

SUPERCHUTE[®] SNOW CHUTE SYSTEM

SC-150-BD SUPPORT FRAME & CANVAS CHUTE INSTALLATION MANUAL

1st Edition, Published February 4, 2011

Contains information and instructions on:

- Planning
- Installation
- Use
- Maintenance

When used correctly, meets OSHA 1926.852

- If at any time you are unsure of how to proceed, call Superchute Ltd. toll free:

1-800-363-2488

It is the responsibility of companies that sell, rent or use the Superchute[®] product to freely supply this manual to the following persons:

- Planners and supervisors of the chute system
- Installers of the chute system
- Users of the chute system

WARNING

- The installation and use of a Superchute Debris Chute System involves work at heights, suspended loads of considerable weight, and falling debris.
- Serious injury or death can result from improper installation, use, or maintenance of the Superchute product.
- This manual must be read and understood by:
 - Planners and supervisors of the chute system
 - Installers of the chute system
 - Users of the chute system.

If one or more Superchute Chute Hoists will be used in the chute system, the above mentioned persons must also read the applicable Chute Hoist Manual.

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

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- Tel: 514-365-6121
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This manual refers to the following products, which are protected by international patent laws:

Door Sections	Wraparound® Regular Sections	Chute Hoists (Bolt-Downs, Roofers, Hoisters)
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

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How to Use This Manual

This manual contains important information about the Superchute Snow Chute System. It should not, however, 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 Superchute Snow Chute System should obtain the services of trained professionals.

Use the Most Recent Edition

Each new edition of the Chute 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 date of the edition available for download on the Superchute web site: 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 old Chute Manuals.

Finding Information Quickly

This manual contains four key tools to help you find information quickly:

- the Table of Contents on page 1.
- the List of Figures on page 3.
- the contents page at the beginning of each chapter.
- the Index at the back of the manual.

Getting Copies of This Manual

Print copies of the Chute Manual, in booklet form, are available free of charge from Superchute Ltd. Copies can be sent to you by mail or UPS Express (United Parcel Service - next day delivery option).

You can also download, view, and print the Chute Manual from the Superchute web site www.superchute.com.

If a copy of the Chute Manual is not with the chute system at the jobsite, installation and use of the chute system should be postponed until a copy is obtained.

Who Should Read This Manual

All persons involved in any aspect of planning, supervising, installing and using the chute system should read and understand the contents of this manual.

Specifically, planners, supervisors, installers and users should read the following chapters in their entirety:

Chapter 1. Chute System Overview	Describes the product's intended use, chute components, warning and information labels, frame parts, frame dimension.
Chapter 2. Installation of the Frame and Chute	Provides instructions on frame & chute installation.
Chapter 3. Using the Chute System	Provides instructions on container use, hopper use, controlling access to the chute, designating a safety monitor, preventing and resolving blockages, and severe weather precautions.
Chapter 4. Chute System Maintenance	Provides instructions on using genuine Superchute parts.

This manual should be made readily available to all jobsite personnel at all times.


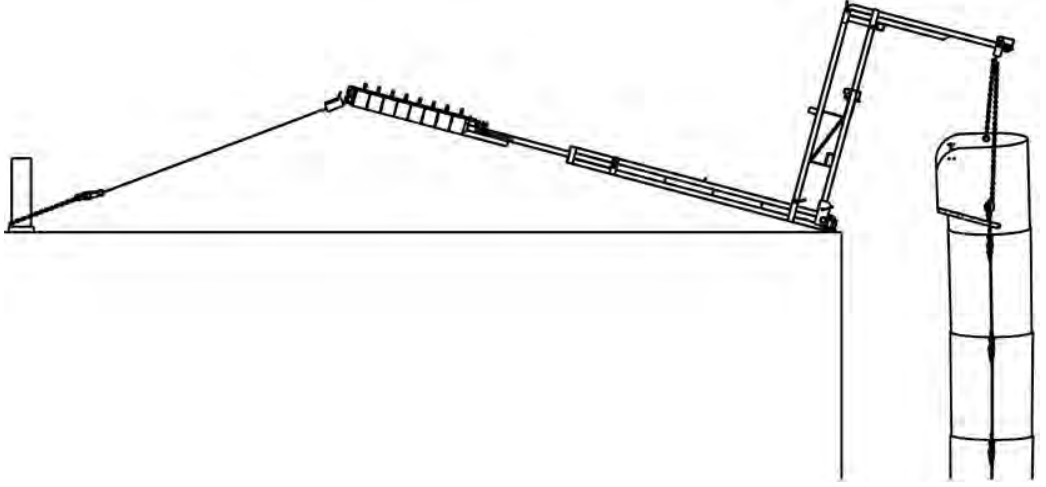
Warning Format

Throughout this manual you will see warnings used to alert planners, supervisors, installers and users to potential hazards inherent in the use of the Superchute Snow Chute System.

Warnings are displayed in a box to help set them apart from other information. The box consists of two or three panels with the following information:

- The signal word **WARNING** is shown in the top panel alongside the safety alert symbol.
- The hazard, consequence, and instruction statements are found in the second panel.
- If the warning contains three panels, the third panel contains an image that identifies the hazard or indicates how to avoid the hazard.

Here is an example of a Superchute warning with three panels:

Signal word with alert symbol	 WARNING
Hazard	<ul style="list-style-type: none"> • If the lifting device is overloaded it could fail and the chute system could collapse. • A falling chute system can seriously injure or kill. • Do not overload the lifting device. Use the forms and weight tables in Chapter 2 to calculate the weight of your chute.
Consequence	
Instruction	
Image (optional)	

Chapter 1.

Chute System Overview

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Intended Use

The Superchute Snow Chute System is designed for the manual removal of snow from open air stadiums.

The system is for temporary use. Do not use the Superchute Snow Chute System as a permanent garbage chute, recycling chute, laundry chute, nor for any other permanent application, since it is not designed to meet fire code regulations for permanent chutes.

Do not use the chute as a human slide, since serious injury or death could result.

Training Available

A one-day training course is offered at the Superchute factory. The course can include a factory visit, and examines the correct planning, preparation, installation, use, and maintenance of Superchute chutes and support frames. The course outline is modeled on the contents of this manual.

The Superchute factory is only a ten minute drive from Montreal-Trudeau International Airport (YUL) and has a large showroom and demonstration area for training purposes.

The training course is free of charge for small groups.

Call Superchute Ltd. at 1-800-363-2488 for details.

Use of Non-Superchute Components

The chute system components manufactured by Superchute Ltd. are designed to work together as a system. Do not mix Superchute components with those of another brand. For example, do not mix Superchute chute sections with another manufacturer's chute sections.

Chute Components

There are 4 components to this snow chute system:

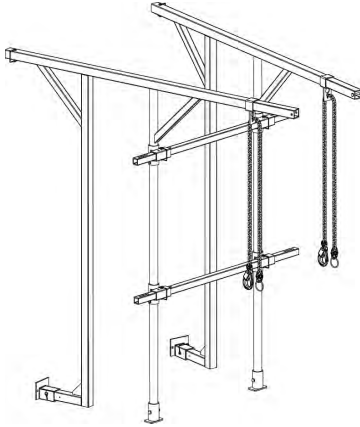


Fig. 1 Support Frame

150 lb Capacity Support Frame

- Aluminum frame
- Steel mounting brackets
- 6' long suspension chains

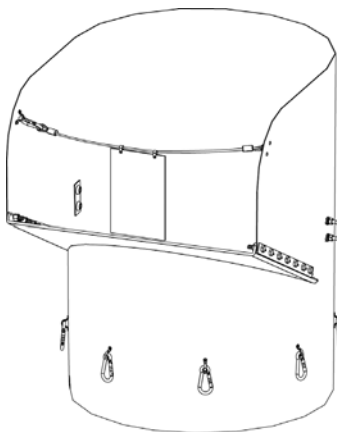


Fig. 2 Top Hopper Section.

Top Hopper Section

- Uppermost section in the chute
- Allows for the introduction of snow
- Scoop shape helps channel snow into the chute
- Must be used at the top of the chute

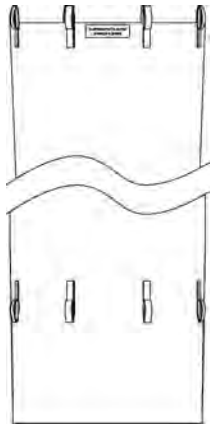


Fig. 3 Canvas Chute

Canvas Chute

- 30" diameter x 20' tall nylon sock

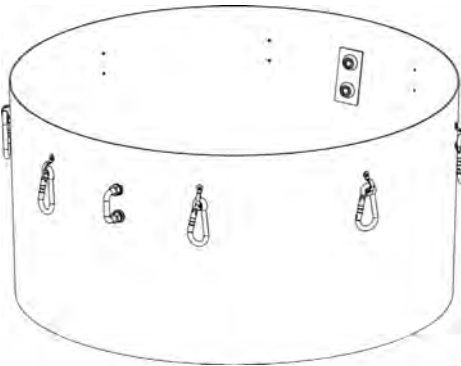


Fig. 4 Bottom Collar

Bottom Collar

- Rigid plastic discharge for the chute end



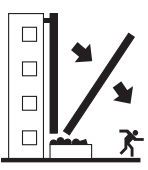

Chute Section Labeling

Every Top Hopper section is stamped with three labels:

- A. General warning label
- B. Fire warning label
- C. Chute section information label.

These labels are reproduced below and on the following pages.

A. General Warning Label

 GENERAL WARNING	
	<ul style="list-style-type: none"> • The installation and use of a Superchute Debris Chute System involves many dangers, for example: <ul style="list-style-type: none"> - workers could fall off the building - a chute blockage could cause the chute system to collapse - persons could be struck by falling debris
	<ul style="list-style-type: none"> • Failure to follow Superchute's instructions may result in serious injury or death. • Planners, Supervisors, Installers, and Users must read the most recent versions of the following manuals before rigging or using a chute system: <ol style="list-style-type: none"> 1. Chute Manual 2. Chute Hoist Manual, if applicable.
	<ul style="list-style-type: none"> • The latest manuals can be downloaded at www.superchute.com. To request printed copies, or for any other assistance, call Superchute Ltd. 1-800-363-2488.

When used correctly meets OSHA 29 CFR 1926.252 and 1926.852 - Made in Montreal, Canada - 20JL09

Fig. 5 General warning label stamped on all plastic chute sections.

B. Fire Warning Labels


	<h1>FIRE WARNING</h1>	
<ul style="list-style-type: none">• Yellow plastic chute sections are flammable, and debris in the roll-off container may be flammable.• A fire in the container will ignite a yellow chute. Any chute, even one made of fireproof material, will quickly spread fire and smoke throughout the building.• Follow these fire prevention measures:<ol style="list-style-type: none">1. Study the fire prevention plan for the chute system at your jobsite.2. Spray water into the container to keep flammable debris wet (wood, shingles, paper, etc).3. Do not smoke, weld, or use an open flame within 20 feet of the chute or container.4. Ensure that there is a water hose or fire extinguisher on every floor level facing the chute.5. Post “Danger - Flammable Materials” signs around the container and on levels facing the chute.6. Consider using fire retardant Superchute sections, available in black plastic or steel.		
Learn more at www.superchute.com/fire	Superchute Factory Phone 1-800-363-2488	14JL09

Fig. 6 Fire warning label stamped on yellow plastic chute sections.

C. Chute Section Information Label

The following specifications are stamped onto every plastic chute section:

- Type of section
- Month of manufacture
- Year of manufacture
- Wall thickness
- Diameter of section
- Weight of section

In addition, the chute section is always stamped with one of the following company logos:

- Contractor's logo
- Distributor's logo
- Superchute logo



Fig. 7 Chute section information label, with company logo.

