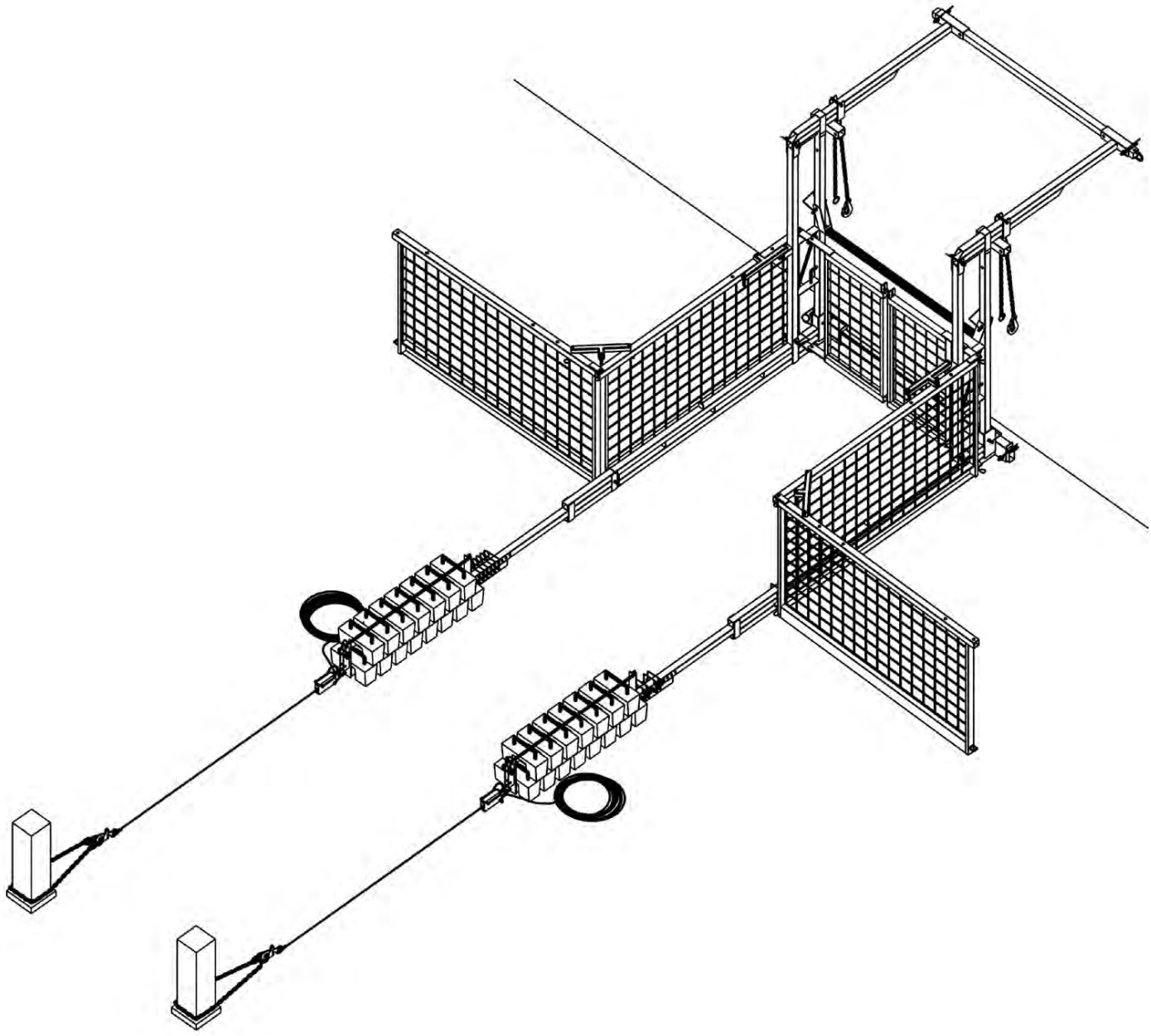
In the event of a blockage, tie-backs will help prevent the hoist from being pulled over the edge of the supporting structure.



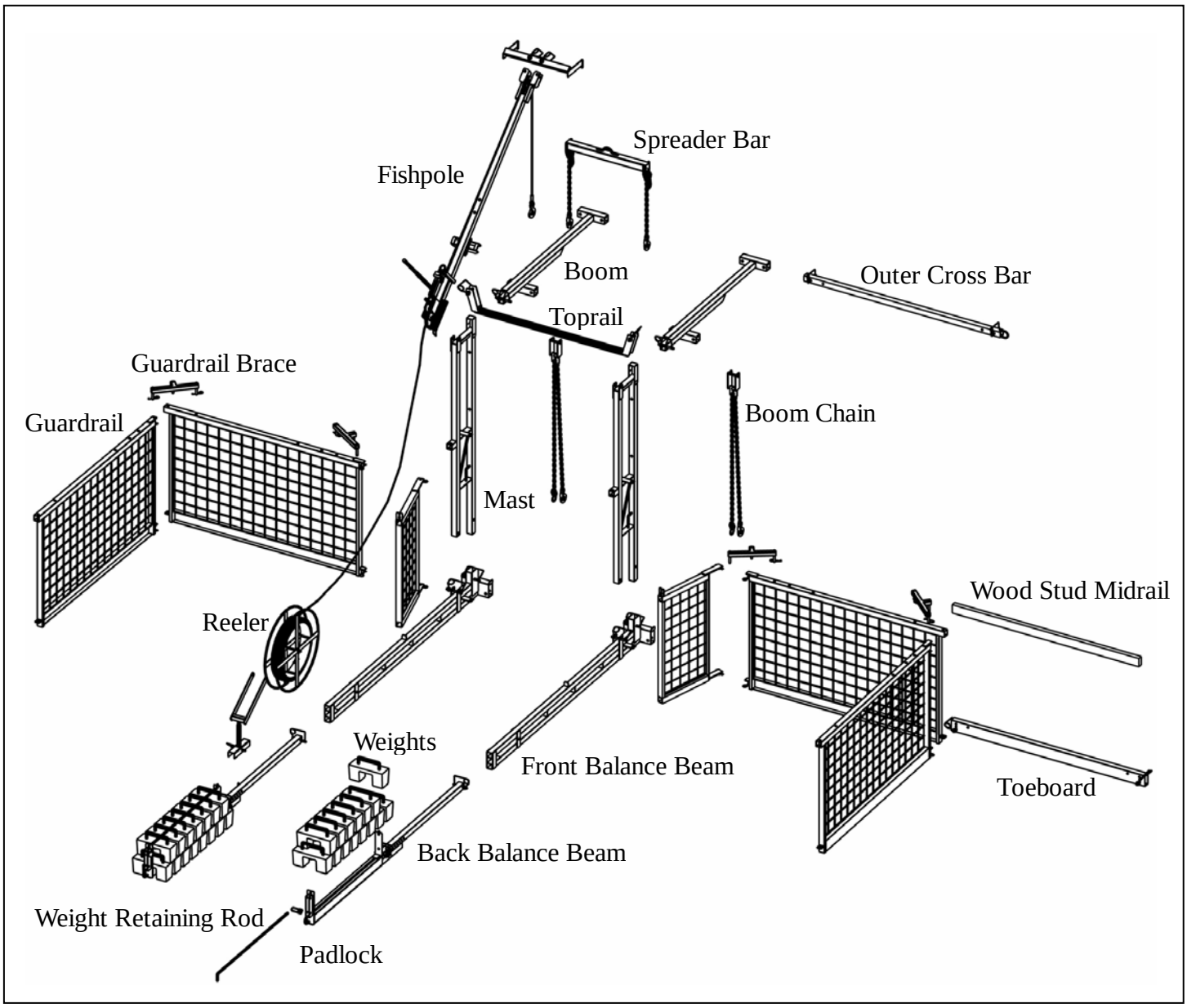


Gates & Guardrails

For added fall protection.



Exploded View

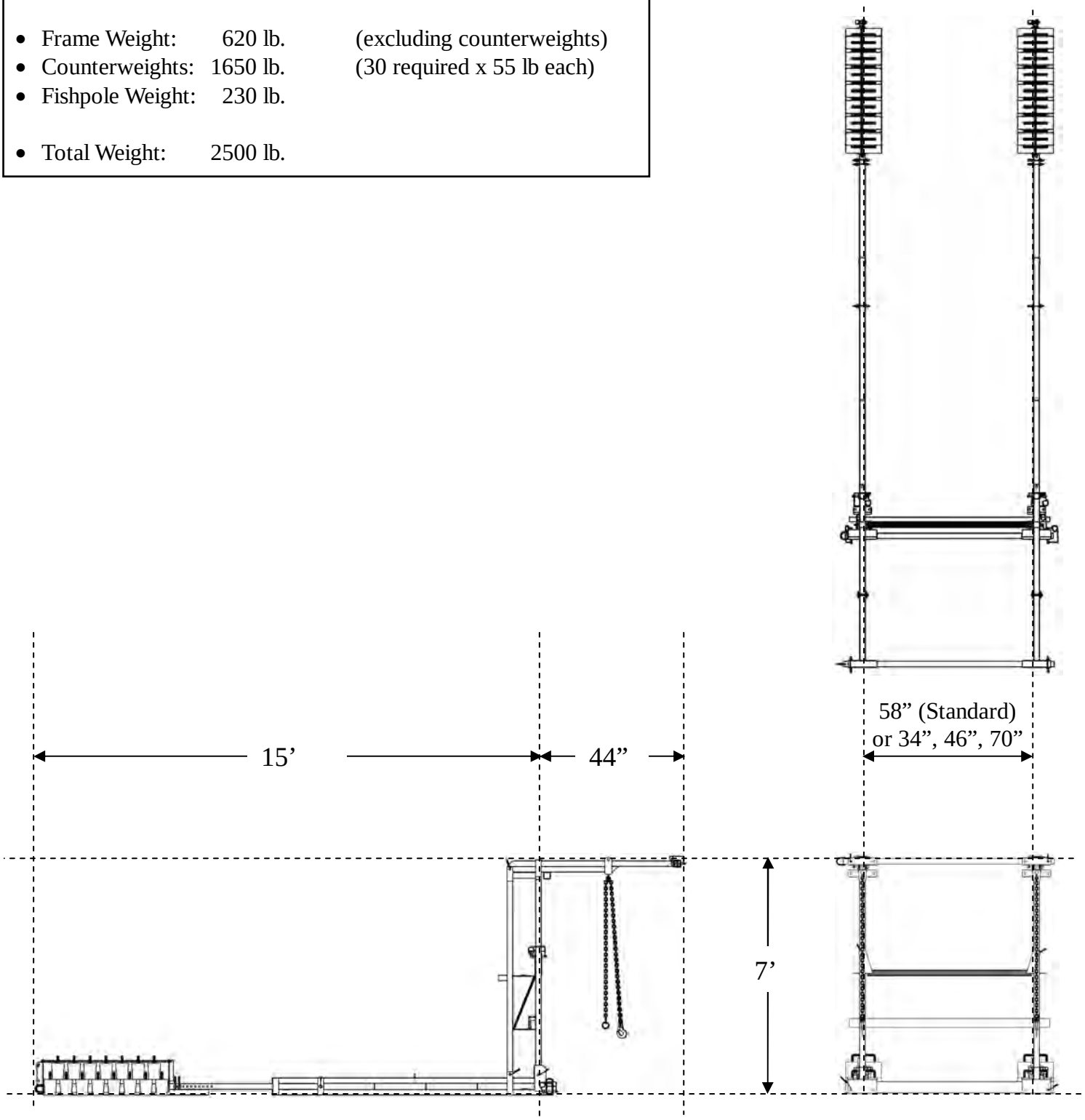


3. DIMENSIONS

WHEN COUNTERWEIGHTED

- Frame Weight: 620 lb. (excluding counterweights)
- Counterweights: 1650 lb. (30 required x 55 lb each)
- Fishpole Weight: 230 lb.

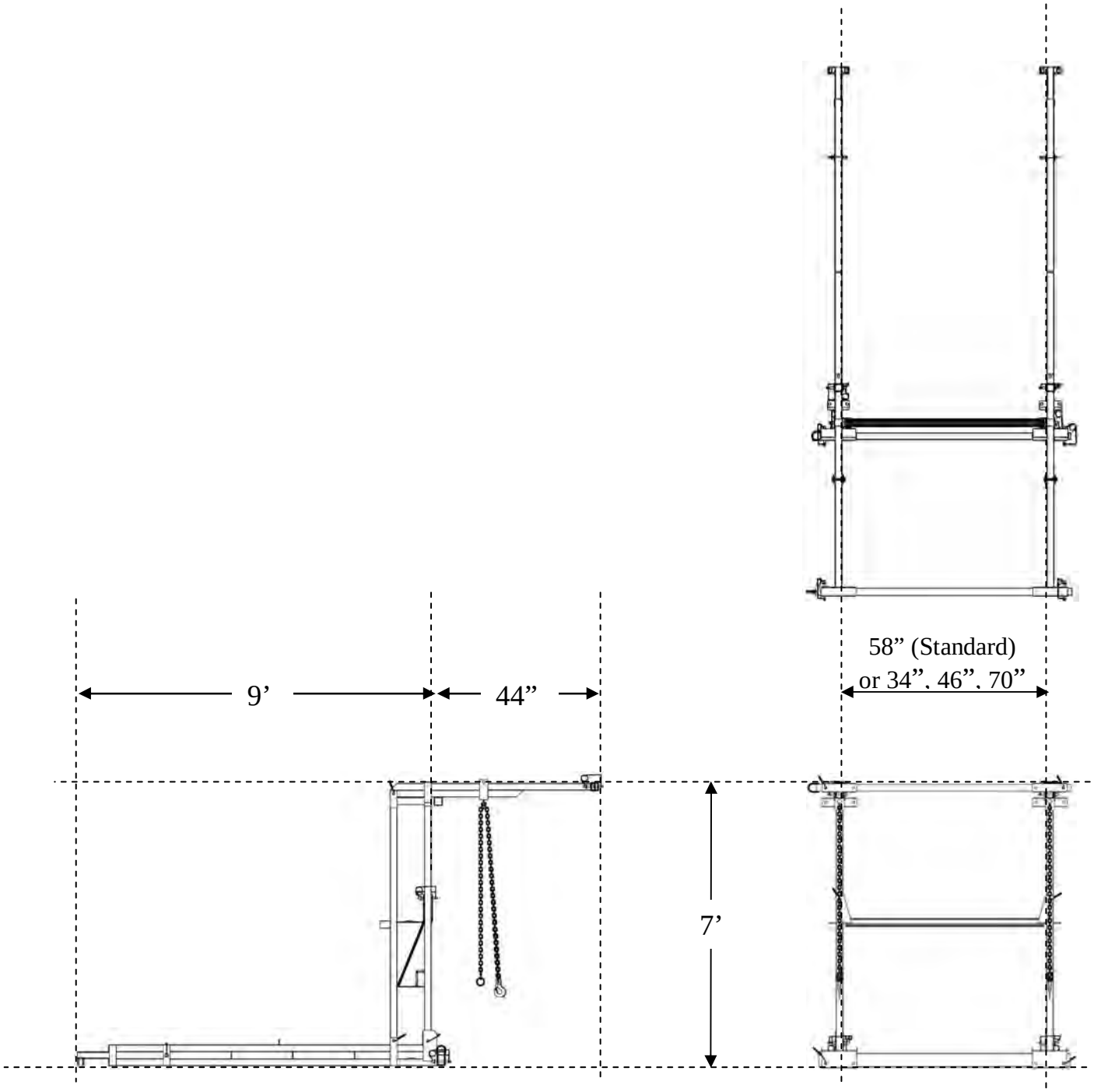
- Total Weight: 2500 lb.



WHEN BOLTED TO THE SLAB

- Frame Weight: 490 lb. (excluding counterweights & rear weight beams)
- Fishpole Weight: 230 lb.
- Bolt-Down Kit: 26 lb.

- Total Weight: 746 lb.

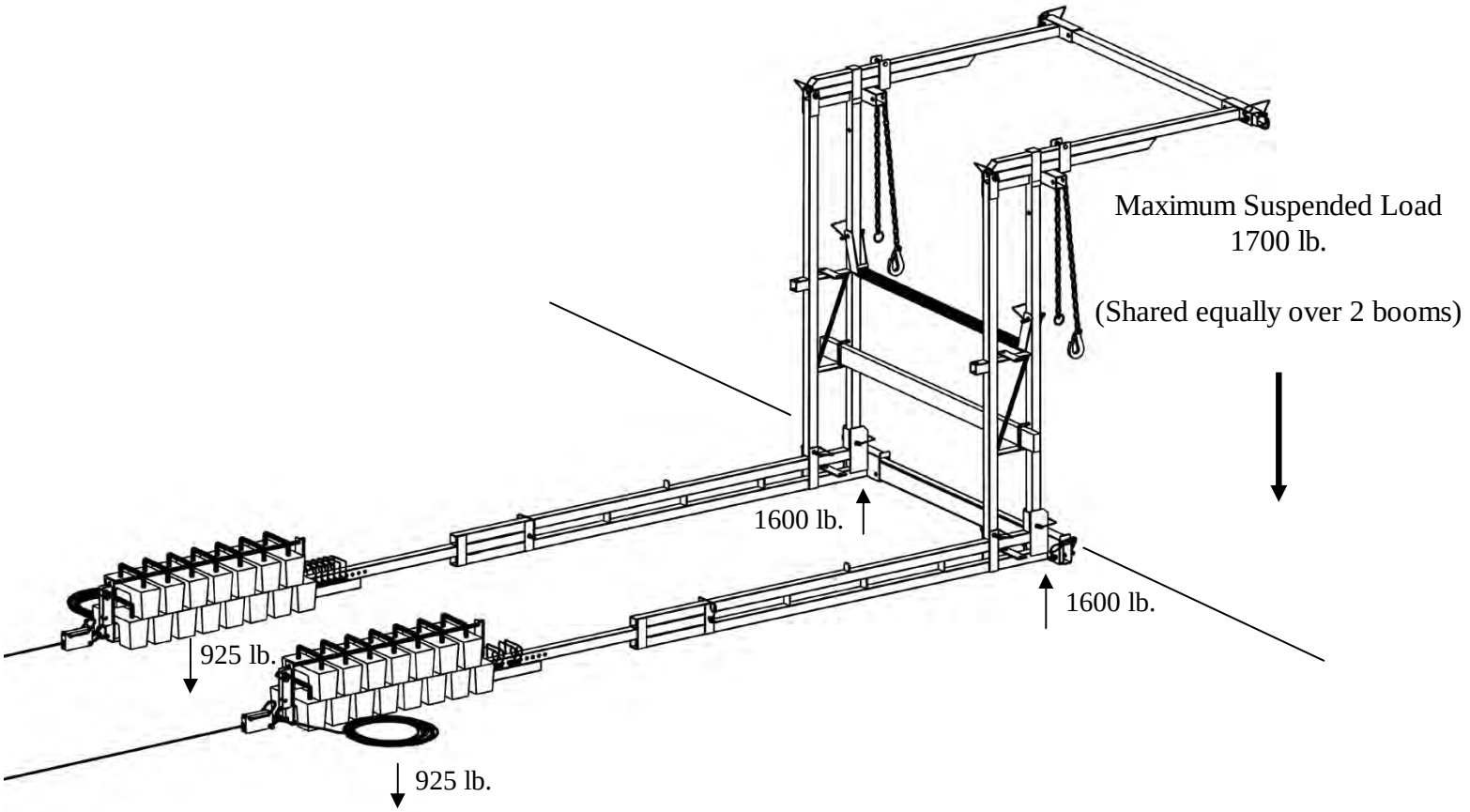


4. NORMAL LOADS

Secured using 2 Counterweighted Extensions

The sketch shows the loads imposed on the supporting structure with normal use.

A structural engineer must verify the adequacy of the supporting floor.

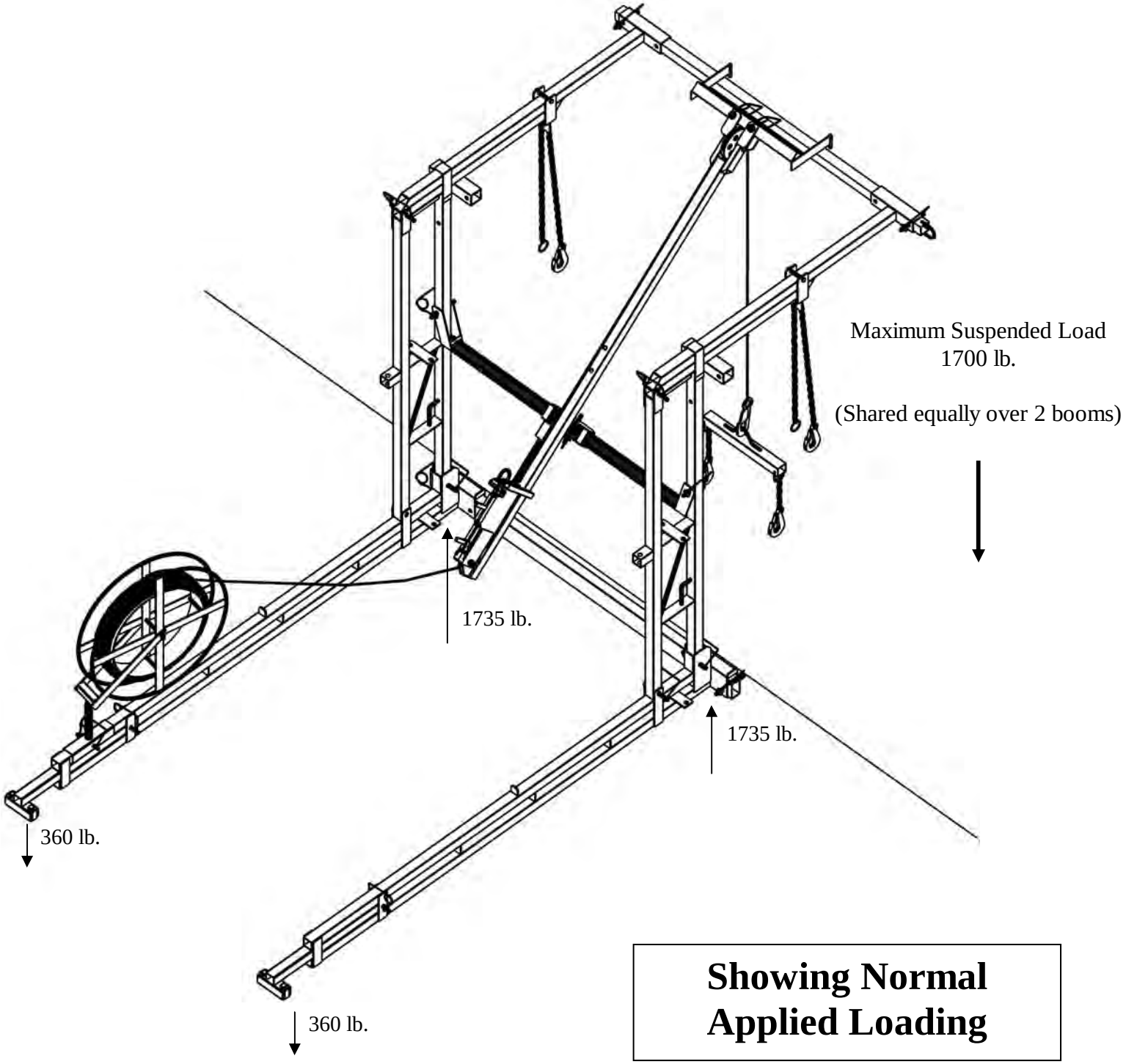


Showing Normal Applied Loading

Secured using 4 Factory-Approved Expansion Anchor Bolts

The sketch shows the loads imposed on the supporting structure with normal use.

A structural engineer must verify the adequacy of the supporting concrete slab.



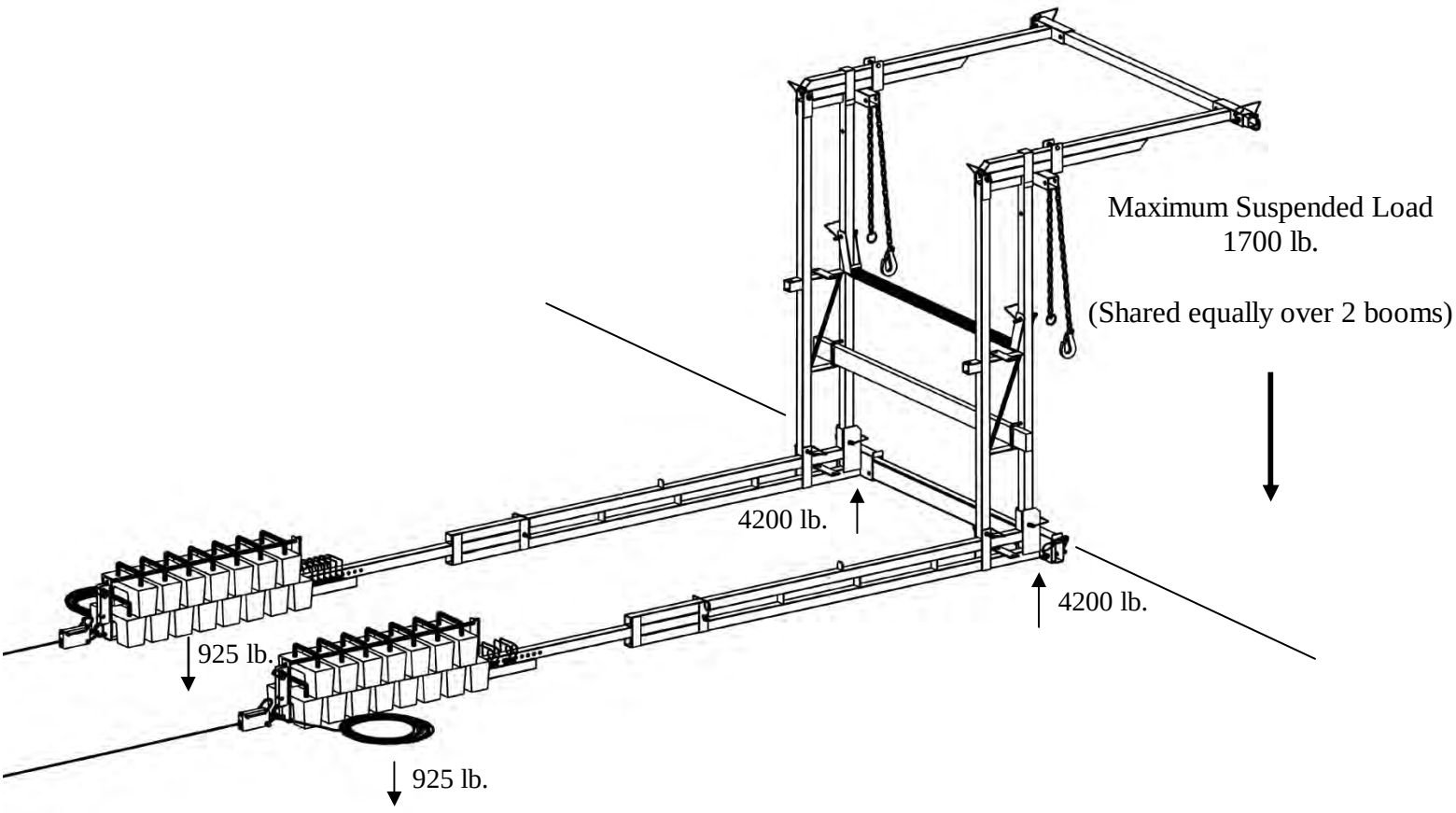
Showing Normal Applied Loading

5. ULTIMATE LOADS

Secured using 2 Counterweighted Extensions

The sketch shows the loads imposed on the supporting structure when the device is overloaded.

A structural engineer must verify the adequacy of the supporting floor.



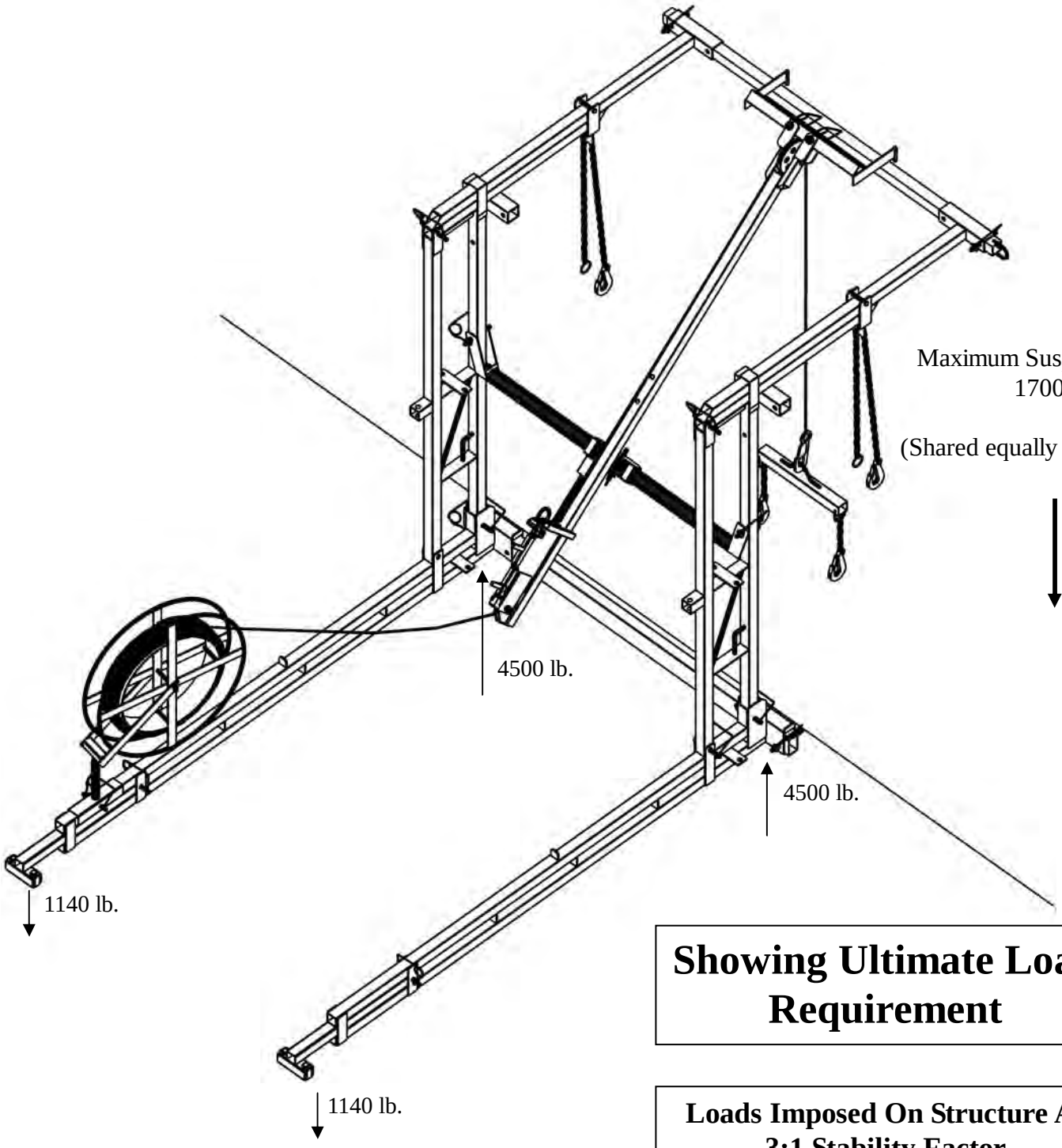
Showing Ultimate Load Requirement

Loads Imposed On Structure At 3:1 Stability Factor

Secured using 4 Factory-Approved Expansion Anchor Bolts

The sketch shows the loads imposed on the supporting structure when the device is overloaded.

A structural engineer must verify the adequacy of the supporting concrete slab.



Showing Ultimate Load Requirement

Loads Imposed On Structure At 3:1 Stability Factor

6. IMPORTANT INFORMATION

Applicable Regulations

Before rigging or using the chute system, planners, supervisors, installers and users should be aware of applicable federal, state, and local safety regulations.

Additional Expertise

This manual should not be taken as an overall survey on rigging technique, fall protection, or structure appraisal. Whenever these considerations arise, the planners, supervisors, installers and users of the chute system should secure the services of trained professionals.

Availability of the Manual

Planners, supervisors, installers and users of the chute system must be able to refer to this manual at any time. Copies of this manual are available from Superchute Ltd. free of charge, **by mail or fax, and can be downloaded from the Superchute® web site at:** www.superchute.com. If this manual is not with the chute system on the job site, postpone installation and use of the chute system until a manual is obtained.

Condition of the Equipment

Every time the chute is to be rigged or used, make sure the following items are in good condition: Superchute® hoist(s), Superchute® cable assemblies, Superchute® chute sections, Superchute® steel liners, and any other ancillary Superchute® equipment, such as door adjustment kits and tie-back kits. Thorough overhaul servicing is available from Superchute Ltd.

Condition of the Workers

Superchute® equipment should only be used by workers who are fit to operate it in a responsible manner.

Corrosive Substances

Keep corrosive substances away from all hoist components.

