



## General Information

**Anyone using this product must be familiar with and understand the instructions outlined in this manual. Failure to use these products in accordance with these instructions could result in serious injury or death.**

**KEEP THESE INSTRUCTIONS!** It is the responsibility of the employer, as part of a total fall arrest, rescue and evacuation program, to retain the manufacturer's instructions and make them readily available to all users. The employer must provide adequate training in the proper use and care of this product prior to use. If requested this manual, along with the inspection log, must be presented to the manufacturer for review, and must accompany the Wire Rope Extender Lanyard if for any reason it is ever returned to the manufacturer.

This product must be used in accordance with all applicable federal OSHA and state safety regulations. This product is to be used only as one component in a complete approved personal fall arrest system. It is not a lifting device for materials or anchorage point for lifting materials or any other purpose not specifically outlined in this manual. If questions arise about the suitability of this product for any particular application, consult Reliance Industries Engineering at (303) 424-8650,

Use of this Lanyard in a manner not authorized by Reliance Industries, LLC may impair its function and safety, will void any warranty, expressed or implied, and consequences arising from such misuse or use in any manner not specifically described in this manual will be the sole responsibility of the user and/or his employer.

## Description

The Wire Rope Extender Lanyard is one component of the anchorage connector system, designed and intended to be an anchor point extender for an approved Personal Fall Arrest System. The Wire Rope Extender Lanyard is a vinyl coated wire rope lanyard with a cargo ring on one end and a Reliance Industries Snaphook on the other end (depending on the primary function of the lanyard, the snaphook will be either a Reliance "Pelican" snaphook, or a Reliance "Steelhead" Tie-Back snaphook).

## Proper Method of Installation

The most common use for an Extender Lanyard is to facilitate access for connection by extending the overhead anchorage location for a worker's fall arrest anchorage to a lower level so that it is within his reach from his walking/working surface.

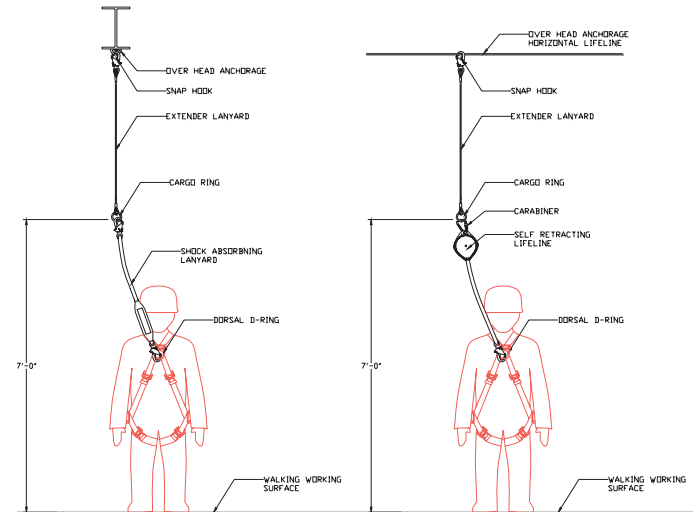


Figure 1

The lanyard should always be installed with the snap end attached to the overhead anchorage and the cargo ring hanging down (see Figure 1). This makes the cargo ring available for the worker's attachment point to his personal protective equipment, whether that be a shock-absorbing lanyard or a self-retracting lifeline. The cargo ring is the only approved attachment point for the workers personal protective equipment.

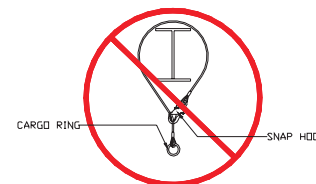


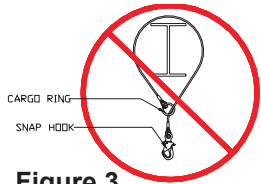
Figure 2

Do NOT use as a choker

**WARNING: (Danger of tie-back installation)** Care must be taken to never use the Extender Cable as a choker in a tie-back installation. It is possible when installing an Extender Cable to loop the Extender Cable around a beam and then attach it back to itself by snapping the hook of the snap over the cable (see Figure 2). It

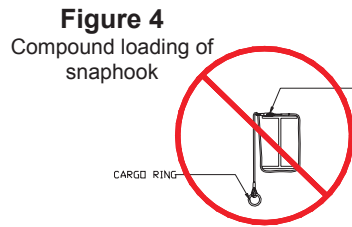
is also possible to loop the Extender Cable around an I-beam and insert the snap back through the cargo ring creating a choker effect (see Figure 3).

