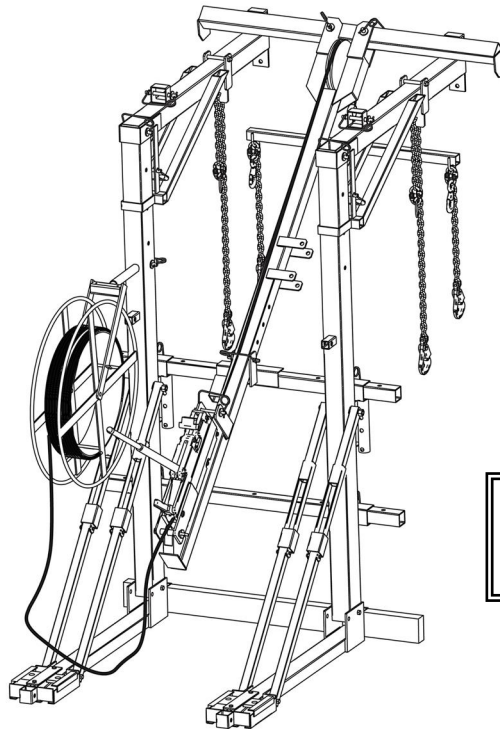


SUPERCHUTE® DEBRIS REMOVAL SYSTEM

CHUTE HOIST INSTALLATION MANUAL



IMPORTANT REFERENCE
DOCUMENT

For Bolt-Down Frame Model N° SC-1500-bd

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 Mar 10, 2016

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.

The contents of this manual remain the intellectual property of Superchute Ltd. Superchute Ltd. authorizes reproduction (photocopies or similar) of all of its safety manuals, provided the reproduction is intended for users of the Superchute® product. Reproductions must be made in their entirety.

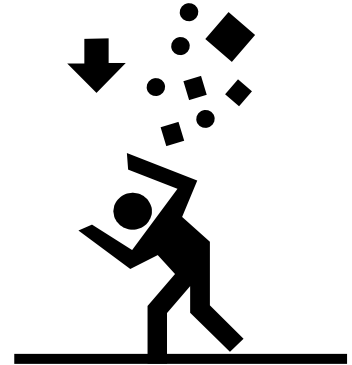
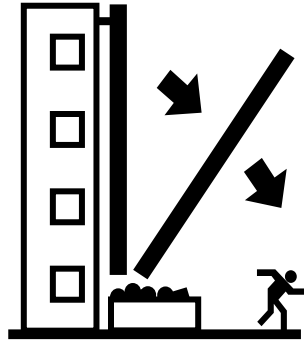
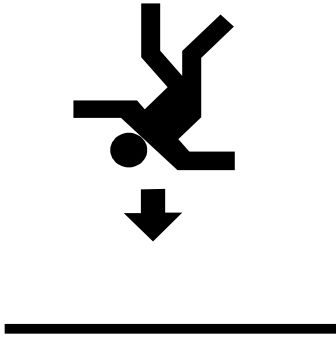
*© Superchute Ltd., 1999
All Rights Reserved
Printed in Canada*

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. 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: 1-800-363-2488 or download them from www.superchute.com

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-1500-bd 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-1500-bd Chute Hoist Installation Manuals.

B) IF USING THIS MANUAL EDITION WITH AN OLDER HOIST

Over time, improvements have been made to the SC-1500-bd Chute Hoist. 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.


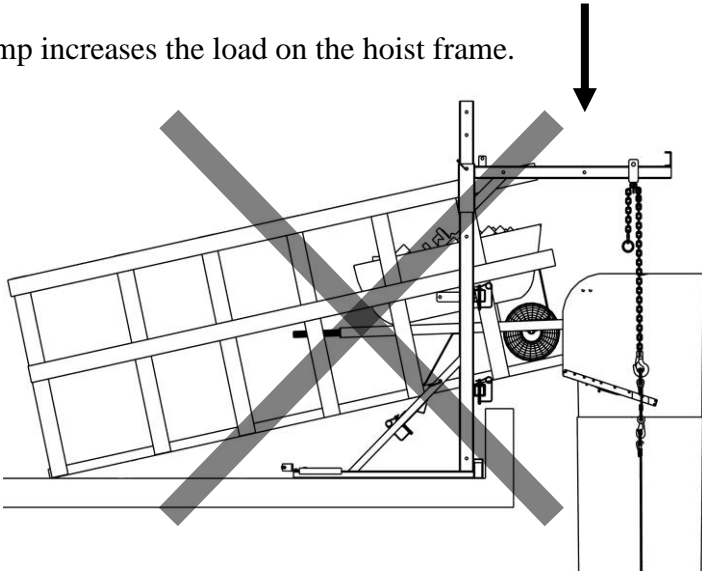
D) SAFETY WARNINGS AND SYMBOLS

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:



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

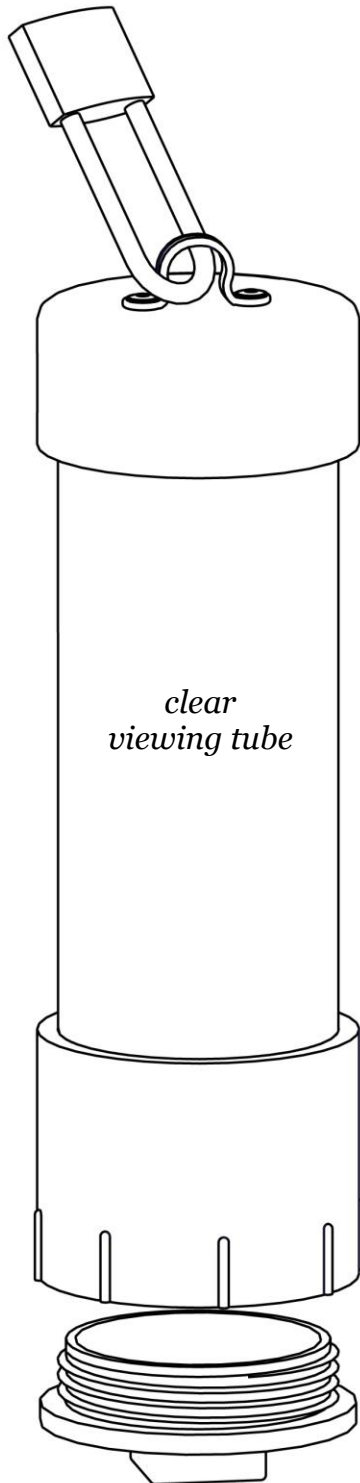
Here is an example of a Superchute® warning:

		 WARNING
Hazard	<input type="checkbox"/>	<ul style="list-style-type: none">• 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 must be approved by a structural engineer.
Consequence	<input type="checkbox"/>	
Instruction	<input type="checkbox"/>	
Pictorial (optional)	<input type="checkbox"/>	<p><u>WRONG:</u></p> <p>The wheelbarrow ramp increases the load on the hoist frame.</p> 

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

HOW TO USE THIS MANUAL.....	3
1. INTRODUCTION	7
2. IDENTIFY THE PIECES	8
3. DIMENSIONS	13
4. NORMAL LOADS	15
5. ULTIMATE LOADS	17
6. IMPORTANT INFORMATION	19
7. ASSESS CHUTE HEIGHT & WEIGHT	21
8. CHUTE SECTION WEIGHT CHARTS	23
9. ASSEMBLY OF THE FRAME	24
10. A FEW FALL PROTECTION REGULATIONS	28
11. SECURE THE FRAME.....	29
12. PREPARE THE HOLES FOR THE ANCHOR BOLTS	30
a) Before Drilling The Holes	30
b) Drill The Holes	31
c) Hole Alignment	32
13. ANCHOR THE FRAME TO THE CONCRETE SLAB	33
14. THE COUNTERWEIGHT KIT	35
15. ATTACH THE BOOMS.....	41
16. TOEBOARD BRACKETS	42
17. PREPARE & INSTALL THE FISHPOLE (IF APPLICABLE)	43
18. HOIST THE CHUTE SECTIONS INTO PLACE	51
19. TRANSFER THE CHUTE LOAD FROM THE LIFTING DEVICE TO THE BOOM CHAINS	57
20. REMOVE THE FISHPOLE (IF APPLICABLE)	59
21. CONGRATULATIONS!	61
22. FALL PROTECTION & THE GATEKEEPER	62
23. RAMPS.....	63
24. PIGGYBACKING.....	64
25. PIGGYBACKING - SPECIAL CONSIDERATIONS.....	65
a) Use A Restraint To Keep Chute Lengths From Kissing.....	65
b) Do Not Link Chute Lengths Using The Cable Assemblies	66
c) Leapfrog The Top Hopper On A Growing Building.....	67
d) Overview Of The Leapfrog Procedure:	68
26. DISMANTLING THE HOIST.....	69
APPENDIX A: WARRANTY.....	73
APPENDIX B: STAY INFORMED	73
APPENDIX C: PARTS LIST	74
APPENDIX D: TEST CERTIFICATE.....	75
APPENDIX E: GLOSSARY	76
APPENDIX F: WINCH INFORMATION (IF APPLICABLE)	77

1. INTRODUCTION

Welcome to safe, quick, and easy chute installations!

The SC-1500-bd Bolt-Down Frame is a simple chute hoist that attaches to a concrete floor slab using 4 expansion anchor bolts (supplied). In cases where drilling into the floor is not possible, the Frame can be secured using a Counterweight Kit (sold separately).

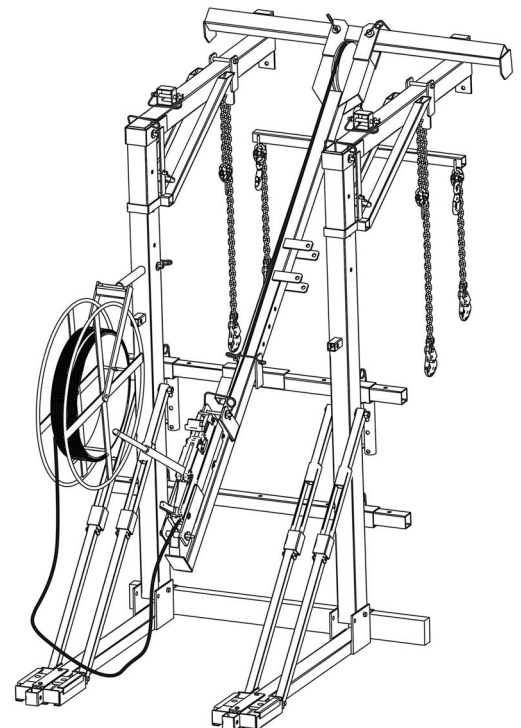
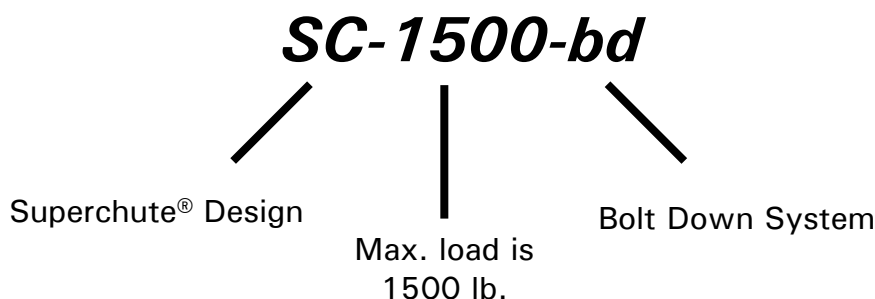
Superchute Ltd manufactures five models of Bolt-Down Frame: the SC-250-bd, SC-500-bd, SC-750-bd, SC-1000-bd, and SC-1500-bd. This installation manual concerns model SC-1500-bd, which lifts, supports, and lowers up to 1500 lb. of chute. A 1500 lb. chute load translates into approximately 100 feet of chute (30 chute sections) – The length of chute that can be created depends on the total weight of the chute, which must be calculated (refer to **Section 7** in this manual entitled: Assess Chute Height & Weight).

The design features a 3:1 safety factor.

The support frame ships and stores as 2 neat, compact packets. It is assembled in less than 5 minutes, using just 8 locking pins. A removable Fishpole is available for lifting and lowering the chute. Built-in storage tubes hold the 4 expansion anchor bolts. There are no loose pieces whatsoever.

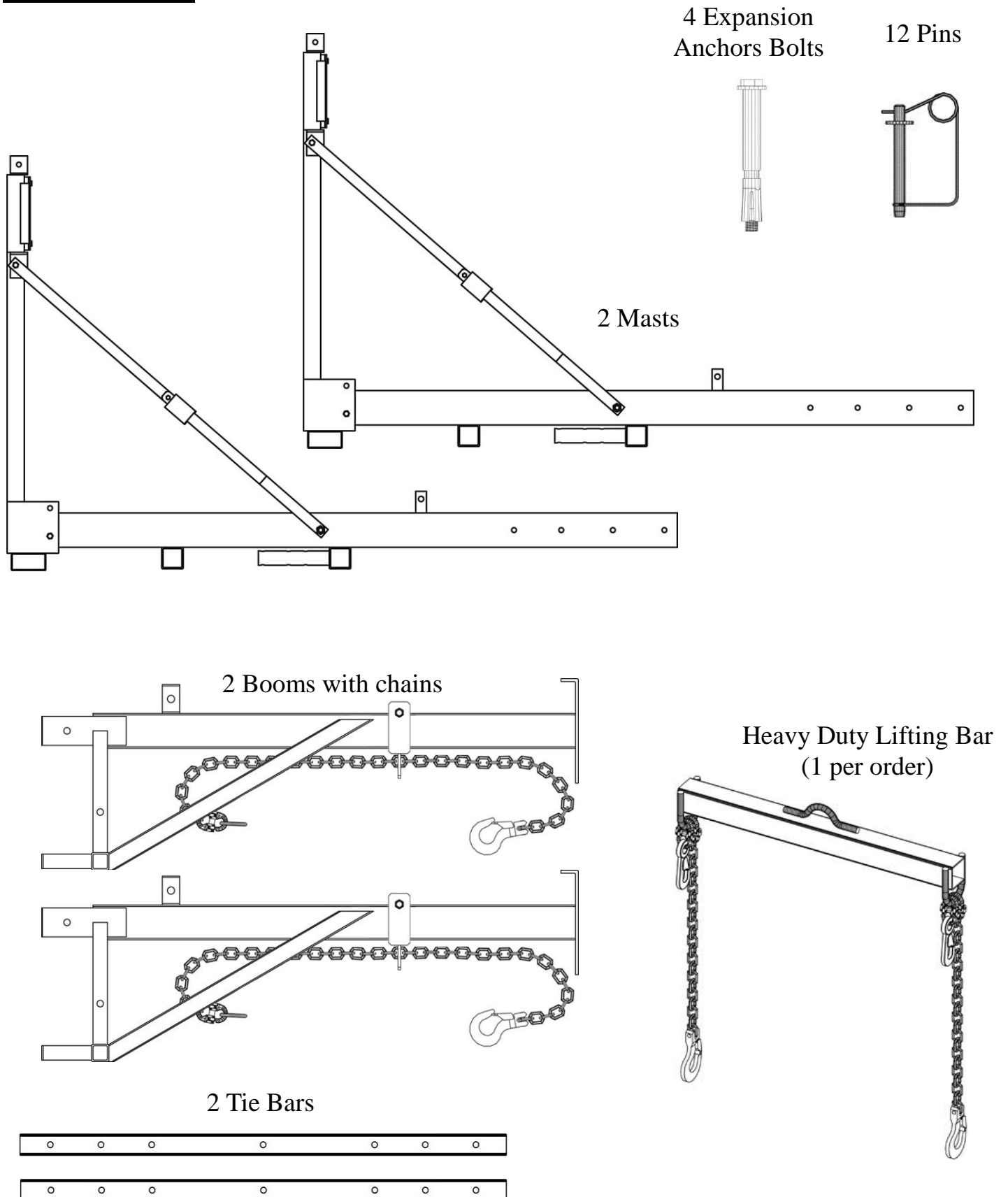
On jobs where a taller chute is needed, frames can be piggybacked approximately every 100 feet (depending on the chute diameter used) in order to achieve a max. chute height of 200 ft.

Understand the Name:



2. IDENTIFY THE PIECES

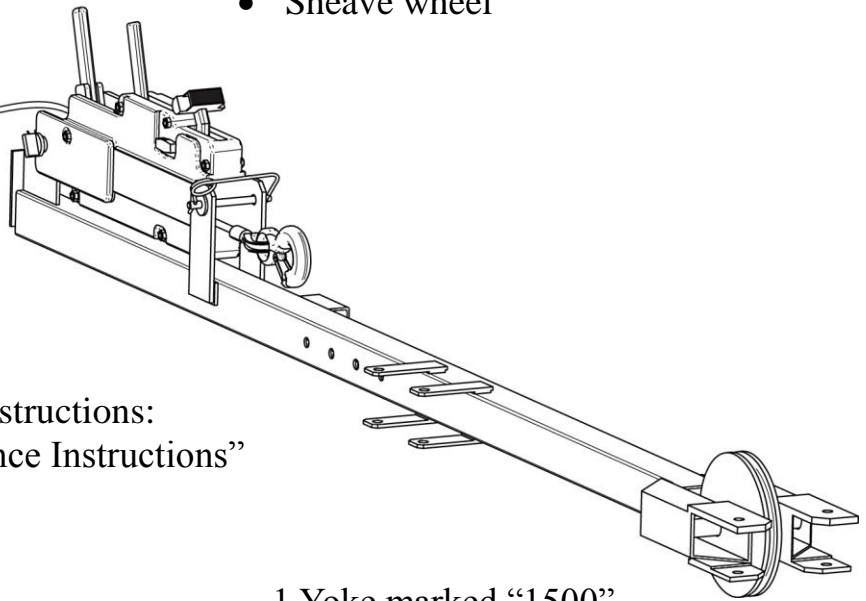
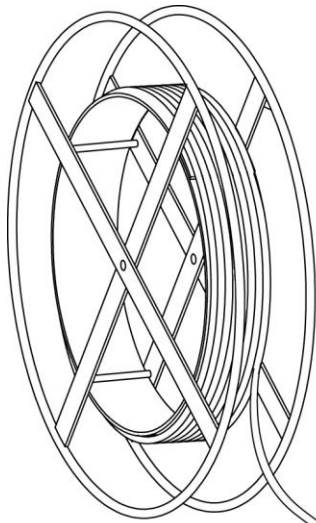
Frame Pieces



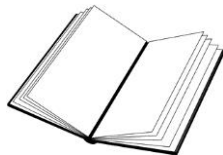
Fishpole Pieces

1 Fishpole equipped with:

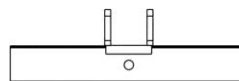
- Griphoist[®]-Tirfor[®] winch model T-516
- Winch handle
- 220 ft cable with hook
- Cable reeler
- Sheave wheel



Booklet containing winch instructions:
“Tirfor – Operating and Maintenance Instructions”



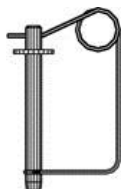
1 Yoke marked “1500”



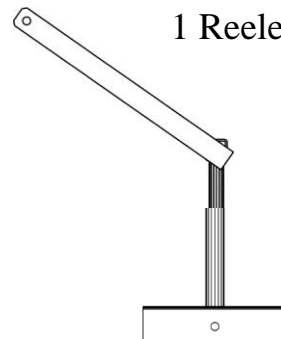
1 Outer Cross Bar
IMPORTANT: labeled “Model SC-1500-bd”



6 Pins



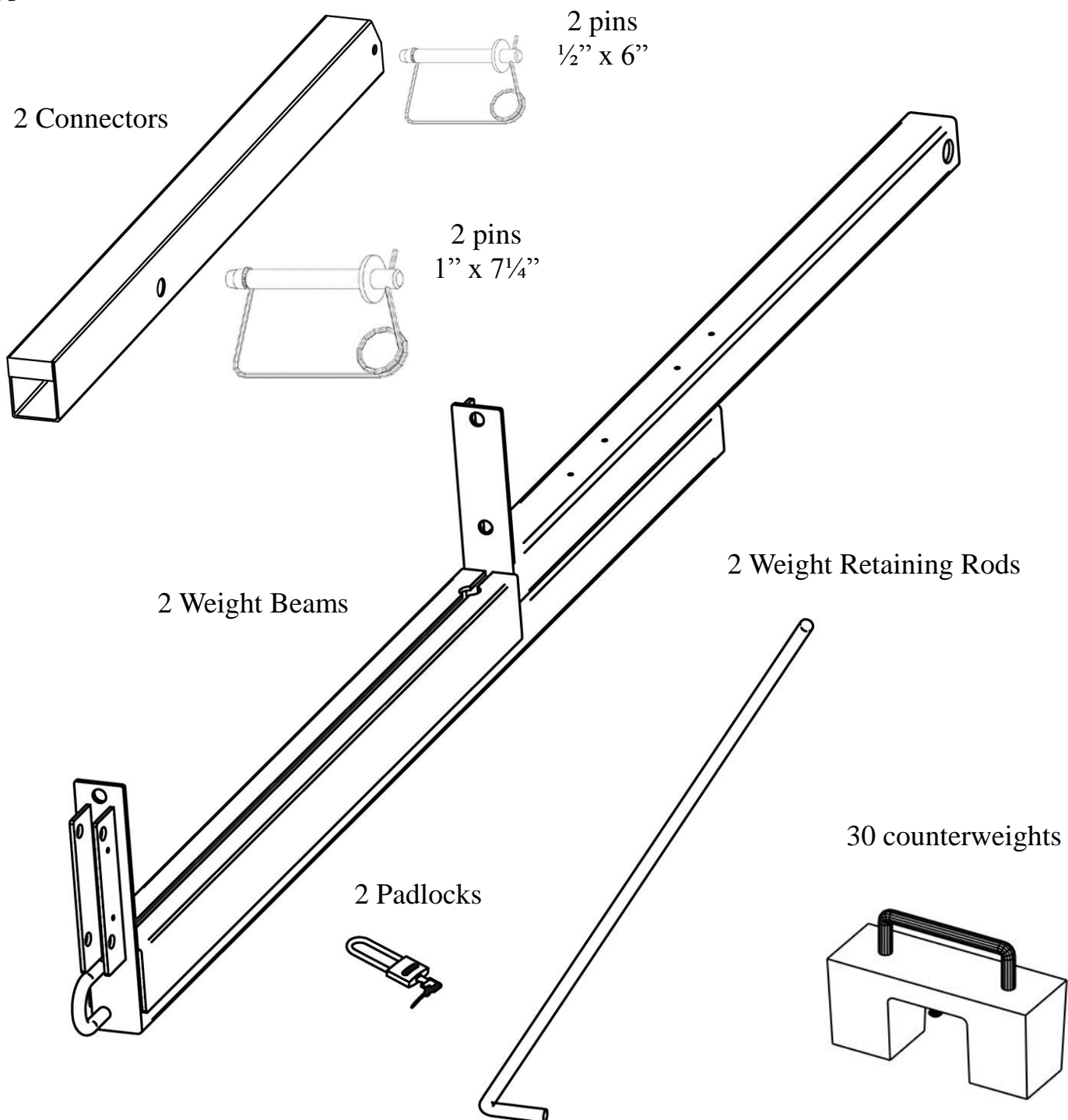
1 Reeler Hanger



Optional Components:

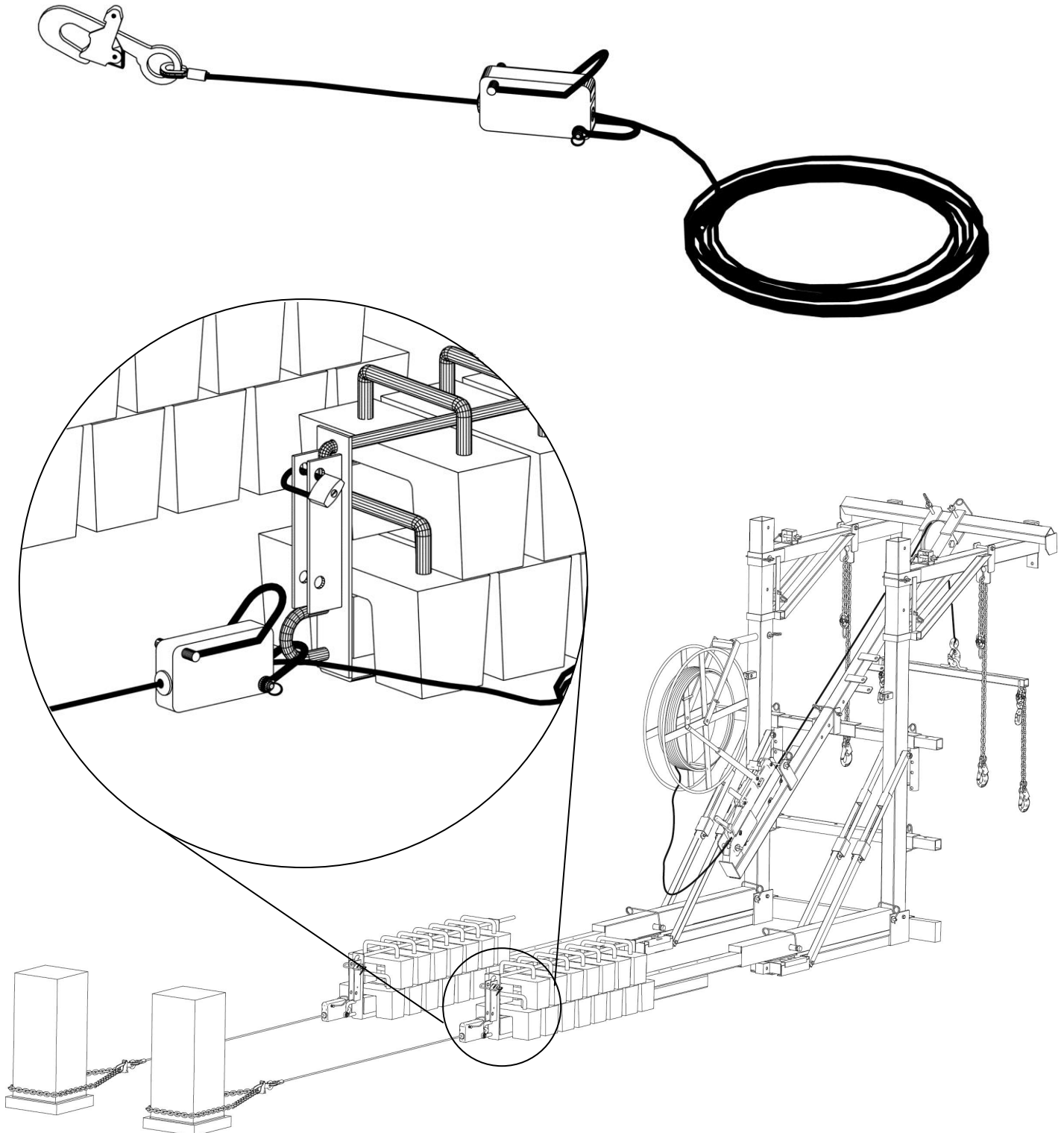
The Weight Kit

In cases where drilling into the floor is not possible, the Frame can be secured using a Counterweight Kit (sold separately). The weight kit borrows the weight beams from the SC-2000-cb chute hoist. Two Connectors are used to attach the weight beams to the SC-1500-bd support frame.