Engineered Rigging Equipment

Use engineered rigging equipment to install and anchor chute sections (for example, a Superchute® chute hoist)

Fire Prevention

Do not weld or flame-cut within 20 ft. of the hoist or chute.

Help Line

If at any time you are unsure of how to proceed call Superchute Toll Free: 1-800-363-2488

Intent of the Product

Do not use the chute hoist to lift or lower materials other than a Superchute® trash chute. Do not use the chute hoist as a man-hoist.

Lightning Storm

During a lightning storm stay away from the hoist & suspended chute system.

Other Brands of Chute

Do not mix Superchute® chute sections with chute sections of another brand.

Parts

Do not replace original Superchute® parts with non-Superchute® parts.

Powered loaders

Do not use powered loaders to introduce debris into the chute.

Prevent Electrocution

Install the hoist and chute in an area free of electric cables. If cables are present contact your local electrical authority before proceeding.

Structural Engineer

Before a chute installation begins, a structural engineer must verify the adequacy of the supporting structure.

Training

A one-day training seminar is offered free of charge at the Superchute® factory. The seminar examines the proper installation and use of Superchute® chute sections and chute hoists. Call 1-800-363-2488 for details.

7. ASSESS CHUTE HEIGHT & WEIGHT

EXAMPLE

- The first step in undertaking a chute installation is to formulate an installation plan.
- This page is a planning tool, which is used here to illustrate an imaginary chute job.
- The next page is clean and is for your own use. Photocopy it and use it to plan your chute installations.

JOB NAME: Hotel On First Ave.

1. What is the anticipated height of the chute? 130' feet.

130 feet x 3 divided by 10 = 39

2. How many chute sections will be needed? Height in ft x 3 ÷ 10 = 39 sections.
   When linked, 3 chute sections of any type will create a 10 foot drop.

3. What diameter of chute will be used? **[18"] [23"] [27"] [30"] [33"] [36"]**
   Every chute section is branded with its diameter.

4. Calculate the total weight of the chute system using the form below:
   Every chute section is branded with its weight.
   Section Weights are also provided on page 25.

Chute Weight Calculation Form

(A)	1	Top Hopper Wraparound	x	42	lb. each	=	42 lb.
(B)	2	Door Sections Wraparound	x	52	lb. each	=	104 lb.
(C)	36	Regular Sections Wraparound – 3/16" wall	x	39	lb. each	=	1404 lb.
(D)	3	Steel Liners	x	40	lb. each	=	120 lb.

A + B + C + D = The Total Weight Of The Chute System = 1670 lb.

5. Does this weight exceed 1700 lb? If "YES", then model SC-2000-cb is not adequate.
   Call the Superchute® factory if your chute weight will exceed 1700 lb.

No. The weight of the chute and liners is 1670 lb. which is less than 1700 lb.

OK – Proceed!

ASSESS CHUTE HEIGHT & WEIGHT – Photocopy this page

Before the chute is rigged it's height and weight must be calculated. Photocopy this form and use it with the weight charts provided on the next page. Knowing the total weight of the chute allows the installer(s) to choose an appropriate lifting device and suitable anchors. If at any time you would like to discuss the particulars of your job situation, please feel free to call the Superchute® factory: 1-800-363-2488.

JOB NAME: _____

1. What is the anticipated height of the chute? _____ feet.

2. How many chute sections will be needed? Height in ft x 3 ÷ 10 = _____ sections.
   When linked, 3 chute sections of any type will create a 10 foot drop.

3. What diameter of chute will be used? **[18"] [23"] [27"] [30"] [33"] [36"]**
   Every chute section is branded with its diameter.

4. Calculate the total weight of the chute system using the form below:
   Every chute section is branded with its weight.
   Section Weights are also provided on the next page.

Chute Weight Calculation Form

(A)	**1**	Top Hopper	x	_____ lb. each	=	_____ lb.
(B)	_____	Door Sections	x	_____ lb. each	=	_____ lb.
(C)	_____	Regular Sections	x	_____ lb. each	=	_____ lb.
(D)	_____	Steel Liners	x	_____ lb. each	=	_____ lb.

A + B + C + D = The Total Weight Of The Chute System = _____ lb.

5. Does this weight exceed 1700 lb? If "YES", then model SC-2000-cb is not adequate.
   Call the Superchute® factory if your chute weight will exceed 1700 lb.

8. CHUTE SECTION WEIGHT CHARTS

- An "x" signifies that no such section exists.
- If using steel liners, do not forget to account for their weight.

WELDED SECTIONS WEIGHTS (in lb.)

Diameter	Wall Thick.	Regular	Top Hopper	Door
18"	**5 mm**	23	24	29
23"	**5 mm**	27	30	36
27"	**5 mm**	32	34	41
30"	**5 mm**	37	40	47
30"	**4 mm**	27	X	X
30"	**3.2 mm**	X	X	X
33"	**5 mm**	40	42	50
36"	**6 mm**	48	53	60

WRAPAROUND® SECTIONS WEIGHTS (in lb.)

Diameter	Wall Thick.	Regular	Top Hopper	Door
18"	**5 mm**	X	X	X
23"	**5 mm**	29	30	40
27"	**5 mm**	35	40	49
30"	**5 mm**	39	42	52
30"	**4 mm**	31	X	X
30"	**3.2 mm**	28	X	X
33"	**5 mm**	43	48	57
36"	**6 mm**	49	57	68

LINER WEIGHTS (in lb.)

18"	23"	27"	30"	33"	36"
23 lb.	**32 lb.**	**37 lb.**	**40 lb.**	**48 lb.**	**53 lb.**

9. A FEW FALL PROTECTION REGULATIONS

"The employer shall determine if the walking/working surfaces on which its employees are to work have the strength and structural integrity to support employees safely. Employees shall be allowed to work on those surfaces only when the surfaces have the requisite strength and structural integrity."

"Each employee on a walking/working surface ... with an unprotected side or edge which is 6 ft or more above a lower level shall be protected from falling by the use of guardrail systems, safety net systems, or personal fall arrest systems."

"An unprotected side or edge means any side or edge ... where there is no wall or guardrail system at least 39" high."

"Each employee in a hoist area shall be protected from falling 6 feet or more to lower levels by guardrail systems or personal fall arrest systems. If guardrail systems ... or portions thereof, are removed to facilitate the hoisting operation ... 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."

From OSHA Part 1926 Safety and Health Regulations for Construction, Subpart M, Fall Protection

When properly used, the SC-2000-cb Hoister meets the applicable requirements of OSHA Part 1926, Subpart M, Fall Protection.

For a more complete understanding of the OSHA regulations consult OSHA's excellent online documentation on the internet: www.osha.gov.

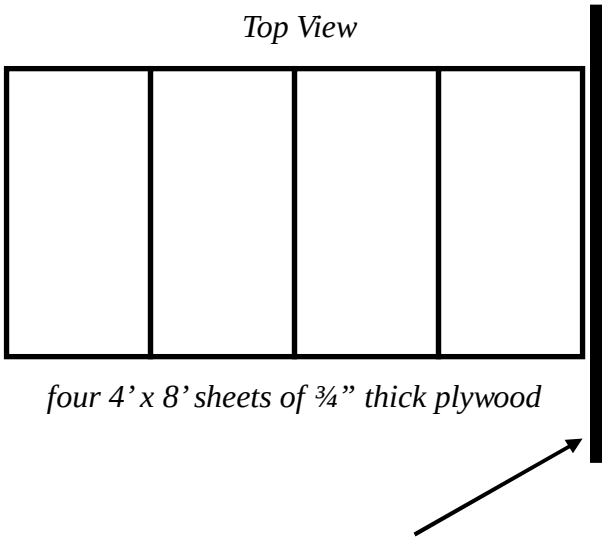
Once there, go to: Laws & Regulations / Standards - 29 CFR / PART 1926 Safety and Health Regulations for Construction.

Some states have their own regulations, which will differ from the U.S. Dept. of Labor's OSHA regulations.

10. PROTECT THE DECK

When using Counterweights:

You may wish to protect the roof membrane or floor finish (and spread the load) by arranging plywood, scaffold planks, or other lumber as shown on right.



When using Anchor Bolts:

The hoist frame must rest directly on the slab.

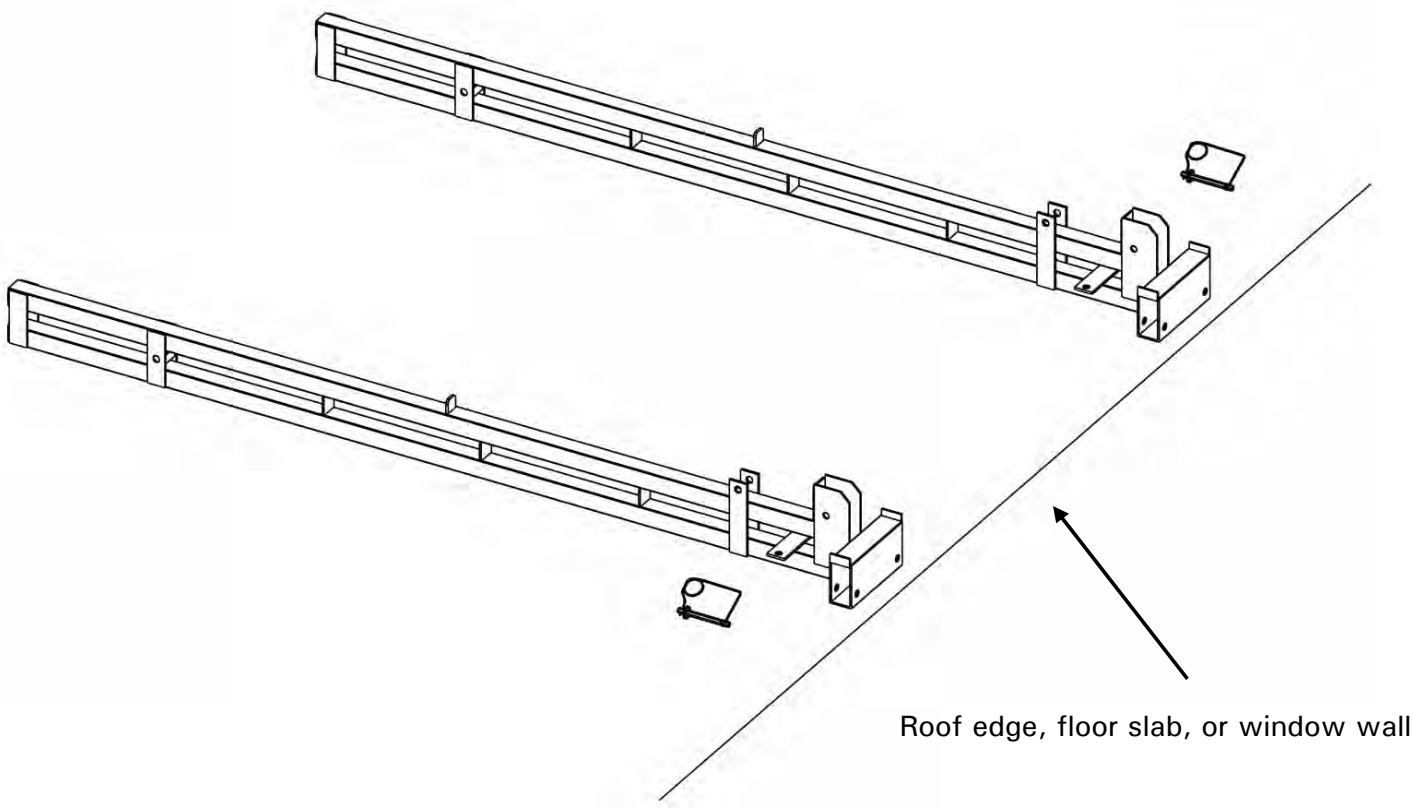
Do not place any wood beneath the hoist frame. If the frame (or part of the frame) was on wood, any movement or shifting of the wood might loosen the bolts. Membranes and floor finishes are usually not an issue when using bolt down systems.

⚠ WARNING

- A person can easily fall off of a building if the floor edge they are working near does not offer fall protection safeguards.
- A fall from a height of 6 ft. is enough to seriously injure or kill.
- OSHA requires that fall prevention barriers be at least 42" high, plus or minus 3". Guardrail systems, parapet walls, and window sills may be acceptable fall prevention barriers provided they meet OSHA's height criteria.
- Use a personal fall arrest system (body harness and lanyard, or similar device) when working near a floor edge that does not offer proper fall prevention barrier(s).
- Read and understand the OSHA fall protection regulations (a few of the regulations are provided on the previous page).

11. ASSEMBLE THE BASE FRAME

- Place the two Front Balance Beams side by side.



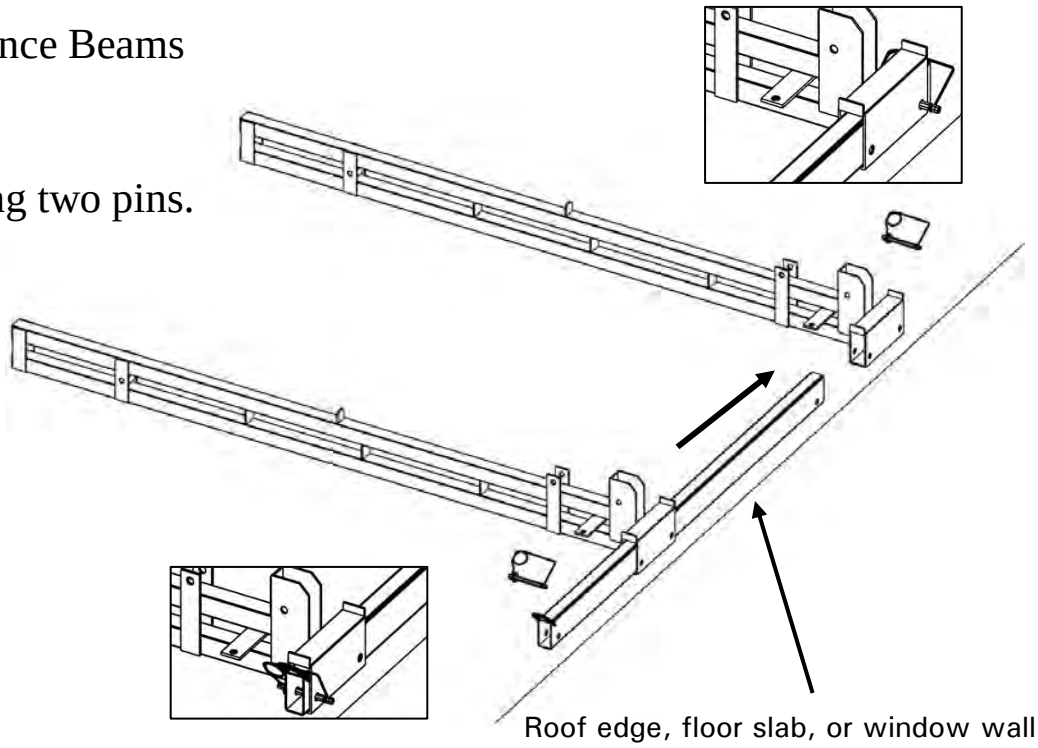
Pin Information:

- Pins are stored on the Pin Racks, located on the Back Balance Beams.
- 14 pins are required to assemble and use the FRAME.
- 5 pins are required to assemble and use the FISHPOLE.
- 4 spare pins are provided with every frame.
- All of the pins used on the SC-2000-cb hoist are identical:

- Diameter: 1”
- Overall Length: 7¼”
- Usable Length: 5½”

ASSEMBLE THE BASE FRAME (continued)

- Join the Front Balance Beams with the Toeboard.
- Pin in position using two pins.

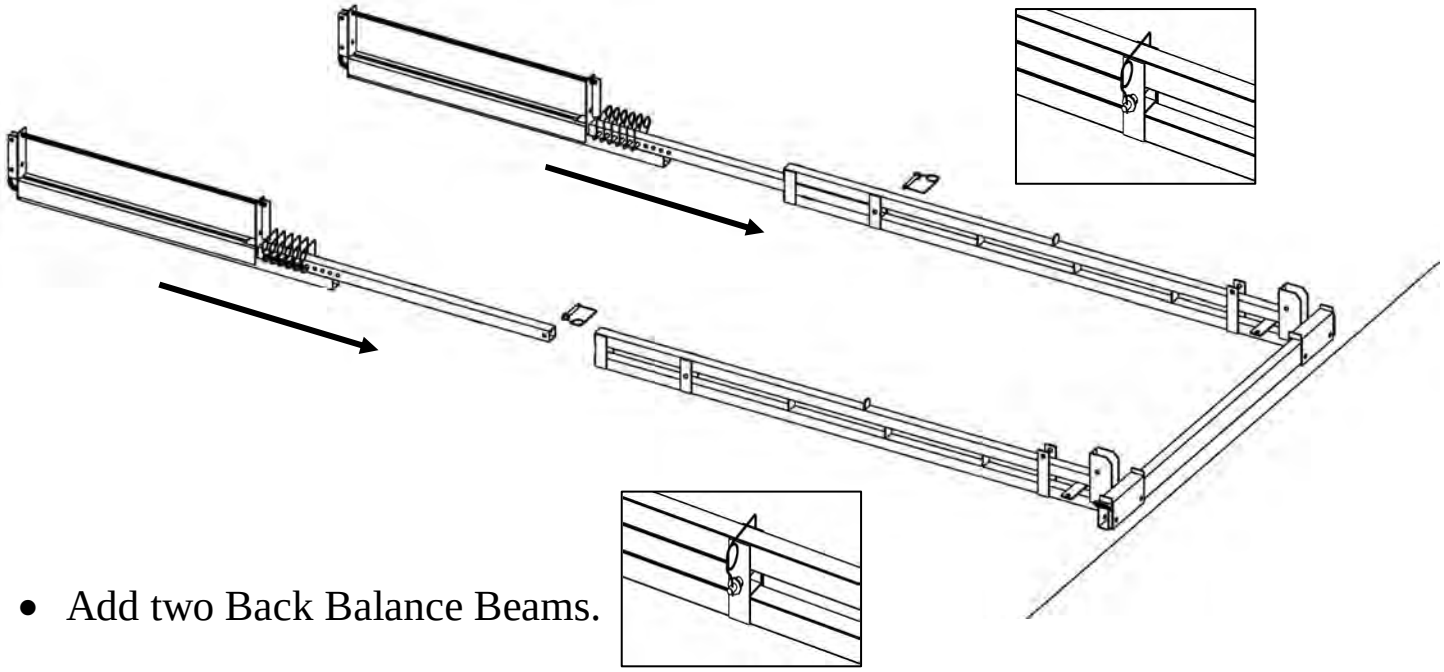


⚠ WARNING

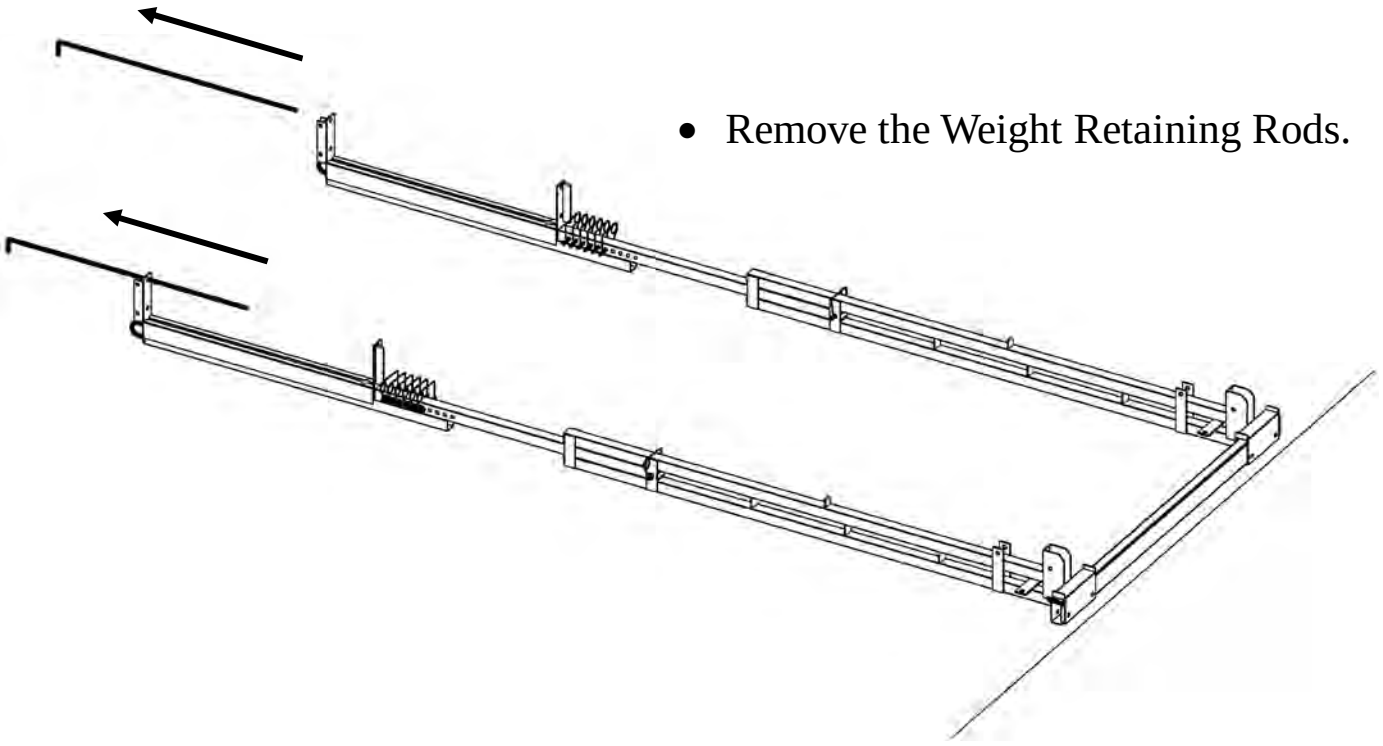
- The frame may fail when load is applied if the correct pins are not used.
- A falling load can seriously injure or kill.
- Use only the pins supplied with the hoist (see “Pin Information” on prior page).
- To prevent pin loss, store the pins on the Pin Racks.
- Order replacement pins from Superchute Ltd.

If you will use expansion anchor bolts to secure the frame, please proceed to Section 13 now.

ASSEMBLE THE BASE FRAME (continued)

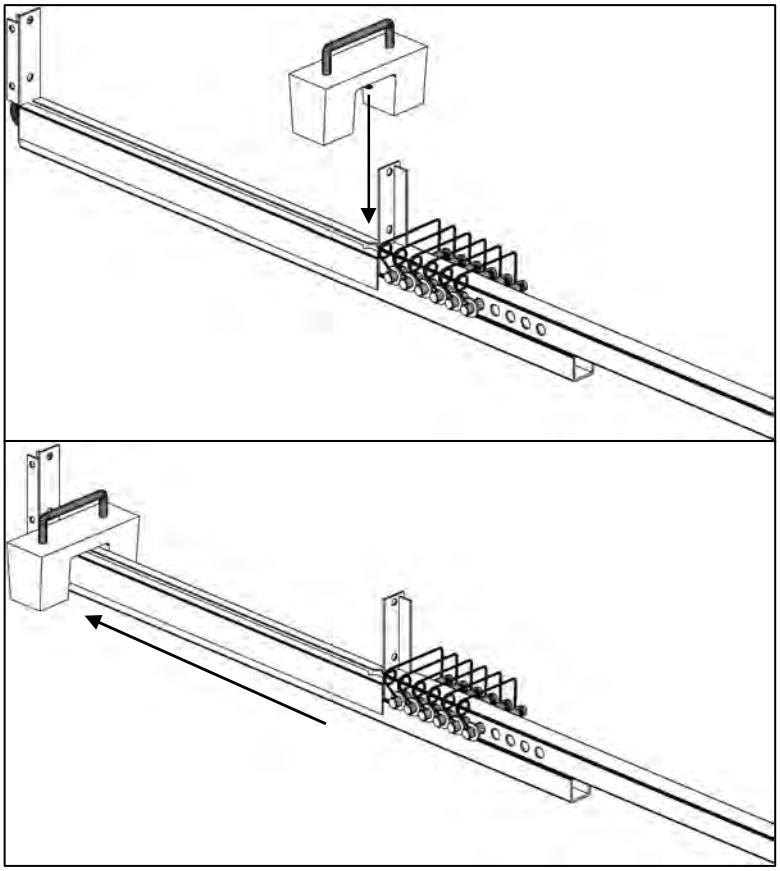


- Add two Back Balance Beams.
- Pin in position using two pins.

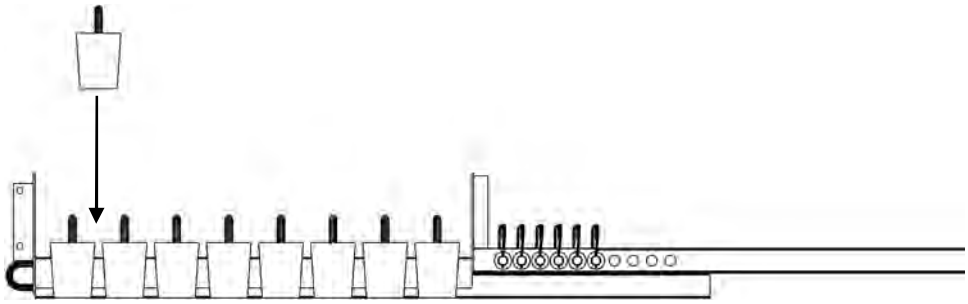


- Remove the Weight Retaining Rods.

ASSEMBLE THE BASE FRAME (continued)

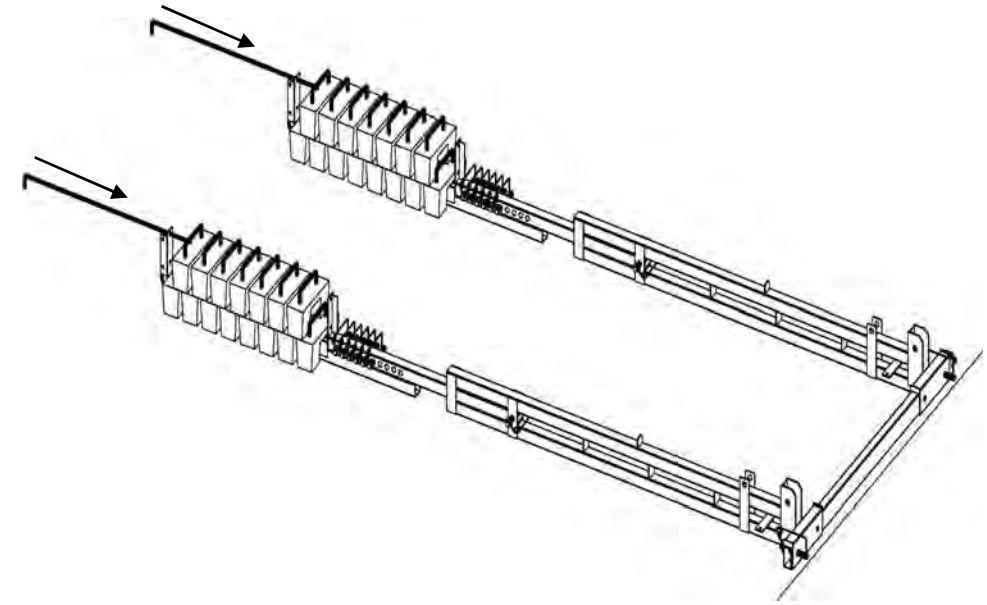


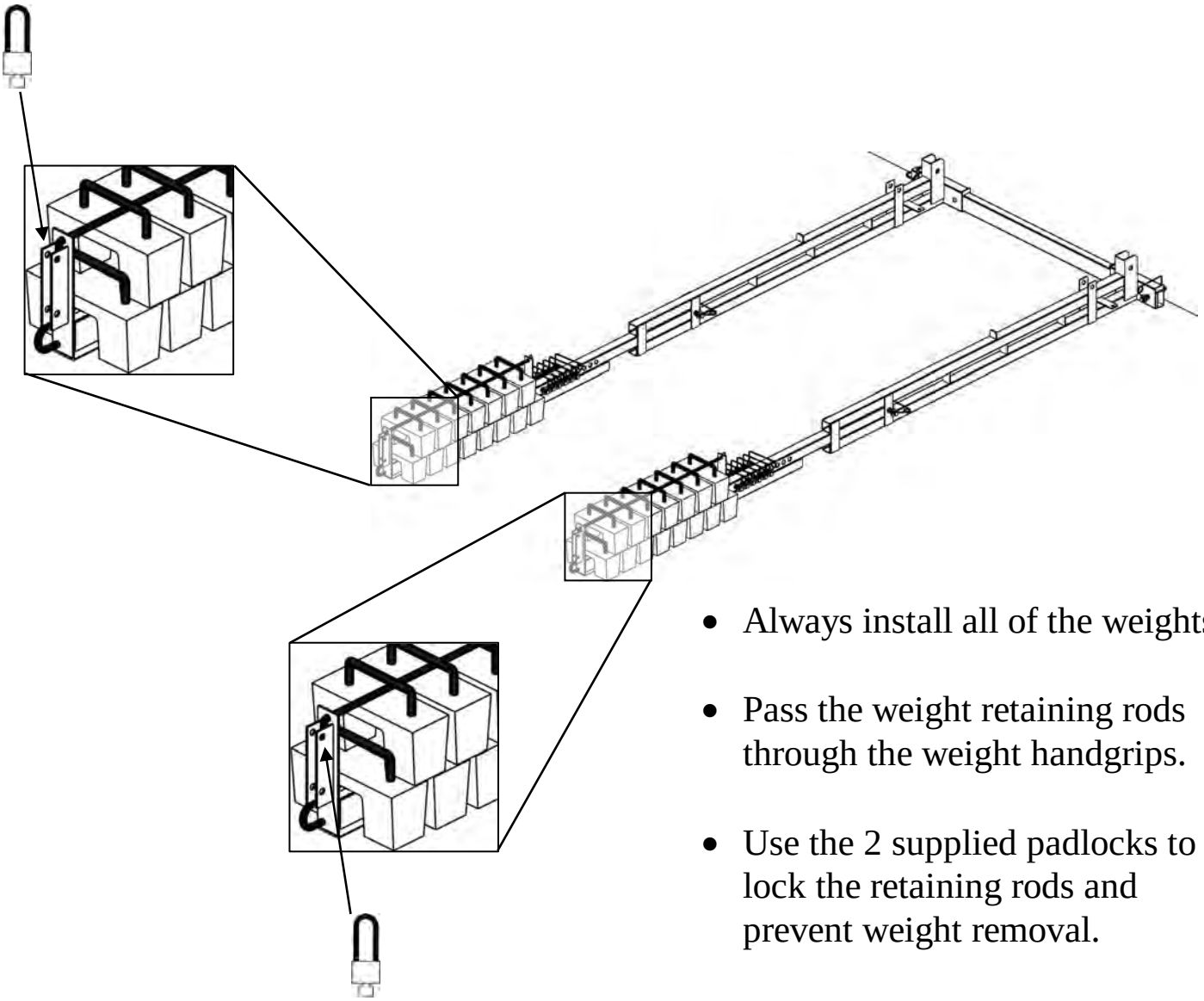
- Place 15 counterweights in each weight carriage.
- In total there should be 30 cast iron weights (55 lb. each) on the hoist.



Exception:

- If less than 900 lb. of chute will be lifted, suspended, and lowered from the frame, the installer need only install 8 counterweights in each weight carriage (ie. fill the bottom of the carriage with weights). In such a case there would be 16 cast iron weights (55 lb. each) on the hoist frame.





- Always install all of the weights.
- Pass the weight retaining rods through the weight handgrips.
- Use the 2 supplied padlocks to lock the retaining rods and prevent weight removal.

