

GUARDIAN

FALL PROTECTION



Product Name: Trench Box System

Part #: 15192; 15193

Instruction Manual

Do not throw away these instructions!
Read and understand these instructions before using equipment!

Introduction	1
Applicable Safety Standards	1
Worker Classifications	1
Product Specific Applications	2
Limitations	3 - 4
Components and Specifications	4
Installation and Use	5 - 8
Maintenance, Cleaning, and Storage	9
Inspection	9
Inspection Log	9
Safety Information	10
Labels	11

Introduction

Thank you for purchasing a Guardian Fall Protection Trench Box Guardrail System. This manual must be read and understood in its entirety, and used as part of an employee training program as required by OSHA or any applicable state agency.


This and any other included instructions must be made available to the user of the equipment. The user must understand how to safely and effectively use the Trench Box Guardrail System, and all fall safety equipment used in combination with the Trench Box Guardrail System.

User Information	
Date of First Use:	_____
Serial #:	_____
Trainer:	_____
User:	_____

Applicable Safety Standards

When used according to instruction specifications, this product meets or exceeds all applicable OSHA 1926 Subpart M, OSHA 1910, ANSI Z359.18-2017, and ANSI A10.32-2012 standards for fall protection. This product has been tested in compliance with the requirements of ANSI/ASSE Z359.7. Testing only covers hardware and does not extend to the anchorage or substrate to which this product is attached. Applicable standards and regulations depend on the type of work being done, and also might include state-specific regulations. Consult regulatory agencies for more information on personal fall arrest systems and associated components.

Worker Classifications

 CAUTION	Understand the following definitions of those who work near or who may be exposed to fall hazards.
--	--

Qualified Person: A person with an accredited degree or certification, and with extensive experience or sufficient professional standing, who is considered proficient in planning and reviewing the conformity of fall protection and rescue systems.

Competent Person: A highly trained and experienced person who is ASSIGNED BY THE EMPLOYER to be responsible for all elements of a fall safety program, including, but not limited to, its regulation, management, and application. A person who is proficient in identifying existing and predictable fall hazards, and who has the authority to stop work in order to eliminate hazards.

Authorized Person: A person who is assigned by their employer to work around or be subject to potential or existing fall hazards.

It is the responsibility of a Qualified or Competent person to supervise the job site and ensure all applicable safety regulations are complied with.

Product Specific Applications



WARNING Use of equipment in unintended applications may result in serious injury or death. Maximum 1 attachment per connection point.



Personal Fall Arrest: Trench Box Anchors may be used in Personal Fall Arrest applications to support a MAXIMUM 1 Personal Fall Arrest System (PFAS). Structure must withstand loads applied in the directions permitted by the system of at least 5,000 lbs. Maximum free fall is 6', or up to 12' if used in combination with equipment explicitly certified for such use. Applicable D-ring: Dorsal. **Personal Fall Arrest applications ONLY suitable for connection to Trench Box Anchor (#15192).**

For all applications: worker weight capacity range (including all clothing, tools, and equipment) is 130-420 lbs.



WARNING Only connect to Trench Box Anchor (#15192). Never make connections to guardrail systems.



Fall Prevention: Trench Box Guardrail Receivers may be used in Fall Prevention applications. Fall Prevention Systems are placed around the leading edges of any and all fall hazards to prevent a worker from going over an edge, and may be used in substitute of Fall Protection or safety netting systems. Installation requirements for Trench Box Guardrail Receiver set forth in this manual MUST be adhered to. Personal Fall Arrest, Work Positioning, Climbing, Rescue, and any other systems must NEVER be connected to Fall Prevention Systems.



WARNING NEVER lean or climb on guardrail systems.



Limitations

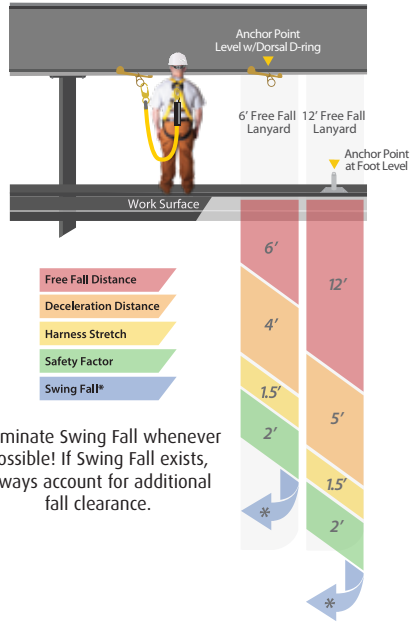
Fall Clearance: There must be sufficient clearance below the anchorage connector to arrest a fall before the user strikes the ground or an obstruction. When calculating fall clearance, account for a **MINIMUM 2'** safety factor, deceleration distance, user height, length of lanyard/SRL, and all other applicable factors.

