

GUARDIAN

FALL PROTECTION

PERFORMANCE SAFETY GEAR



Product Name:
Cable Horizontal Lifeline (HLL) System

Part #: 04800

Instruction Manual

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

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Introduction

Thank you for purchasing a Guardian Fall Protection Cable HLL 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 Cable HLL System, and all fall safety equipment used in combination with the Cable HLL 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 Z359.1-2007, and ANSI A10.32-2012 standards for fall protection. 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



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.

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.

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

Forces applied to anchors must be calculated by a Competent Person.

Harnesses and connectors selected must be compliant with manufacturer's instructions, and must be of compatible size and configuration.

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.

Maintenance of equipment must be done according to manufacturer's instructions. Equipment instructions must be retained for reference.

Prior to EACH use, all equipment in a fall protection system must be inspected for any potential or existing deficiencies that may result in its failure or reduced functionality. IMMEDIATELY remove equipment from service if any deficiencies are found.

Equipment must be inspected by a Competent Person at least every six months. These inspections must be documented in equipment instruction manual and on equipment inspection grid label.

Equipment must be inspected for defects, including, but not limited to, the absence of required labels or markings, improper form/fit/function, evidence of cracks, sharp edges, deformation, corrosion, excessive heating, alteration, excessive wear, fraying, knotting, abrasion, and absence of parts.

Equipment that fails inspection in any way must immediately be removed from use, or repaired by an entity approved by the manufacturer.

No on-site repair of equipment unless explicitly permitted by Guardian Fall Protection.

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

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.

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.

Allowable individual worker weight limit (including all equipment), unless explicitly stated otherwise, is 130-310 lbs.

Maintenance, Cleaning, and Storage

Repairs to Cable HLL Systems can only be made by a Guardian Fall Protection representative or an entity authorized by Guardian. Contact Guardian for all maintenance and repair needs at: 1-800-466-6385. If a Cable HLL System fails inspection in any way, immediately remove it from service, and contact Guardian to inquire about its return or repair.

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

KEEP INSTRUCTIONS AVAILABLE FOR REFERENCE. Record Date of First Use.

Prior to EACH use, inspect Cable HLL System for deficiencies, including, but not limited to, corrosion, deformation, pits, burrs, rough surfaces, sharp edges, cracking, rust, paint buildup, excessive heating, alteration, broken stitching, fraying, bird-caging, and missing or illegible labels. IMMEDIATELY remove Cable HLL 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 6 months, a Competent Person other than the user must inspect Cable HLL Systems. **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 Cable HLL Systems have been subjected to.

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: Cable HLL System may be used to support a MAXIMUM 2 Personal Fall Arrest Systems (PFAS) for use in Fall Arrest applications. Structure must withstand loads applied in the directions permitted by the system of at least 5,000 lbs. Maximum free fall is 6'. Applicable D-ring: Dorsal.



Restraint: HLL System may be used in Restraint applications to support a maximum 2 PFAS. Restraint systems prevent workers from reaching the leading edge of a fall hazard. Always account for fully deployed length of lanyard/SRL. Structure must withstand loads applied in the directions permitted by the system of at least 1,000 lbs. No free fall is permitted. Restraint systems may only be used on surfaces with slopes up to 4/12 (vertical/horizontal). Applicable D-rings: Dorsal, Chest, Side, Shoulder.

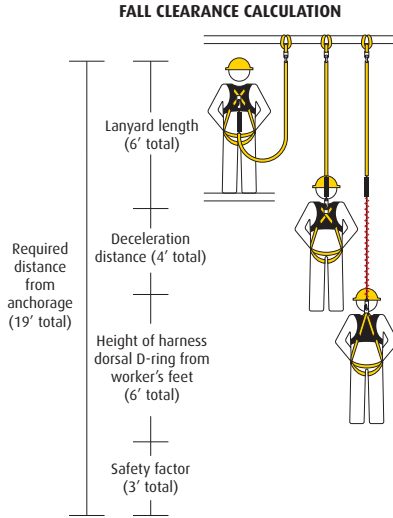
For all applications: worker weight capacity range (including all clothing, tools, and equipment) is 130-220 lbs. per worker.

NEVER for simultaneous use in Fall Arrest and Restraint applications.