**Both of these arrangements are strictly forbidden.**

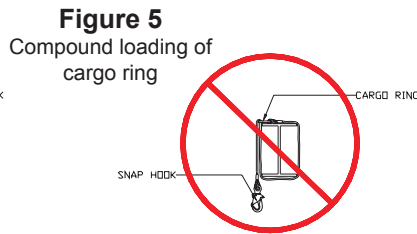


**Figure 3**  
Do NOT use as a choker

It is especially dangerous to use a Wire Rope Extender Lanyard in a tie-back installation when the snap might be positioned over the beam during a fall. This type of arrangement can cause the snap to become restricted against the beam and cause gate or snap failure due to compound loading. A fall in this position can cause the snap gate to be side loaded creating double the fall arrest force seen



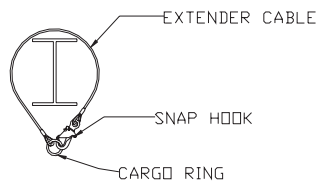
**Figure 4**  
Compound loading of snaphook



**Figure 5**  
Compound loading of cargo ring

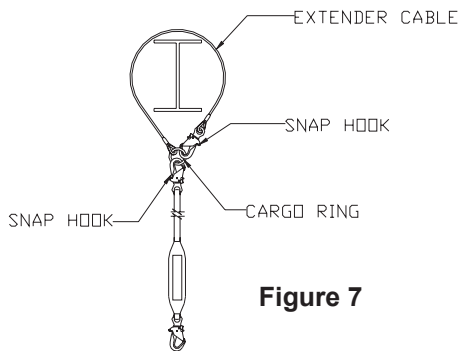
by the shock absorber. Standard locking snaphooks are not designed to withstand these forces in side load or gate load (see Figures 4 and 5). **Both of these arrangements are strictly forbidden.**

When a worker is looping an extender cable around an I-beam or structure to create an anchorage, the only approved location to attach the Extender Cable snap is to the Extender Cable cargo ring (Figure 6).



**Figure 6**

When anchoring the personal protective equipment to the Extender Cable, the only approved location to attach to the snap of the shock-absorbing lanyard is to the cargo ring of the Extender Cable (Figure 7).



**Figure 7**

## Selection of Personal Protective Equipment to be Used with the Wire Rope Extender Lanyard

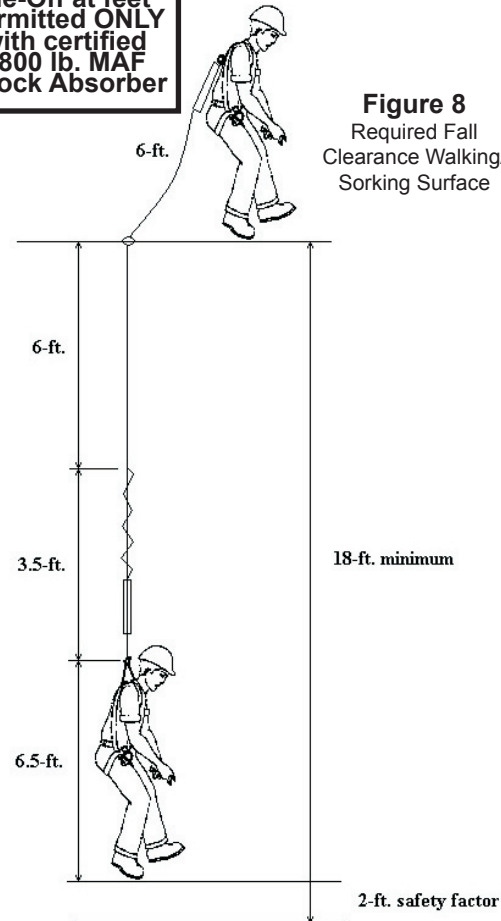
When the Wire Rope Extender Lanyard is installed properly the location of the cargo ring will be at or above the level of the worker's dorsal d-

ring but within his reach. This is usually 5-ft. or higher above the walking/working surface. In this arrangement the worker should be wearing a full body harness and be attached using a 900-lb. MAF (Maximum Arrest Force) shock-absorbing lanyard or self-retracting lifeline incorporating connectors that are double-action, self-closing and self-locking and be attached to the harness at his dorsal d-ring. In this arrangement a worker will be limited to a free-fall of 6-ft. or less.

