

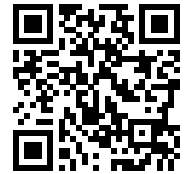
# PENETRATOR

## MOBILE FALL PROTECTION

# OWNERS MANUAL

**Do not throw away these instructions!**  
**Read and understand these instructions before using this product.**

Introduction	2
Model Configurations	3
Roof Zone Cart Assembly	4
Roof Zone Cart Parts List	5
Penetrator Device Assembly and Installation	8
Optional Equipment Assembly Instructions	10
Hoisting Rings	10
Materials Box Installation	10
Rolled Goods Rack Installation	10
<b>Original Penetrator and Penetrator Pro Operating Instructions</b>	11
Multi-Plus and Sentinel Assembly Instructions	18
Removing Spike Engagement Tune	19
Concrete Plate Installation	21
Materials Box Installation	22
Rolled Goods Rack Installation	22
<b>Multi-Plus and Sentinel Operating Instructions</b>	23
Quick Brake Installation	29
SRL Tray - Installation/Operations	30
Penetrator Device Parts List	31
Warning Label Locations	34
Penetrator Warranty	35
Inspection Check List and Maintenance Log	Back Cover



On-line Instruction  
Penetrator Manual  
#08505

**MADE**  
★IN THE★  
**USA**

Use these instructions as part of a training program as required by OSHA and any applicable state agency. The user must understand how to safely use the Penetrator and all safety equipment used in combination with the Penetrator Fall Protection device.

A competent person who is highly trained and experienced, assigned by the employer, must be responsible for all elements of a fall safety program, including the regulation, management, and application as it relates to the use of the Penetrator and related components.

Tie Down Roofing Products Division  
ISO 9001:2015 Certification  
Intellectual property of TIE DOWN Inc. ©2019 TIE DOWN, Inc.

Instruction Sheet #08505  
E1591, Rev. 11/5/20

**TIE DOWN**  
MANUFACTURING INGENUITY

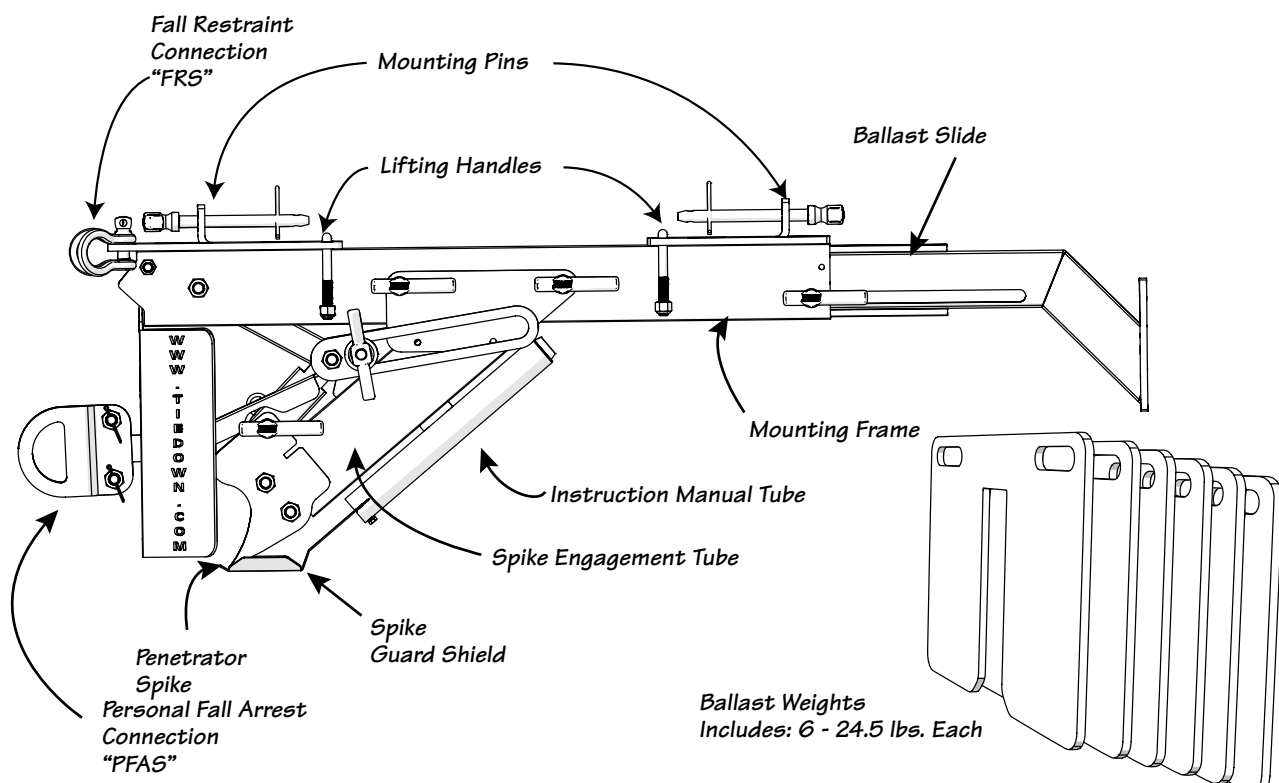
404-344-0000 • [www.tiedown.com](http://www.tiedown.com)  
605 Stonehill Drive SW, Atlanta, GA 30336  
[sales@tiedown.com](mailto:sales@tiedown.com)

# Introduction

## The industries' first lightweight and fully portable mobile fall protection device 3 Fall Arrest and 2 Fall Restraint

When a fall occurs, the powerful penetrating spikes engage, piercing into the roof insulation and metal decking, thus creating a safe, secure anchor. For use on most substrates, EXCLUDING concrete, the Penetrator has been tested for use on Built-Up, TPO, ISO, PVC, EPDM, and other standard materials that are part of a finished roof system. The Penetrator is reusable and offers the lightest mobile fall protection system available on the market today.

New OSHA Rule in affect: Walking-Working Surfaces, #1910.28, please comply with this as well as all Local, State and Federal OSHA rules. The Penetrator is compliant with OSHA Fall Protection Regulation 1926.502

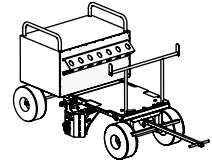
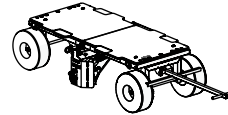
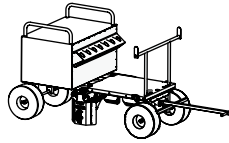
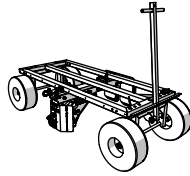


## **WARNING**

Serious injury or death may occur if this equipment is used for purposes other than intended. Tie Down provides the following instructions for the use and care of this equipment. It is the responsibility of the user to understand and convey proper instruction to any and all individuals who use this product for Fall Arrest and or Fall Restraint. The Penetrator complies with the requirements set forth by the Federal Occupational Safety and Health Administration (OSHA) when used according to the manufacturers' instructions.

The Penetrator was designed and tested only to be used on the Roof Zone Trailer #65028 with Flat Free Tires.

# Penetrator Model Configurations



Hardware Included:	Original #65033	Pro #65043	Multi-Plus #65044	Sentinel #65042
Penetrator Device	*	*	*	*
Roofing Zone Cart	*	*	*	*
Aluminum Decking (1 Plate)		*		
Materials Box		*		*
Rolled Goods Rack		*		*
Hoisting Rings		*	*	*
Concrete Ballast (8 Plates)				*
Concrete Ballast (10 Plates)			*	

Available Accessories	Part ID:	Original #65033	Pro #65043	Multi-Plus #65044	Sentinel #65042
Aluminum Decking (2 Plates)	65031	*			
Materials Box	65040	*		*	
Rolled Goods Rack	65038	*(a)		*(a)	
Hoisting Rings	65032	*			
Sentinel Coverersion Kit (8 Plates)	65047	*			
Multi-Plus Conversion Kit (10 Plates)	65046	*			
Rolled Goods Post	65030	*		*	
Quick-Brake	65046	*	*	*	*
Towing Clevis	65029	*(b)	*(b)	*(b)	*(b)
SRL Tray (3 Slotted)	40619	*	*	*	*

Notes: (a) - 2 Rolled Goods Racks needed if used without the Materials Box  
 (b) - The Towing Clevis can not be used with the Quick-Brake

### Penetrator Recommended Surfaces:

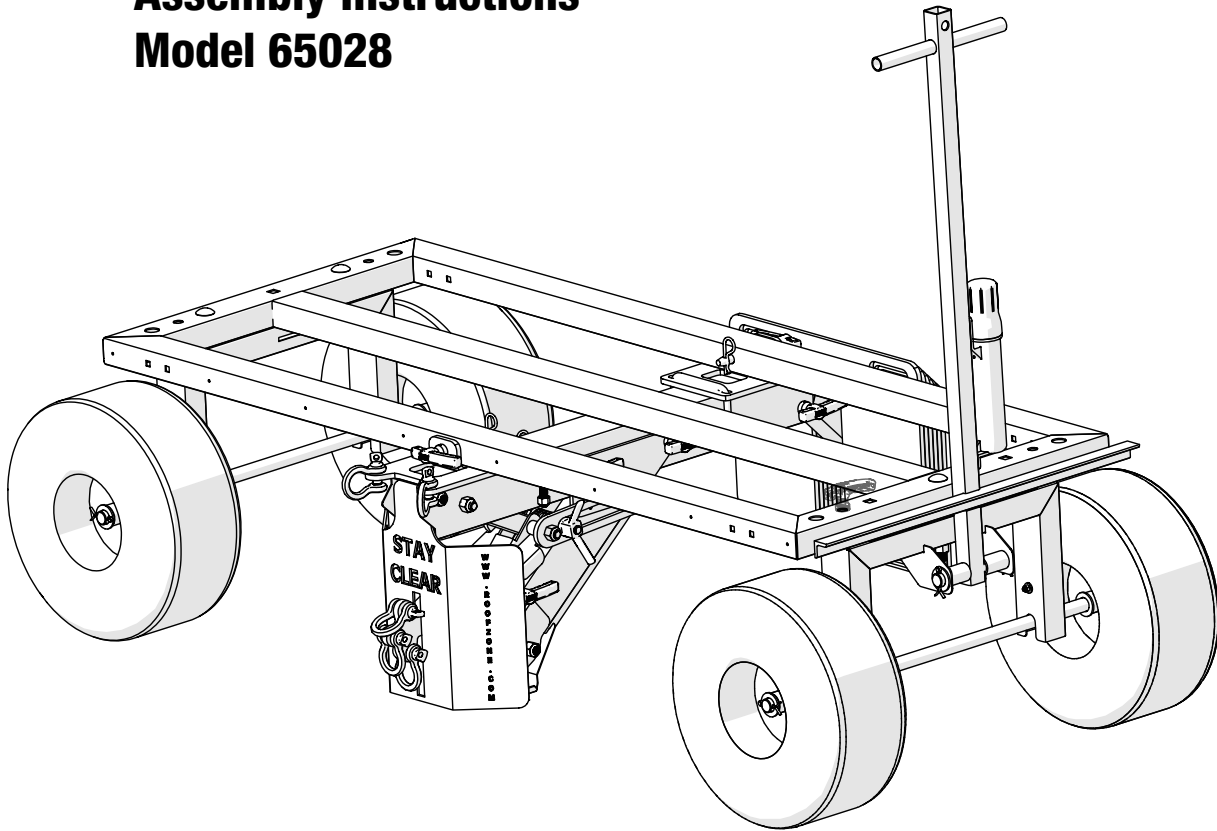
Gypsum Deck, Modified Bitumen Membranes, Built-up Roofing (BUR) Membrane, Modified PVC Membranes, Thermoplastic Polyolefin (TPO) Membranes, Polyisocyanurate (ISO), Expanded Polystyrene (EPS), EPDM Roofing Membranes, Ballasted EPDM Membrane, Hardboard, Flat Surfaces to slopes up to 1:12, Metal Deck (20 ga. And 22 ga. ONLY), Dens Deck & Plywood.

### Multi-Plus and Sentinel Recommended Surfaces:

Concrete (with the required ballast plates and spike engagement tube removed). The spike engagement tube can be reinstalled and the Penetrator can then be used with all surfaces listed above.

# Roof Zone Cart Assembly

## Roof Zone Cart Assembly Instructions Model 65028

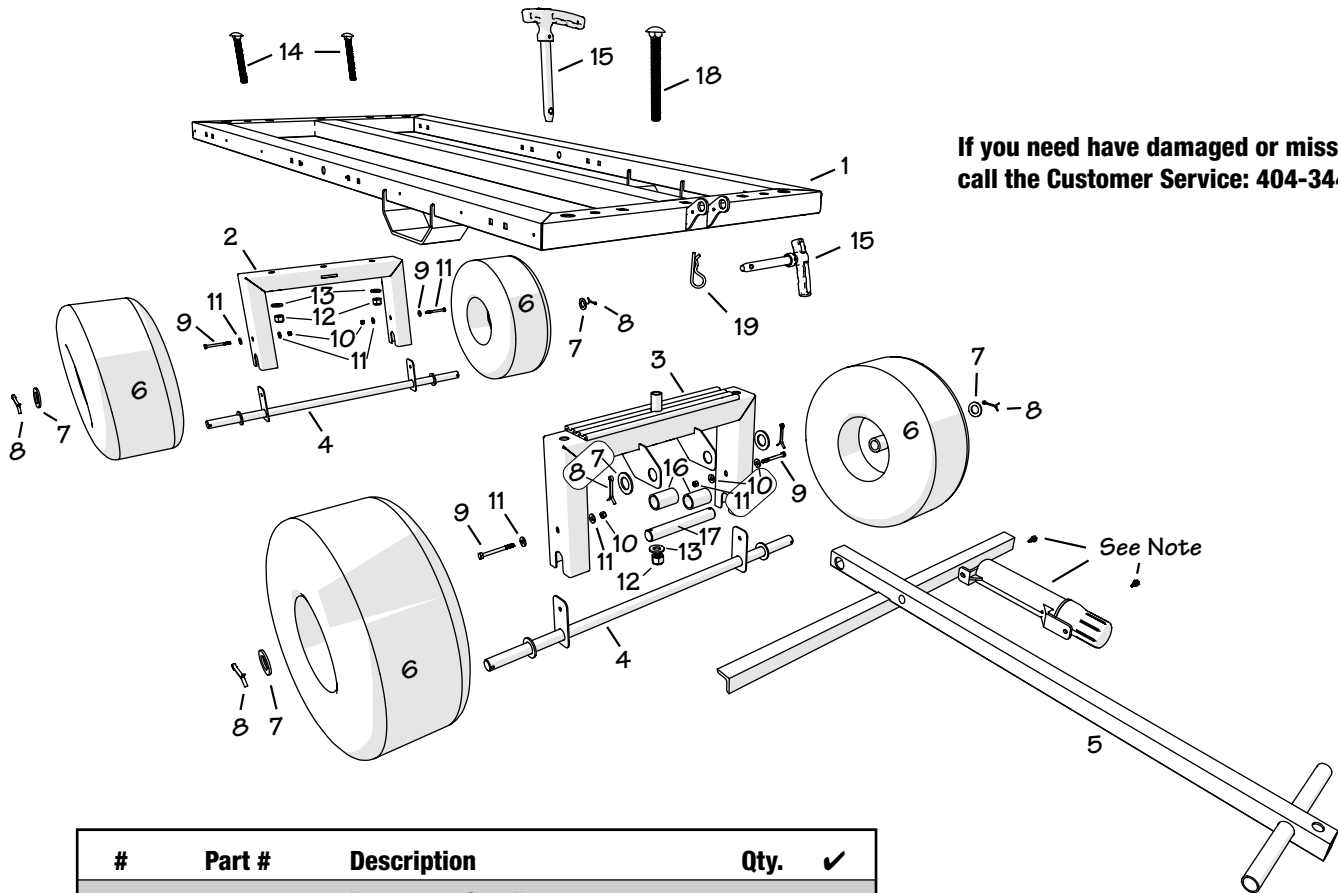


### Important – Please Read These Instructions Fully Before Starting Assembly

- Check you have all the components listed on the next page.
- Remove all parts from the plastic bags and separate them into their groups.
- Keep children and animals away from the work area, small parts could choke if swallowed.
- Make sure you have enough space to layout the parts before starting.
- Assemble on a hard level surface.
- Assembly of the axles/frame will be easier with 2 people.