Snow Chute Support Frame Part Numbers

Item	Part Numbers	Description	Quantity
1	SC1521	Front Post Foot	2
2	SC1522	Tie Bar Sleeve	4
3	SC1524	Anchor Bracket	2
4	SC1527	Tie Bar	2
5	SC1532	Canvas Chute Side Frame	2
6	WSSC609	Hanger	2
7	AP2-80	AL. Pipe 2 SCH 80	4
8	SN1-233-244	Lock Pin 3/8 Dia. X 2 1/2 Usable	2
9	SN1-233-249	Lock Pin 3/8 Dia. X 2 1/4 Usable	4
10	380-000-272-Z	NYLOC Nut 3/8-16 UNC	8
11	380-314-005-Z	HH Cap 3/8-16 UNC x 2 3/4 GRD 5	6
12	380-243-005-Z	HH Cap 3/8-16 UNC x 2 3/4 GRD 5	2
13	WC1-WR-332-SS	Wire Rope 3/32 DIA. SS	6
14	WC1-SS-332-A	Swage Sleeve 3/32	12

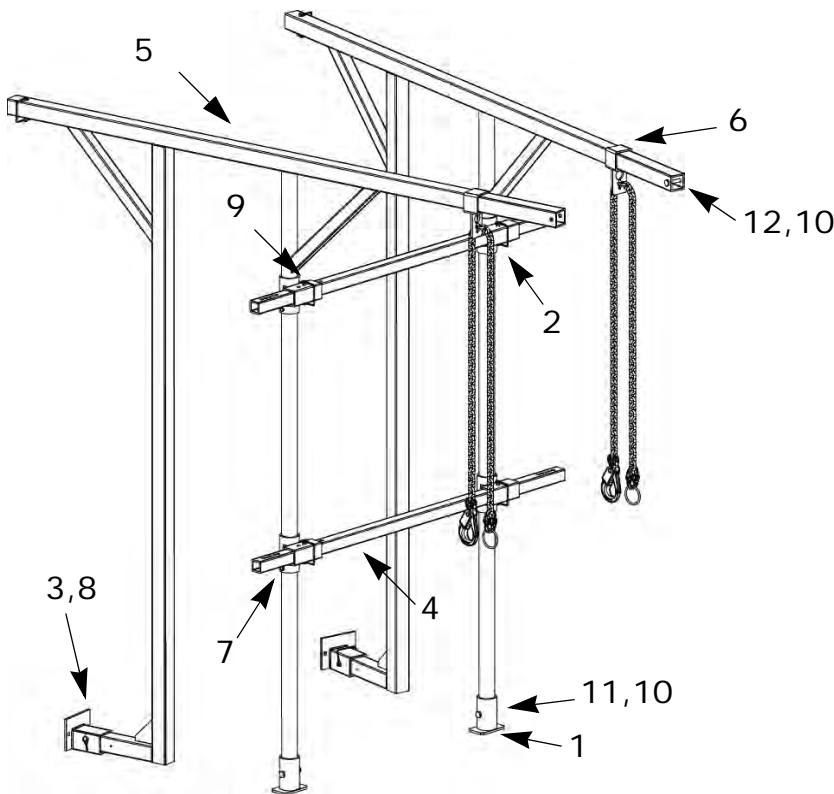


Fig. 8 Identification of Part Numbers

Snow Chute Dimensions Front View

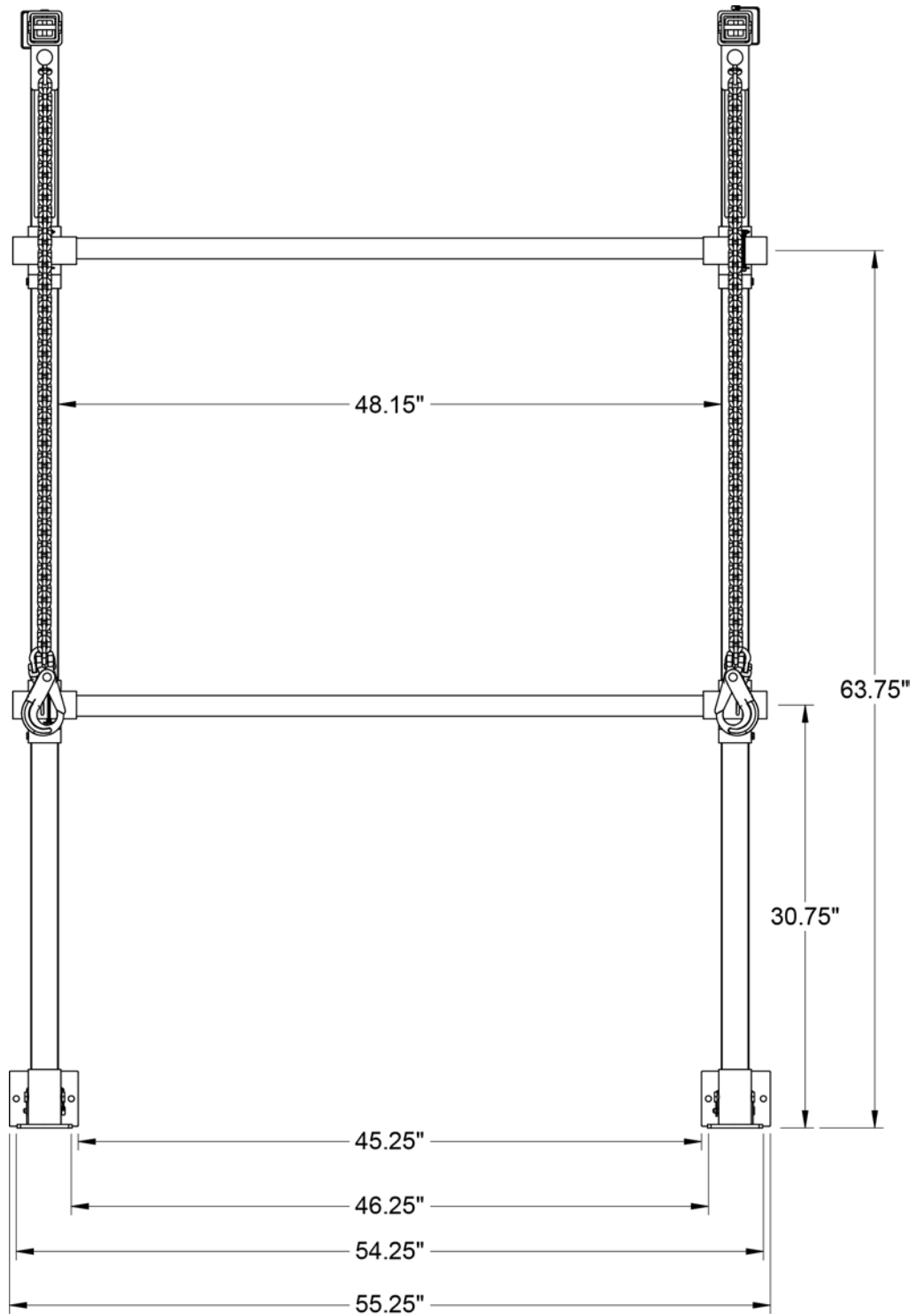


Fig. 9 Snow Chute Dimensions Front View

Snow Chute Dimensions Side View

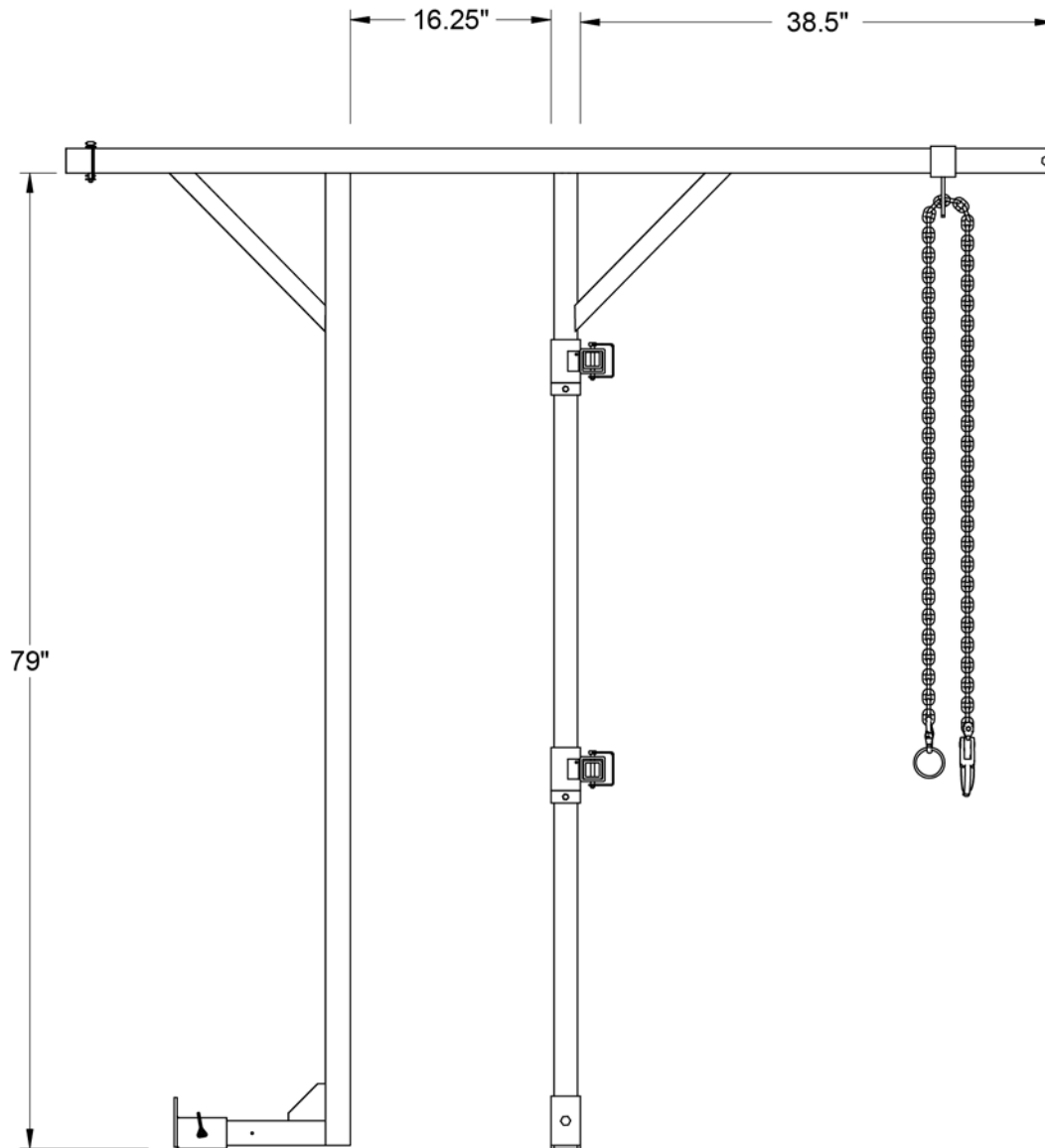


Fig. 10 Snow Chute Dimensions Side View

Installation of the Frame and Chute

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Federal, State, and Local Safety Regulations

Chute planners should be aware of applicable federal, state, and local safety regulations that pertain to the installation and use of a chute.

For example, planners in the USA should be aware of the Occupational Safety and Health Administration (OSHA) regulations for chutes and fall protection, some of which are reproduced in the appendix "OSHA Information" on page 51. OSHA regulations are federal regulations. Other state or local regulations may apply.

Planning Step Checklist

For every chute installation, the planning process must include these essential steps:

- A. Select the installation area.
- B. Select competent installers.
- C. Ensure that installers have fall protection training & equipment.
- D. Ensure that the installation area is clear of snow & ice.
- E. Supervisor's verification of the completed installation.

Superchute factory assistance and guidance is available if you have questions.

A. Select the Installation Area

Choose the installation area carefully. A poor choice can create a hazardous and less efficient chute system.

The following issues must be given careful consideration when selecting the installation area for your chute:

Consider Worker Safety

Always consider the consequences of a worst case scenario. For example:

- If the chute collapsed, might it fall on persons below?
- If a worker throws a chunk of ice towards the top hopper and misses, what might be the consequences of the ice falling outside the chute?
- If a hole wears through the canvas chute wall, and snow and ice escape from the chute, could people be harmed below?

Prevent Electrocutation

Prevent electrocution by choosing an area that is free of power lines. If power lines are present, consult with either the chief electrician, electrical engineer, or local power authority before proceeding.

Do Not Obstruct Emergency Passageways & Staircases

Do not install the chute in a location which will obstruct an emergency access. Paramedics and firemen must be able to circulate easily around the installed chute.

B. Assembly Instructions

1. Fasten a pair of Anchor Brackets (SC1524) to the stadium riser, using 2 screw anchors per bracket (HILTI Screw Anchor model HUS-H 3/8x2 1/8 item 336686).

