



## Product Name: Retractable HLL

Part #: 04660

### 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 Retractable HLL. 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 Retractable HLL, and all fall safety equipment used in combination with the Retractable HLL.

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 and OSHA 1910.140 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

 <b>CAUTION</b>	Understand the following definitions of those who work near or who may be exposed to fall hazards.
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**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:** Retractable HLL may be used to support a MAXIMUM 2 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', or up to 12' if used in combination with equipment explicitly certified for such use. Applicable D-ring: Dorsal.



**Restraint:** Retractable HLL may be used in Restraint applications. 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.

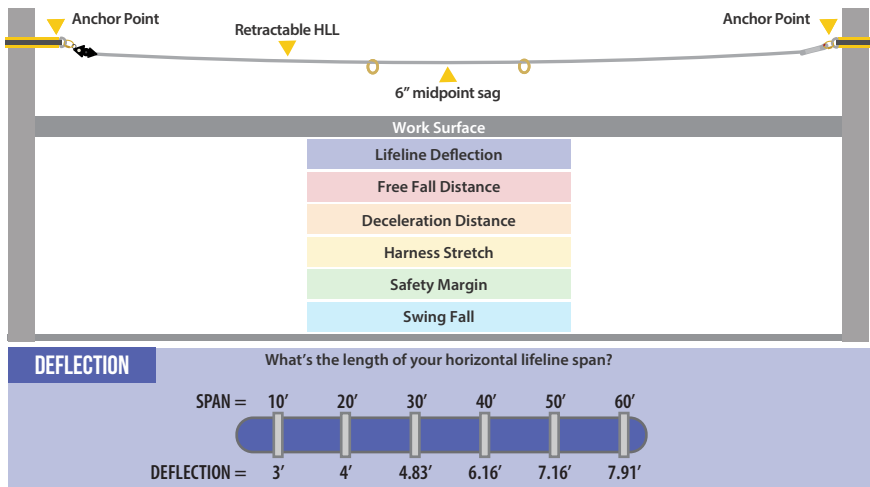
**For all applications, worker weight capacity range (including all clothing, tools, and equipment) is: 130 - 310 lbs. (per worker).**

## 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, harness stretch, lifeline deflection, and all other applicable factors. If span length is between values noted below, always use next highest noted span length to determine deflection.

**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.

**Diagram shown is an example fall clearance calculation ONLY.**



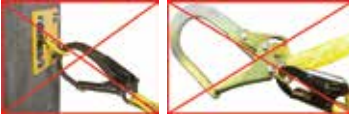
**Compatibility:** When making connections with Retractable HLL, eliminate all possibility of roll-out. Roll-out occurs when interference between a hook and the attachment point causes the hook gate to unintentionally open and release. All connections must be selected and deemed compatible with Retractable HLL 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.**

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



Connector directly to webbing. **NO.**

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



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

## Components and Specifications

Materials: Aluminum, stainless steel, zinc-plated steel, and galvanized steel.

Lifeline diameter and material: 1/4" galvanized steel.

Maximum lifeline length: 60'.

Weight: 29 lbs.



## 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. If unable to determine suitable location, consult with Qualified Person.
4. Installation, set-up, and use of Retractable HLL must be done under the supervision of a Qualified Person.
5. Maximum 2 workers per Retractable HLL.



**Example of deployed Metal Energy Absorber**



### **WARNING**

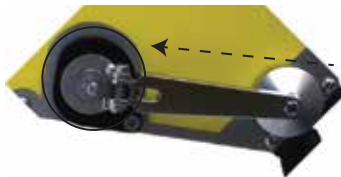
NEVER use Retractable HLL if improperly tensioned. Immediately remove from service if Metal Energy Absorber indicates signs of deployment.

### Installation:

1. At desired span endpoints, install compatible anchorage connectors per manufacturer's instructions. Anchorage connectors must allow Retractable HLL to be level/at 180°. Never install Retractable HLL with lifeline at an upward or downward angle.

\*Always refer to anchorage connector instruction manual to ensure compatibility with HLL systems.

2. At one end of span, attach Metal Energy Absorber end to anchorage connector with compatible shackle or carabiner. If using shackle, tighten until at least 1 full thread is visible.
3. With Metal Energy Absorber end fully secured, hold Retractable HLL by carrying handle, engage easy-access spool-release trigger, and slowly walk to second anchorage connector, allowing cable to pay out.
4. Connect Retractable HLL swivel top to anchorage connector with compatible shackle or carabiner. If using shackle, tighten until at least 1 full thread is visible.
5. Tension Retractable HLL by first flipping handle back over itself and locking down over tension pin. Then, rotate tensioning handle clockwise. Tensioning can either be done manually or with 12V ¼" hex drill. Proper tensioning is achieved when 6" of sag exists in the lifeline, measured from the midpoint of the span. Never over-tension lifeline. Never use Retractable HLL if improperly tensioned.



6. Attach complete and compatible PFAS to HLL O-rings. Maximum 1 connection per O-ring. Guardian Fall Protection snap hooks and carabiners may be directly connected to HLLs, however connecting to O-rings is considered best-practice use.

7. To uninstall and/or release tension on lifeline, rotate tensioning handle a partial turn to transition tension away from spool-release trigger, then compress trigger and extend lifeline sufficiently to allow removal from anchorage connector. When completely uninstalled, always fully retract HLL cable back into unit housing.



# Maintenance, Cleaning, and Storage

If Retractable HLL 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 Retractable HLL. Remove all dirt, corrosives, and contaminants from Retractable HLL before and after each use. If Retractable HLL cannot be cleaned with plain water, use mild soap and water, then rinse and wipe dry. NEVER clean Retractable HLL 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 Retractable HLL 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 Retractable HLL 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 Retractable HLL. **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 Retractable HLL have 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 Retractable HLL. Separate inspection logs must be used for each Retractable HLL. 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