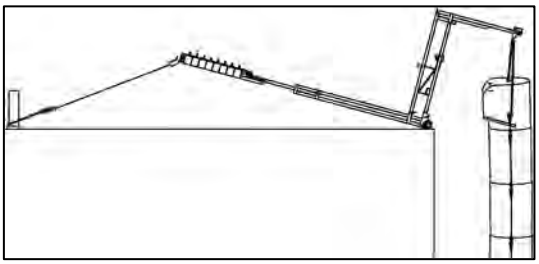
12. TIE BACK THE FRAME

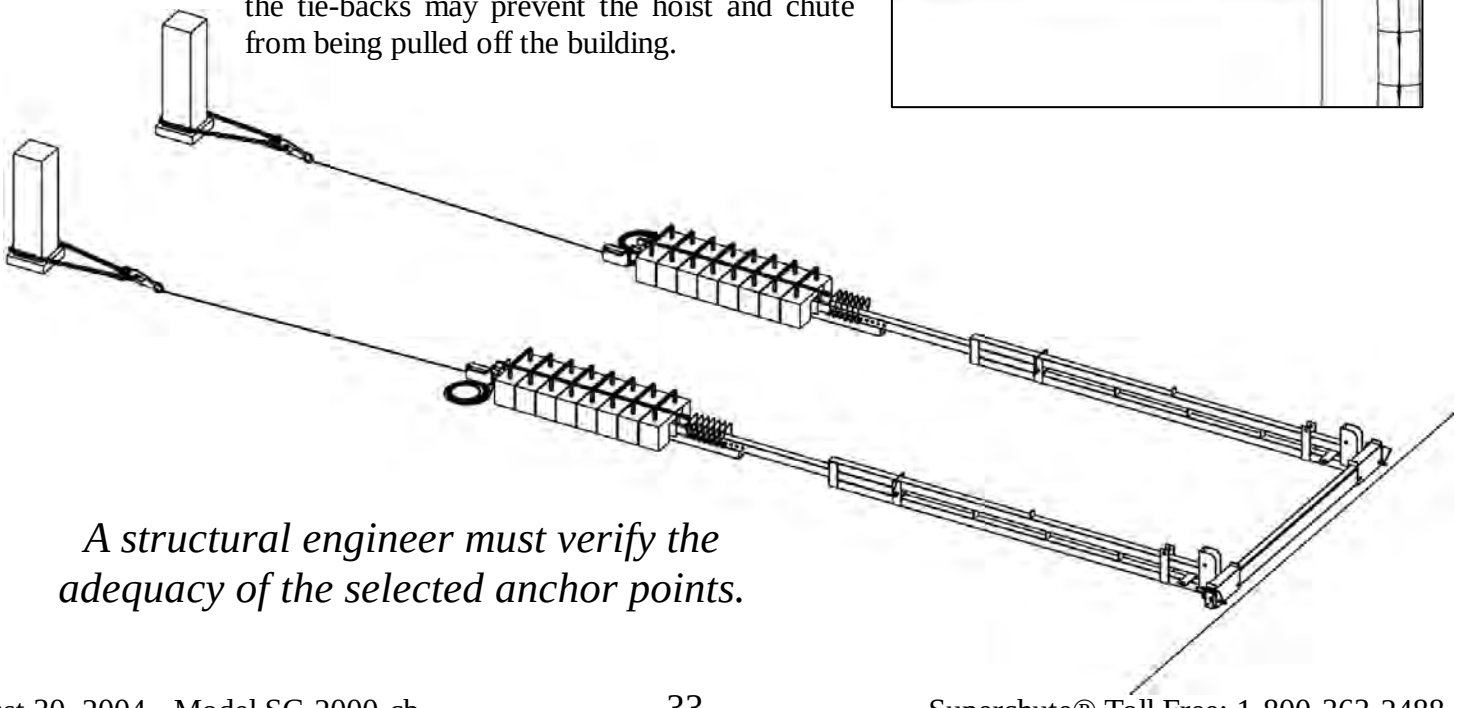
Secure the hoist frame to the building by attaching a length of 5/8” nylon rope or 5/16" wire rope to each of the tie loops located on the Weight Beams.

Affix these two tie-backs to suitable structural members of the building (portions of the building structure, and window cleaning anchors are usually adequate, while roof vents, air conditioners, and parapets are usually not adequate). Avoid tying or running the rope over any sharp surfaces. DO NOT tie back to anchors that will be used concurrently by personal fall arrest systems.

- **Nylon Rope:** install snug, using recognized safety knots (example: figure eight).
- **Wire Rope:** install snug, using proper hooks and fittings.
- **Tie-Back Kits:** are available from Superchute® Ltd. for quicker & safer tie-backs.

Tie-backs provide back-up for worst-case situations. For example: if a blockage occurs in the chute and the weight of the chute increases, the tie-backs may prevent the hoist and chute from being pulled off the building.





A structural engineer must verify the adequacy of the selected anchor points.

13. THE NEW BOLT DOWN CONVERSION KIT

In cases where the concrete floor can accommodate expansion anchors, the Frame can be secured using a Bolt-Down Kit (sold separately) & 4 expansion anchor bolts.

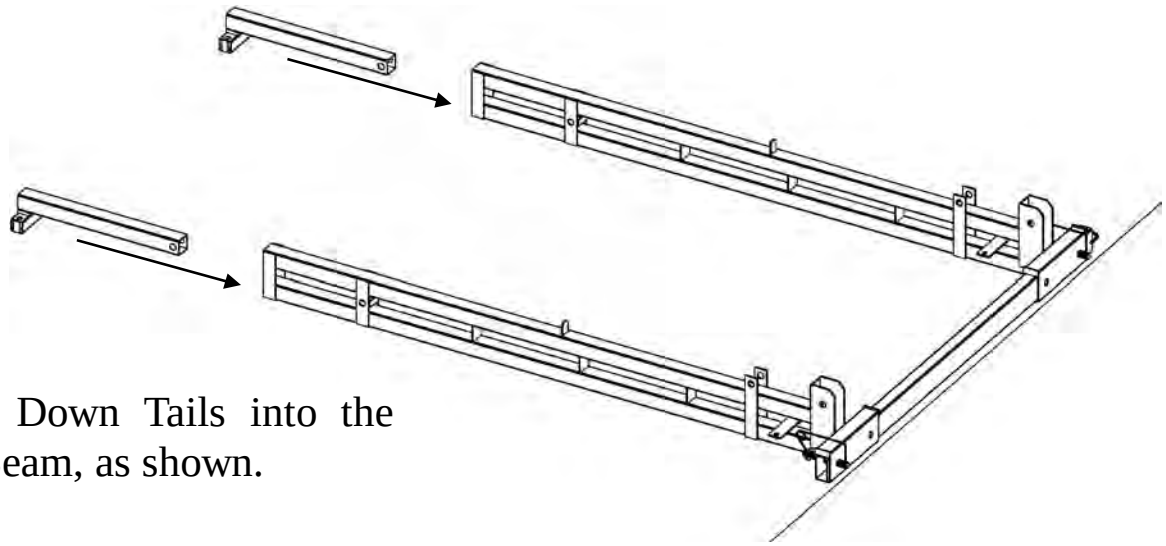
Note: Expansion anchor bolts are a single-use, disposable fastener. They are not reusable. Order spares from Superchute.

Advantages of the Bolt Down Kit:

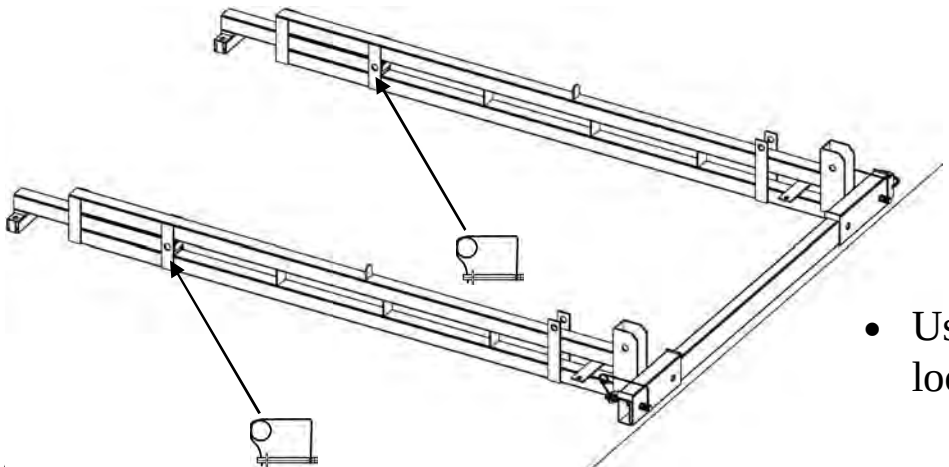
- It reduces the hoist's weight greatly, as it replaces the Back Beams & 30 weights.
- It reduces the length of the base frame from 15' to 9'.

If you will NOT use the Bolt Down Kit to secure the frame, please proceed to Section 16 now.

To use the kit, follow these instructions:



- Insert the Bolt Down Tails into the Front Balance Beam, as shown.



- Use the 2 supplied pins to lock the tails in position.

14. PREPARE THE HOLES FOR THE ANCHOR BOLTS

a) Before Drilling The Holes

The hoist frame must be installed on the exposed concrete surface of a solid concrete floor. If there is a covering over the concrete (for example: wood, tile, carpet, marble, terrazzo, roof membrane), then at least 4' x 4' of the covering must be removed in order to expose the concrete surface. If the floor is not concrete, call the factory for guidance: 1-800-363-2488.

1. Ensure that the floor is level, at least 6" thick, properly cured, and structurally adequate (minimum 2000 psi).
2. Use the chart below to decide which bolt model you will use.
3. Affix the appropriate drill bit to your drill. Hilti Bolts and Power-Bolts require different drill bit diameters. Use only the specified drill bit size.

THE FOLLOWING ARE THE ONLY APPROVED MODELS* OF EXPANSION ANCHOR BOLT:

Scale	Brand of Bolt To Be Used	Model No.	Length of the Anchor Bolt	Precise Drill Bit Diameter	Minimum Hole Depth
Metric ➔	HILTI® Bolt	HSLB M12/50	145 mm (5.75")	18 mm only	100 mm (4")
Metric ➔	HILTI® Bolt	HSL M12/50	145 mm (5.75")	18 mm only	100 mm (4")
Imperial ➔	Power-Bolt™	6945	6"	5/8" only	4.5"

*** Always follow the anchor bolt manufacturer's instructions.**

Visual Identification of the Brand:

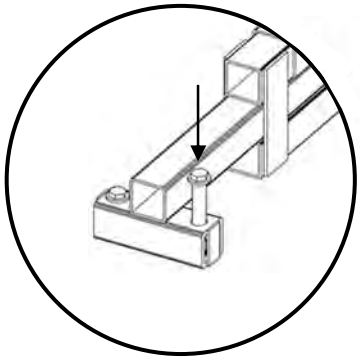
- The HILTI® Bolt is engraved with the code **HSL M12/50**.
- The Power-Bolt™ is engraved with the code **POWERS**.

Anchor Bolt Manufacturers:

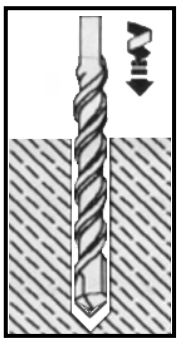
- Powers Fasteners, Inc. tel: 914-235-6300
  web: www.powers.com
- HILTI® USA: tel: 1-800-879-6000
- HILTI® Canada: tel: 1-800-363-4458
  web: www.hilti.com

B) DRILL THE HOLES

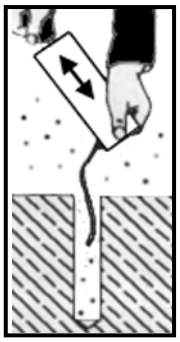
1. While wearing eye protection, drill 4 holes into the concrete. Use the holes in each bolt down tail as a template.
2. Drill the holes to the appropriate depth (consult chart on previous page) using the correct drill bit diameter.
3. To prevent damage to the underside of the floor, avoid drilling right through the slab.
4. Use a blow-out bulb or compressed air to clean the dust from the holes.



Step 1



Steps 2 & 3

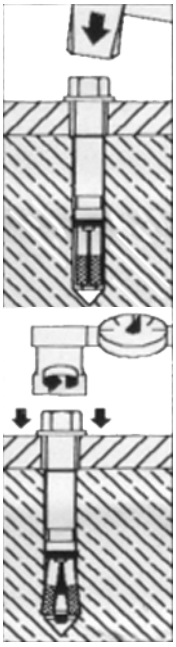


Step 4

WARNING

- Concrete floors can contain embedded cables that are under tension.
- Drilling a hole in such a floor could cut through an embedded cable.
- A severed cable could shoot out of the slab like a missile, and could seriously injure or kill.
- Before drilling holes into the floor, ask a structural engineer to verify the adequacy of the concrete floor slab.

15. ANCHOR THE FRAME TO THE CONCRETE SLAB



1. Insert two approved models of anchor bolt through each bolt down tail into the freshly drilled holes.

2. Gently hammer the anchor bolts until the bolt heads & washers are firmly seated against the tail. Do not expand the anchor bolts by hand before tapping them into the hole.

3. Tighten the anchor bolts with a torque wrench.[1] A torque wrench will allow you to ensure that the bolts are properly tightened. Torque wrenches are available for purchase from Superchute Ltd.

4. Use this chart to determine the required tightening torque.

Scale	Brand of Bolt	Model No.	Wrench Size	Max. Torque
Metric ➔	HILTI® Bolt	HSLB M12/50	24 mm socket	60 ft. lb. [1]
Metric ➔	HILTI® Bolt	HSL M12/50	19 mm socket	60 ft. lb.
Imperial ➔	Power-Bolt™	6945	¾" socket	See note below [2]

[1] *Model HSLB M12/50 does not require the use of a torque wrench. When the required tightening torque is applied, the red indicator cap shears off.*

[2] *If installing the Power-Bolt™ in NORMAL WEIGHT CONCRETE use a guide torque of 100 ft. lb.*
If installing the Power-Bolt™ in STRUCTURAL LIGHTWEIGHT CONCRETE use a guide torque of 60 ft. lb.
Where the concrete type, material strength or condition is unknown or questionable, job site tests are needed.

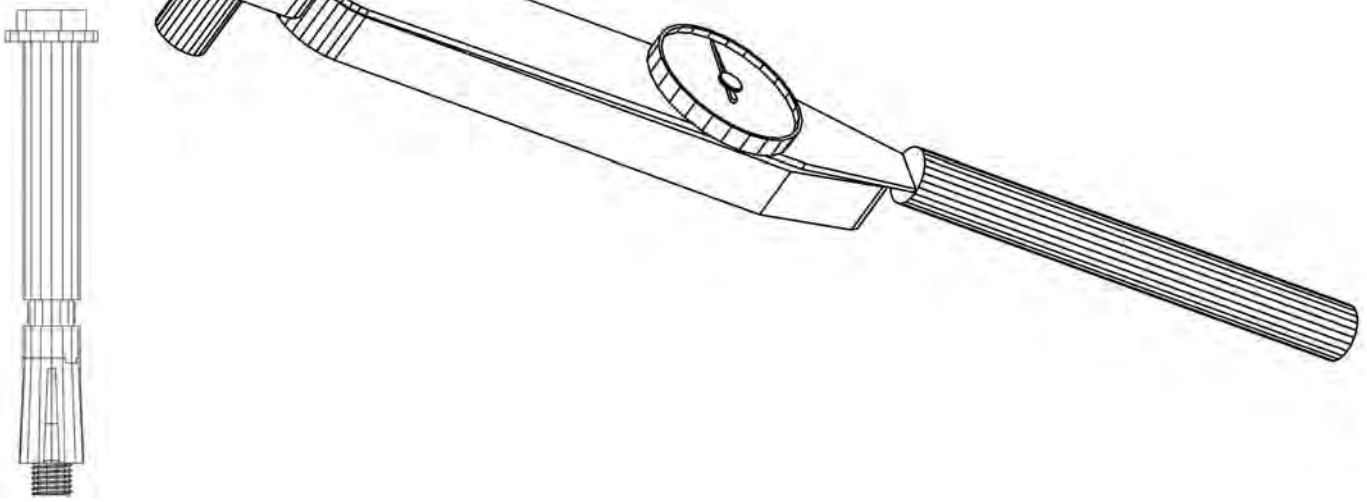
WARNING

- The frame may pullout when load is applied if an approved model of anchor bolt is not used.
- A falling load can seriously injure or kill.
- Use only an approved model of anchor bolt. The three anchor bolt models listed above are the only approved models.
- Replacement anchor bolts can be ordered from Superchute Ltd.

Armstrong® Torque Wrench:

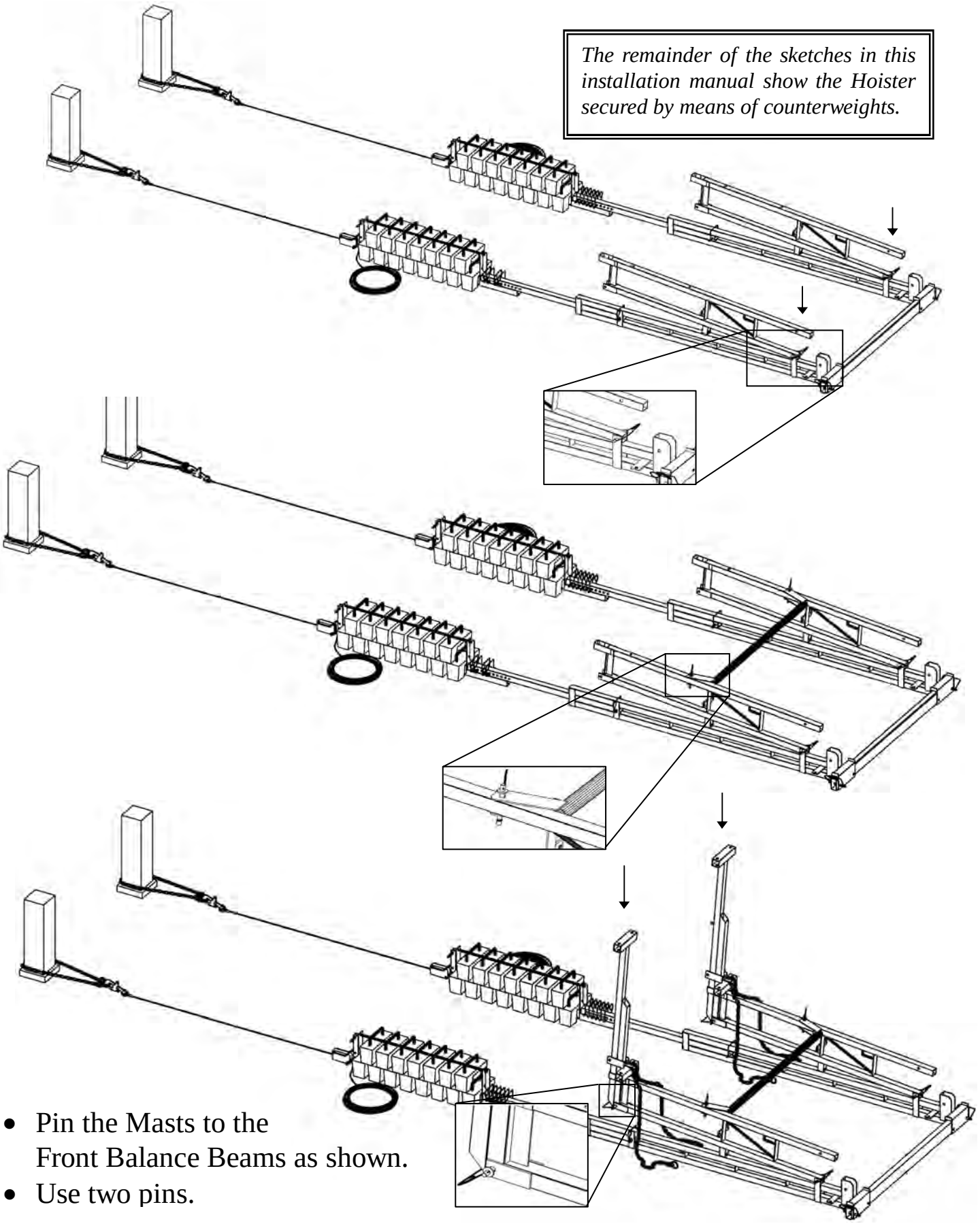
- Made in the USA
- Model No. 64-407
- Large Dial provides readings in Foot Pounds & Newton Meters
- Drop Forged ½" drive
- Has ratchet head
- Has memory needle
- Includes protective case
- Lifetime Guarantee

Available for purchase from Superchute Ltd.



16. ATTACH THE MASTS, BOOMS AND TOPRAIL

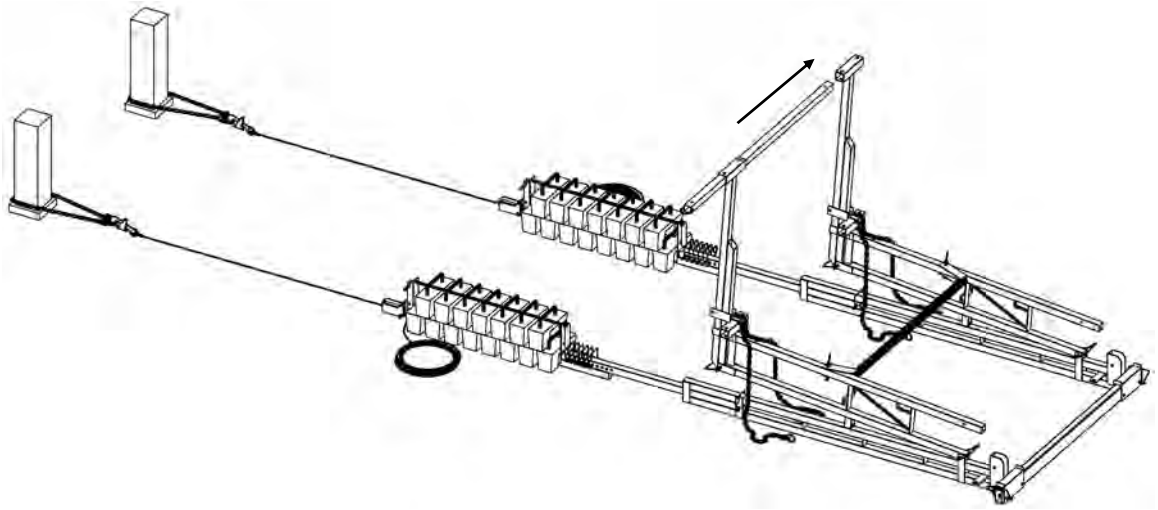
The remainder of the sketches in this installation manual show the Hoister secured by means of counterweights.



- Pin the Masts to the Front Balance Beams as shown.
- Use two pins.

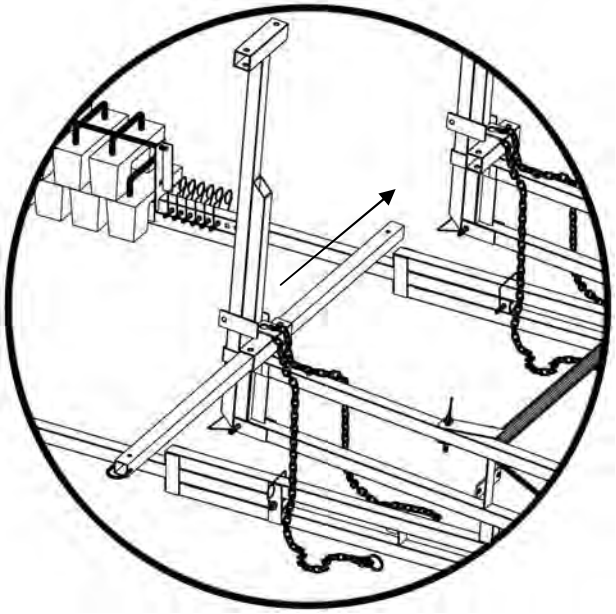
17. INSTALLATION CHOICES FOR THE OCB

- The Outer Cross Bar can be installed in two positions: Primary or Secondary.



- Use the Primary position (shown above) if the Fishpole will be used to raise and lower the chutes.

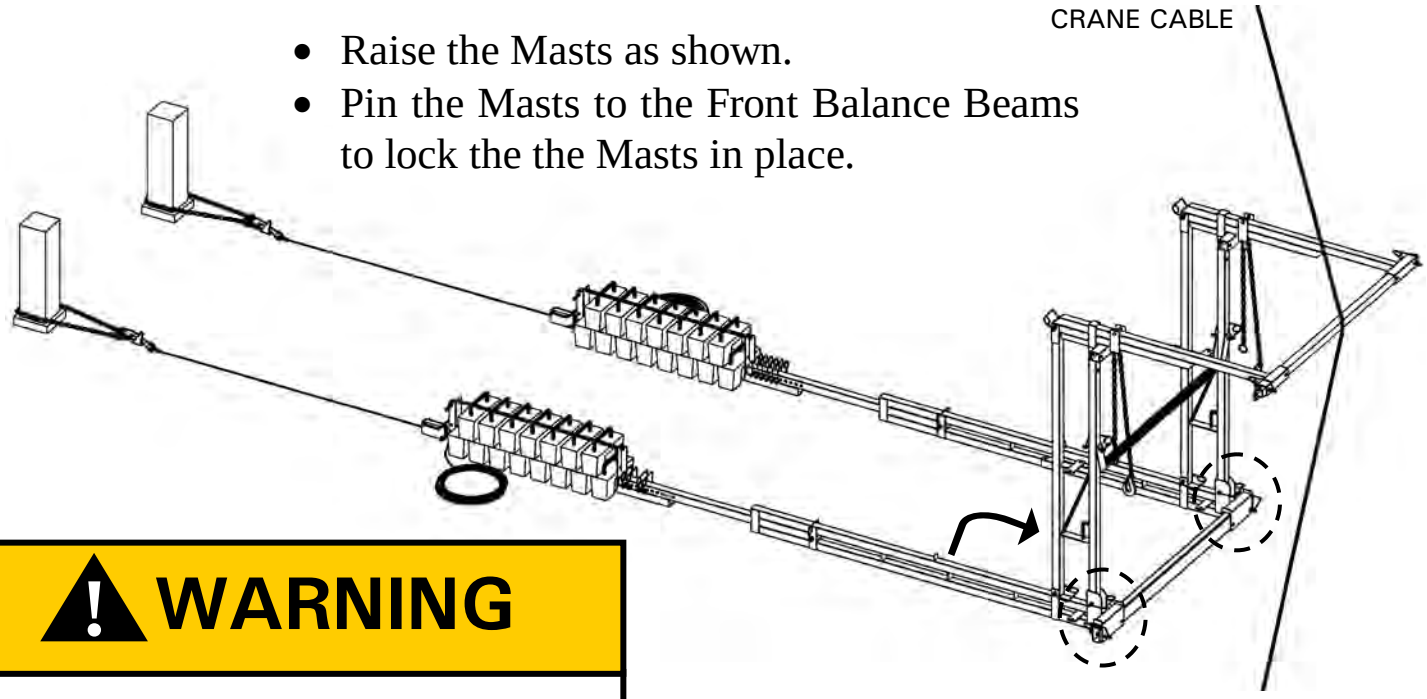
or



- Use the Secondary position if an alternate lifting device (crane or similar) will be used to raise and lower the chutes.

18. RAISE THE MASTS TO A VERTICAL POSITION

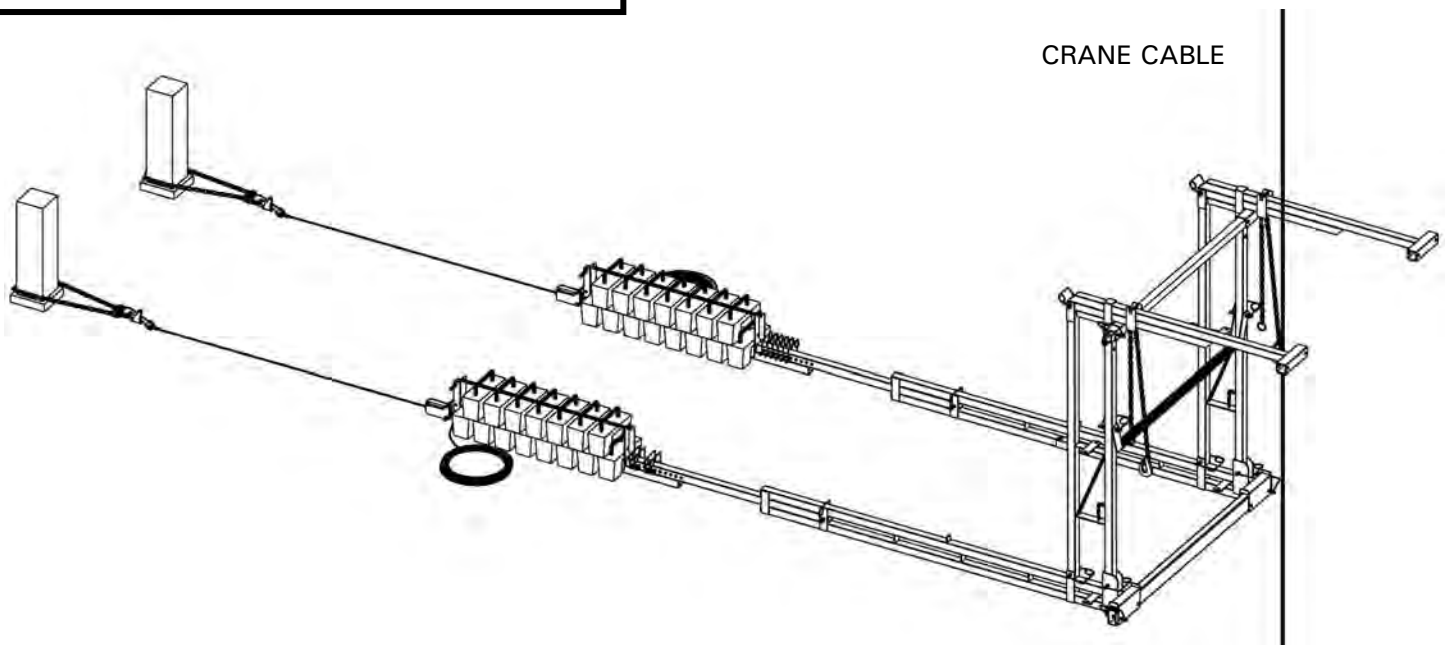
- Raise the Masts as shown.
- Pin the Masts to the Front Balance Beams to lock the the Masts in place.



An imaginary crane cable is attempting to bring chute to the hoist.
Note the obstruction created by the OCB when it is in the Primary (Fishpole) position.

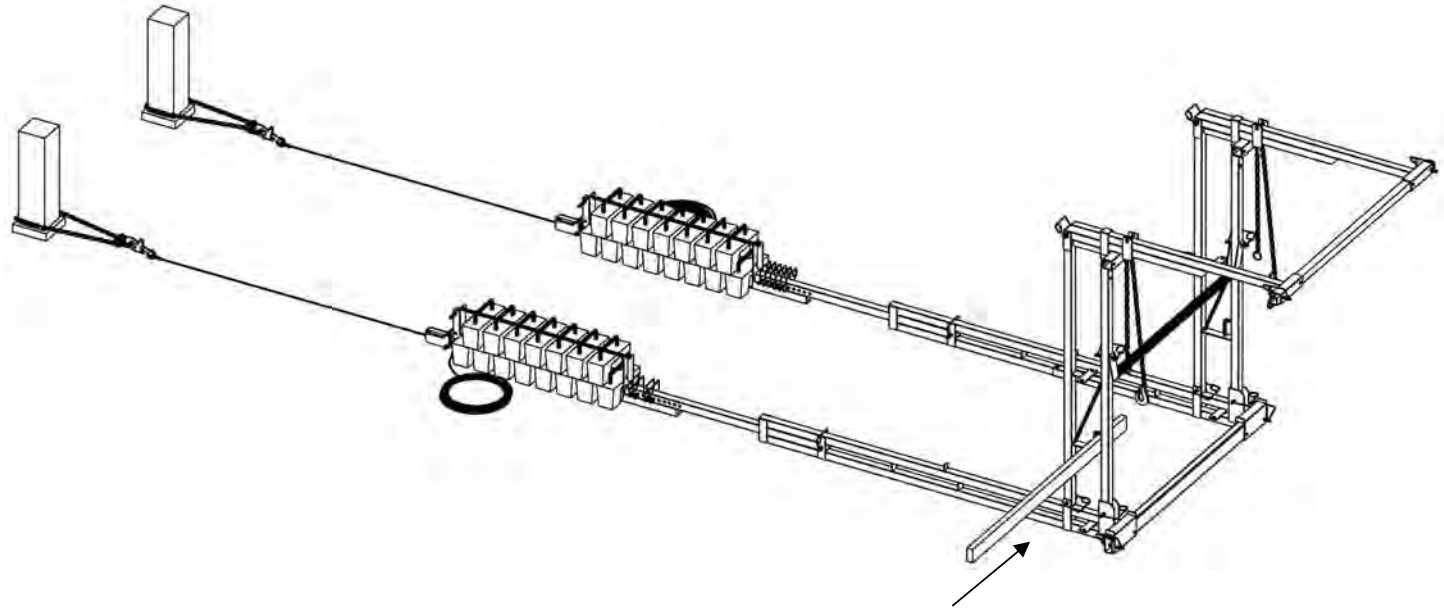
⚠ WARNING

- The Masts are heavy.
- The Masts could crush you, causing severe injury or death.
- Use at least four strong people to raise the Masts (two people per mast).