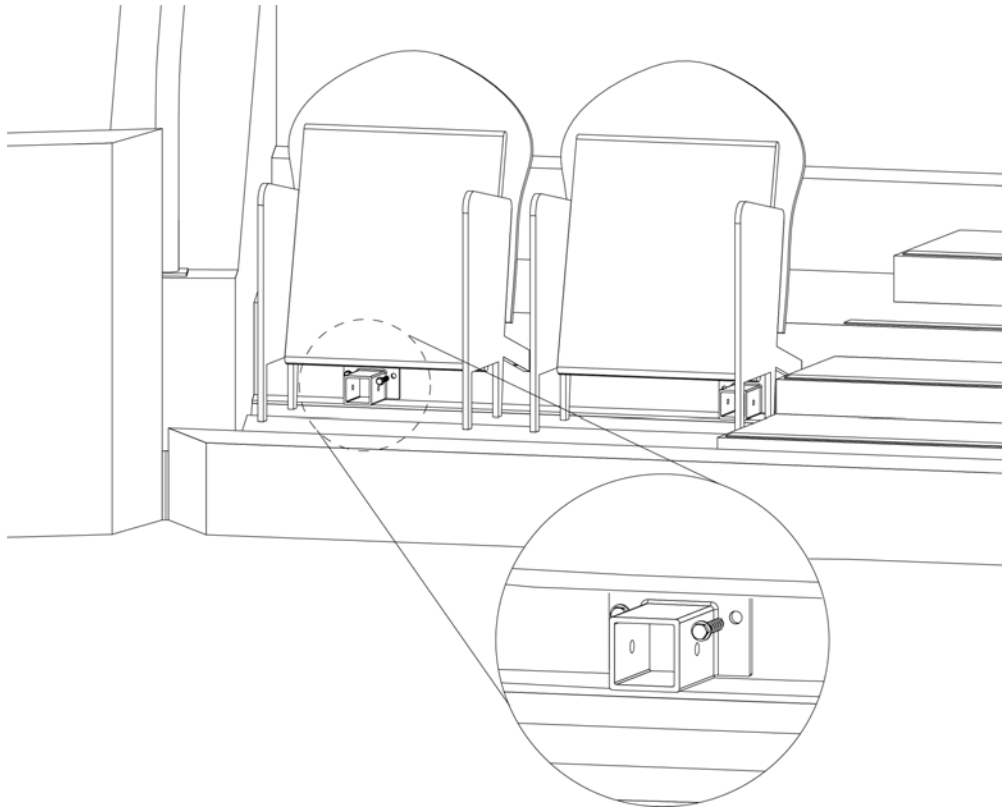


Fig. 11 Installation of the brackets

Note: Brackets may already be installed.