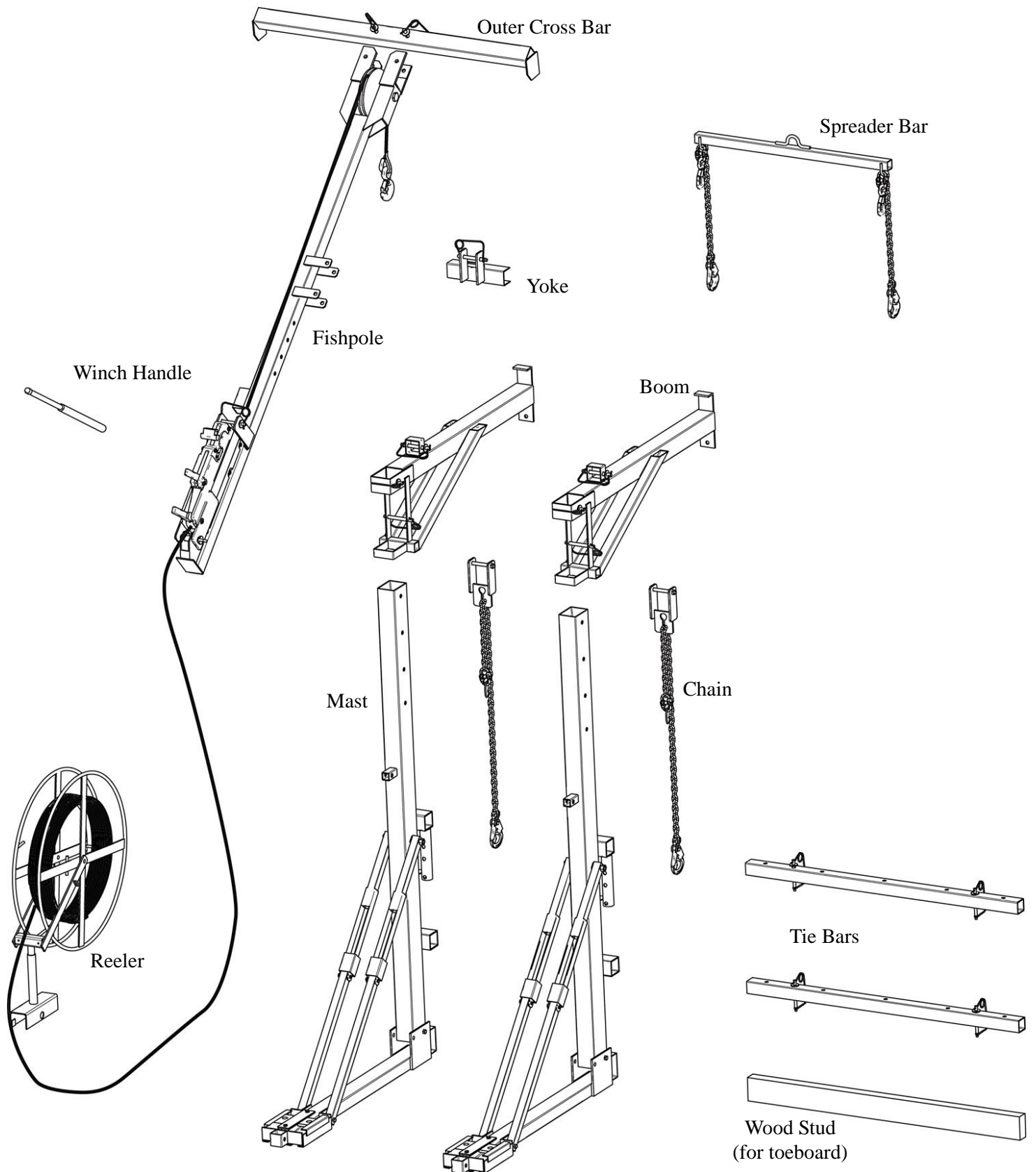


Tie-Backs for the Weight Kit

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



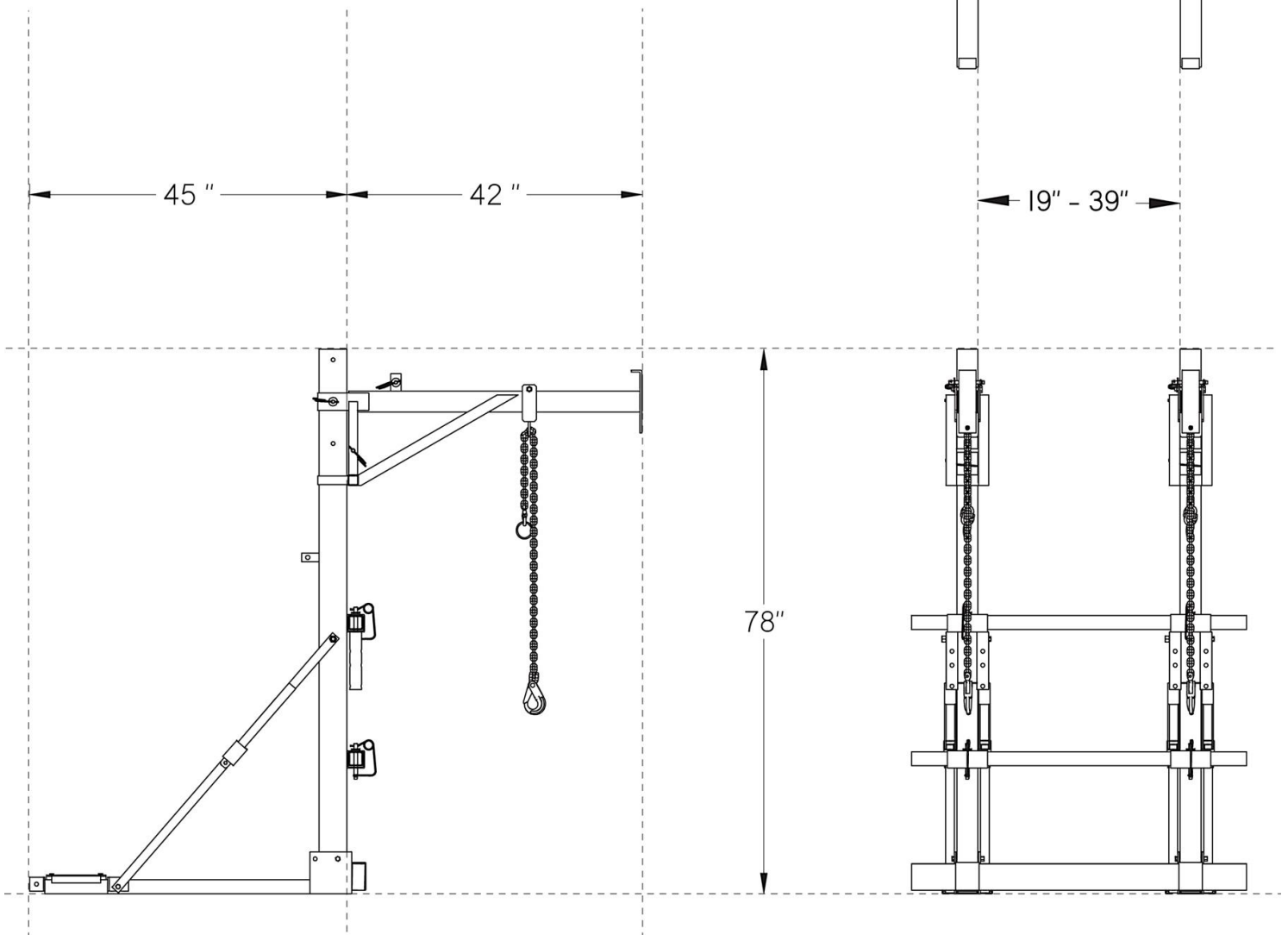
Exploded View



3. DIMENSIONS

WHEN BOLTED TO THE SLAB

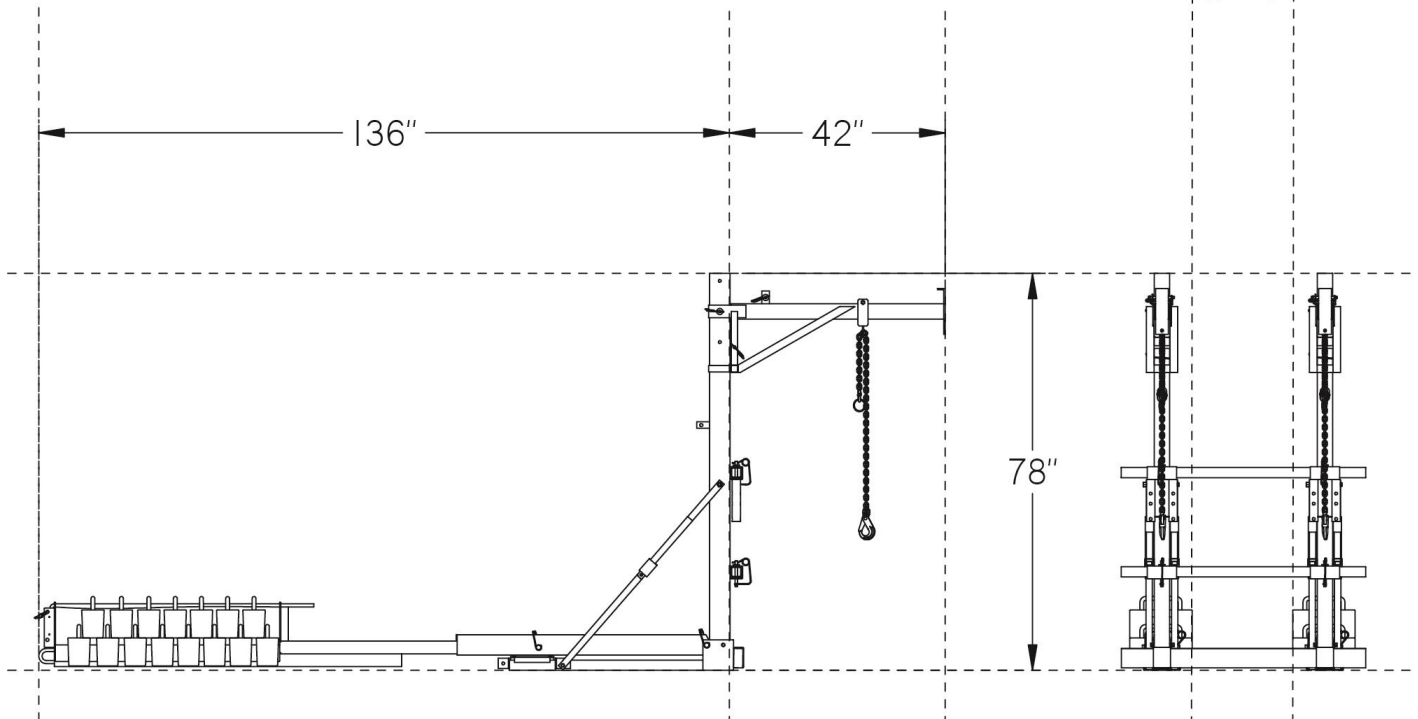
- Frame Weight: 300 lb.
 - Fishpole Weight: 240 lb.
- Total Weight: 540 lb.



WHEN COUNTERWEIGHTED:

- Frame Weight: 300 lb.
- Fishpole Weight: 240 lb.
- Counterweights: 1650 lb. (30 required x 55 lb each)
- Weight Beams: 150 lb.
- Connectors: 50 lb.

Total Weight: 2390 lb.

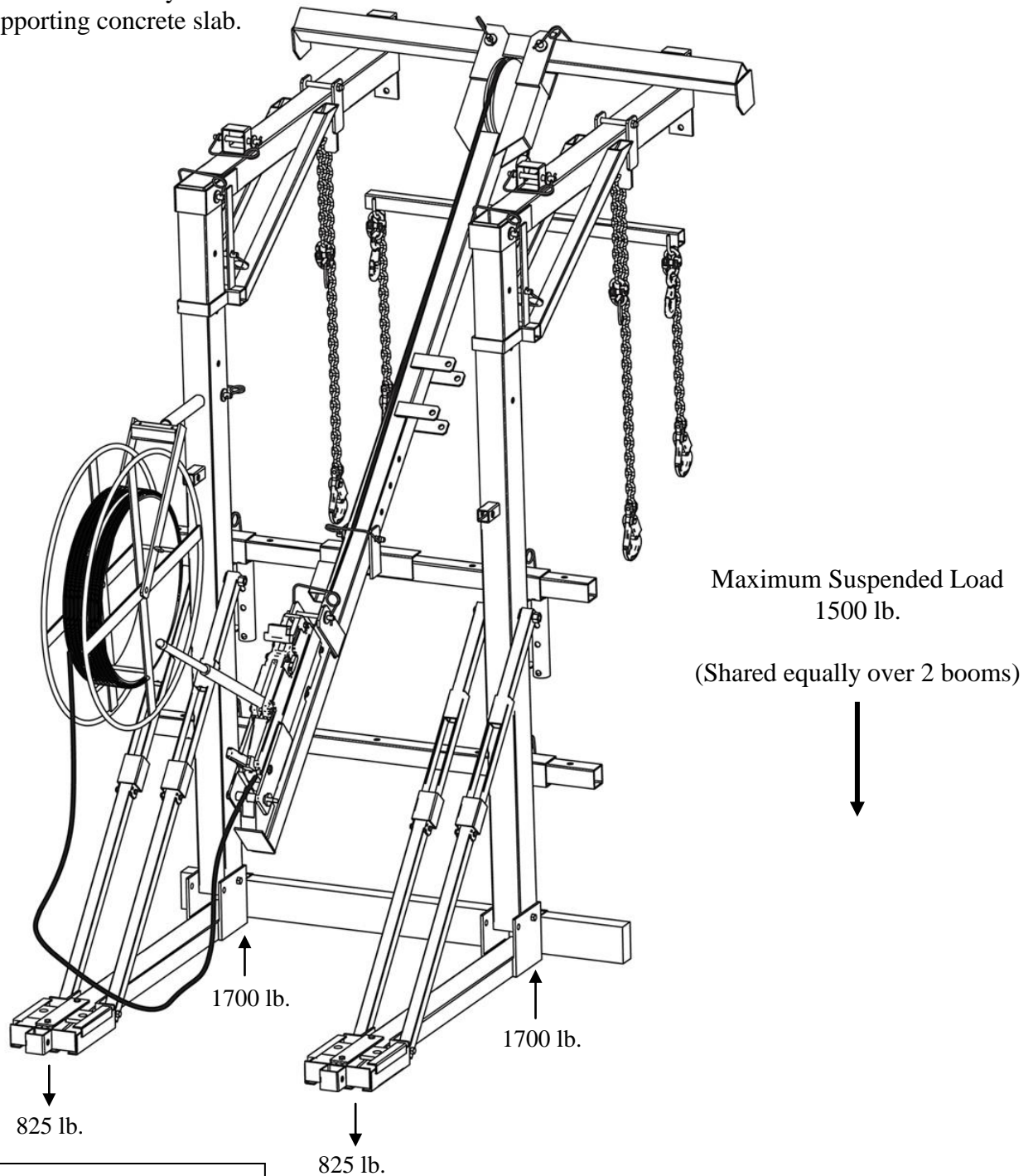


4. NORMAL LOADS

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.

**Secured using 4 Factory-Approved
Expansion Anchor Bolts**

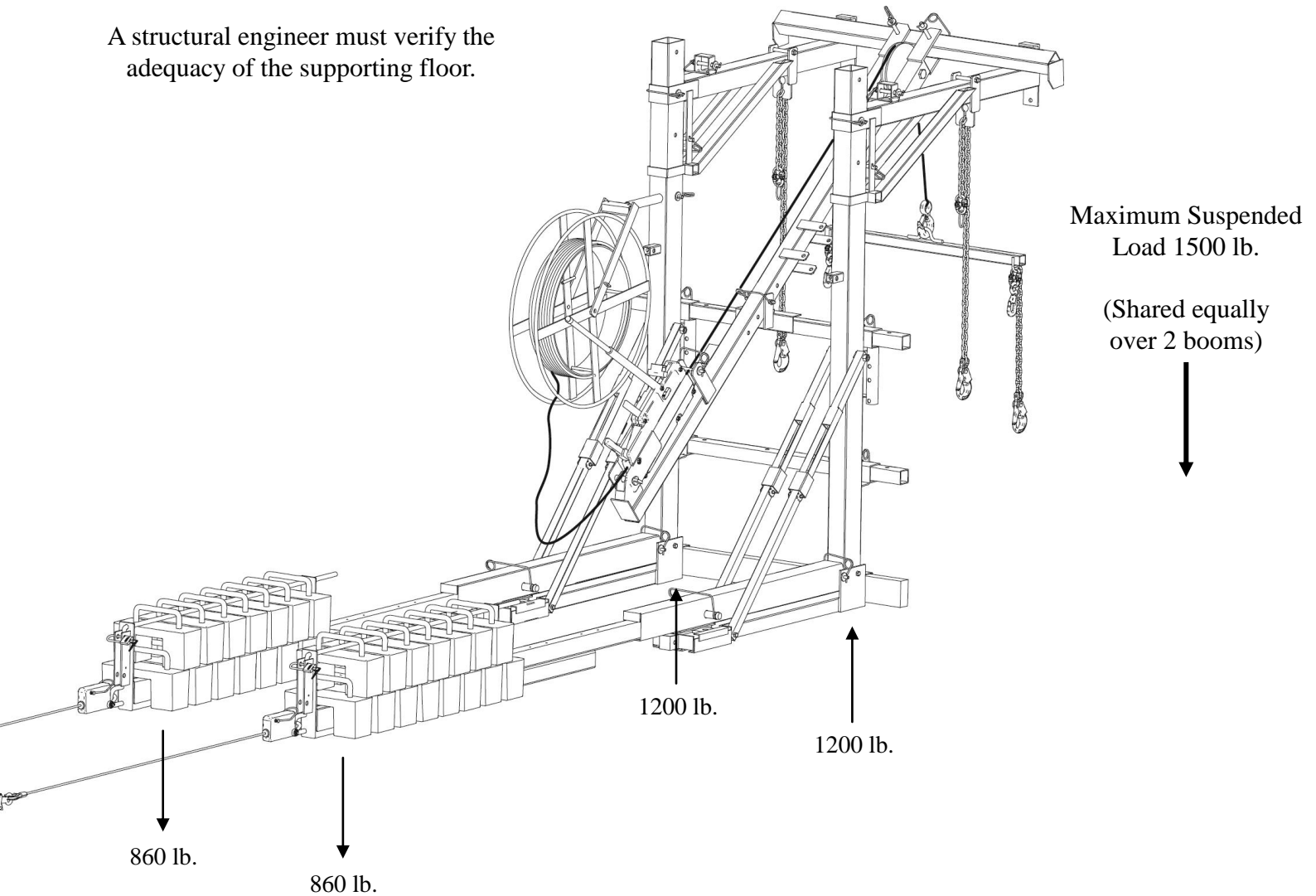


**Showing Normal
Applied Loading**

Secured using 2 Counterweighted Extensions (instead of 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 floor.



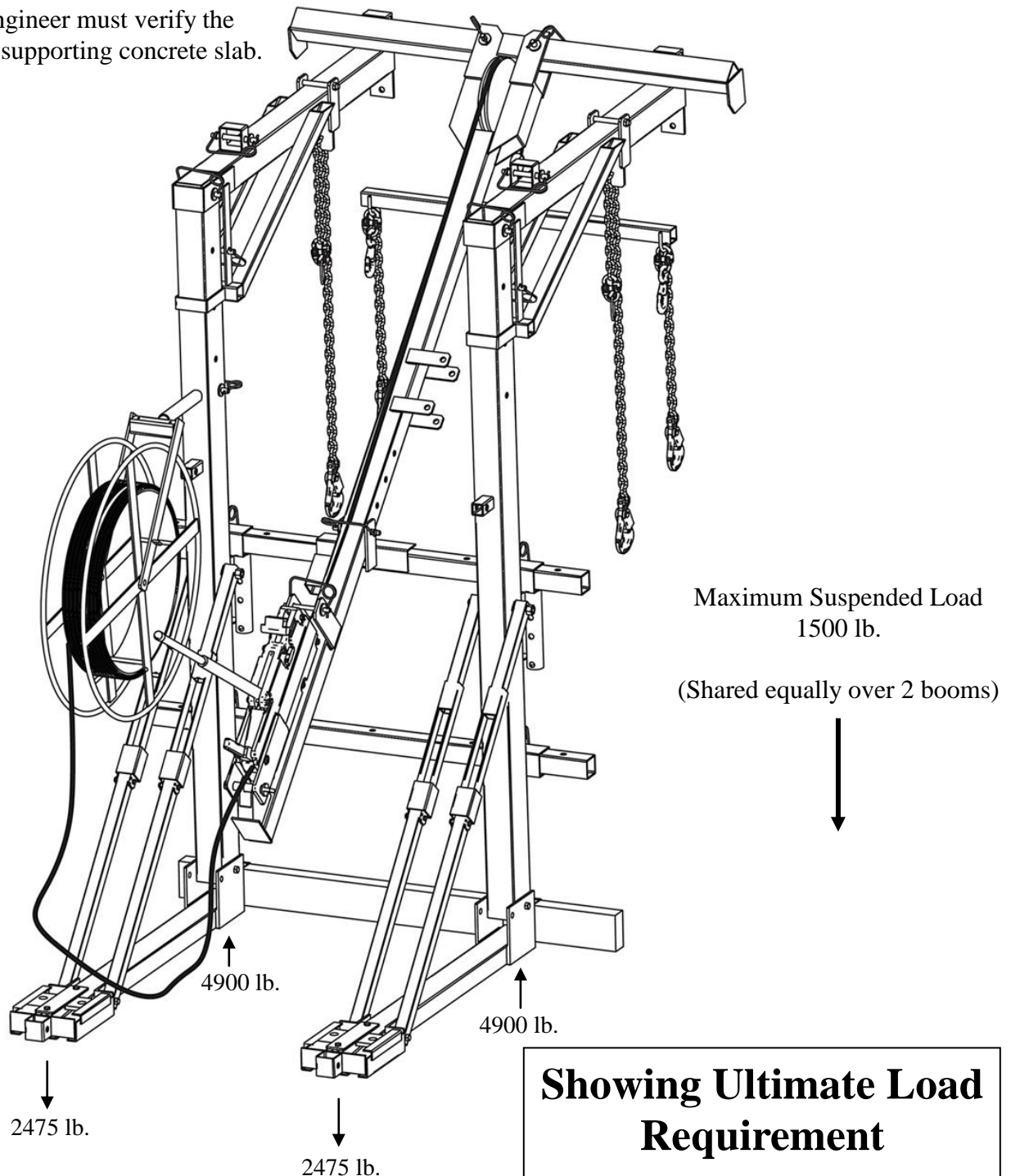
**Showing Normal
Applied Loading**

5. ULTIMATE LOADS

Secured using 4 Factory-Approved Expansion Anchor Bolts

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

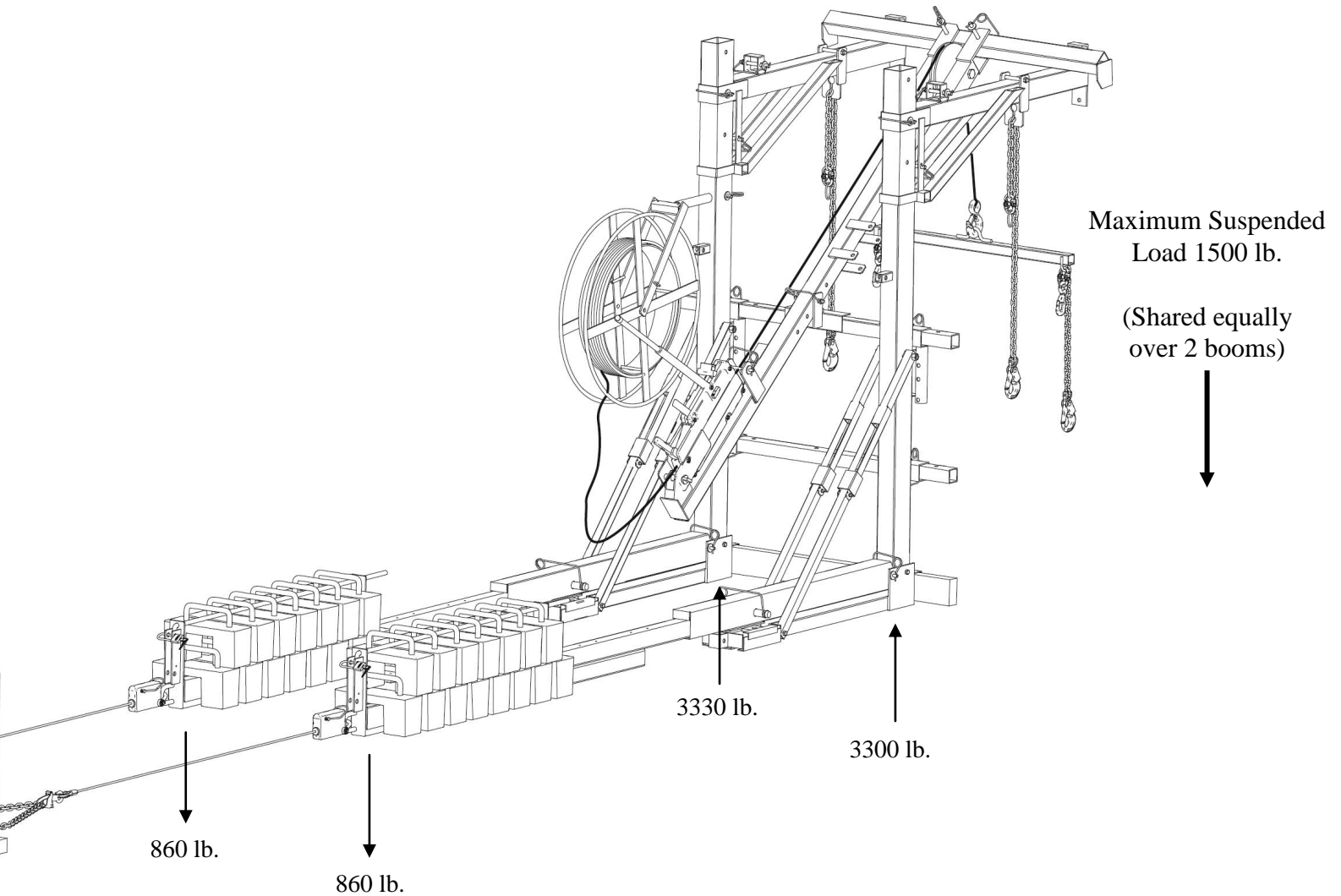
A structural engineer must verify the adequacy of the supporting concrete slab.



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

Secured using 2 Counterweighted Extensions (instead of Expansion Anchor Bolts)

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



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 Electrocuting

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

SAMPLE

- 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? 100' feet.

The maximum allowable height of a chute is 200 ft.

100 feet x 3 divided by 10 = 30

2. How many chute sections will be needed? Height in ft x 3 ÷ 10 = 30 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 23.

Chute Weight Calculation Form

(A) 1 Top Hopper Wraparound x 42 lb. each = 42 lb.

(B) 2 Door Sections Wraparound x 52 lb. each = 102 lb.

(C) 27 Regular Sections Wraparound - 5 mm wall x 39 lb. each = 1053 lb.

(D) 2 Steel Liners x 40 lb. each = 80 lb.

A+B+C+ D = The Total Weight Of The Chute System = 1277 lb.

5. How many SC-1500-bd frames will be needed to handle the total weight.

Divide the total weight of the chute system by 1500, and round up. This is your answer.

1277 lb. divided by 1500 lb. Capacity per frame = 0.85 frame

1 Frame Needed

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.

The maximum allowable height of a chute is 200 ft.

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. How many SC-1500-bd frames will be needed to handle the total weight.

Divide the total weight of the chute system by 1500, and round up. This is your answer.

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 SECTION 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® SECTION WEIGHTS (in lb.)

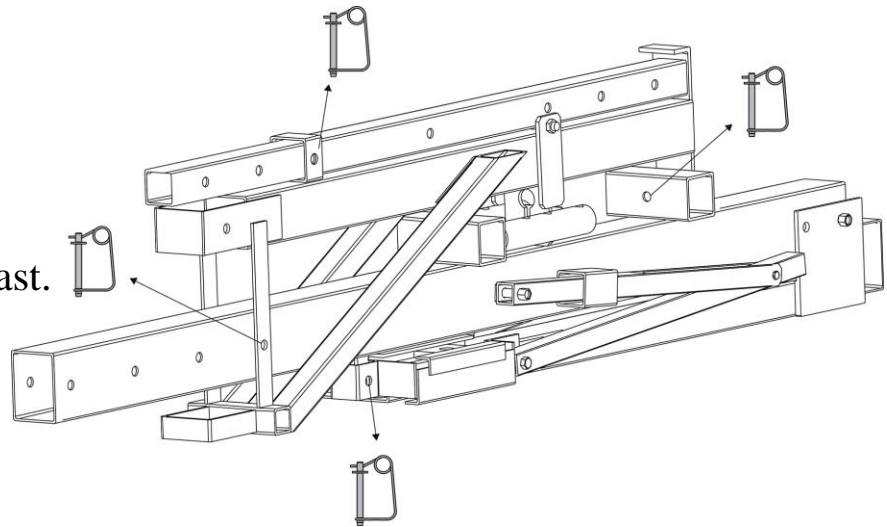
Diameter	Wall Thick.	Regular	Top Hopper	Door
18”	5 mm	X	X	X
23”	5 mm	29	30	40
27”	5 mm	35	40	49
30”	5 mm	39	42	52
30”	4 mm	31	X	X
30”	3.2 mm	28	X	X
33”	5 mm	43	48	57
36”	6 mm	49	57	68

LINER WEIGHTS (in lb.)

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

9. ASSEMBLY OF THE FRAME

- Start with a stored frame packet.
- Release the 4 pins.
- Remove the boom, tie bar, and mast.
- Repeat with another packet.



Pin Information:

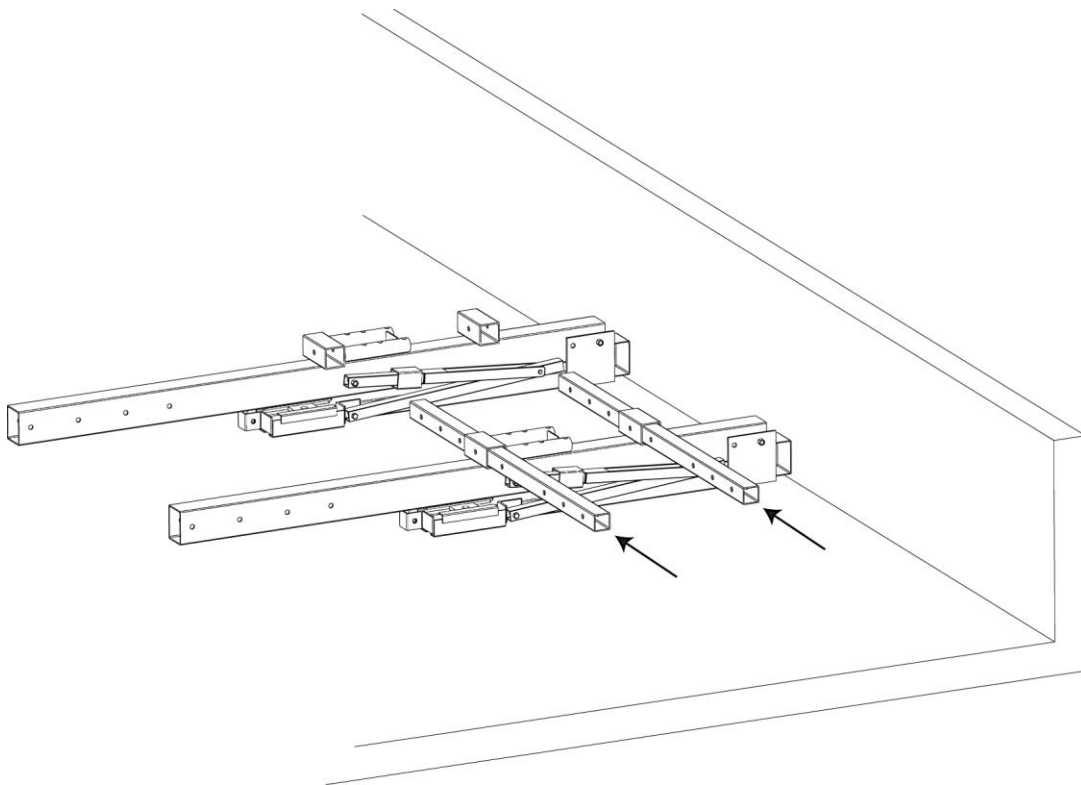
- 8 pins are required to store, assemble and use the FRAME.
- 6 pins are required to assemble and use the FISHPOLE.
- 4 spare pins are used to close the anchor bolt holders.
- All of the pins used on the SC-1500-bd support frame are identical:

Diameter:	$\frac{1}{2}$ "
Overall Length:	6"
Usable Length:	$4\frac{1}{4}$ "

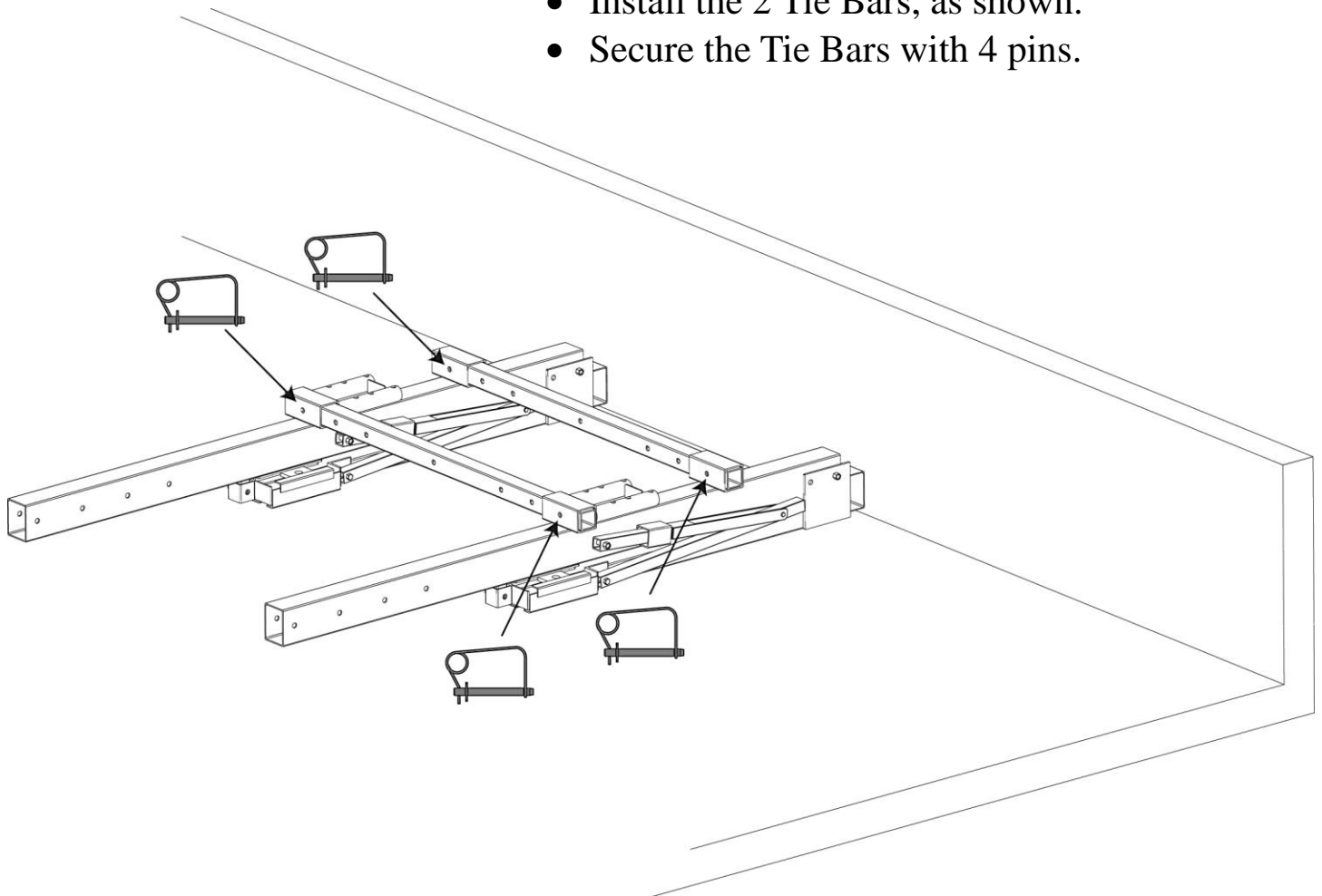


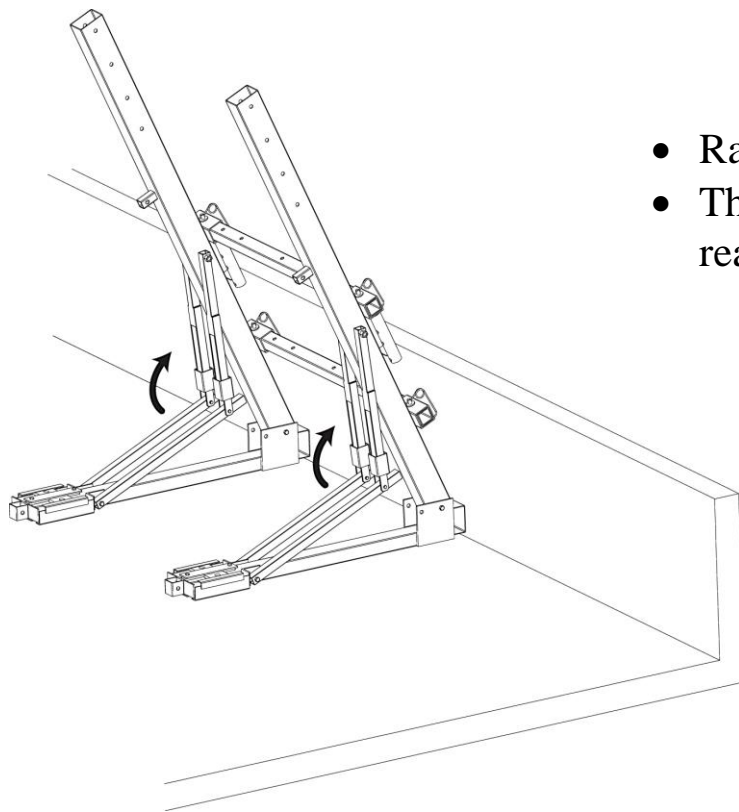
WARNING

- 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 that were supplied with this hoist (see "Pin Info" above).
- To prevent pin loss, store the pins on the unit.
- Order replacement pins from Superchute Ltd.