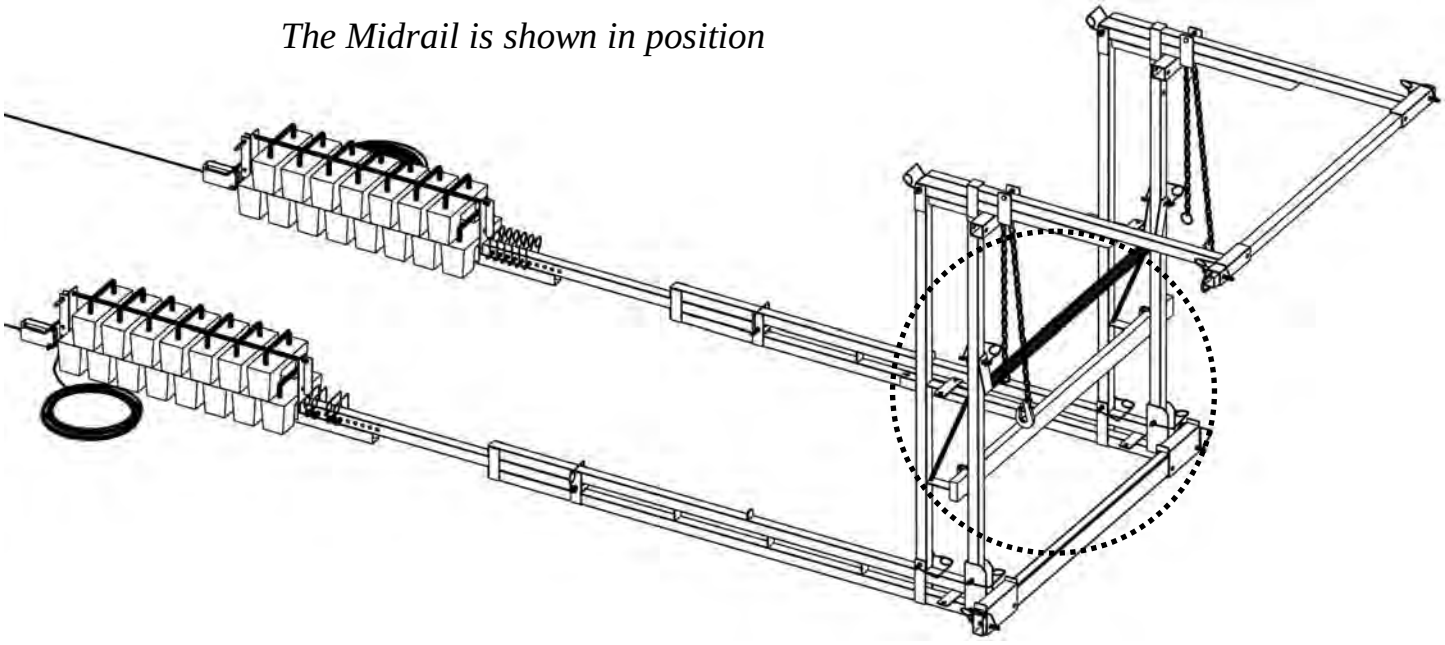
An imaginary crane cable is attempting to bring chute to the hoist.
Note the passage afforded the crane cable when the OCB is in the Secondary position.

19. INSTALL A 2" X 4" WOOD STUD

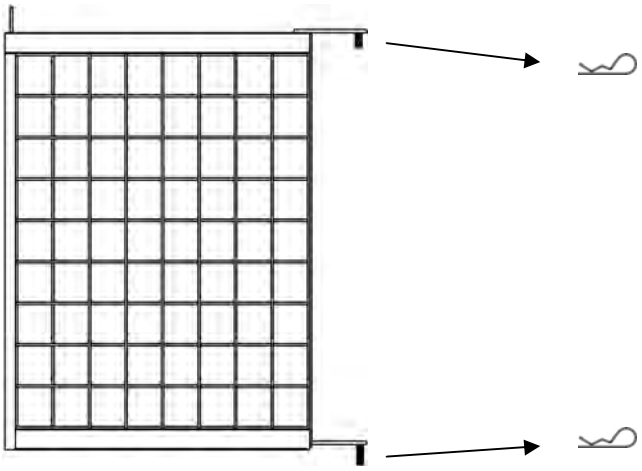


- To prevent falls between the Toprail and Toeboard OSHA requires a Midrail.
- Install a Midrail by passing a 5 ft. long 2" x 4" wood stud through the mast brackets, as shown.

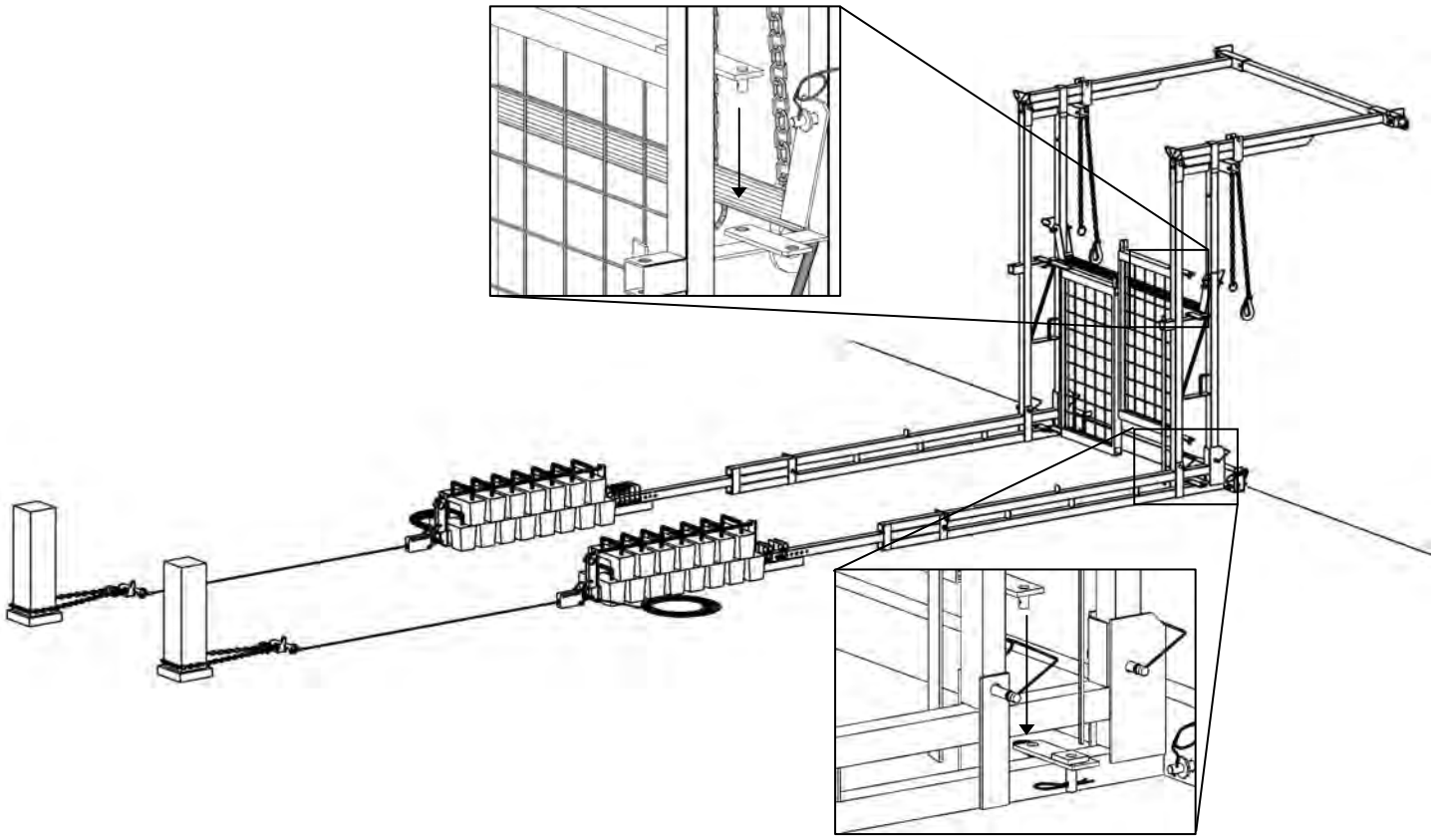
The Midrail is shown in position



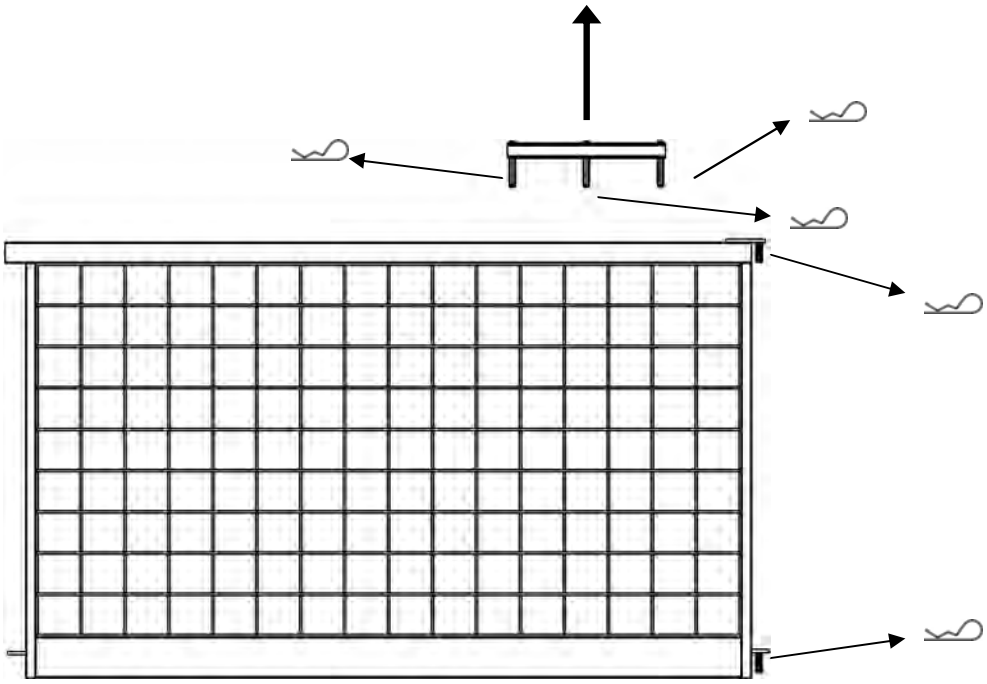
20. ATTACH THE GATES (IF APPLICABLE)

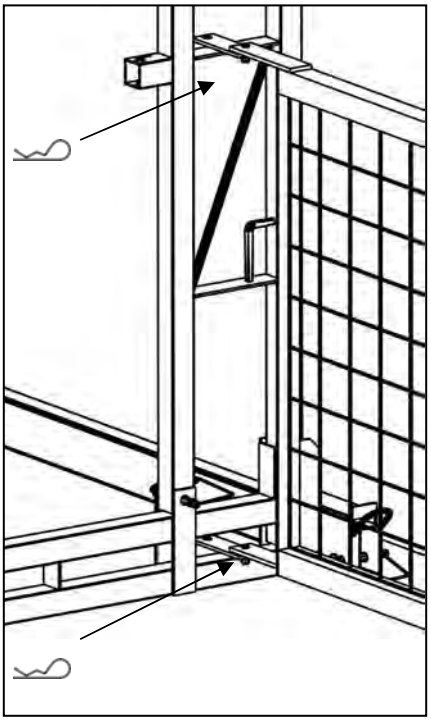


- To prevent falls and limit access to the Top Hopper section, a pair Gates can be installed between the masts.
- Gates are useful for closing access to the chute. For example, when the full debris container is changed for an empty one.
- Install as shown.
- Secure the closed gates using the provided chain.

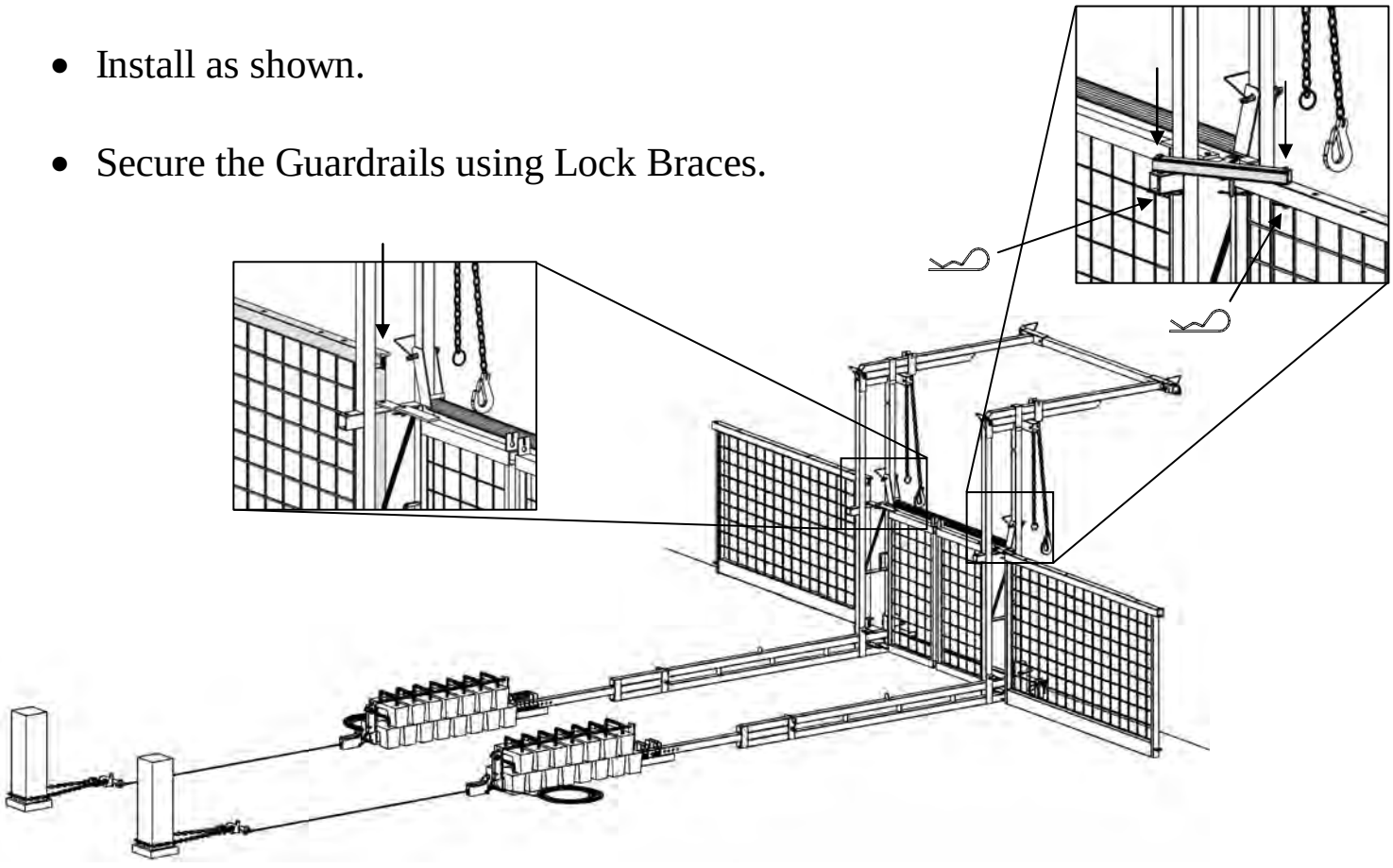


21. ATTACH THE GUARDRAILS (IF APPLICABLE)



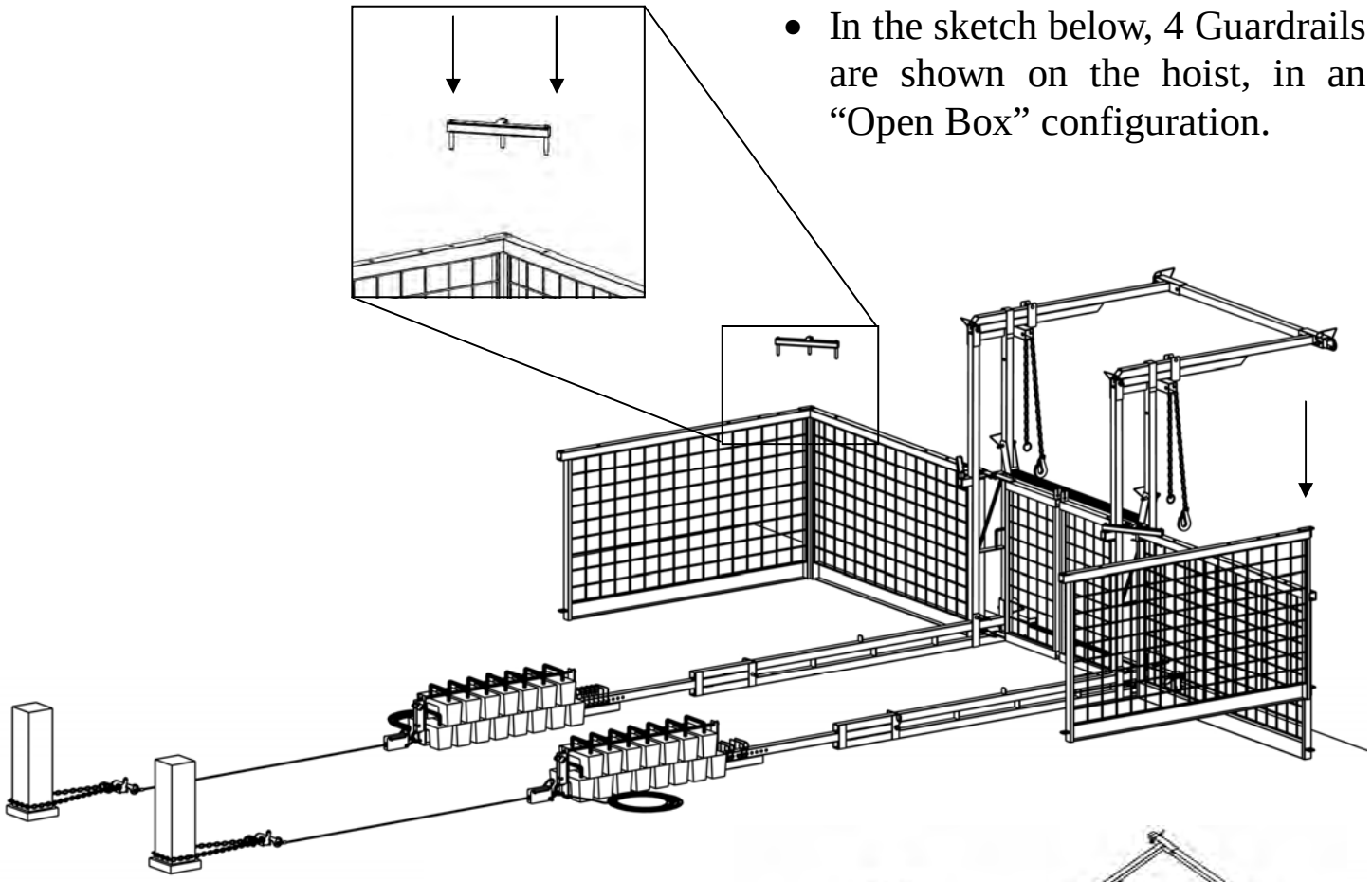


- To prevent falls, up to 2 Guardrails can be installed on each side of the Hoist.
- Install as shown.
- Secure the Guardrails using Lock Braces.



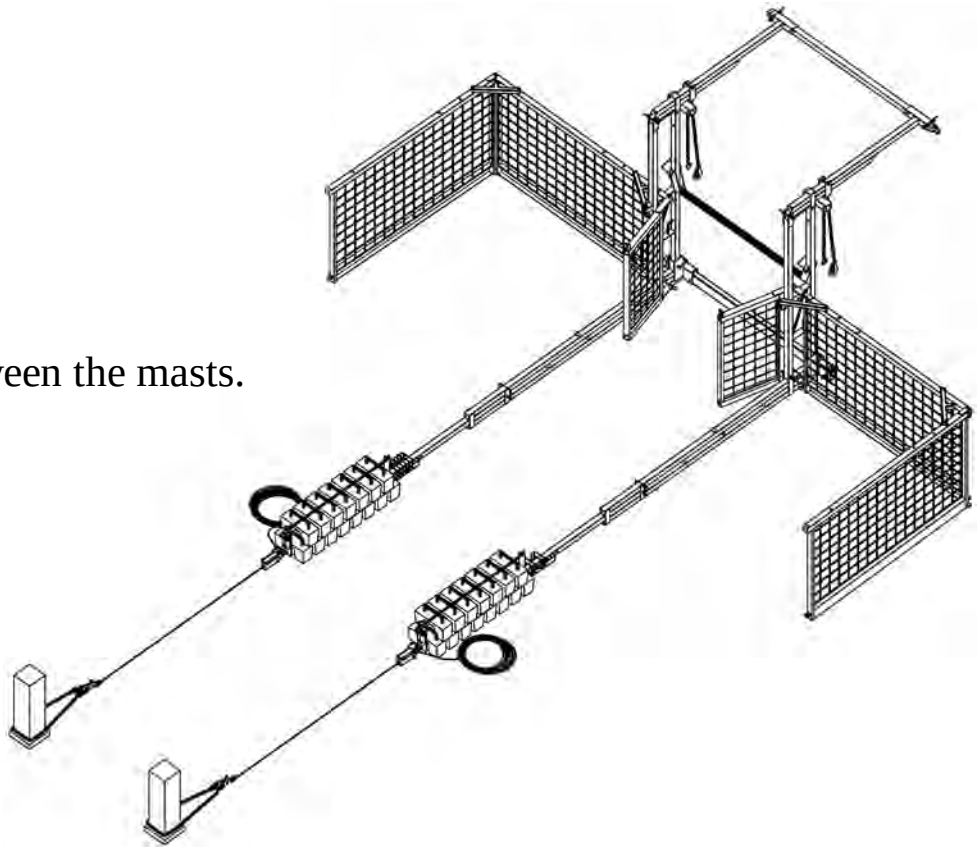
ATTACH THE GUARDRAILS (continued)

- In the sketch below, 4 Guardrails are shown on the hoist, in an "Open Box" configuration.

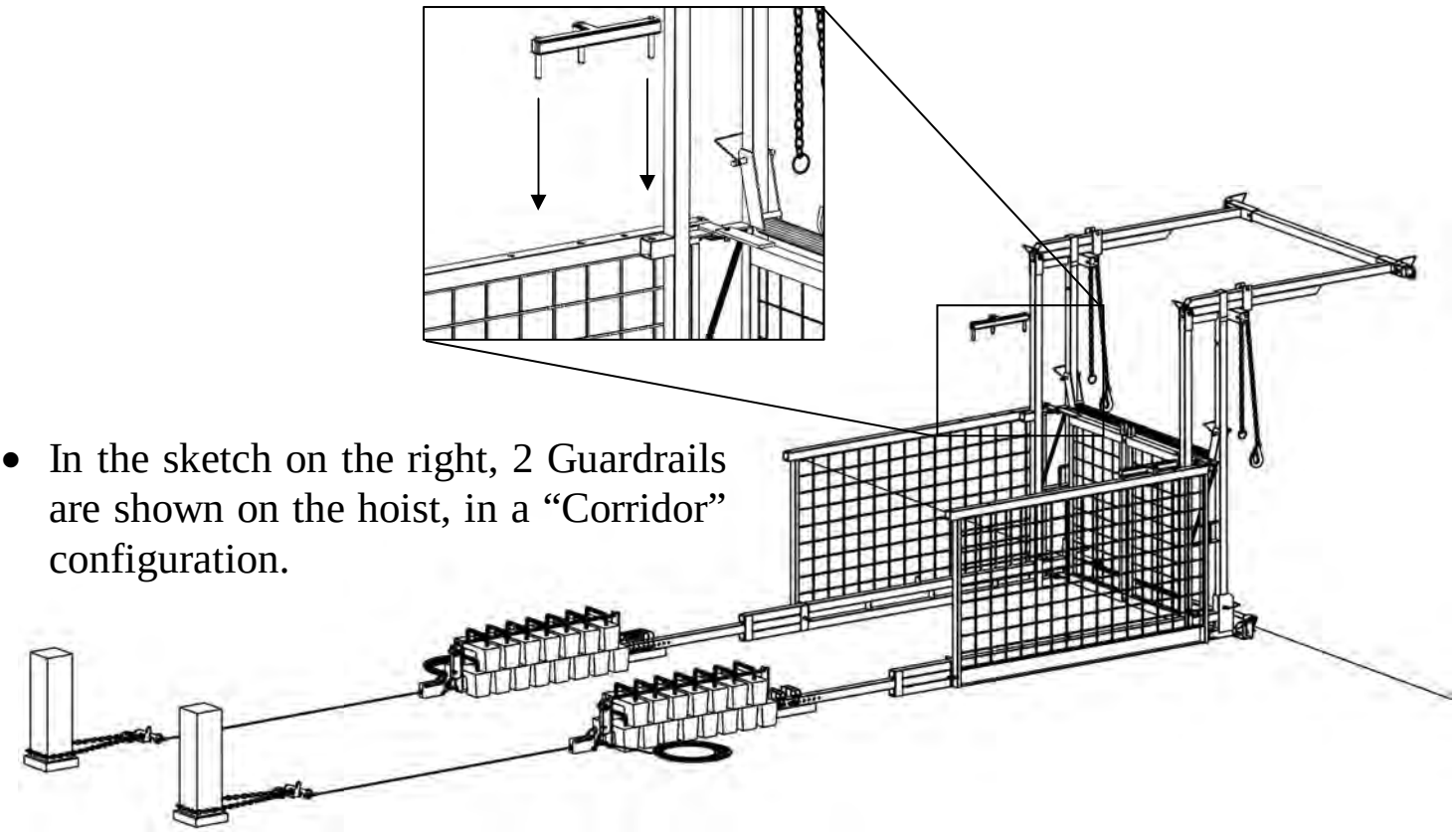


Top View:

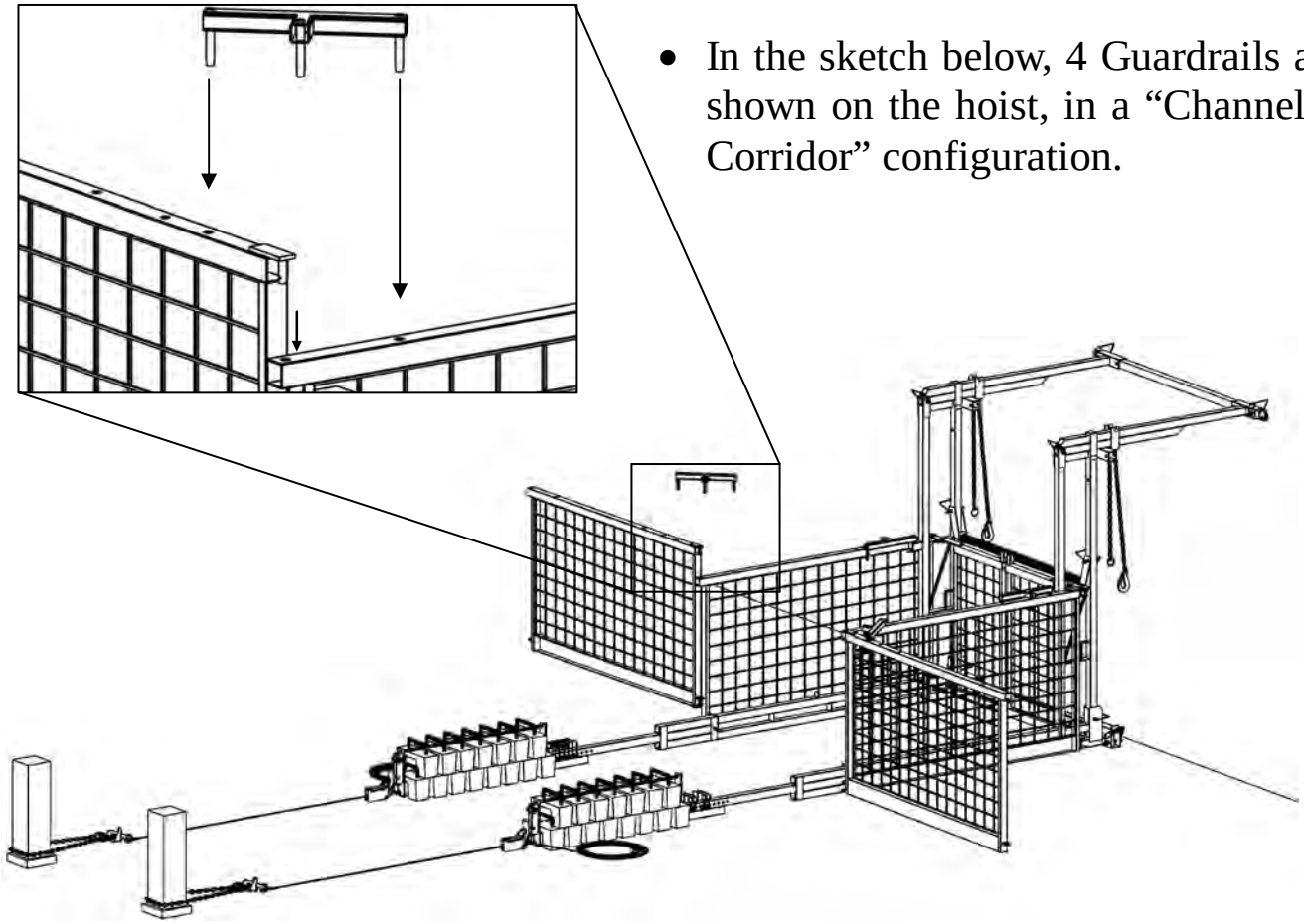
- Note the 2 Gates between the masts.
- Note the tiebacks.



ATTACH THE GUARDRAILS (continued)



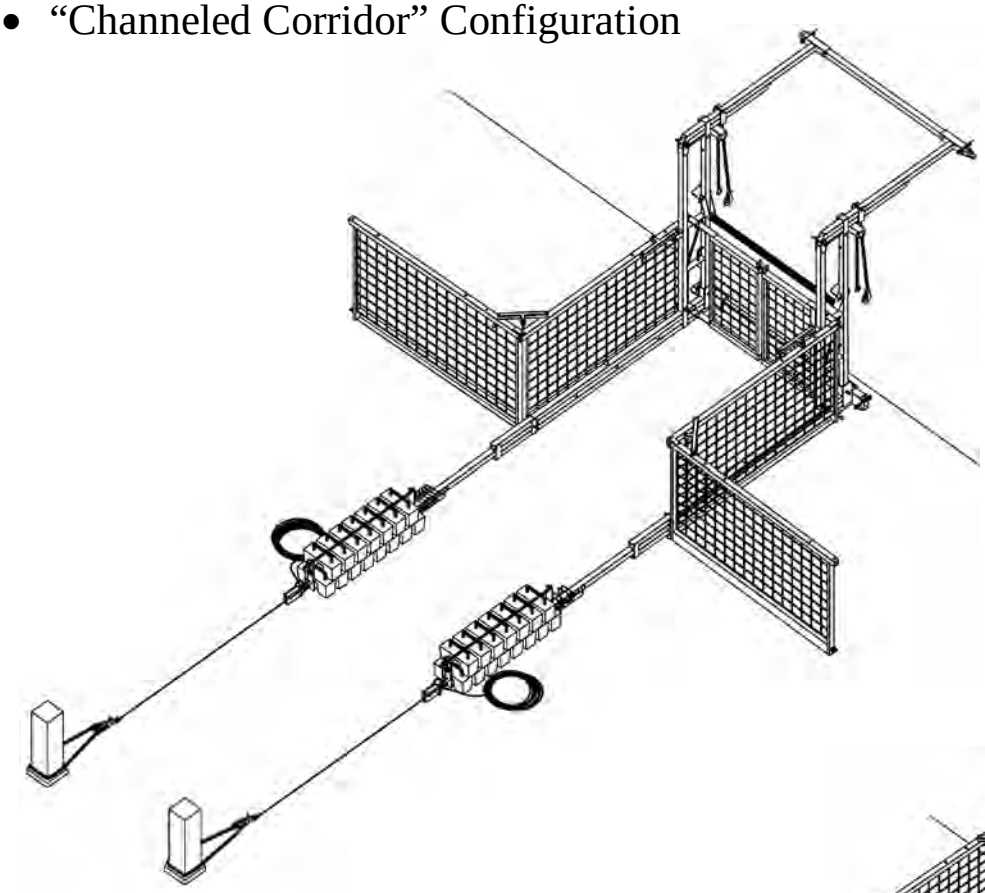
- In the sketch on the right, 2 Guardrails are shown on the hoist, in a “Corridor” configuration.

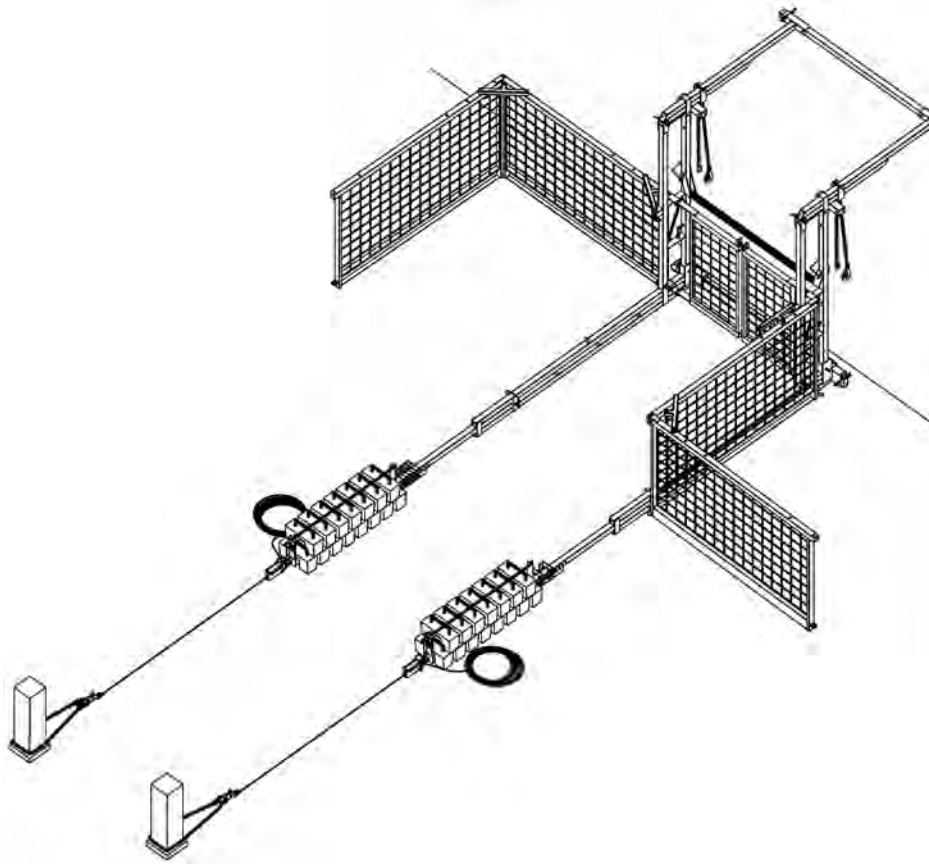


- In the sketch below, 4 Guardrails are shown on the hoist, in a “Channeled Corridor” configuration.