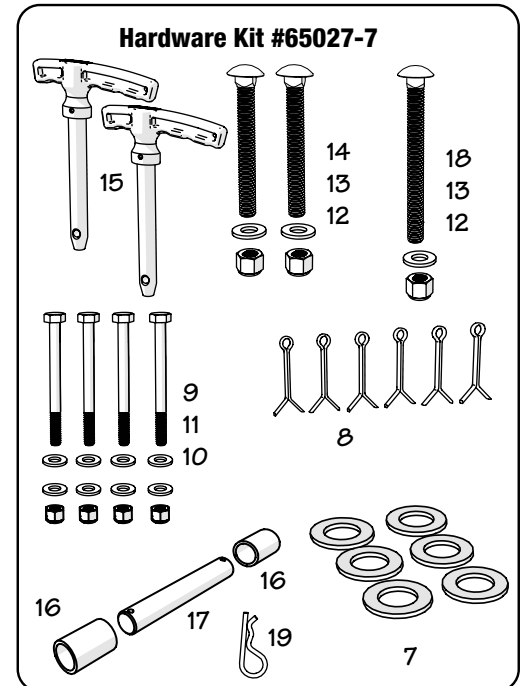
If you need have damaged or missing parts, call the Customer Service: 404-344-0000

# Components - Complete Parts List



If you need have damaged or missing parts, call the Customer Service: 404-344-0000

#	Part #	Description	Qty.	✓
1	65027-1	Penetrator Cart Frame	1	
2	65027-6	Rear Axle Frame	1	
3	65027-2A	Front Axle Frame	1	
4	65027-5	Axle Assembly	2	
5	65027-3	Handle/Brake Assembly	1	
6	13844	Flat Free Tire - 18"	4	
<b>Hardware Kit #65027-7 (In one box)</b>				
7	10520Z	Flat Washer - 1" zinc	6	
8	10691	Cotter Key - 3/16" x 2"	6	
9	10461	Bolt - 1/4-20 x 2.75" Zinc	4	
10	10027	Nylock Nut - 1/4"-20	4	
11	10028	Washer - 1/4"	8	
12	10628	Nyloc Nut - 5/8 -11 zinc Grade 2	3	
13	10513Z	Flat Washer - 5/8" Zinc	3	
14	10455	Carriage Bolt - 5/8x11 x 3"	2	
15	70509	Pull Pin - 5/8" x 3"	1	
16	65027-3-3	Bushing - Cart Handle	2	
17	65018-4-2Z	Handle Pin - 1"	1	
18	10456	Carriage Bolt - 5/8-11 x 6"	1	
19	10604	Safety Pin	1	



**Note:** Instruction Tube is Preinstalled.

Replacement Parts:

Instruction Tube Part #MAX-WT100  
Self Tapping Screws (2) Part #10495

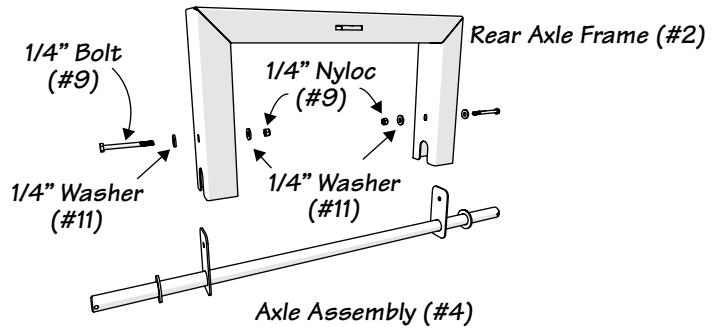
If you need have damaged or missing parts, call the Customer Service: 404-344-0000

# Roof Zone Cart Assembly

## Step 1

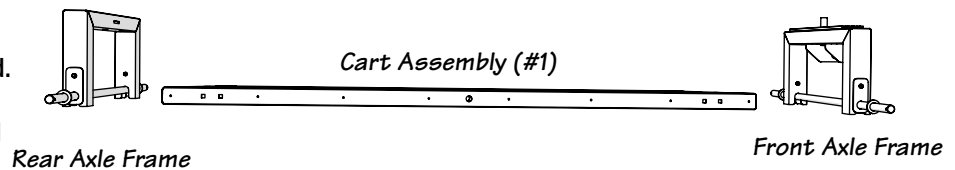
Slide the axle assemblies onto the front/rear axle frames, the axle brackets will be on the outside of the axle frames.

Attach the axle to the frame with 1/4" bolt, washer and nylock nut.



## Step 2

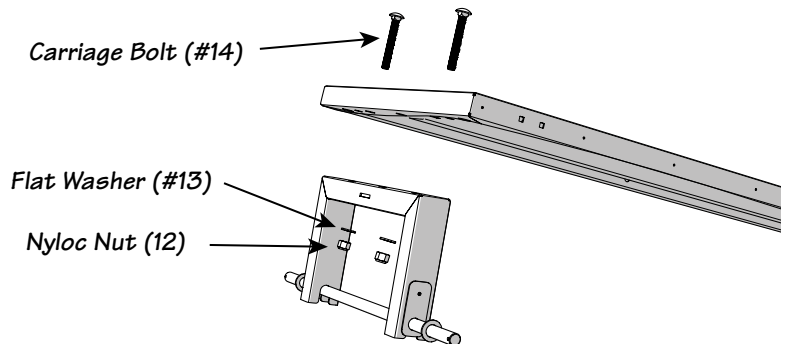
Lay the cart frame flat on hard ground. Position axle frames front and back of the cart. The axle frames will stand on their own.



## Step 3

Lift the rear cart frame (may require two people). Align the mounting holes with the axle and cart frame.

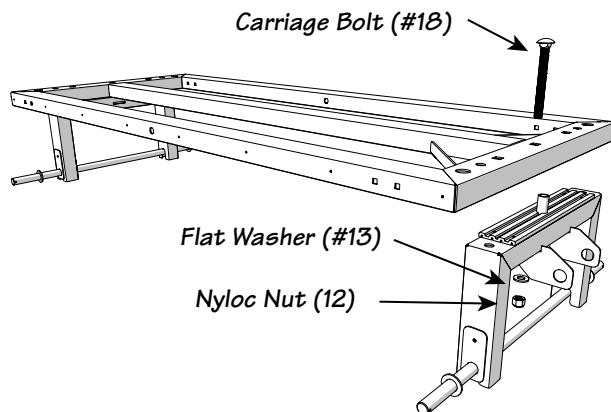
Insert carriage bolts through cart frame and axle frame, attach with washers and nylock nuts. Use a 15/16" socket wrench to tighten the nuts/bolts.



## Step 4

Lift the front cart frame (may require two people). Align the center mounting hole with the axle and cart frame.

Insert carriage bolt through cart frame and axle frame, attach with washer and nylock nut. Use a 15/16" socket wrench on the nut/bolt and tighten to 35 ft. lbs, then counter rotate 1/4 turn. Rotate the axle frame making sure that it turns freely.



# Roof Zone Cart Assembly

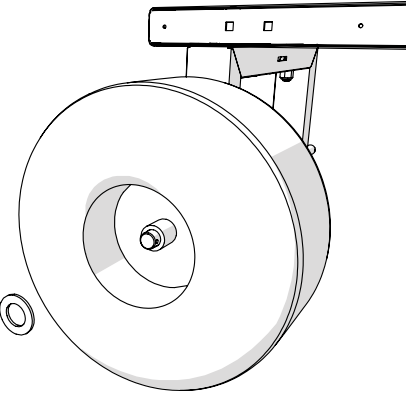
## Step 5

Lift the front or the rear cart (may require two people).  
Slide the flat free tires onto the axle.

Install a washer over the axle shaft, insert cotter key through the axle mounting hole. Split the cotter key securing the tire to the axle frame. Repeat for all four tires.

Flat Washer (#7)

Cotter Key (#8)

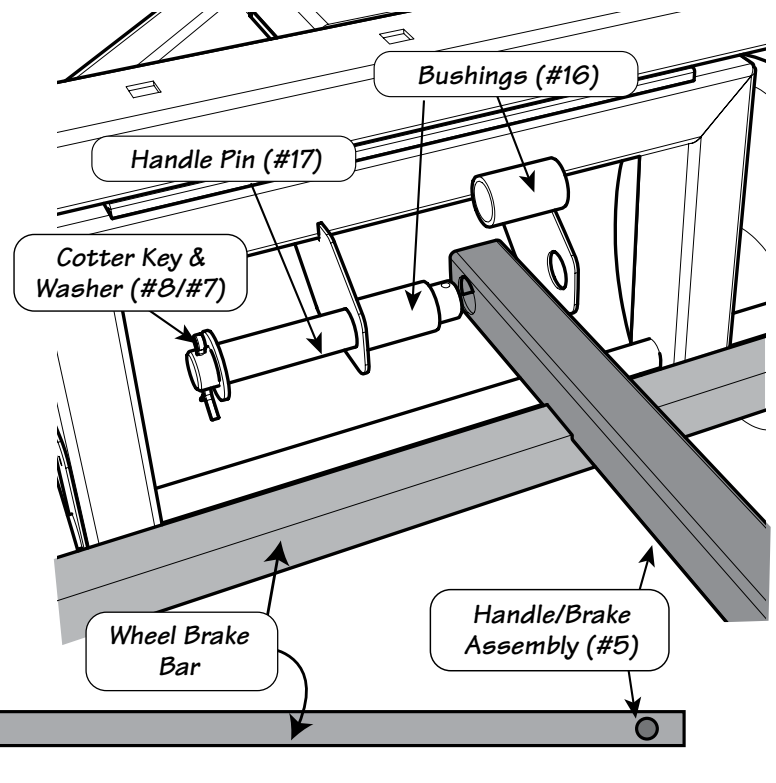


## Step 6

Install and split open cotter key on ONE end of the handle pin (#17), slide on ONE washer. Insert the handle pin through the handle guide bracket on the front axle. Slide one bushing over the handle pin.

Position the handle assembly so the wheel brake bar is located on the bottom of the handle. Align the handle assembly with the handle pin/bushing. Slide the handle pin with bushing through the handle assembly tube while aligning the second bushing with the handle pin.

Once the handle pin is aligned with the second bushing, slide the entire assembly through the opposite handle guide bracket. Slide on a flat washer, install and split open the cotter key.

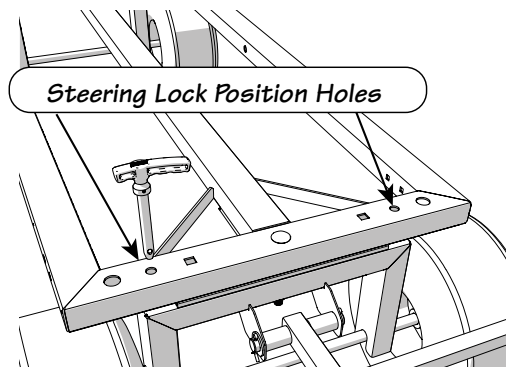


**IMPORTANT:** Side view of the handle brake assembly with the wheel brake bar (on the bottom side).

## Step 7

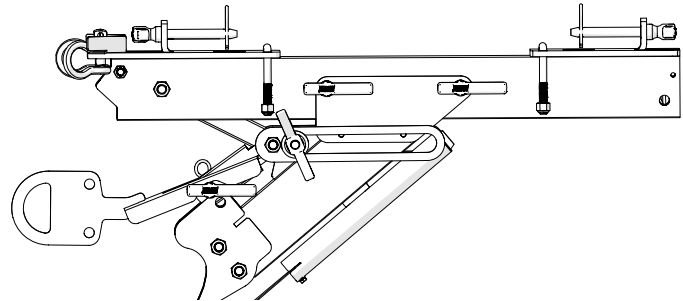
The Penetrator Roofing Cart has the option of locking the steering with a pull pin (both sides).

To lock the front steering: place the pull pin into the smaller inside round hole.



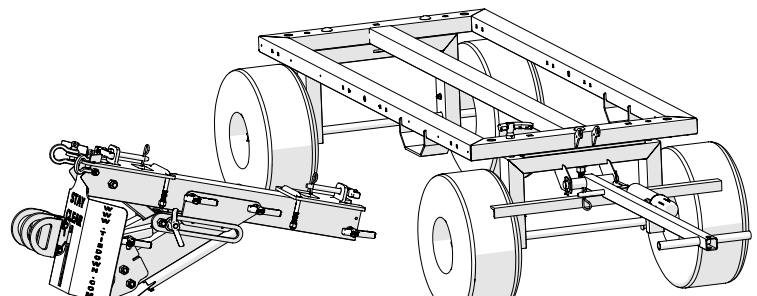
# Penetrator Installation

When you open the Penetrator Fall Protection device for the first time, some minor assembly will be required. The Penetrator device is shipped as shown to the right. The front guard plate, cleats and cart assembly must be assembled before use.



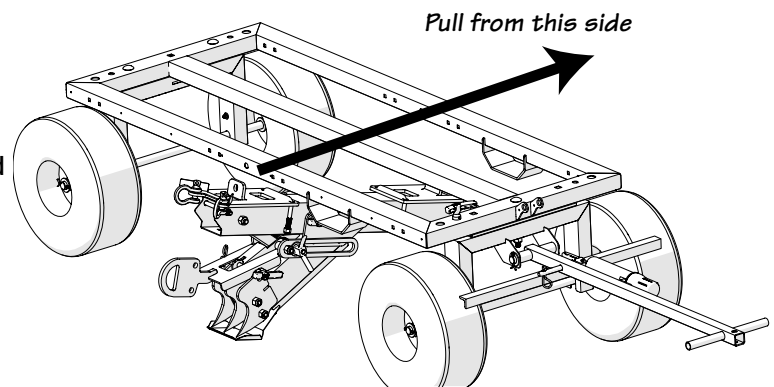
## Step 1

Position the Cart and Penetrator as close as possible to the final assembly. Stand up the Penetrator on its extension arm and safety plate.



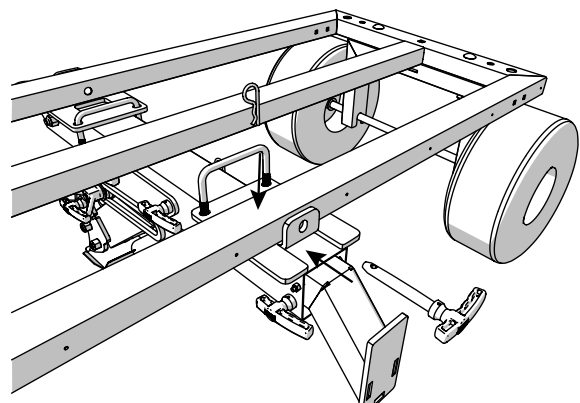
## Step 2

Pull the Penetrator device under the cart from the opposite side of the cart. Stop pulling when the pull pin stop is aligned with the cart.



## Step 3

From the weight side of the Penetrator, lift up on the pull pin mounting bracket. Align the holes with the Penetrator and the pull cart. Insert the pull pin through the bracket and cart. Attach safety pin to the pull pin.

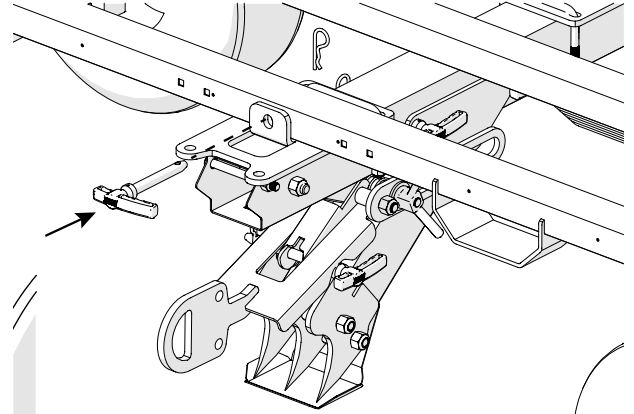




# Penetrator Installation

## Step 4

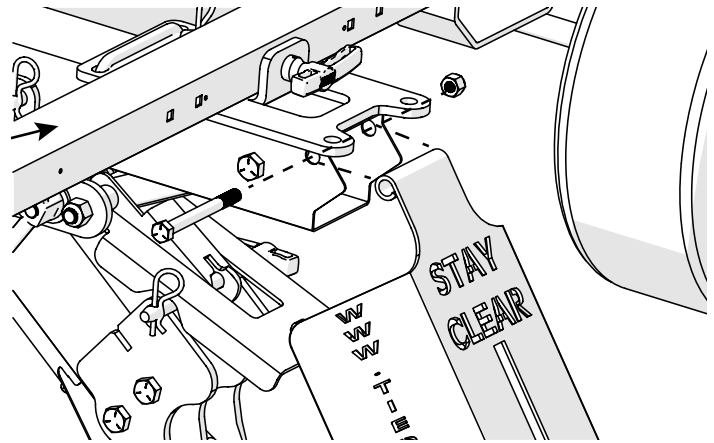
From the front side of the Penetrator, lift up on the pull pin mounting bracket. Align the holes with the Penetrator and the roof cart. Insert the pull pin through the bracket and cart. Attach safety pin to the pull pin.



## Step 5

Locate the 5/8" Hex Head Bolt and 5/8" nylock nut from the hardware bag.

Working from the front side of the Penetrator, Align the front guard plate to the top right mounting hole located on the Penetrator base. Insert the hex head bolt through the base and front guard plate, attach nylock nut. Tighten with a 5/8" wrench. The front guard plate must be able to pivot outward without any resistance (Do not over tighten).



## Step 6

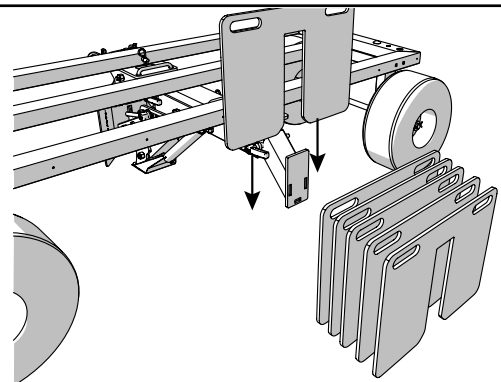
Locate the 5 anchor shackles from the hardware bag.

Working from the front side of the Penetrator, install the two anchor shackles for fall restraint on top position holes. Install the remaining three anchor shackles on the fall arrest arm in front of the front guard plate.

## Step 7

Carefully lift and place the ballast weights one at a time on the ballast slide assembly.

