INSTRUCTION MANUAL

FRONTLINE®

FALL PROTECTION

USER MANUAL

WARNING LINE SYSTEM

WLS16

Rev. Feb. 2026

Frontline Fall Protection Inc.

INSTRUCTION MANUAL

Applicable standards and regulations depend on the type of work being done, and also might include state-specific regulations. Refer to local, state, and federal (OSHA) requirements for additional information concerning the governing body of occupational safety regarding ladders, ladder systems and/or Personal Fall Arrest Systems (PFAS).

All users must refer to local, state or federals safety and health regulations before using this equipment. If there's a contradiction between any local, state, federal requirement and/or standard with this manual or within this manual, whichever is the most stringent will apply.

You are required to read and fully understand the user instruction manual BEFORE using this product. Improper use and installation can result in serious injury or death. User manuals occasionally may be updated so for the latest user manual please visit **www.frontlinefall.com/uim.**

TABLE OF CONTENTS

DEFINITIONS: For better use and understanding, the following is some terminology and definitions as referenced by OSHA that may help better understand this user manual. Please refer to OSHA 1910 or 1926 for full details.

Anchorage
A secure point of attachment for lifelines, lanyards, or deceleration devices.
Attachment Point
A loop or "D" ring connected (integrally) to the body support that provides a means for attachment of other components of the fall protection system.
Body Harness
Means straps, which may be secured about the worker in a manner that will distribute the fall arrest forces over at least the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.
Carabiner
A link with a gate that is normally closed or that automatically closes, and is used to connect components of a personal fall protection system.
Competent Person
Is defined as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them" [29 CFR 1926.32(f)]. By way of training and/or experience, a competent person is knowledgeable of applicable standards, is capable of identifying workplace hazards relating to the specific operation and has the authority to correct them.
Connector
A device which is used to couple (connect) parts of the personal fall arrest system and positioning device systems. It may be an independent component of the system, such as a carabiner, or it may be an integral component of part of the system (such as a buckle or D-ring sewn into a body belt or body harness, or a snap-hook spliced or sewn to a lanyard or self-retracting lanyard).
D Ring
A form of attachment point on body belts and fully body harnesses meant for attachment of other components of a fall protection and positioning system.
Deceleration Device
Means any mechanism that serves to dissipate energy during a fall.
Deceleration Distance
The vertical distance a falling employee travels from the point at which the deceleration device begins to operate, excluding lifeline elongation and free fall distance, until stopping. It is measured as the distance between the location of an employee's body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.
Fall Arrest System
A fall arrest system means a system used to arrest an employee in a fall from
a working level. It consists of an anchor point, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.
Fall Prevention System
Those systems and techniques that eliminate the possibility of a fall.
Fall Protection System
Any of the following when used to protect a worker from a fall or minimize the risk from falling: Guardrails, Safety belt or a full body harness with a lanyard and/or lifeline and an anchor, and their related equipment, Safety net, Control zone, Safety monitor with a control zone, and other acceptable procedures.
Fall Restraint System
A work positioning system to prevent a worker from falling from a work position, or a travel restriction system such as guardrails or a personal fall protection system to prevent a worker from traveling to an edge from which the worker could fall.
Free Fall
The act of falling before the personal fall arrest system begins to apply force to arrest the fall.
Free Fall Distance
Vertical displacement of the fall arrest attachment point on the employee's body belt or body harness between onset of the fall and just before the system begins to apply force to arrest the fall. This distance excludes deceleration distance, lifeline and lanyard elongation, but includes any

deceleration device slide distance or self-retracting lifeline/lanyard extension before the devices operate and fall arrest forces occur.

Full Body Harness

A body support device consisting of connected straps designed to distribute a fall arresting force over at least the thigh, shoulders and pelvis, with provision for attaching a lanyard, lifeline or other components.

Lanyard

A flexible line of webbing, synthetic rope or wire rope that is used to secure a safety belt or full body harness to a lifeline or anchor.

Horizontal Lifeline System

A system composed of a synthetic or wire rope installed horizontally between two anchors, to which a worker attaches a personal fall protection system.

Leading Edge

The edge of a floor, roof, or formwork for a floor or other walking or working surface (such as the deck) which changes location as additional floor, roof, decking, or formwork sections are placed, formed, or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

Lifeline

A synthetic or wire rope, rigged from one or more anchors, to which a worker's lanyard or other part of a personal fall protection system ¡s attached.