ATTACH THE GUARDRAILS (continued)

- Top View
- “Channeled Corridor” Configuration



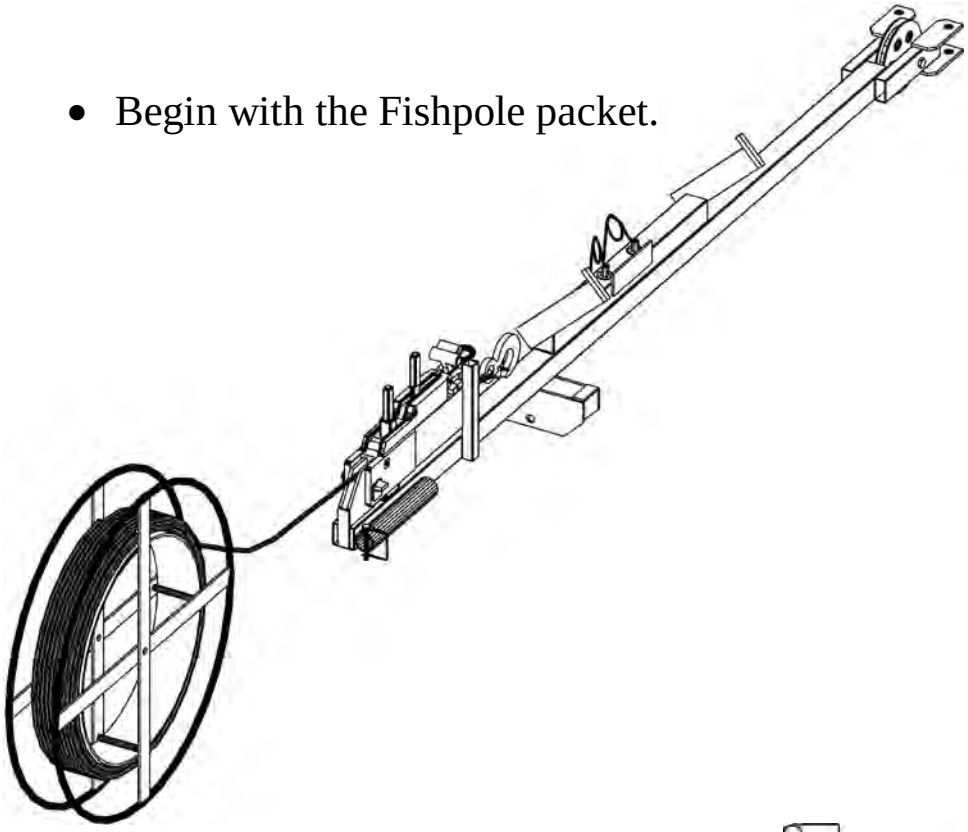


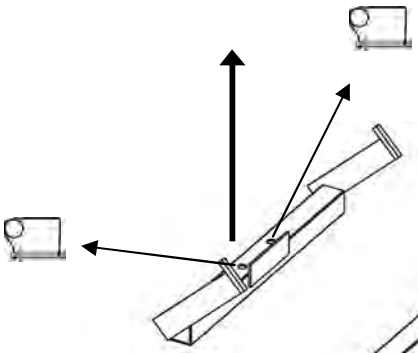
- Top View
- “Open Box” & “Channeled Corridor” Configuration

22. THE FISHPOLE (IF APPLICABLE)

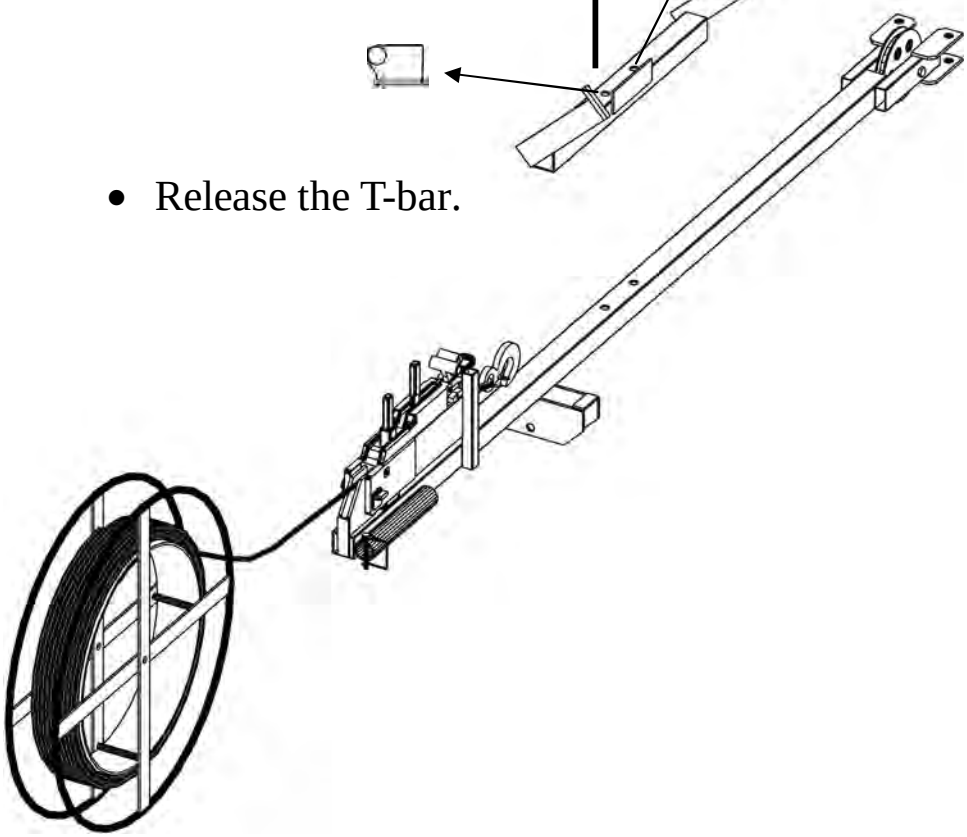
PREPARATION, INSTALLATION AND OPERATION

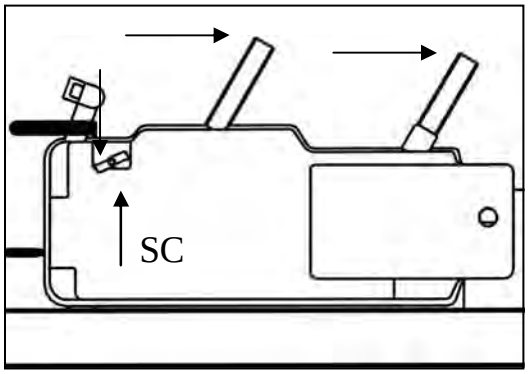
- Begin with the Fishpole packet.

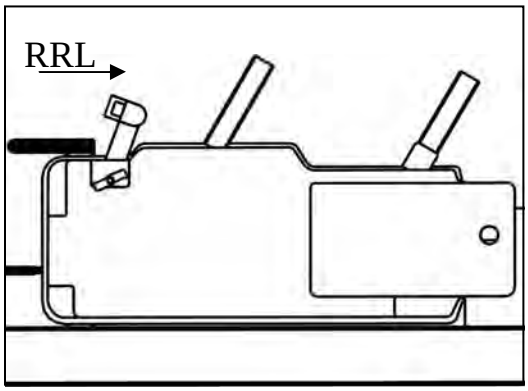


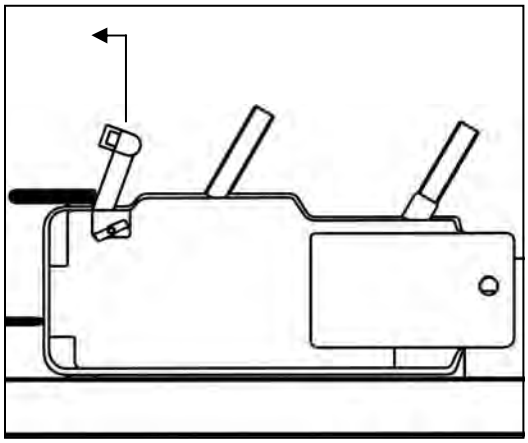


- Release the T-bar.









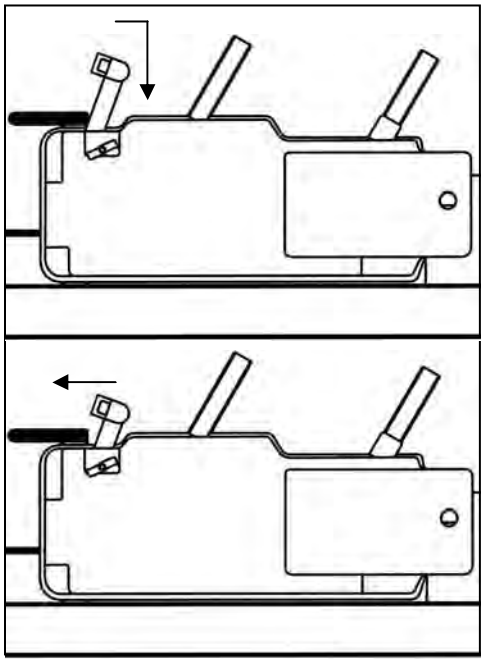
Release the Winch's Grip on the Rope

Turn the yellow Rope Release Safety Catch (SC) and push the yellow Rope Release Lever (RRL) towards the butt of the Fishpole until it locks into position when raised slightly at its limit. Release the Rope Release Safety Catch (SC).

Refer to the separate booklet entitled "Tirfor - Operating and Maintenance Instructions" for detailed instructions on the operation of the winch.

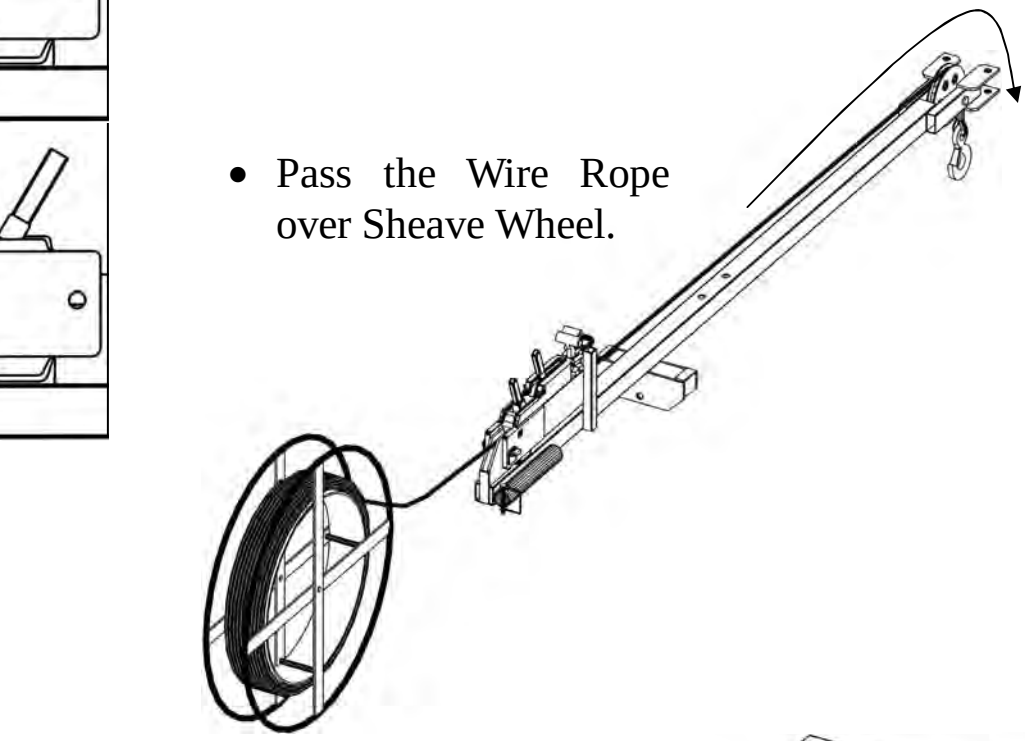
- Pull 20' of Wire Rope through the winch.
- The rope should move freely through the winch.

THE FISHPOLE (continued)

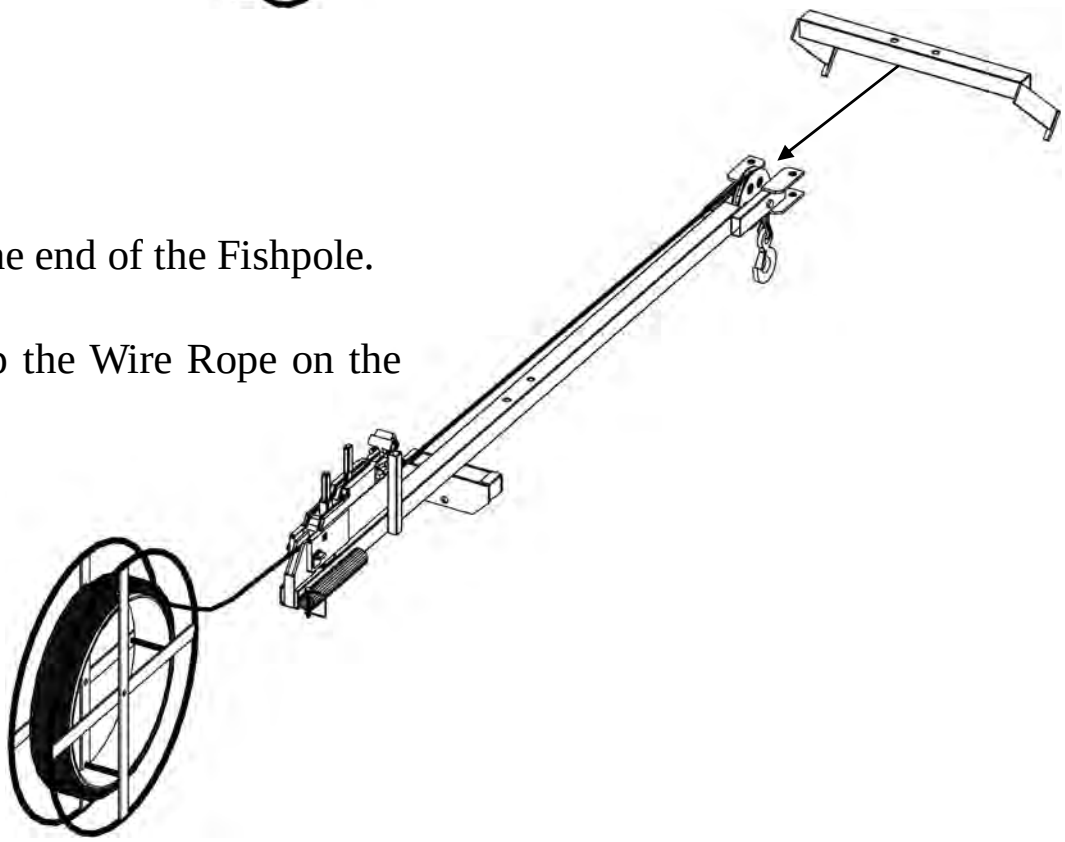


- Disengage the Rope Release Lever as shown.
- The wire rope should now be locked. The wire rope should not move freely through the winch.

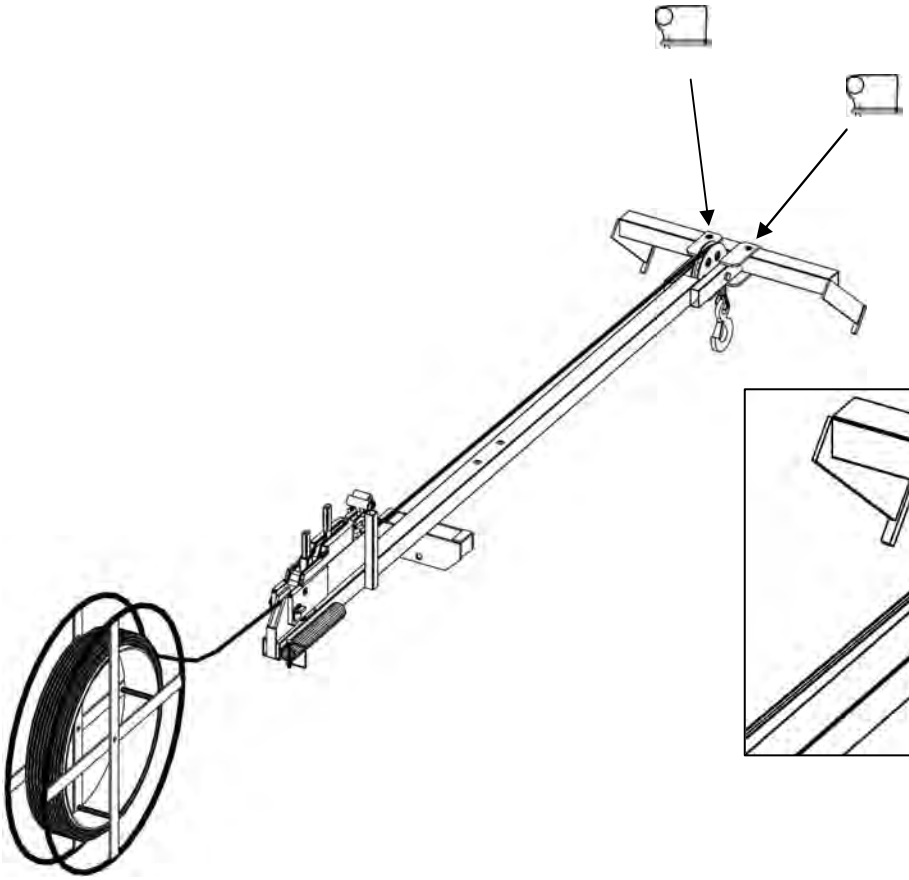
- Pass the Wire Rope over Sheave Wheel.



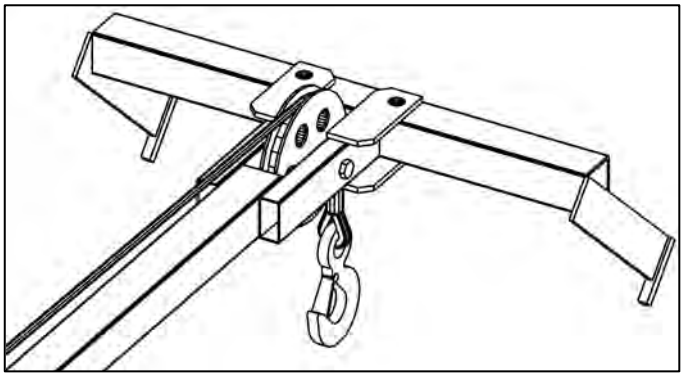
- Fit the T-bar onto the end of the Fishpole.
- The T-bar will keep the Wire Rope on the Sheave Wheel.

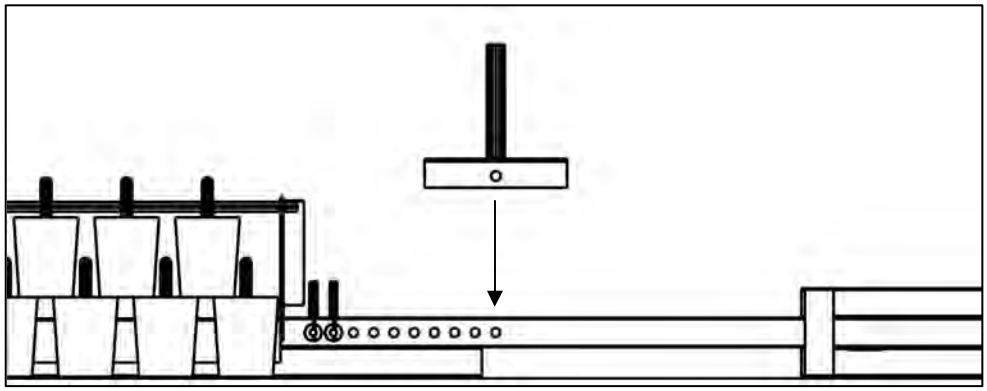


THE FISHPOLE (continued)

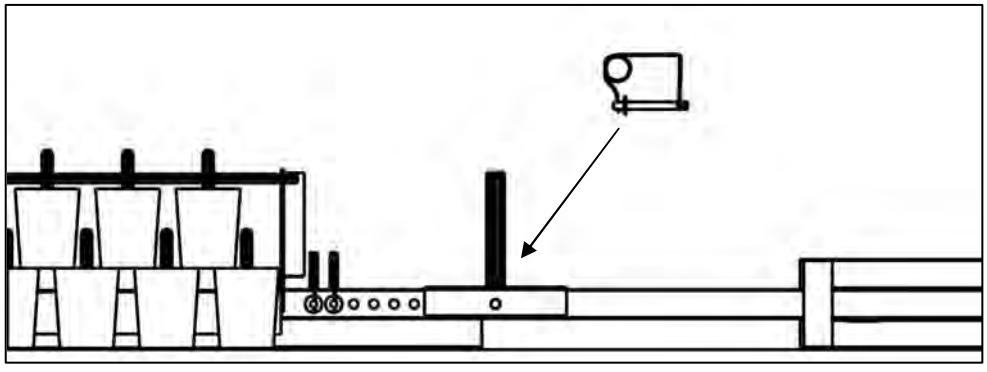


- Pin the T-bar to the Fishpole.



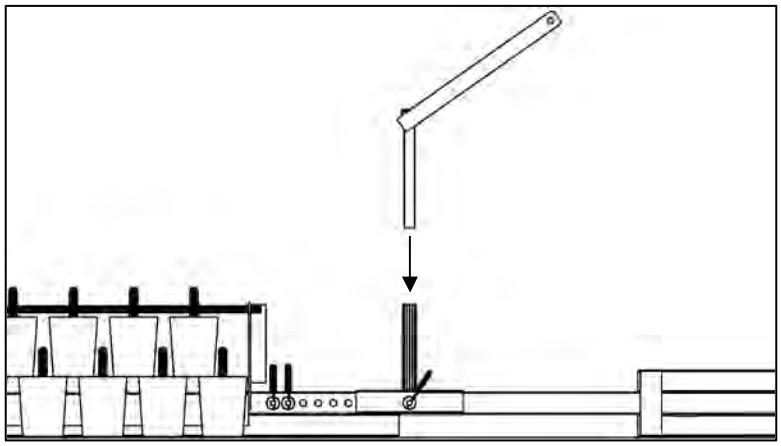


- Fit the Reel Base onto the Pin Rack.

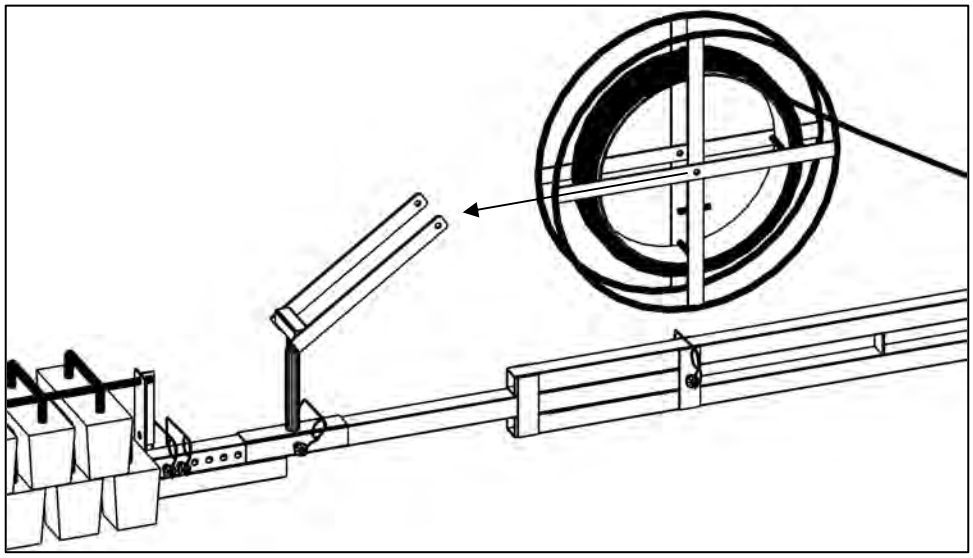


- Pin the Reel Base to the Pin Rack

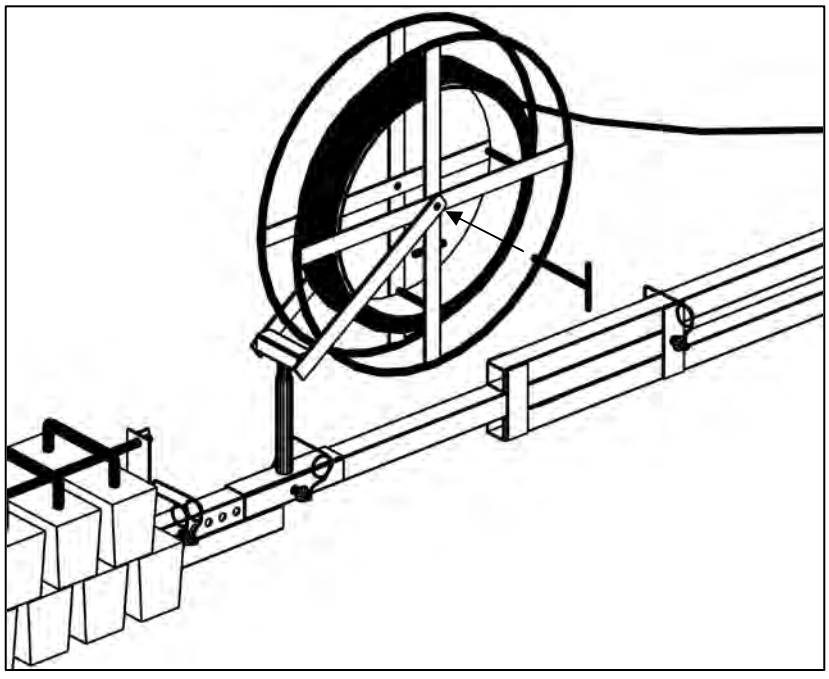
THE FISHPOLE (continued)



- Place the Reel Yoke into the Reel Base.

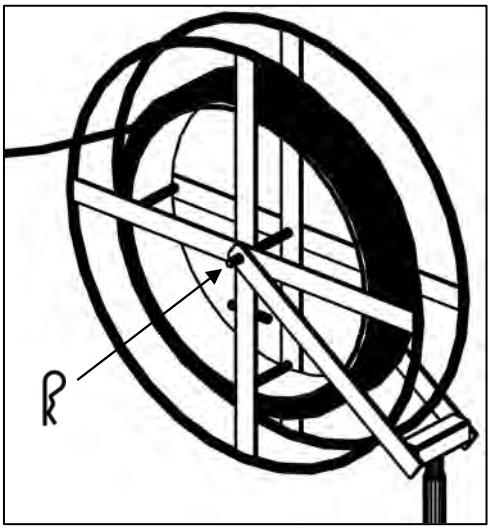


- Align the holes of the Reel Drum with the holes of the Reel Yoke.



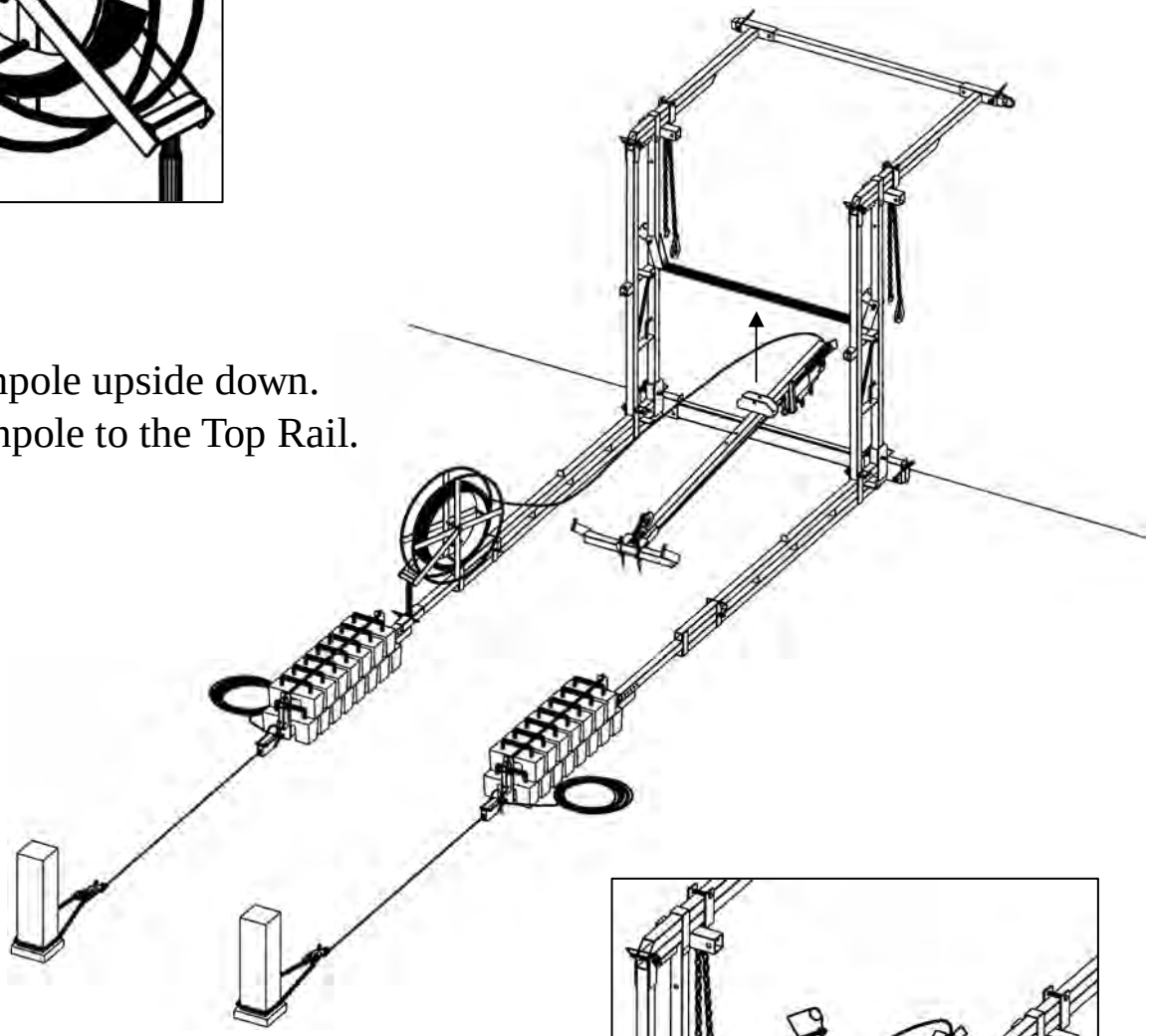
- Insert the Reel Axle Pin through the Reel Yoke and Reel Drum.

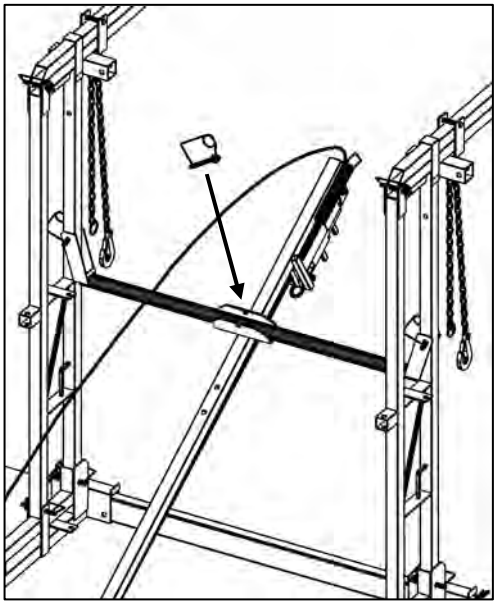
THE FISHPOLE (continued)



- Secure the Axle Pin with the supplied cotter pin.

- Place the Fishpole upside down.
- Raise the Fishpole to the Top Rail.

