



Reliance Industries, LLC

**Installation, Operation, Inspection and Maintenance
Instructions for the Cast in Place Stanchion Receiver**



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Important Instructions!

These instructions must be kept on file and available for the users reference at **all** times. The users must read and full understand these instructions or have the instructions explained in detail before using this equipment. **Failure to observe these instructions could result in serious injury or death.**

Prior to use, all workers must be trained in the proper use of all systems and equipment.

A Training and Instruction review should be repeated at regular intervals.

A rescue plan must be prepared; the workers must be trained in its use, and rescue equipment must be on hand prior to any use of horizontal lifeline systems or their components.

Any questions regarding these instructions should be directed to:

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Important OSHA Regulations Covering the Use of Horizontal Lifeline Systems

OSHA 1910.66 Subpart M – 1926.502 (d)(8):

Horizontal Lifelines shall be designed, installed, and used under the supervision of a qualified person as part of a complete fall arrest system, which maintains a safety factor of at least two.

OSHA 1910.66 (b):

“Qualified Person” means one with a recognized degree or professional certificate and extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation, and specifications in the subject work, project, or product.

OSHA 1910.66 (b):

“Competent Person” means a person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as in their application and use with related equipment

OSHA 1910.66:

Personal fall arrest systems shall be rigged such that an employee can neither free-fall more than 6-ft. nor contact any lower surface.

OSHA 1910.66 (n):

The sag in the lifeline should be minimized to prevent the connecting piece of equipment (self-retracting lanyard or other appropriate personal fall arrest device) from sliding down the lifeline to a position which creates a swing hazard during a fall arrest.

OSHA Standards, Interpretations and Compliance Letters, 02/09/1995-Criteria for personal fall arrest systems:

The free-fall distance is limited to 6 feet. The deceleration distance must not exceed 42 inches; lifeline elongation is not included in deceleration distance; and the total fall distance is unregulated except that the employee cannot make contact with a lower level...The safety factor of two should be applied based on the anticipated maximum arrest force, not the fall energy.

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System Description

The Cast in Place Stanchion Receiver is an inert PVC stanchion tube receiver that can be placed and secured to concrete forming prior to pouring leaving a location to drop-in an approved Reliance Industries End/Bypass Stanchion once the concrete has cured. The Bracket may be used in any location where at least a foot of concrete exists on all sides of the bracket and that the overall structure has been certified capable of withstanding the loads that may be imposed on it. Once properly placed, a Reliance Industries Horizontal Lifeline Stanchion may be dropped into place. Upon completion of the work, the stanchion tube may be removed from the Receiver, and the Receiver filled with concrete if it will no longer be needed. Certified and properly sized tie-back cables still must be used with the end stanchion of an approved horizontal lifeline system to insure that the stanchion is not overloaded.

Installation

Installation of horizontal lifeline systems should be done under the supervision of a Qualified Person trained in their function and use. Use only parts that have been qualified as compatible components by Reliance Industries. Install the system only as specified in the system parameter documents prepared by the computer program system. Ensure that the minimum anchorage strength is at least 2 times the anticipated line tension called out in the system parameter documents. Have the anchorages certified by a qualified person and keep documentation on hand. HLL calculations for minimum required clearance (MRC) are measured below the walking/working surface and assume that the horizontal lifeline is at least 5 ft. above the walking/working surface (unless otherwise specified) in order to limit free-fall to 6 ft. or less as required by OSHA. Always install lifelines horizontally where all end anchorages and bypass supports are at the same elevation. Always install the system per the system parameter documents and NEVER change span length, sub-span length, or number of people allowed on the system once a system is designed and certified. Remember, horizontal lifeline dynamics change with any change to span length, or number of people allowed on the system. Any changes require a new design, and MUST be approved by a qualified person.

The Cast in Place Stanchion Receiver **MUST NOT** be used with horizontal lifelines that utilize a Strongback (compression) member.

To install the Cast in Place Stanchion Receiver:

1. The location where the Cast in Place Stanchion Receiver must be determined prior to the curing of the concrete it is to be placed in. The open end of the Tube may be filled with foam blocks or covered with duct tape to prevent concrete from filling the receiver. The interior of the receiver may also be coated with a light application of grease to allow for the easy removal of any excess concrete that may leak into the tube. The receiver should be located where there is at least one foot of space between it and any concrete edge.
2. If the concrete has not been poured yet, the receiver must be secured to the interior rebar (or formwork) such that it will not shift when the concrete is poured or vibrated. Care must be taken to ensure that the receiver is placed in a vertical position. If the concrete has been freshly poured (but

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not cured), it is possible to press the receiver into the concrete until the top edge is flush with (or slightly below; if the receiver is to be filled with concrete upon completion of the work, placing the tube below the top surface will allow for a better finished surface after being filled in) the finished surface of the concrete. A stanchion temporarily inserted into the Receiver can help adjust orientation of the tube and verify that it is placed in a vertical position. The stanchion should be removed from the receiver so that it does not push the tube further into the wet concrete.