Low-Slope Roof

A roof having a slope less than or equal to 4 in 12 (vertical to horizontal).

Lower Levels

Those areas or surfaces to which a worker can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavations, pits, tanks, material, water, equipment, structures, or portions thereof.

Passive Fall Prevention

Refers to a system that is non-dynamic, stationary, and does not move, adapt, or change when in or out of use. Passive systems don't require the use of personal protective equipment or active participation from the worker. Typically, passive systems include netting, handrails, and guardrails.

Personal Fall Arrest System (PFAS)

A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline or suitable combinations of these. As of January 1, 1998, the use of a body belt for fall arrest is prohibited.

Positioning System (work-positioning system)

A system of equipment and connectors that, when used with a body harness or body belt, allows an employee to be supported on an elevated vertical surface, such as a wall or window sill, and work with both hands free. Positioning systems also are called "positioning system devices" and "work-positioning equipment".

Qualified

A person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project.

Rope Grab

A deceleration device which travels on a lifeline and automatically, by friction, engages the lifeline and locks so as to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking or both (also referred to as a fall arrester).

Self-Retracting Lifeline/Lanyard

A deceleration device containing a drum-wound line, which can be slowly extracted from, or retracted onto, the drum under slight tension during normal worker movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

Shock Absorber

A device intended to limit the deceleration forces exerted on a worker during fall arrest.

Snap Hooks

A connector consists of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object.

Unprotected Sides and Edges

Any side or edge (except at entrances to points of access) of a walking or working surface (for

example, floor, roof, ramp, or runway) where there is no wall or guardrail system at least 39 inches high.

Walking/Working Surface

Any surface (whether horizontal or vertical) on which a worker walks or works, including but not limited to floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel; but not including ladders, vehicles, or trailers, on which workers must be located in order to perform their job duties.

Warning Line System

A barrier erected on a roof to warn workers that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body harness, or safety net systems to protect workers in the area.

Working load

Refers to aggregate simultaneous load of personnel, equipment, and/or material to be supported by the equipment or system.

GENERAL STATEMENT AND WARNINGS

This guardrail system is meant to be installed ONLY by competent and trained personnel in fall protection. This system serves as part of a complete passive fall prevention system. This system has been designed to comply with OSHA 1926 and OSHA 1910.

User/Installer MUST read, understand and follow all safety information contained in these instructions prior to the use or installation of this system. Misuse of this system other than its original intended use or not described in this User

Instruction Manual is not approved by Frontline Fall Protection and could result in serious injury or death.

These instructions must be provided to the installer/user of this equipment.

Retain these instructions for future reference or you can find a copy of them at www.frontlinefall.com. For more information regarding any portion of this user instructions manual please contact us at info@frontlinefall.com. The following are requirements for the safe use of this system:

- Do not install this equipment until proper training, fall protection and rescue programs are in place.
- Do not install this equipment near electrical lines. A minimum of 10' distance from electrical lines or other electrical hazards is required.
- Do not install this equipment on slippery surfaces, gravel or slopes.
- Do not install this equipment less than 18" from a fall hazard or leading edge.
- Do not use this equipment for other uses other than its original and designed intended use.
- Do not lean or climb at any point of the guardrail system.
- Do not use this product if it does not pass safety inspection or that the safety and integrity of it is questionable.
- Installers should consult a doctor prior installing this equipment, as physical labor and heavy lifting is required for the proper installation of this system.
- Pregnant women or minors must not be exposed to a workplace hazard and must not install this equipment.
- All installers/users must refer to local, state or federal safety and health regulations before using this equipment. Whichever is most stringent shall supersede and apply.
- Never alter or intentionally misuse this equipment, always inspect before each use to ensure its compliance and safe use.
- Always examine the work area and the surroundings to identify hazards that may impact safety before commencing work.
- Use fall protection when and where necessary and ensure training is performed before being exposed to fall hazards.

TRAINING REQUIREMENTS

Before using Frontline Fall Protection product, user and employers must ensure that the person using this equipment has been trained on the proper use, care and maintenance of this product by a competent person qualified in Fall Protection. It is the responsibility of the user of this product to ensure that proper training has been done in addition to reading and fully understanding these user instructions manual.