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 3' safety factor, deceleration distance, user height, length of lanyard/SRL, and all other applicable factors. **Diagram shown is an example fall clearance calculation ONLY.**



Fall Clearance Requirements		
Span Length	1 Worker	2 Workers
1'-10'	15'	16'
11'-20'	16'	17½'
21'-30'	17'	19½'
31'-40'	18'	21½'
41'-50'	20'	24'
51'-60'	21'	26'
61'-70'	23'	28'
71'-80'	25'	30'
81'-90'	27'	32'
91'-100'	29'	34'

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 Cable HLL Systems, 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 Cable HLL Systems 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:

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



Connector to integral lanyard. **NO.**

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



Connector directly to webbing. **NO.**

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



Application that places load on gate. **NO.**

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



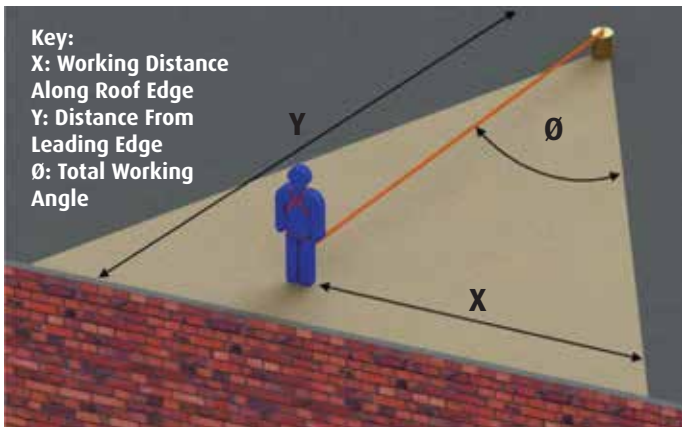
Connector directly to horizontal lifeline. **NO.**

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.

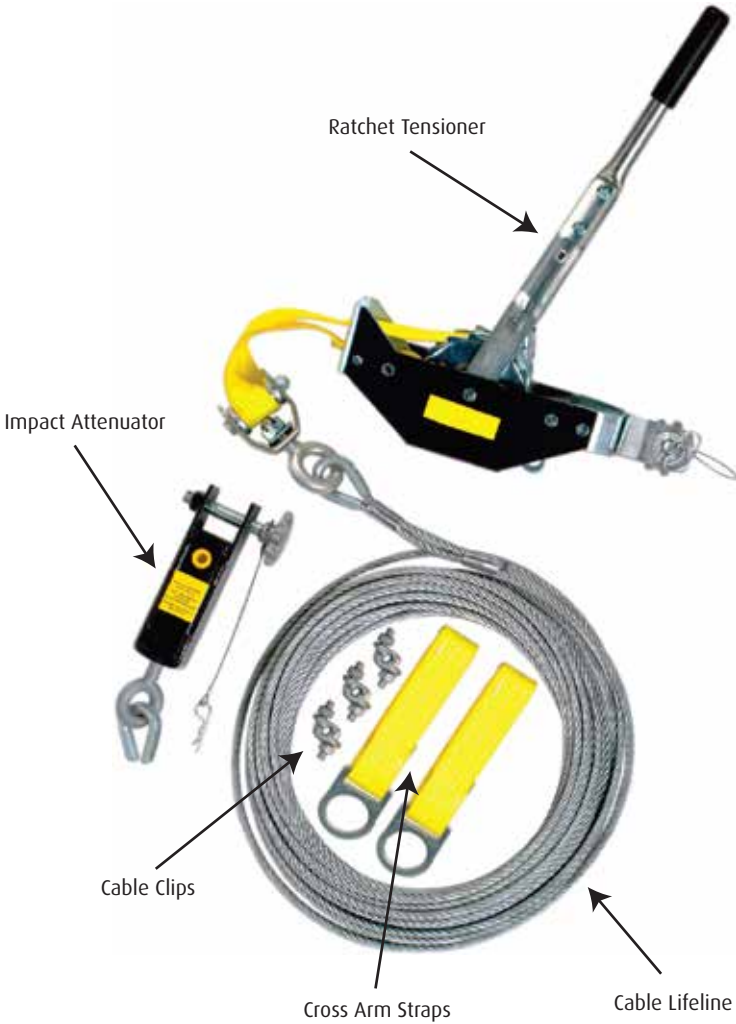
Anchor Distance From Leading Edge (Y)	Working Distance Along Roof Edge (Either Direction) (X)	Working Angle From Perpendicular (θ)
6'	8'	53°
10'	9' - 9"	45°
15'	11' - 7"	38°
20'	13' - 3"	33°
25'	14' - 6"	30°
30'	16'	28°
35'	17' - 2"	26°
40'	18' - 3"	24°
45'	19' - 4"	23°
50'	19' - 10"	21°
55'	21' - 4"	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: polyester, galvanized steel, and zinc-plated steel.
Cable diameter: 3/8".