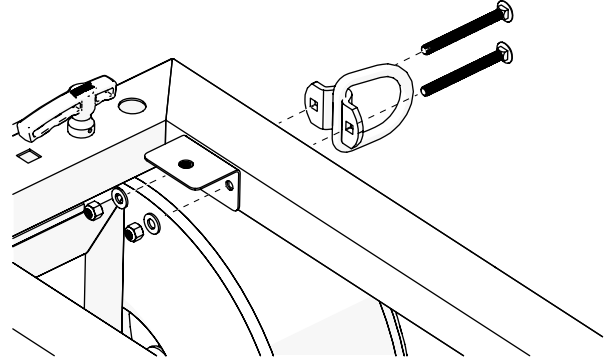
**BE VERY CAREFUL, THESE ARE PITCH POINTS**



# Installation of Optional Equipment

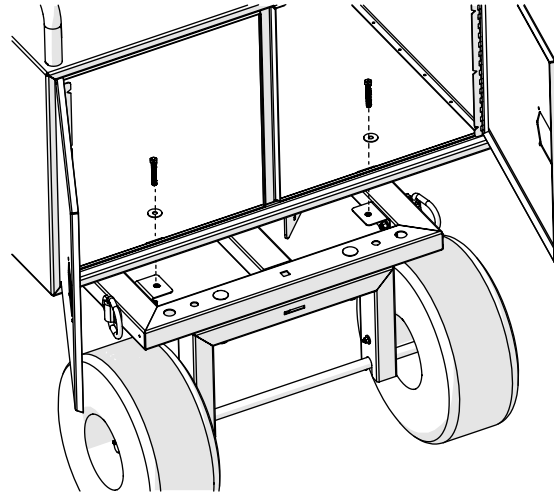
## Hoisting Rings and Mounting Bracket Installation

Align the hoisting ring/mounting bracket with the two holes located on each side/corner of the roofing cart. Insert each hex head bolt through the mounting bracket and passing out the opposite side of frame. Slide the "L" shaped mounting bracket over the two hex head bolts. Place washers over each bolt and tighten with nyloc nuts. Repeat for each corner.



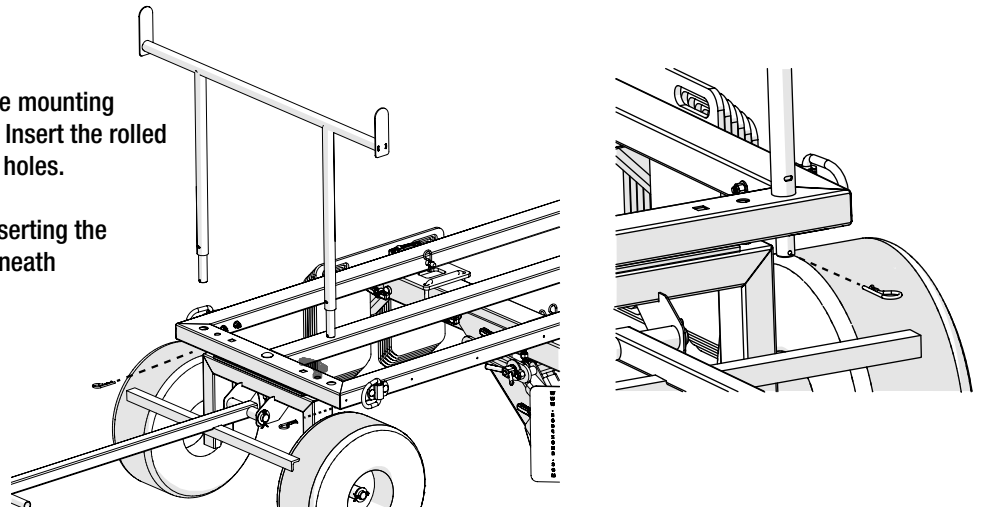
## Material Tool Box Installation

1. Two people are needed to lift the materials box safely on top of the Penetrator cart. Place the materials box on the back half of the cart aligning the two mounting holes over the cart mounting holes. Open the locking doors and the mounting holes are located just inside the door edge. Look through the holes and make sure you can see completely through the materials box and the cart frame. Use a screw driver or a center punch to align box/frame.
2. Place the washer over the hex head nut and insert the bolt through the material box and frame. The hex head bolt should pass through to the "L" shaped bracket. Once both bolts are aligned and fastened with the underside welded nut, tighten both bolts.

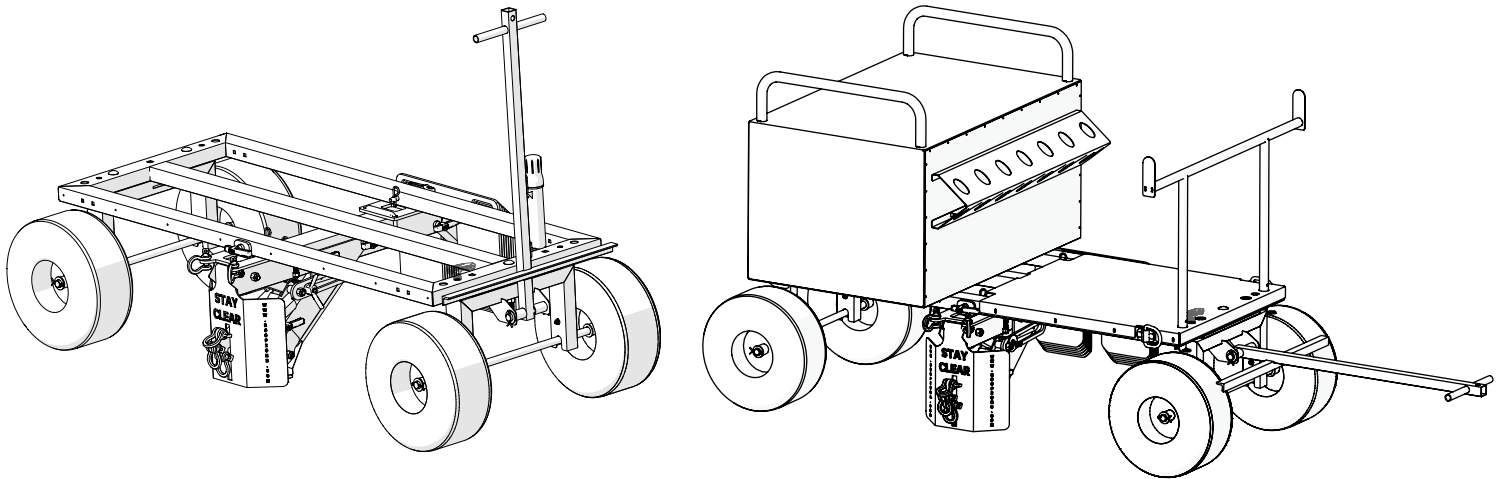


## Rolled Goods Rack

1. Align the rolled goods rack with the mounting holes located above the front axle. Insert the rolled goods post into the corresponding holes.
2. Secure the rolled goods rack by inserting the safety pin into the post hole underneath the cart frame.



# Original Penetrator and Pro Operations



## Applications

When set up properly the Penetrator allows for three workers to be tied off for fall arrest using the specially designed fall arrest connection mechanism with three individual attachment points. An additional two workers can be tied-off for fall restraint at the specified attachment points.

The Penetrator in conjunction with the Roof Zone cart may be used as an anchor point in a complete mobile fall protection system. The Penetrator with cart allows both worker mobility and fall protection. See [www.osha.gov](http://www.osha.gov) for all regulations and standards.

**Fall Restraint System** – A fall restraint system (FRS) prevents the user from falling. The system is comprised of a body harness along with an anchorage, connectors and other equipment. The components typically include a lanyard and also may include a lifeline and other devices. The Penetrator can be used as an anchorage in a fall restraint system for up to two workers.

**Personal Fall Arrest System** – A personal fall arrest system (PFAS) arrests a fall after a fall incident has occurred. The system is comprised of an anchor point, connecting device, body harness, connectors, and a body harness and must include a deceleration system, or suitable combinations. Note that a PFAS does NOT prevent a fall from occurring. The Penetrator can be used as an anchorage in a PFAS for up to three workers. A Personal Fall Arrest System must meet the following OSHA requirements:

- Limit maximum arresting force on an employee to 1,800 pounds when used with a body harness;
- Be rigged (lifeline plus deceleration device) so that an employee can neither free-fall more than 6 feet (1.8 meters) nor contact any lower level;
- Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to OSHA 3.5 feet (1.07 meters); and 4 ft. per ANSI 359.
- Have sufficient strength to withstand twice the potential impact energy of an employee free-falling a distance of 6 feet (1.8 meters) or the free-fall distance permitted by the system, whichever is less.

**Anchorage** — An anchorage is a secure point of attachment for lifelines, lanyards, or deceleration devices. The Penetrator is a mobile anchorage.

**Penetrator Use** - For use on low slope surfaces only.

# Applications: Surfaces

## Recommended Surfaces:

- ✓ Gypsum Deck
- ✓ Built-up Roofing (BUR) Membrane
- ✓ Thermoplastic Polyolefin (TPO) Membranes
- ✓ Expanded Polystyrene (EPS)
- ✓ Ballasted EPDM Membrane
- ✓ Flat Surfaces to slopes up to 1:12.
- ✓ Dens Deck
- ✓ Modified Bitumen Membranes
- ✓ Modified PVC Membranes
- ✓ Polyisocyanurate (ISO)
- ✓ EPDM Roofing Membranes
- ✓ Hardboard
- ✓ Metal Deck (20 ga. And 22 ga. ONLY)
- ✓ Plywood

## Do Not Use on the Following Surfaces:

- ✗ Concrete
- ✗ Snow
- ✗ Tectum Deck
- ✗ Metal Deck less than 22 ga. Or over 20 ga. (Structural Deck)
- ✗ Loose laid material not part of a complete finished system.
- ✗ Ice

# Roofing Load Requirements

**Before the Penetrator and cart are hoisted to any roofing deck the user MUST VERIFY THAT THE DECK CAN ACCOMMODATE THE LOAD REQUIREMENTS.**

Verify that the surface that the Penetrator will be used on is capable of supporting both the unit and personnel using it. Inspect that the entire area to determine if the working surfaces have the strength and to support users safely.

**CAPACITY:** The Penetrator Mobile Fall Protection System is designed for a maximum of three persons for fall arrest and two for fall restraint with a combined weight (clothing, tools) of no more than 310 lbs. per person. No more than five persons may be connected to the Penetrator at any time.

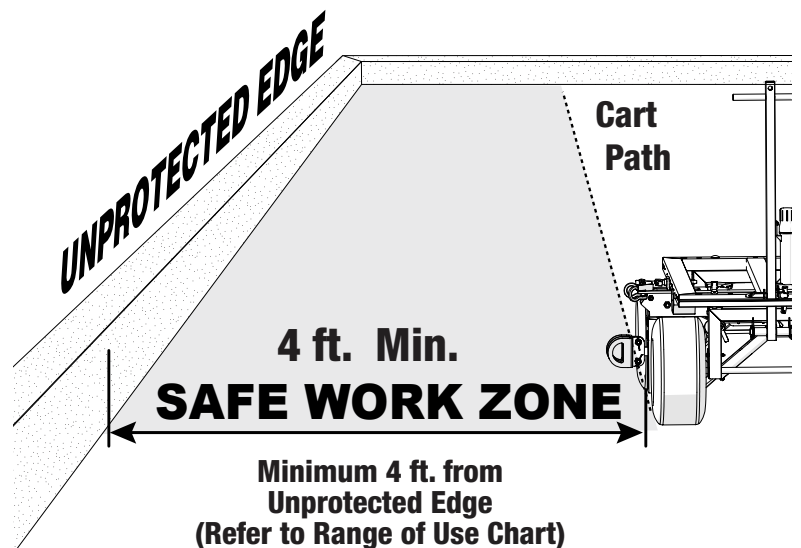
**IMPORTANT:** DO NOT start work for which fall protection is required until the Penetrator and corresponding FRS or PFAS have been completely installed. Do NOT disable any part of the FRS or PFAS, including the Penetrator unit, or reposition the unit, until work for which fall protection is required has ceased.

# Placement/Repositioning of the Penetrator Safety Cart

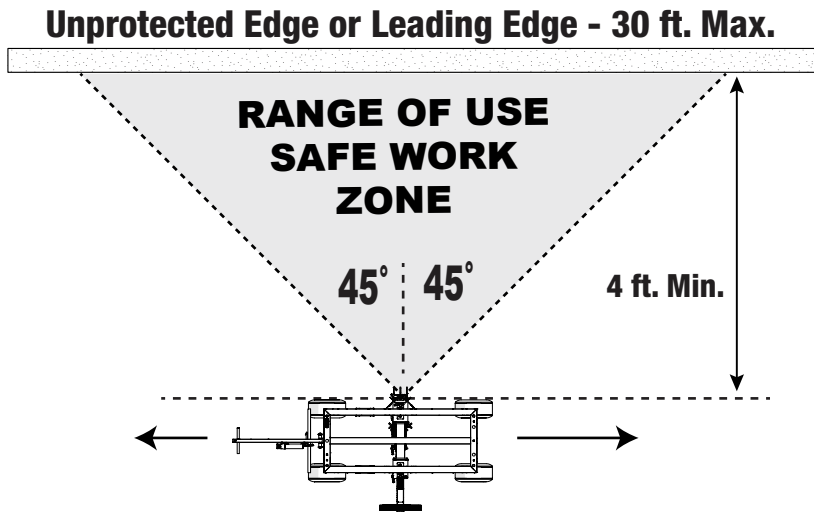
The attachment tie-off anchor shackles must be pointed toward the leading edge and the cart is set to travel parallel to the unprotected edge or leading edge.

Position the Penetrator such that the front guard plate is between 4 feet from the leading edge, and in line with the center of the area to be worked.

**IMPORTANT:** When repositioning the Penetrator Cart, active fall restraint is maintained by a maximum length of five feet less than the distance of the cart to the leading edge. Once repositioned, the tow handle must be in the down position in order to lock the wheels and the steering locking pin must be inserted into the steering mechanism (shown on next page).



# Placement/Repositioning of the Penetrator Safety Cart



**Range of Use Chart**

Distance to Leading Edge	Maximum Range of Use
4 ft.	8 ft.
5 ft.	10 ft.
6 ft.	12 ft.
7 ft.	14 ft.
8 ft.	16 ft.
9 ft.	18 ft.
10 ft.	20 ft.
11 ft.	22 ft.
12 ft.	24 ft.
13 ft.	26 ft.
14 ft.	28 ft.
15 ft.	30 ft.

**Prior to Positioning the Penetrator:**

Verify that the surface is capable of supporting the Penetrator, ballast weights, cart, and all personnel using it.

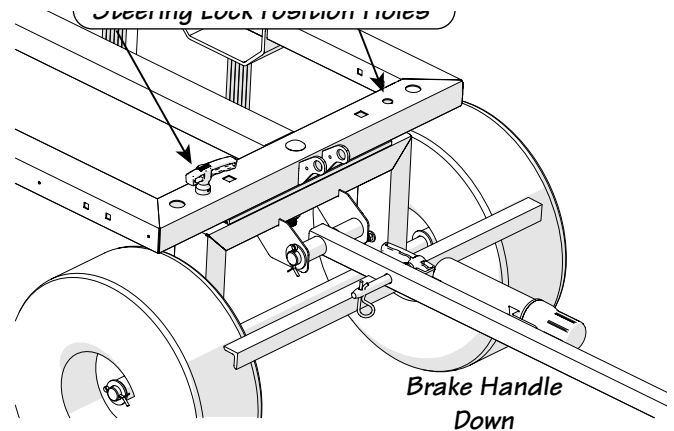
**During Repositioning the Penetrator:**

Active fall restraint is maintained by a maximum length of five feet less than the distance of the cart to the leading edge.

**After 15 ft. Max. Range  
No Greater than 30 ft.**

## Setting the Ballast Slide and Weights

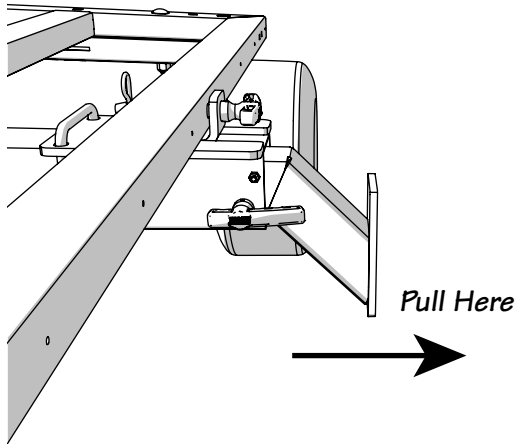
Make sure the handle/tire brake mechanism is in the down position and the brake stop rests firmly against the front tires. Place the Pull Pin into the front axle fork through the appropriate hole located on either side of the cart by aligning with the roof cart frame tube with the front axle fork. This will prevent the cart from turning.



**DO NOT use the Penetrator Roofing Cart without the ballast slide extended and all ballast weights applied. Once the location for the operation of the Penetrator has been determined, the ballast slide must be adjusted to the proper operational length.**

# Setting the Ballast Slide and Weights

**DO NOT use the Penetrator Roofing Cart without the ballast slide extended and all ballast weights applied.** Once the location for the operation of the Penetrator has been determined, the ballast slide must be adjusted to the proper operational length.