Additionally, the employer must establish a training program to employees that are exposed to a fall hazard and trained by a competent person qualified in those areas. The program shall enable each employee to recognize the hazards of falling and shall train each employee in the procedures to be followed in order to minimize these hazards.

Retraining is necessary when the employer has reason to believe that any affected employee who has already been trained does not have the understanding and skill to carry out those duties. Circumstances where retraining is required include, but are not limited to, situations where:

- Changes in the workplace render previous training obsolete.
- Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
- Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate that the employee has not retained the requisite understanding or skill.
- Changes in the OSHA regulations or ANSI Standards.

Training must be done in the language that the employee understands and shall, be documented and kept as outlined under OSHA recordkeeping regulations. No user or employee shall perform work without the proper training and understanding on how to properly and safely use this product.

GENERAL DISCLAIMER

Frontline has tested their product to comply with OSHA under a controlled environment. Frontline cannot and does not guarantee the same performance for different substrates other than the ones mentioned in these user manuals. Frontline systems will meet or exceed OSHA requirements, but it's ultimately up the end user/installer/owner of the product to ensure that the systems are installed accordingly and comply with OSHA requirements and/or other governing safety entities. Please contact info@frontlinefall.com if you have any questions regarding this subject matter.

WARNING

The following is required, as outlined by OSHA 1926 and 1910:

1. The warning line shall be erected around all sides of the roof work area.

i. When mechanical equipment is not being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge.

ii. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

iii. Points of access, materials handling areas, storage areas, and hoisting areas shall be connected to the work area by an access path formed by two warning lines.

iv. When the path to a point of access is not in use, a rope, wire, chain, or other barricade, equivalent in strength and height to the warning line, shall be placed across the path at the point where the path intersects the warning line erected around the work area, or the path shall be offset such that a person cannot walk directly into the work area.

2. Warning lines shall consist of ropes, wires, or chains, and supporting stanchions erected as follows:

i. The rope, wire, or chain shall be flagged at not more than 6-foot (1.8 m) intervals with high-visibility material;

ii. The rope, wire, or chain shall be rigged and supported in such a way that its lowest point (including sag) is no less than 34 inches (.9 m) from the walking/working surface and its highest point is no more than 39 inches (1.0 m) from the walking/working surface;

iii. After being erected, with the rope, wire, or chain attached, stanchions shall be capable of resisting, without tipping over, a force of at least 16 pounds (71 N) applied horizontally against the stanchion, 30 inches (.8 m) above the walking/working surface, perpendicular to the warning line, and in the direction of the floor, roof, or platform edge;

iv. The rope, wire, or chain shall have a minimum tensile strength of 500 pounds (2.22 kN), and after being attached to the stanchions, shall be capable of supporting, without breaking, the loads applied to the stanchions as prescribed in paragraph (f)(2)(iii) of this section; and

v. The line shall be attached at each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in adjacent sections before the stanchion tips over.

3. No employee shall be allowed in the area between a roof edge and a warning line unless the employee is performing roofing work in that area.

4. Mechanical equipment on roofs shall be used or stored only in areas where employees are protected by a warning line system, guardrail system, or personal fall arrest system.

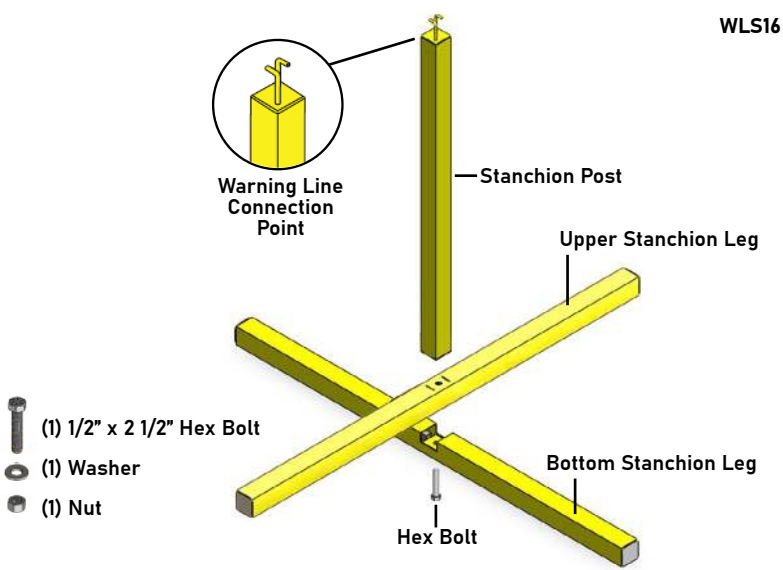
Additional note and disclaimer: Other regulations may apply as described under OSHA 1926 and OSHA 1910 and other relevant standards under OSHA or State or local specific safety programs. It is the employer's responsibility to ensure that their warning line systems are erected and built to comply with OSHA or other regulatory agencies' minimum standards.