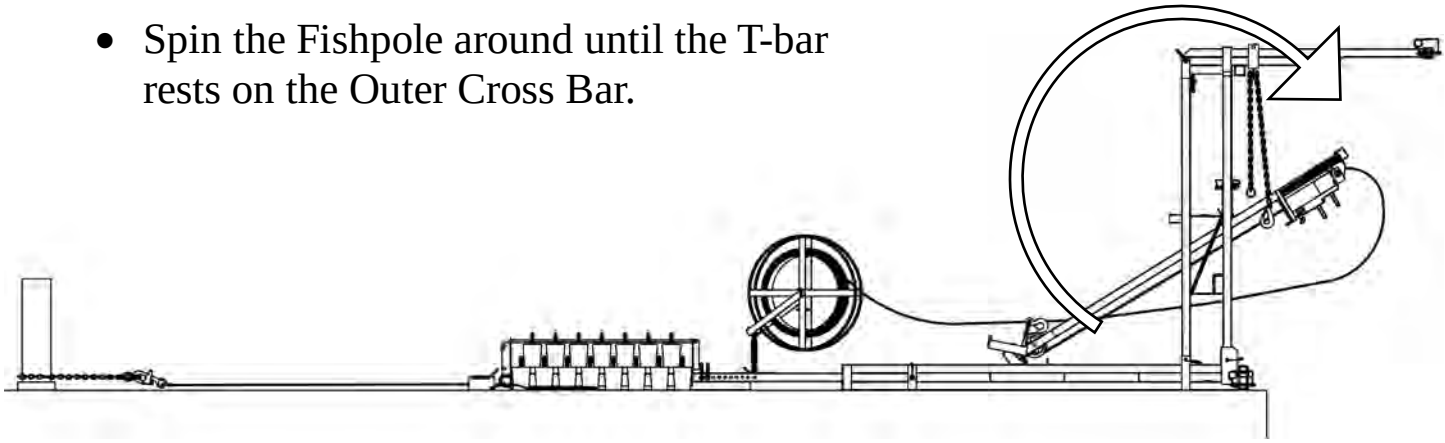




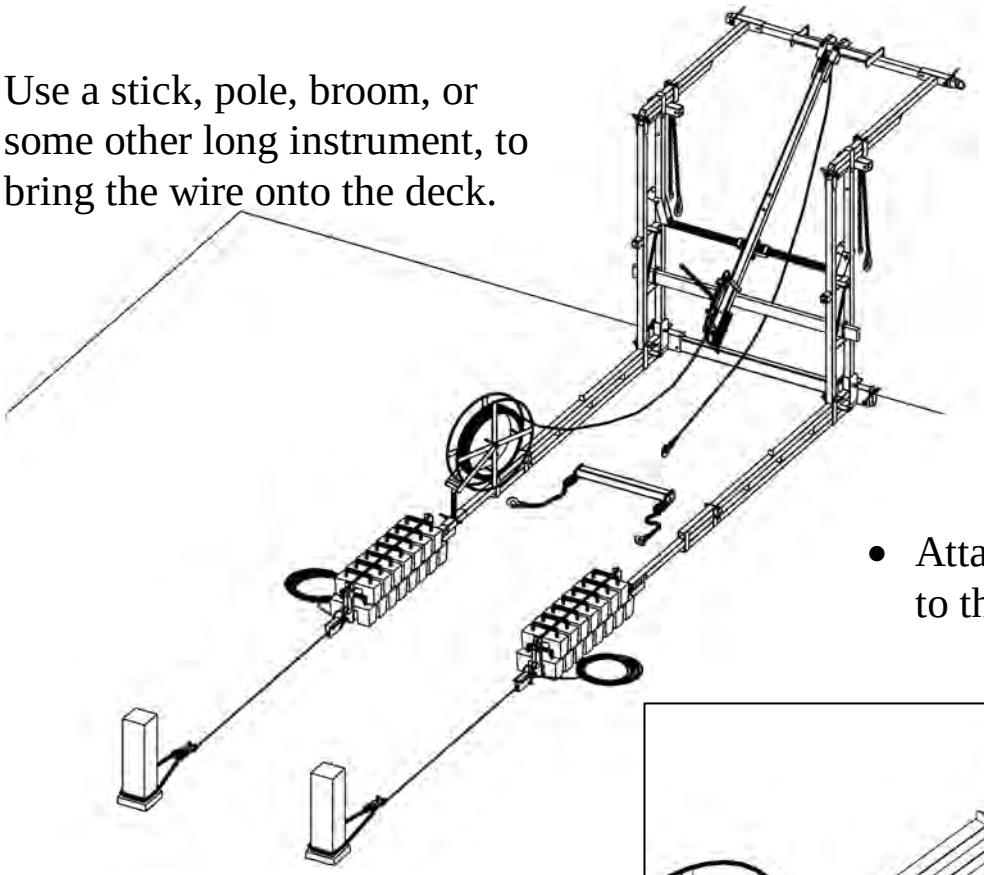
- Pin the Fishpole to the Toprail.

THE FISHPOLE (continued)

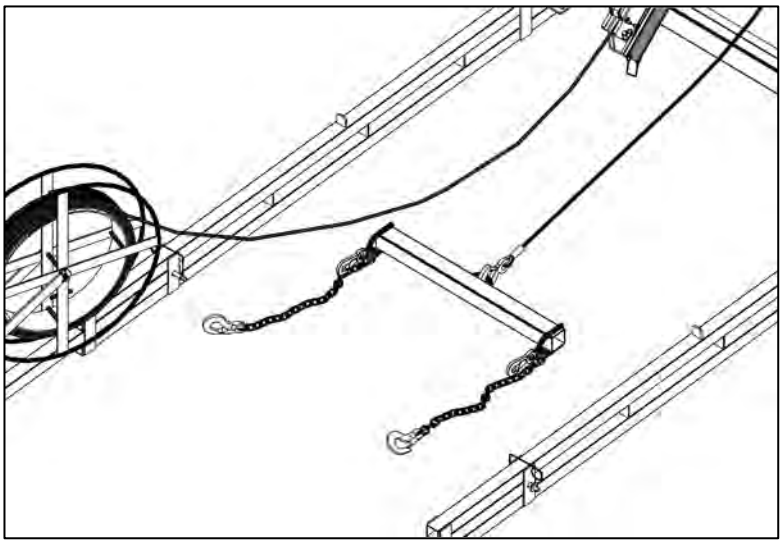
- Spin the Fishpole around until the T-bar rests on the Outer Cross Bar.



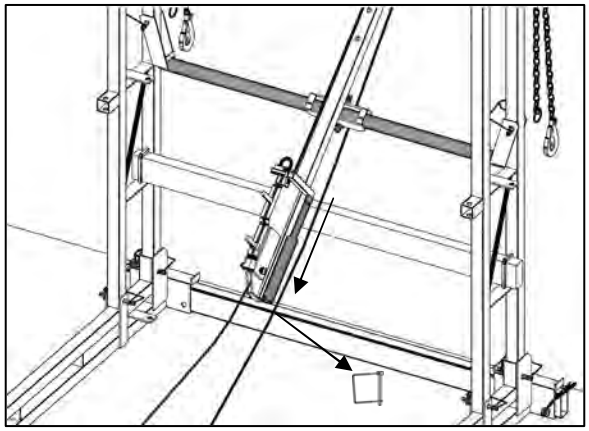
- Use a stick, pole, broom, or some other long instrument, to bring the wire onto the deck.



- Attach the cable's hook to the Spreader Bar.



THE FISHPOLE (continued)



Winch Handle

A pin holds the handle in its storage tube.

Warning!

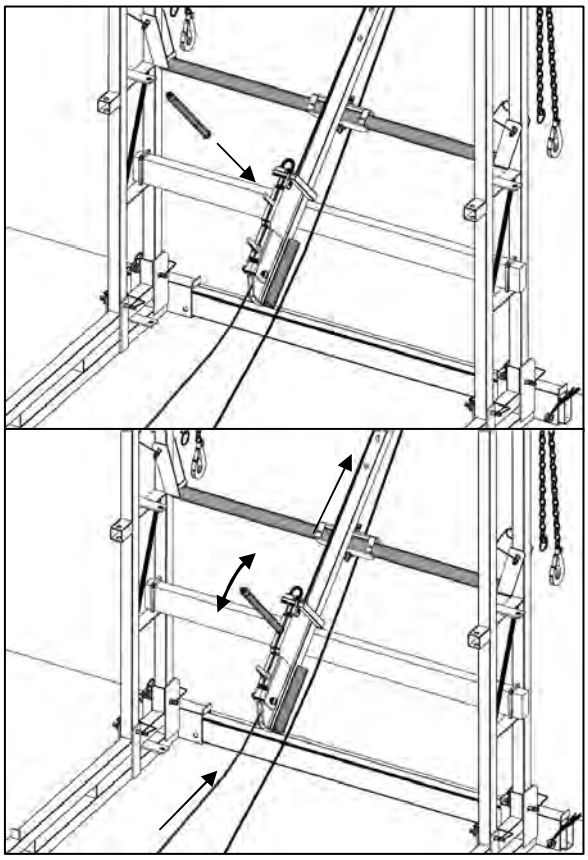
When the pin is removed the handle will quickly slide out of the Storage Tube.

The falling handle could land on your toes!

Remove the pin & be ready to catch the handle.

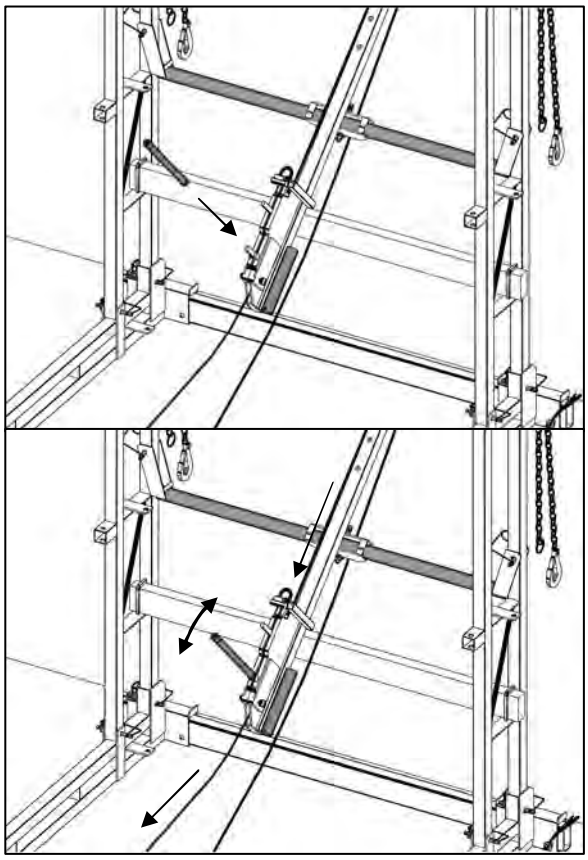
To Pay Out Wire Rope

- Attach handle to Forward Operating Lever
- Move handle back and forth
- The winch will pay out the wire rope

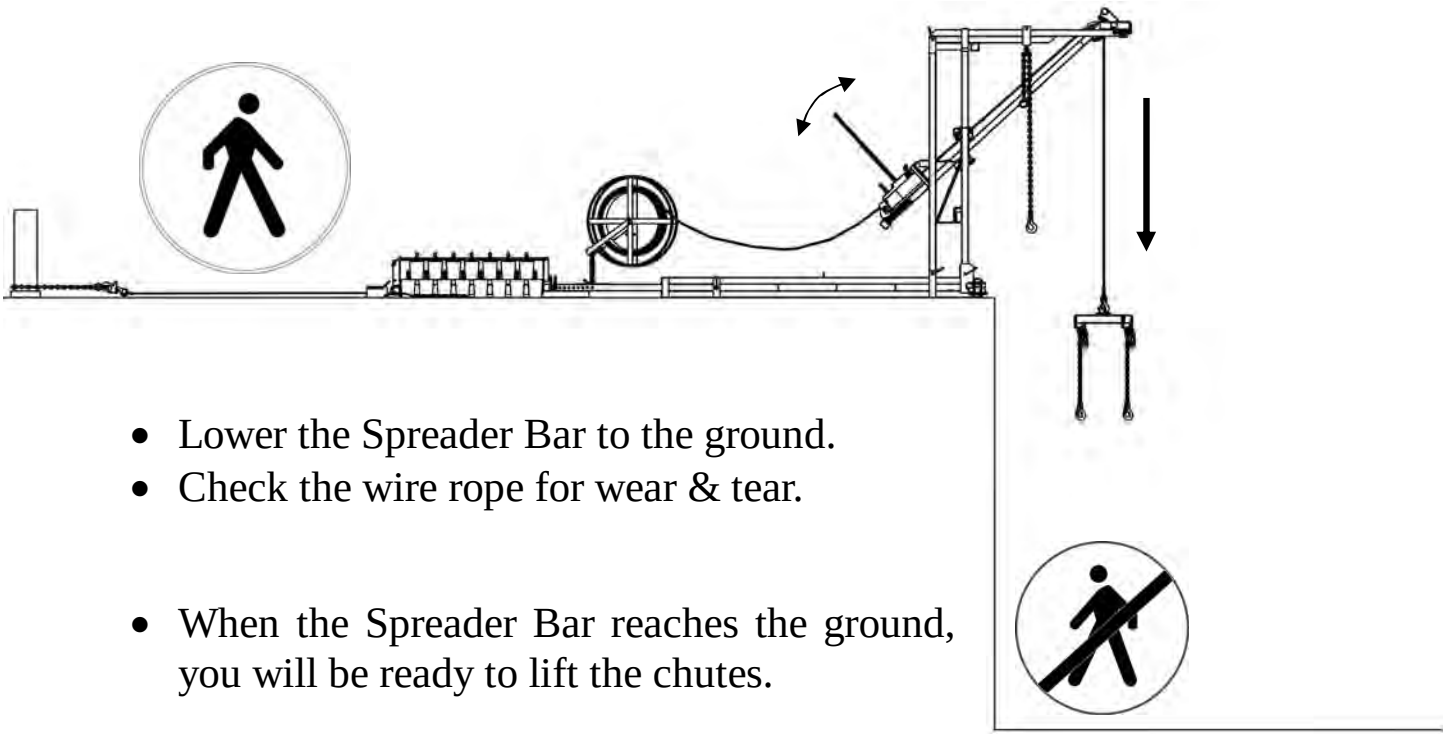


To Take In Wire Rope

- Attach handle to Reverse Operating Lever
- Move handle back and forth
- The winch will take in the wire rope



THE FISHPOLE (continued)



- Lower the Spreader Bar to the ground.
- Check the wire rope for wear & tear.

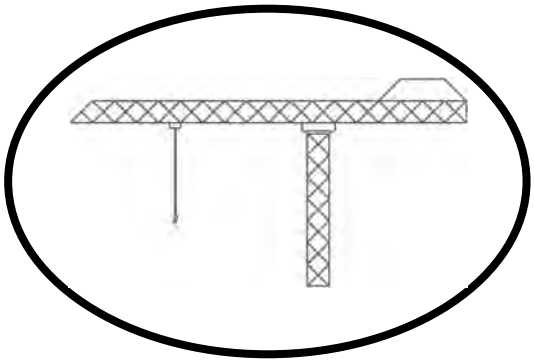
- When the Spreader Bar reaches the ground, you will be ready to lift the chutes.

WARNING

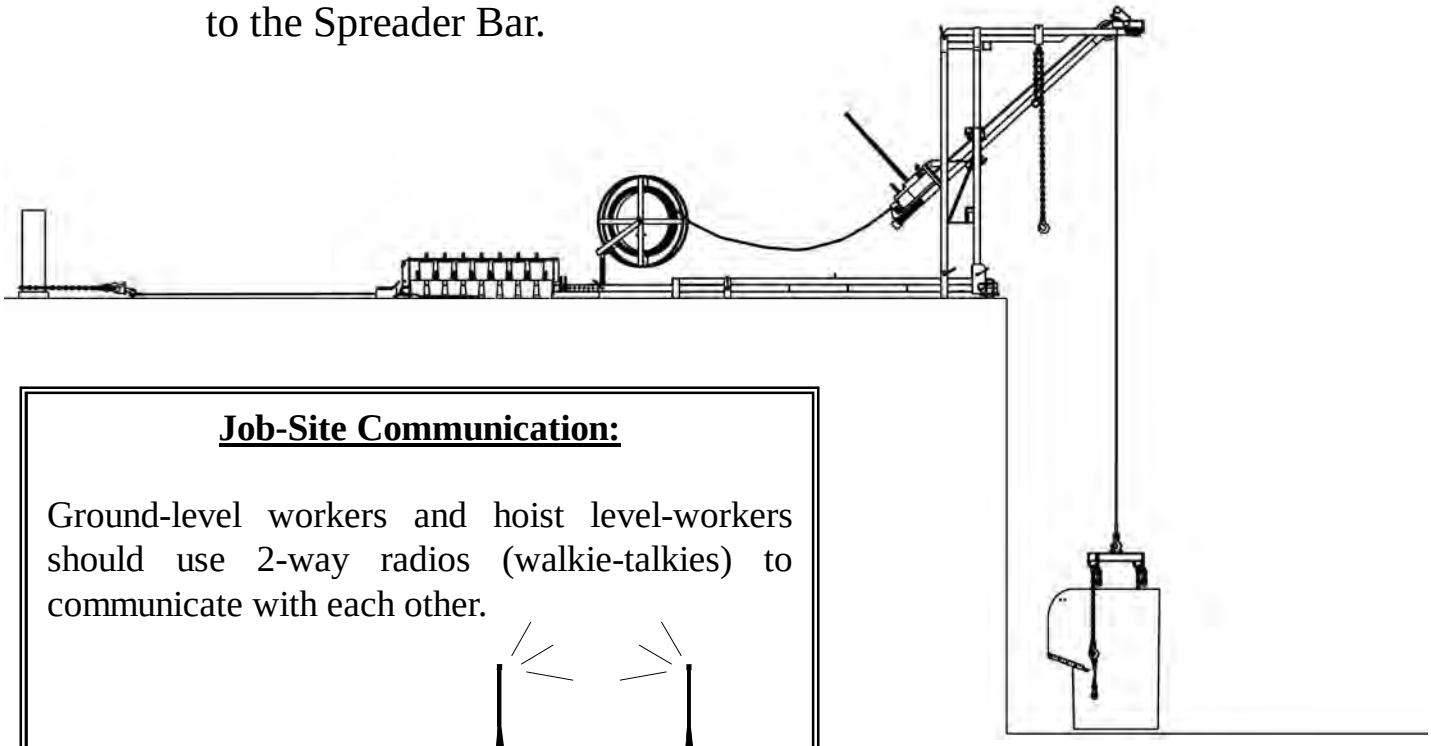
- The Spreader Bar can descend quickly.
- If the descending Spreader Bar were to hit a worker or bystander it could seriously injure or kill.
- Ensure the area below the hoist is clear of workers and bystanders while the Spreader Bar is descending.

23. HOIST THE CHUTES INTO PLACE

Although the following sketches show the Fishpole in use, other lifting devices, such as cranes, material hoists, or boom lifts, may be appropriate as long as they can safely manage the chute load. All lifting devices require the procedure shown in this section.



- Attach a Top Hopper section to the Spreader Bar.



Job-Site Communication:

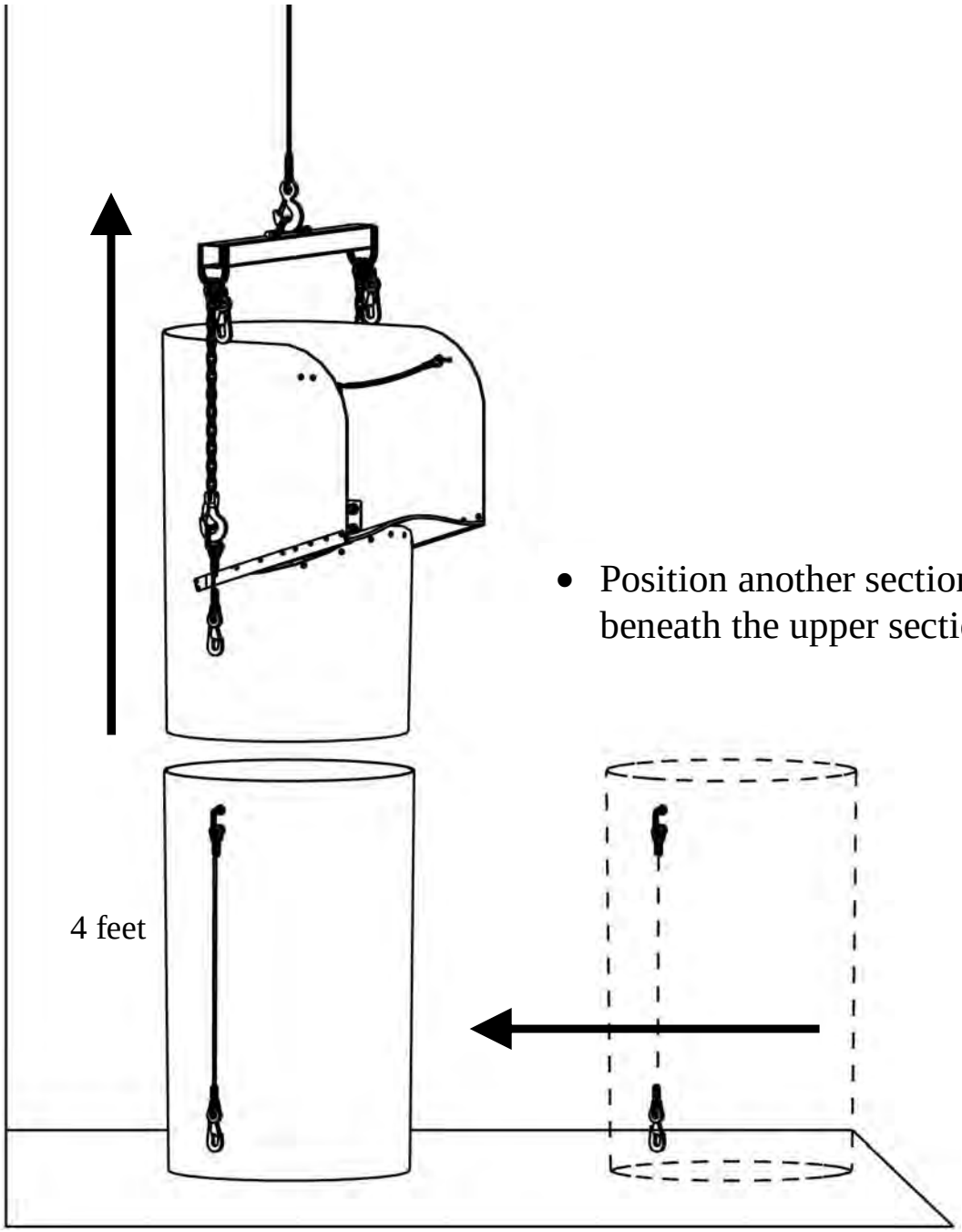
Ground-level workers and hoist level-workers should use 2-way radios (walkie-talkies) to communicate with each other.

⚠ WARNING

- GROUND WORKERS MUST WEAR HARDHATS

HOIST THE CHUTES INTO PLACE (continued)

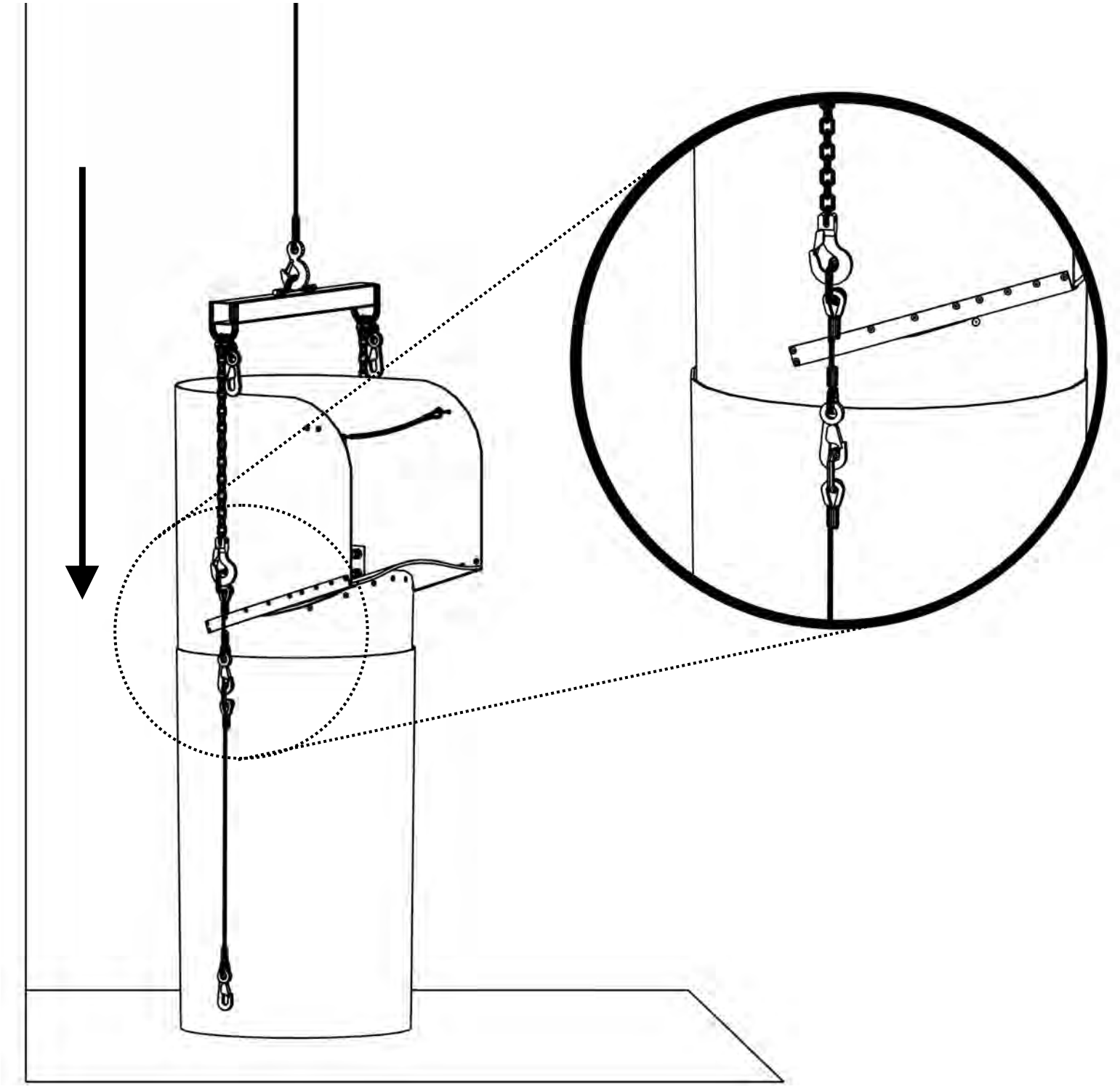
- Raise the section 4 feet.



- Position another section beneath the upper section.

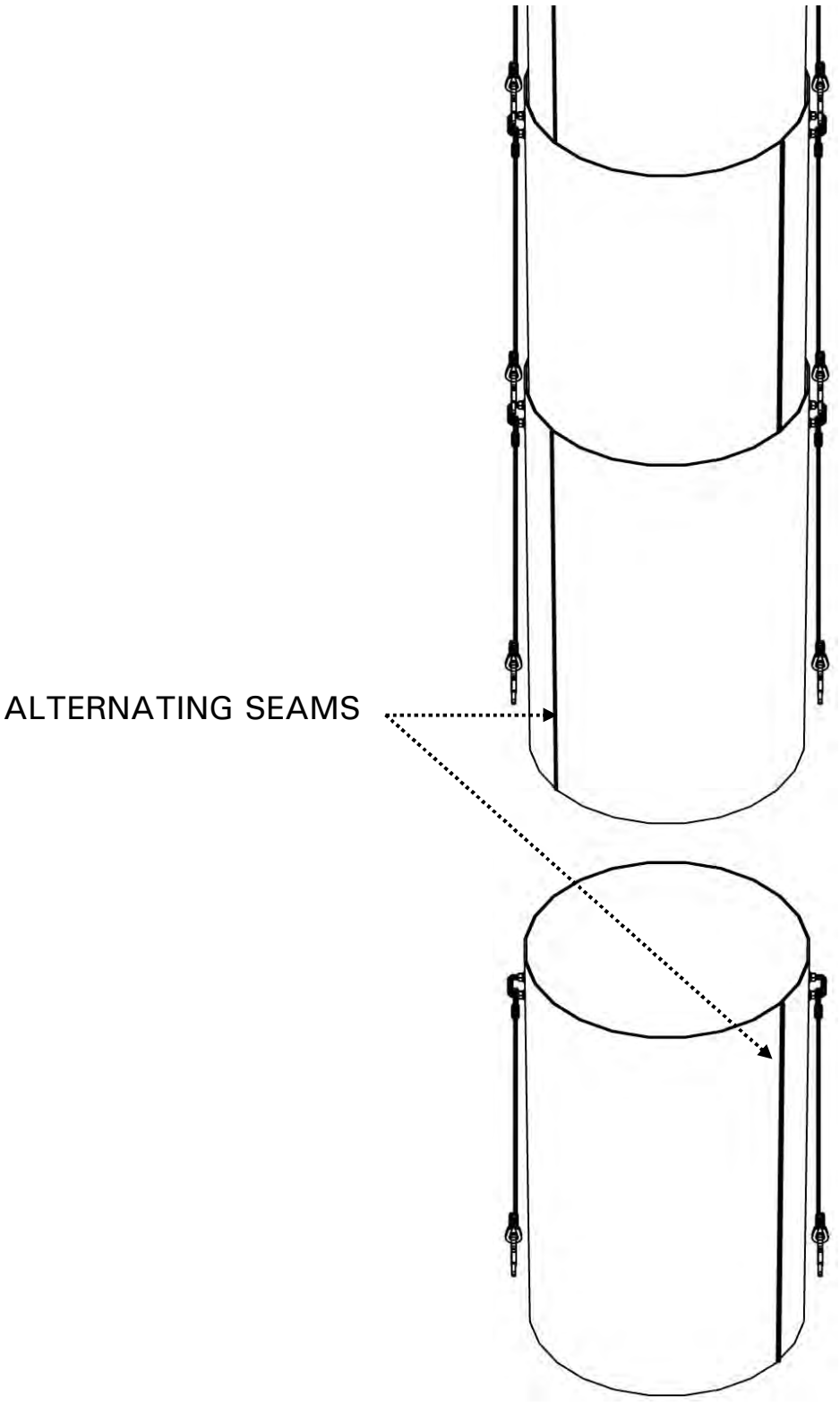
HOIST THE CHUTES INTO PLACE (continued)

- Lower the suspended section into the section beneath it.
- Connect the two sections with the upper section's cable assemblies.

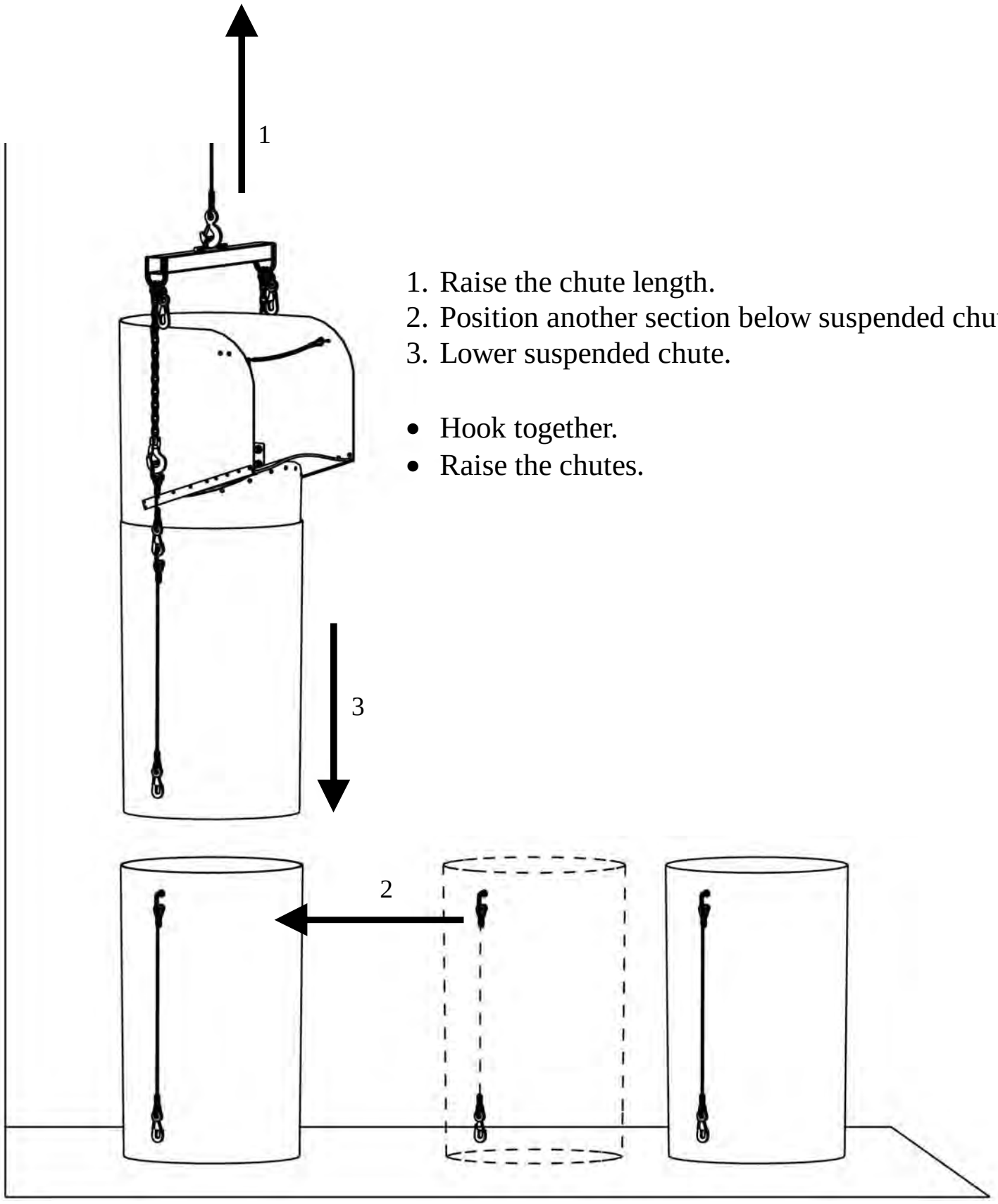


ALTERNATE THE SEAMS

As you add Regular sections, arrange them so that the **plastic weld seams** or **Wraparound® clasp seams** alternate from side to side, as depicted in the sketch below. Alternating the seams from side to side will help the chute hang straight.