2. Bring two Side Frames to the dumping area.

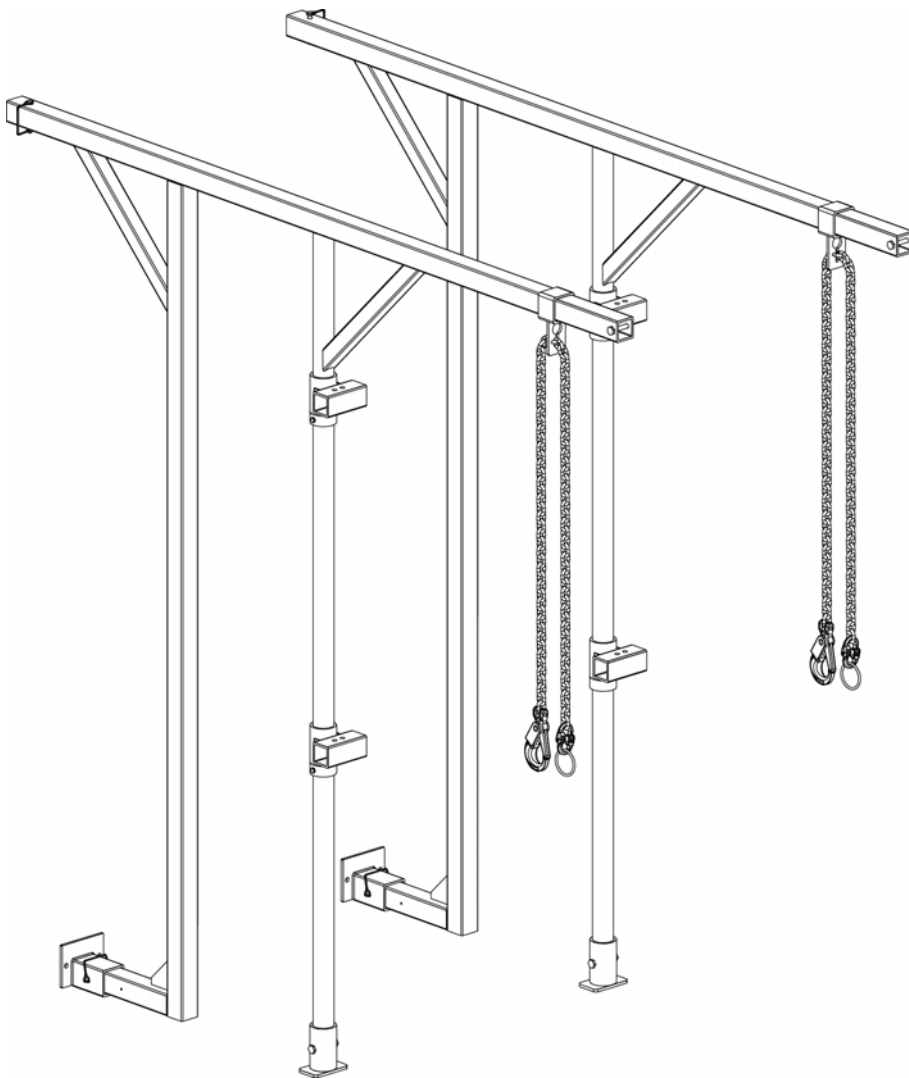


Fig. 12 Two side frames

3. Remove the Locking Pin (3/8 Dia. X 2 1/2 Usable) (SN1-233-244).

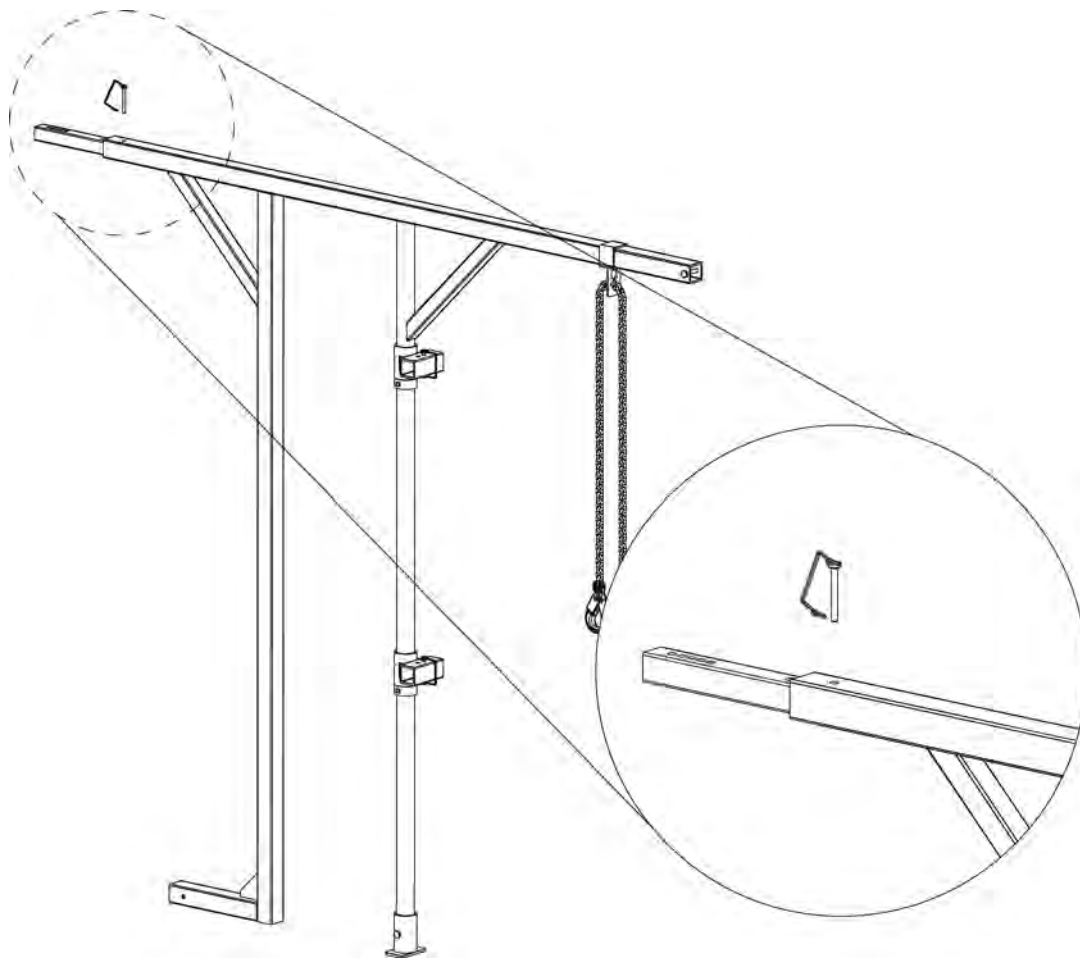


Fig. 13 Removal of the locking pin that secures the tie bar

4. Remove the stored Tie Bar (SC1527) from the Side Frame (SC1532).

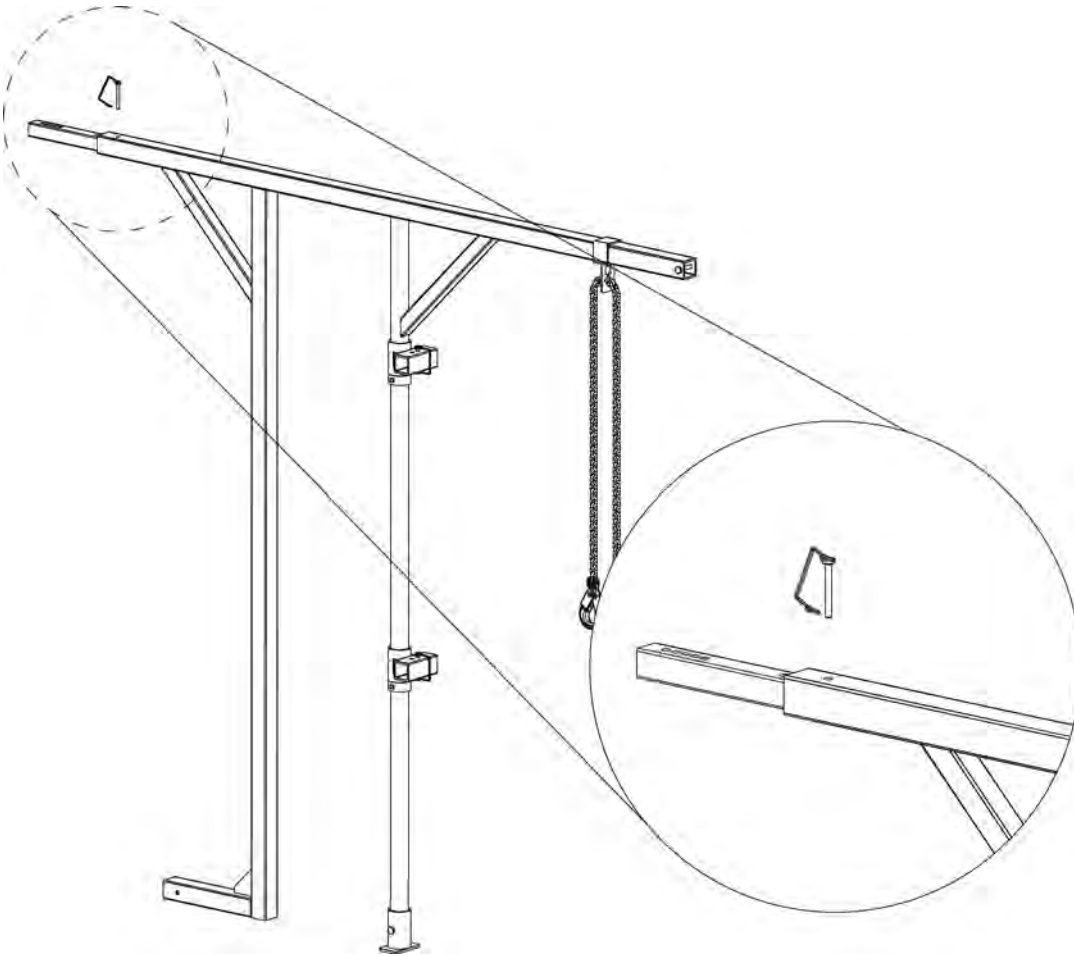


Fig. 14 Removal of the tie bar

5. Replace the Locking Pin (3/8 Dia. X 2 ½ Usable) (SN1-233-244) to prevent loss of the pin.

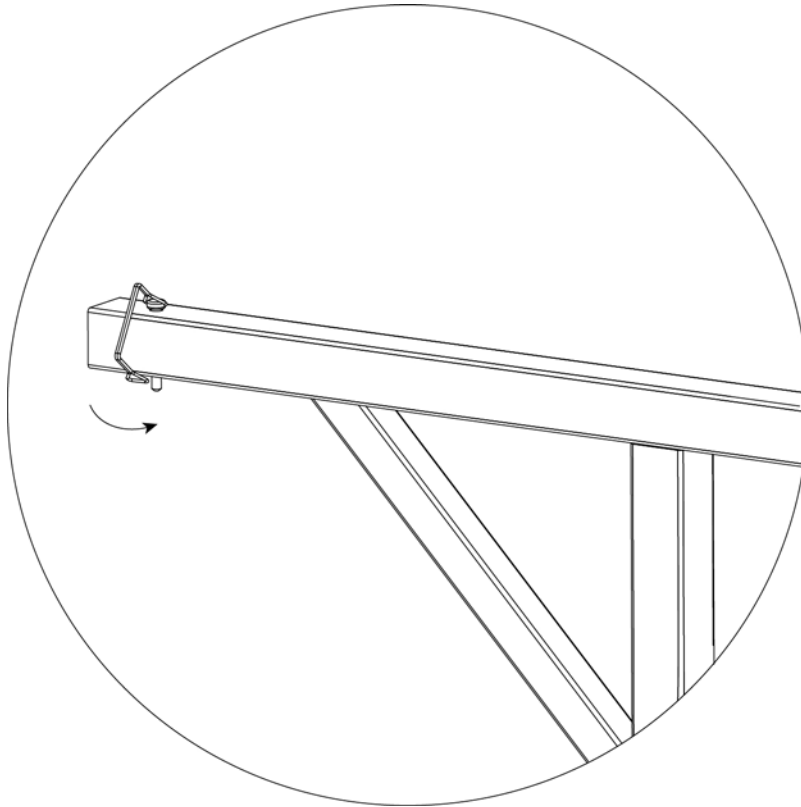


Fig. 15 Storing the pin

6. Insert the first Side Frame (SC1532) into the Anchor Bracket (SC1524).

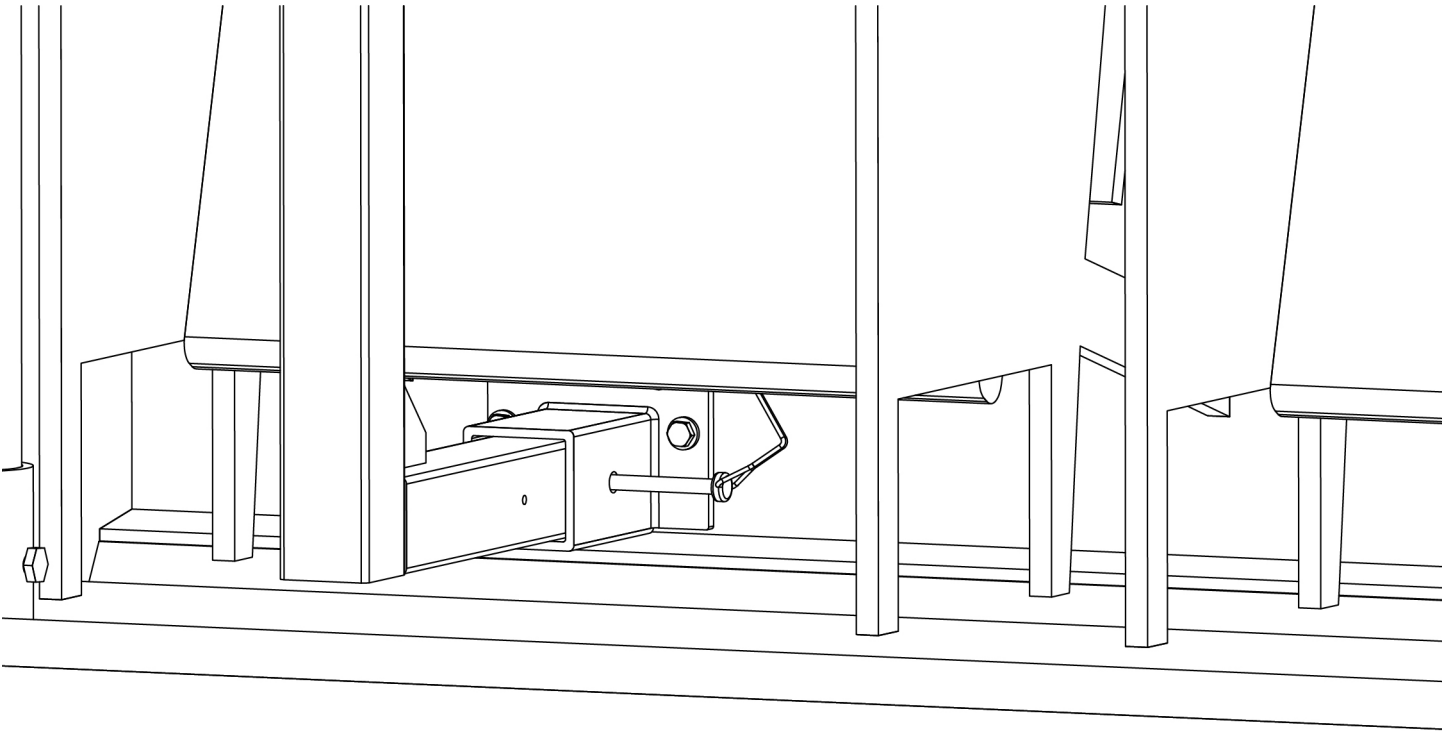


Fig. 16 Side Frame insertion

7. Secure the Side Frame with the Locking Pin (3/8 Dia. X 2 1/2 Usable) (SN1-233-244).
8. Insert the second Side Frame (SC1532) into the other Anchor Bracket (SC1524).