SPECIFIC USE AND APPLICATION:

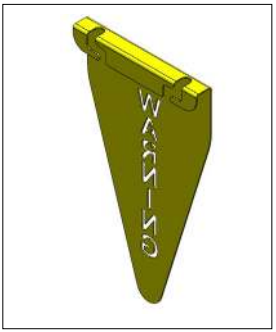
This system has been designed to serve as a warning line system. The system should be set-up only as a warning system, to advise user and others of a fall hazard but this system does NOT serve a passive or active fall arrest system. Check with your employer for more details on fall protection compliance if the area is questionable.

Component Names:
In order to help installation guidance, the following are the component names:

FIGURE 1



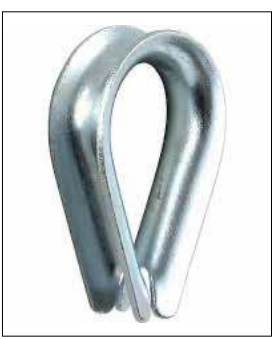
PART NUMBERS: (SOLD SEPARATELY OR AS KIT)



WLS16-FLAG

WLS16-CABLE316

WLS16-CLIP



WLS16-THIMBLE

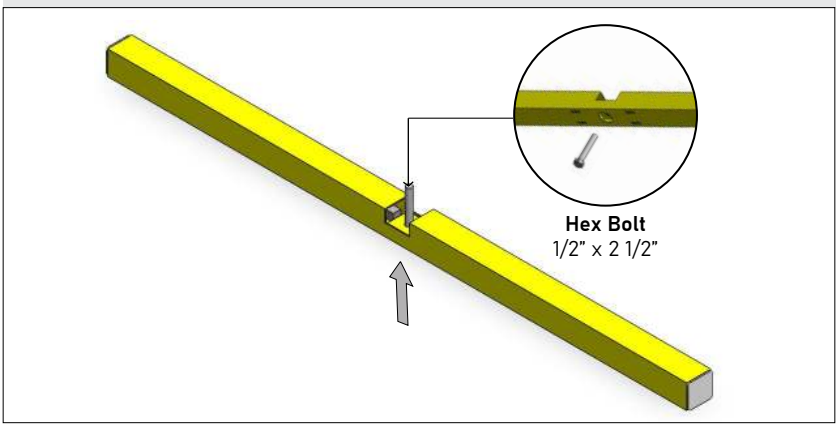
INSTALLATION

Employers must ensure installers are properly trained in fall protection, have a complete fall protection and rescue program in place prior to installation. Remember not to install on slippery, sloped or gravel surfaces. Don't install 10' from powerline or electrical hazards. A layout plan should be done of the fall hazard exposed area which is being covered prior to installation so that the proper lineal foot amount of warning line system is accounted for. Once the warning line system is onsite and ready to be installed, the following steps must be followed:

1. Locate the Leg Stanchions, and lay flat the one with the opening as shown on Figure 2.

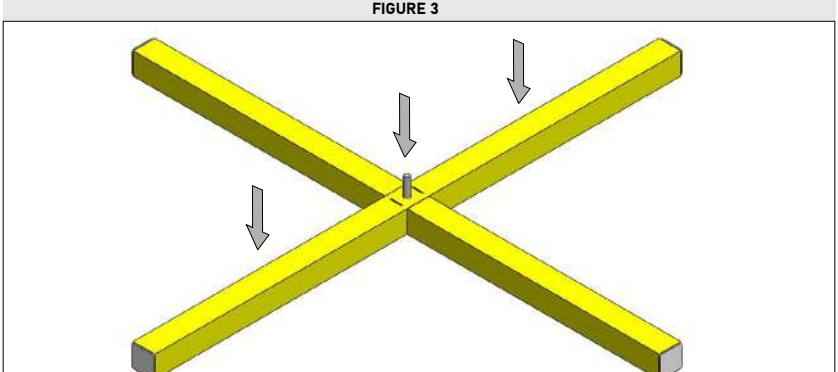
a. Insert the 1/2" x 2 1/2" hex bolt, washer and nut through the hole under the Bottom Stanchion Leg.