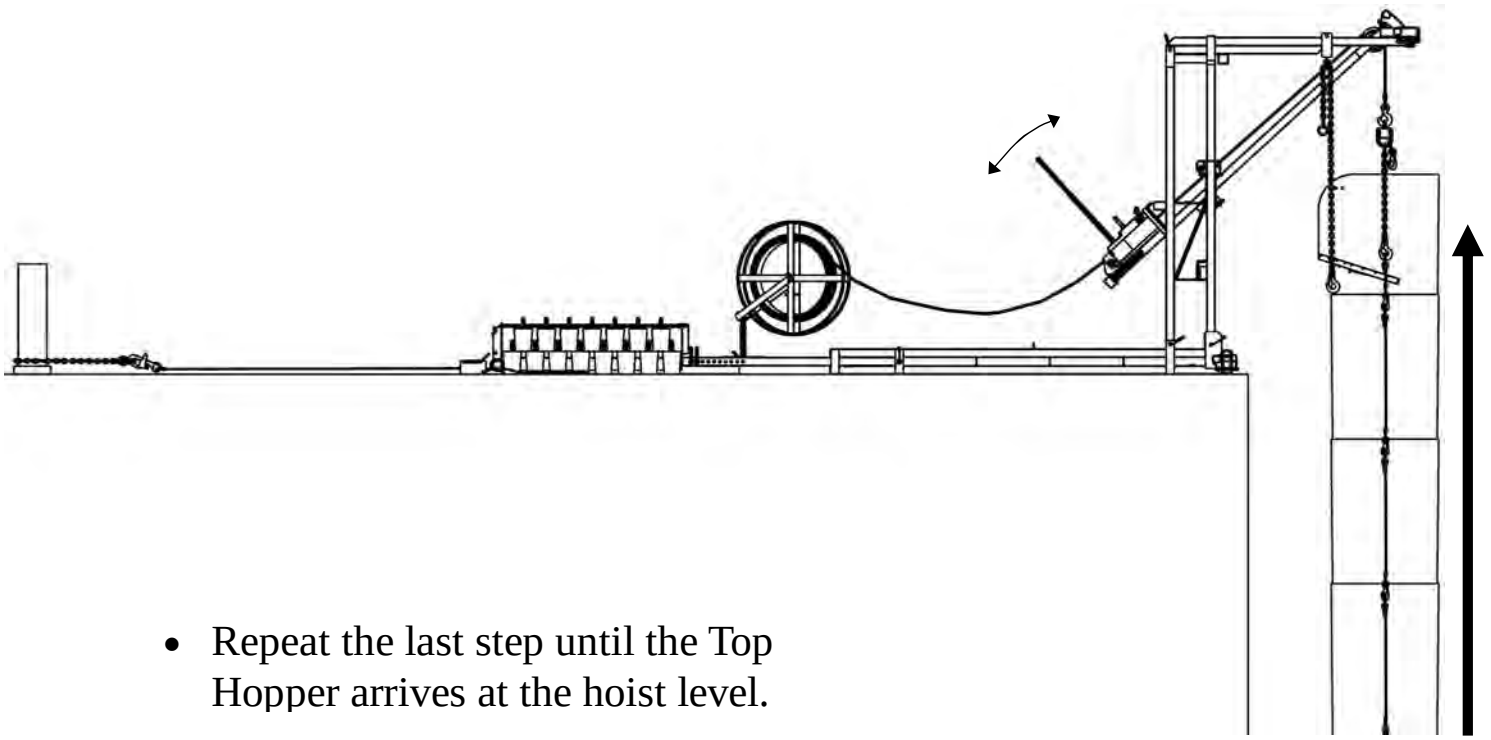
HOIST THE CHUTES INTO PLACE (continued)



1. Raise the chute length.
2. Position another section below suspended chute.
3. Lower suspended chute.

- Hook together.
- Raise the chutes.

HOIST THE CHUTES INTO PLACE (continued)



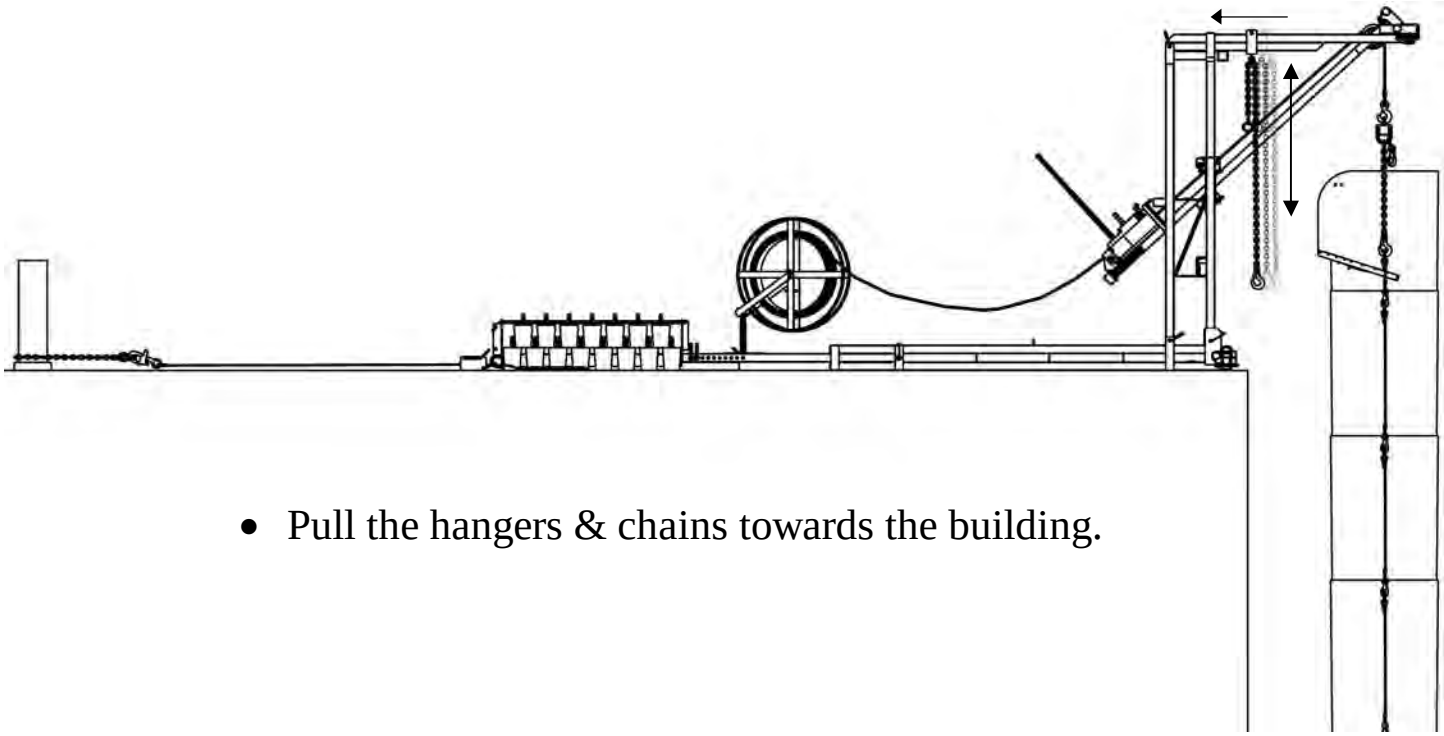
- Repeat the last step until the Top Hopper arrives at the hoist level.

⚠ WARNING

- The SC-2000-cb Hoister is designed to safely lift, support, and lower a chute load weighing up to 1700 lb.
- The hoist frame and/or Fishpole may fail if more than 1700 lb. is applied.
- A falling chute system can seriously injure or kill.
- Do not overload the hoist frame or the Fishpole.
- Use the information in ***Sections 7 & 8*** to calculate the maximum number of Superchute® sections you can safely lift, suspend, & lower per frame.

24. TRANSFER THE CHUTE LOAD FROM THE LIFTING DEVICE TO THE BOOM CHAINS

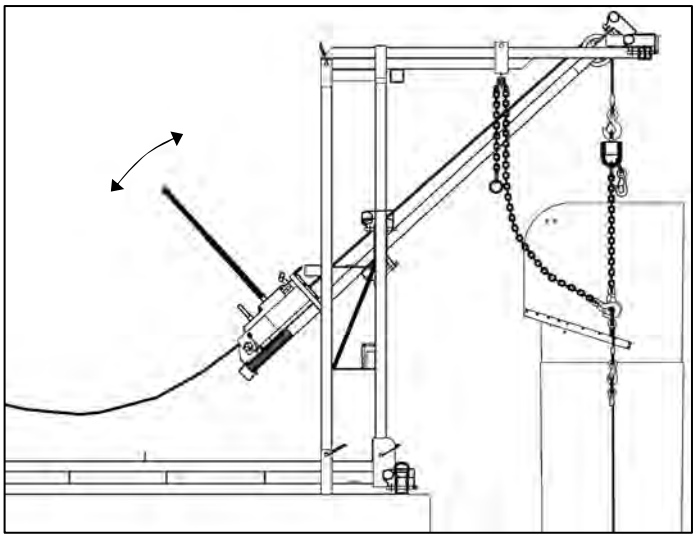
Although the following sketches show the Fishpole in use, other lifting devices, such as cranes, material hoists, or boom lifts, may be appropriate as long as they can safely manage the chute load. All lifting devices require the procedure shown in this section.



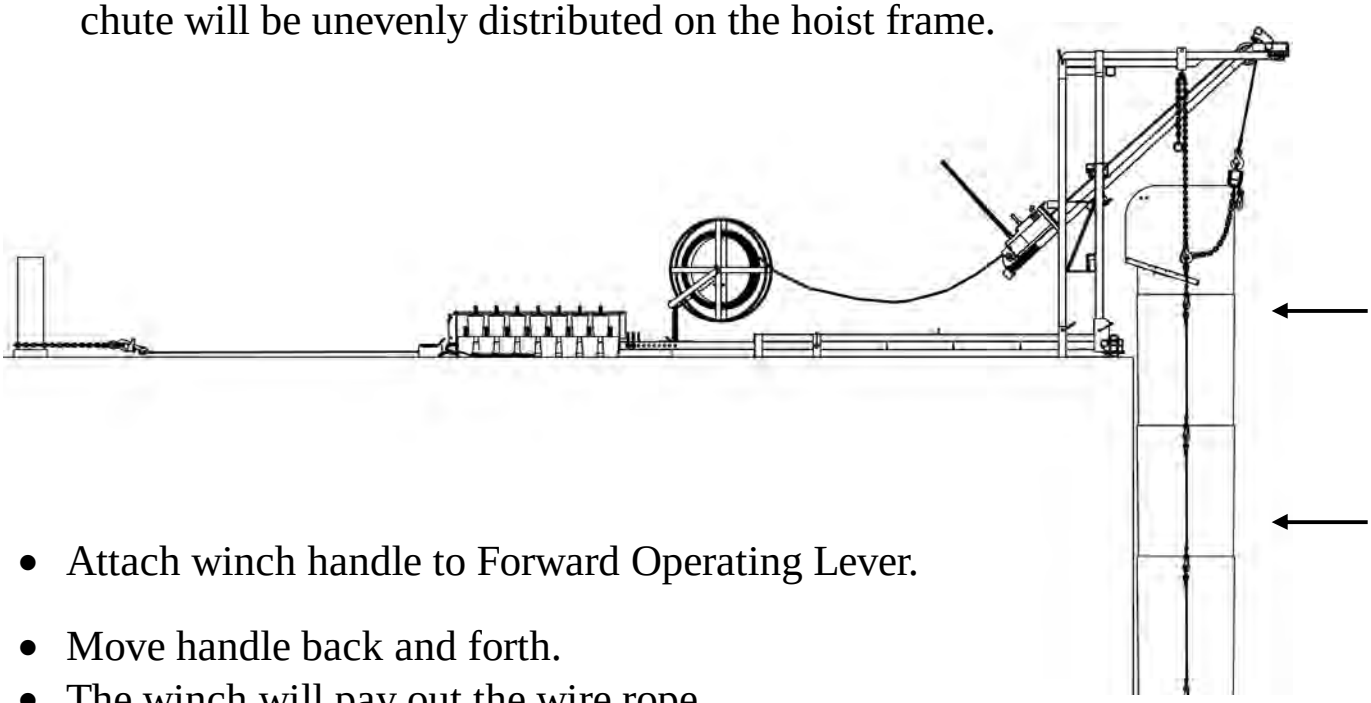
- Pull the hangers & chains towards the building.

- Adjust the chains through the keyholes until the clips are level with the Top Hopper section's U-bolts.

TRANSFER THE CHUTE LOAD (continued)



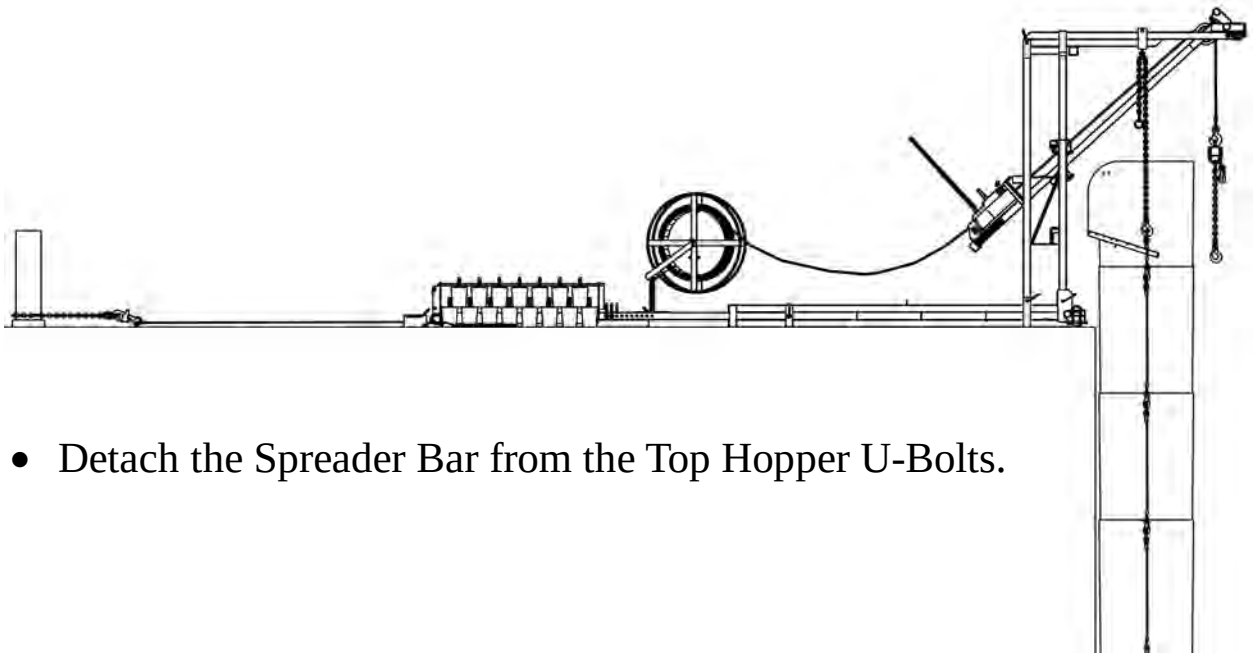
- Fine-tune the Top Hopper height.
- Attach a chain clip to each U-Bolt.
- Adjust the chain lengths.
- **The chain lengths must be equal (count the links)**. If the chain lengths are not equal the weight of the chute will be unevenly distributed on the hoist frame.



- Attach winch handle to Forward Operating Lever.
- Move handle back and forth.
- The winch will pay out the wire rope.
- The weight of the chute will transfer to the Boom Chains.
- Unhook the Spreader Bar from the chute section's U-bolts.

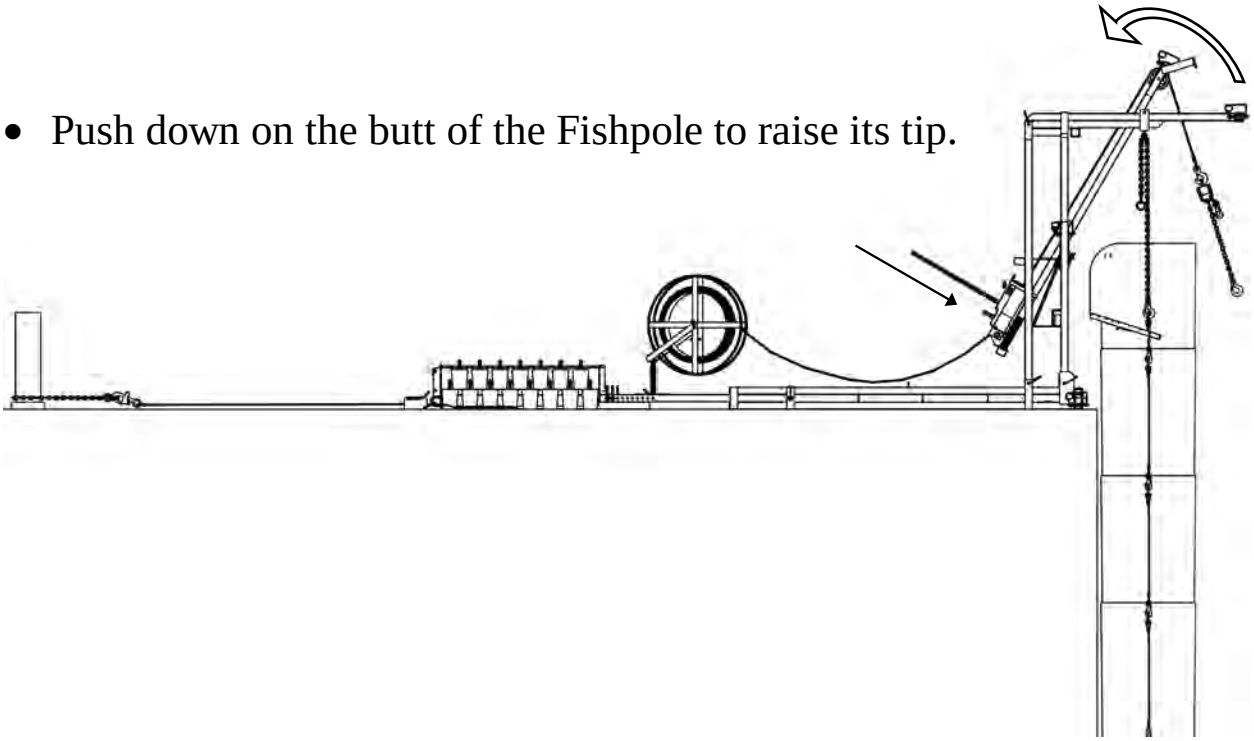
25. REMOVE THE FISHPOLE (IF APPLICABLE)

If using a crane (or similar device), then please go directly to Section 26.



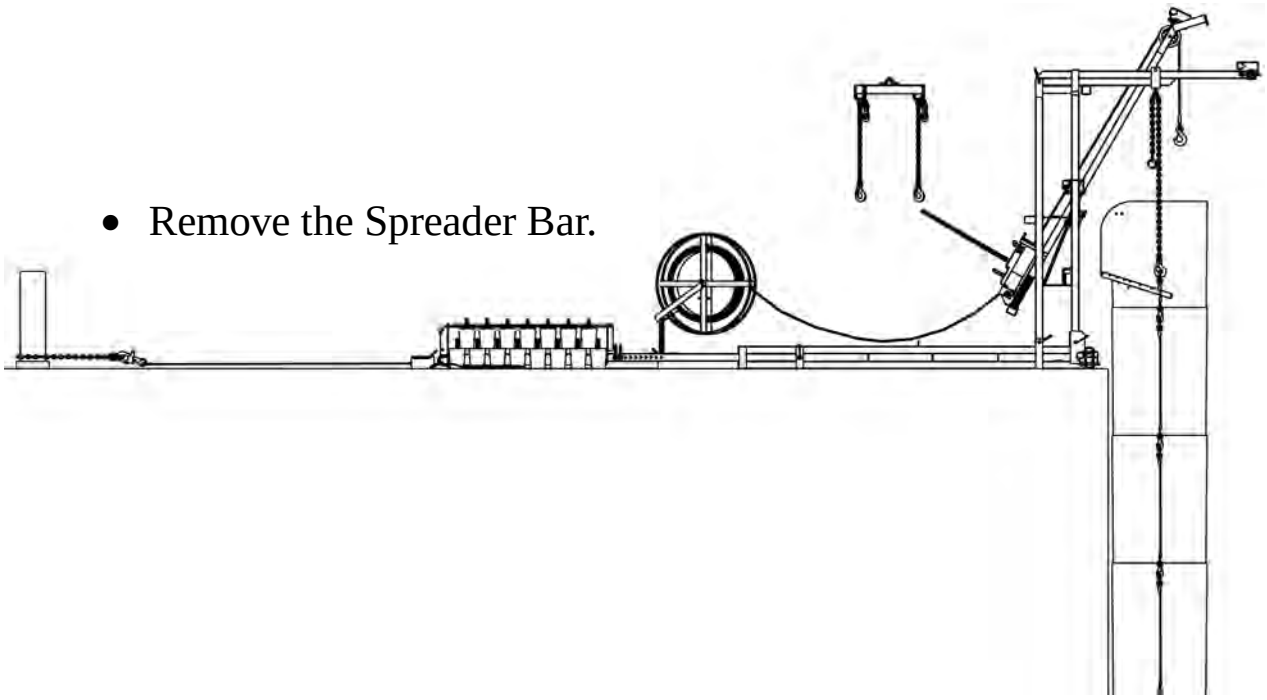
- Detach the Spreader Bar from the Top Hopper U-Bolts.

- Push down on the butt of the Fishpole to raise its tip.

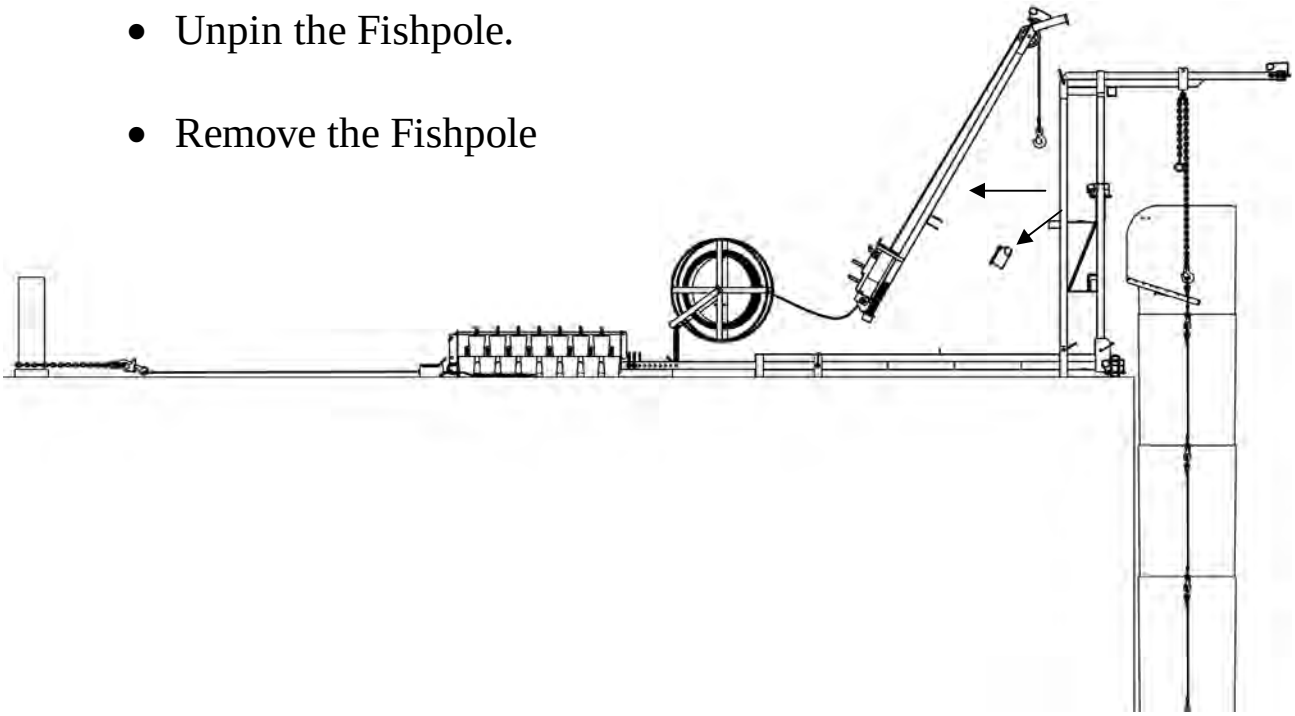


REMOVE THE FISHPOLE (continued)

- Remove the Spreader Bar.

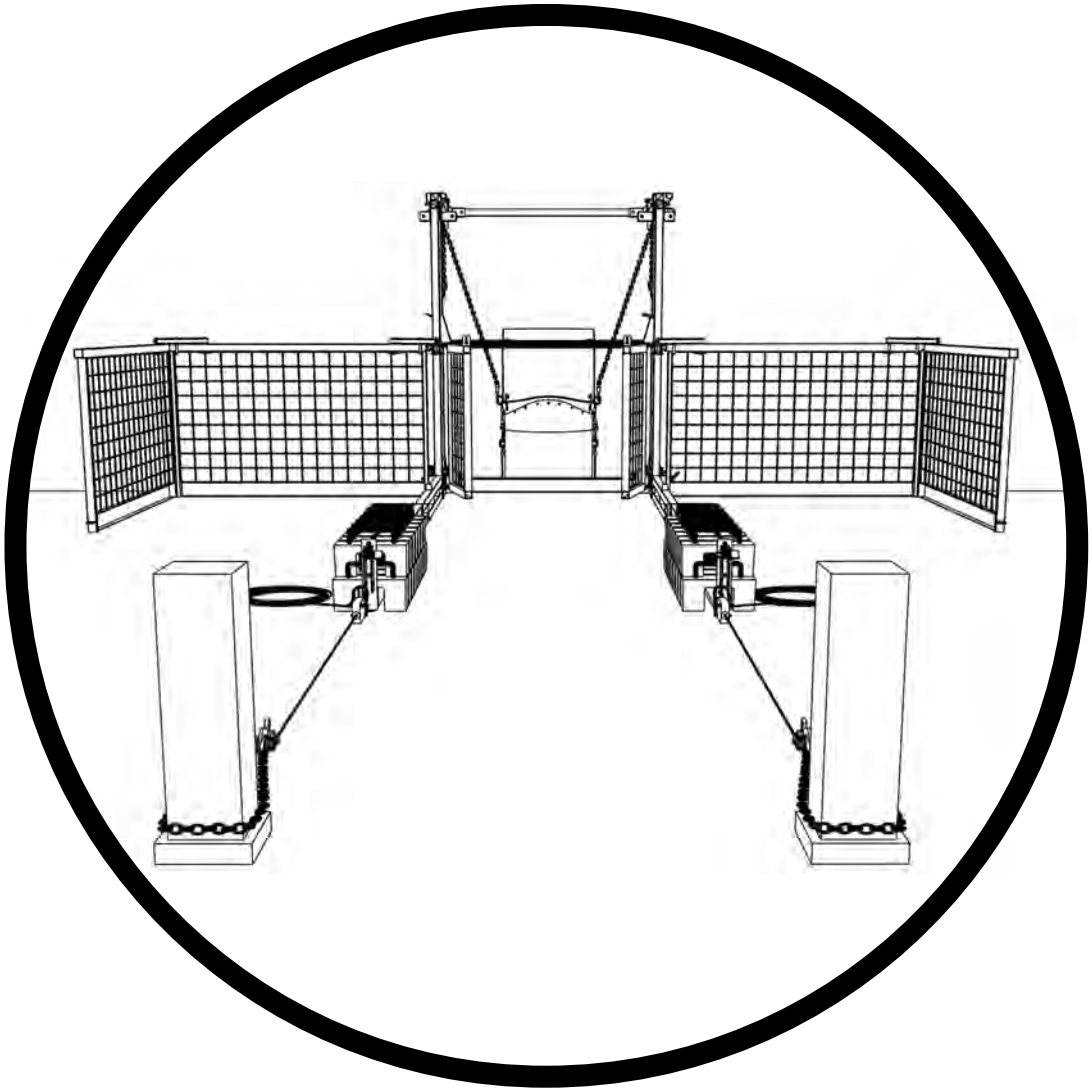


- Unpin the Fishpole.
- Remove the Fishpole



26. CONGRATULATIONS

The installation of your SC-2000-cb Chute Hoister is complete.



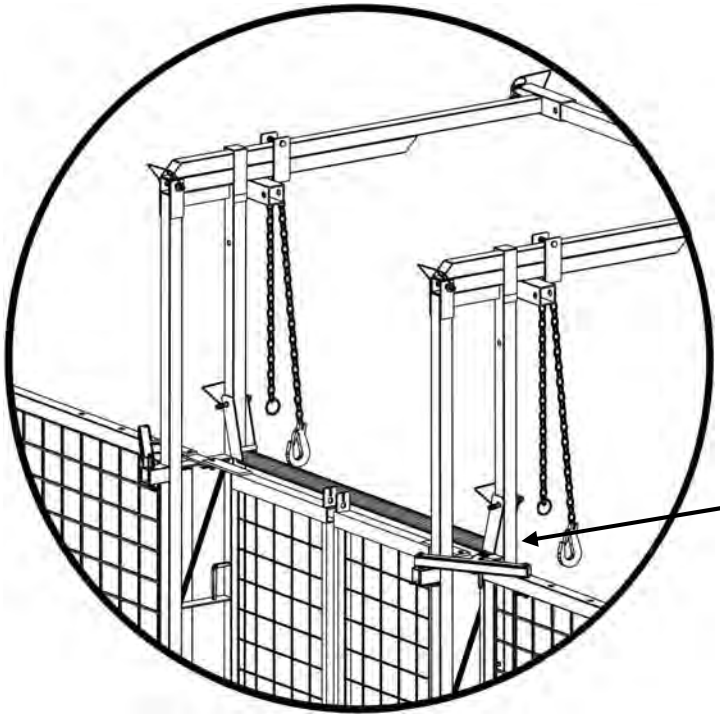
Please see the next few pages for some important instructions.

27. FALL PROTECTION, THE GATEKEEPER AND THE ALTERNATE TOPRAIL POSITION

⚠ WARNING

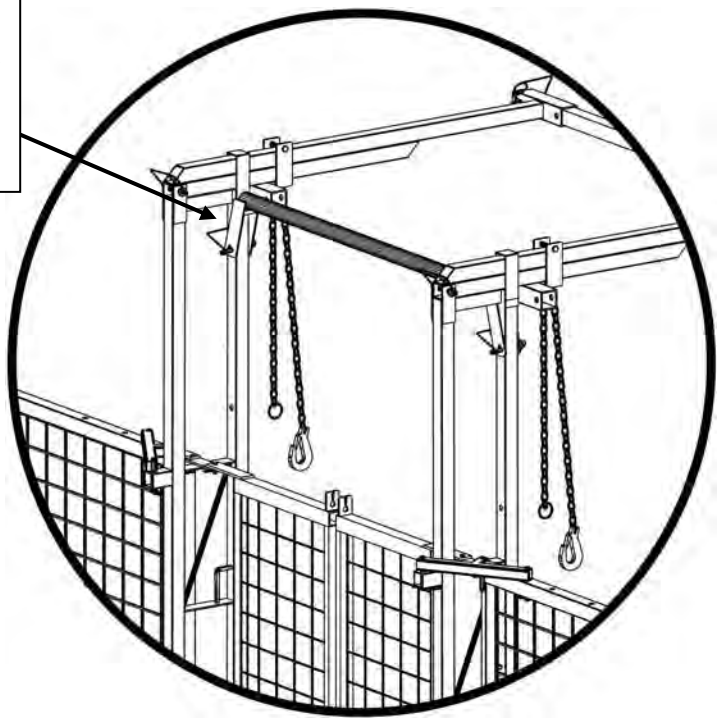
- If the hoisting area does not feature adequate fall prevention barriers, a person could easily fall into the chute or off the building.
- A fall from a height of 6 ft. is enough to seriously injure or kill.
- OSHA requires the use of fall prevention barriers along unprotected edges. The barriers must be at least 42" high, plus or minus 3". Guardrail systems, parapet walls, and window sills may be acceptable fall prevention barriers provided they meet OSHA's height and strength criteria.
- The Toprail is a substantial fall prevention barrier when installed in the "waist high" position. If the Toprail is removed because it is interfering with the debris removal process an alternate fall protection system must be used (body harness and lanyard, or similar).
- Keep the debris removal process quick and safe in areas without adequate fall protection by designating a worker as the **Gatekeeper.**
- The Gatekeeper is secured by a personal fall arrest system to an anchor that is independent of the chute system. Because he is protected against falls, he can work near the exposed edge. At a demarcated "stop line" (where there is no risk of falling over the edge), the Gatekeeper receives full wheelbarrows from unprotected workers. He empties the wheelbarrows into the chute and returns them to the stop line in exchange for full ones.