9. Slide the lower Tie Bar (SC1527) into the lower Tie Bar Sleeves (SC1522).

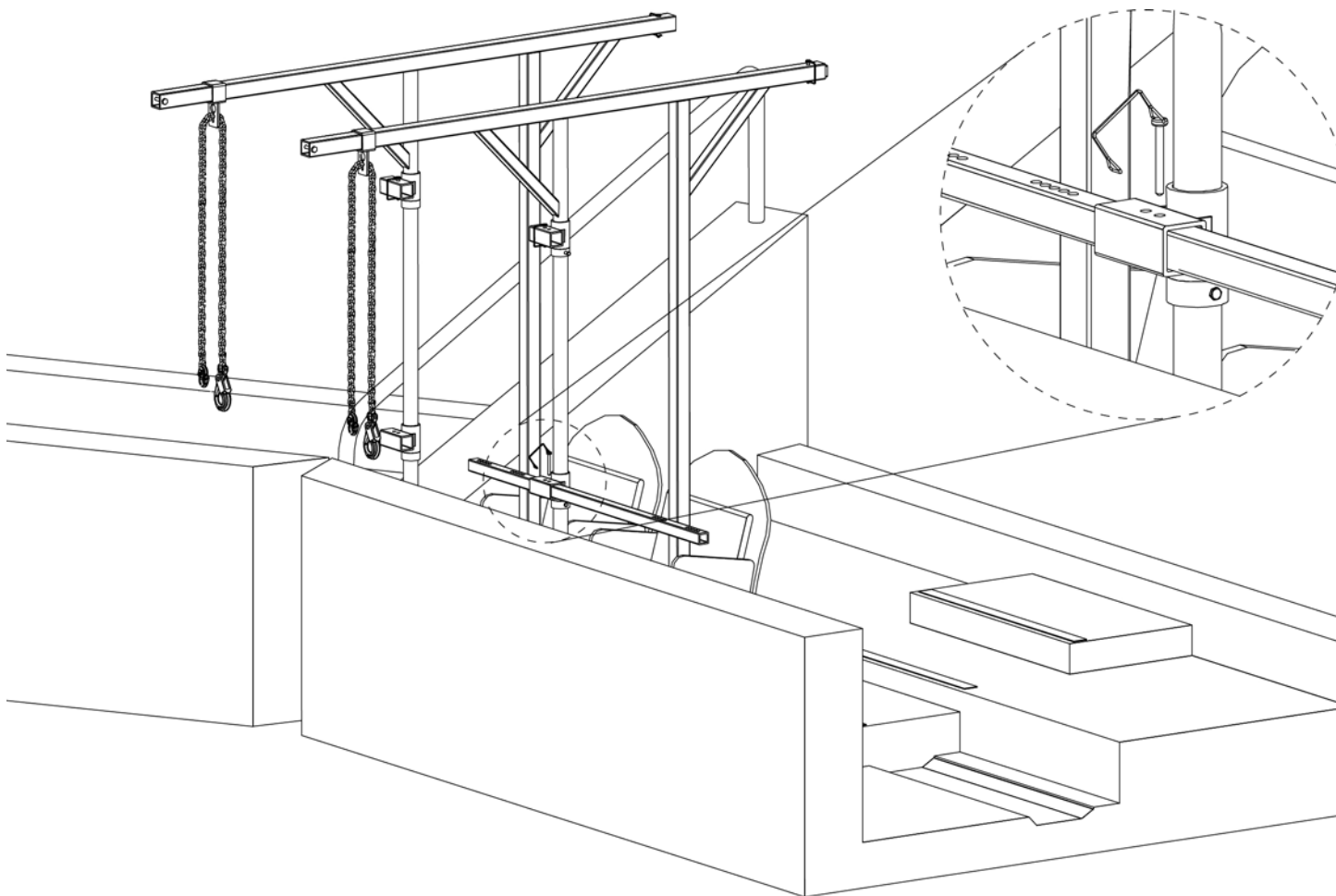


Fig. 17 Installation of the lower tie bar

10. Insert a Locking Pin (SN1-233-249) through each of the 2 sleeves.

11. Adjust the two suspension chains until they are fully extended. Connect the chains to the Top Hopper.

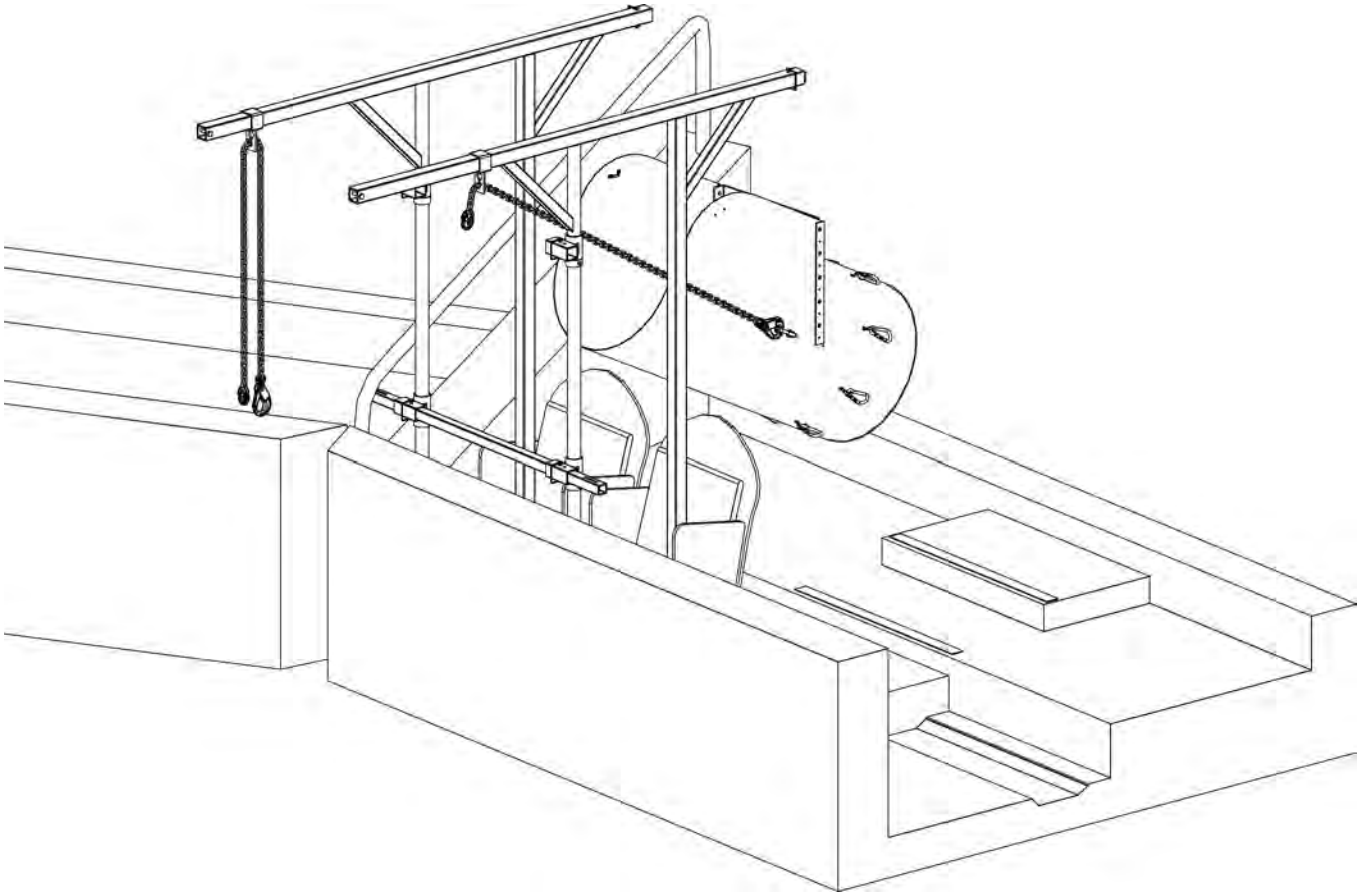


Fig. 18 Connecting the Top Hopper to the Frame

12. Connect the canvas chute to the lower end of the hopper.

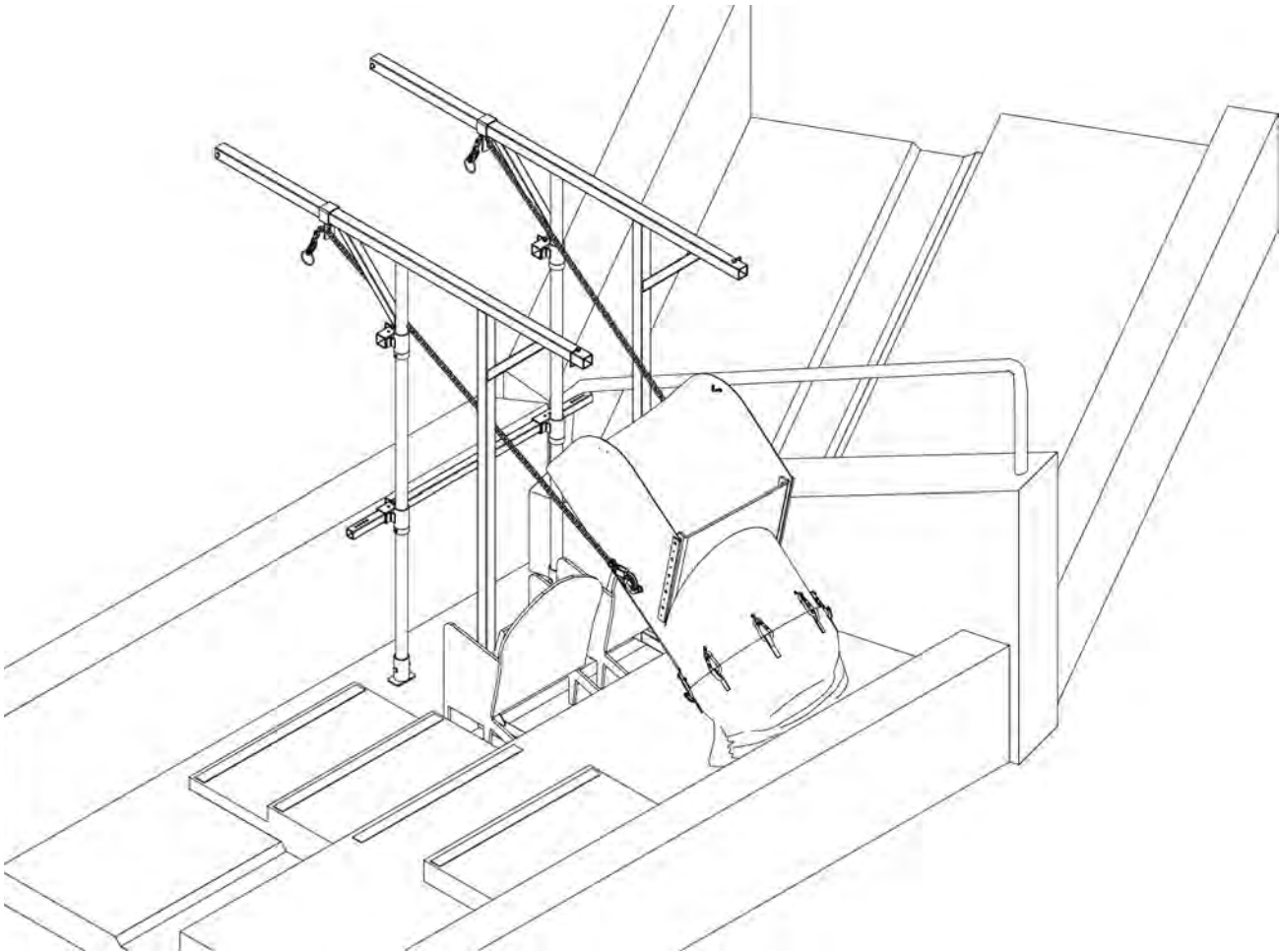


Fig. 19 Connecting the canvas chute to the plastic hopper

13. Connect the bottom collar to the canvas chute. Gently lower the chute over the wall starting with the bottom collar, followed by the canvas chute, and finally the top hopper.

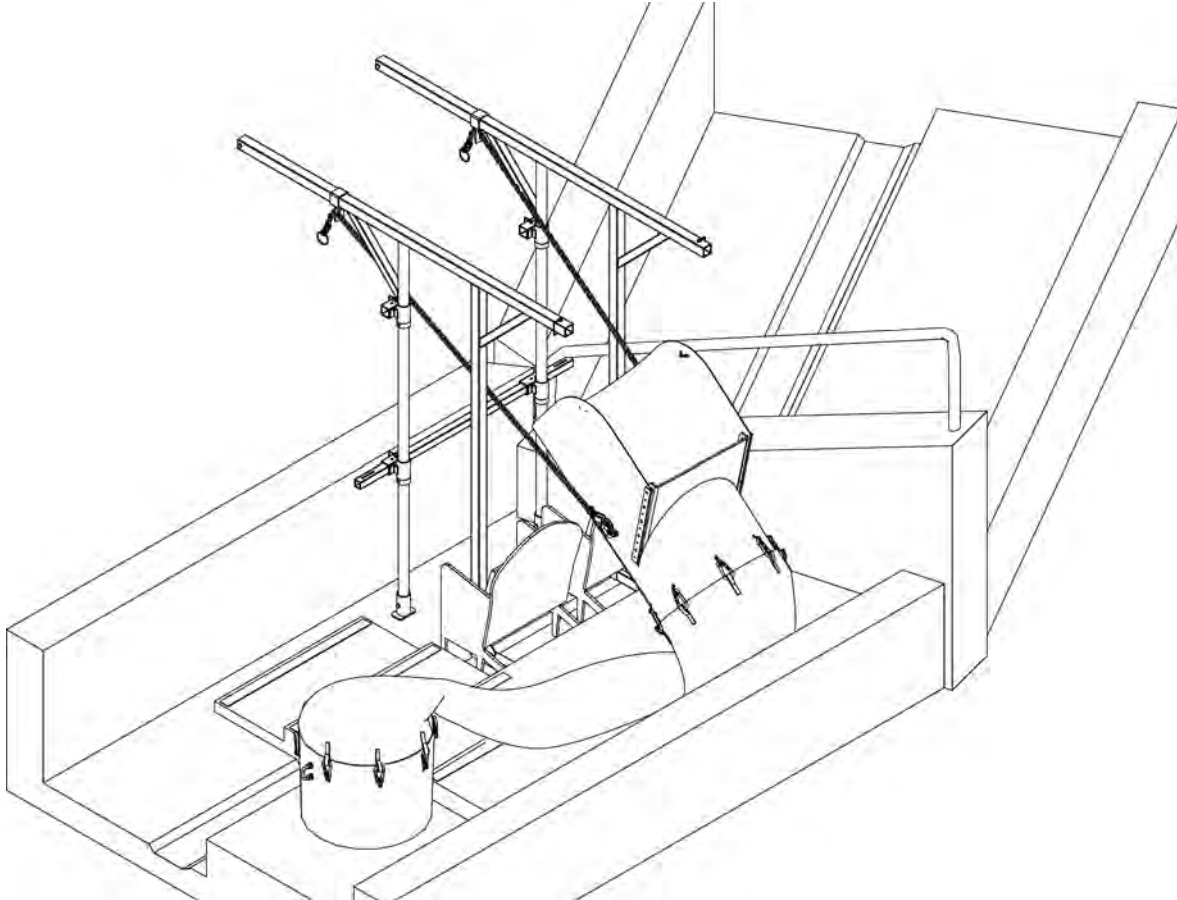


Fig. 20 Connecting the plastic bottom collar to the canvas chute

14. Install the upper tie bar. The suspended chute is now ready for use.

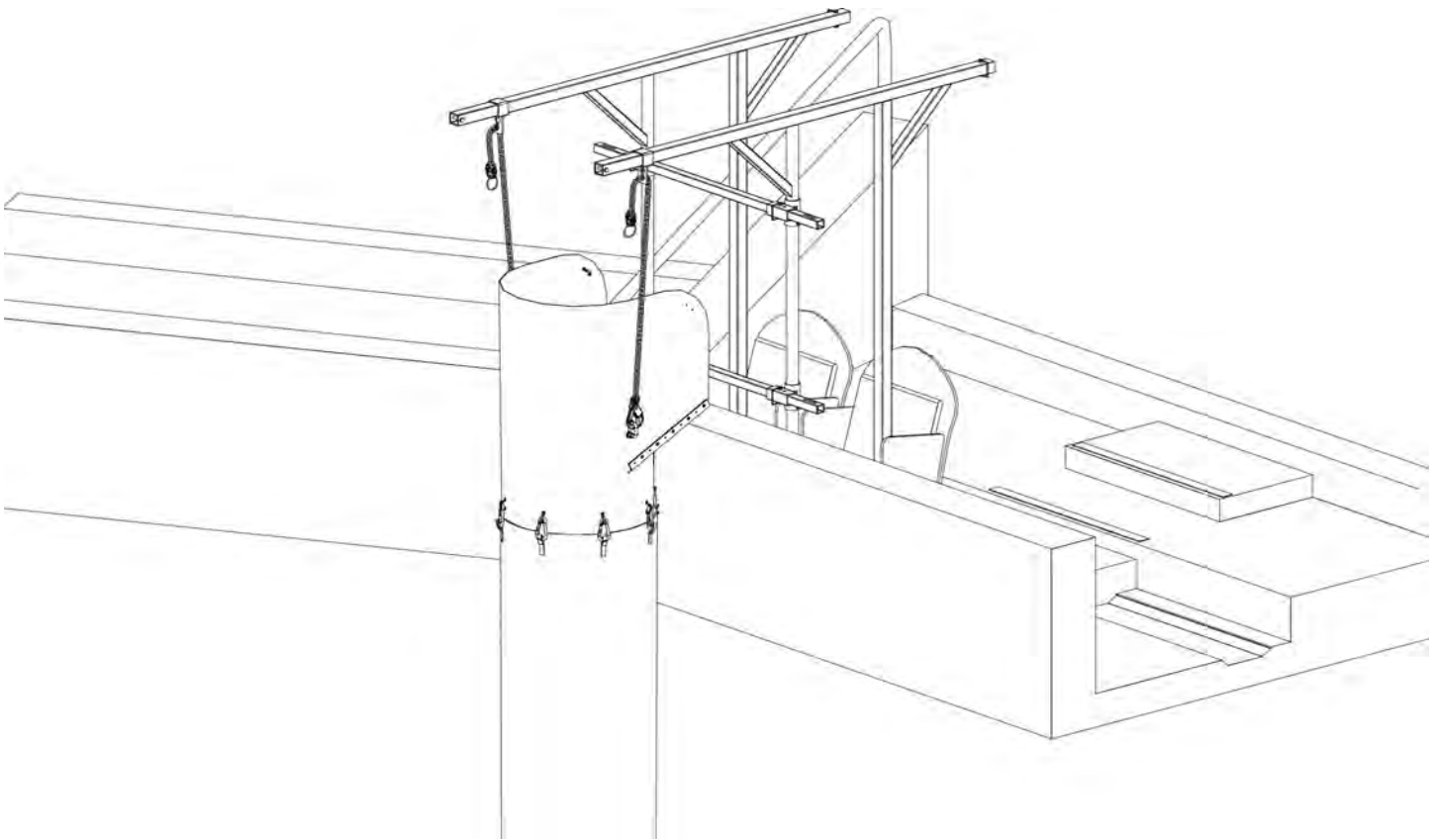


Fig. 21 The assembled system

Chapter 3.