FIGURE 2



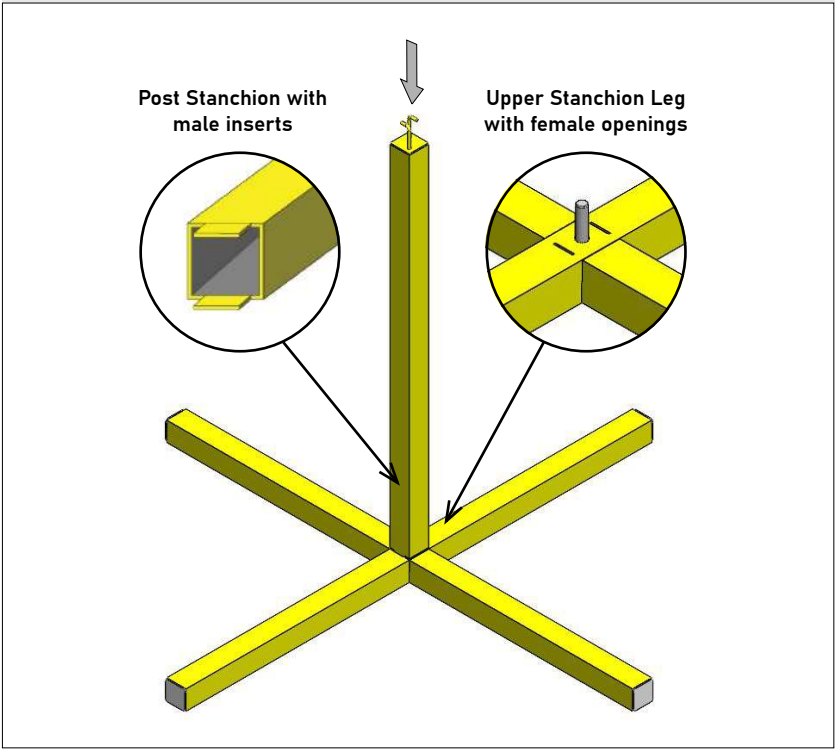
2. Lay the Upper Stanchion Leg over the Bottom Stanchion Leg and the hex bolt as shown in Figure 3.

FIGURE 3



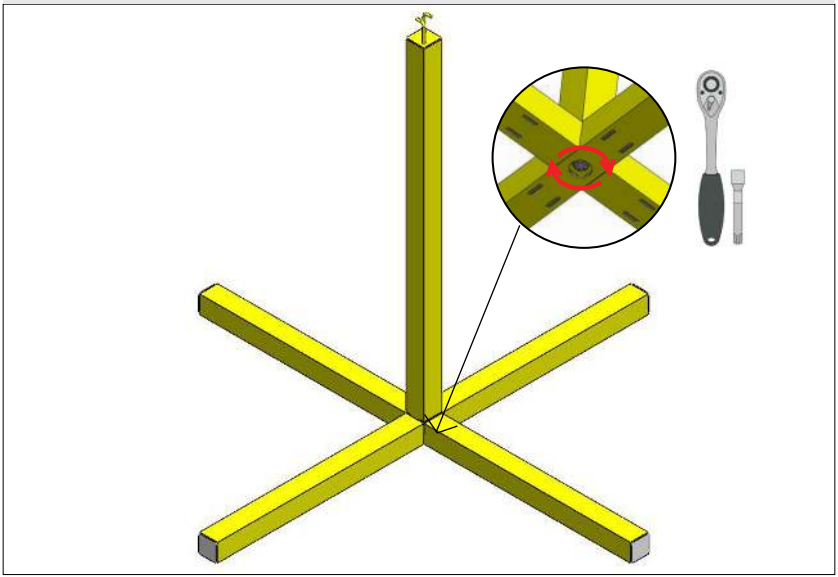
3. Locate the Post Stanchion and insert it through the Upper Stanchion Leg female openings, ensure the Leg Stanchions and the bolt are raised and aligned vertically so the Post Stanchion can be properly inserted as shown in Figure 4.