- Place the 2 folded Masts, side by side.
- Install the 2 Tie Bars, as shown.
- Secure the Tie Bars with 4 pins.





- Raise the masts to vertical position.
- The hinges will lock once the masts reach the vertical position.

- To prevent the unsecured hoist frame from toppling over, DO NOT install the Booms at this time.

- Position the hoist frame where you wish to anchor it.
- If the hoist will be installed facing an unprotected edge, leave 3" between the toeboard brackets and the floor edge.



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 and strength criteria.
- Use a personal fall arrest system (harness and rope, 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 next page).

10. 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-1500-bd Bolt Down Frame Chute Hoist 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.

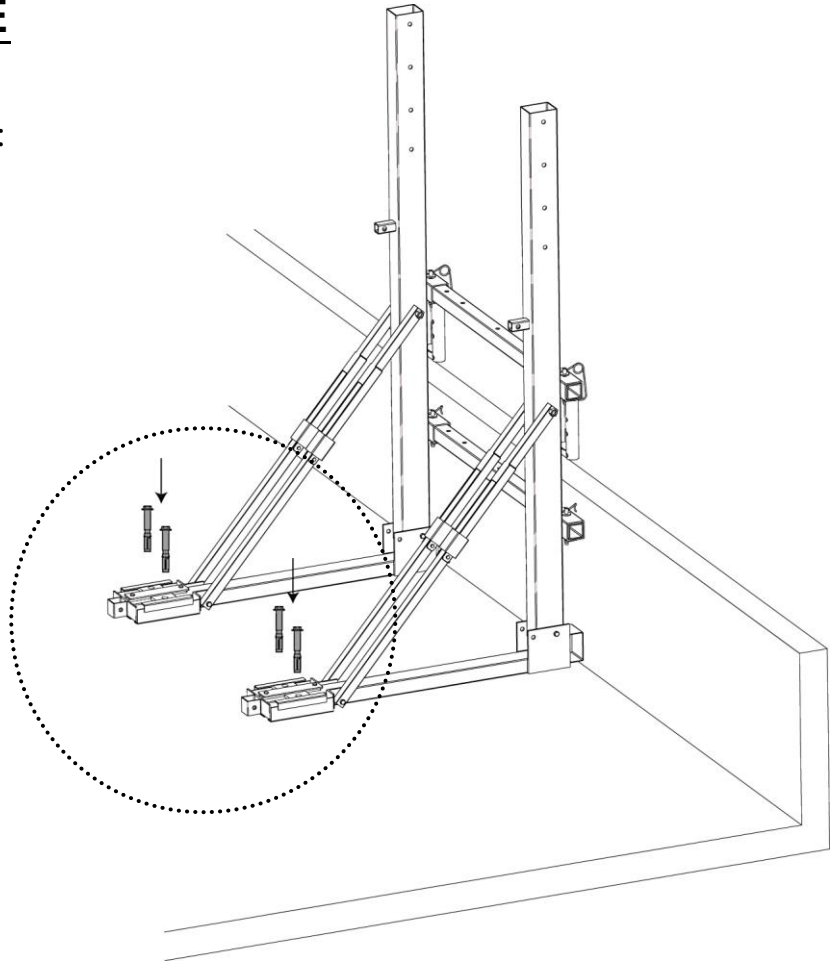
Once there, go to: Laws & Regulations / Standards - 29 CFR / PART 1926 Safety and Health Regulations for Construction.

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

11. SECURE THE FRAME

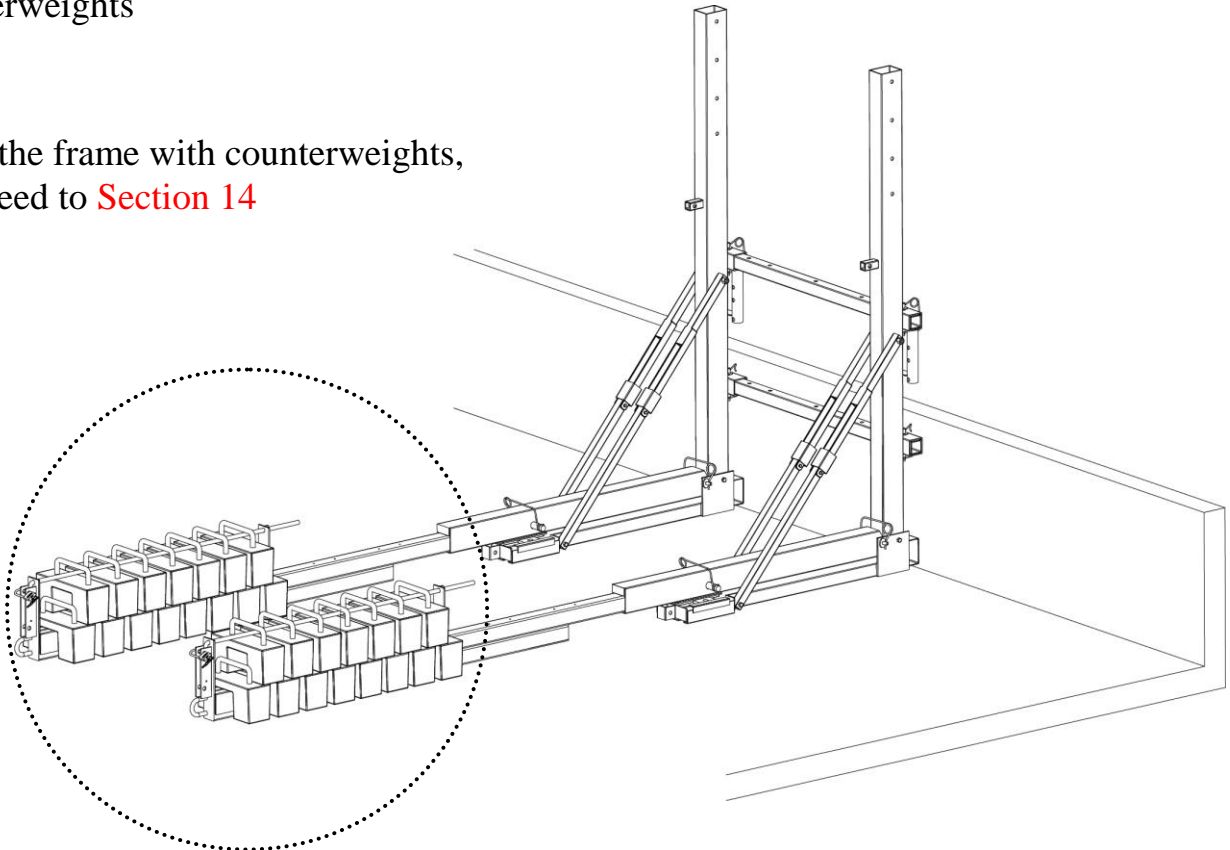
There are two ways to secure the frame:

- With 4 expansion anchor bolts



- With 30 counterweights

If securing the frame with counterweights, please proceed to **Section 14**



12. 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:

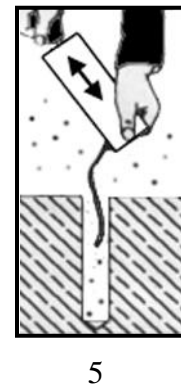
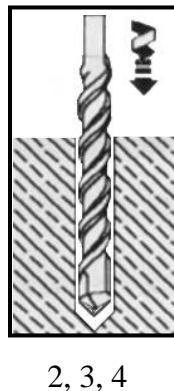
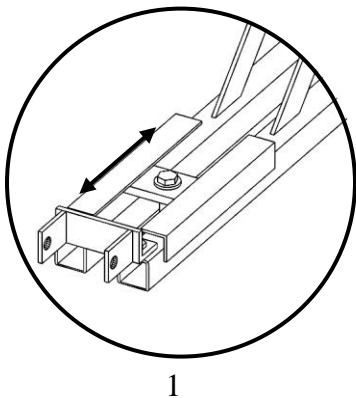
- The HILTI® Bolt is engraved with the code **HSL M12/50**.
- The Power-Bolt™ is engraved with the code **POWERS**.

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

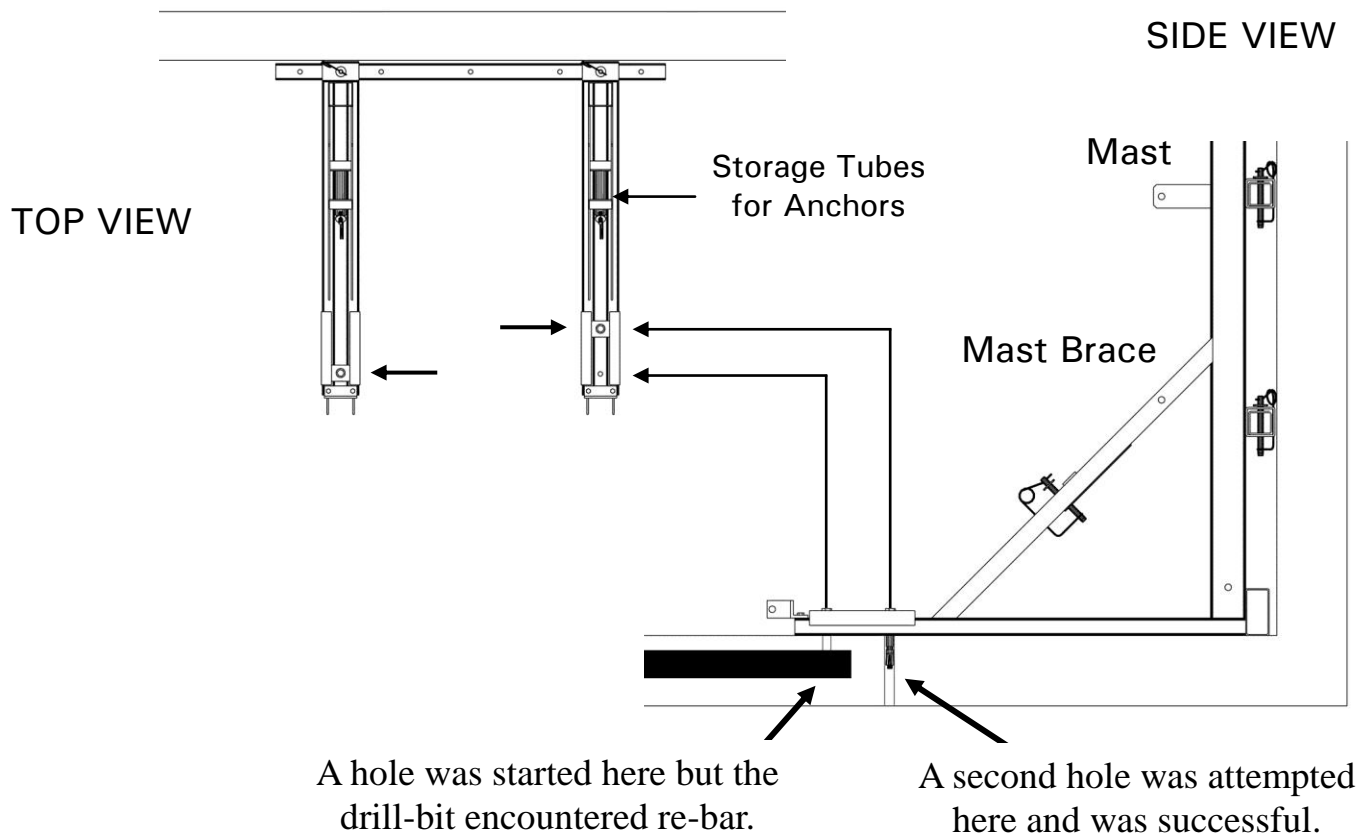


WARNING

- 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.

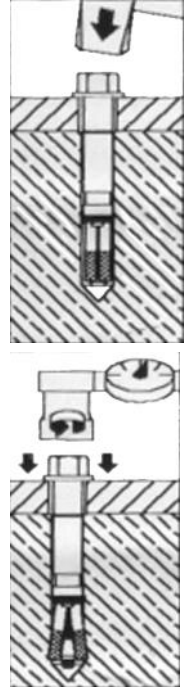
c) Hole Alignment

- It is possible that 4 suitable holes will not be aligned. The frame features sliding anchor plates to account for this possibility. For example: the worker may encounter embedded steel reinforcement bar.
- Although a hole can be drilled at any point offered by the sliding anchor plate, it is best to drill it at the position that is the furthest from the masts.



13. ANCHOR THE FRAME TO THE CONCRETE SLAB

1. Insert an approved model of anchor bolt through each anchor plate and into the prepared holes. The anchor plates may, or may not, be in alignment.
2. Gently hammer the anchor bolts until the bolt heads & washers are firmly seated against the anchor plates. 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.



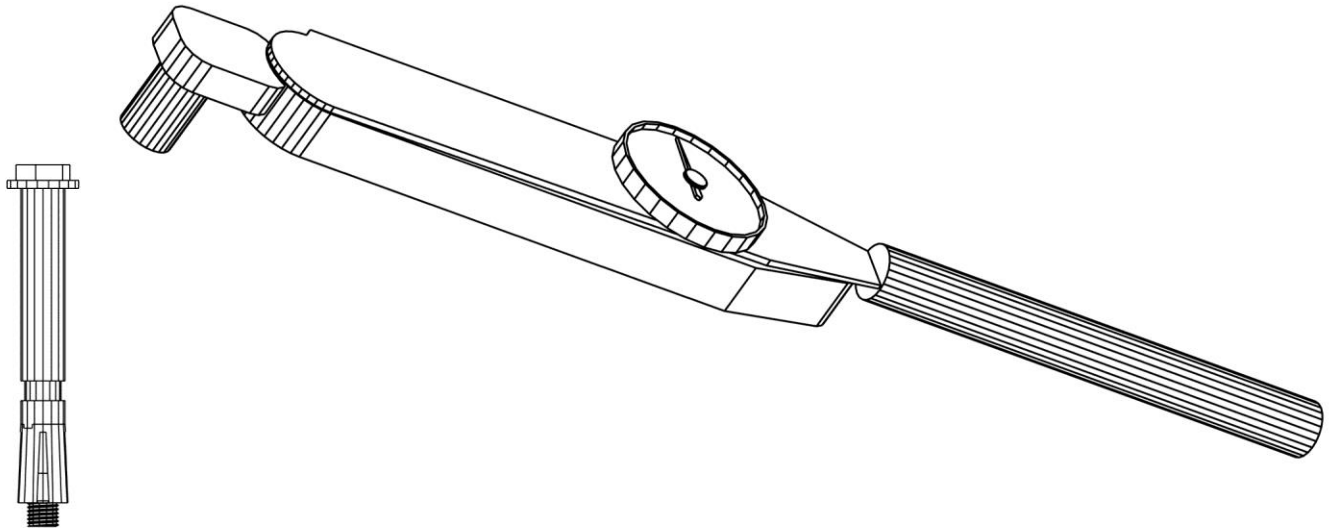
WARNING

- 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.*

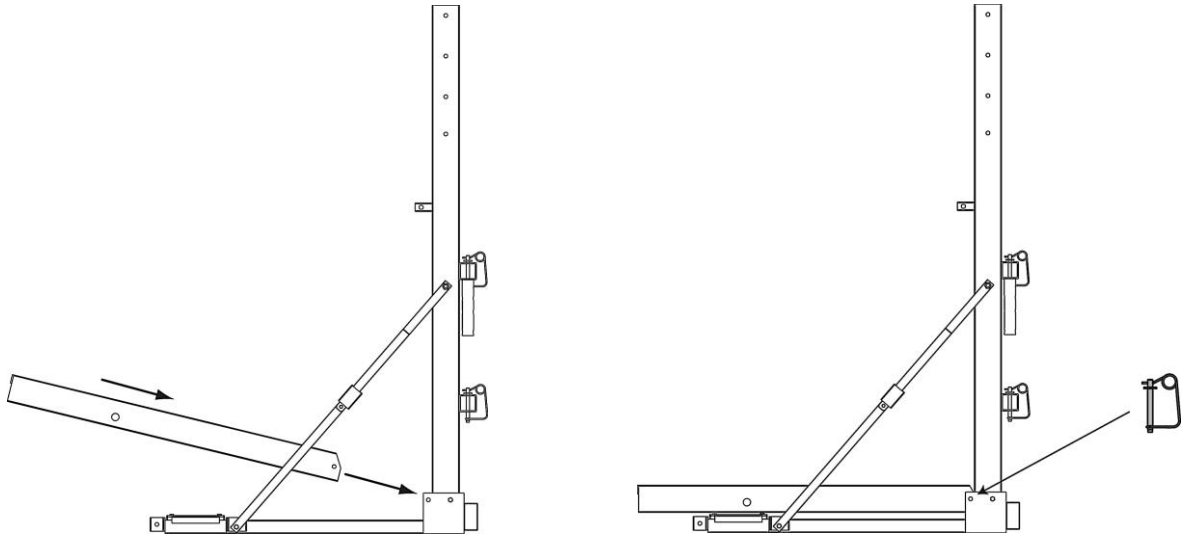


The expansion bolts are not reusable,
except in the original hole.
Order spares from Superchute Ltd.

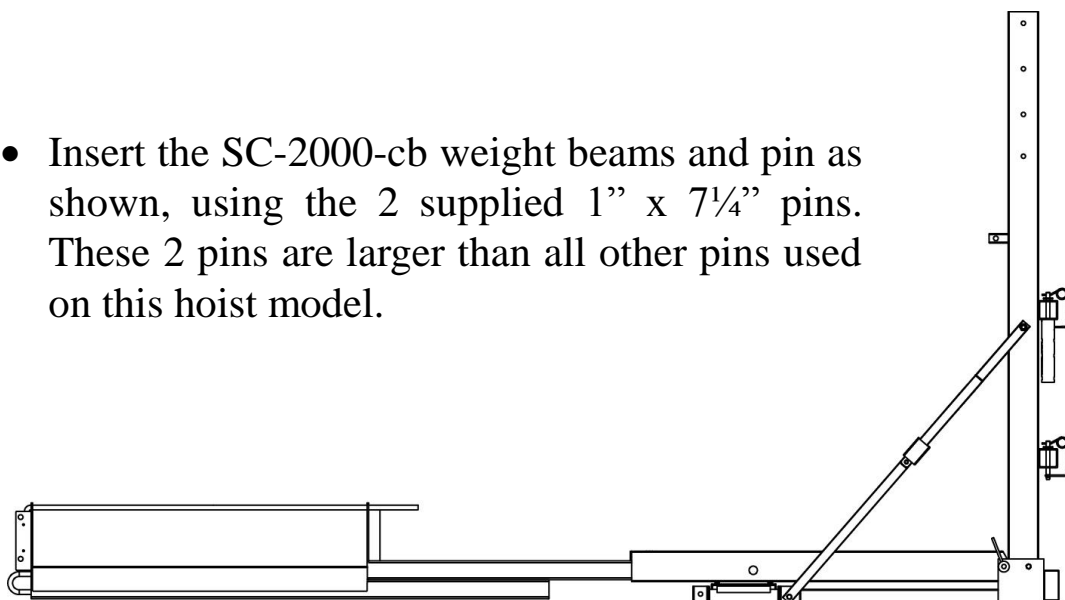
14. THE COUNTERWEIGHT KIT

In cases where the floor cannot accommodate Expansion Anchors, the Frame may be secured using a Counterweight Kit. The Kit is installed as shown:

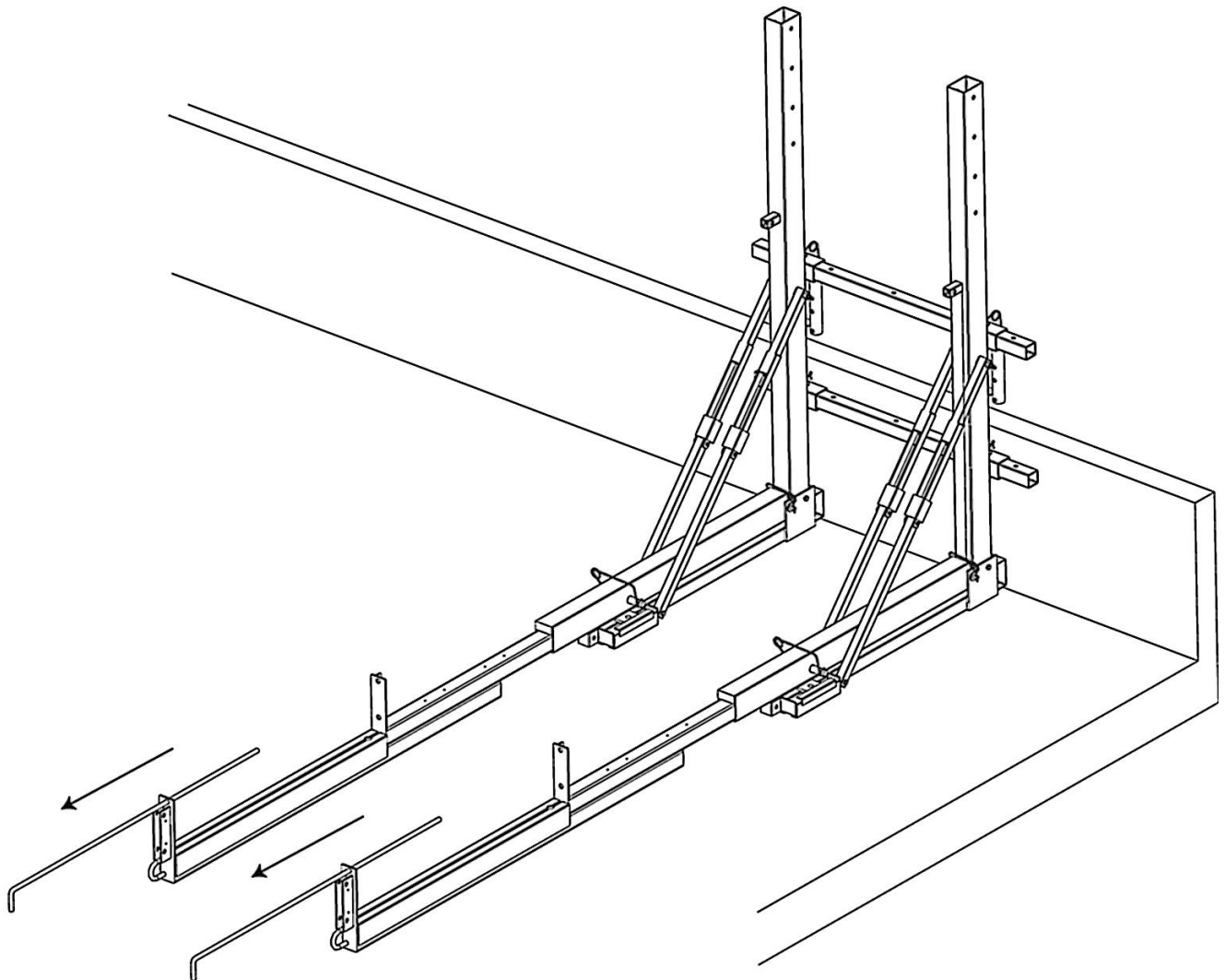
- Attach the 2 connector pipes to the frame and pin, as shown.



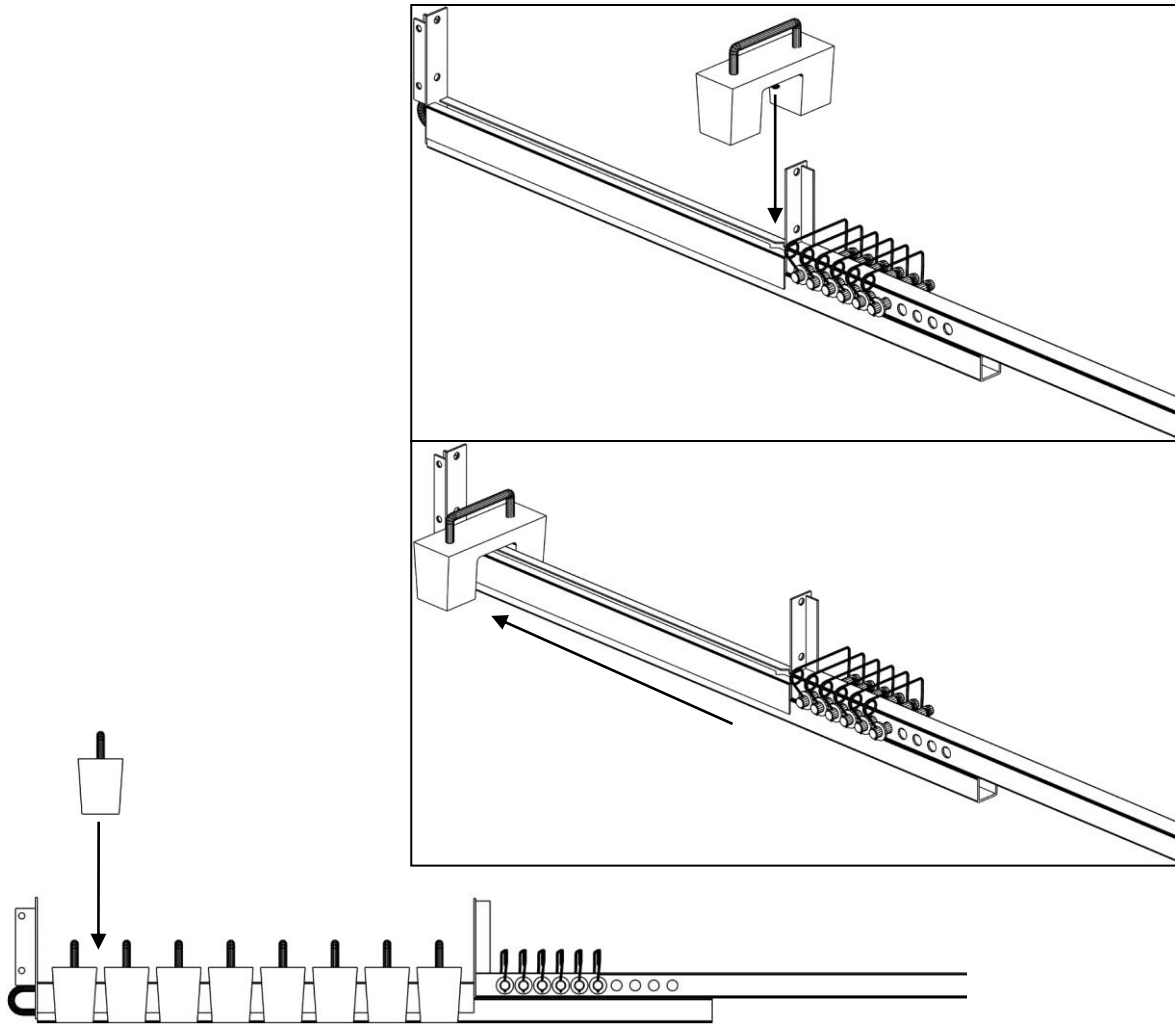
- Insert the SC-2000-cb weight beams and pin as shown, using the 2 supplied 1" x 7¼" pins. These 2 pins are larger than all other pins used on this hoist model.



- Remove the Retaining Rods.



- Place 15 counterweights in each weight carriage.