3. Once the concrete has been allowed to cure to a minimum of 3000 PSI strength, a stanchion may be placed into the receiver and be used as a method of fall protection when all other items of fall protection have been certified for use.

The Cast in Place Stanchion Receiver can be filled with concrete (or grout) when the work requiring its use is completed. The interior PVC may be chipped away at the top with a chisel to allow for a better finish of concrete at the top surface.

If there is ongoing work that will use the receiver, it may be capped to prevent debris from entering the cavity.

Training

It is the responsibility of the employer to train all workers prior to using this system (per OSHA 1926.503 (a)(1)). The employer shall provide a training program for each employee who might be exposed to fall hazards. 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.

The employer shall assure that, as necessary, each employee has been trained by a competent person qualified in the following areas:

- a. OSHA regulations governing the use of horizontal lifelines.
- b. Ability to recognize potential fall and workplace hazards.
- c. Method of inspection of safety equipment.
- d. Rescue procedures.
- e. Installation and removal techniques.

Planning for Rescue

Prior to system use, a rescue plan must be prepared, the workers must be trained in its use, and the rescue equipment must be on hand to implement it in case of a fall.

Typical rescue plans include (but are not limited to) the following items:

1. List of equipment that must be readily accessible in the event of an emergency and the names of those workers certified to use or operate that equipment.
2. Emergency contact phone numbers (ambulance, hospital, fire department...) and a means to contact them (cell phone, emergency radio).

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3. List of employees on the site, and the specific tasks they will perform to effect the rescue.
4. If a confined spacing is to be entered a confined space work permit must be filed and approved.

During installation of horizontal lifeline systems, anchorage points should be identified, and clearly marked in such a manner as to provide a means to rescue a worker at any position along the lifeline system.

Inspection

Prior to each use, the worker must inspect the system for any physical damage, wear, corrosion, or malfunctioning parts. The horizontal lifeline connected to stanchions that are inserted into the Pour in Place Receiver must be inspected each day prior to use as part of the general lifeline inspection. If an inspection reveals a problem or unsafe condition, remove the entire system from service until it can be re-certified by a competent person.

The worker, who must also check the pre-tension of the horizontal lifeline system prior to each use, must inspect all system components. A formal inspection must be carried out a minimum of once each year, and be formally documented and kept on file with the system parameter documents.

Servicing

A qualified person trained in the inspection and servicing of system components must carry out servicing of this system. The company's safety officer should maintain a record log of all servicing and inspection dates. The system and all components must be withdrawn from service if subjected to fall arrest forces. Those components may be returned to service only after being certified by a qualified person. Only original Reliance equipment replacement parts are approved for use in this system. Contact Reliance Industries Engineering with questions and when in need of assistance.

Warnings and Limitations

Proper care should always be taken to visually scan the work area prior to use. Remove any obstructions, debris, and other materials from, and beneath the work area that could cause injuries or interfere with the operation of this system. Be cautious of swing fall hazards if working horizontally to the side of the lifeline. Always use the shortest lanyard length possible to connect to the lifeline. Be aware of the movements of others on the lifeline at the same time, knowing that if they fall, the sudden motion in the lifeline could pull others off balance. When working at a fixed area, tie off to other suitable overhead anchorage if they exist, allowing the lifeline to be occupied by fewer people.

Users should be familiar with pertinent regulations governing the use of this system and its components. Only trained and competent personnel should install and supervise the use of this system.



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Do not exceed manufacturers' recommended span length or maximum number of people on the same lifeline as listed on either the tag attached to the specific horizontal lifeline system, or in the lifeline parameter data sheets.

Do not use these components with any other horizontal lifeline material. Only 3/8 – 7x19 IPS or stainless steel wire rope is allowed, due to its high-energy capacity.

Use only Reliance Industries supplied or qualified compatible components.

If you have any questions regarding the correct installation or use of this product DO NOT USE. Call Reliance Industries at Ph. (303) 424-8650 or Fax (303) 424-8670.