FIGURE 4



4. Hold the Stanchion and hex bolt from underneath and tighten with a 3/4" hex socket wrench or drill as shown on Figure 5.

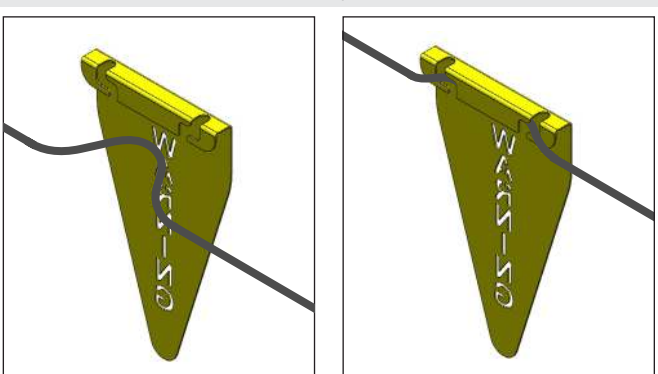
FIGURE 5

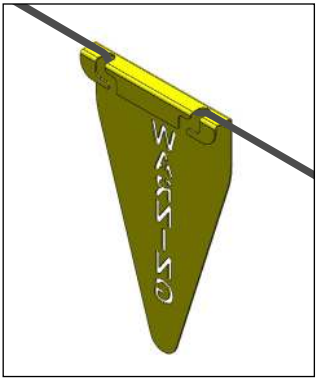


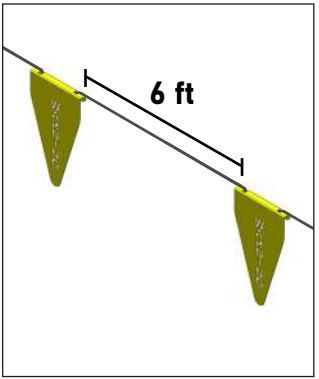
5. Use Frontline part numbers WLS16-FLAG and WLS16-CABLE316 for the following step. As required by OSHA, the rope, wire, or chain shall be flagged at not more than 6-foot (1.8 m) intervals with high-visibility material as shown Figure 6.

a. Feed the cable through the flag openings and secure as shown below in Figure 6:

FIGURE 6

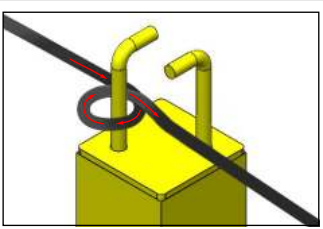


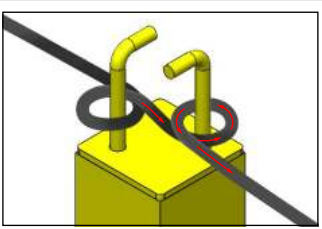




6. Insert the cable through the Warning Line Connection Point as shown in Figure 6. **Ensure the distance between Stachion Posts does not exceed and is no more than 24 feet (cable run can be continuous).**

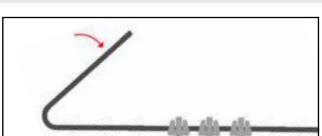
FIGURE 7



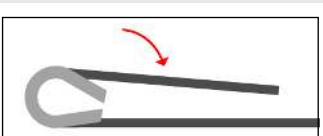


7. At the start and end of each run of the line the cable needs to be secured with a WLS16-THIMBLE and WLS16-CLIPS as shown in the Figure 8.

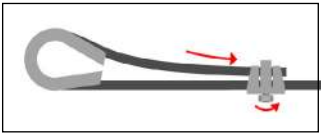
FIGURE 8



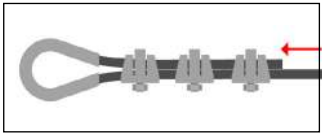
a. Slide the WLS16-CLIPS onto the cable and bend about 6 inches of the cable back, creating a loop.



b. Place the WLS16-THIMBLE inside the loop, ensuring it sits snug against the main cable.