Diagram shown is an example fall clearance calculation ONLY.

Swing Falls: Prior to installation or use, make considerations for eliminating or minimizing all swing fall hazards. Swing falls occur when the anchor is not directly above the location where a fall occurs. Always work as close to in line with the anchor point as possible. Swing falls significantly increase the likelihood of serious injury or death in the event of a fall.

Compatibility: When making connections with Trench Box Anchor, eliminate all possibility of roll-out. Roll-out occurs when interference between a hook and the attachment point causes the hook gate to unintentionally open and release. All connections must be selected and deemed compatible with Trench Box Anchor by a Competent Person. All connector gates must be self-closing and self-locking, and withstand minimum loads of 3,600 lbs. See the following for examples of compatible/incompatible connections:

Fall clearance calculation shown based on standing worker falling directly in-line with anchor point. Always consider potential swing fall and other hazards when calculating fall clearance.



*Eliminate Swing Fall whenever possible! If Swing Fall exists, always account for additional fall clearance.

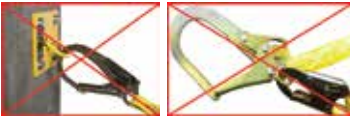
Connector closed and locked to D-ring. **OK.**



Two connectors to same D-ring. **NO.**



Incompatible or irregular application, which may increase risk of roll-out. **NO.**



Two or more snap hooks or carabiners connected to each other. **NO.**



Connector to integral lanyard. **NO.**



Connector directly to webbing. **NO.**



Connector directly to horizontal lifeline. **NO.**

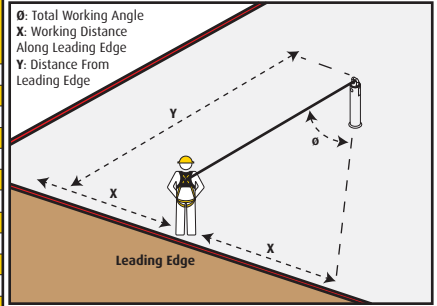


Correct Anchorage Positioning:

This chart details allowable working zones required to reduce risk of swing falls and improper side loading.
ALWAYS adhere to information specified by chart.

Anchor Distance From Leading Edge (Y)	Working Distance Along Roof Edge (Either Direction) (X)	Working Angle From Perpendicular (θ)
6'	8'	53°
10'	9' - 9"	45°
15'	11' - 7"	38°
20'	13' - 3"	33°
25'	14' - 6"	30°
30'	16'	28°
35'	17' - 2"	26°
40'	18' - 3"	24°
45'	19' - 4"	23°
50'	19' - 10"	21°
55'	21' - 4"	21°
60'	22' - 3"	21°

For example, if the anchorage connector is 6' from the leading edge (Y), the working distance (X) is 8' in each direction from the perpendicular, which translates to a 53° working angle.



Components and Specifications

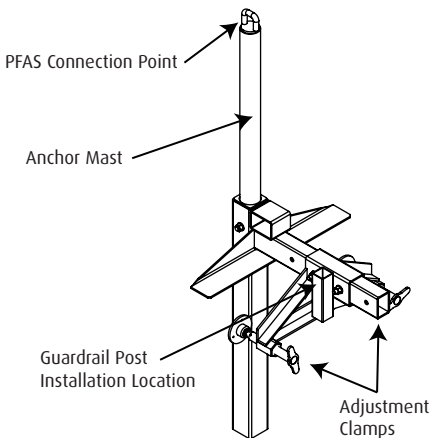
Materials: galvanized steel.

#15192: Trench Box Anchor

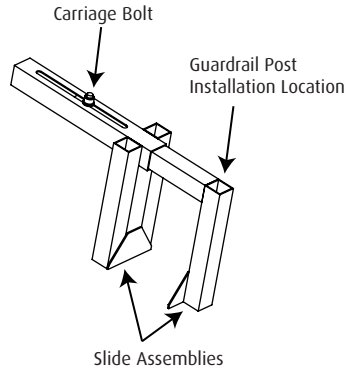
Type A anchorage connector.

Minimum permitted service temperature: -30° F.

5,000 lb. MBS (minimum breaking strength).



#15193: Trench Box Guardrail Receiver



Installation and Use

Maximum compatible trench box thickness: 10".