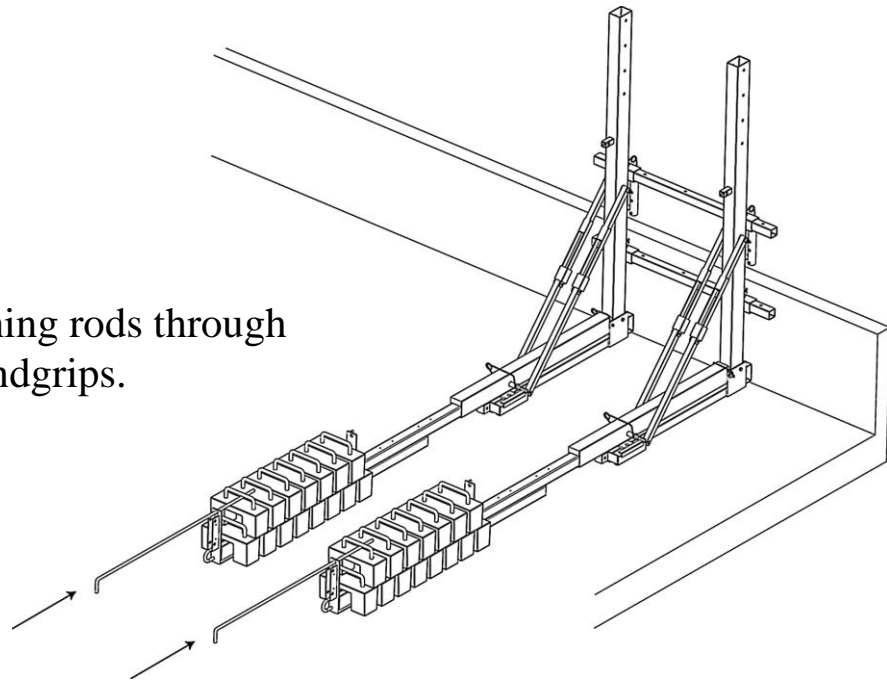


- In total there should be 30 cast iron weights (55 lb. each) on the hoist.
- Always install all of the weights.

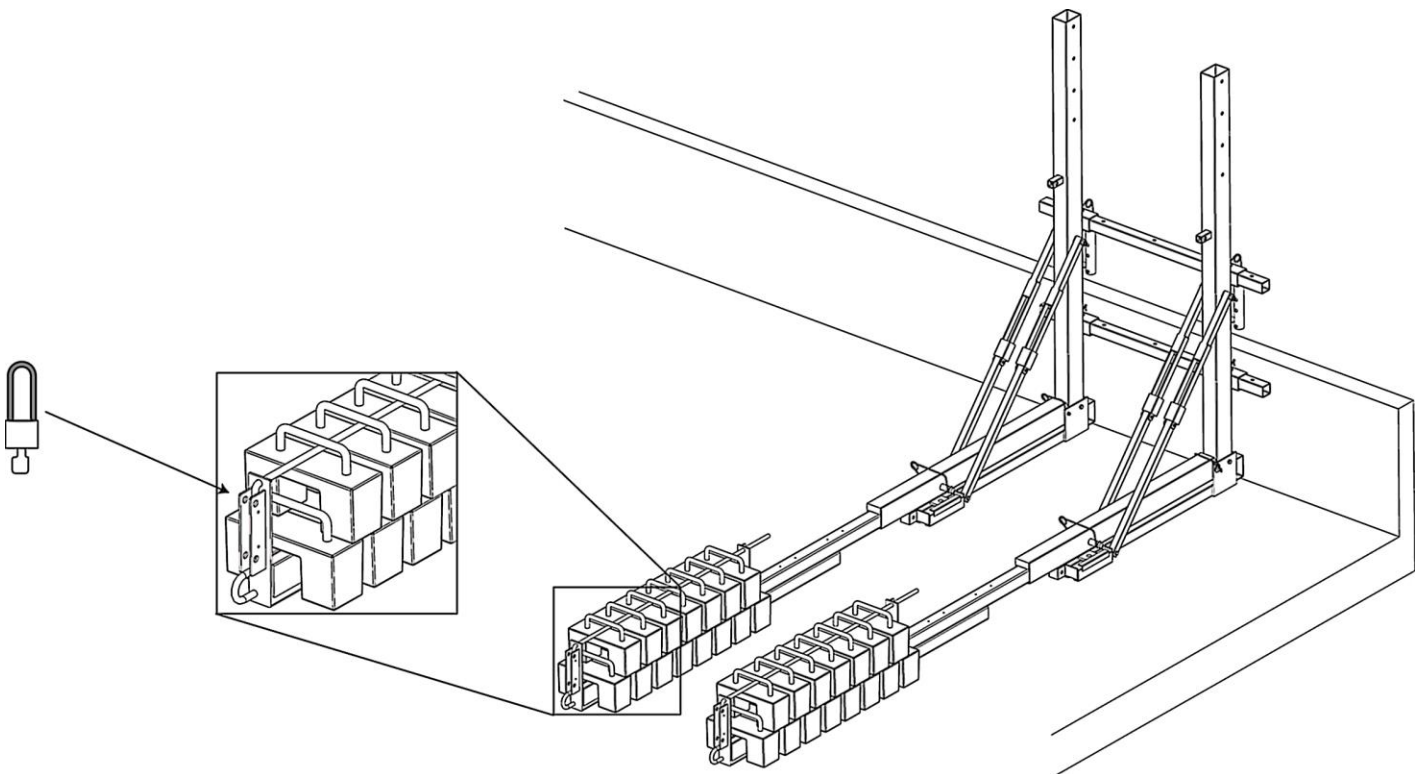
Exception:

If less than 750 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.

- Pass the retaining rods through the weight handgrips.

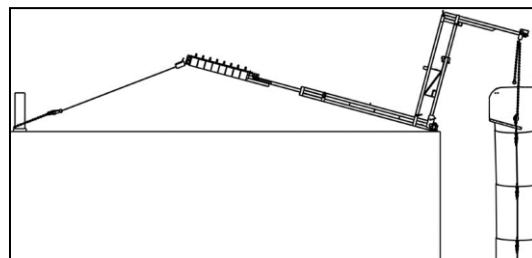


- Use the 2 supplied padlocks to lock the retaining rods and prevent weight removal.

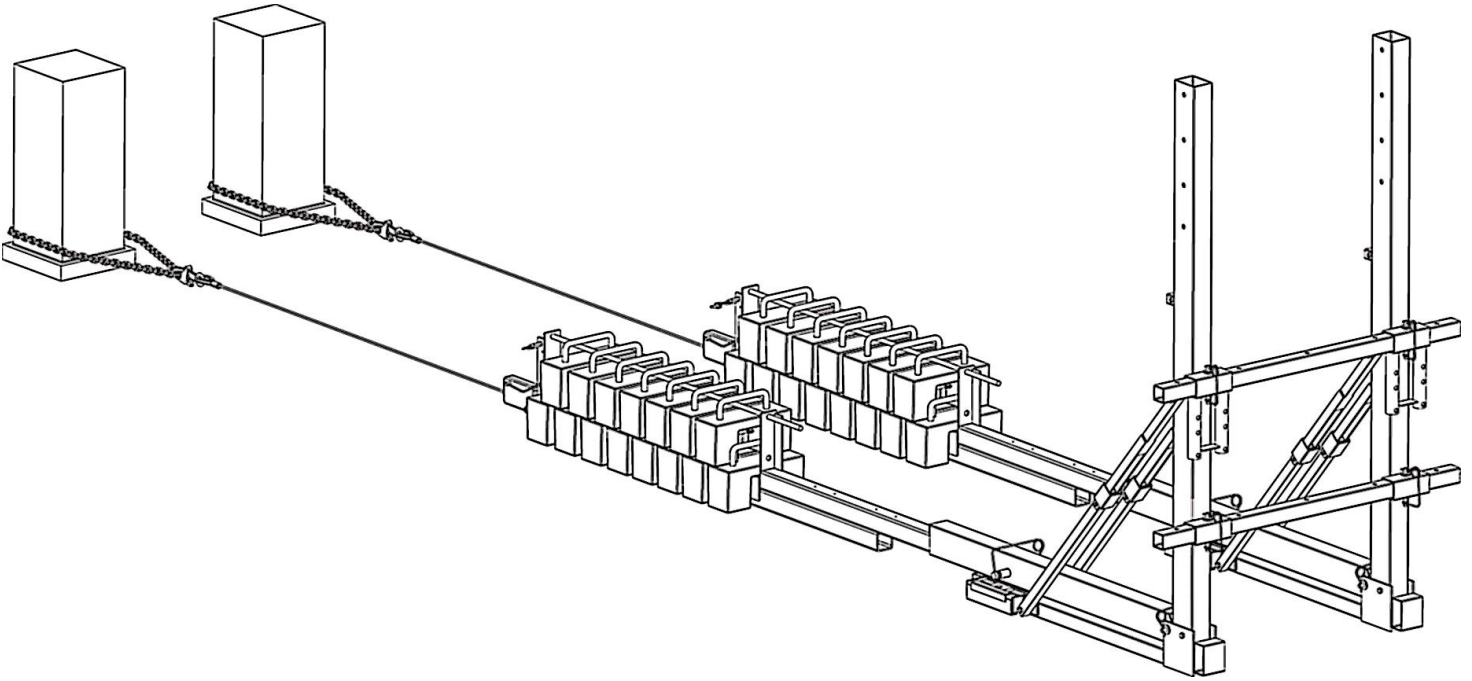


Tie-backs

- If the hoist frame was secured using counterweights, then it should be tied-back to the building to prevent it from being dragged or pulled off the building in the event of a blockage.
- Tie-back each weight beam to a structural member of the building using 5/8" nylon or 5/16" wire rope. Use the tie-back loops 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 (ex: figure eight knot).
- **Wire Rope:** install snug, using proper hooks and fittings.
- **Tie Back Kits:** are available from Superchute® for quicker & safer tie-backs.



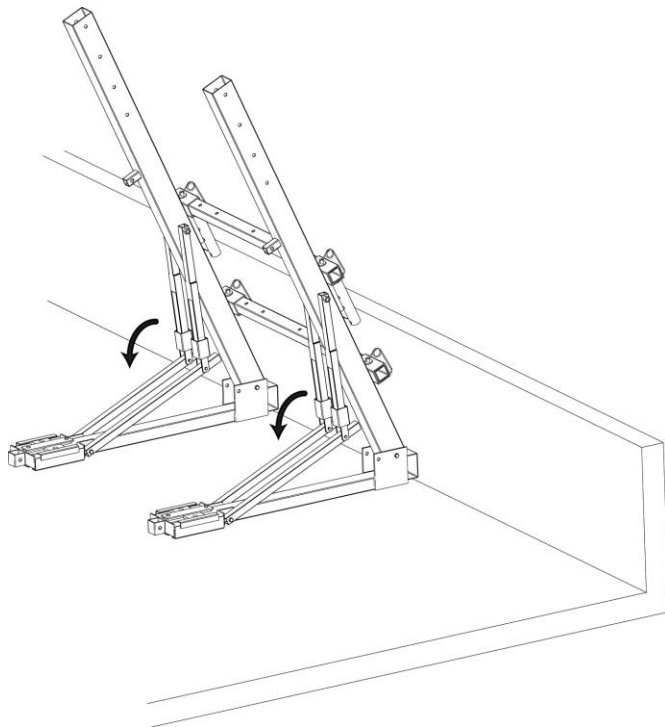
- Tie-backs installed.



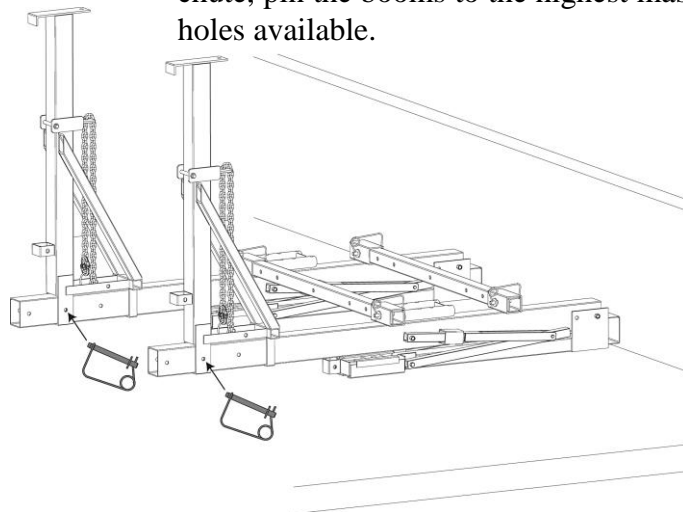
Note: The remainder of the sketches in this installation manual show the hoist secured to the floor slab by means of expansion anchor bolts.

15. ATTACH THE BOOMS

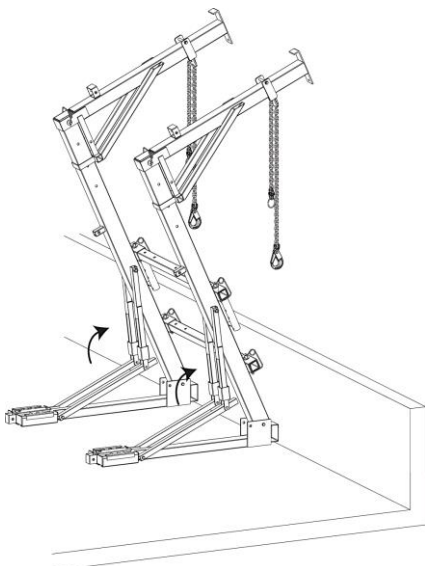
- A. • Lower Masts to floor.



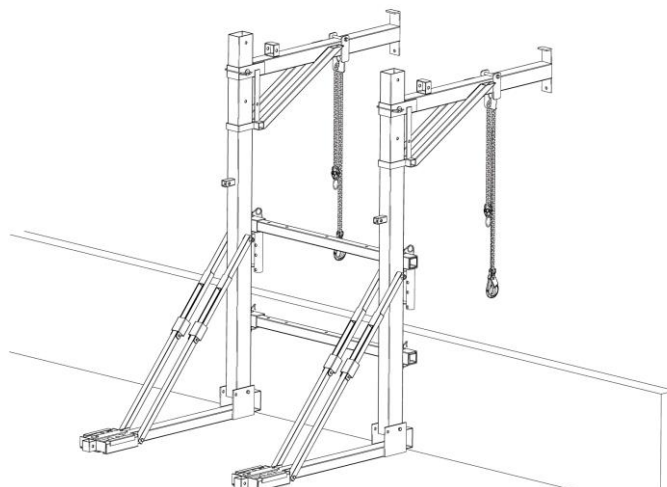
- B. • Install and pin the Booms.
• If you will use the Fishpole to raise the chute, pin the booms to the highest mast holes available.



- C. • Raise the masts.



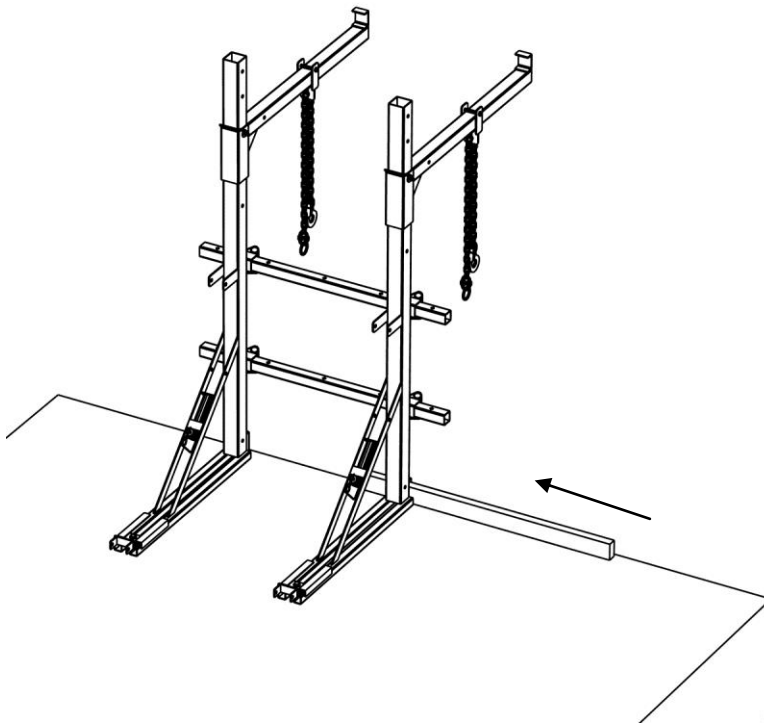
- D. • The hinges will lock once the masts reach the vertical position.



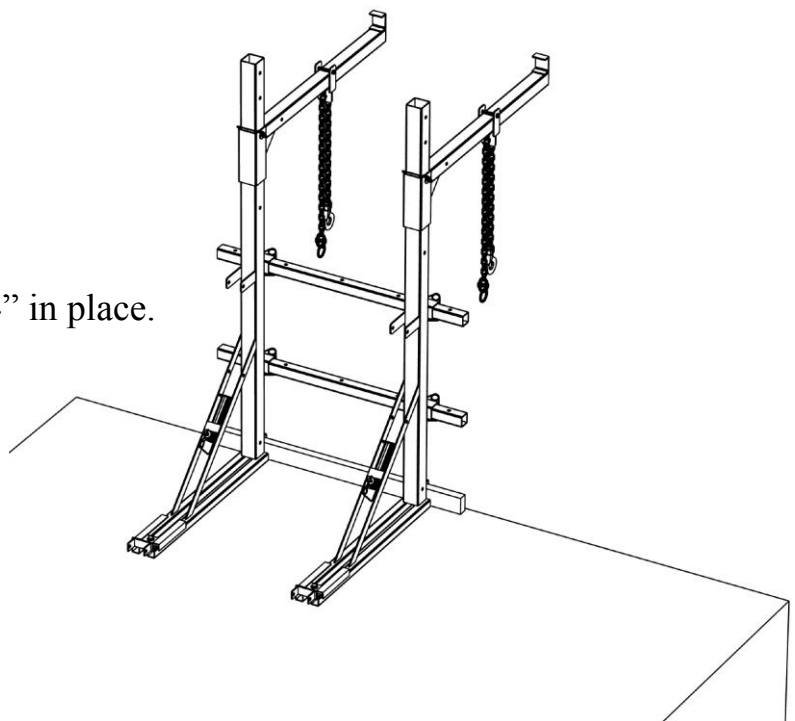
16. TOEBOARD BRACKETS

Insert a 2" x 4" wood stud through the toeboard brackets if the frame is on a floor slab without a toeboard (or equivalent, like a window sill, or parapet). This is an OSHA requirement.

The installed 2" x 4" will prevent small objects from being accidentally kicked over the edge.



- 2" x 4" in place.

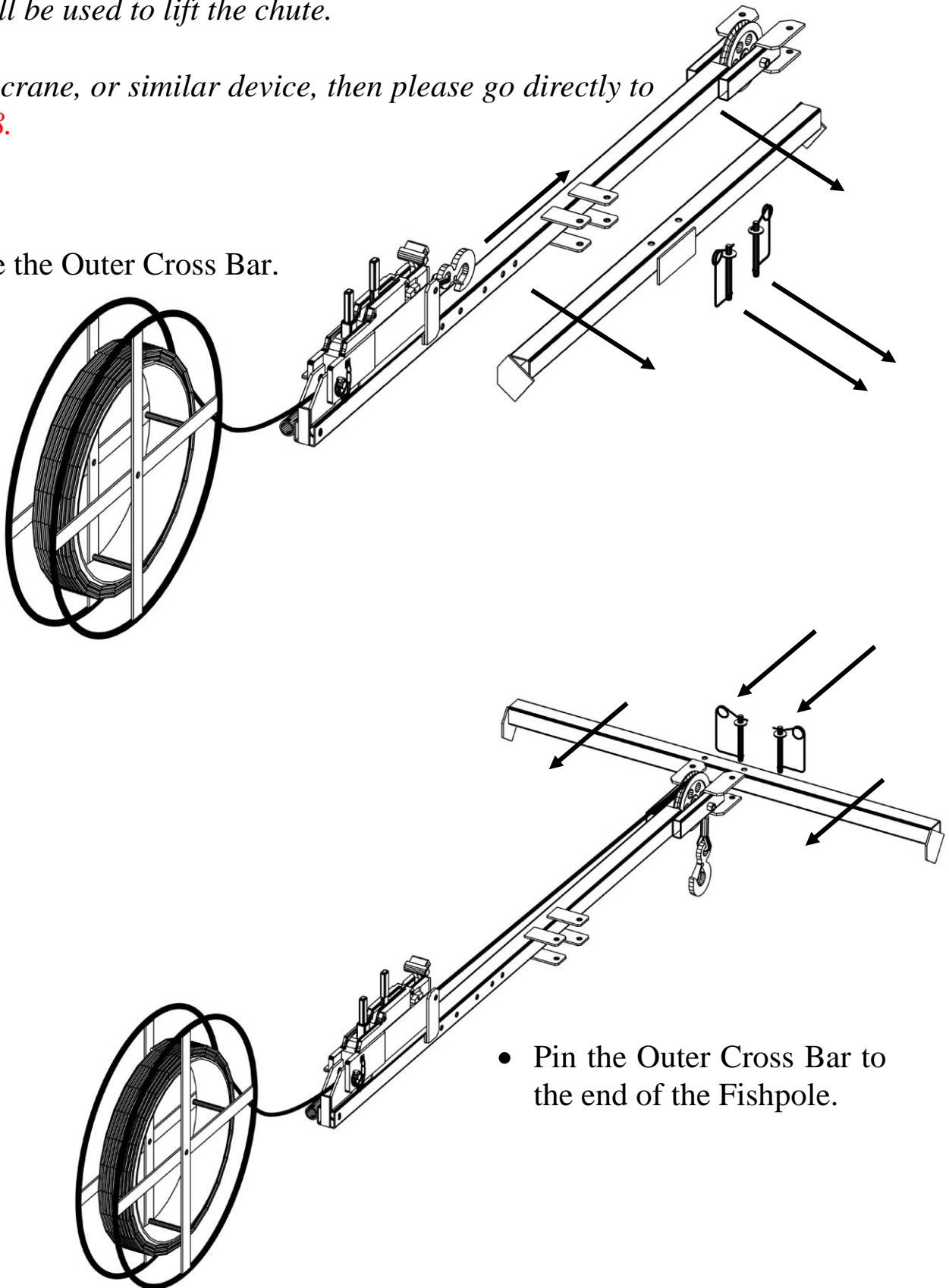


17. PREPARE & INSTALL THE FISHPOLE (IF APPLICABLE)

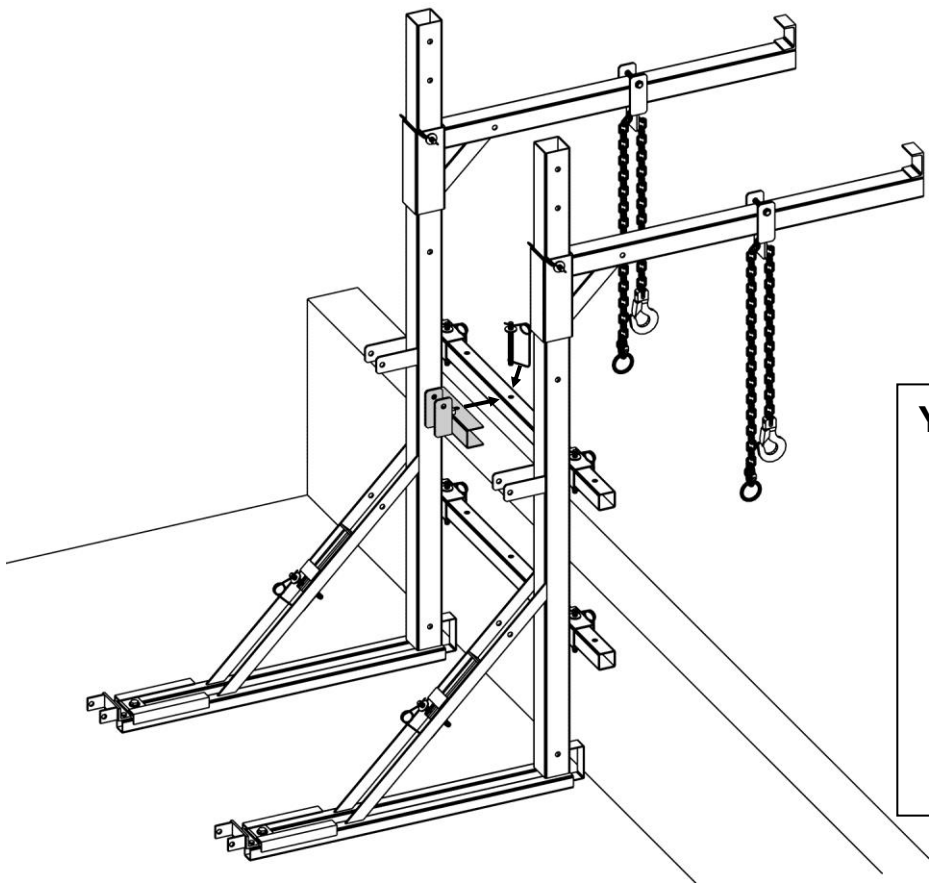
The Fishpole will be unnecessary if a crane, or similar device, will be used to lift the chute.

*If using a crane, or similar device, then please go directly to **Section 18.***

- Release the Outer Cross Bar.

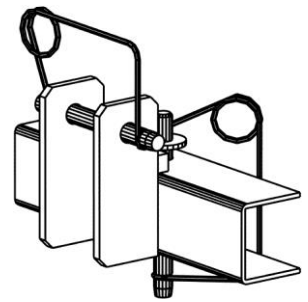


- Pin the Outer Cross Bar to the end of the Fishpole.

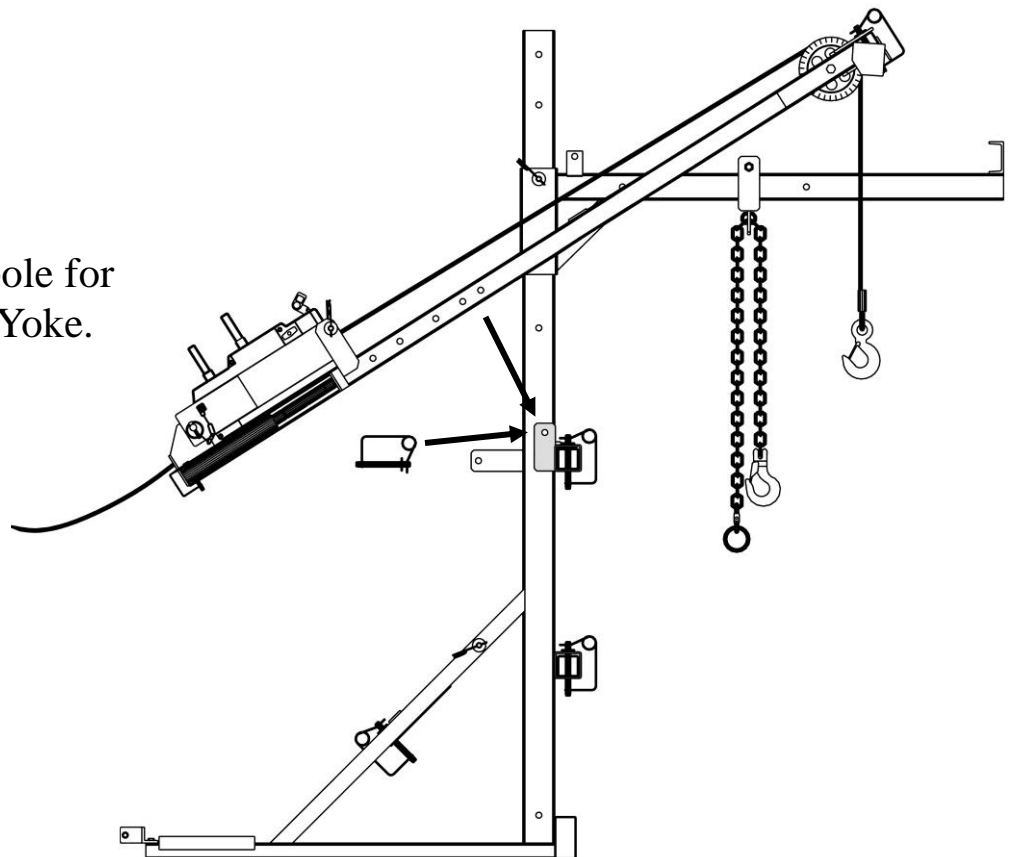


- Pin the Yoke to the upper Tiebar.

**YOKE MARKED
“1500”**

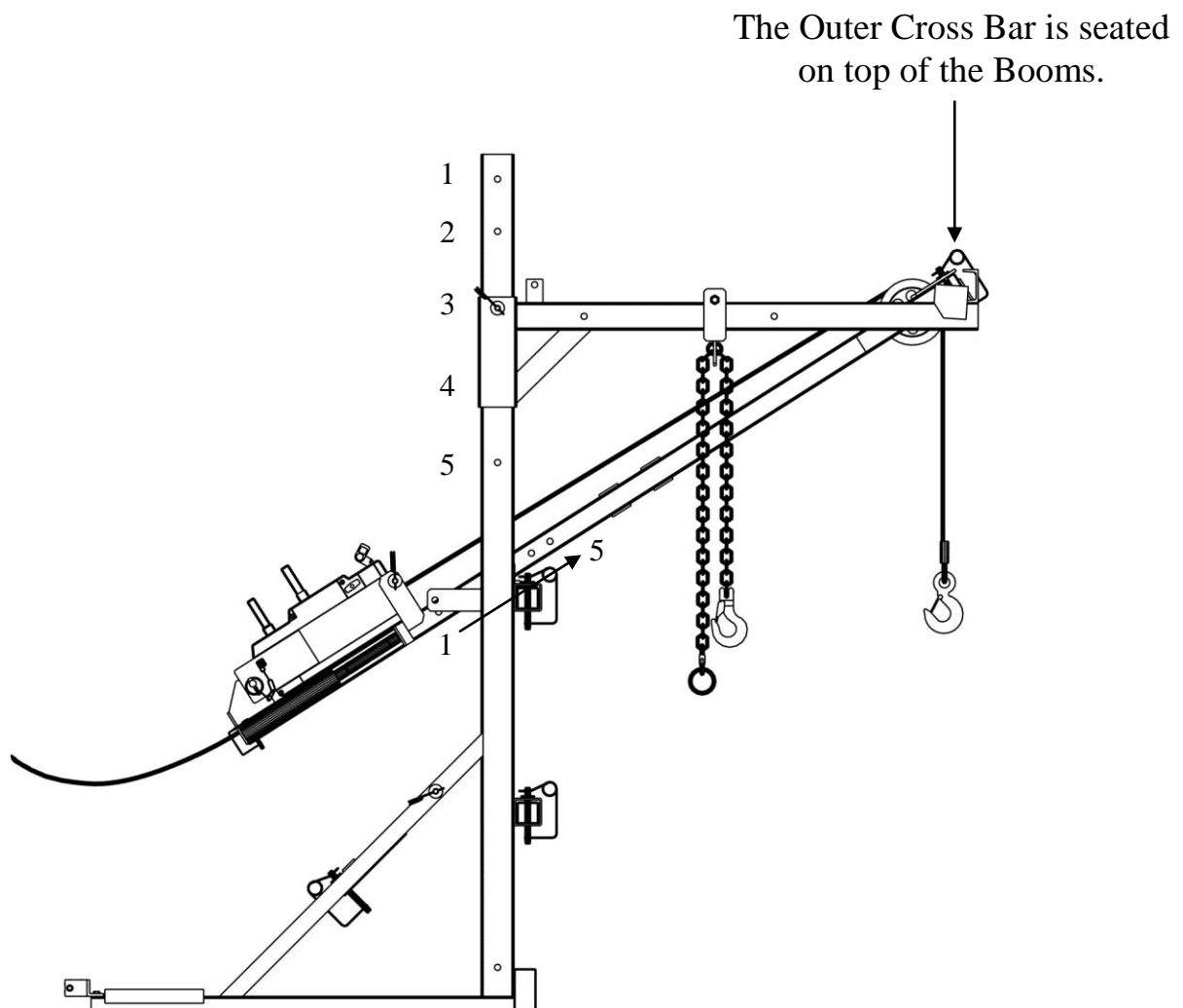


- Position the Fishpole for attachment to the Yoke.