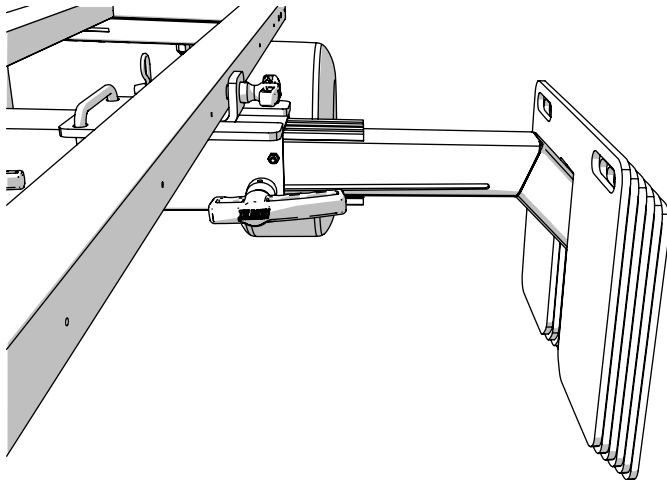
## Step 1

Hold on the bottom of the ballast arm and pull outward.

## Step 2

Continue pulling until the ballast arm stops.

If ever needed, the ballast arm can be fully removed by pulling out the pull pin.



## Step 3

Carefully place the ballast weights one at a time. Be carefully when placing the ballast, each weight has the potential of being a Pitch Point.

**DO NOT USE THE PENETRATOR WITHOUT THE BALLAST SLIDE ARM EXTENDED AND THE BALLAST WEIGHTS APPLIED.**



# Connecting to the Penetrator Safety Cart

**DO NOT** hook Personal Fall Arrest System (PFAS) to any point except a Fall Arrest or Fall Restraint Tie-off Anchor Shackle

When making connections, only use double-locking snap hooks and double-locking carabiners with this equipment. Only use connectors that are suitable to each application. Ensure all connections are compatible in size, shape and strength. Do not use equipment that is not compatible. Ensure that all connectors are fully closed and locked.

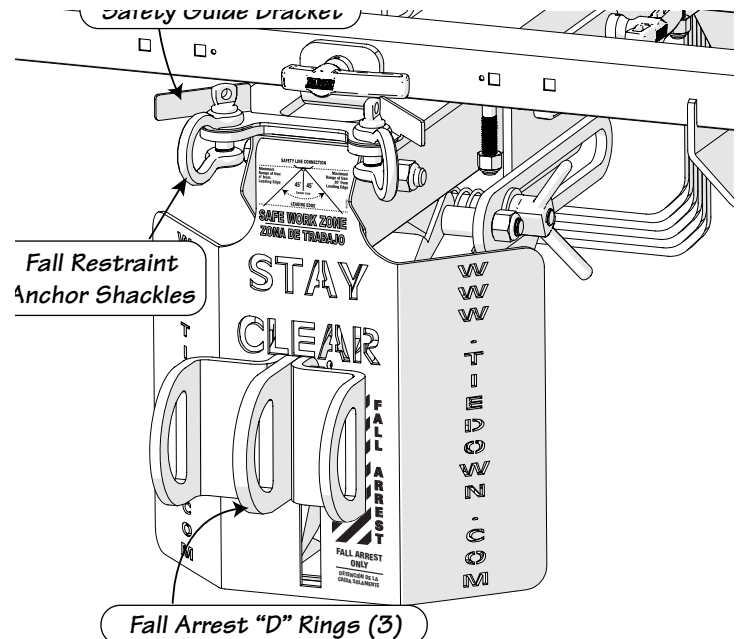
## The Fall Restraint Tie-Off Shackles

Two Fall Restraint Anchor Shackles are installed on the top side of the Penetrator where labeled. The Fall Restraint Anchor Shackles **DO NOT** arrest falls. The user must insure that the Fall Restraint worker is personally equipped with lanyards, harnesses, safety lines, etc., when working in conjunction with potential fall arrest workers.

**Do Not allow the fall restraint user to work close to any roof edge.**

## FALL ARREST TIE-OFF Shackles

The three Fall Arrest Tie Off shackles are located on the lower side of the Penetrator, in front of the stay clear guard as labeled. The user must insure that the lanyards and harness are properly attached.



**IMPORTANT:** Confirm all screw pins on all five anchor shackles are fully inserted prior to attachment of Fall Restraint or Fall Arrest lines.

**IMPORTANT:** **DO NOT** allow workers to cross paths (cross lines) at anytime! Fall Restraint/Fall Arrest lines must never cross over each other. Crossed lines will cause the unit to not function as intended. Failure to maintain clear lines may cause a accident or death.

# Before Using the Penetrator

OSHA requires that before operating the system there must be an inspection for damaged equipment.

- 1 Check for loose, bent or damaged parts, including the three penetrating spikes.
- 2 Check welded components for distortion, cracks, or other damage.
- 3 Check Tie-off shackles for distortion or damage and confirm that they are properly tightened.
- 4 Check retaining slide bars for rusting and/or wear before each use.
- 5 All labels must be present and fully legible. (Copies of all labels are attached at the back of this section for accurate inspection.)
- 6 Check for all pull pins that they are fully inserted and the safety cotter pin clips are attached to each pull pin.

**IMPORTANT: BEFORE USING THIS UNIT, A RESCUE PLAN MUST BE ADOPTED.**

OSHA requires employers to provide a quick rescue of employees in the event of a fall or employers shall assure that employees are able to rescue themselves. It is impossible to guarantee that an employee can rescue himself because he may be unconscious or injured as a cause or result of the fall. Therefore, a procedure involving rescuers must be adopted.

**Consult with your roofing distributor/supplier for fall rescue equipment.**

**DO NOT OPERATE DAMAGED EQUIPMENT. DO NOT OPERATE EQUIPMENT THAT HAS BEEN MODIFIED.**

(Please use the Inspection and Maintenance Log contained within the instructions manual )

## Maintenance and Care

- ✓ Inspect Penetrator before and after each use.
- ✓ Keep wheels free from roofing debris. Any asphalt or adhesives on the tires can cause the wheel brake to function improperly.
- ✓ Regularly inspect for damaged or missing parts and do not place the Penetrator into service until all missing and or damaged parts have been replaced.
- ✓ Store the Penetrator in a place protected from weather and where only authorized employees have access.
- ✓ Maintain finish to prevent corrosion.

## General Safety Precautions

- USE COMMON SENSE! Most accidents can be avoided by using common sense and concentrating on the job at hand. Look around and confirm a safe distance from the roof edge is being maintained.
- The Penetrator should not be used by persons whose ability or alertness is impaired by fatigue, intoxicating beverages, illegal or prescription drugs, or any other physical cause that exposes the user or others to injury.
- Always wear proper safety attire.
- Keep hands and feet clear of moving parts. DO NOT stick hands or fingers in the equipment when workers are attached to the Penetrator.
- Do not operate the equipment near electrical power lines. **ELECTRICITY KILLS!**
- Do not allow passengers to ride on safety cart.
- Allow handle to drop and set brake when not in use. Insert the Pull Pin into the axle fork in order to prevent unwanted turning of the roof cart.
- Ensure that all areas directly underneath, and in front of the cart, are clear and free of debris.
- Do not use on roofs with ice or snow.
- Only use the unit on a surface or roof composition for which it has been tested.
- Do not set unit atop unfastened materials. Materials may slide if not mechanically attached to the roof.
- Depending on added weight loaded on the Roof Cart / Penetrator unit (including all materials) additional workers may be required to safely move the unit. Always use caution when moving the unit.

## Hoisting Safety Precautions

- When hoisting by crane, a spreader bar must be used.
- Loads may slip, if the Penetrator is not hoisted properly, this could result in injury or death.
- Do not use with damaged slings or chains.
- Utilize appropriate rigging gear for overhead lifting.
- Utilize rigging gear within the industry standards and the manufacturer's recommendations.
- Conduct regular inspection and maintenance of the rigging gear.
- DO NOT hook to the fall arrest or fall restrain shackle safety line connectors when lifting the cart.
- Do Not lift Penetrator Cart with materials on the cart when hoisting.



# Procedure for Handling the Penetrator After a Fall

**Before rescuing a fallen employee, check that the Penetrator is secure.**

It is highly recommended that any rescuer be tied off in a FRS before attempting to aid in a rescue. The number of rescuers allowed to tie off to the Penetrator is 3 (three) minus the number of fallen workers. Up to 2 (two) additional rescuers may tie off to the Penetrator utilizing the two fall restraint tie-off shackles marked for FRS.

**Prior to disengaging the Penetrator after deployment as the result of an fall incident, make certain that the rescue procedure has been successfully completed.**

# Procedure for Reseting the Penetrator After a Fall

Prior to disengaging the Penetrator after deployment as the result of an fall incident, make certain that the rescue procedure has been successfully completed.

The three penetrating spikes will be somewhat buried into the roof after activation.

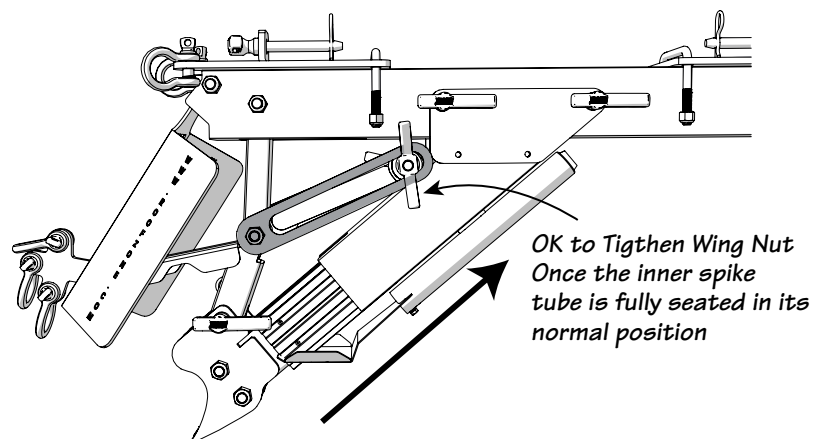
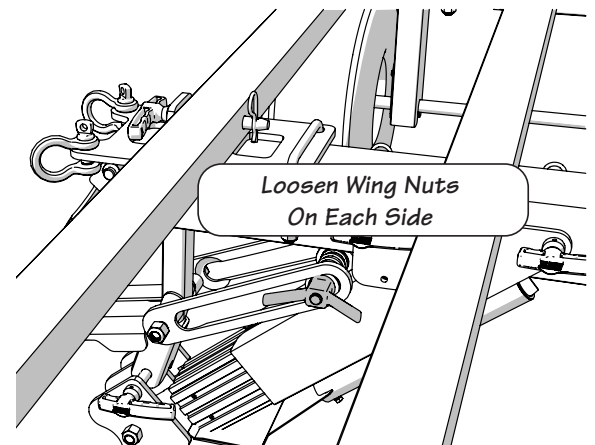
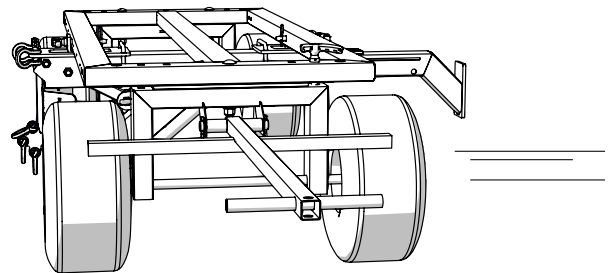
**Follow these steps to reset the Penetrator Device:**

1. Remove the ballast weights.
2. Using at least two people, rotate the entire roofing cart while sliding it backward from the engagement point. Once the spikes are clear of the engagement area, it is safe to slowly lower the roofing cart.
3. Loosen the Wing Nuts on each side of the Spike engagement tube.
4. Standing behind the Penetrator, reach down through the roofing cart, and grasp the upper front sides of the outer spikes. Pull upward on the inner spike tube, as you pull up the front guard plate and other components will reset to their original positions.
5. Continue pulling up the inner spike tube until it stops. When the inner spike tube is fully inserted into the outer engagement tube, firmly tension the two large wing nuts on both retaining slide bars until fully seated against the threaded slide bolt. (See illustration right).

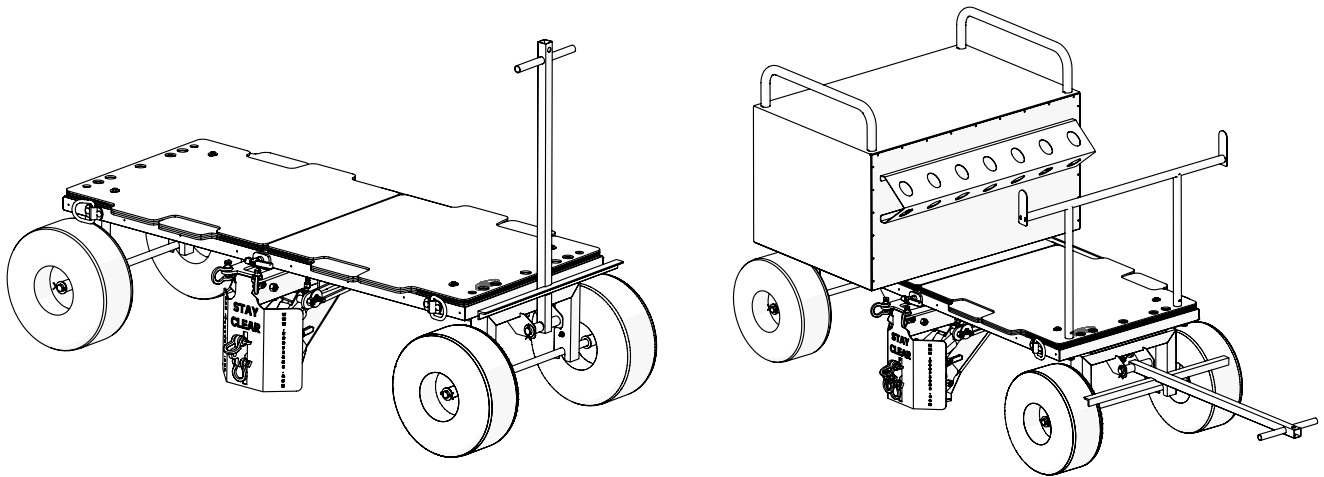
Always use caution when disengaging the outer engagement tube as well as reinserting the inner engagement tube as these areas can become pinch points and cause bodily injury.

**Do not reuse the Penetrator after incident until fully inspected and any damaged parts have been replaced and recertification and inspection has been performed. See inspection check list on back cover.**

**Rotate and Pull Back**



# Penetrator Multi-Plus and Sentinel Operations



## Applications

The Multi-Plus and Sentinel Penetrators may be used as an anchor point in a complete mobile fall protection system. The Penetrator with cart allows both worker mobility and fall protection. See [www.osha.gov](http://www.osha.gov) for all regulations and standards.

**Fall Restraint System** – A fall restraint system (FRS) prevents the user from falling. The system is comprised of a body harness along with an anchorage, connectors and other equipment. The components typically include a lanyard and also may include a lifeline and other devices. The Concrete Penetrator can be used as an anchorage in a fall restraint system for up to two workers.

### Personal Fall Arrest System

**WHEN USED ON CONCRETE, THE PENETRATOR SYSTEM CAN NOT BE USED AS A FALL ARREST SYSTEM! THE PENETRATOR INNER SPIKE ENGAGEMENT TUBE MUST BE REMOVED AND THE CART MUST BE INSTALLED WITH 10 CONCRETE BALLAST PLATES OR 8 CONCRETE BALLAST PLATES WITH THE MATERIALS BOX INSTALLED.**

### Personal Fall Arrest System OPTION:

**The Multi-Plus and Sentinel Penetrator cart can be used on other acceptable roofing surfaces, providing the roof can safely support the full cart weight with or without the concrete ballast plates. If your concrete system is used on non-concrete surfaces please refer to the Penetrator Safety Instructions.**

**Anchorage** — An anchorage is a secure point of attachment for lifelines, lanyards, or deceleration devices. The Penetrator is a mobile anchorage.