Using the Chute System

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Introduction

Before using the chute system, users should be familiar with applicable federal, state, and local safety regulations. Superchute equipment should only be used by workers who are fit to operate it in a responsible manner.

Failure to adhere to the following instructions could result in injury or death.

Container Area

A roll-off steel container should be positioned beneath the chute. Roll-off containers are generally rented from waste disposal companies. A dump truck, pick-up truck, or similar vehicle, should not be used since falling material could strike the cab and injure the driver (see "A Letter from OSHA" on page 51).

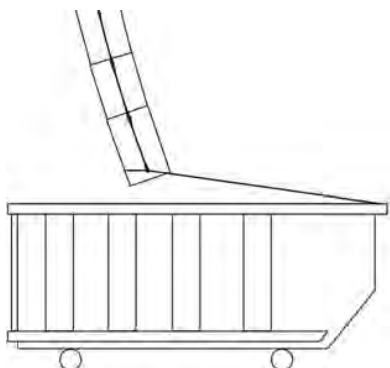


Fig. 22 Gap above container.

1. Direct the discharge end of the chute into the container, so that debris exiting the chute falls into the container.
2. Ensure that the discharge end of the chute is located above and not inside the container. A gap of 2 to 5 feet between the discharge end of the chute and the container is recommended. See Fig. 22
3. Barricade the container area in order to protect workers and the public from any material that may ricochet out of the container. See Fig. 23

Build the barricade using plywood sheets, screens or similar materials.

In the event that debris is accidentally thrown into the chute when the discharge end of the chute is not directed into the container, or the container has been removed, the barricaded area may help to prevent injury.

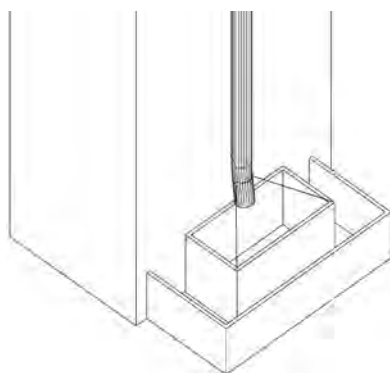


Fig. 23 Barricaded container.

4. Do not overfill the container. Overfilling can plug the discharge end of the chute and result in a chute collapse.
5. Do not install tarpaulins over the container and chute discharge. Users must be able to see debris exiting the chute at all times. If the container and chute discharge are covered, a blockage could go unnoticed.
6. If you must enter the container, ensure that the chute's discharge end is temporarily directed outside the container, to a secured dumping area, free of personnel.

Container Cord

Tie the chute's discharge end to the container using one or two lengths of Superchute Container Cord (provided with the Superchute Debris Chute System). Unlike regular cords and ropes, Superchute Container Cord is designed to fail. If a full container is accidentally driven away with the chute still attached, the Superchute Container Cord will fail and the chute system will not be pulled from the building.

Do not double up the container cord or use more than one or two lengths to attach the chute's discharge end to the container. The effect would be to increase the strength of the attachment, which would make it less likely to fail if it should need to do so. See Fig. 24

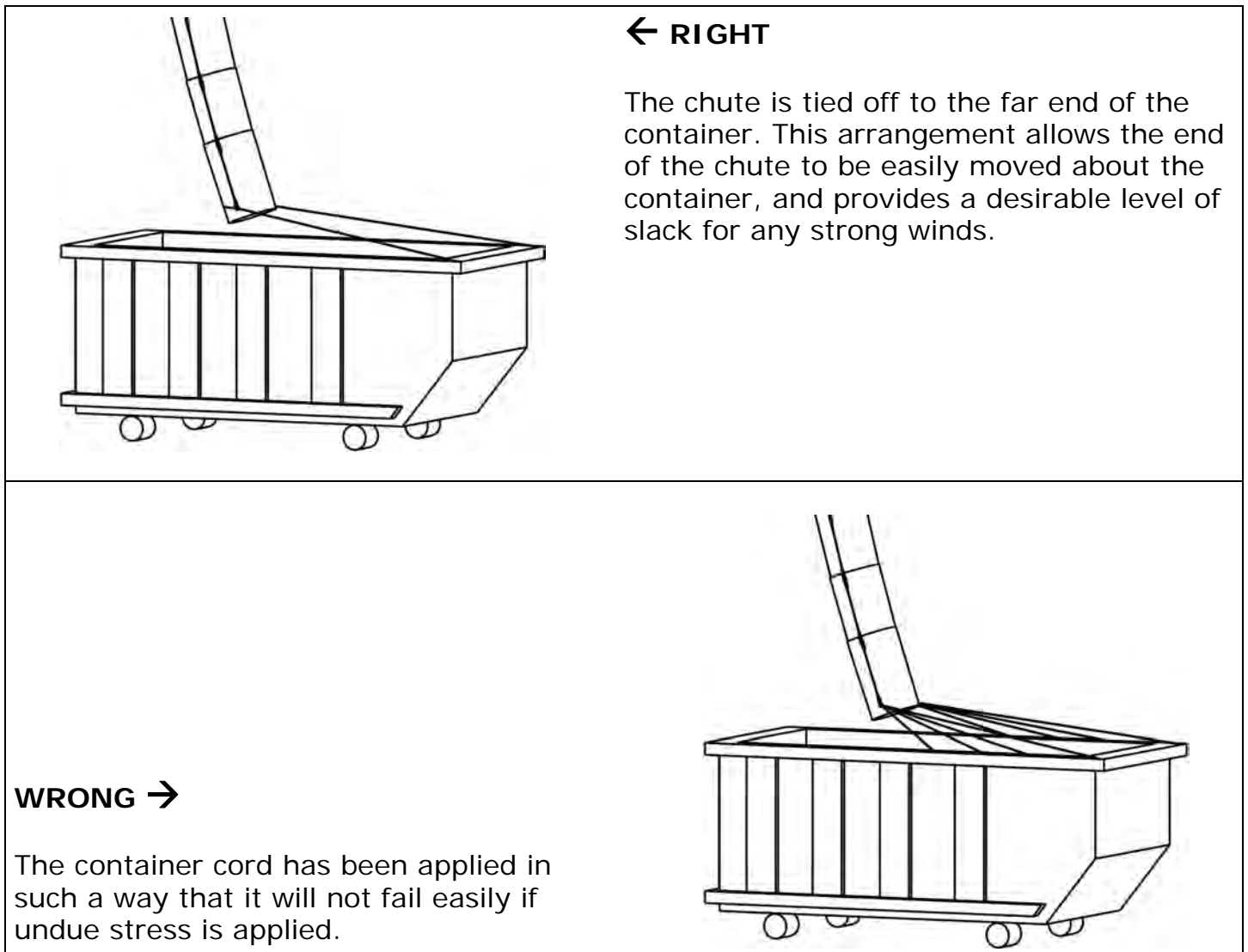


Fig. 24 Right and wrong application of container cord.

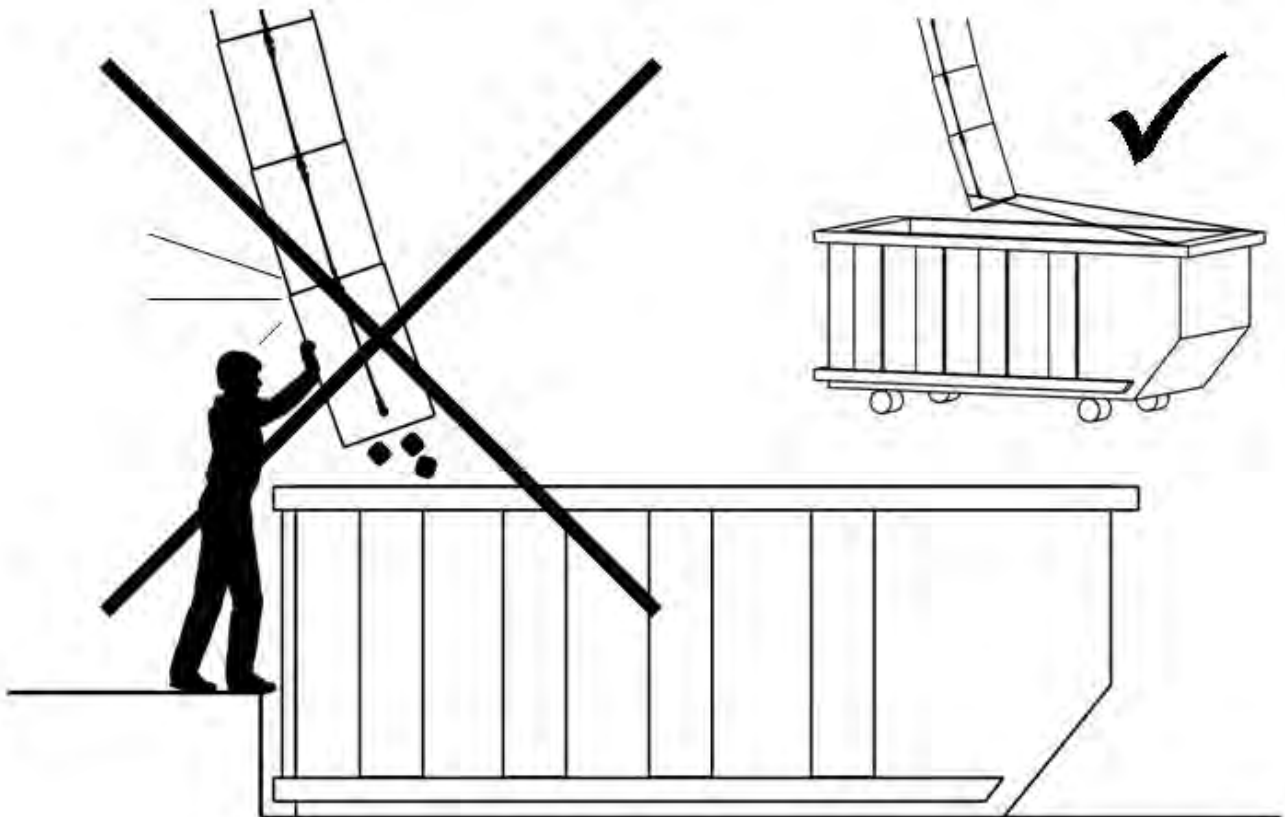
Discharge End Precautions

Always assume that debris can exit the discharge end at any time.

1. Never stand under the discharge end of a chute.
2. Never look up the discharge end of a chute.
3. Never put your hands or feet beneath the discharge end.

WARNING

- Debris falling through the chute can cause the discharge end of the chute to shake violently.
- A person near the discharge end could be injured or killed by the moving chute.
- Do not stand near the chute. Do not hold the chute. Use the supplied 20-foot lengths of Superchute Container Cord to position the chute over the container. Maintain a distance of at least 30 feet between people and the chute.