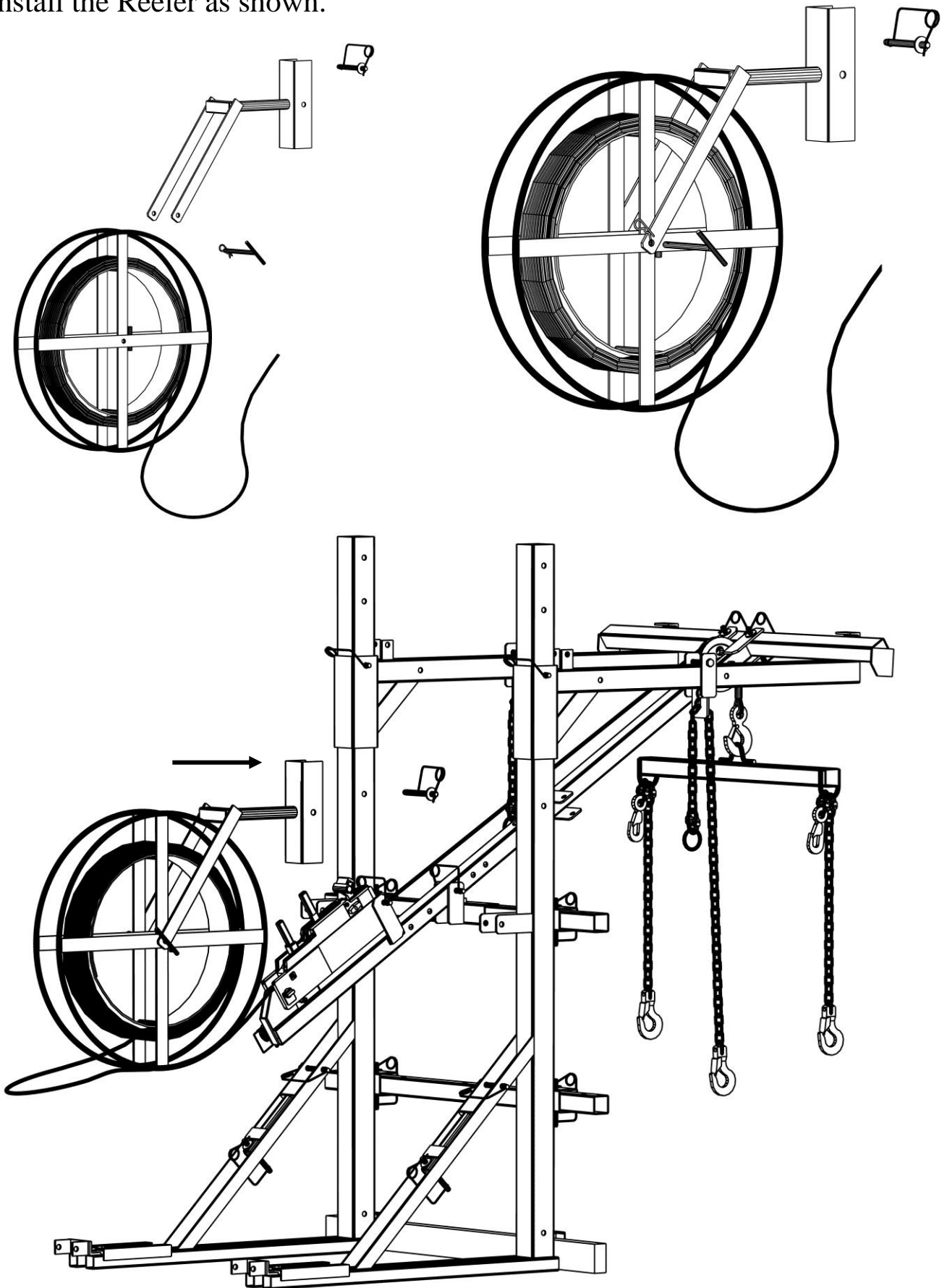


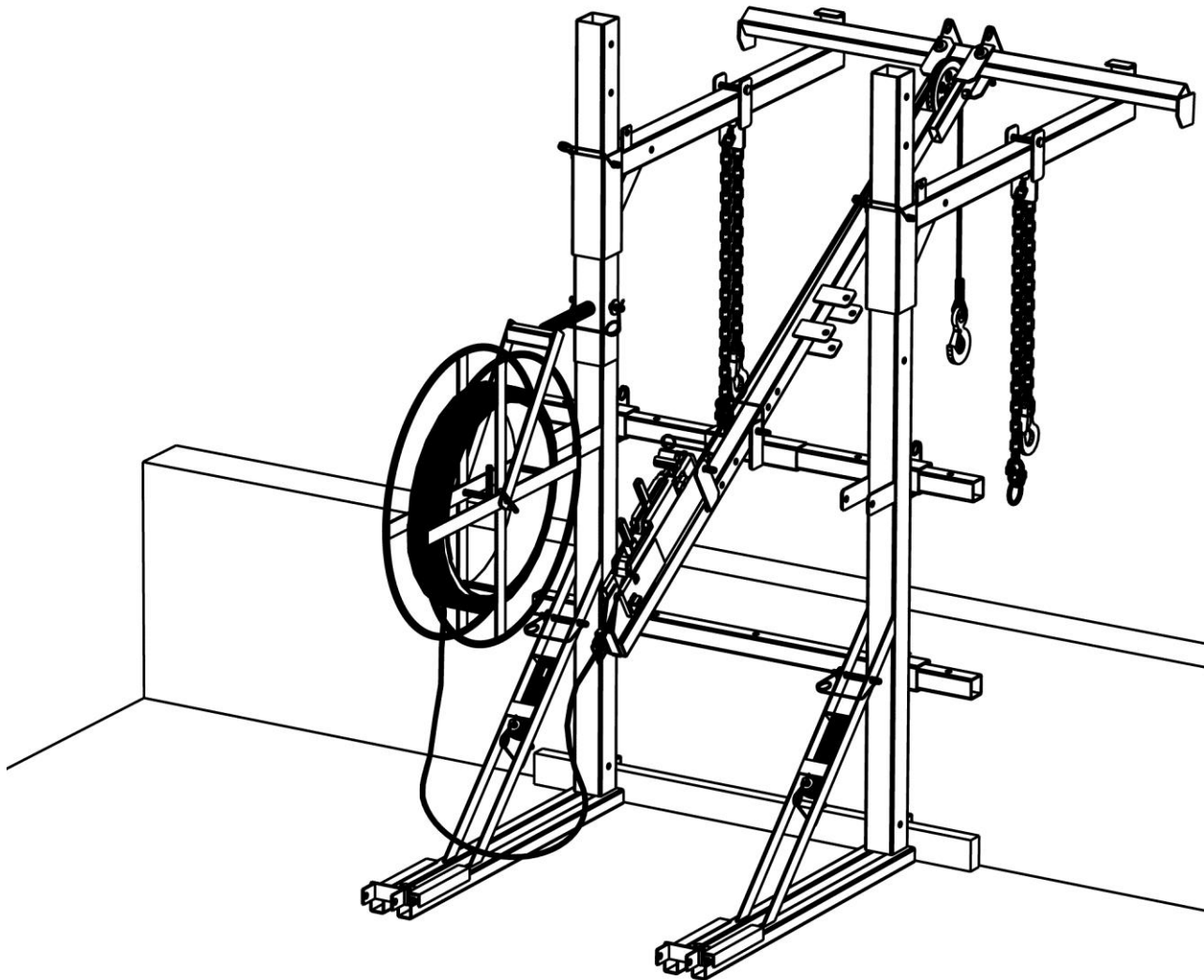
Pin the Fishpole to the Yoke

- There are five holes on the upper half of each Mast. These holes correspond to the five holes found on the Fishpole, nearest the winch.
- In the diagram below, the holes on the Masts and Fishpole are numbered 1 through 5. Hole “1” on the Mast matches hole “1” on the Fishpole, hole “2” on the Mast matches hole “2” on the Fishpole, and so on.
- For example, if the Booms are pinned to Mast hole “3” (as shown below), then the Fishpole would be attached to the Yoke using the corresponding hole “3”.
- Matching the Mast & Fishpole holes will provide the chute with the maximum amount of clearance from the building face.



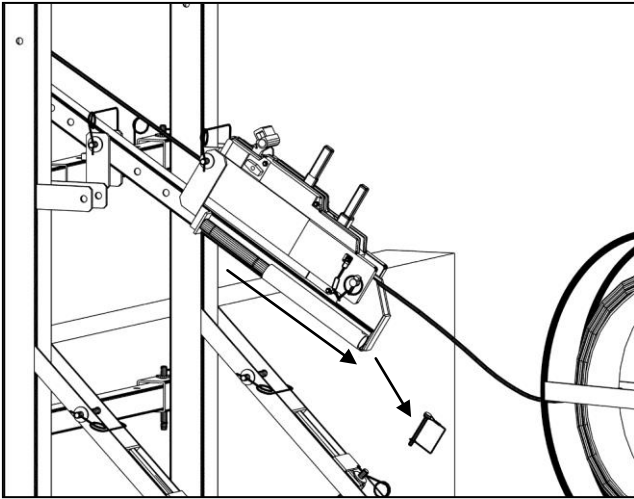
- Install the Reeler as shown.





Winch Operation

- **Refer to the separate booklet entitled “Tirfor - Operating and Maintenance Instructions” for detailed instructions on the operation of the winch.**
- **Never substitute the winch cable (11.5 mm diameter) for another size or strand design.**



Winch Handle

A pin holds the handle in its storage tube.

Warning!

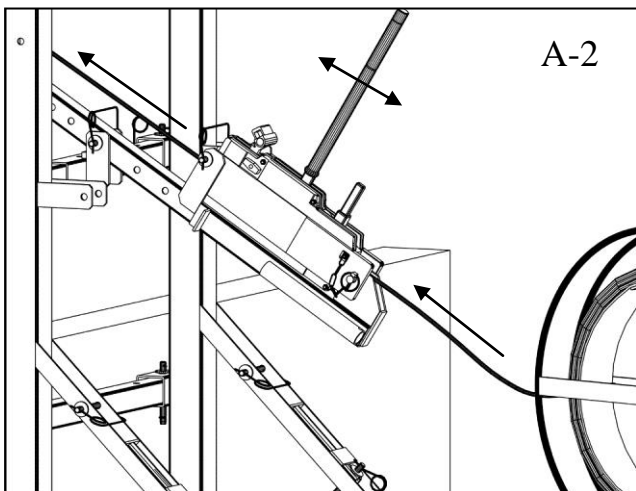
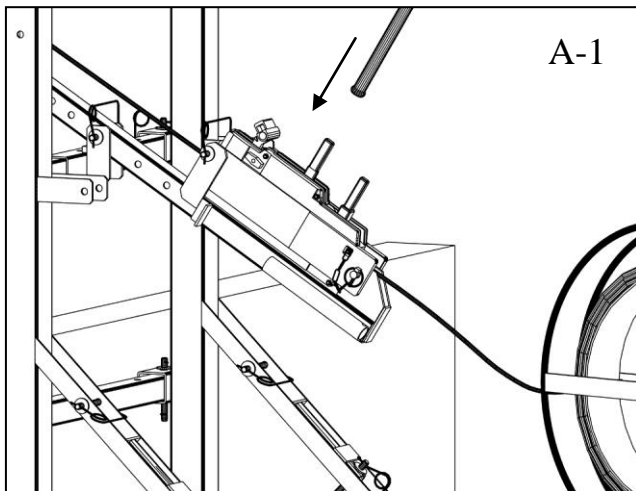
When the pin is removed the handle will quickly slide out of the Storage Tube.

The falling handle could land on your toes!

Remove the pin & be ready to catch the handle.

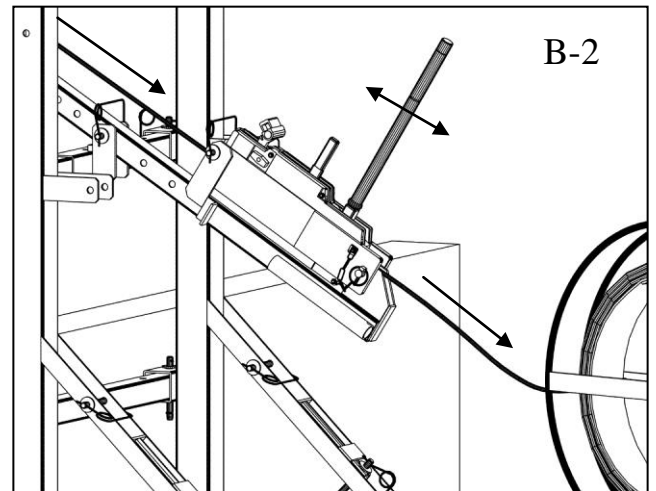
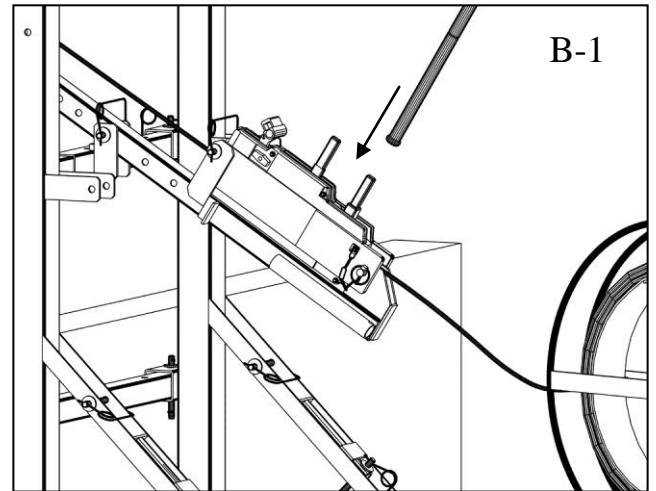
A) To Pay Out Wire Rope

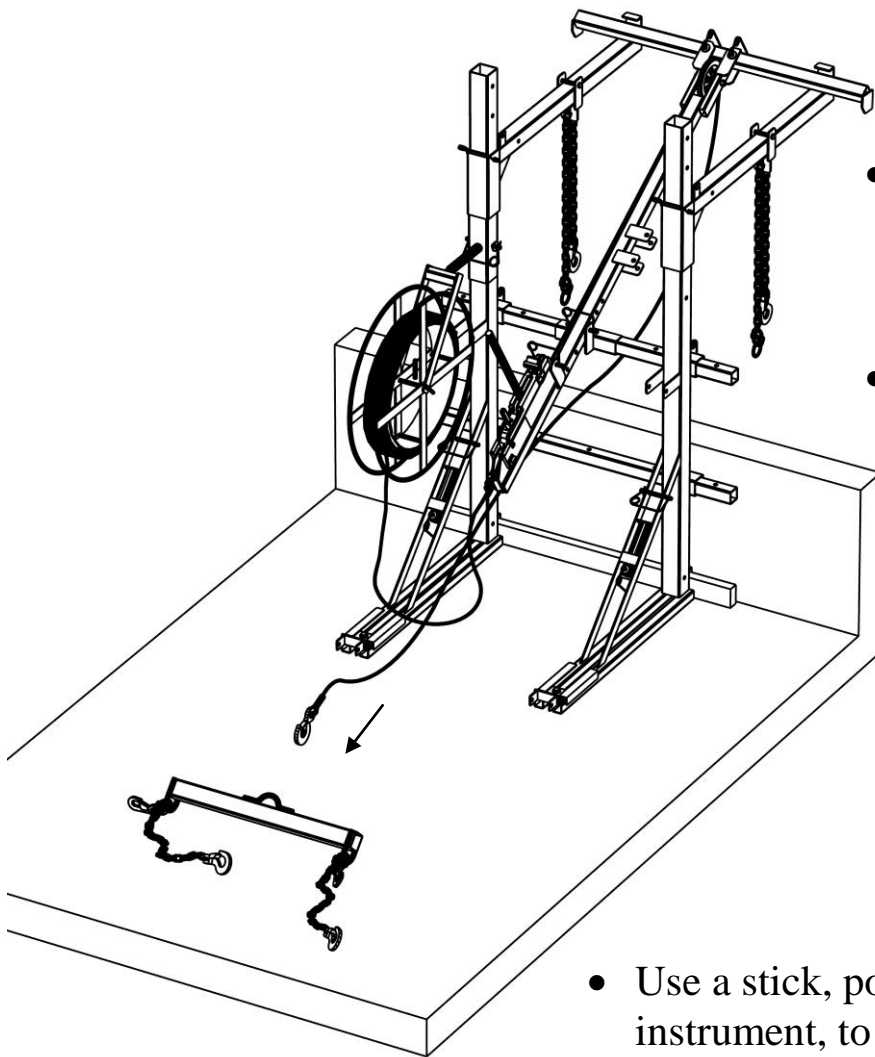
- Attach handle to Forward Operating Lever
- Move handle back and forth
- The winch will pay out the wire rope



B) To Take In Wire Rope

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

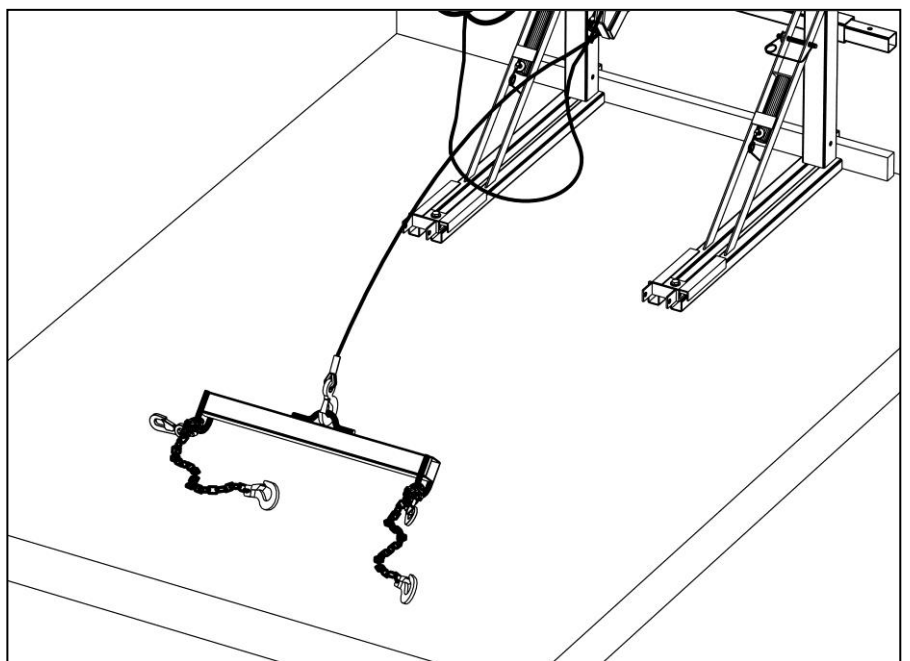




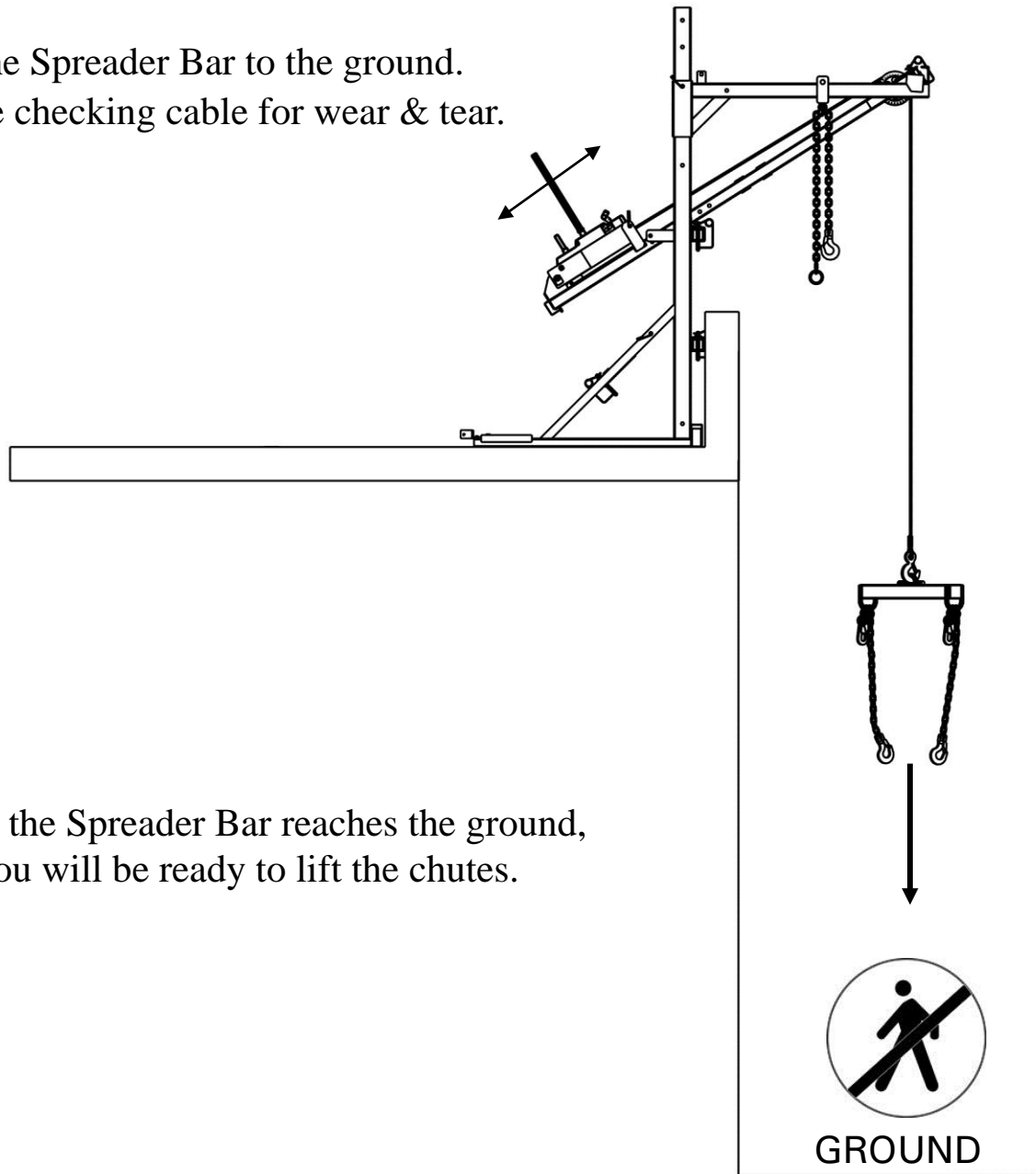
- Lower a few feet of cable. As the cable unspools, check it for wear and tear.
- If the cable is frayed or kinked, postpone the installation and order a new cable from Superchute Ltd.

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

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



- Lower the Spreader Bar to the ground.
- Continue checking cable for wear & tear.



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



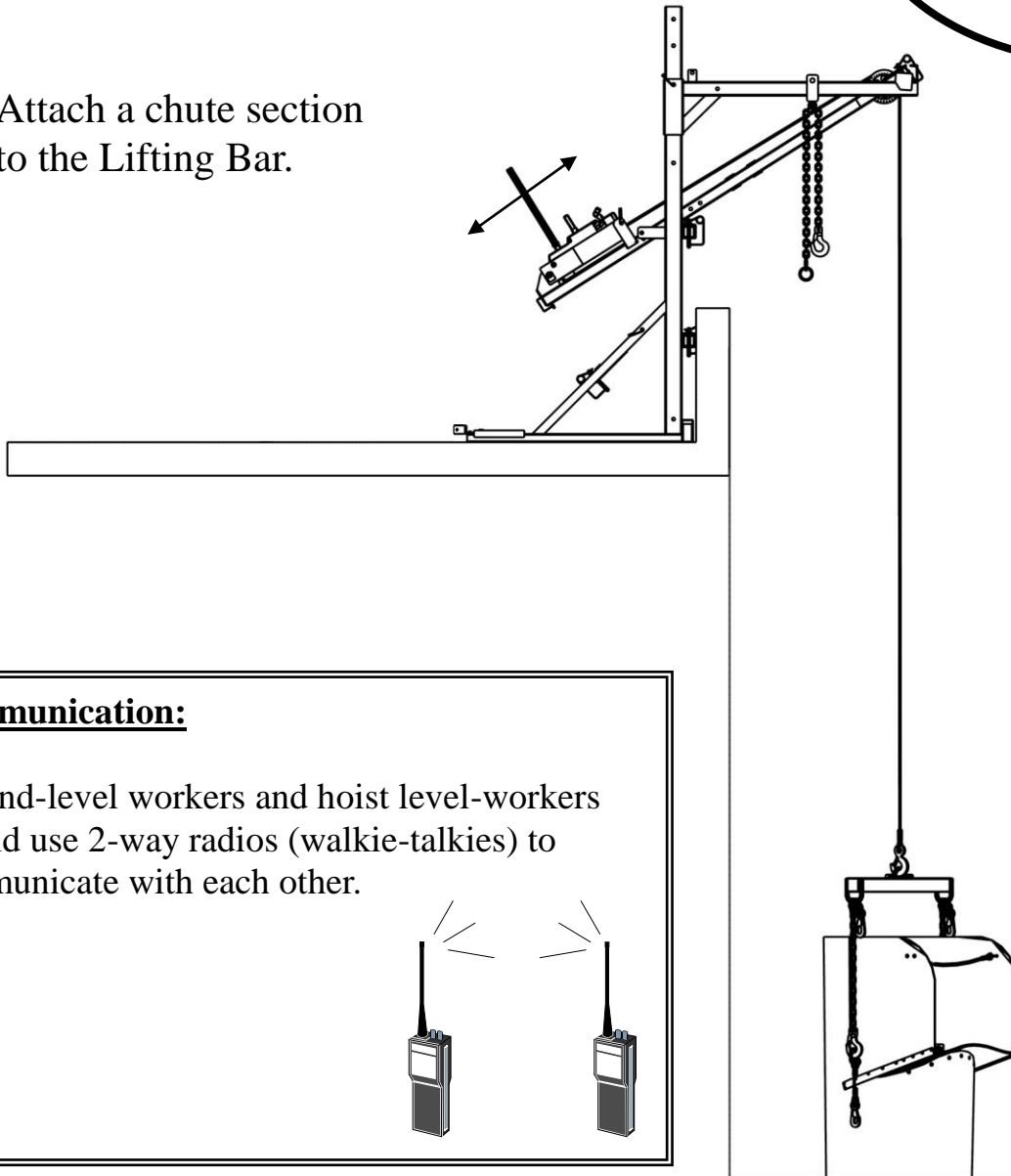
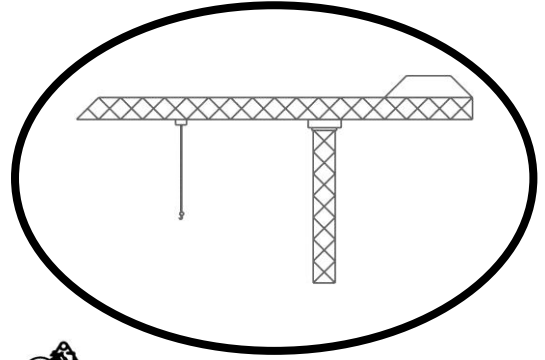
WARNING

- 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.

18. HOIST THE CHUTE SECTIONS INTO PLACE

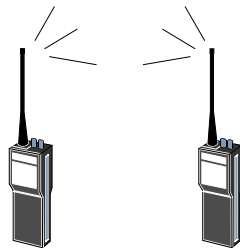
Although the following sketches show the Fishpole in use, other lifting devices, such as cranes, material hoists, or boom lifts, may be appropriate as long as they can safely manage the chute load. All lifting devices require the procedure shown in this section.

- Attach a chute section to the Lifting Bar.