**Penetrator Use** - For use on low slope surfaces only.

# Penetrator Device Set Up for Concrete



## WARNING



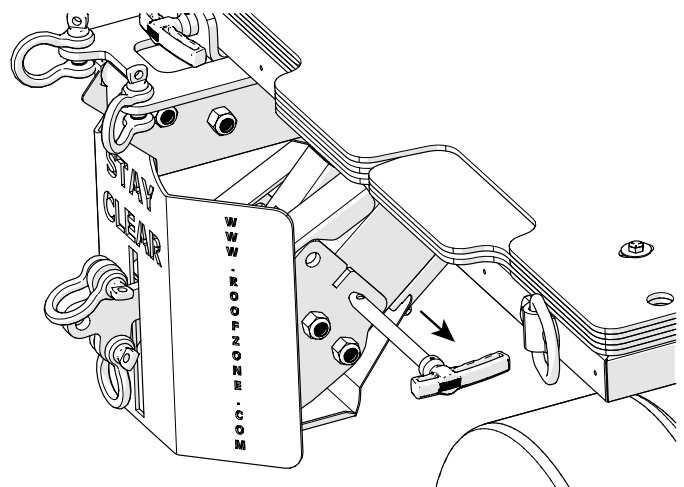
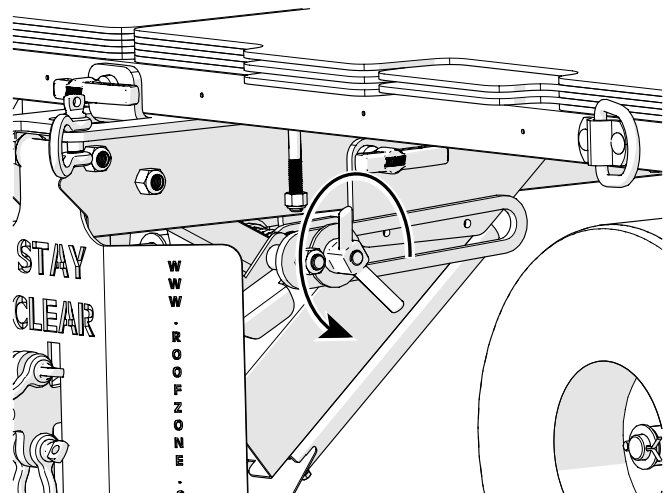
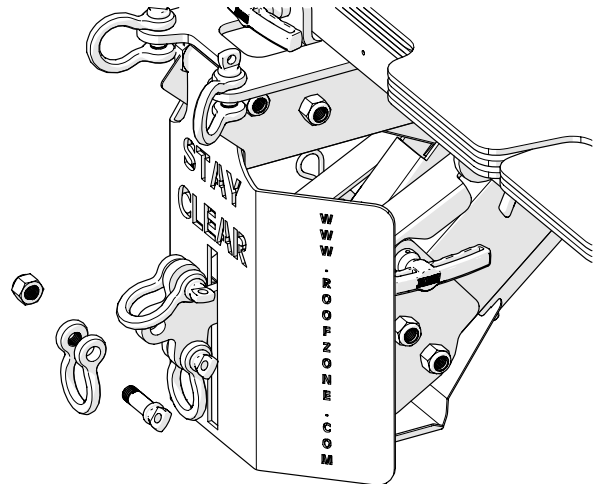
**THE SET UP PROCEDURE FOR CONCRETE REMOVES THE PENETRATOR SPIKES AND CAN NOT BE USED ON ANY SURFACE OTHER THAN CONCRETE!**

**BEFORE ATTACHING ANY FALL RESTRAINT CONNECTIONS, THE SPIKE ENGAGEMENT TUBE MUST BE REMOVED WHEN USED ON CONCRETE.**

**NOTE:  
ONLY FOUR CONNECTIONS CAN BE USED ON THE PENETRATOR DEVICE. TWO TIE OFF SHACKLES ON THE FALL ARREST AND TWO ON THE FALL RESTRAINT.**

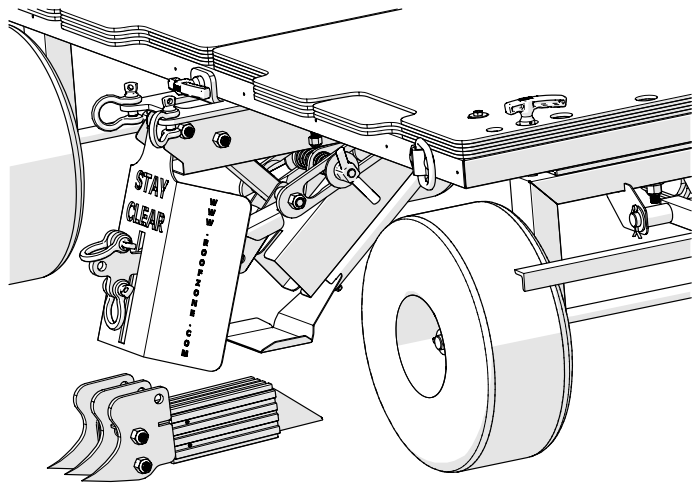
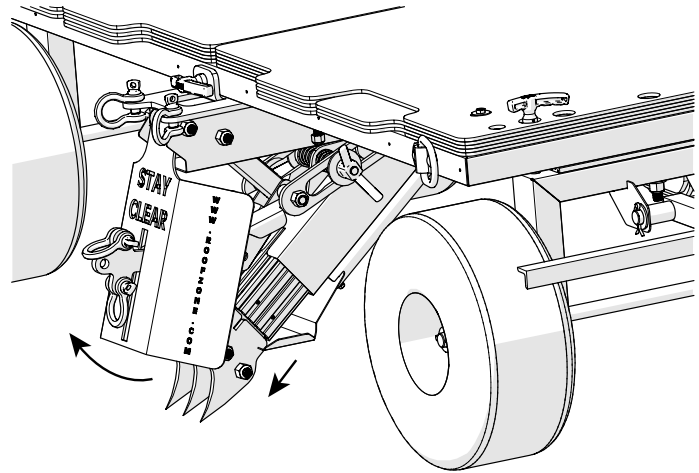
### How to set up for concrete surfaces:

1. Remove the middle shackle, nut and bolt. Store in a safe location. You will want to replace the shackle connection when used on non concrete surfaces.
2. Turn the large wing nut to counter clockwise 1/2 to 1 full turn.
3. Remove the black pull pin located just above the spike plates. This will release the spike tube.

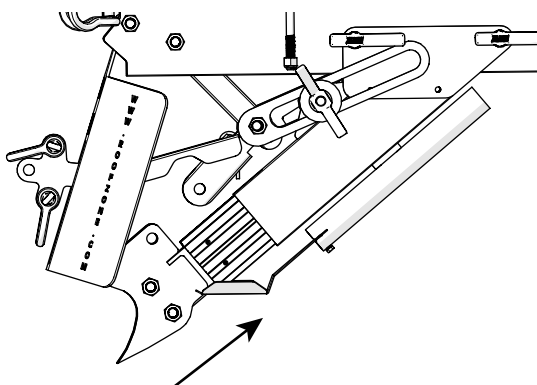


**IMPORTANT:**  
**BEFORE REMOVING THE SPIKE TUBE, THE OPERATOR MUST WEAR HEAVY DUTY GLOVES. THE SPIKES ARE VERY SHARP AND EXTREMELY DANGEROUS.**

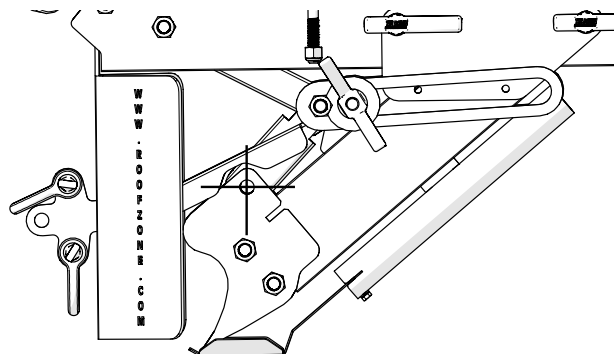
4. Lift up the front safety plate. The spike engagement tube should slide out, it may be pulled out. Be very careful handling the spike tube, the spikes are very sharp and dangerous.
5. Store the shackle and the spike tube in a safe and secure location. For future use the Penetrator can be converted back to non-concrete surfaces.



## Reinstalling the Spike Engagement Tube



1. Lift up the front safety plate. Slide the spike engagement tube into the outer spike tube. **ATTENTION: THE SPIKES ARE VERY SHARP AND EXTREMELY DANGEROUS** work with heavy duty gloves. Slide the spike tube upward until it stops.



2. As the safety plate lowers down to the normal position, the Penetrator short link and long link will align with the spike plates. It may be necessary to slide the spike engagement tube up or down a little to align the links with the spike plates. Once all three are aligned, insert the spike pull pin.

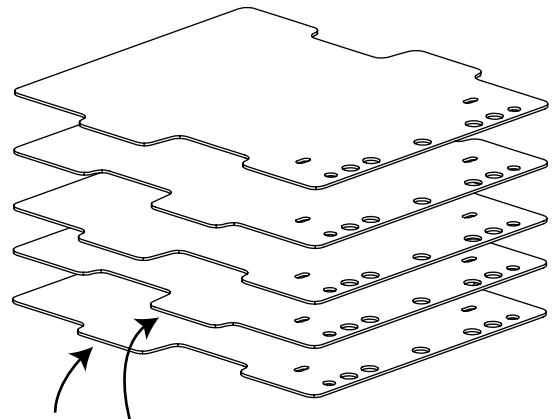
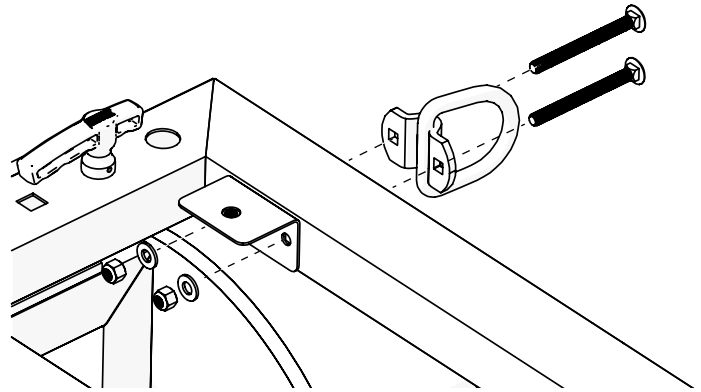
# Concrete Ballast Plate Installation

## Concrete Ballast Plate Installation

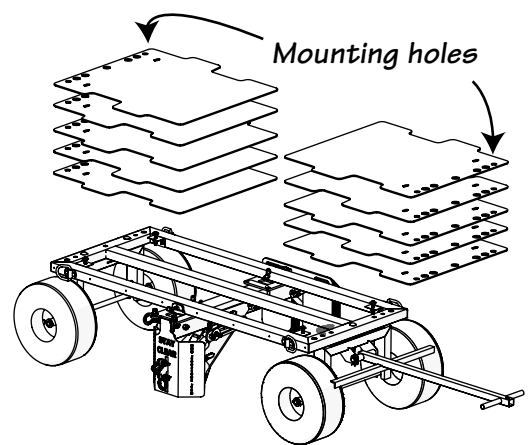
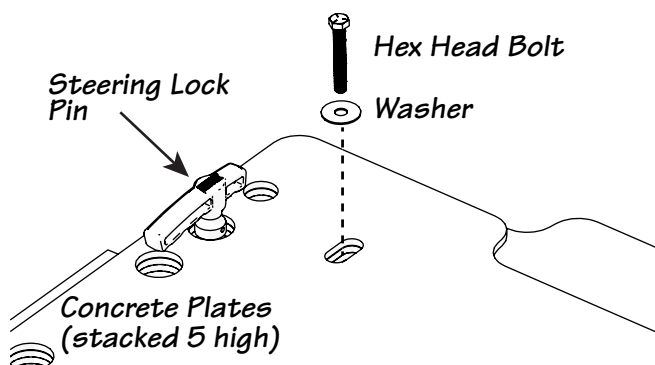
1. Align the hoisting ring/mounting bracket with the two holes located on each side/corner of the roofing cart. Insert each hex head bolt through the mounting bracket and passing out the opposite side of frame. Slide the "L" shaped mounting bracket over the two carriage bolts. Place washers over each bolt and tighten with nyloc nuts. Repeat for each corner.
2. Holes located on the end plate must be located facing forward while the opposite side stack facing backwards. Tabs in the center on the plates should alternate with each plate placement. This arrangement will allow you to pick up the plate without pinching fingers.
3. The concrete system requires 10\* concrete plates. Stack 5 plates facing forward and 5 plates facing backward (see Pict 3). Align all plates so that the steering lock pin will pass through to the frame. You can use the steering lock pin as a tool to aid in alignment.

\* If the roofing cart has a toolbox already installed, only 8 concrete plates are required.

4. Place the washer over the hex head nut and insert the bolt through the 5 concrete plates. If the plates are aligned properly the hex head bolt will pass through to the "L" shaped bracket. The bracket has a nut welded on the underside. Repeat for the opposite side on the same plate. Once both bolts are aligned and fastened with the underside nut, tighten both bolts. Repeat for the opposite side concrete stack.



*Place the plates so the tabs alternate*

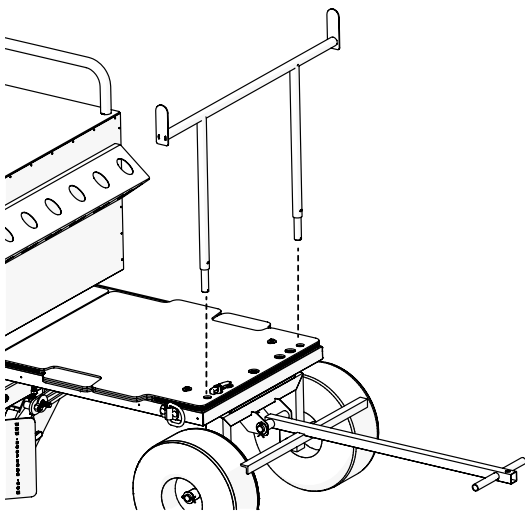
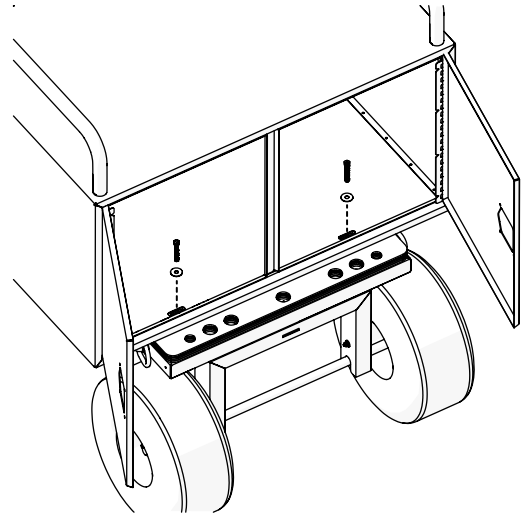
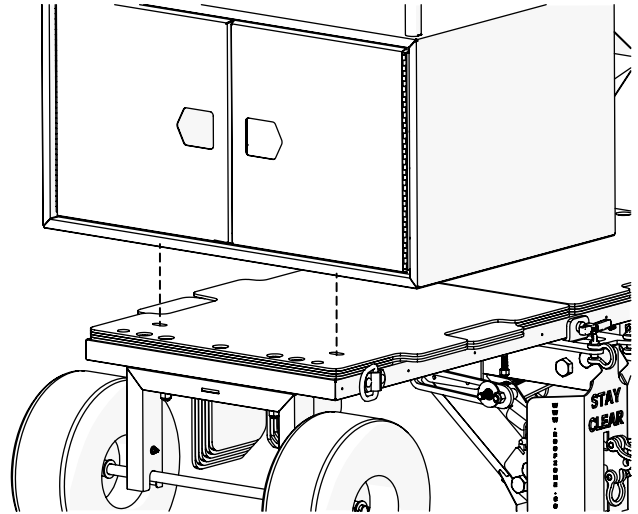


# Optional Equipment

## Material Tool Box Installation

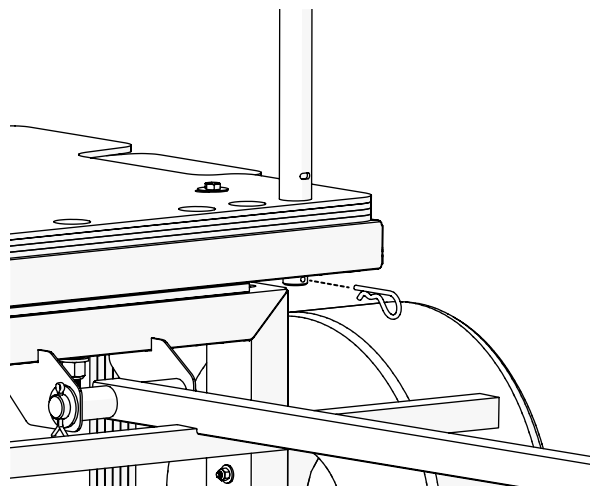
**NOTE:** The Penetrator cart only needs 8 concrete ballast plates when the material box is installed. If you're installing the materials box on a Penetrator cart with 10 plates, two ballast plates should be removed.

1. Remove the 2 hex head bolts & washers used to secure the rear concrete ballast plates.
2. Two people are needed to lift the materials box safely on top of the Penetrator cart. Place the materials box on the back half of the cart aligning the two mounting holes over the concrete ballast mounting holes. Open the locking doors and the mounting holes are located just inside the door edge. Look through the holes and make sure you can see completely through the materials box, all 4 concrete plates and the cart frame. Use a screw driver or a center punch to align box/plates/frame.
3. Place the washer over the hex head nut and insert the bolt through the material box, 4 concrete plates and frame. If the plates are aligned properly the hex head bolt will pass through to the "L" shaped bracket. Once both bolts are aligned and fastened with the underside nut, tighten both bolts.



## Rolled Goods Rack

1. Align the rolled goods rack with the mounting holes located above the front axle. Insert the rolled goods post into the corresponding holes.
2. Secure the rolled goods rack by inserting the safety pin into the post hole underneath the cart frame.



# Applications: Surfaces

## Recommended Surfaces:

- ✓ Concrete
- ✓ Gypsum Deck
- ✓ Modified Bitumen Membranes
- ✓ Built-up Roofing (BUR) Membrane
- ✓ Modified PVC Membranes
- ✓ Thermoplastic Polyolefin (TPO) Membranes
- ✓ Polyisocyanurate (ISO)
- ✓ Expanded Polystyrene (EPS)
- ✓ EPDM Roofing Membranes
- ✓ Ballasted EPDM Membrane
- ✓ Hardboard
- ✓ Flat Surfaces to slopes up to 1:12.
- ✓ Metal Deck (20 ga. And 22 ga. ONLY)
- ✓ Dens Deck
- ✓ Plywood

## Do Not Use on the Following Surfaces:

- ✗ Ice
- ✗ Snow
- ✗ Tectum Deck
- ✗ Metal Deck less than 22 ga. Or over 20 ga. (Structural Deck)
- ✗ Loose laid material not part of a complete finished system.