Please see the next page for more information on positioning the Toprail.



- The Toprail is a substantial fall prevention barrier when installed in the "waist high" position shown below.

- The Toprail may be detached and moved to the alternate "head high" position (shown below).
- However in this alternate position the Toprail does not provide protection against falls, and does not meet OSHA's fall protection regulations.
- If the Toprail is removed completely, or installed in the "head high" position, other fall protection measures must be taken to prevent falls into the chute or off of the building.



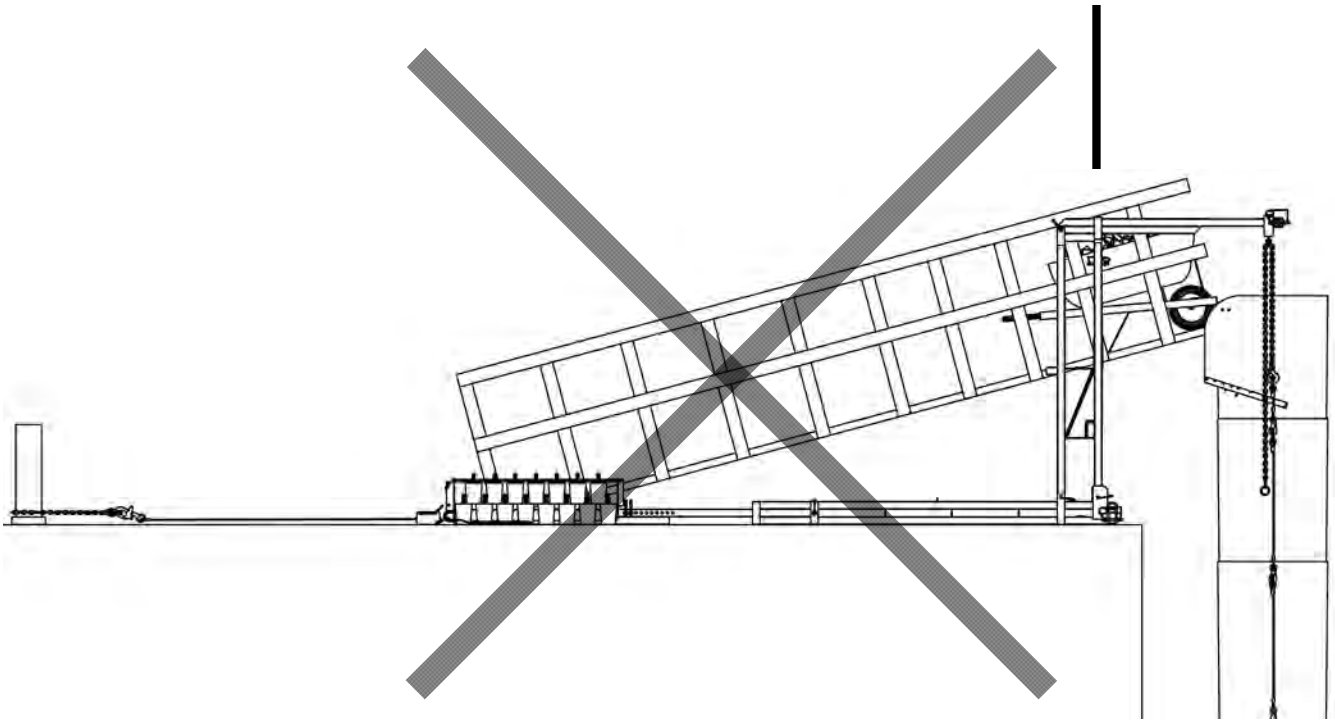
28. RAMPS

⚠ WARNING

- A ramp resting on the hoist frame could greatly increase the loading on the hoist frame.
- The load increase could cause the hoist frame to fail.
- Do NOT rest ramps on the hoist frame. Do NOT attach ramps to the hoist frame.
- Ramp designs should be approved by a structural engineer.

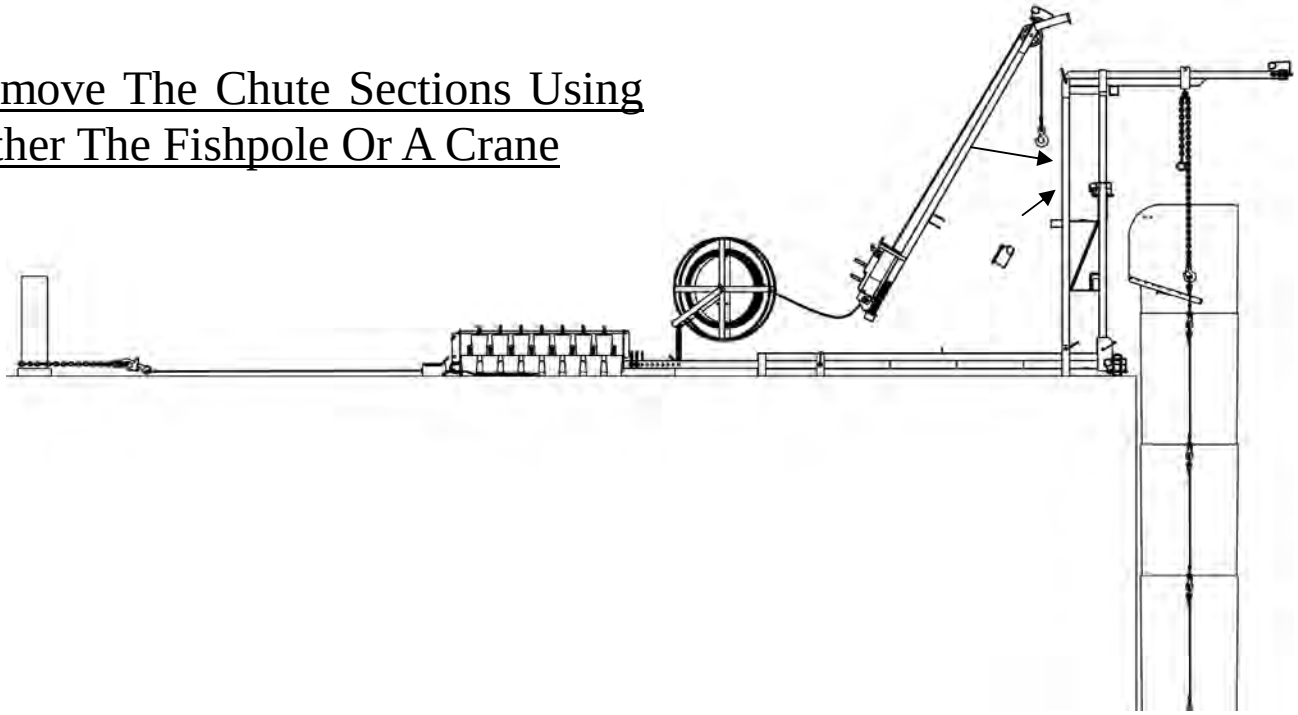
WRONG:

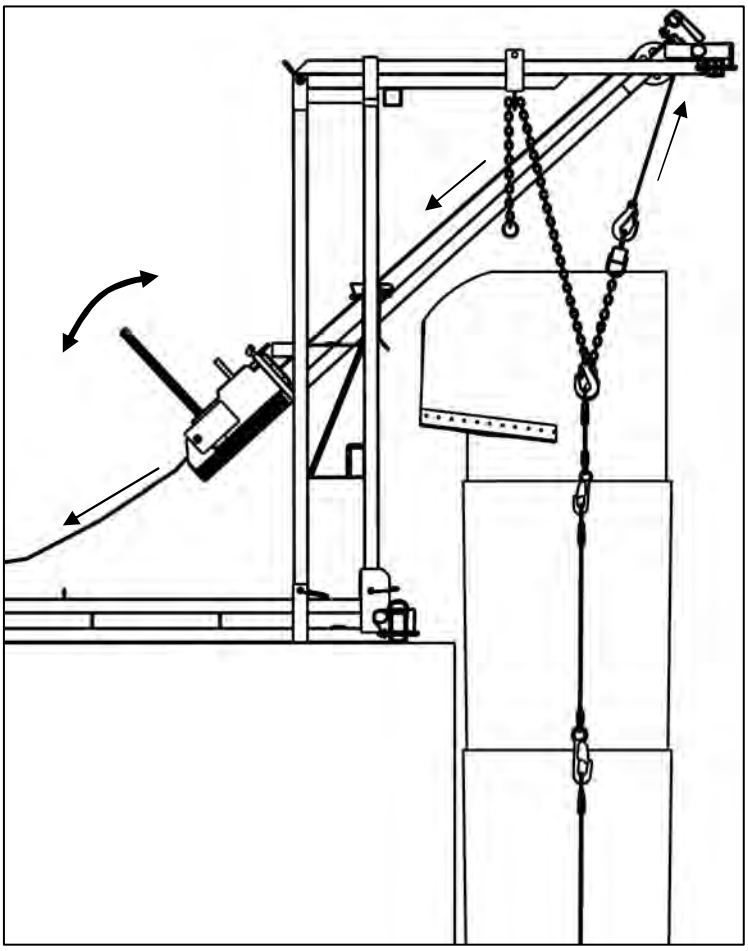
The wheelbarrow ramp increases the load on the hoist frame.



29. DE-INSTALLATION OF THE HOIST WHEN NO LONGER NEEDED

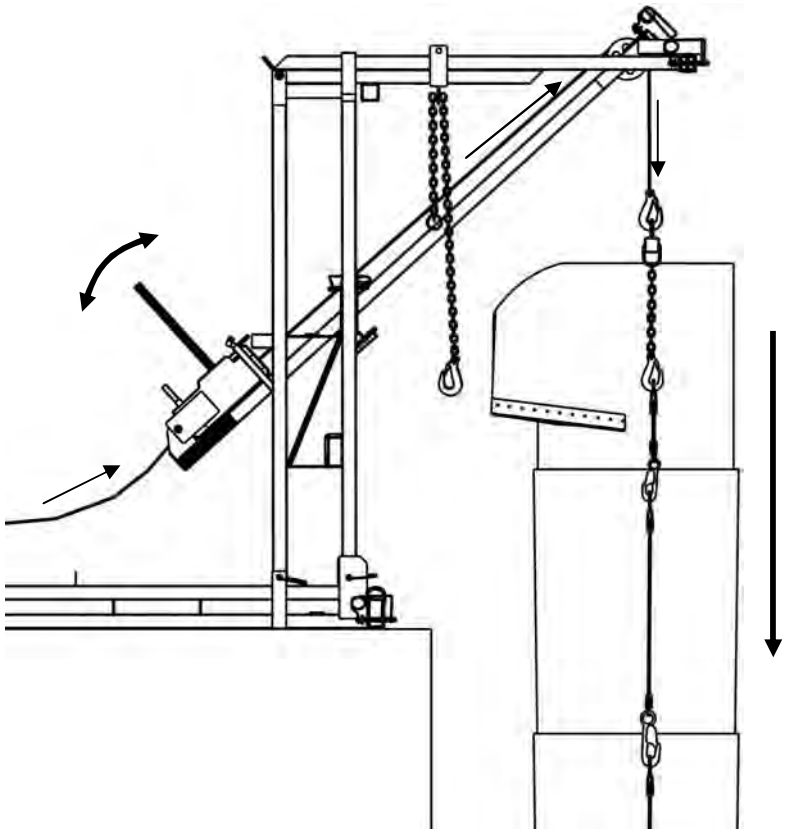
Remove The Chute Sections Using Either The Fishpole Or A Crane





- Attach the hoist cable to the Spreader Bar.
- Attach the Spreader Bar to the Top Hopper U-Bolts.
- Transfer the weight of the chute to the Hoisting Cable (on the Fishpole or Crane).
- Unclip the Boom Chains.

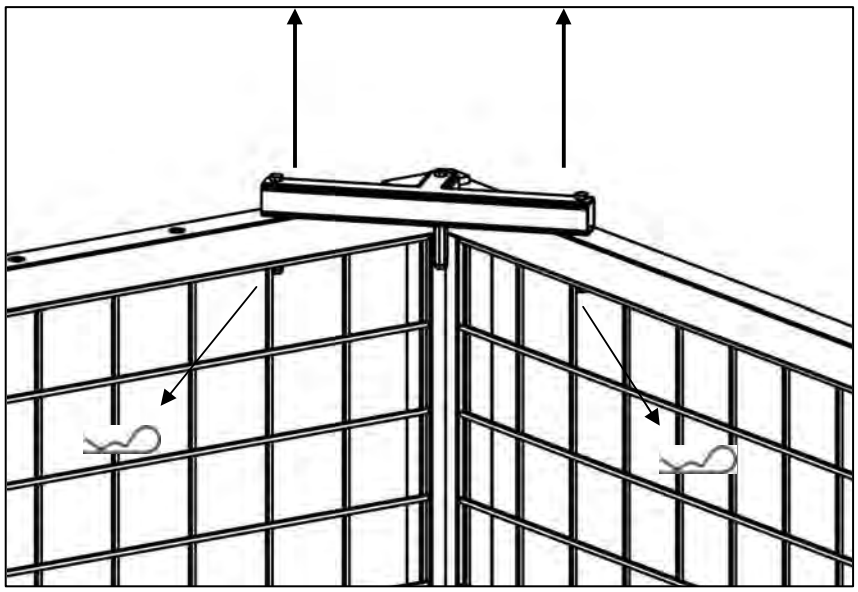
DE-INSTALLATION OF THE HOIST (continued)



- Lower the chute to the ground.

Guardrail Removal

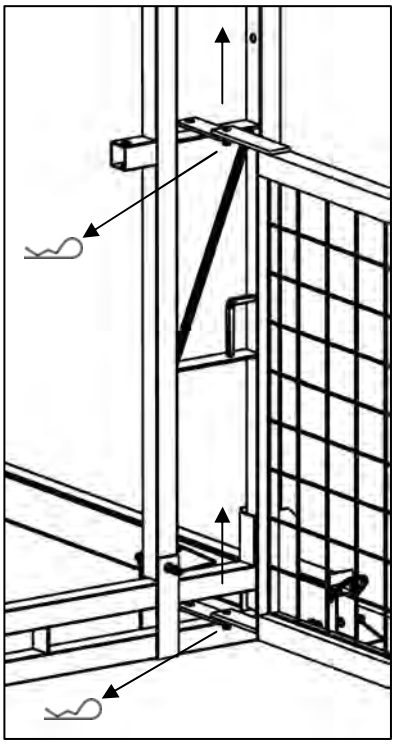
Remove all guardrail braces using the method shown below.



⚠ WARNING

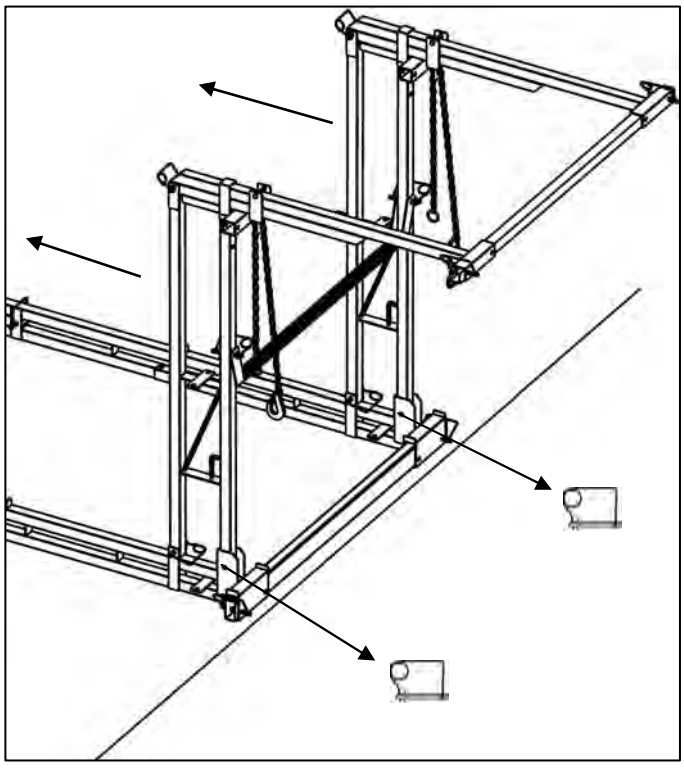
Before you remove the Guardrails & Gates, set-up an alternate fall protection system!

DE-INSTALLATION OF THE HOIST (continued)



- Remove all gates and guardrails using the method shown on the left.

- Lower the Masts

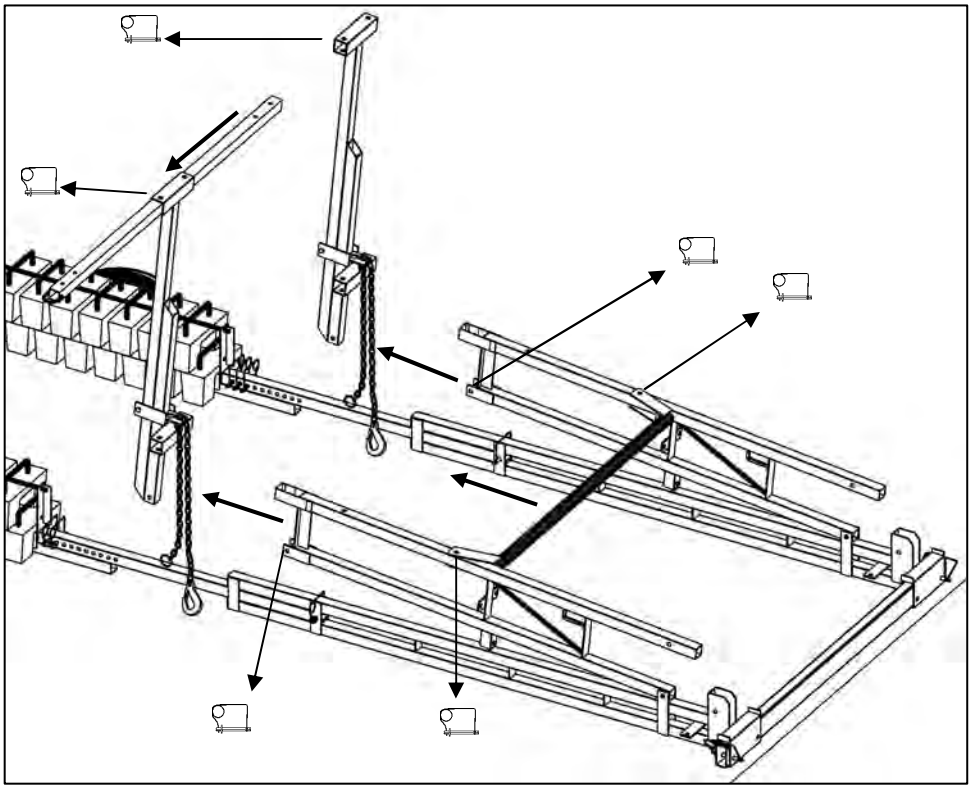


⚠ WARNING

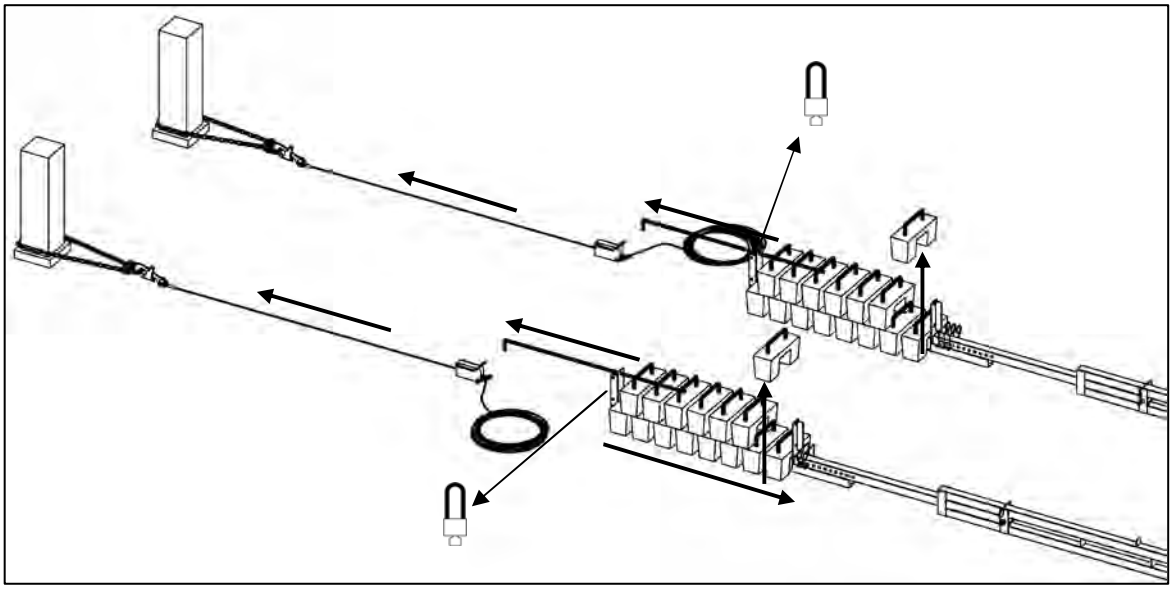
- The Masts are heavy.
- The descending Masts could crush you, causing severe injury or death.
- Use at least four strong people to lower the Masts (two people per side).

DE-INSTALLATION OF THE HOIST (continued)

- Remove the Toprail, Booms and OCB

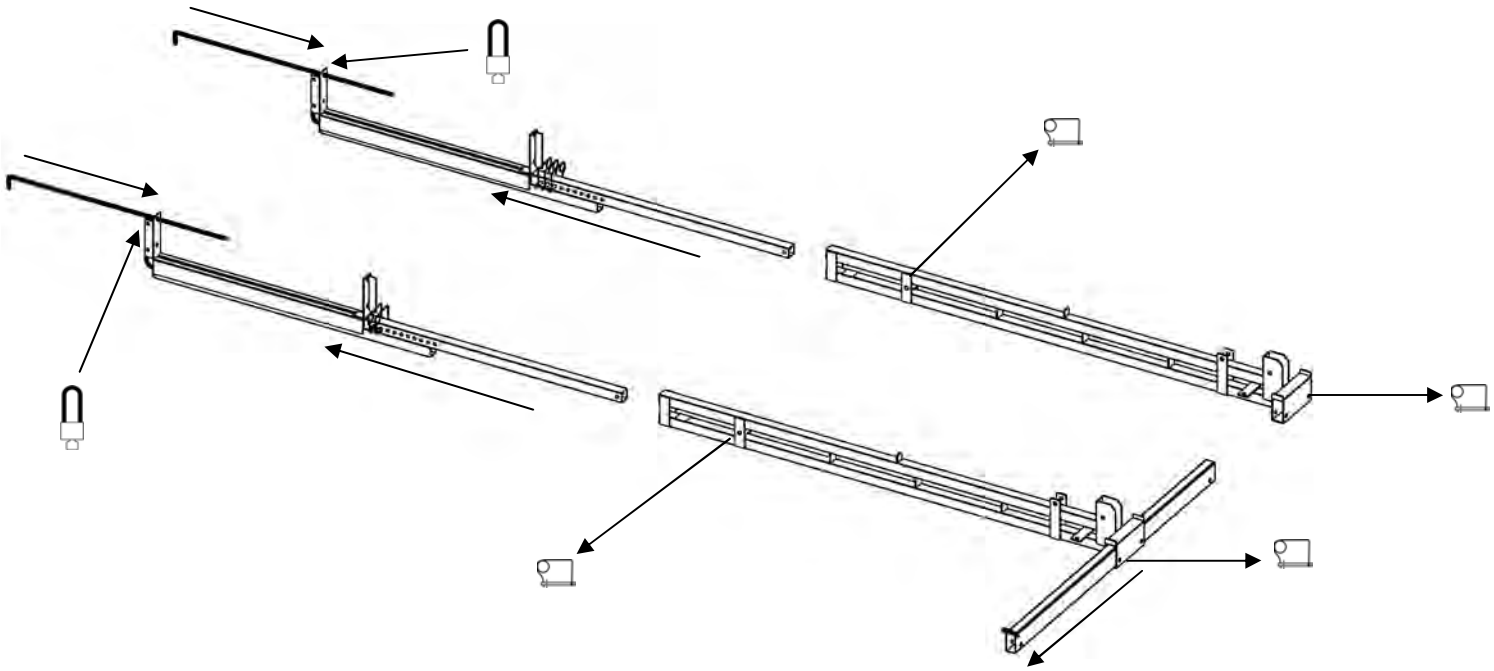


- Remove the Counterweights (or Anchor Bolts).



DE-INSTALLATION OF THE HOIST (continued)

- Replace the two Weight Retaining Rods and secure with padlocks.
- Remove the Back Balance Beams (or Bolt Down Tails).
- Remove the Toeboard.
- Store the pins on the Pin Rack.



The de-installation is complete!

Call Superchute if you have any questions:

1-800-363-2488

APPENDIX A: WARRANTY

Superchute® chute hoists are made for heavy wear, but like all tools, time and use will take its toll. There is no warranty for wear and tear, or misuse of the hoist. Superchute® warrants all products against manufacturing defects, which must be reported in writing to Superchute® Ltd. upon receipt of goods. Thorough overhaul servicing is offered by Superchute® Ltd.

APPENDIX B: STAY INFORMED

The Superchute® factory sends out regular notices regarding new products, changes, recalls, and upgrades. Stay informed by filling out the form below and sending it in. Please feel free to enclose any other comments. Thank you for choosing Superchute® Ltd.

Your Name: _____ Company: _____ Address: _____ Phone: _____ Fax: _____	E-mail address: Website:

Number of chute sections owned: _____

Diameter(s) of the chute sections: _____

Date(s) of purchase: _____

Name of the Supplier: _____

Number of chute hoist(s) owned: _____

Models and Serial Numbers: _____

Date(s) of purchase: _____

Name of the Supplier: _____

Fax to: 514-365-8987, or mail to: Superchute® Ltd., 8810 Elmslie Road, Montreal, QC, Canada, H8R 1V6

APPENDIX C: PARTS LIST

PHOTOCOPY & ATTACH TO CLIENT FILE

HOISTER MODEL SC-2000-cb

1. Frame Components					**Quantity**	**Factory**	**Office** Initials:
Front Balance Beams					2		
Masts					2		
Booms with chains					2		
Locking pins (1" diameter)					14		
Locking pins (1" diameter) - SPARES					4		
	Width Kits						
Approx. path width	**5'**	**or 3'**	**4'**	**6'**			
Toeboard*	70"	70"	57.5"	83.5"	1		
Toprail *	60"	36"	48"	74"	1		
Outer Cross Bar*	68"	44"	56"	82"	1		
** measured from Pinhole Center to Pinhole Center*							

2. Method of Securing

Back Balance Beams					2		
Counterweights					30		
Padlocks					2		

Bolt Down Tails					2		
HILTI®	Model: HSL M12/50				4		
HILTI®	Model: HSLB M12/50				4		
Power-Bolt™	Model: 6945				4		
Superchute® Thru-Bolt	Length:	18"	or	36"	4		

3. Hoisting Components

Fishpole + sheave	1		
Tirfor T-516 winch + Instruction Booklet + 220' cable + reeler	1		
T-Bar	1		
Locking pins (1" diameter)	5		
Heavy Duty Spreader Bar (WLL 2000 lb.)	1		

4. Extra Fall Protection

Gates			
Guardrails			
Lock Braces & Cotter Pins			

APPENDIX D: FACTORY TEST CERTIFICATE

I _____ certify that the 3 tests listed below were performed on the enclosed hoist:
use capitals

1. The Frame was fully assembled and checked.
2. The Fishpole was attached to the frame & proof tested to 2000 lb.
3. The Boom Chains were proof tested to 2000 lb.

_____ _____
signed: production crew member date

Serial Number(s):

PHOTOCOPY THIS PAGE AND ATTACH TO CLIENT'S FILE

APPENDIX E: GLOSSARY

Breaking Strain: The average load at which a new component (for example: a cable or chain assembly) will fail. The breaking strain is obtained by applying direct tension to a component at a uniform rate of speed, in a testing machine.

Chute: A series of linked chute sections that are used to convey debris.

Chute Hoist: An engineered device that has been designed specifically to raise, anchor, and lower a chute. A chute hoist consists of a support frame and a detachable winch apparatus (known as the Fishpole). The support frame, without the Fishpole, can still be referred to as a chute hoist.

Chute Sections: Modular conical tubes that can be linked together in series to form a chute.

Chute System: A suspended chute and the anchors (including chute hoists) that support it.

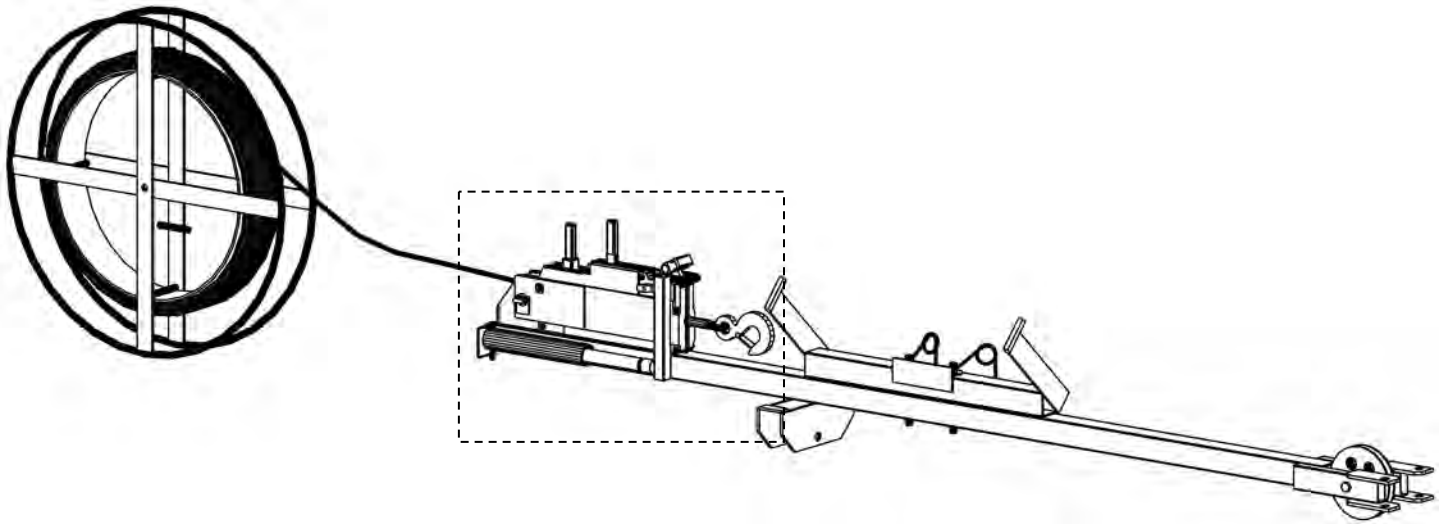
Design Factor: Also known as the "safety factor", it is a product's theoretical reserve capacity. The design factor is calculated by dividing the Breaking Strain by the Working Load Limit. The design factor is generally expressed as a ratio, for example: 10 to 1, or 10:1.

Users: The term "users" includes planners, supervisors, installers, and end-users of the chute hoist.

Working Load Limit:
The maximum load which can be applied to the component, when the component is new, or in "good as new" condition, and when the load is applied in the intended manner. This term can be abbreviated to WLL.

APPENDIX F: WINCH INFORMATION (IF APPLICABLE)

If a Fishpole is part of your SC-2000-cb Hoister, then the following information applies:



The Fishpole is equipped with a traction-style winch.

Winch manufacturer:	Tractel Group
Telephone (Canada):	(800) 561-3229
Telephone (USA):	(800) 421-0246
Winch model:	Griphoist®-Tirfor® T-516
Cable specification:	11.5 mm diameter, 66 meter length (220 ft)
Further information:	Consult the separate booklet for more information on the winch unit.