Communication:

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

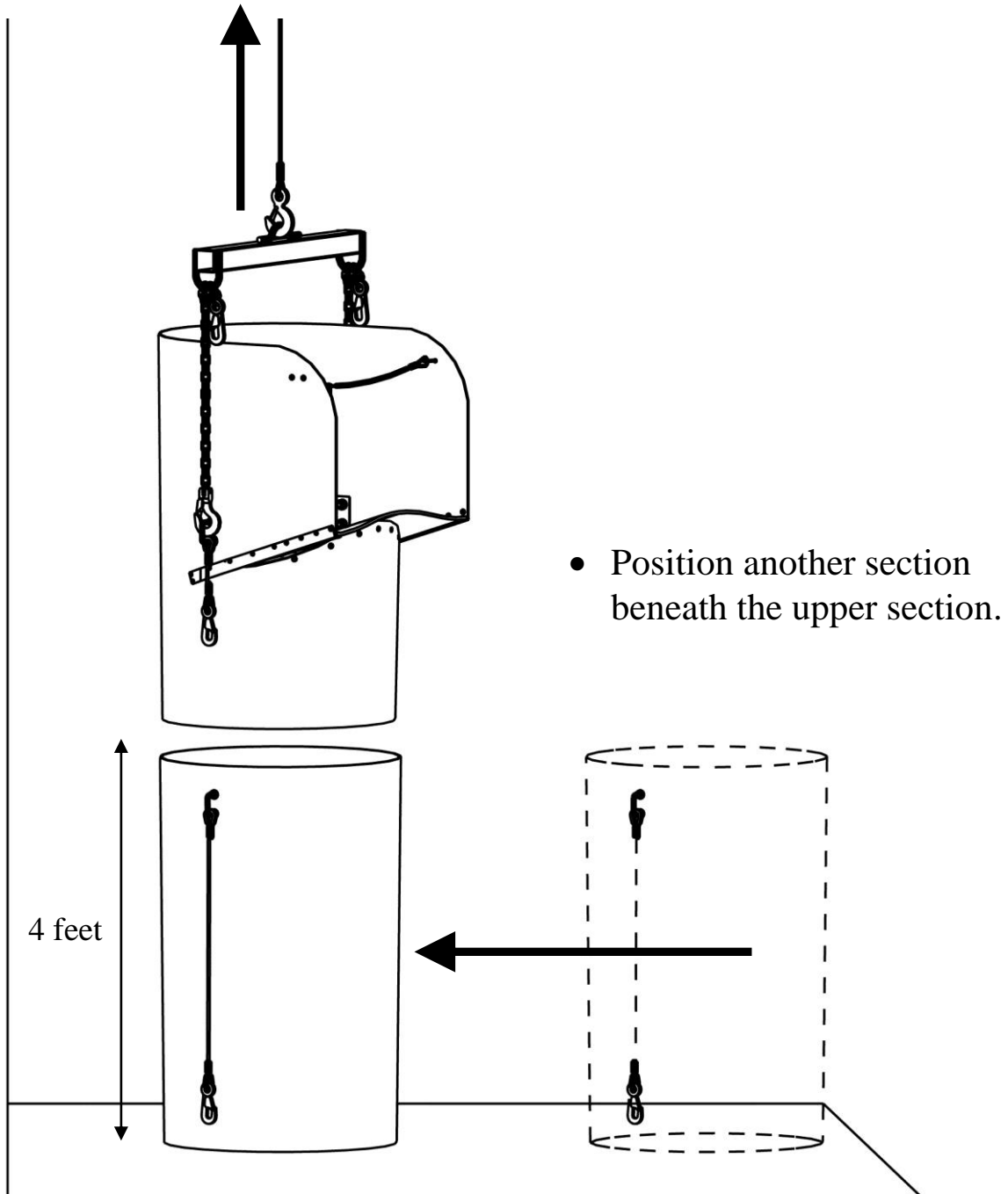


WARNING

- GROUND WORKERS MUST WEAR HARDHATS

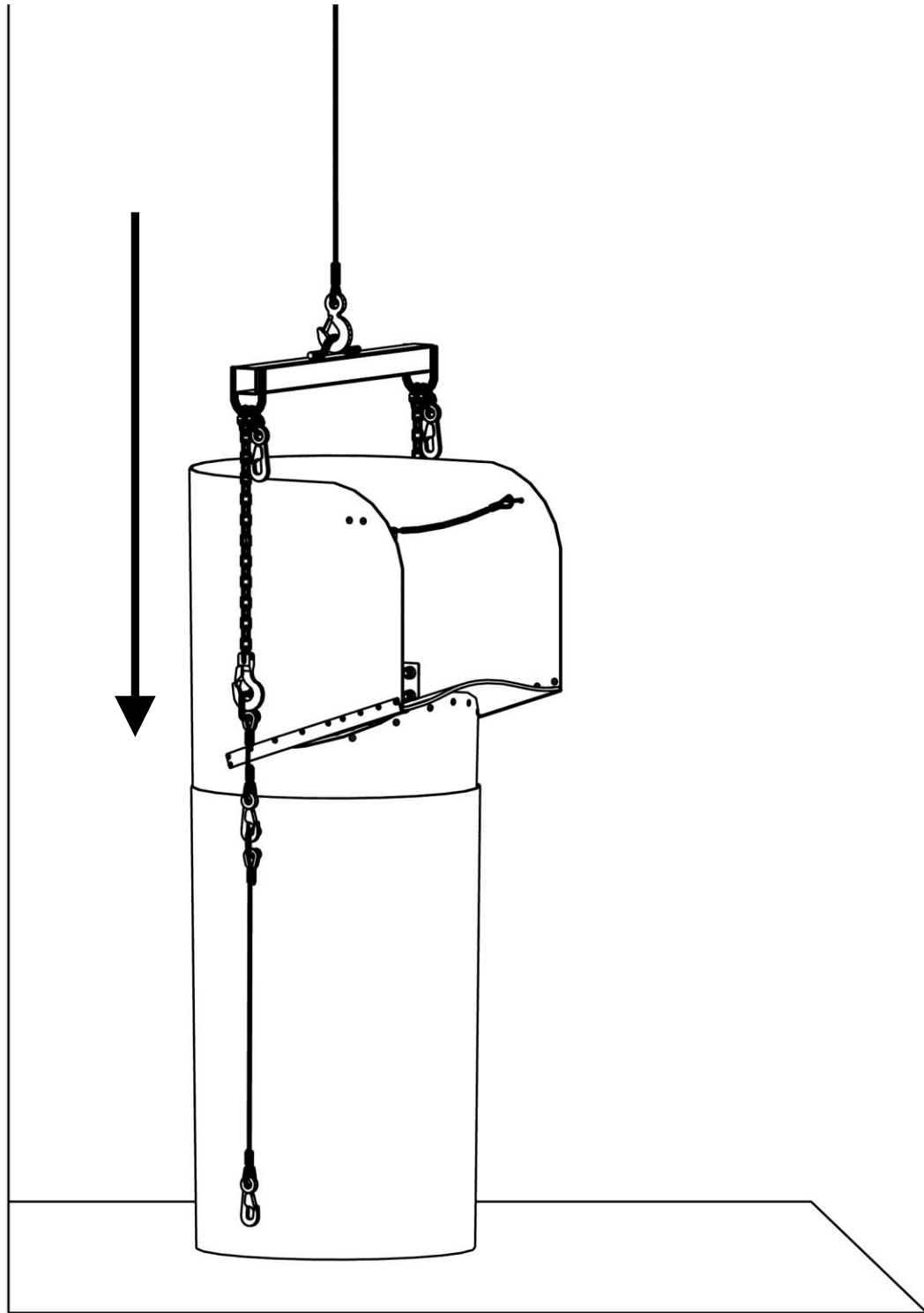
HOIST THE CHUTE SECTIONS INTO PLACE (continued)

- Raise the section 4 feet.



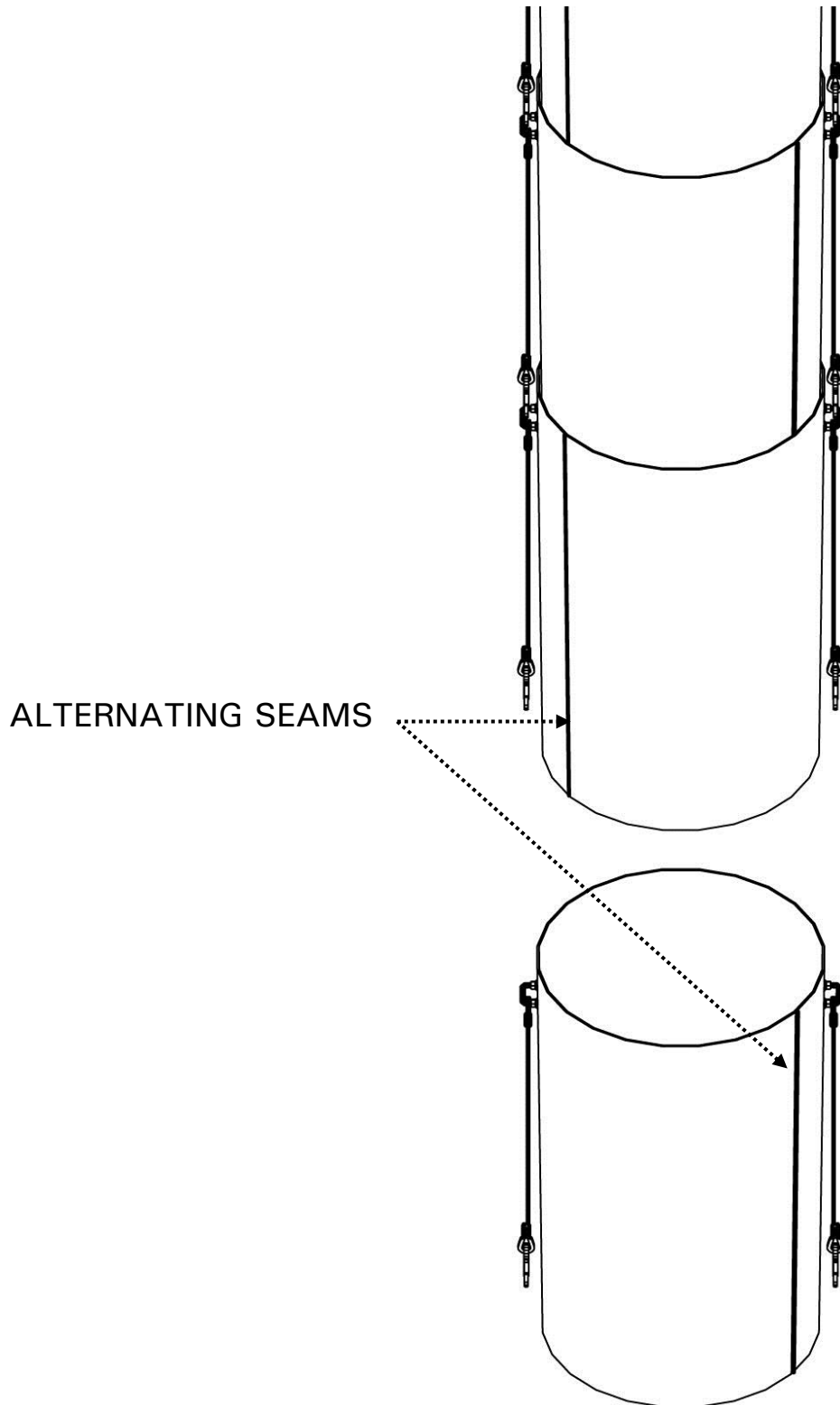
HOIST THE CHUTE SECTIONS INTO PLACE (continued)

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

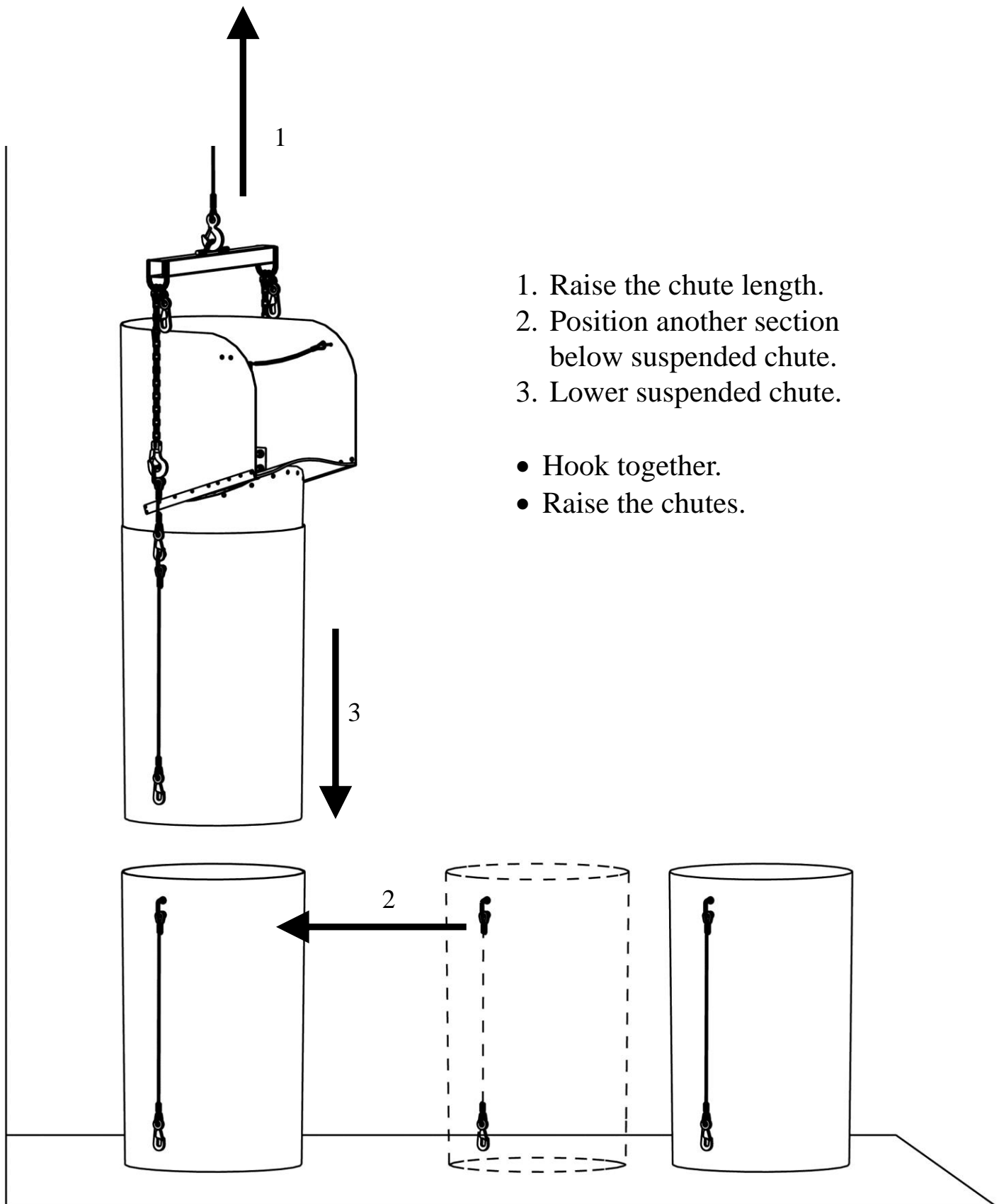


ALTERNATE THE SEAMS

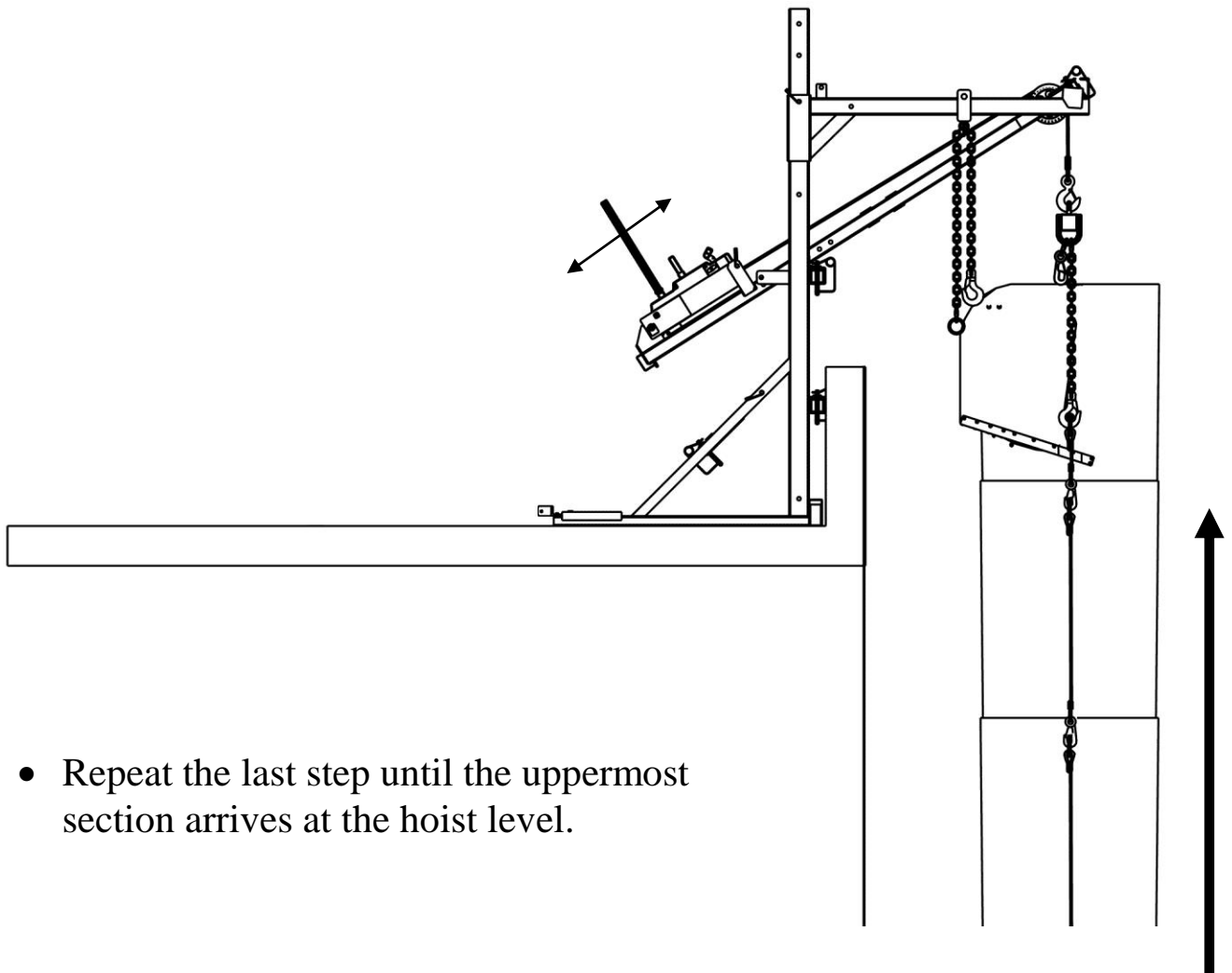
As you add Regular sections, arrange them so that the **plastic weld seams** or **Wraparound® clasp seams** alternate from side to side, as depicted in the sketch below. Alternating the seams from side to side will help the chute hang straight.



HOIST THE CHUTE SECTIONS INTO PLACE (continued)



HOIST THE CHUTE SECTIONS INTO PLACE (continued)



- Repeat the last step until the uppermost section arrives at the hoist level.

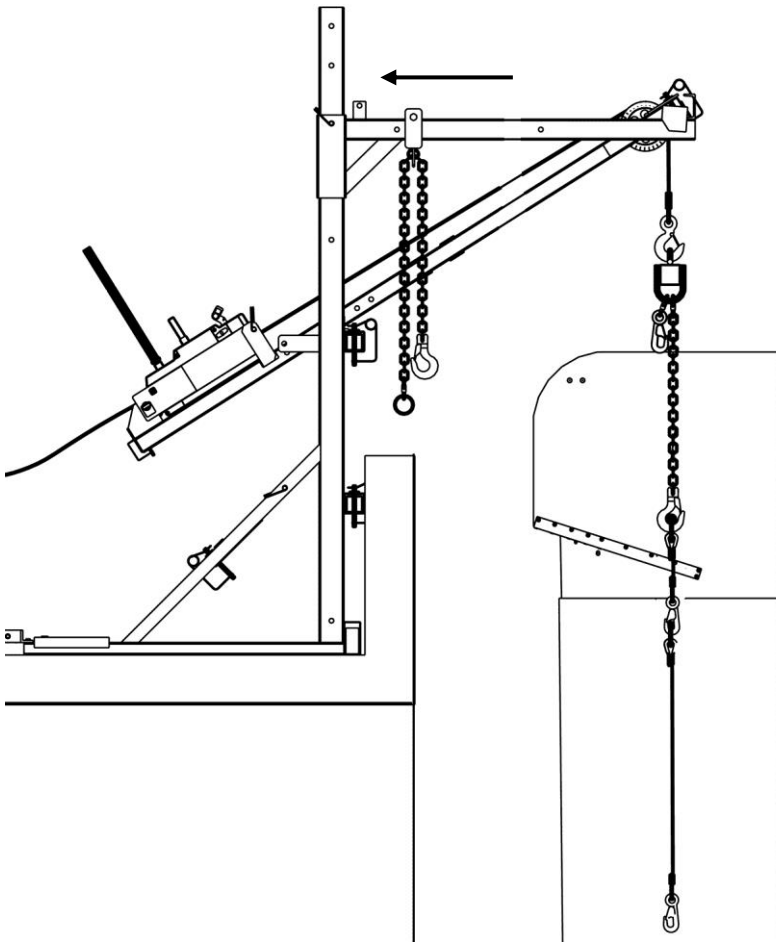


WARNING

- The SC-1500-bd Bolt Down Frame has a Working Load Limit of 1500 lb. (It is designed to safely lift, support, and lower a chute load weighing up to 1500 lb).
- The hoist frame and/or Fishpole may fail if more than 1500 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.

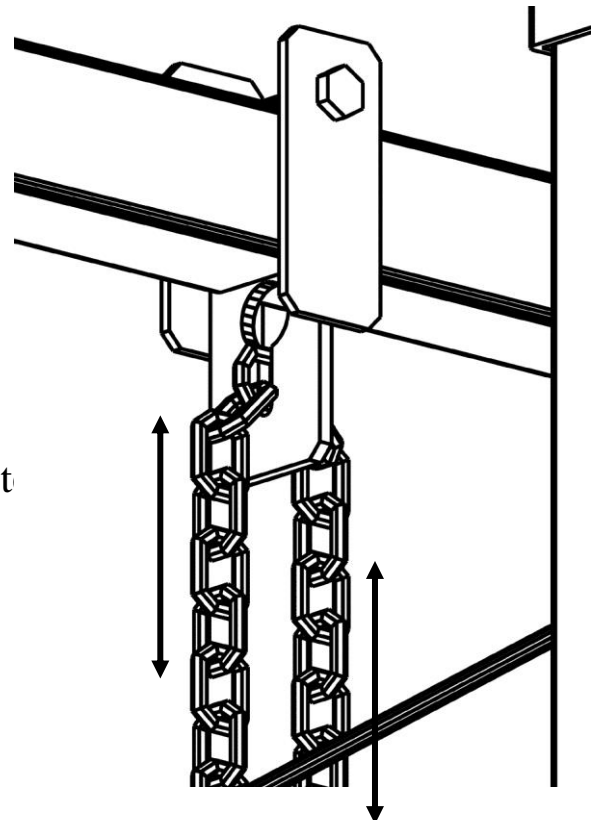
19. TRANSFER THE CHUTE LOAD FROM THE LIFTING DEVICE TO THE BOOM CHAINS

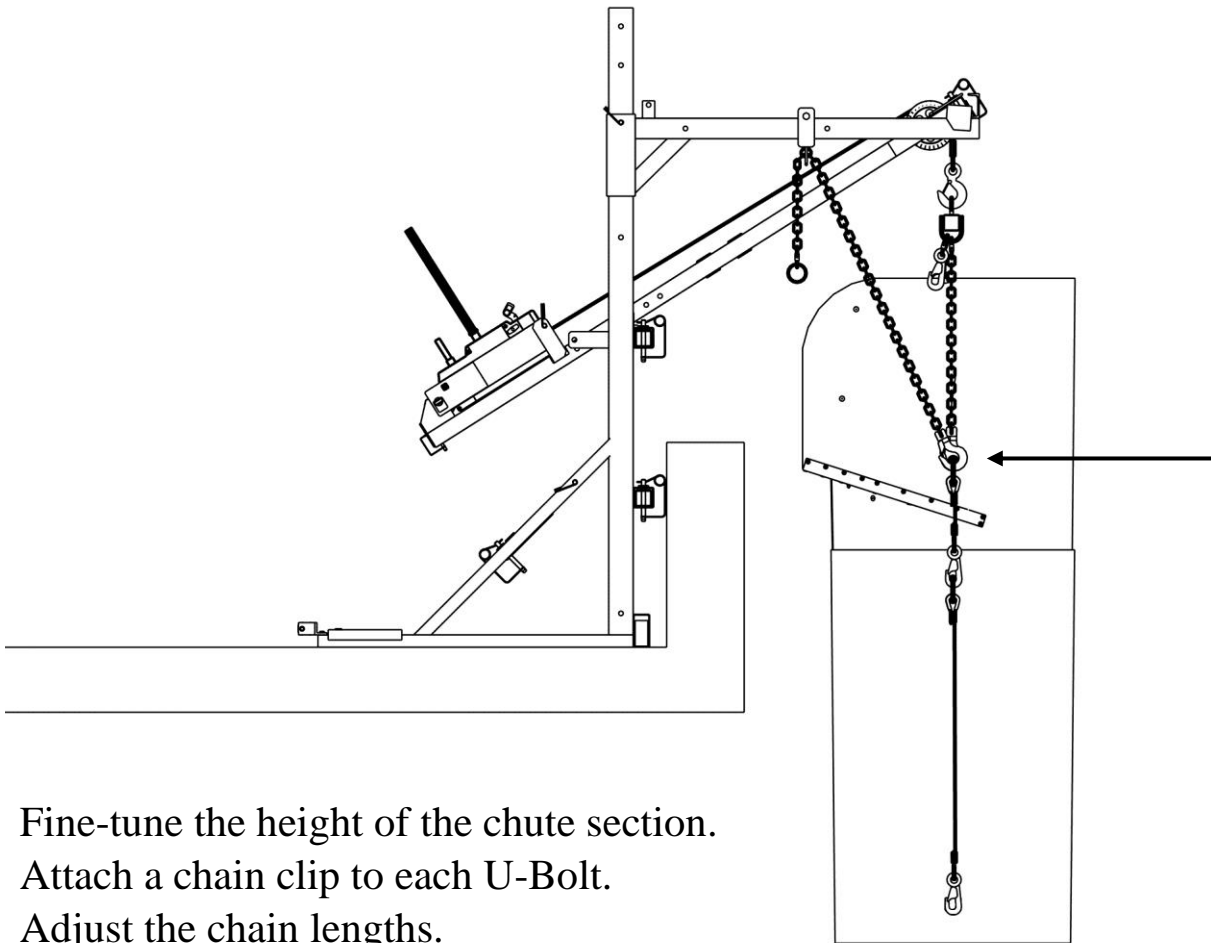
Although the following sketches show the Fishpole in use, other lifting devices, such as cranes, material hoists, or boom lifts, may be appropriate as long as they can safely manage the chute load. All lifting devices require the procedure shown in this section.



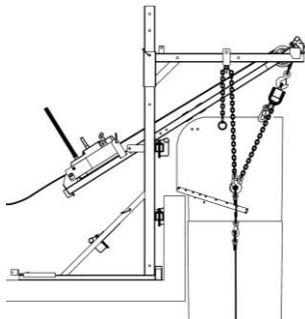
- Pull the hangers & chains towards the Masts.

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

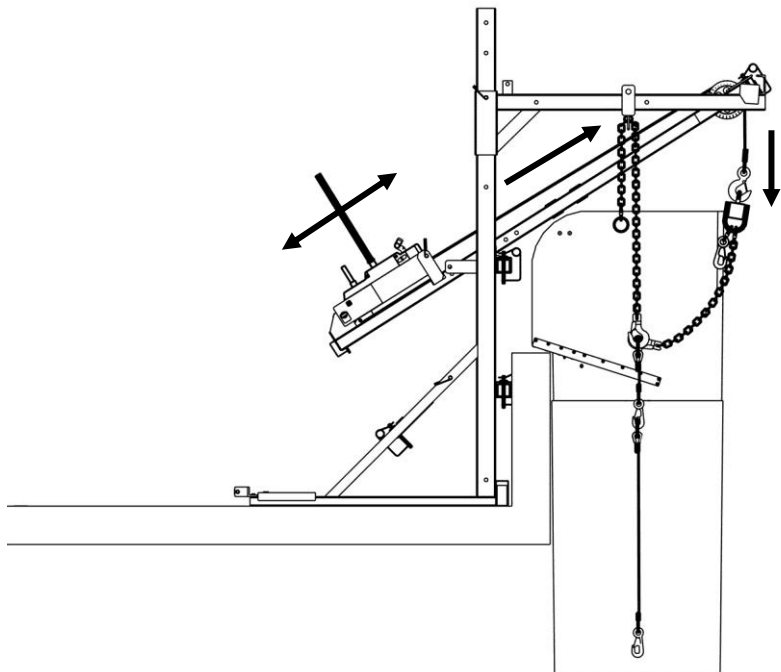




- Fine-tune the height of the chute section.
- Attach a chain clip to each U-Bolt.
- Adjust the chain lengths.
- **The chain lengths must be equal (count the links).**
If the chain lengths are not equal the weight of the chute will be unevenly distributed on the hoist frame.

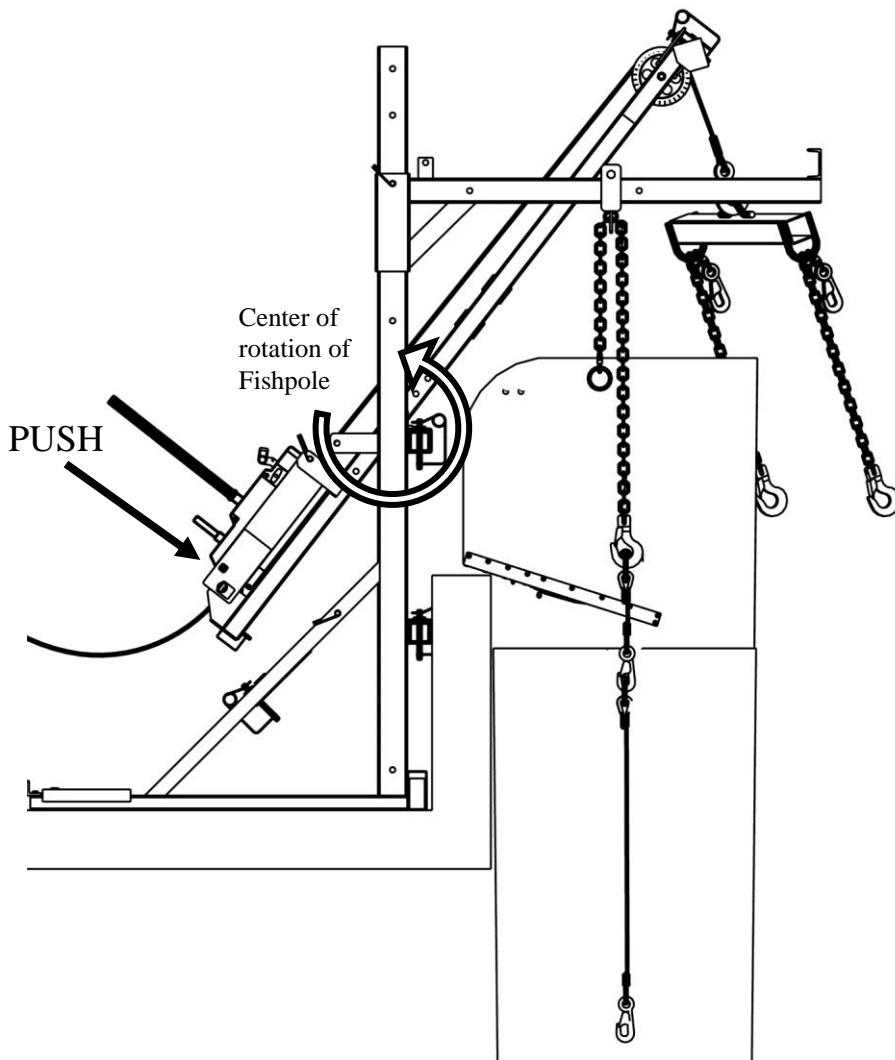


- Slacken the winch cable.
- The weight of the chute will transfer to the boom chains (above & right).
- Unhook the lifting bar from the chute section's U-bolts.