Prior to use, for Trench Box Guardrail Receiver, plan entire Fall Prevention system:

All leading edges of fall hazards must be blocked, or a supplemental Fall Protection system **MUST** be used in combination with, but never connected to, the applicable Fall Prevention system.

1. Selected work area must be free of all hazards, including, but not limited to, debris, rot, decay, cracking, and hazardous materials. NEVER install Trench Box Guardrail Receiver on top of gravel or other loose or slippery surfaces. Guardrail systems must be installed a MINIMUM 10' from power lines and all other electrical hazards.
2. All guardrail posts, guardrails, and any other equipment must be selected and deemed compatible by a Competent Person. All guardrails **MUST** be compatible 2" x 4" or 2" x 6" construction grade lumber, or snap-on metal rails. All lumber guardrails must overlap by a minimum 12" at each end.
3. Top-rails must be 42" (+/- 3") above the work surface.
4. Mid-rails must be halfway between the top edge of the guardrail system and the working level (not the toeboard).
5. All intermediary rails (not the top-rail or the mid-rail) must not allow for gaps greater than 19".
6. Toeboards are **REQUIRED** on surfaces with slopes more than 4/12 (vertical/horizontal), or if a risk exists for tools, equipment, materials, or other substances to fall down to a lower level.
7. Toeboards must be a minimum 3½" from their top edge to the work surface, and must not have greater than ¼" clearance between their bottom edge and the work surface. A trench wall may function as a toeboard if deemed permissible by Competent Person.
8. Maximum permitted spacing between Trench Box Guardrail Receivers is 10'
9. Lay out the job by measuring and spacing the location of Trench Box Guardrail Systems on the work surface.

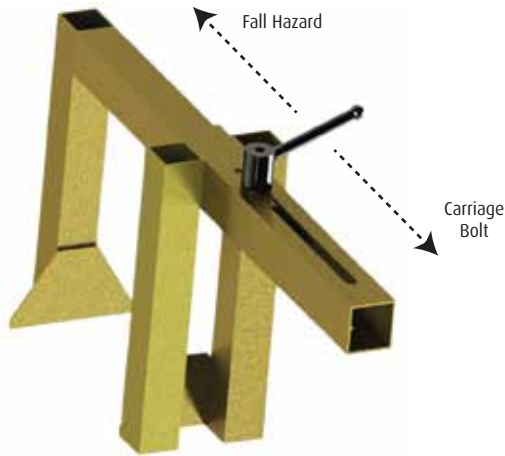


Prior to use, for Trench Box Anchor, plan entire PFAS:

1. Ensure all PFAS equipment is selected and deemed compatible with Trench Box Anchor by Competent Person.
2. Eliminate or minimize all risk of swing fall.
3. Ensure structure to which Trench Box Anchor is to be installed, and on which work is to be performed, is free of all hazards, including, but not limited to, debris, rot, rust, sharp or abrasive edges and surfaces, and hazardous materials.
4. A Qualified Person must determine that structure to which Trench Box Anchor is to be installed is rated to withstand minimum required loads. There are no minimum or maximum spacing requirements for Trench Box Anchors, however 10' Trench Box Guardrail Receiver spacing applies if guardrails are in place.
5. Trench Box Anchor is rated for loading in any direction provided it is installed as prescribed. Do not use in combination with horizontal lifeline (HLL) systems.

Trench Box Guardrail Receiver:

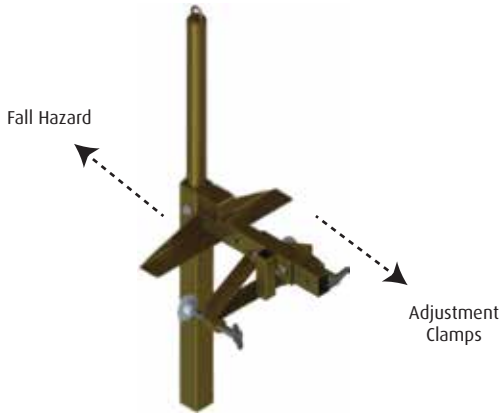
1. Place Trench Box Guardrail Receiver over trench box wall with Carriage Bolt facing away from fall hazard. Adjust Trench Box Guardrail Receiver to fit trench box wall thickness (maximum 10" width). Slide Assemblies must lie flush against trench box wall.