In some instances (when no overhead structure exists) a worker may find the need to attach to an Extender Lanyard that is looped around a beam or structure located at his feet. In this type of an arrangement a worker will experience at least 12-ft. of free-fall before his shock-absorbing lanyard will begin to pull on the anchorage

cable. **Standard 6-ft. 900-lb. MAF shock absorbers are not designed for this type of fall and can cause high arrest forces or lanyard breakage that can result in serious injury or death.**

**Tie-Off at feet permitted ONLY with certified 1800 lb. MAF Shock Absorber**



**Figure 8**  
Required Fall Clearance Walking/Working Surface

***Whenever the possibility of experiencing a free-fall greater than 6-ft. exists, use only an OSHA approved 1800-lb. MAF shock-absorbing lanyard and limit the weight of workers approved to work in these conditions to 310-lb. or less including harness and tools.***

Train workers to be aware of resulting free-fall distances when they anchor at their feet. When using a 6-ft. shock absorbing lanyard, a typical fall will require 16-ft. plus the length that the cargo ring hangs below the top of the walking working surface. Therefore the Wire Rope Extender Cable should not be longer than needed just to circle the anchorage structure (Figure 6).

### **General Cautions**

This product should be used only in accordance with these instructions, the instructions of any device to be used with the Wire Rope Extender Lanyard, and in accordance with all state, federal and local safety regulations. The worker must read, heed and understand all warnings and instructions called out in the labels and operating instructions. Any hazards to safe and proper operation must be eliminated prior to use. The manufacturer is not responsible for damages resulting from an improper application or use of this product. Proper application means following the operating instructions, workplace geometry, workplace hazards and the conditions of inspection and maintenance. The user must have a rescue plan, be trained in the use of this plan and the means at hand to implement it when using this equipment. Damaged products and products having already been used for arresting a fall must be removed from service.

Whenever the structure, or general work area in which any Wire Rope Lanyard Extender is installed is altered, the suitability of the fall protection anchorage must be re-certified by a Qualified Person who must determine if the fall protection equipment will still function in an appropriate and safe manner. This Qualified Person should conduct periodic inspections at least once yearly.

### **Inspection, Maintenance and Storage**

The user of this product is responsible for the installation of inspection, maintenance and use of the Wire Rope Extender Lanyard. The user shall inspect equipment before each use to ensure that the equipment is in serviceable condition and operating correctly.

A Qualified Person capable of determining the suitability for use should

perform twice yearly inspections of all Lanyards being used to assure not only the condition of the Lanyards but also the condition of the structures to which they are attached and the manner they are used.

When any inspection reveals defects in, damage to, or inadequate maintenance of equipment, it shall be tagged as “**UNUSABLE**” and be removed from service permanently or undergo adequate corrective maintenance and an authorized inspection before return to service.

### **Procedure for Wire Rope Inspection**

Carefully conducted inspections are necessary to ascertain the condition of the wire rope making up the Wire Rope Extender Lanyard before each days use, and a more thorough examination must be conducted by a Qualified Person on a twice yearly basis. The primary purpose of inspecting the wire rope is removal from service of those lanyards that contain defects or damage that could pose a hazard to continued normal operations. The individual making the inspection should be familiar with the lanyard, its' method of operation and use, and the components making up the lanyard.

The visual inspection of the lanyard begins with an examination of the ferrules. The ferrules should be examined for cracks or loose fittings. Two ferrules should be present at each end of the lanyard. There should be no broken wires present where it exits the ferrules. If ANY of the following defects are observed, the lanyard should be tagged “**UNUSABLE**” and immediately removed from service:

- Distortion of the wire rope, such as kinking, crushing, bird-caging, strand displacement, etc.
- General corrosion
- Reduction of the outer diameter of the wire rope due to wear
- Evidence of any heat damage from any cause
- More than Two broken wires in one lay or more than one broken wire at an end connection.

### **Cleaning**

The Lanyards should always be handled in a manner that will protect them from damage or corrosion. Prior to use, the Wire Rope Extender Lanyard may be cleaned if necessary with a solvent based oil such as WD-40 that do not contain chlorine or chemicals corrosive to steel or zinc. Spraying with a light oil and wiping clean will ensure that the snaphook is free of debris and well lubricated.