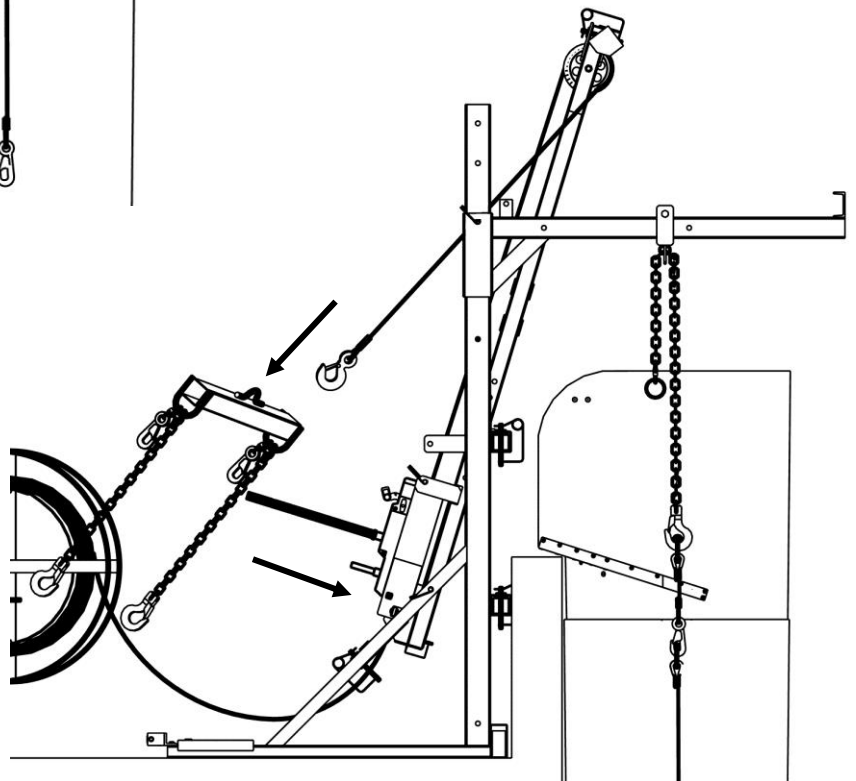
20. REMOVE THE FISHPOLE (IF APPLICABLE)

*If using a crane (or similar device), then please go directly to **Section 21**.*

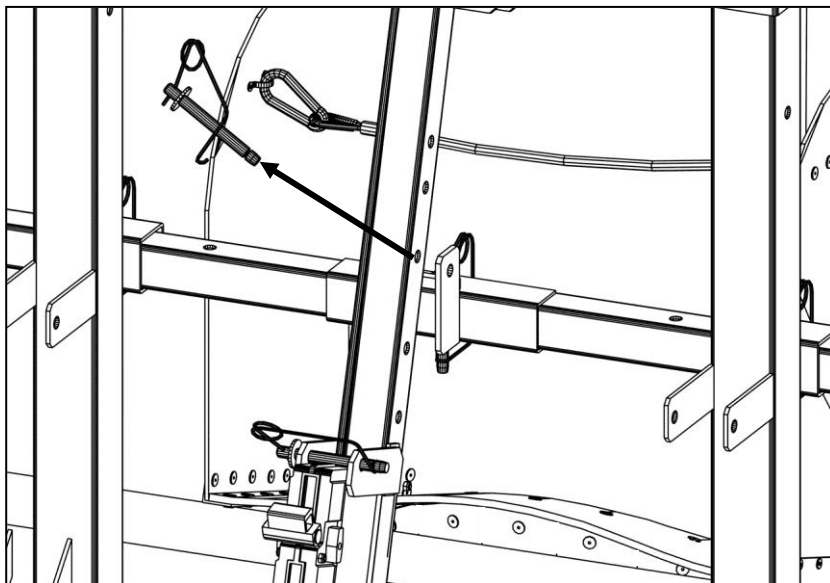


- Push down on the winch box to raise the Fishpole to the vertical position.

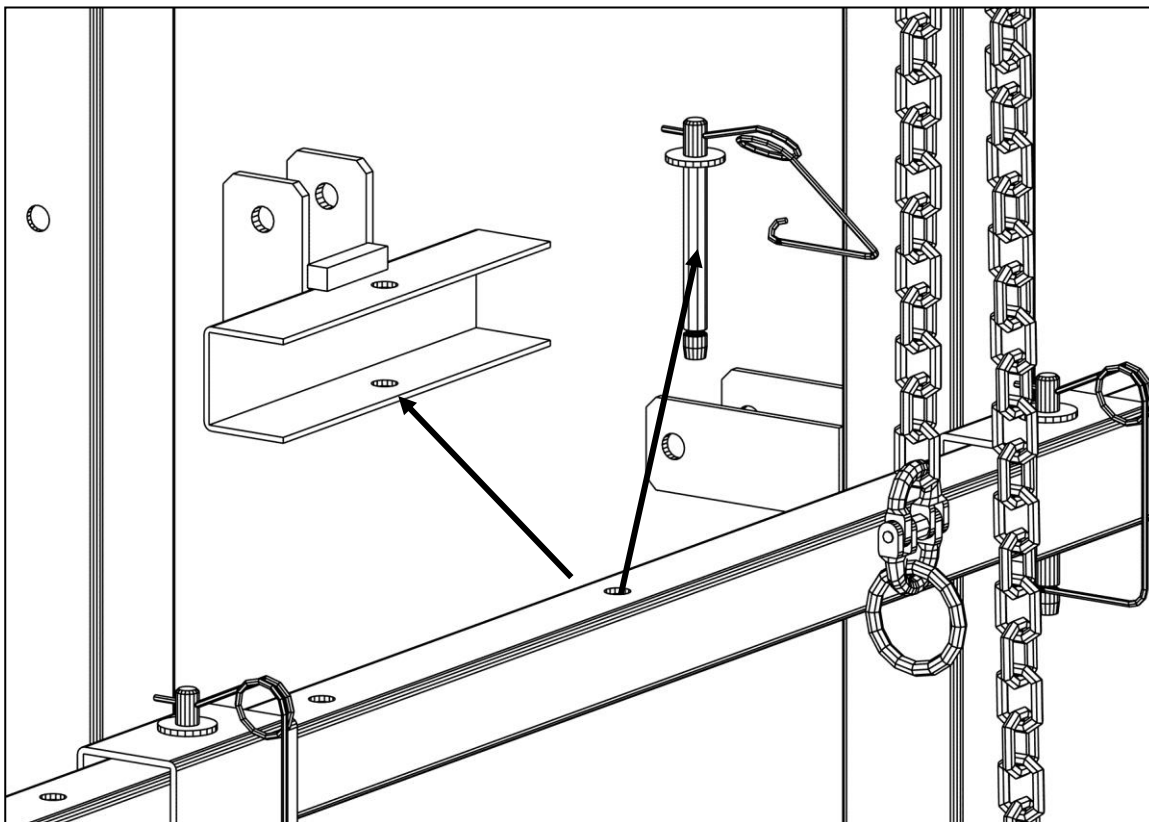
- Remove the Lifting Bar.



- Unpin and remove the Fishpole.



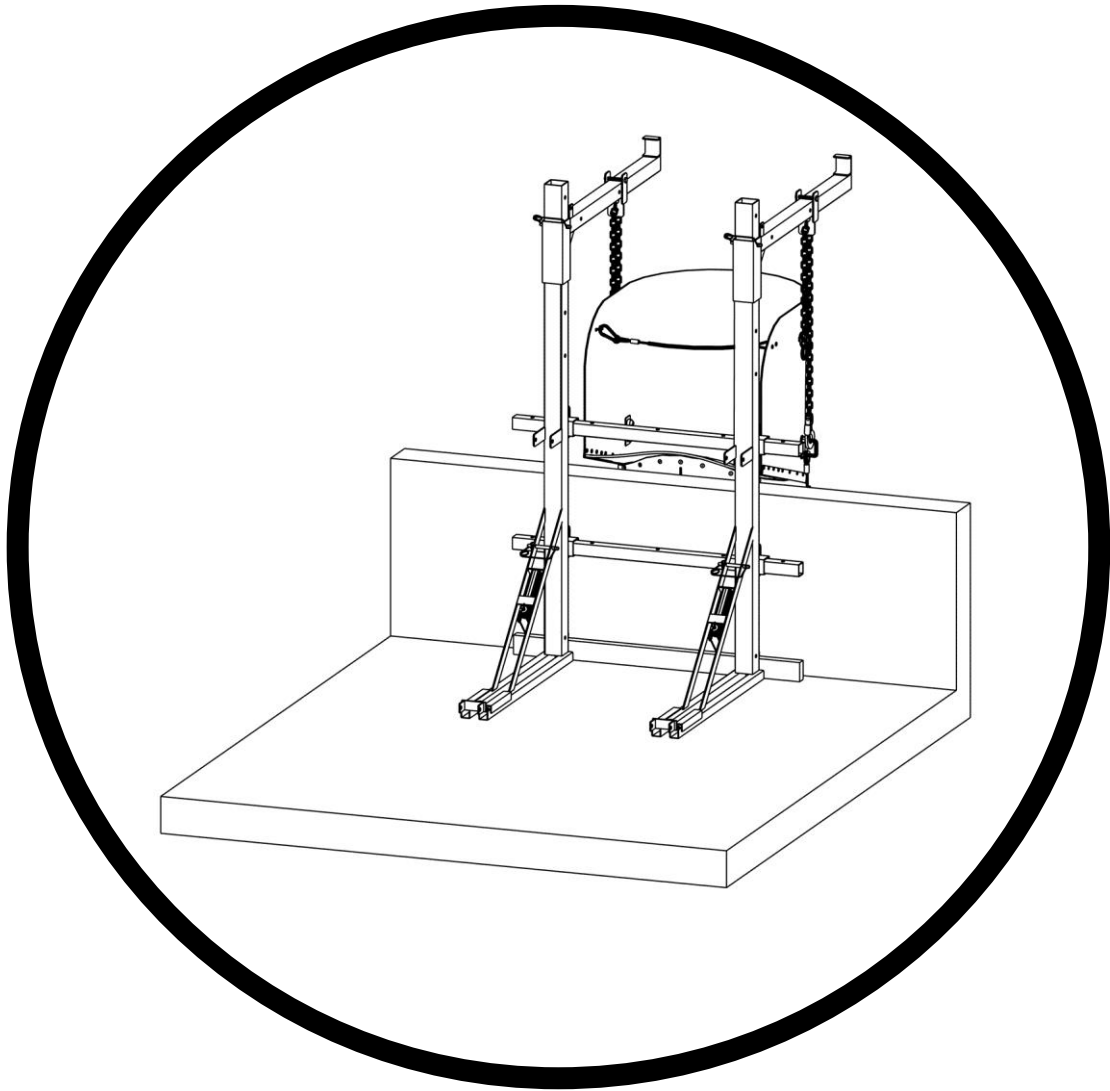
- Unpin and remove the Yoke.



- Store the Fishpole & Yoke in a safe place.

21. CONGRATULATIONS!

The installation of your SC-1500-bd Bolt-Down Frame is complete!



Please see the next few pages for some important instructions.

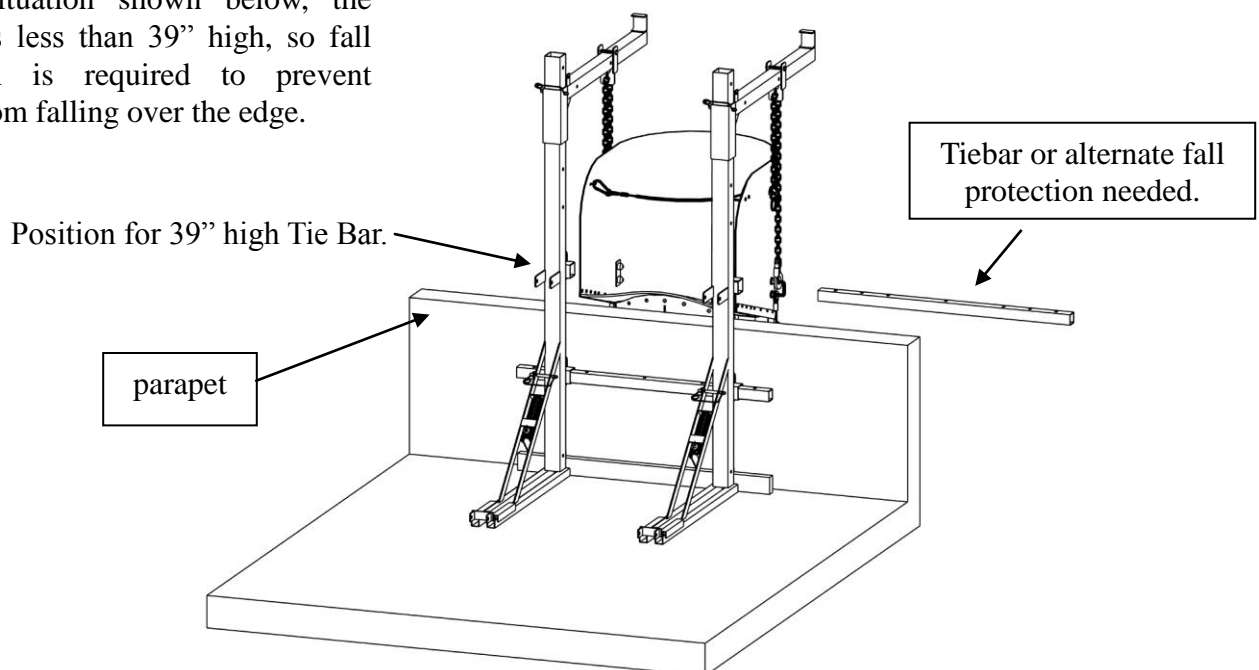
22. FALL PROTECTION & THE GATEKEEPER



WARNING

- The upper Tie Bar is a substantial fall prevention barrier. If the upper Tie Bar is removed, and an alternate fall prevention barrier does not exist, 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 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 and strength criteria.
- The upper Tie Bar may be detached if it is interfering with the debris removal process, as long as personal fall arrest systems are used, or alternate fall prevention barriers are present.
- 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.

In the situation shown below, the parapet is less than 39" high, so fall protection is required to prevent people from falling over the edge.



23. RAMPS

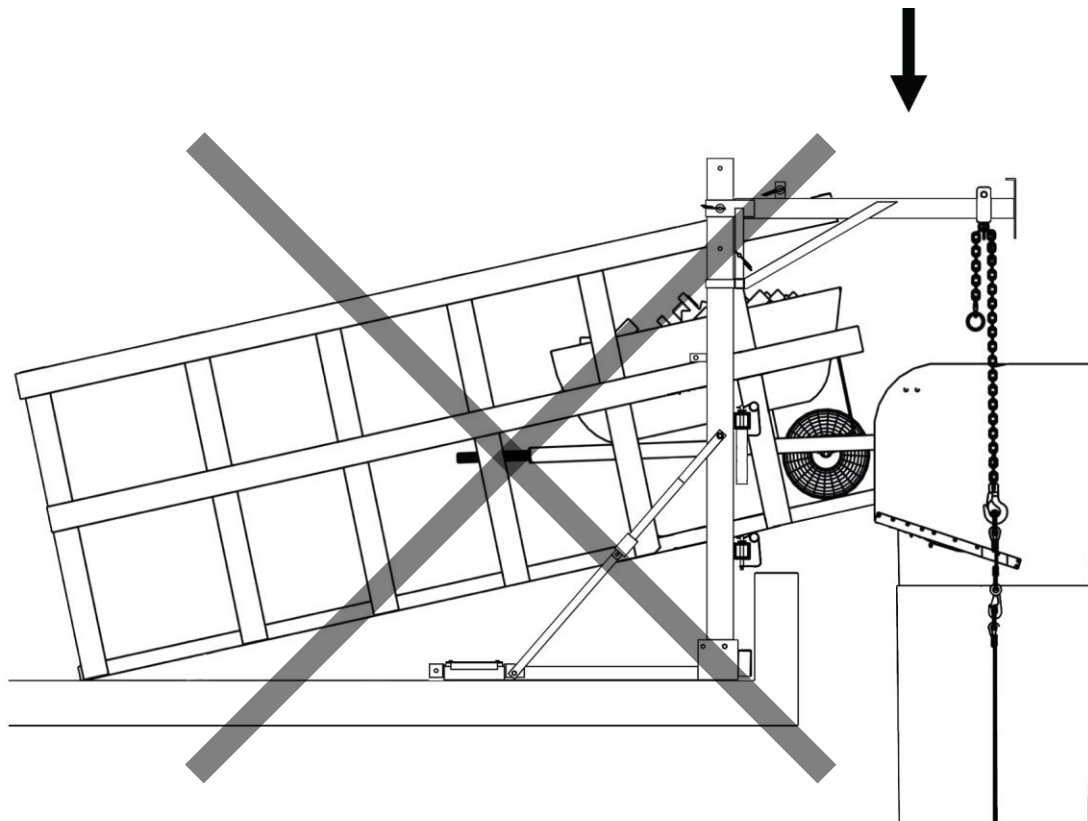


WARNING

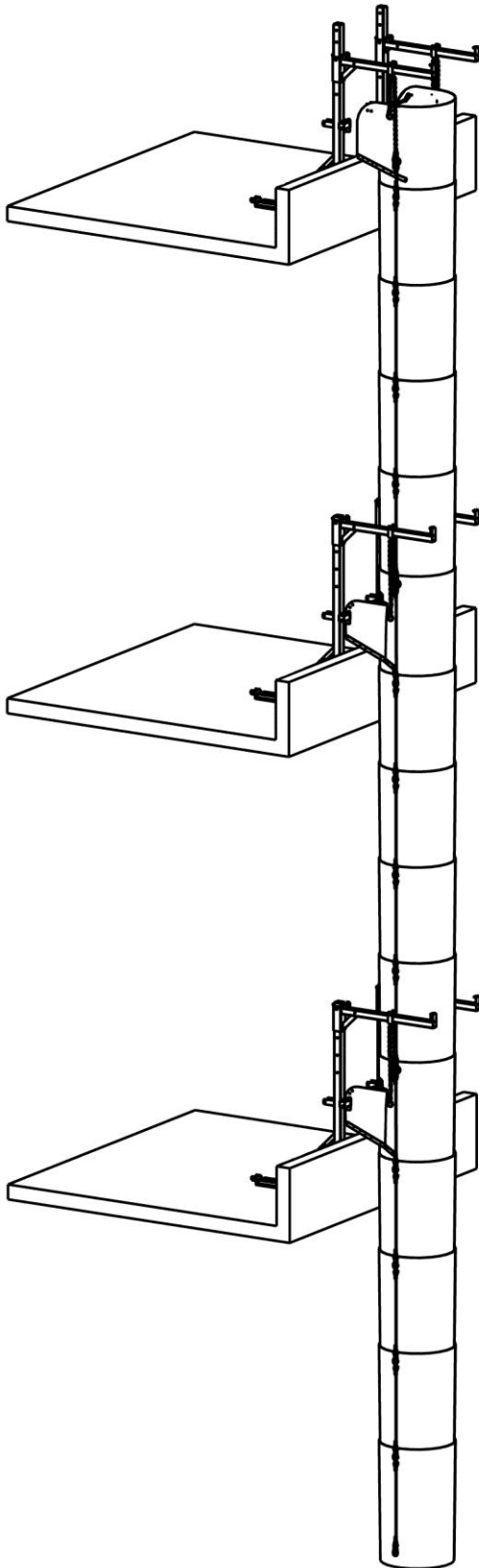
- A ramp resting on the hoist frame could greatly increase the loading on the hoist frame.
- The load increase could cause the hoist frame to fail.
- Do NOT rest ramps on the hoist frame. Do NOT attach ramps to the hoist frame.
- Ramp designs should be approved by a structural engineer.

WRONG:

The wheelbarrow ramp increases the load on the hoist frame.



24. PIGGYBACKING



On jobs where a taller chute is needed, frames can be piggybacked approximately every 80 feet (depending on the chute diameter used) in order to achieve a maximum chute height of 200 ft.

For buildings that are growing skywards, the piggyback arrangement may be the only practical installation method. Piggybacking allows the chute to be lengthened quickly, without disturbing segments that have already been installed. As the building rises, install an additional frame on the new floor. Use either the Fishpole or a crane to lift a length of chute into the air. Chain the chute length to the frame, and mate the bottom of it to the chute already in use below.

If the chute system contains door sections, the piggyback arrangement will also allow the door sections to be better aligned with the window openings.

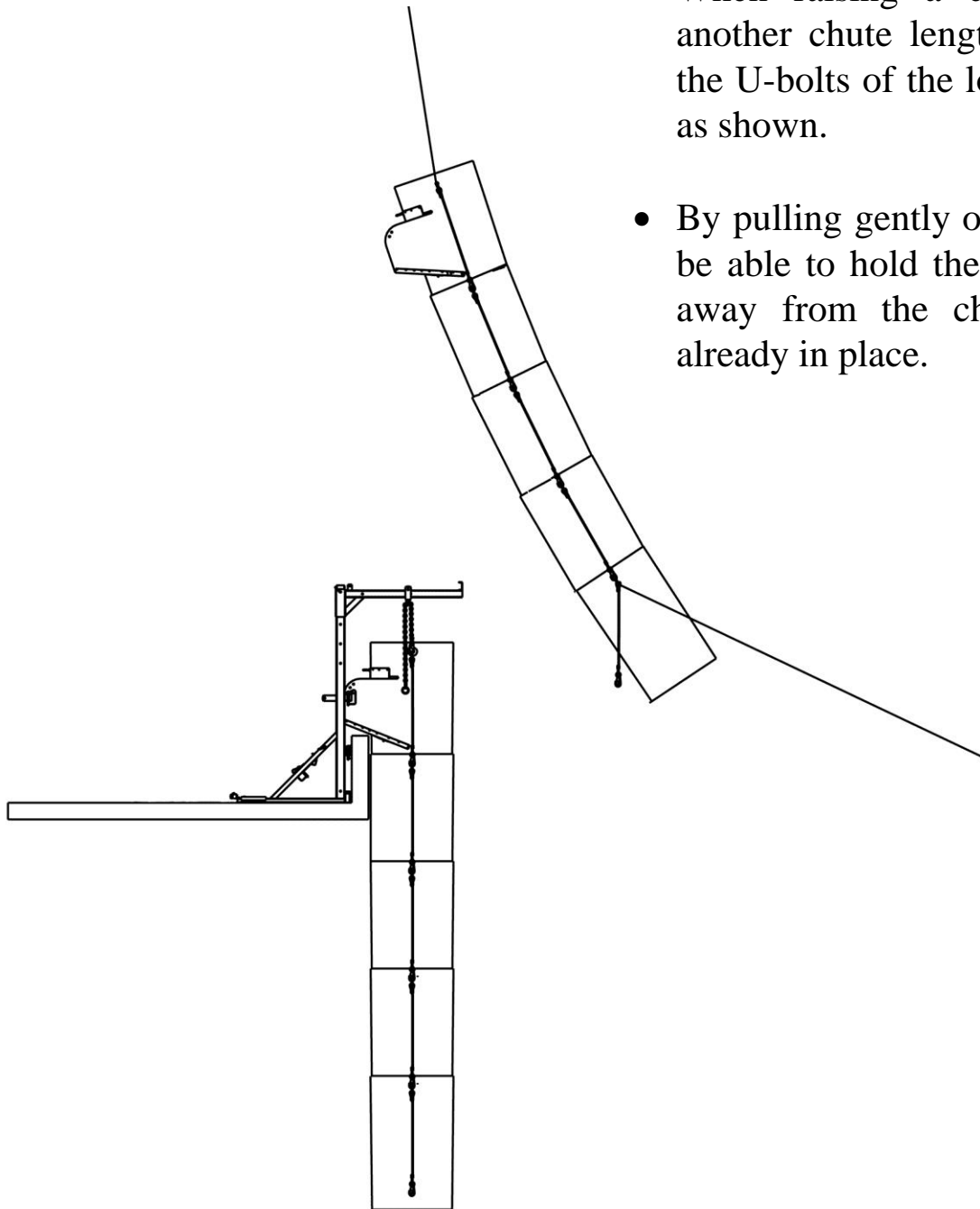


WARNING

- A frame may fail if more than 1500 lb. of load is applied.
- A falling frame and its load can seriously injure or kill.
- When piggybacking, never raise more than **one chute length** at a time. To do so risks placing the weight of many chute lengths on a single frame.
- Use the information in **Sections 7 & 8** to calculate the maximum number of Superchute® sections you can safely lift, suspend, & lower per frame.

25. PIGGYBACKING - SPECIAL CONSIDERATIONS

a) Use A Restraint To Keep Chute Lengths From Kissing



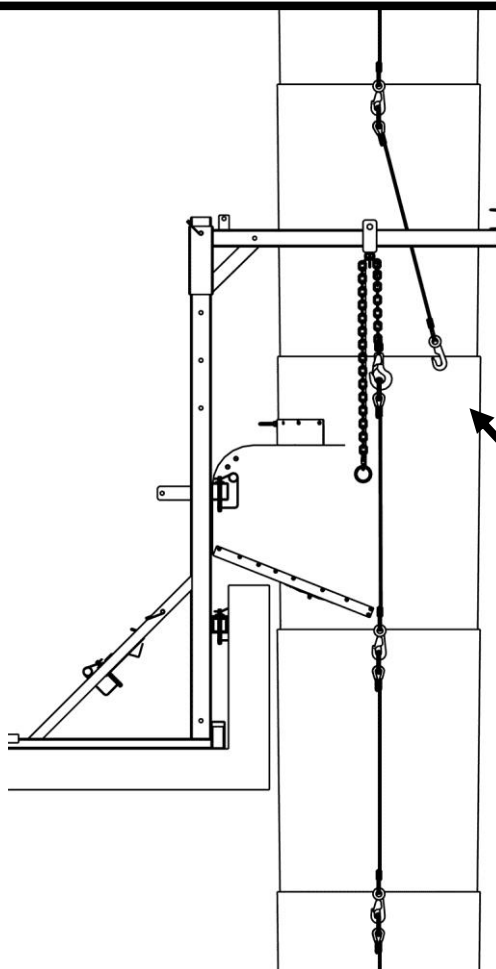
- When raising a chute length above another chute length, attach a rope to the U-bolts of the lowest chute section, as shown.
- By pulling gently on the rope, you will be able to hold the rising chute length away from the chute length that is already in place.

b) Do Not Link Chute Lengths Using The Cable Assemblies



WARNING

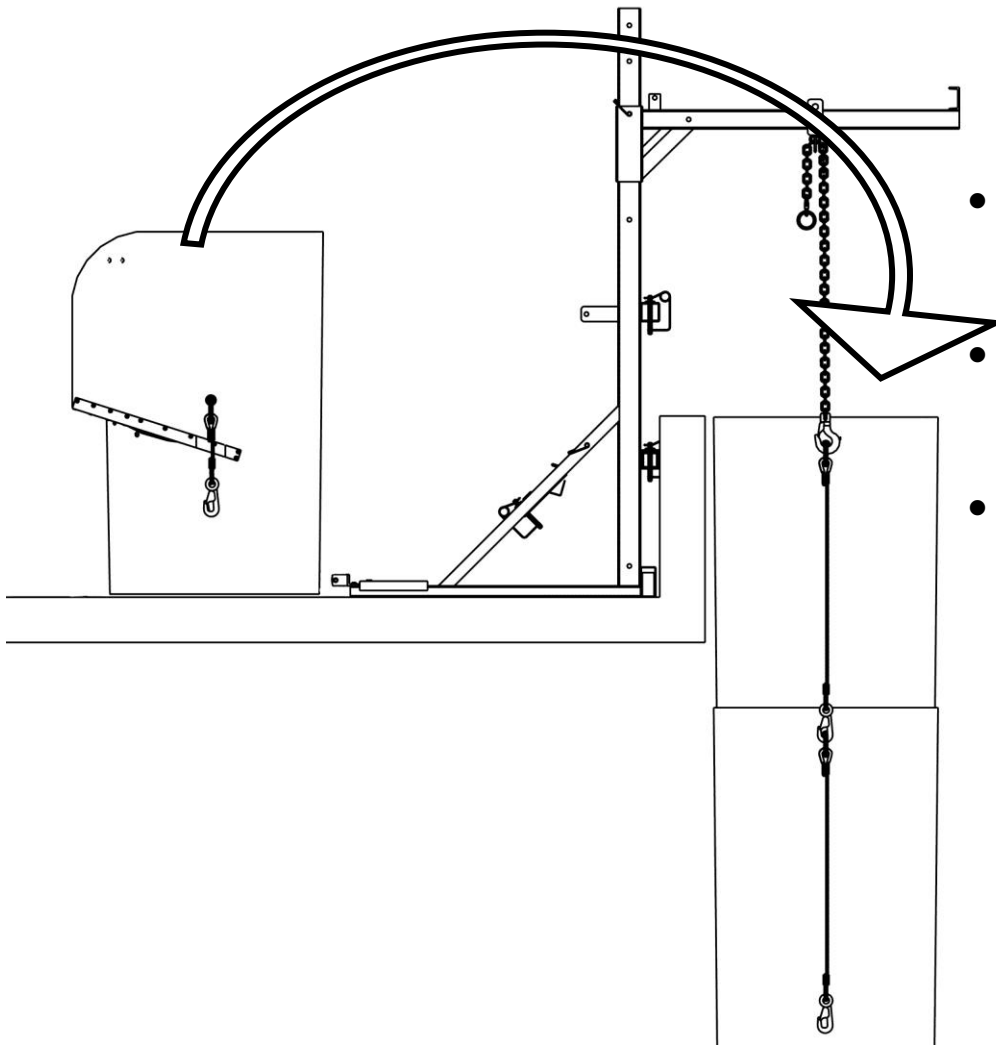
- A single frame could be forced to carry the weight of many chute lengths if the chute lengths are linked together using cable assembly pairs.
- A frame may fail if more than 1500 lb. of load is applied. A falling frame and its load can seriously injure or kill.
- Do NOT use cable assembly pairs to link chute lengths. Where two chute lengths meet, use two 4 foot lengths of the supplied Superchute® Breakaway Container Cord to create a weak linkage, which can fail if necessary.



The cable assembly pair is not used where the chute lengths meet. Use Container Cord (or similar weak cord) to link the chute lengths instead.