Top Hopper Use

1. Ensure that the top of the chute is equipped with a Top Hopper. Do not use the chute if it is not equipped with a Top Hopper. Contact the installer.
2. Introduce debris manually. Do not use motorized loaders to introduce debris into the chute (motorized loaders introduce too much debris, too quickly).
3. Do not drop more than 50 lbs. (23 kgs) of debris at a time into the chute.
4. Do not introduce whole concrete cinder blocks, spikes, flammables, or toxic dusts.
5. Break up debris before throwing it into the chute. The largest dimension of any single piece of debris should be less than half the diameter of the chute.
6. Use supplied warning gates to close the Top Hopper sections when:
 - there is no container beneath the chute
 - the full container is being changed for an empty one
 - there is a blockage in the chute.
 - a maintenance operation is being carried out.

Controlling Access to Top Hopper Sections

Superchute Top Hopper sections are equipped with red warning gates.

In addition to the warning gates, two more options are available for controlling access to the chute:

- Entry Point Lockout Covers
- Traffic Light System

These three access controls are described in detail on the next three pages.

Warning Gates

Each Superchute Top Hopper section is equipped with a red warning gate complete with attached danger sign.

When the warning gate is clipped across the opening, debris must not be thrown into the chute.

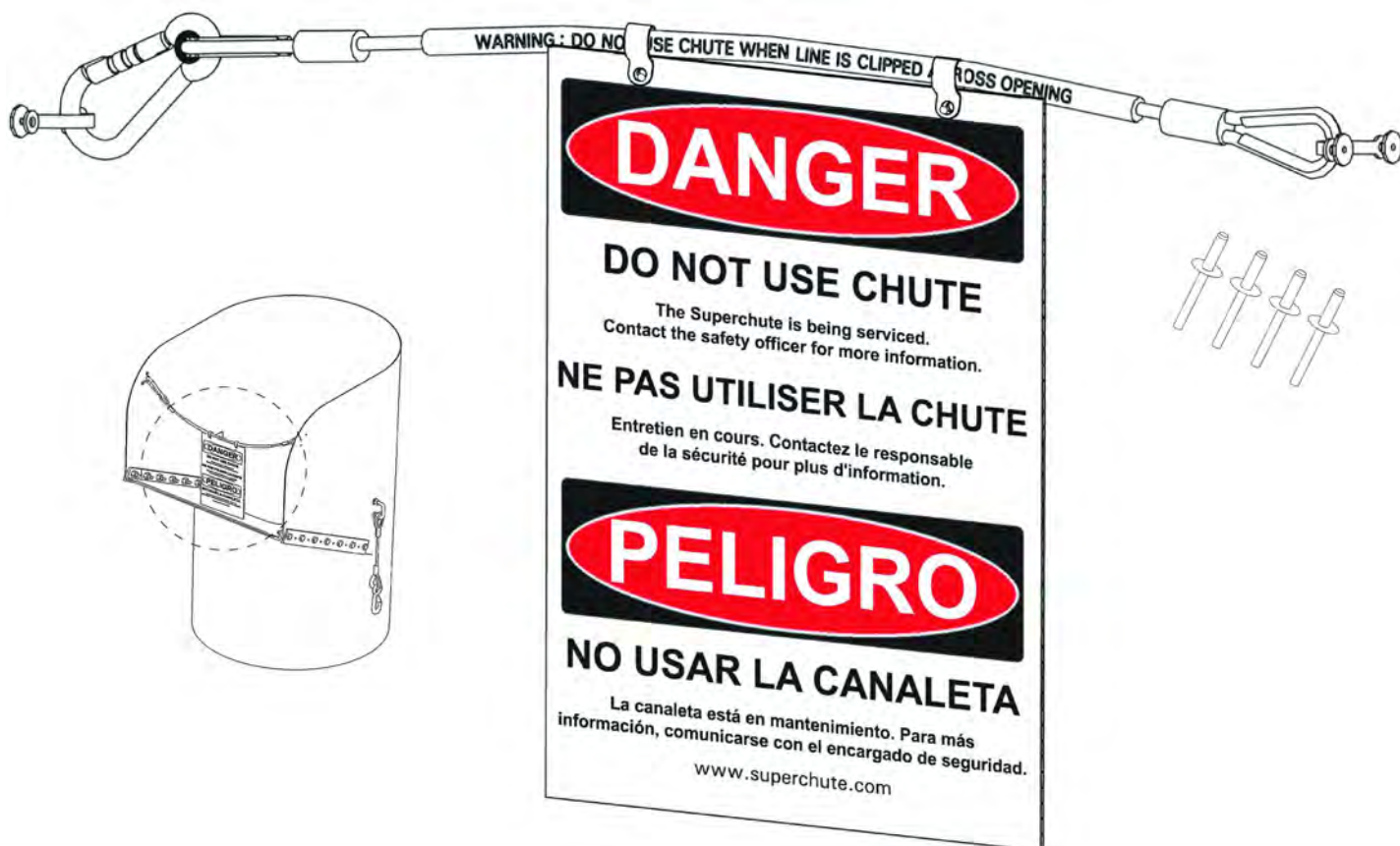


Fig. 25 Warning gate with a danger sign and mounting hardware.

- Included with every Top Hopper section
- Wire rope assembly with printed red plastic sleeve and durable 8" x 12" plastic sign
- "Danger - Do Not Use Chute" sign warns in 3 languages: English, French, and Spanish
- OSHA requirement
- Spare gates can be ordered with mounting hardware (2 eye straps and 4 blind rivets)
- Spare "Danger - Do Not Use Chute" signs can be ordered with tie wraps (2 per sign)
- Please specify your chute diameter when ordering spare gates.

Entry Point Lockout Covers

Entry point lockout covers are available for Top Hopper sections.

The lockout cover physically blocks and prevents use of the entry section. It is supplied with a padlock. The same key will open the padlock on every lockout.

Lockout covers are available for all chute diameters.

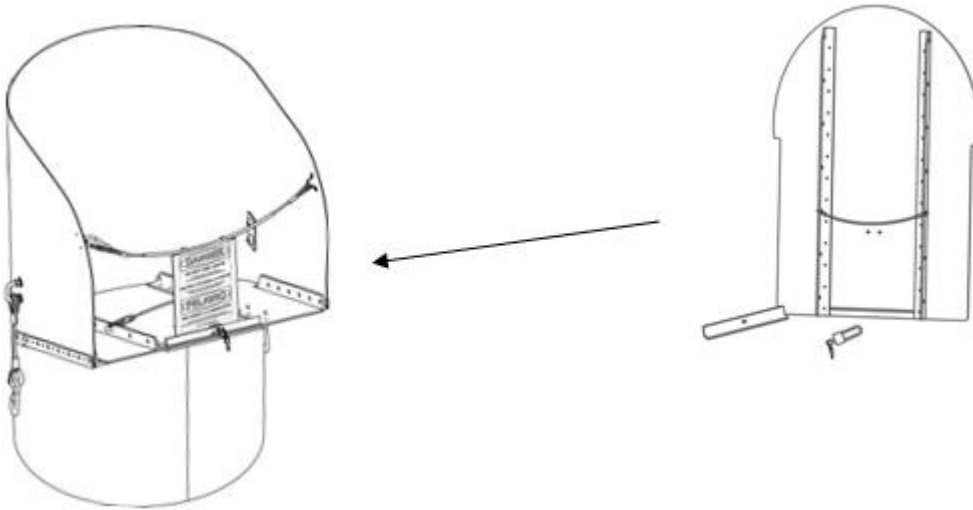


Fig. 26 Lockout cover for Top Hopper section (2 piece design).

The Top Hopper section lockout is comprised of a plastic panel and aluminum clamp.

Designate a Safety Monitor

Designate a safety monitor who will keep an eye on all aspects of chute usage. The Safety Monitor will ensure:

1. The chute was installed, used, and maintained according to the instructions provided by Superchute Ltd.
2. The chute is tied properly to the container with Superchute Container Cord.
3. The chute is untied from the container before the container is moved or changed.
4. Adherence to the Fire Prevention Plan (provided by the chute planner).
5. All blockage prevention measures are followed. See page 45 for guidelines.
6. There are no gaps between chute openings and the building edge. Any gaps will be covered over to prevent debris spilling outside the chute.
7. Warning gates, lockout covers, traffic lights are used at the correct times.
8. All components of the chute are kept in good working condition as the job progresses.
9. A means of communication with other jobsite workers exists.
10. Empty debris containers are readily available.
11. All work is conducted in a safe and responsible manner.
12. Fall protection safeguards exist.

Chute Blockage Warning

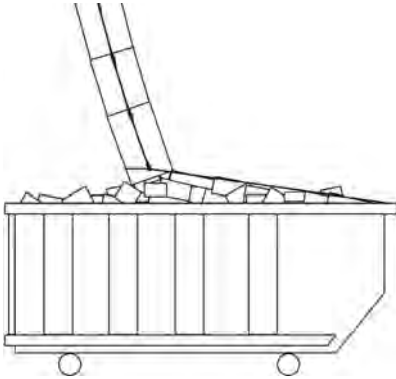
WARNING

- Chute blockages are the most frequent problem encountered by chute users.
- If a chute blockage is not noticed and more debris is introduced, the total weight of the chute will rapidly increase, and the chute system could collapse. A collapsing chute system can cause serious injury or death.
- The Safety Monitor will take steps to prevent blockages from occurring (as explained in this manual), and will keep a constant lookout for chute blockages.

Preventing Blockages

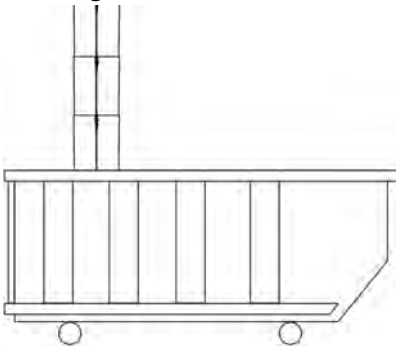
WRONG

The container is overfilled. This could cause the chute to fill from the bottom and collapse. Do not overfill the container.



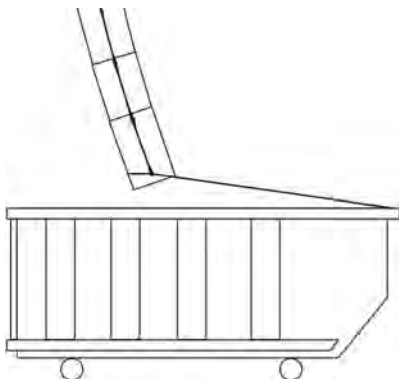
WRONG

Falling debris cannot be seen as it exits the chute. This situation will lead to a blockage and will prevent the blockage from being noticed.



RIGHT

Workers are able to see the debris exiting the chute and entering the container.



In the event of a chute blockage, the chute system could tear away from the building causing serious injury or death. To prevent blockages follow these guidelines:

- Designate a safety monitor who will, in addition to monitoring for blockages, supervise the safety of the entire debris removal operation.
- Ensure falling debris can be seen to exit the chute and enter the container (see Fig. 27).
- Ensure the chute is hanging straight (vertically). Horizontal displacement of the chute must not exceed 20% of the height. Have the chute reinstalled if it does not meet this criteria.
- Ensure the chute is not bent over balconies, shelves, or similar protrusions. These obstructions could crimp the chute and lead to a blockage. Have the chute reinstalled if it is crimped.
- Only introduce debris with dimensions that are less than half the diameter of the chute. For example: if using a 30" (76 cm) diameter chute, the maximum allowable dimensions of the debris are 15" x 15" x 15" (38 cm x 38 cm x 38 cm).
- Do not use motorized loaders to introduce debris into the chute (motorized loaders introduce too much debris, too quickly).
- Break up debris before throwing it into the chute.
- Redirect the chute's discharge end to less filled areas of the container (chute usage must be stopped while repositioning the end of the chute).
- Test the chute for blockages frequently: Drop an identifiable object into the Top Hopper and ensure that it comes out the discharge end.

Fig. 27 Preventing blockages.

If A Blockage Occurs

1. Stop putting debris into the chute. Do not touch the chute.

The chute system could collapse without warning.

Evacuate the area below the chute of people. Consider that the path of destruction created by a collapsing chute could be equivalent to its height. The chute could fall away from the building just as a tree falls when cut at the trunk.

2. Call in a crane with ample capacity to lower the entire chute to the ground (do not use the chute hoist or any other winching device to lower the chute, since it will not have enough capacity to safely lower a blocked chute).
3. Separate the chute sections on the ground.
4. Remove the blockage.
5. Consult a structural engineer and the Superchute factory to determine if the anchors and cable assemblies were strained:
 - If the engineer concludes the cable assemblies were strained, order new cable assemblies from your Superchute supplier or from the Superchute factory.
 - If the anchors were strained, rig new anchors.
 - If the engineer concludes the anchors and cable assemblies were not strained, reinstall the chute system.