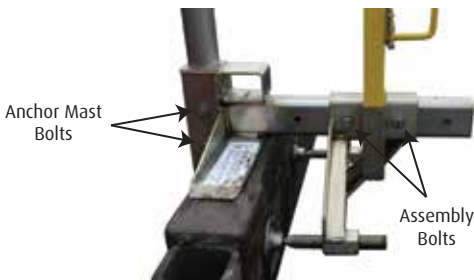
2. Tighten carriage bolt until snug against Trench Box Guardrail Receiver.
3. Repeat steps #1-2 for all planned Trench Box Guardrail Receivers.
4. Install all guardrail posts. Guardrail post rungs must face away from fall hazard.
5. Install all guardrails. All guardrails **MUST** be compatible 2" x 4" or 2" x 6" construction grade lumber, or snap-on metal rails. All lumber guardrails must overlap by a minimum 12" at each end. If applicable, install all planned Trench Box Anchor Mast Assemblies prior to installing guardrails.

Trench Box Anchor:

1. Adjust Trench Box Anchor to fit trench box wall thickness (maximum 10" width).
2. Place Trench Box Anchor over trench box wall with Adjustment Clamps facing away from fall hazard.



3. Tighten (2) provided assembly bolts with 3/4" wrench until snug.
4. Tighten both Adjustment Clamps until snug. Adjustment Clamps must lie flush against trench box wall.
5. Install Anchor Mast. Insert (2) provided bolts, attach nuts to bolts, and tighten with 3/4" wrench until snug. Anchor Mast must not move after installation.



6. Repeat steps #1-5 for all planned Trench Box Anchors.

7. Install all guardrail posts. Guardrail post rungs must face away from fall hazard.

8. Install all guardrails. All guardrails **MUST** be compatible 2" x 4" or 2" x 6" construction grade lumber, or snap-on metal rails. All lumber guardrails must overlap by a minimum 12" at each end. If applicable, install all planned Trench Box Guardrail Receivers prior to installing guardrails.



Maintenance, Cleaning, and Storage

If Trench Box Guardrail System fails inspection in any way, immediately remove it from service, and contact Guardian to inquire about its return or repair. Field serviceability testing is not required, and should not be done by the end user.

Cleaning after use is important for maintaining the safety and longevity of Trench Box Guardrail System. Remove all dirt, corrosives, and contaminants from Trench Box Guardrail System before and after each use. If Trench Box Guardrail System cannot be cleaned with plain water, use mild soap and water, then rinse and wipe dry. NEVER clean Trench Box Guardrail System with corrosive substances.

When not in use, store equipment where it will not be affected by heat, light, excessive moisture, chemicals, or other degrading elements.

Inspection

Prior to EACH use, inspect Trench Box Guardrail System for deficiencies, including, but not limited to, corrosion, deformation, pits, burrs, rough surfaces, sharp edges, cracking, rust, paint buildup, excessive heating, alteration, and missing or illegible labels. IMMEDIATELY remove Trench Box Guardrail System from service if defects or damage are found, or if exposed to forces of fall arrest.

Ensure that applicable work area is free of all damage, including, but not limited to, debris, rot, rust, decay, cracking, and hazardous materials. Ensure that selected work area will support the application-specific minimum loads set forth in this instruction manual. Work area MUST be stable.

At least every 12 months, a Competent Person other than the user must inspect Trench Box Guardrail System. **Competent Person inspections MUST be recorded in inspection log in instruction manual and on equipment inspection grid label. The Competent Person must sign their initials in the box corresponding to the month and year the inspection took place.**

During inspection, consider all applications and hazards Trench Box Guardrail System has been subjected to.

Inspection Log

Date of First Use: _____.

Product lifetime is indefinite as long as it passes pre-use and Competent Person inspections. User must inspect prior to EACH use. Competent Person other than user must complete formal inspection at least every 12 months. Competent Person to inspect and initial.

This inspection log must be specific to one Trench Box Guardrail System. Separate inspection logs must be used for each Trench Box Guardrail System. All inspection records must be made visible and available to all users at all times.

	J	F	M	A	M	J	J	A	S	O	N	D
YR												
YR												
YR												
YR												
YR												

If equipment fails inspection IMMEDIATELY REMOVE FROM SERVICE.

Safety Information



Failure to understand and comply with safety regulations may result in serious injury or death. Regulations included herein are not all-inclusive, are for reference only, and are not intended to replace a Competent Person's judgment or knowledge of federal or state standards.

Do not alter equipment. Do not misuse equipment.

Workplace conditions, including, but not limited to, flame, corrosive chemicals, electrical shock, sharp objects, machinery, abrasive substances, weather conditions, and uneven surfaces, must be assessed by a Competent Person before fall protection equipment is selected.