# Roofing Load Requirements

**Before the Penetrator and cart are hoisted to any roofing deck the user MUST VERIFY THAT THE DECK CAN ACCOMMODATE THE LOAD REQUIREMENTS.**

Verify that the surface that the Penetrator will be used on is capable of supporting both the unit and personnel using it. Inspect that the entire area to determine if the working surfaces have the strength and to support users safely.

**CAPACITY:** The Penetrator Mobile Fall Protection System is designed for a maximum of three persons for fall arrest and two for fall restraint with a combined weight (clothing, tools) of no more than 310 lbs. per person. No more than five persons may be connected to the Penetrator at any time.

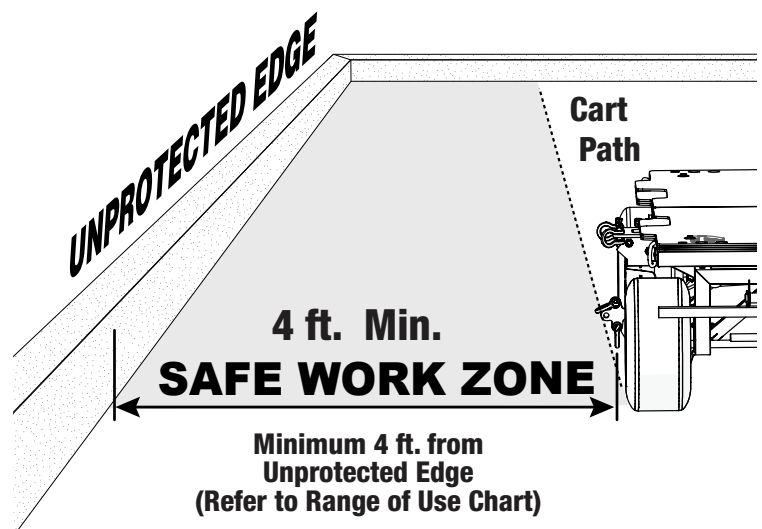
**IMPORTANT:** DO NOT start work for which fall protection is required until the Penetrator and corresponding FRS or PFAS have been completely installed. Do NOT disable any part of the FRS or PFAS, including the Penetrator unit, or reposition the unit, until work for which fall protection is required has ceased.

# Placement/Repositioning of the Penetrator Safety Cart

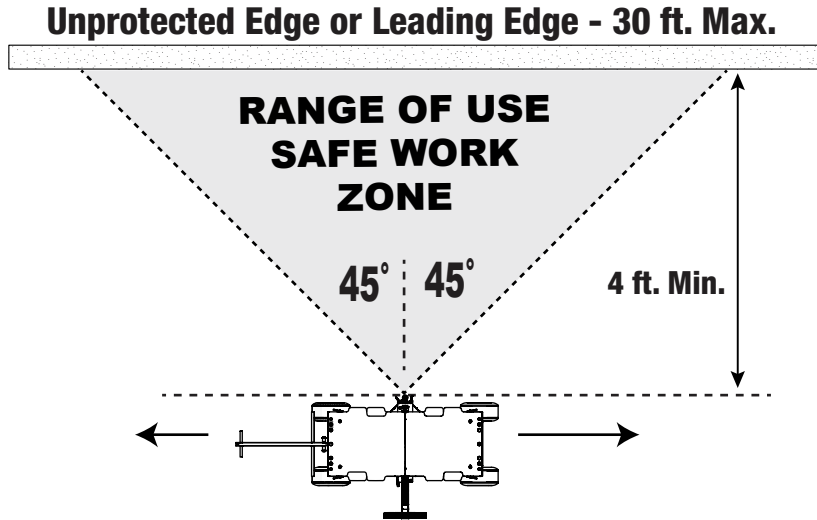
The attachment tie-off anchor shackles must be pointed toward the leading edge and the cart is set to travel parallel to the unprotected edge or leading edge.

Position the Penetrator such that the front guard plate is between 4 feet from the leading edge, and in line with the center of the area to be worked.

**IMPORTANT:** When repositioning the Penetrator Cart, active fall restraint is maintained by a maximum length of five feet less than the distance of the cart to the leading edge. Once repositioned, the tow handle must be in the down position in order to lock the wheels and the steering locking pin must be inserted into the steering mechanism (see next page).



# Placement/Repositioning of the Penetrator Safety Cart



**Range of Use Chart**

Distance to Leading Edge	Maximum Range of Use
4 ft.	8 ft.
5 ft.	10 ft.
6 ft.	12 ft.
7 ft.	14 ft.
8 ft.	16 ft.
9 ft.	18 ft.
10 ft.	20 ft.
11 ft.	22 ft.
12 ft.	24 ft.
13 ft.	26 ft.
14 ft.	28 ft.
15 ft.	30 ft.

**After 15 ft. Max. Range  
No Greater than 30 ft.**

**Prior to Positioning the Penetrator:**

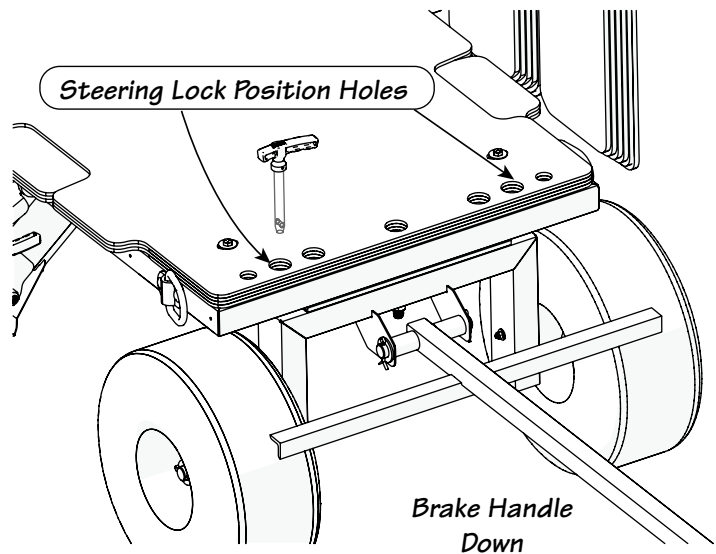
Verify that the surface is capable of supporting the Penetrator, ballast weights, cart, and all personnel using it.

**During Repositioning the Penetrator:**

Active fall restraint is maintained by a maximum length of five feet less than the distance of the cart to the leading edge.

## Setting the Ballast Slide and Weights

Make sure the handle/tire brake mechanism is in the down position and the brake stop rests firmly against the front tires. Place the Pull Pin into the front axle fork through the appropriate hole located on either side of the cart by aligning with the roof cart frame tube with the front axle fork. This will prevent the cart from turning.

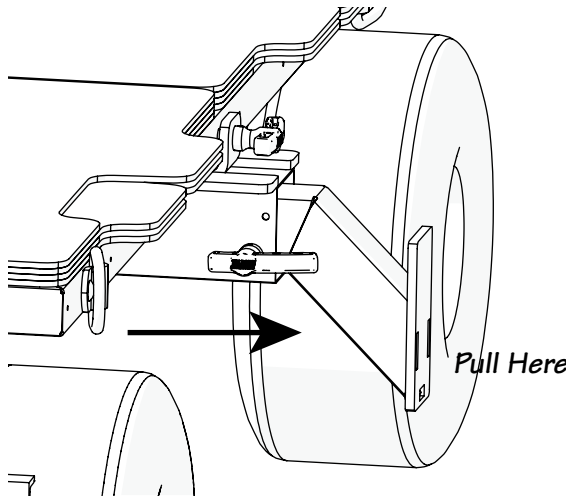


**IMPORTANT:** When repositioning the Penetrator Cart, active fall restraint is maintained by a maximum length of five feet less than the distance of the cart to the leading edge. Once repositioned, the tow handle must be in the down position in order to lock the wheels and the steering locking pin must be inserted into the steering mechanism (see chart above).

**DO NOT use the Penetrator Roofing Cart without the ballast slide extended and all ballast weights applied.** Once the location for the operation of the Penetrator has been determined, the ballast slide must be adjusted to the proper operational length.



# Setting the Ballast Slide and Weights



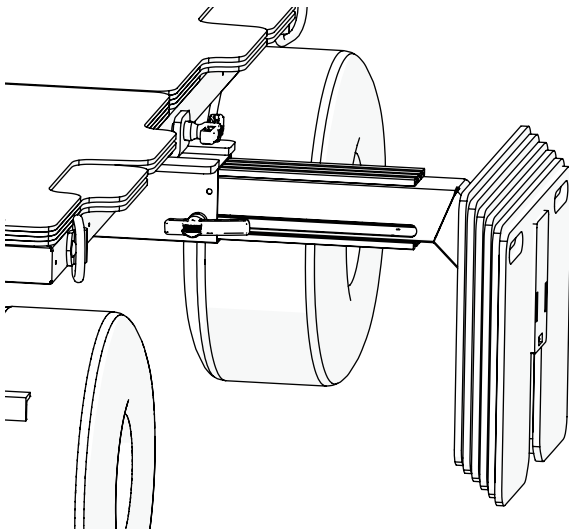
## Step 1

Hold on the bottom of the ballast arm and pull outward.

## Step 2

Continue pulling until the ballast arm stops.

If ever needed, the ballast arm can be fully removed by pulling out the pull pin.



## Step 3

Carefully place the ballast weights one at a time. Be carefully when placing the ballast, each weight has the potential of being a Pitch Point.

**DO NOT USE THE PENETRATOR WITHOUT THE BALLAST SLIDE ARM EXTENDED AND THE BALLAST WEIGHTS APPLIED.**

**ATTENTION!**



# Connecting to the Penetrator Safety Cart

**DO NOT** hook Personal Fall Arrest System (PFAS) to any point except a Fall Restraint Tie-off Anchor Shackle  
When making connections, only use double-locking snap hooks and double-locking carabiners with this equipment. Only use connectors that are suitable to each application. Ensure all connections are compatible in size, shape and strength. Do not use equipment that is not compatible. Ensure that all connectors are fully closed and locked.

## FALL ARREST TIE-OFF Shackles

The three Fall Arrest Tie Off shackles are located on the lower side of the Penetrator. Only two persons can be attached to the fall arrest tie -off shackles when used on concrete.

**THE PENETRATOR INNER SPIKE ENGAGEMENT TUBE MUST BE REMOVED AND THE CART MUST BE INSTALLED WITH 10 CONCRETE BALLAST PLATES OR 8 CONCRETE BALLAST PLATES WITH THE MATERIALS BOX INSTALLED.**

## NOTE:

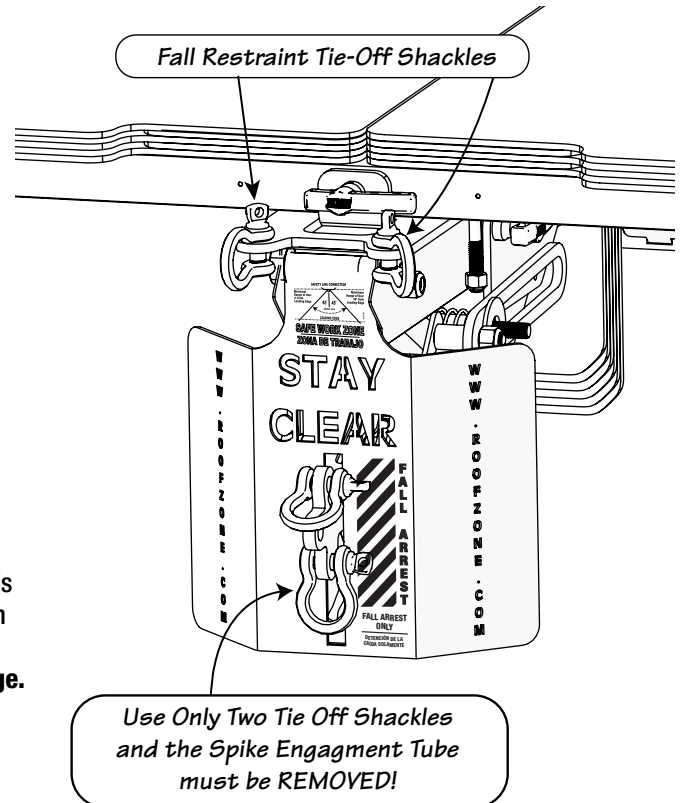
Detailed Instructions for removing the spike engagement tube are located in the Penetrator Operation Manual.

## The Fall Restraint Tie-Off Shackles

Two Fall Restraint Anchor Shackles are installed on the top side of the Penetrator where labeled. The Fall Restraint Anchor Shackles DO NOT arrest falls . The user must insure that the Fall Restraint worker is personally equipped with lanyards, harnesses, safety lines, etc., when working in conjunction with potential fall arrest workers.

**Do Not allow the fall restraint user to work close to any roof edge.**

**IMPORTANT: Confirm all screw pins on all four anchor shackles are fully inserted prior to attachment of Fall Restraint or Fall Arrest lines.**



**IMPORTANT: DO NOT** allow workers to cross paths (cross lines) at anytime! Fall Restraint/Fall Arrest lines must never cross over each other. Crossed lines will cause the unit to not function as intended. Failure to maintain clear lines may cause a accident or death.

# Before Using the Penetrator

OSHA requires that before operating the system there must be an inspection for damaged equipment.

1. Check for loose, bent or damaged parts, including the three penetrating spikes.
2. Check welded components for distortion, cracks, or other damage.
3. Check Tie-off shackles for distortion or damage and confirm that they are properly tightened.
4. Check retaining slide bars for rusting and/or wear before each use.
5. All labels must be present and fully legible. (Copies of all labels are attached at the back of this section for accurate inspection.)
6. Check for all pull pins that they are fully inserted and the safety cotter pin clips are attached to each pull pin.

**IMPORTANT: BEFORE USING THIS UNIT, A RESCUE PLAN MUST BE ADOPTED.**

OSHA requires employers to provide a quick rescue of employees in the event of a fall or employers shall assure that employees are able to rescue themselves. It is impossible to guarantee that an employee can rescue himself because he may be unconscious or injured as a cause or result of the fall. Therefore, a procedure involving rescuers must be adopted.

**Consult with your roofing distributor/supplier for fall rescue equipment.**

**DO NOT OPERATE DAMAGED EQUIPMENT. DO NOT OPERATE EQUIPMENT THAT HAS BEEN MODIFIED.**

(Please use the Inspection and Maintenance Log contained within the instructions manual )

## Maintenance and Care

- ✓ Inspect Penetrator before and after each use.
- ✓ Keep wheels free from roofing debris. Any asphalt or adhesives on the tires can cause the wheel brake to function improperly.
- ✓ Regularly inspect for damaged or missing parts and do not place the Penetrator into service until all missing and or damaged parts have been replaced.
- ✓ Store the Penetrator in a place protected from weather and where only authorized employees have access.
- ✓ Maintain finish to prevent corrosion.

## General Safety Precautions

**USE COMMON SENSE!** Most accidents can be avoided by using common sense and concentrating on the job at hand. Look around and confirm a safe distance from the roof edge is being maintained.

The Penetrator should not be used by persons whose ability or alertness is impaired by fatigue, intoxicating beverages, illegal or prescription drugs, or any other physical cause that exposes the user or others to injury.

Always wear proper safety attire.

Keep hands and feet clear of moving parts. **DO NOT** stick hands or fingers in the equipment when workers are attached to the Penetrator.

Do not operate the equipment near electrical power lines. **ELECTRICITY KILLS!**

Do not allow passengers to ride on safety cart.

- ~ Allow handle to drop and set brake when not in use. Insert the Steering Lock Pin into the axle fork in order to prevent unwanted turning of the roof cart.
- ~ Ensure that all areas directly underneath, and in front of the cart, are clear and free of debris.
- ~ Do not use on roofs with ice or snow.
- ~ Only use the unit on a surface or roof composition for which it has been tested.
- ~ Do not set unit atop unfastened materials. Materials may slide if not mechanically attached to the roof.
- ~ Depending on added weight loaded on the Roof Cart / Penetrator unit (including all materials) additional workers may be required to safely move the unit. Always use caution when moving the unit.

## Hoisting Safety Precautions

- ~ Loads may slip, if the Penetrator is not hoisted properly, this could result in injury or death.
- ~ Do not use with damaged slings or chains.
- ~ Utilize appropriate rigging gear for overhead lifting.
- ~ Utilize rigging gear within the industry standards and the manufacturer's recommendations.
- ~ Conduct regular inspection and maintenance of the rigging gear.
- ~ DO NOT hook to the fall arrest or fall restraint shackle safety line connectors when lifting the cart.
- ~ Do Not lift Penetrator Cart with materials on the cart when hoisting.

## Procedure for Handling the Penetrator After a Fall

**Before rescuing a fallen employee, check that the Penetrator is secure.**

It is highly recommended that any rescuer be tied off in a FRS before attempting to aid in a rescue. The number of rescuers allowed to tie off to the Penetrator is 3 (three) minus the number of fallen workers. Up to 2 (two) additional rescuers may tie off to the Penetrator utilizing the two fall restraint tie-off shackles marked for FRS.