Installation and Use

Prior to use, plan your system:

1. Ensure all PFAS equipment is selected and deemed compatible by a Competent Person.
2. Eliminate or minimize all risk of swing fall.
3. Determine desired location for HLL; ensure location is free of debris, rot, decay, cracking, and hazardous materials.
4. Installation, set-up, and use of Cable HLL system must be done under the supervision of a Qualified Person.
5. Maximum 2 workers per Cable HLL System.


**Required Cable HLL System line sag: 6", measured from center of span.
 Maximum span length: 100'.**

Installation:

1. Wrap (1) Cross Arm Strap around compatible support structure as determined by a Competent Person. Cross Arm Strap must fit snugly to structure. Attach (1) Carabiner to small O-ring on Cross Arm Strap. **A different anchorage connector, deemed compatible with Cable HLL System, may be used in place of Cross Arm Strap.**
2. Repeat step #1 on opposite support structure for second Cross Arm Strap and Carabiner. Cross Arm Straps must be directly across from each other, so that Cable Lifeline will be completely level and not slope in any way when installed.
3. With 3' of web out of Ratchet Tensioner, connect Ratchet Tensioner end to anchor point by inserting Clevis Pin through Ratchet Tensioner end and anchor point, then securing with Hitch Pin. Attach Impact Attenuator at opposite end of system in same method.
4. Attach Cable Lifeline to Impact Attenuator. Loop Cable Lifeline around thimble, and secure with (3) Cable Clips. **Space Cable Clips at 6--1/2" apart. Torque all Cable Clips to 45 foot-pounds.**
5. Pivot Ratchet Tensioner handle back and forth to tension Cable HLL System. Tension until Belleville washers in Ratchet Tensioner assembly are compressed flat. If washers do not compress flat, adjust Cable Clips at other end of Cable Lifeline to take up extra slack. **DO NOT OVERTIGHTEN.** Ensure there is a minimum of 4 wraps around the hub of Ratchet Tensioner, with a maximum 3' of web double lined out of mechanism.
6. Attach complete and compatible PFAS to HLL O-ring. Maximum 1 connection per O-ring. Maximum 2 PFAS in entire system. NEVER attach PFAS directly to HLL.



Labels




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PERFORMANCE SAFETY GEAR

1-800-466-6385 6305 S. 231st St.
www.guardianfall.com Kent, WA 98032

Cable Horizontal Lifeline System
Part #: 04800

Prior to use, read and understand all manufacturer's instructions provided with equipment at time of shipment.

Compliant with all applicable OSHA 1910, OSHA 1926 Subpart M, ANSI Z359.1-2007, and ANSI A10.32-2012 regulations.

Date of Manufacture:


Worker capacity range:
(including all equipment) 130-220 lbs.


Maximum 2 PFAS per system.

Materials:
Stainless steel, galvanized steel, and polyester.

All PFAS equipment must be selected and deemed compatible by a Competent Person.


All installation, set-up, and use of HLL must be done under supervision of a Qualified Person.

Refer to instructions for compatible connections and correct installation process.

 **WARNING**

Always avoid all hazards, including, but not limited to, chemicals, corrosive substances, excessive heat, electric shock, and sharp and abrasive edges and surfaces.

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(REV. A)



INSPECTION GRID

User must inspect prior to EACH use. Competent Person must complete formal inspection every 6 months. Competent Person to inspect and initial.

Date of First Use: _____.

Product lifetime is 5 years as long as equipment passes pre-use and Competent Person inspections.

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

If equipment fails inspection
IMMEDIATELY REMOVE FROM SERVICE

DO NOT REMOVE LABELS



For reference only.
Background to be white.
Date of manufacture to be: mo/year.



For reference only.
Punch hole here.

Inspection Log

User must inspect prior to EACH use. Competent Person other than user must complete formal inspection at least every 6 months. Competent Person to inspect and initial.

Date of First Use: _____. Product lifetime is 5 years from Date of First Use, or, if not recorded, from Date of Manufacture, as long as it passes pre-use and Competent Person inspections.

This inspection log must be specific to one Cable HLL System. Separate inspection logs must be used for each Cable HLL 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.

Notes

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