Severe Weather Precautions

1. To prevent electrocution, stay away from the chute system during a lightning storm.
2. In the event that hurricanes, tornadoes, or strong storms are expected, dismantle the chute system and store it until the storm passes.⁹

Chapter 4.

Chute System Maintenance

Introduction 48

Introduction

Although the chute system has been engineered to be long lasting, you may eventually need to replace certain parts. Always use genuine Superchute parts when replacing chute components. Do not use non-Superchute parts. Thorough overhaul servicing is offered by the Superchute factory. Call 1-800-363-2488 for details.

Appendix A. Product Warranty

Superchute trash chutes 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 chute. 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.

Further details on "Warranties and Limitation of Liability" can be downloaded at www.superchute.com/tc.

Appendix B. OSHA Information

This appendix contains information about Occupational Safety and Health Administration (OSHA) requirements and regulations as they apply to the installation and use of the Superchute Debris Chute System.

A Letter from OSHA

OSHA

March 25, 1992

Mr. Andrew Anson, President
Superchute Ltd.

Dear Mr. Anson:

This is in response to your February 10 letter requesting the Occupational Safety and Health Administration (OSHA) to review the design of a debris chute manufactured by Superchute Ltd. I apologize for the delay of this response.

As you know, it is the policy of the Occupational Safety and Health Administration not to approve or endorse products. The variable working conditions at jobsites and possible alteration or misapplication of an otherwise safe product could easily create a hazardous condition beyond the control of the product manufacturer. However, we have reviewed the information provided in your letter and evaluation report and it appears that if properly installed and maintained and not used to load trucks the Superchute® system would comply with OSHA requirements. If a chute is being used to load trucks where falling material can present a hazard to the truck operator then a substantial gate and employee to operate the gate would be required by 29 CFR 1926.852(c).

If we can be of any further assistance, please contact Dale Cavanaugh of my staff at (206) 553-5930.

Sincerely,

Patricia K. Clark, Director
Directorate of Compliance Programs

OSHA Regulations for Chutes

From OSHA Regulations (Standards – 29 CFR) Part 1926 Safety and Health Regulations for Construction

These are the OSHA regulations for chutes:

Subpart H - Materials Handling, Storage, Use, and Disposal **1926.252 - Disposal of waste materials** *(partial copy)*


- (a) Whenever materials are dropped more than 20 feet to any point lying outside the exterior walls of the building, an enclosed chute of wood, or equivalent material, shall be used. For the purpose of this paragraph, an enclosed chute is a slide, closed in on all sides, through which material is moved from a high place to a lower one.

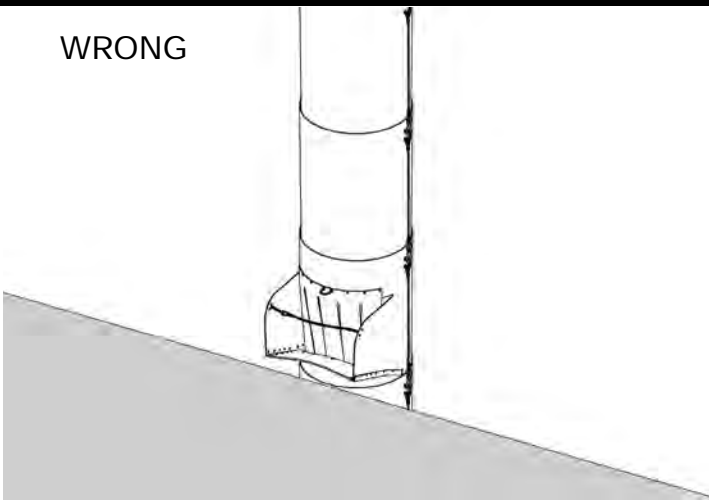
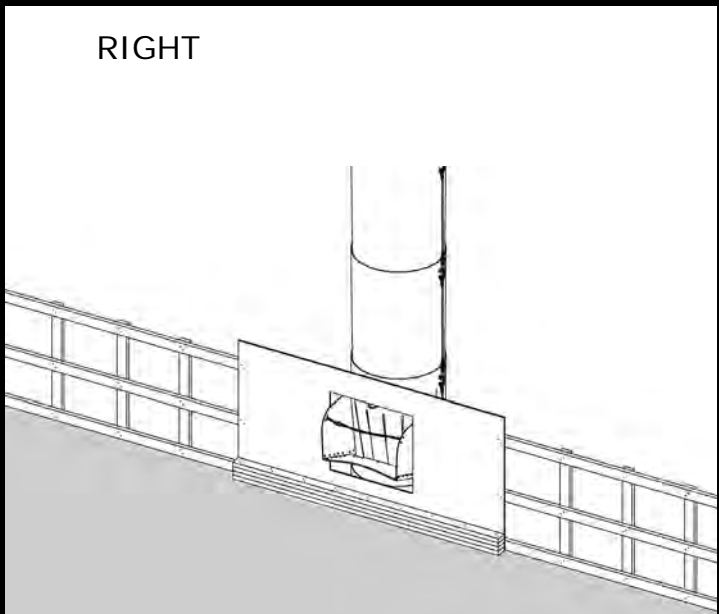
Subpart T - Demolition **1926.852 - Chutes** *(complete copy)*

- (a) No material shall be dropped to any point lying outside the exterior walls of the structure unless the area is effectively protected.
- (b) All materials chutes, or sections thereof, at any angle of more than 45 degrees from the horizontal, shall be entirely enclosed, except for openings equipped with closures at or about floor level for the insertion of materials. The openings shall not exceed 48 inches (122 cm) in height measured along the wall of the chute. At all stories below the top floor, such openings shall be kept closed when not in use.
- (c) A substantial gate shall be installed in each chute at or near the discharge end. A competent employee shall be assigned to control the operation of the gate, and the backing and loading of trucks.
- (d) When operations are not in progress, the area surrounding the discharge end of a chute shall be securely closed off.
- (e) Any chute opening, into which workmen dump debris, shall be protected by a substantial guardrail approximately 42 inches (107 cm) above the floor or other surface on which the men stand to dump the material. Any space between the chute and the edge of openings in the floors through which it passes shall be solidly covered over.
- (f) Where the material is dumped from mechanical equipment or wheelbarrows, a securely attached toe board or bumper, not less than 4 inches (10 cm) thick and 6 inches (15 cm) high, shall be provided at each chute opening.
- (g) Chutes shall be designed and constructed of such strength as to eliminate failure due to impact of materials or debris loaded therein.

OSHA and Fall Protection

The following three pages refer to OSHA Regulations (Standards – 29 CFR)
Part 1926 Safety and Health Regulations for Construction
Subpart M - Fall Protection
1926.500 to 1926.503

 **WARNING**

<p>WRONG</p>  <p style="text-align: center;">NO FALL PROTECTION</p>	<p>RIGHT</p> 
---	---

- A person can easily fall from a building if the floor edge they are working near does not offer fall protection safeguards.
- A fall from a height of 6 ft. (1.8 meters) is enough to cause serious injury or death.
- Use a personal fall arrest system (example: body harness and lanyard) when working near a floor edge that does not offer proper fall protection. OSHA requires that fall protection barriers be at least 42" high, plus or minus 3" (107 cm, plus or minus 8 cm). Guardrail systems, parapet walls, and window sills may be acceptable fall protection barriers provided they meet OSHA's height and strength criteria. Read and understand the OSHA fall protection regulations (a few of the regulations are provided on the next two pages).

The Fall Protection System shown below incorporates the following features:

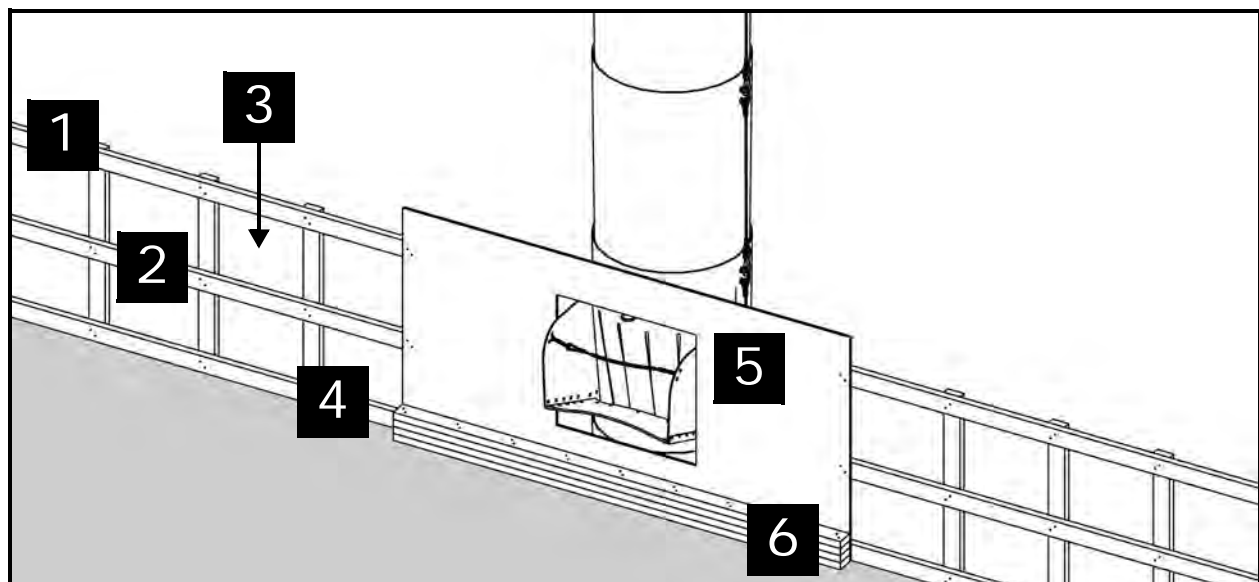
FALL PROTECTION FOR PEOPLE:

- (1) TOPRAIL "shall be 42" (107 cm) plus or minus 3" (8 cm) above the walking/working level"
- (2) MIDRAIL "shall be installed at a height midway between the top edge of the guardrail system and the walking/working level, when there is no wall or parapet wall at least 21" (53 cm) high".
- (3) OPENINGS "Other structural members shall be installed such that there are no openings in the guardrail system that are more than 19" (48 cm) wide.

FALL PROTECTION FOR OBJECTS:

- 4) TOEBOARD "shall be a minimum of 3.5" (9 cm) in vertical height from its top edge to the level of the walking/working surface. It shall not have more than ¼" (6 mm) clearance above the walking/working surface".
- (5) SCREENS Openings around Top Hopper and Door sections must be covered over using screens, boards, or plywood to prevent debris from falling outside the chute.
- (6) BUMPER A solid bumper, not less than 4" (10 cm) thick and 6" (15 cm) high, prevents wheelbarrows from breaking through and falling over the edge.

"Guardrail systems, when used for falling object protection, shall have openings small enough to prevent passage of falling objects"



These are some of the OSHA regulations for Fall Protection:

"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 (1.8 meters) 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" (1 meter) high."

"Each employee in a hoist area shall be protected from falling 6 feet (1.8 meters) 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."

For a more complete understanding of the OSHA regulations you can:

- Consult OSHA's excellent online documentation on the Internet: www.osha.gov.
- Note that some states have their own regulations, which will differ from the U.S. Dept. of Labor's OSHA regulations.

Appendix C. Information Request Form

The Superchute factory sends out regular notices regarding new products, changes, recalls, and upgrades. Keep 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.

Name: _____ Company: _____ Address: _____ Phone: _____ Fax: _____	E-mail address: _____ Web site address: _____
Number of chute sections owned: _____ Diameters of the chute sections: _____ Dates of purchase: _____ Name of the Supplier: _____	
Number of chute hoists owned: _____ Models and Serial Numbers: _____ Dates of purchase: _____ Name of Supplier: _____	

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

Appendix D. 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:** Two or more chute sections linked together and used to channel debris into a container.
- Chute Hoist:** An engineered device designed specifically to raise, anchor, and lower a chute. A chute hoist consists of a support frame and a winch apparatus. The support frame, with the winch apparatus removed, can also be called a chute hoist.
- Chute Section:** A modular conical tube with linking hardware. Chute sections are connected 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.
- 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-line, with respect to the center line of the component. Abbreviated as WLL.

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