Prior to disengaging the Penetrator after deployment as the result of an fall incident, make certain that the rescue procedure has been successfully completed.

# Installation of Optional Equipment

After being locked into place on the rear frame, the front handle of the Penetrator system can be raised, greatly reducing any tripping hazard and making the work area safer. The Quick-Brake comes completely assembled.

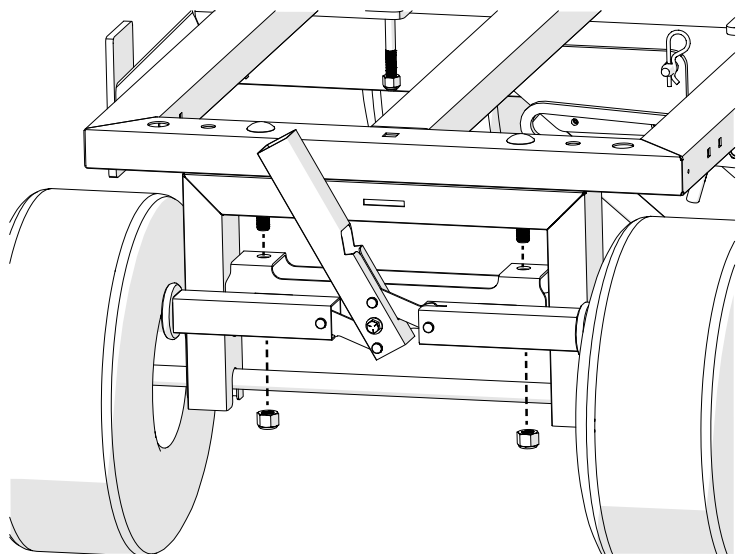
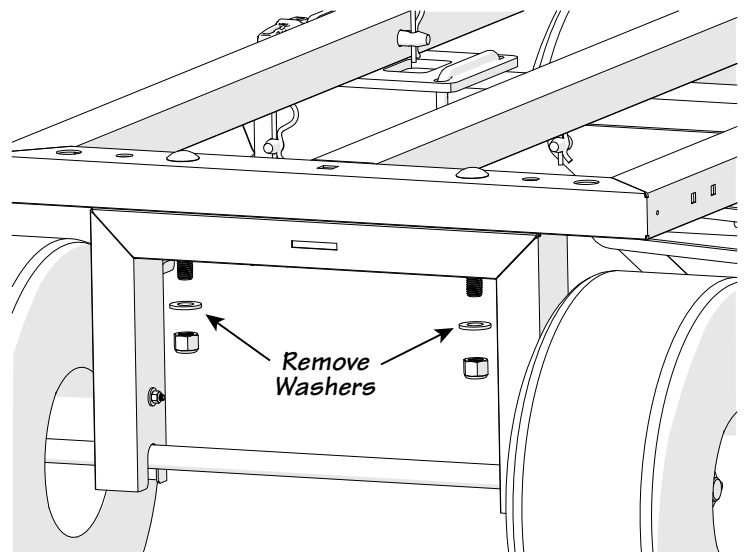
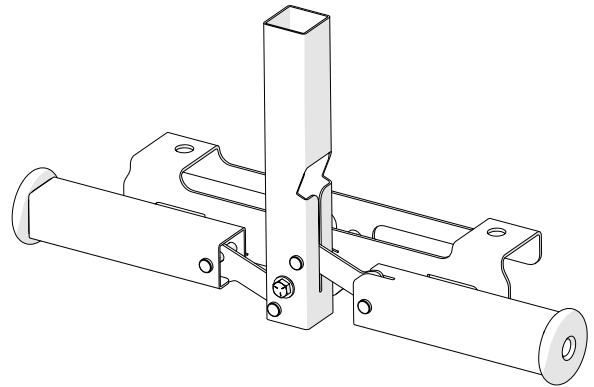
## Quick Brake Installation

1. Position the Penetrator cart on a flat service. Place blocks under the wheels and make sure the cart is free from any movement.
2. Remove the two 5/8" nuts and washers under the rear axle frame as shown right. The washers are no longer needed for any part of this installation.

### WARNING:

Once the nuts are removed the cart frame and rear axle frame are loose and may tilt forward or backwards. Do not rock the frame during installation.

3. Position the Quick-Brake between the axle frame and directly below the two bolts (shown lower right). Raise the Quick-Brake upward till it is flush to the top of the axle frame.
4. Use one hand to hold the Quick-Brake in place, while using the other hand to loosely attaching both nuts.
5. Once the Quick-Brake is in place, use a long 5/8" socket/wrench to tighten both nuts.
6. Test the Quick-Brake by moving the handle left and right making sure the brake engages with the tires. With the brake engaged the cart should be free of any forward/backward movement.



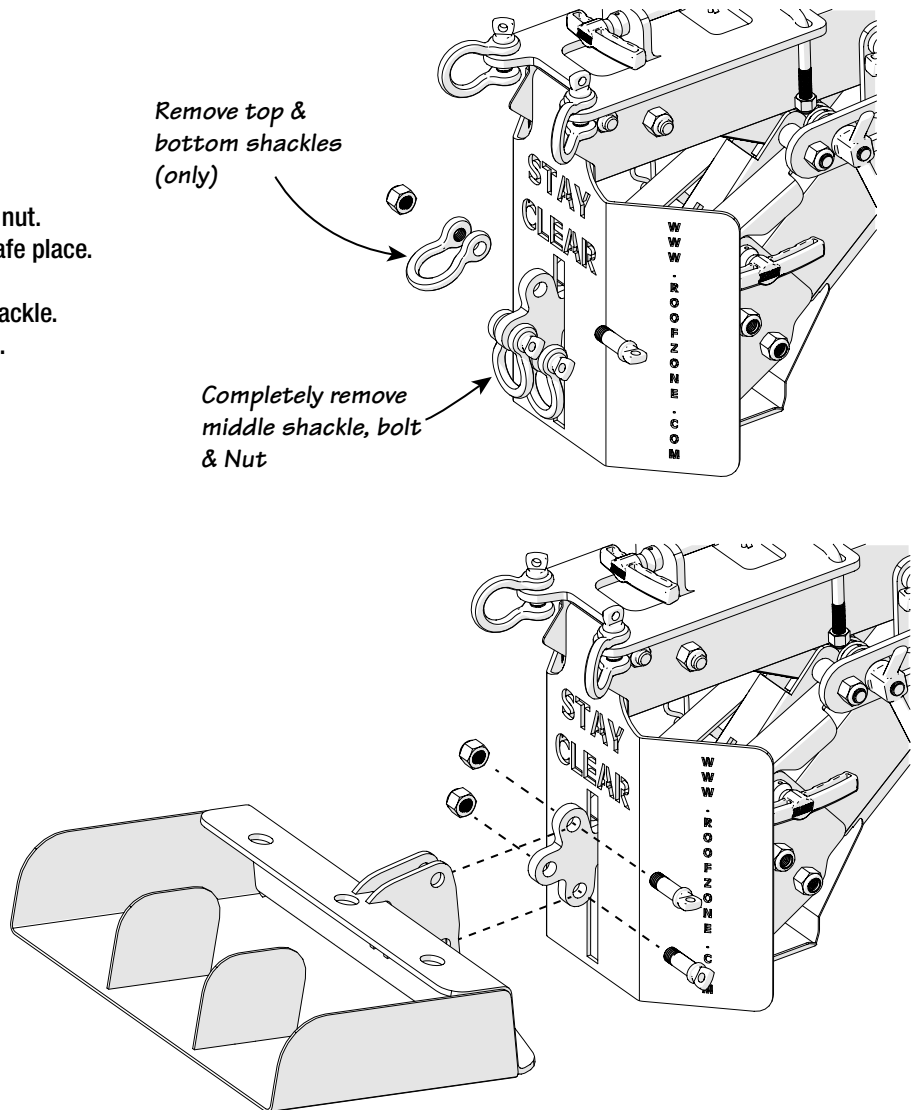
# Installation of Optional Equipment

## SRL Tray Installation

1. Remove the middle shackle, bolt and nut. Reassemble shackle and store in a safe place.
2. Loosen nut for the top and bottom shackle. Remove both top and bottom shackle. Store the shackles in a safe place.
3. Position the SRL tray so that the top mounting holes align.
4. Slide one shackle bolt through the SRL/Penetrator mounting holes. Repeat for the bottom bolt.
5. Screw the shackle nut to the shackle bolt and repeat for the bottom bolt. Tighten both nuts.

Remove top & bottom shackles (only)

Completely remove middle shackle, bolt & Nut

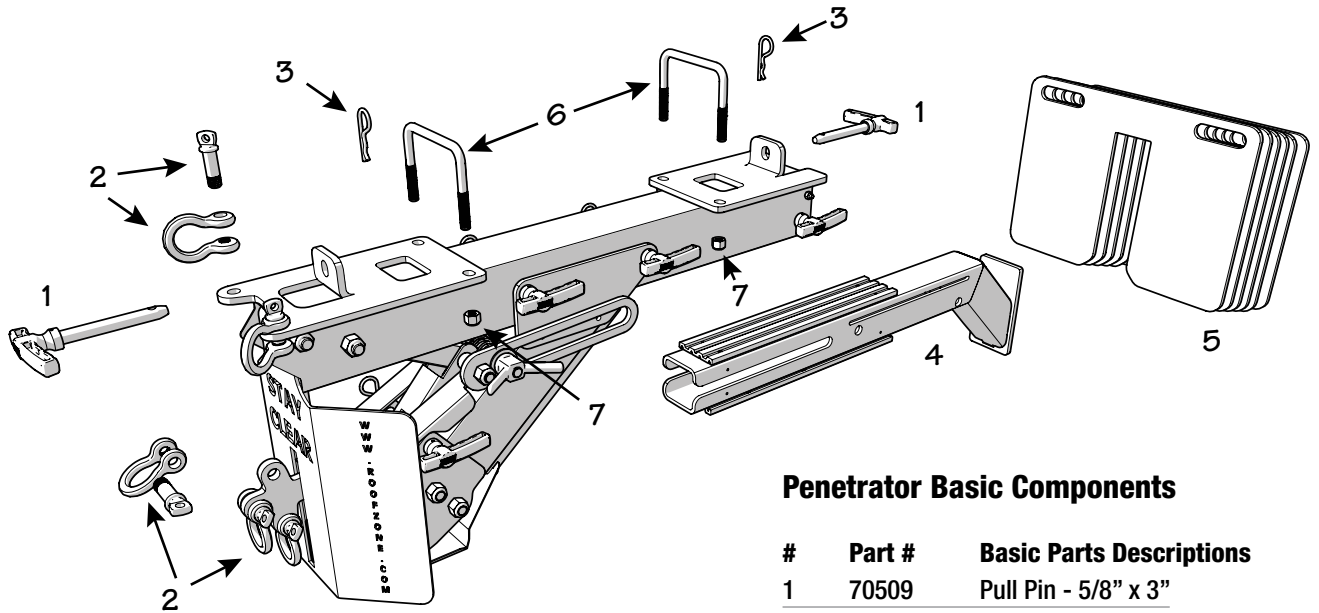


## SRL Operations

The use of Self-Retracting Lifelines (SRL s) for fall protection on flat roofs, leading edges, or similar applications where the SRL is not located overhead of the work area is acceptable under most circumstances provided special precautions are taken as described below.

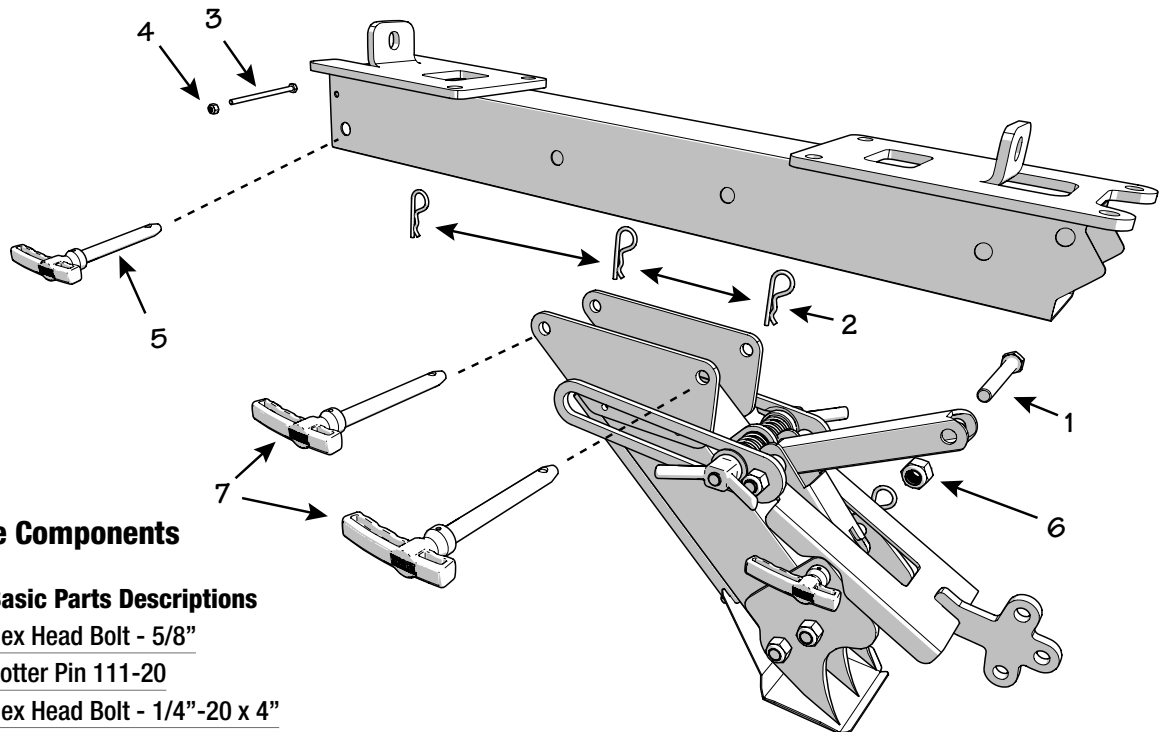
1. The SRL should be positioned on its edge, rather than laid flat, to prevent uneven spooling of the lifeline and to benefit retraction.
2. Swing fall hazards may exist, especially when working near corners, or out away from the SRL. Added fall clearance distances may be required, depending on the swing fall hazard.
3. A separate in-line energy absorber must be installed between the end of the lifeline and the harness to reduce the arrest forces resulting from falling over an edge. This energy absorber is connected in-line between the harness dorsal d-ring and the SRL s snap hook.
4. Sharp edges which the lifeline may contact during a fall could cut or damage the SRL s lifeline. Sharp edges must be avoided or covered over. Falls where the lifeline may slide along a sharp edge must be guarded against.
5. The cable extension speed must reach a speed of approximately 4.5 feet per second, before the brake will engage and a fall stopped. If a person fails to reach a speed of approximately 4.5 feet per second, the SRL will not engage, such as in a sliding fall down a sloped surface.
6. All applicable user instruction manuals should be reviewed and followed.
7. Employee training should be conducted to help assure a safe working environment.