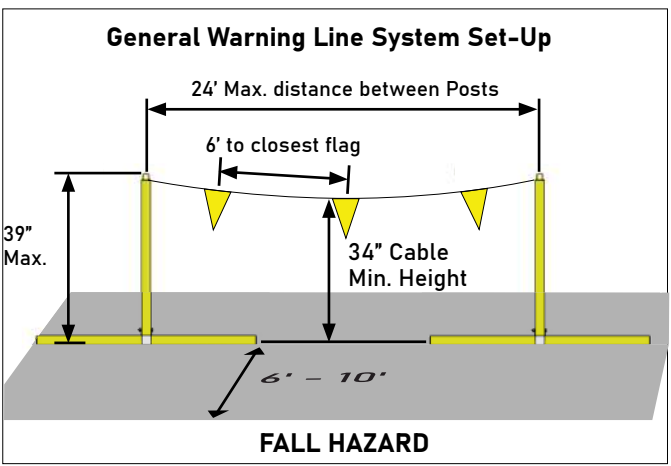
c. Feed the looped end cable through the WLS16-CLIPS.



d. Space and tighten the WLS16-CLIPS evenly until the WLS16-THIMBLE is firmly secured within the loop.

8. When mechanical equipment is not being used, the warning line hall be erected not less than 6 feet (1.8 m) from the roof edge as shown on Figure 9.

FIGURE 9



9. When mechanical equipment is being used, the warning line shall be erected not less than 6 feet (1.8 m) from the roof edge which is parallel to the direction of mechanical equipment operation, and not less than 10 feet (3.1 m) from the roof edge which is perpendicular to the direction of mechanical equipment operation.

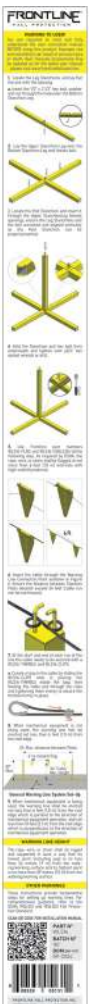
REPAIR, CARE AND MAINTENANCE:

Personal/local repairs, outside and other than performed by Frontline Fall Protection will void warranty unless expressly stated and written by Frontline Fall Protection technical department. Company and end user are require to install system and maintain the system compliance throughout the duration of the job. Product that does not pass inspection or is questionable needs to be taken out of service immediately and then notified to Frontline Fall Protection for inspection and further action.

Equipment that has been physically exposed such as rain/dirty water, concrete, paint, buildup of other construction material or other surface contamination shall be cleaned and dried for better maintenance and/or storage. Equipment chemically exposed or corroded that cannot be cleaned with water and soap or other similar cleaning agents need to be removed from service for added safety.

If products are not temporarily or permanently installed, when possible, all products shall be stored at room temperature in indoor space, lockers or in a clean area away from sunlight, rain and other environmental conditions. Products should be also stored where they are not exposed to chemical, oils, paint, concrete, or other contaminants that might compromise the integrity of the product.

LABEL



INSPECTION CHECKLIST AND LOG				
MODEL NUMBER:		**DATE OF FIRST USE:**		
INSPECTION:	Prior to installation and prior to each use / Inspection by a competent person is required every 6 months.		**PASS**	**FAIL**
WARNING LINE SYSTEM:	Make sure the stanchion is in an upright, vertical and at a 90 degree angle			
	Make sure the leg stanchions are flat on the surface			
	Ensure that the system is installed on a flat surface			
	The rope, wire, or chain shall be rigged and its lowest point (including sag) is no less than 34 inches and highest 39" from the working surface			
	Ensure warning line does not fall lower than 34" from the substrate			
	Ensure there's warning banners of intervals of no more than every 6', including from the stanchion			
	Inspect the for damage: Look for cracks, dents, or deformities			
	Inspect labels to ensure they are legible and in place			
	Inspect bolt to ensure it's properly installed			
	Inspect the entire unit for corrosion			
	Inspect for any missing/malfunctioning parts on the warning line system			
	Inspect for permanent deformation			
	Inspect for any other unconformity			

INSPECTION LOG			
COMPETENT PERSON:	**DATE OF INSPECTION**	**PASS**	**FAIL**

Frontline Fall Protection Inc.

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