The analysis of the workplace must anticipate where workers will be performing their duties, the routes they will take to reach their work, and the potential and existing fall hazards they may be exposed to. Fall protection equipment must be chosen by a Competent Person. Selections must account for all potential hazardous workplace conditions. All fall protection equipment should be purchased new and in an unused condition.

Fall protection systems must be selected and installed under the supervision of a Competent Person, and used in a compliant manner. Fall protection systems must be designed in a manner compliant with all federal, state, and safety regulations. Forces applied to anchors must be calculated by a Competent Person.

Unless explicitly stated otherwise, the maximum allowable free fall distance for lanyards must not exceed 6'. No free fall allowed for non-LE SRLs. Class A SRLs must arrest falls within 24"; Class B SRLs must arrest falls within 54".

Harnesses and connectors selected must be compliant with manufacturer's instructions, and must be of compatible size and configuration. Snap hooks, carabiners, and other connectors must be selected and applied in a compatible fashion. All risk of disengagement must be eliminated. All snap hooks and carabiners must be self-locking and self-closing, and must never be connected to each other.

A pre-planned rescue procedure in the case of a fall is required. The rescue plan must be project-specific. The rescue plan must allow for employees to rescue themselves, or provide an alternative means for their prompt rescue. Store rescue equipment in an easily accessible and clearly marked area.

Training of Authorized Persons to correctly erect, disassemble, inspect, maintain, store, and use equipment must be provided by a Competent Person. Training must include the ability to recognize fall hazards, minimize the likelihood of fall hazards, and the correct use of personal fall arrest systems.

NEVER use fall protection equipment of any kind to hang, lift, support, or hoist tools or equipment, unless explicitly certified for such use.

Equipment subjected to forces of fall arrest must immediately be removed from use.

Age, fitness, and health conditions can seriously affect the worker should a fall occur. Consult a doctor if there is any reason to doubt a user's ability to withstand and safely absorb fall arrest forces or perform set-up of equipment. Pregnant women and minors must not use this equipment.

Physical harm may still occur even if fall safety equipment functions correctly. Sustained post-fall suspension may result in serious injury or death. Use trauma relief straps to reduce the effects of suspension trauma.

Labels

GUARDIAN

FALL PROTECTION

1-800-466-6385 • www.guardianfall.com

Trench Box Anchor

Part #: 15192

DOM: ████████

Serial #: ████████

Prior to use, read and understand all instructions provided at time of shipment from manufacturer.

Compliant with all OSHA 1910, OSHA 1926 Subpart M, ANSI Z359.18-2017, and ANSI A10.32-2012 regulations.

Materials: galvanized steel.

Type A anchorage connector.

5,000 lb. MBS (min. breaking strength).

Minimum service temperature: -30° F.

ONLY make connections to Trench Box Anchor Mast. NEVER connect to guardrails or any other component of this system.

All connections must be selected and deemed compatible with Trench Box Anchor by Competent Person.

Capacity range: 130-420 lbs. (including all equipment).

90073 (Rev. C)



MAXIMUM 1 connection per anchor mast.

Avoid contact with hazards, including, but not limited to, heat, chemicals, electricity, and sharp or abrasive edges and surfaces.

GUARDIAN

FALL PROTECTION

1-800-466-6385 • www.guardianfall.com

Trench Box Guardrail Receiver

Part #: 15193

DOM: ████████

Serial #: ████████

Materials:
galvanized steel.
90943 (Rev. A)

Prior to use, read and understand all instructions provided at time of shipment from manufacturer.

Compliant with all OSHA 1910 and 1926 Subpart M regulations.

Adjusts to fit trench walls up to 10" thick.

Install guardrail posts with rungs facing AWAY from fall hazard.

Ensure top-rail is 42" (+/- 3") above work surface.

Guardrails must be 2"x4" or 2"x6" lumber, or compatible snap-on rails. Lumber guardrails must overlap minimum 12".

Maximum spacing of Trench Box Guardrail Receivers: 10'.



NEVER climb or lean on guardrails.
NEVER make any connections to Trench Box Guardrail Receiver.

INSPECTION GRID

User must inspect prior to EACH use. Competent Person must complete formal inspection every 12 months. Competent Person to inspect and initial.
Date of First Use: _____ **Product lifetime is indefinite as long as it passes pre-use and Competent Person inspections.**

	YR	J	F	M	A	M	J	J	A	S	O	N	D
20__													
20__													
20__													
20__													
20__													

If equipment fails inspection IMMEDIATELY REMOVE FROM SERVICE

DO NOT REMOVE LABELS