# Penetrator Part List



## Penetrator Basic Components

#	Part #	Basic Parts Descriptions
1	70509	Pull Pin - 5/8" x 3"
2	XSH366G	1/2" Anchor Shackles with Pin
3	10604	Cotter Pin 111-20
4	40633	Ballast Slide Assembly
5	40634	Ballast Plates (6 - 24.5 lbs. each)
6	84433-1Z	U-bolt
7	10645	Nylock Nut



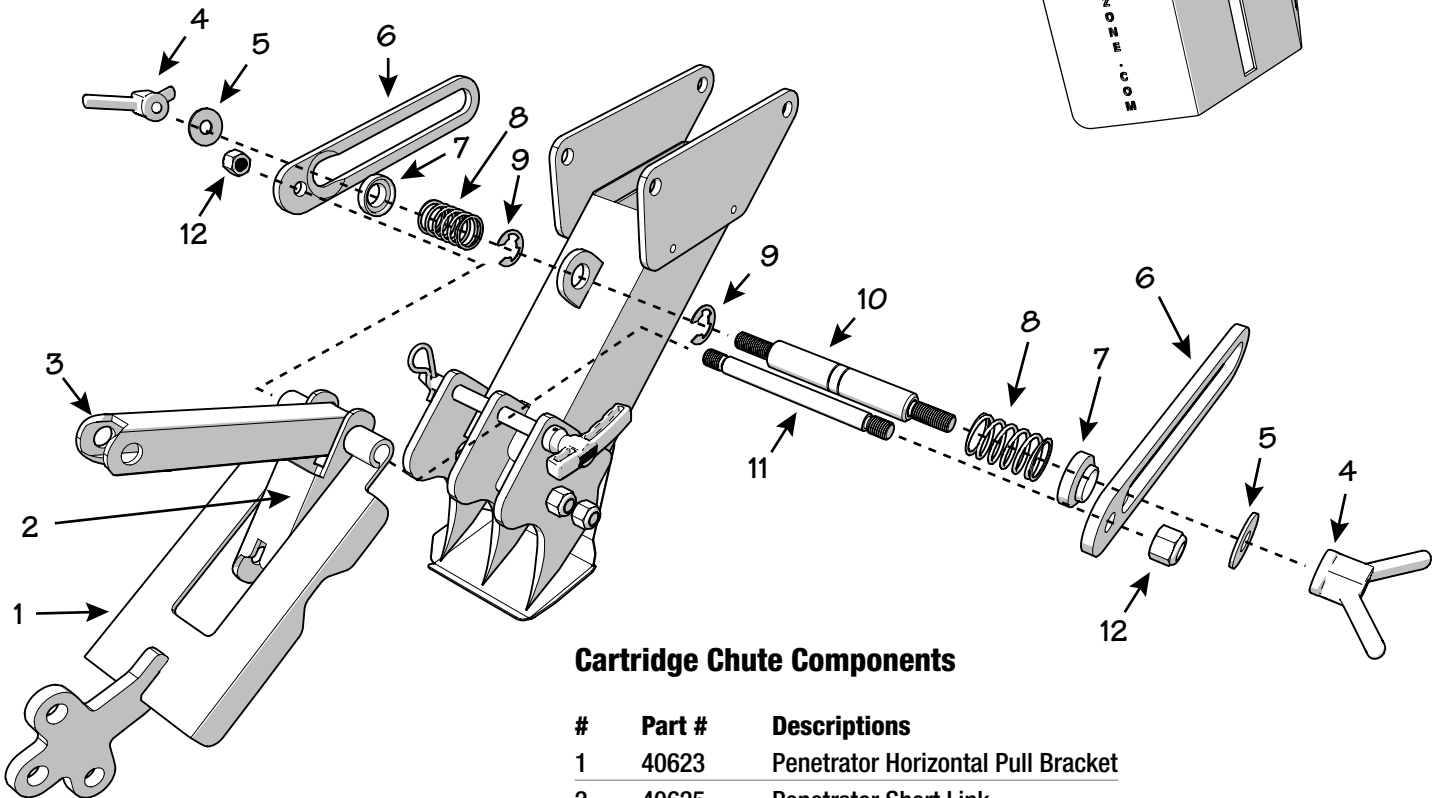
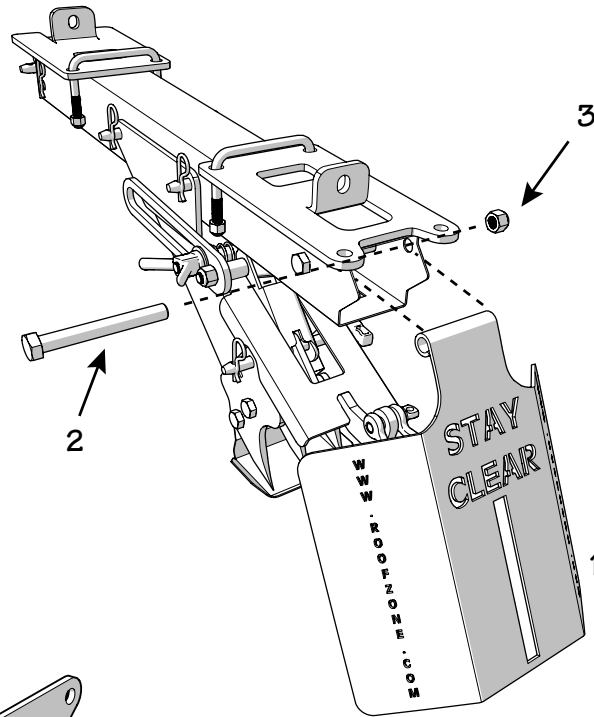
## Mounting Frame Components

#	Part #	Basic Parts Descriptions
1	10458	Hex Head Bolt - 5/8"
2	10604	Cotter Pin 111-20
3	10453	Hex Head Bolt - 1/4"-20 x 4"
4	10027	Nylock Nut - 1/4"-20
5	70509	Pull Pin - 5/8" x 3"
6	10628	Nylock Nut - 5/8"-11
7	70512	Pull Pin - 5/8" x 4"

# Penetrator Part List

## Face Plate Components

#	Part #	Basic Parts Descriptions
1	40626	Front Guard Plate
2	10458	Hex Head Bolt - 5/8"-11 x 5"
3	10628	Nylock Nut - 5/8"-11



## Cartridge Chute Components

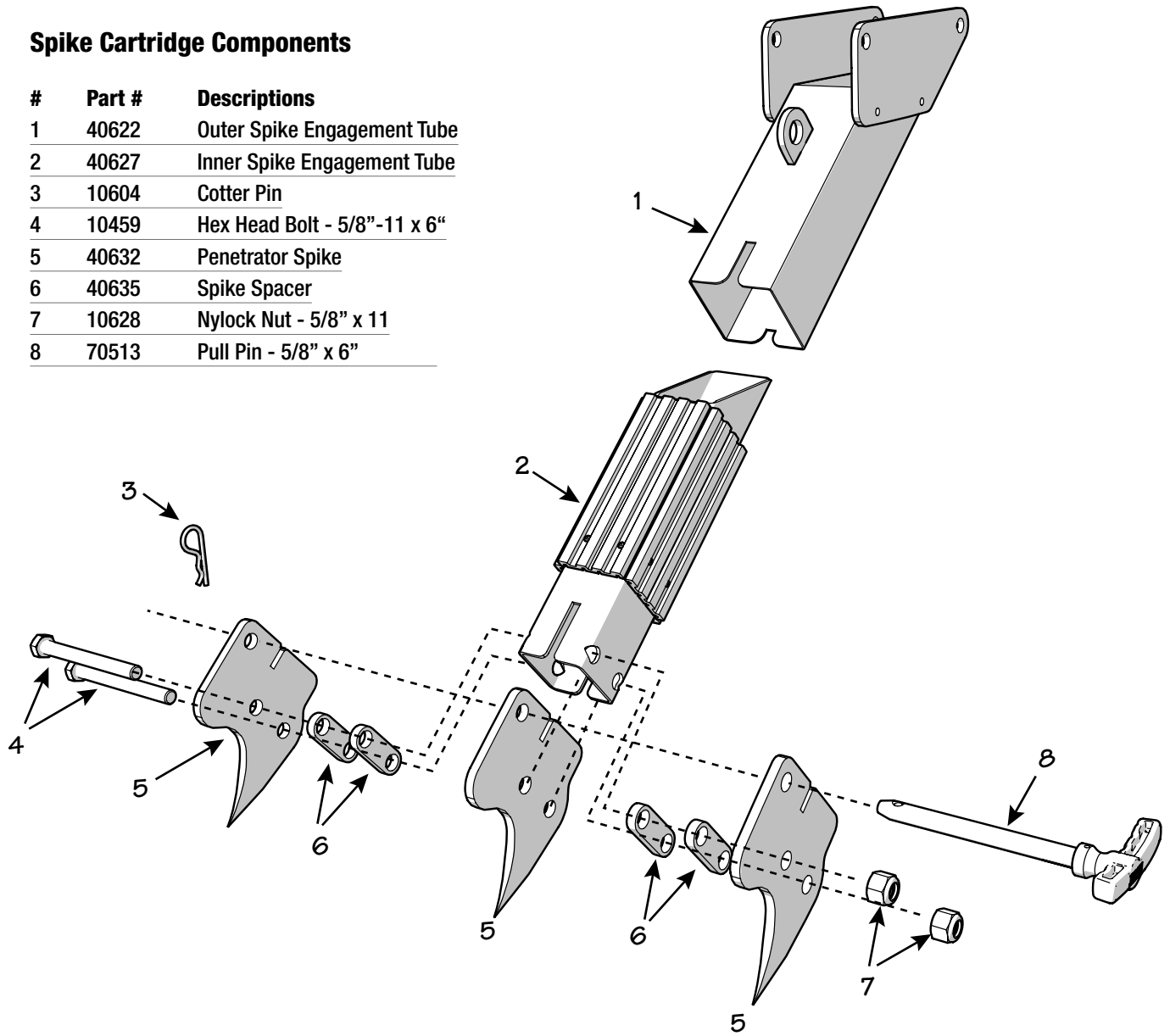
#	Part #	Descriptions
1	40623	Penetrator Horizontal Pull Bracket
2	40625	Penetrator Short Link
3	40624	Penetrator Long Link
4	48683	Wing Nut - 5/8" - 11
5	10513Z	Flat Washer
6	40628	Penetrator Retaining Slide Bar
7	40629	Spring Lock Bushing
8	10132	Compression Spring
9	10800	Snap Clip
10	40630	Dual End Shoulder Bolt 1"
11	40631	Dual End Shoulder Bolt 5/8"
12	10628	Nylock Nut - 5/8" - 11



# Penetrator Part List

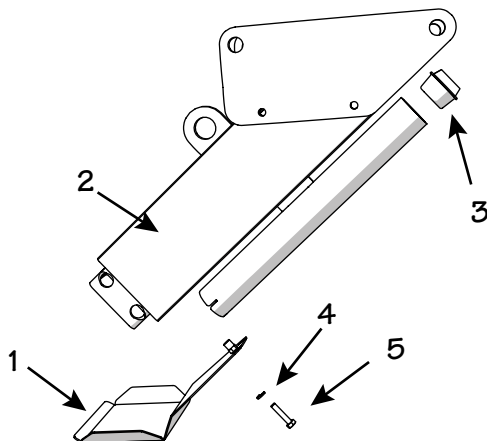
## Spike Cartridge Components

#	Part #	Descriptions
1	40622	Outer Spike Engagement Tube
2	40627	Inner Spike Engagement Tube
3	10604	Cotter Pin
4	10459	Hex Head Bolt - 5/8"-11 x 6"
5	40632	Penetrator Spike
6	40635	Spike Spacer
7	10628	Nylock Nut - 5/8" x 11
8	70513	Pull Pin - 5/8" x 6"

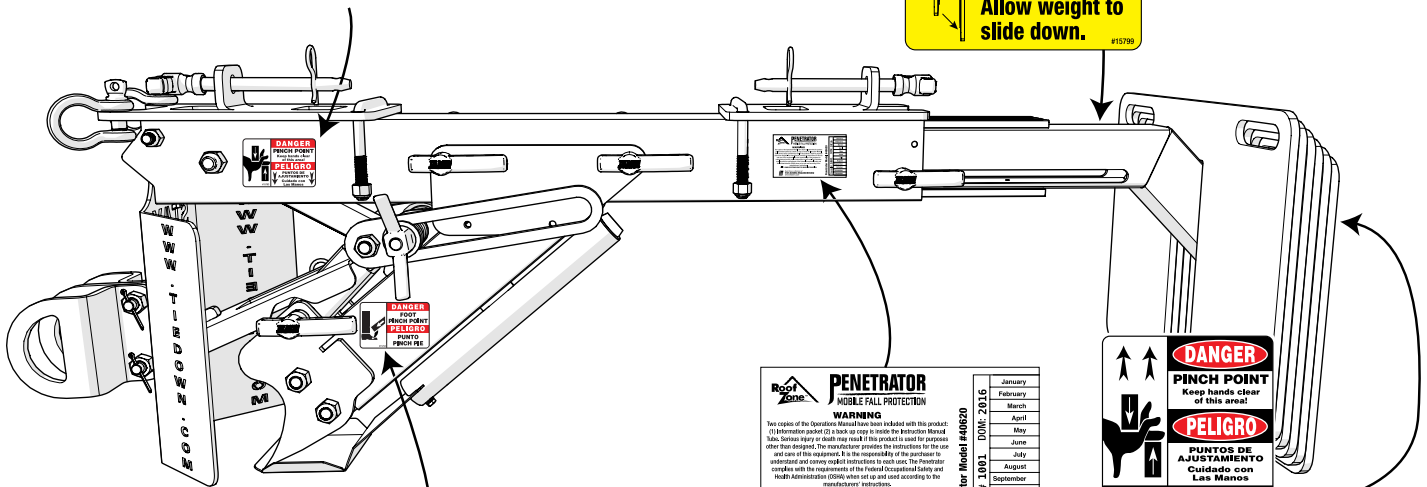
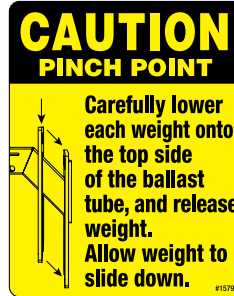


## Safety Shield Components

#	Part #	Descriptions
1	40636	Spike Safety Guard Shield
2	40622	Outer Spike Engagement Tube
3	17514	Insert Plug
4	12177	Split Washer
5	10814	Hex Head Bolt - M6 x 1" x 30 mm.



# Warning and Product ID Labels



**Roof Zone**  
**PENETRATOR**  
MOBILE FALL PROTECTION

**WARNING**  
The copies of the Operator Manual have been included with this product. (1) Information printed on back up cover to ensure the Instruction Manual. Each warning every or detail may result in this product is used for purposes other than designed. The manufacturer provides the instructions for the use and care of this equipment. It is the responsibility of the user to read, understand and comply with instructions for each use. The Penetrator complies with the requirements of the Federal Occupational Safety and Health Administration (OSHA) when set up and used according to the manufacturer's instructions.

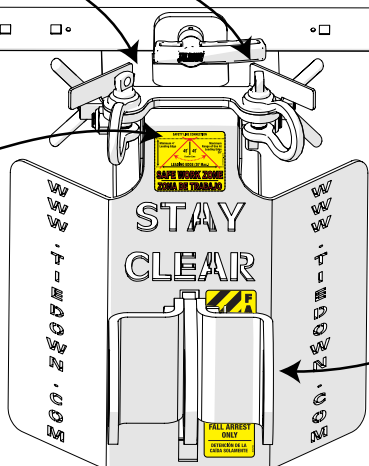
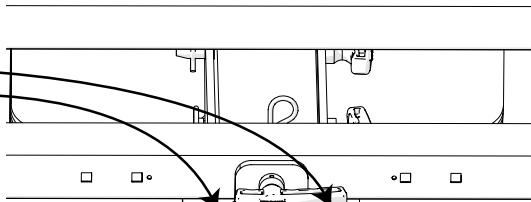
Visit [www.roofzone.com](http://www.roofzone.com) FOR MORE INFORMATION

**TIE DOWN ENGINEERING**

Product Model ID and Serial Number

January
February
March
April
May
June
July
August
September
October
November
December

Penetrator Model #4020  
Serial # 1001 DATE 2016



## PENETRATOR FALL PROTECTION LIMITED WARRANTY

Tie Down Engineering (TIE DOWN) will repair or replace, free of charge, any part, or parts of the Penetrator Fall Protection Devices (PENETRATOR) that are defective in material or workmanship or both. The limited warranty is in effect for 90 days from date of purchase. Return the defective unit to the dealer or contact Tie Down direct at 800-241-1806, x1525.

This warranty does not apply to damage or loss caused by any or all of the following circumstances or conditions:

- Damage caused during assembly or installation.
- Parts, accessories, materials or components used with or replacing any PENETRATOR part not obtained from or approved in writing by TIE DOWN.
- Misapplication, misuse and failure to follow the directions or observe cautions and warnings on installation, operation, application, inspection or maintenance specified in any TIE DOWN quotation, acknowledgment, sales literature, specification sheet or installation instruction and service manual ("applicable literature").
- Use of product in any other application other than those described in TIE DOWN's product information materials.

If any TIE DOWN products are found upon TIE DOWN's examination to have been defective when supplied, TIE DOWN will either: credit the purchaser's account for the purchase price of the TIE DOWN product; replace the TIE DOWN product; or repair the product. TIE DOWN has sole discretion in choosing which option to provide. For this LIMITED WARRANTY to apply, TIE DOWN must receive notice of the alleged defect within 30 days of either the discovery of the alleged defect or the expiration of the warranty period, whichever is earlier. Any claim not made within this period shall conclusively be deemed waived.

If requested by TIE DOWN, purchaser shall return the alleged defective product to TIE DOWN for examination at purchasers expense. TIE DOWN will not pay for expenses incurred in returning a product to TIE DOWN without TIE DOWN's prior written authority. TIE DOWN shall not be liable for any other expenses purchaser incurs to remedy any defect. Purchasers waive subrogation on all claims under any insurance.

**Limitation of Liability:** It is expressly agreed that the liability of TIE DOWN is limited and TIE DOWN does not function as an insurer. THE REMEDIES SET FORTH IN THIS WARRANTY SHALL CONSTITUTE THE EXCLUSIVE REMEDIES AVAILABLE TO THE PURCHASER OR USER AND ARE IN LIEU OF ALL OTHER REMEDIES, EXPRESS OR IMPLIED. THE LIABILITY OF TIE DOWN, WHETHER IN CONTRACT, IN TORT, UNDER ANY WARRANTY OR OTHERWISE, SHALL NOT EXCEED THE PURCHASE PRICE OF THE PARTICULAR PRODUCT MANUFACTURED, SOLD OR SUPPLIED BY TIE DOWN.

**To Obtain Technical Assistance:** To enable TIE DOWN to respond to a request for assistance or evaluation of customer or user operating difficulty, please provide at a minimum the following information by calling 404-344-0000:

- Model number, serial number and all other data on the specific component which appears to be involved in the difficulty.
- The date and from whom you purchased your TIE DOWN product.
- State your difficulty, being sure to mention at least the following: Application, Environment, Working Surface, and Number of Workers.

**THIS WARRANTY DOES NOT COVER NOR EXTEND TO INCIDENTAL OR CONSEQUENTIAL DAMAGE.** Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

No representative has authority to make any representation, promise or agreement except as stated in this Limited Warranty. TIE DOWN reserves the right to make design and other changes upon its products without any obligation to install the same on any previously sold or delivered products.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THOSE DESCRIBED ABOVE. EFFECTIVE MAY 2017 THIS WARRANTY SUPERSEDES ALL PRIOR WARRANTIES, WRITTEN OR IMPLIED.**

E1541; 10-24-17