Inspection Log for HLL Systems

Company: _____ Location: _____ Date: _____
 Job Site: _____ HLL Log No.: _____ System No.: _____

Is this system used as described in the HLL Log No. _____ to conform to design document criteria? _____

Describe non-conforming conditions in the boxes below:

Inspection Criteria	Missing Parts	Labels Readable	Corrosion	Deformed Parts	Cracked Parts/ Broken wires	Excessive Loading
HLL Identity Tag						
HLL Shock Absorber						
End Clamp complete						
End fittings(bow shackles)						
Shackles						
Wire Rope						
Webbing Strap						
Ratchet Tensioner						
Stanchions						
Tie Back Cables						

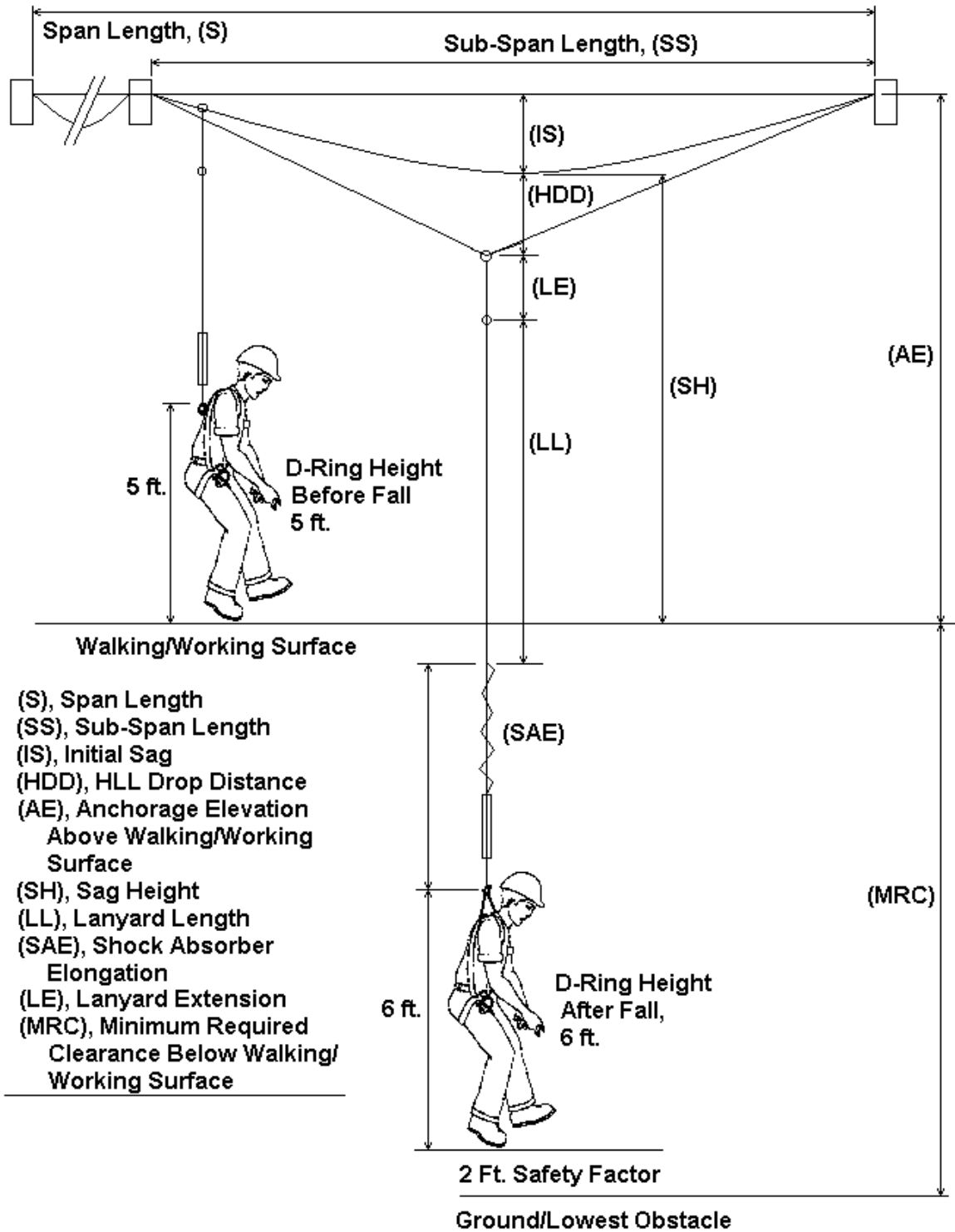
Is Shock Absorber pre-tension set correctly _____

Has a Rescue Plan been prepared _____

Is Rescue Equipment on hand _____

Have workers been trained in the Rescue Procedures and been given a copy of the Rescue Plan _____

Skyline™ Horizontal Lifeline Diagram



- (S), Span Length
- (SS), Sub-Span Length
- (IS), Initial Sag
- (HDD), HLL Drop Distance
- (AE), Anchorage Elevation Above Walking/Working Surface
- (SH), Sag Height
- (LL), Lanyard Length
- (SAE), Shock Absorber Elongation
- (LE), Lanyard Extension
- (MRC), Minimum Required Clearance Below Walking/Working Surface