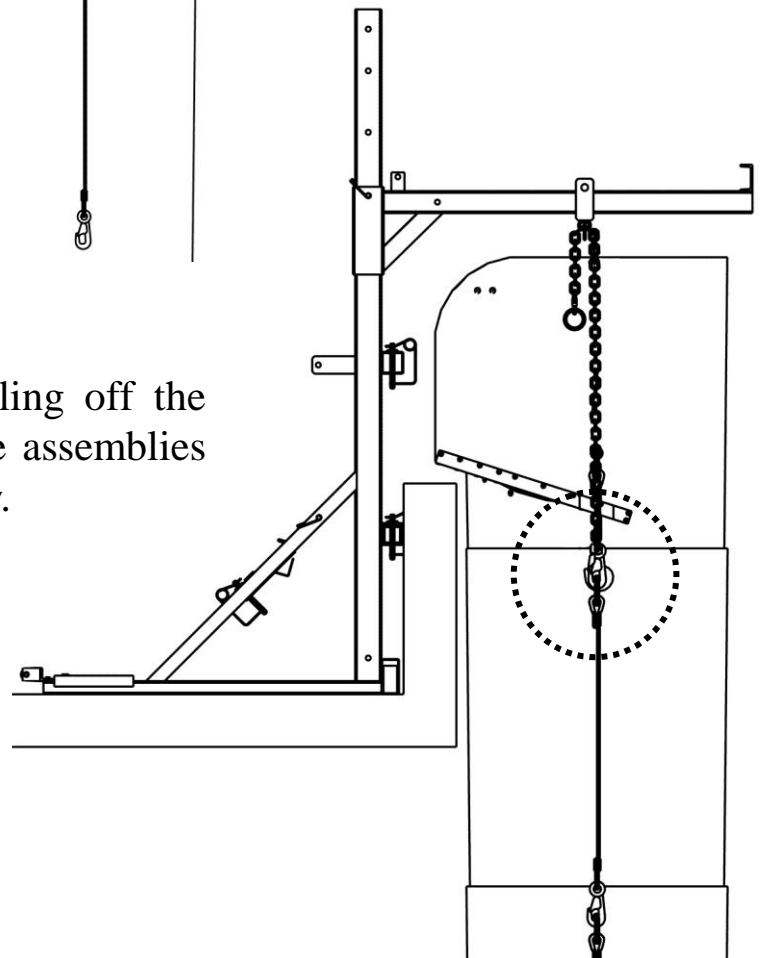
- Container Cord breaks at 500 lb.
- A cable assembly breaks at 10000 lb.

c) Leapfrog The Top Hopper On A Growing Building

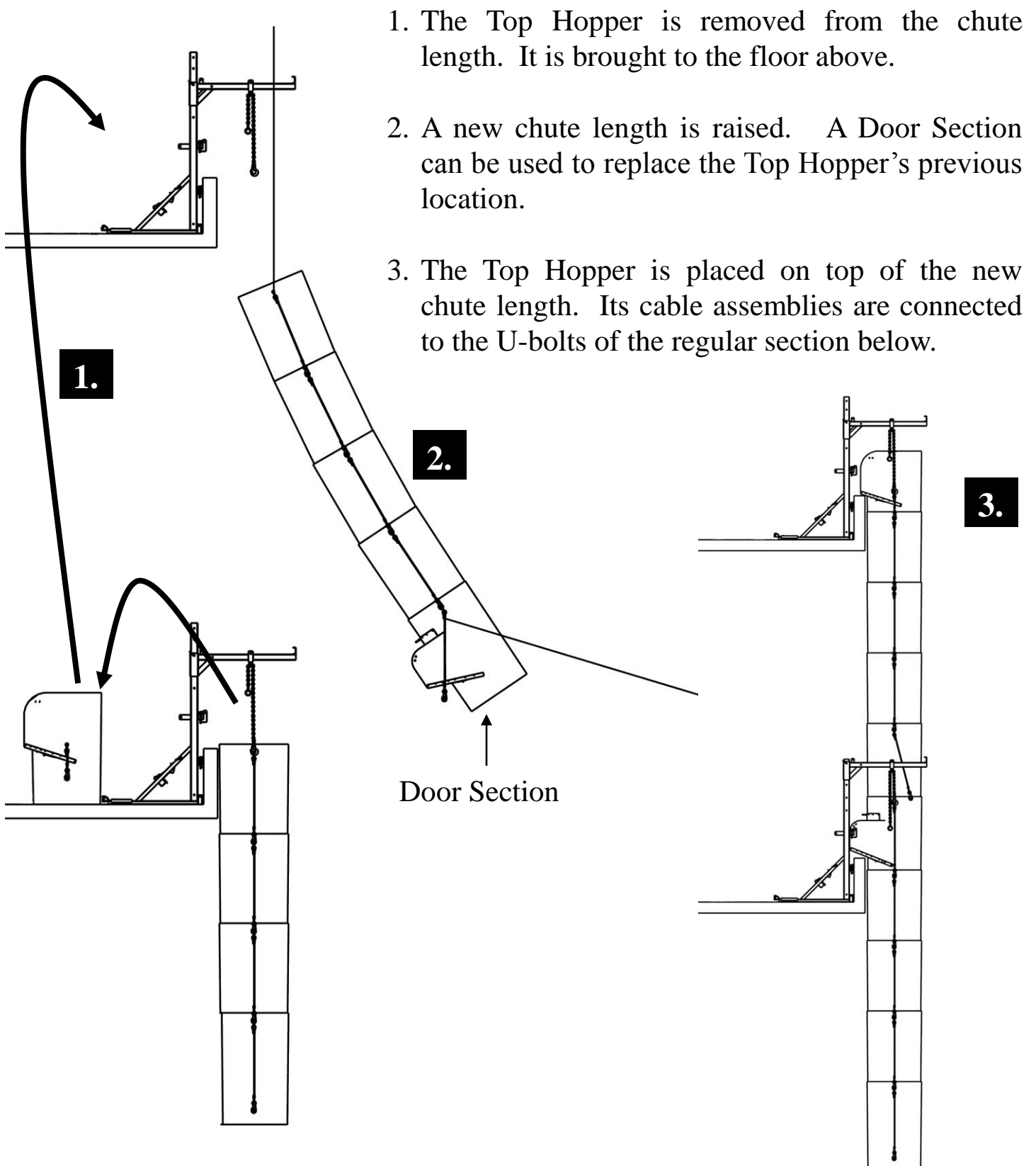


- Tie the boom chains to the topmost regular section.
- Place the Top Hopper on top of the chute length.
- Placing the Top Hopper in this manner will allow it to be easily removed later when the chute system needs to be extended.

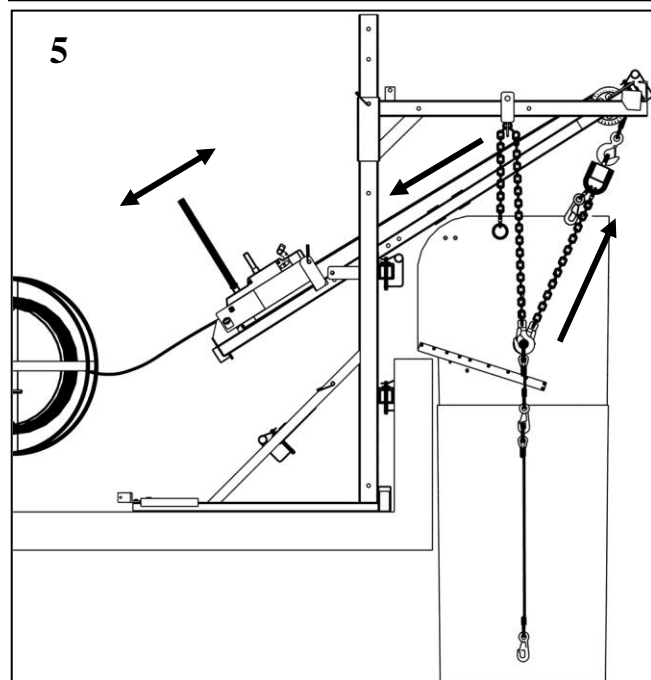
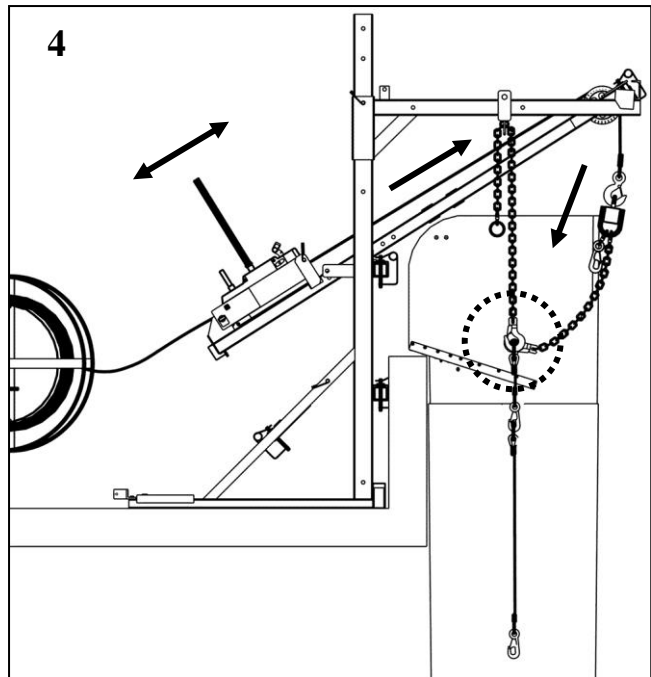
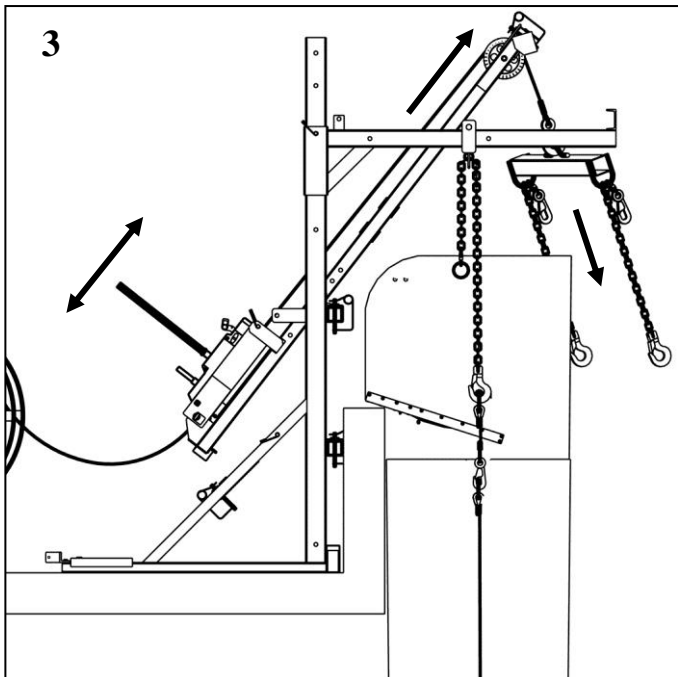
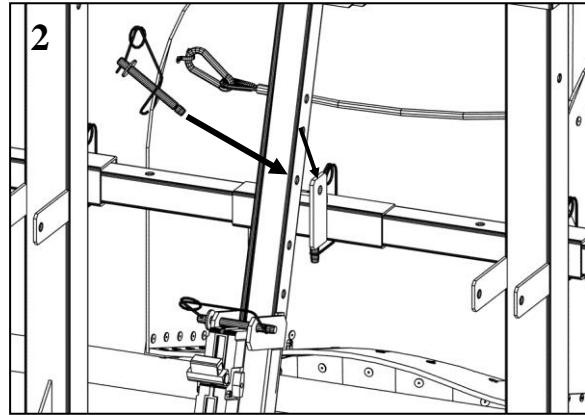
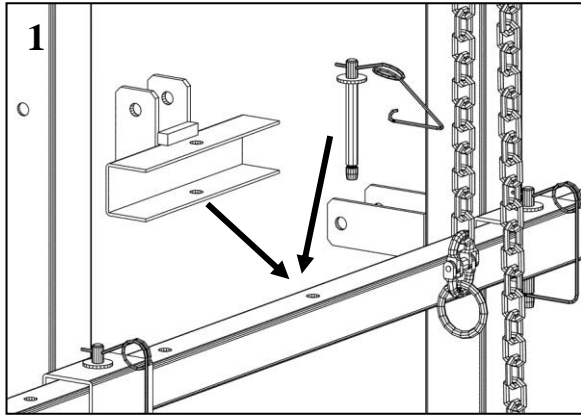
- To prevent the Top Hopper from falling off the chute length, always use its two cable assemblies to secure it to the regular section below.



d) Overview Of The Leapfrog Procedure:



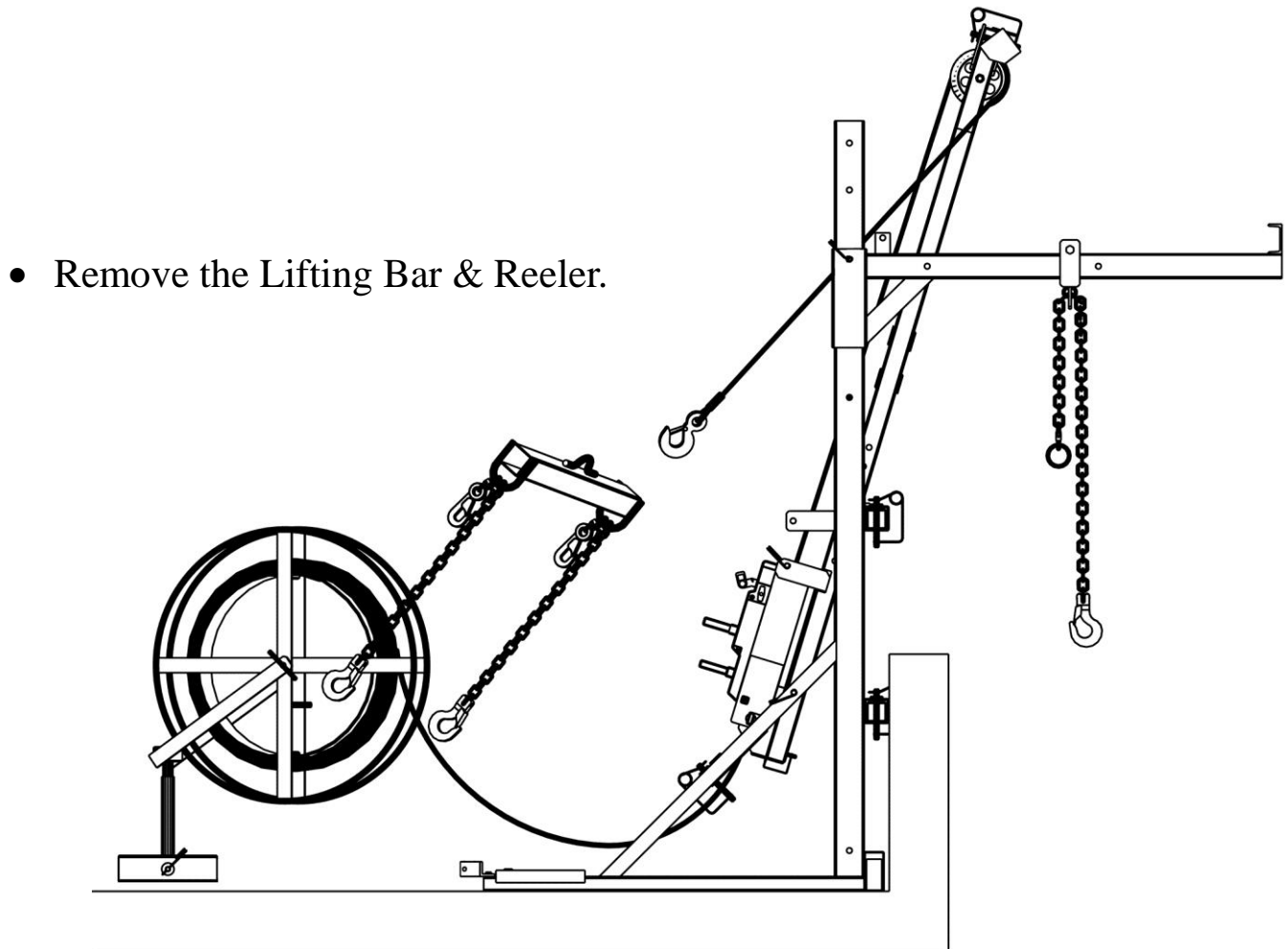
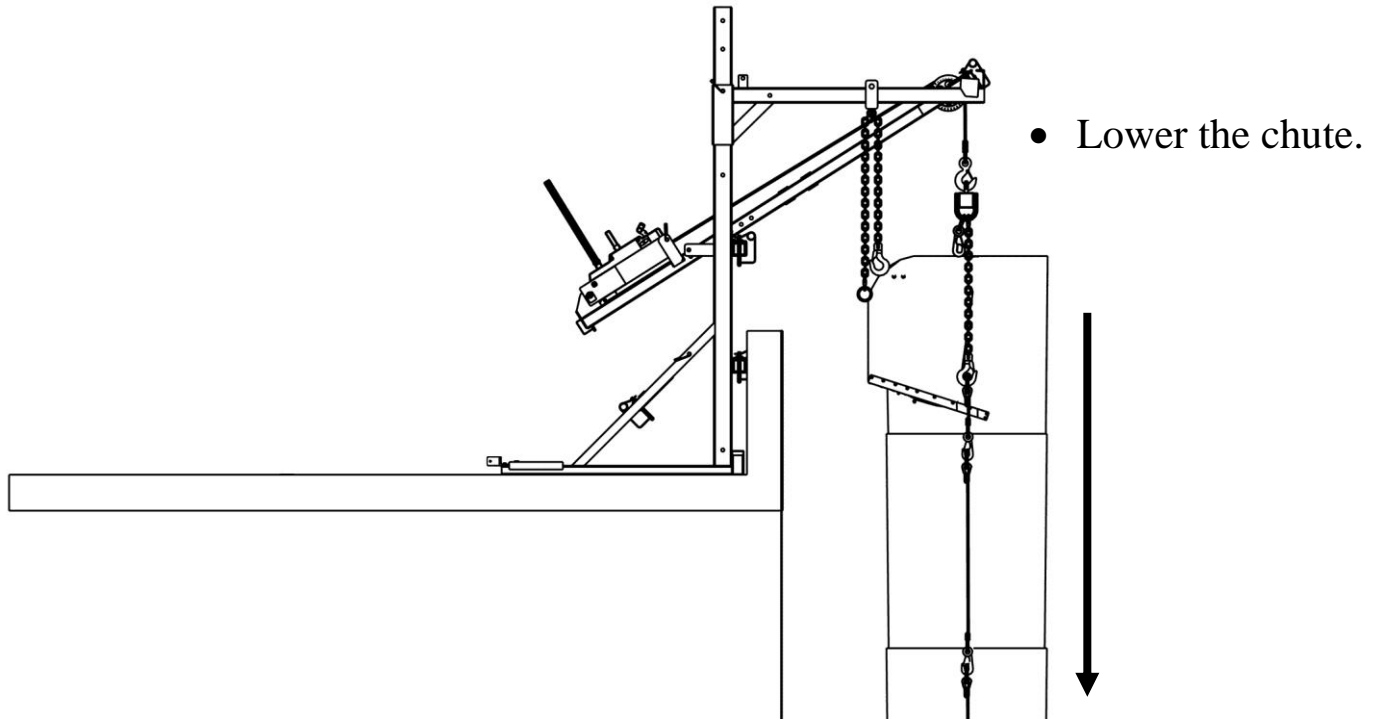
26. DISMANTLING THE HOIST



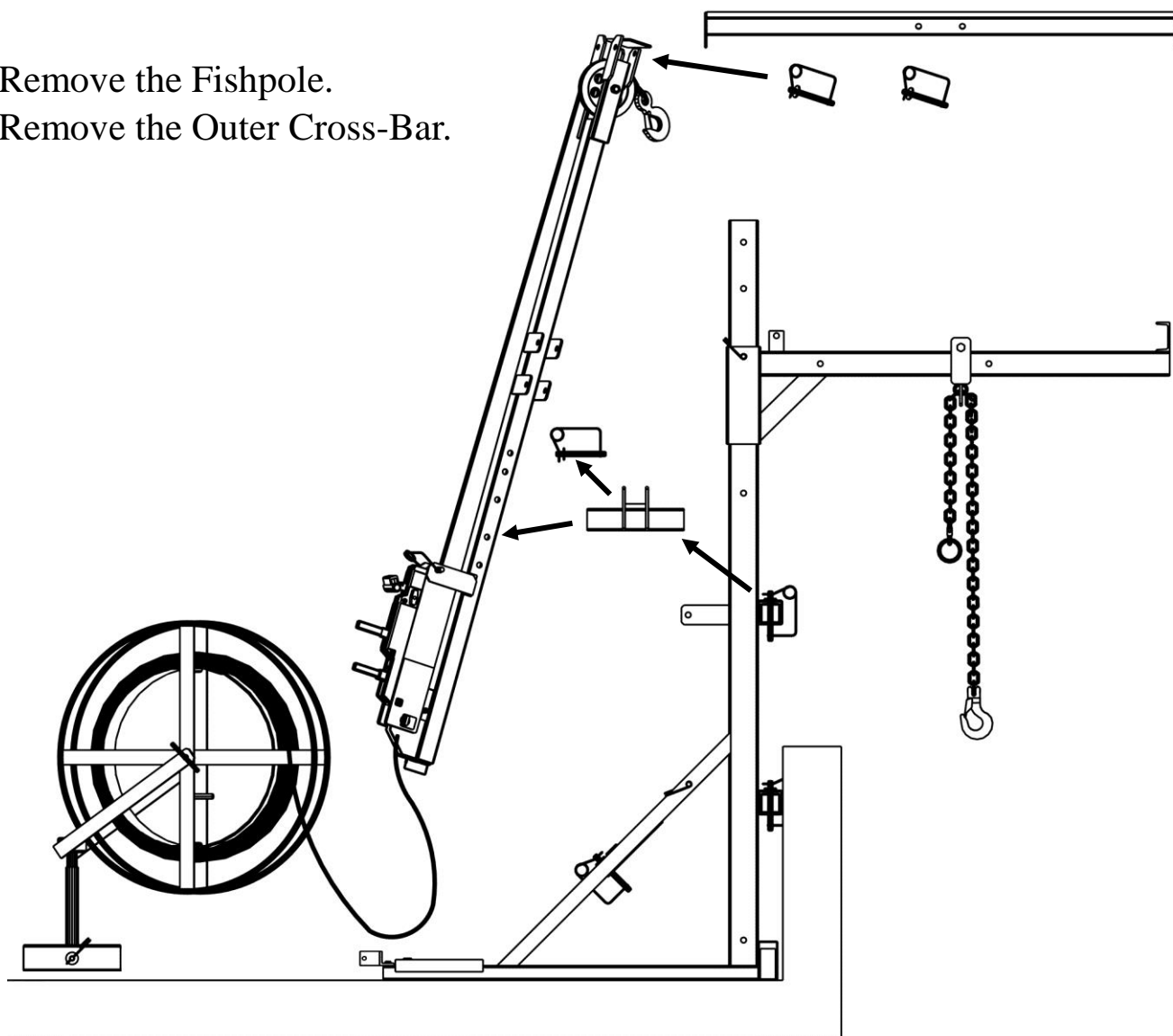
Use the Fishpole or a crane to lower the chute.

On this page we see the Fishpole being used to lower the chute.

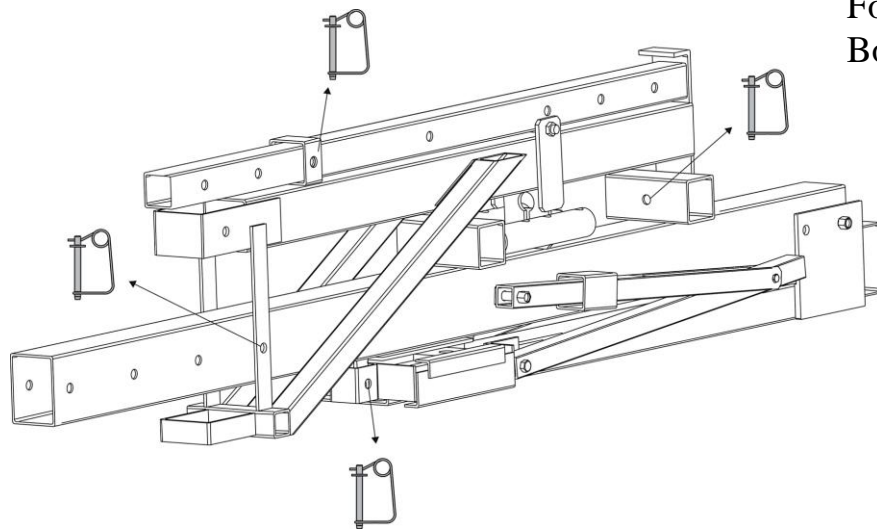
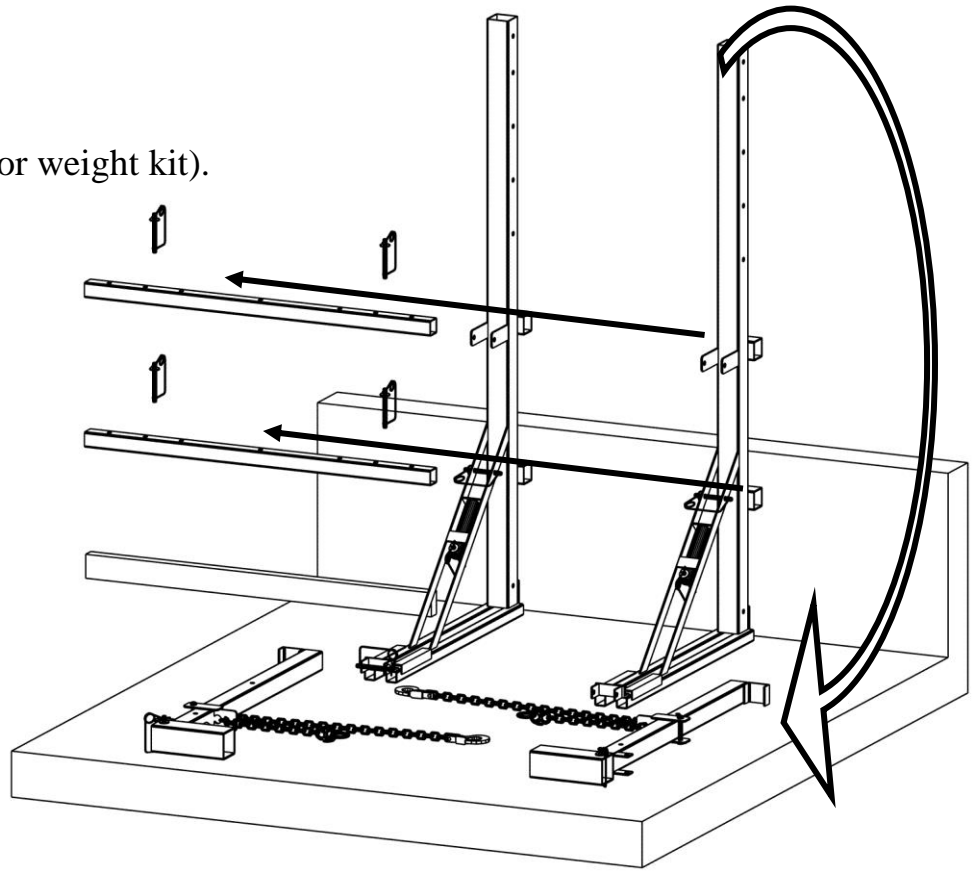
1. Attach Yoke to Frame.
2. Attach Fishpole to Yoke.
3. Attach Winch Cable to Spreader Bar.
4. Attach Spreader Bar to Chute.
5. Tension the cable using the winch.
The weight of the chute will transfer from the Booms to the Fishpole.



- Remove the Fishpole.
- Remove the Outer Cross-Bar.



- Remove the Booms.
- Remove the Tiebars.
- Remove the anchor bolts (or weight kit).



Fold the Masts, and store the Booms and Tiebars as shown.

THE DISMANTLE IS COMPLETE!

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.

<p>Your Name: _____</p> <p>Company: _____</p> <p>Address: _____</p> <p>Phone: _____</p> <p>Fax: _____</p>	<p>E-mail address: _____</p> <p>Website: _____</p>
<p>Number of chute sections owned: _____</p> <p>Diameter(s) of the chute sections: _____</p> <p>Date(s) of purchase: _____</p> <p>Name of the Supplier: _____</p>	
<p>Number of chute hoist(s) owned: _____</p> <p>Models and serial numbers: _____</p> <p>Date(s) of purchase: _____</p> <p>Name of the Supplier: _____</p>	

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

APPENDIX C: PARTS LIST

BOLT-DOWN HOIST MODEL SC-1500-bd

1. Frame Components

Quantity

Factory

Office Initials:

Masts	2		
Booms with chains	2		
Tie bars	2		
½" x 6" diameter locking pins	8		
½" x 6" diameter locking pins - SPARE	4		

2. Hoisting Components

Fishpole + sheave	1		
Fishpole Yoke (labeled Yoke 1500)	1		
Tirfor T-516 winch + Instruction Booklet + 220' cable + reeler	1		
Reeler Arm + Reeler Arm Yoke (labeled SC-1500-bd)	1		
Outer cross bar (labeled SC-1500-bd)	1		
½" x 4" diameter locking pins	6		
Heavy Duty Lifting Bar (WLL 2000 lb.)	1		
Leave in Place Lifting Bar (WLL 2000 lb.)	1		

3. Anchor Bolts

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		

4. Counterweight Kit

Back Balance Beams (from model SC-2000-cb)	2		
Connectors	2		
Counterweights	30		
½" x 6" diameter locking pins	2		
1" x 7¼" diameter locking pins	2		
Padlocks	2		

PHOTOCOPY THIS PAGE AND ATTACH TO CLIENT'S FILE

APPENDIX D: TEST CERTIFICATE

I _____ certify that 3 tests (see 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 1500 lb.
3. The Boom Chains were proof tested to 1500 lb.

Serial Number(s):

signed: production crew member

date

PHOTOCOPY THIS PAGE AND ATTACH TO CLIENT'S FILE

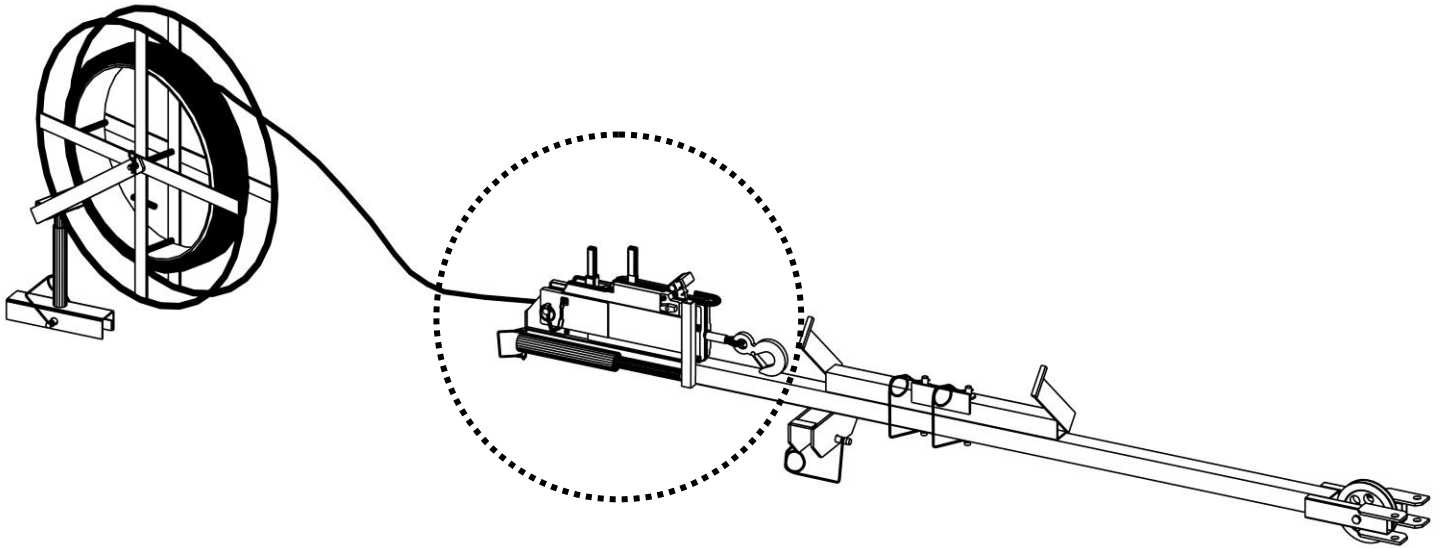
APPENDIX E: GLOSSARY

- 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 Length:** A short series of linked chute sections whose total weight is less than the Hoist Frame's load capacity. For example, workers using the SC-1500-bd must build chute lengths weighing less than 1500 lb.
- 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.

The Working Load Limit of the SC-1500-bd is 1500 lb.

APPENDIX F: WINCH INFORMATION (IF APPLICABLE)

If a Fishpole is part of your SC-1500-bd Bolt-Down Frame, 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.