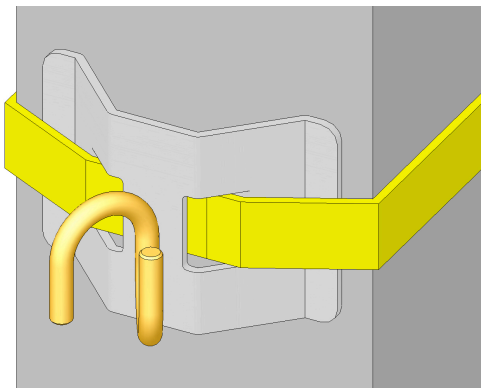




Reliance Industries, LLC

**Installation, Operation, Inspection and Maintenance
Instructions for the Ratchet Strap Bypass for Use with the
Skyline™ Horizontal Lifeline System**



**Reliance Industries, LLC
PO Box 140008
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Ph. (800) 488-5751
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User Instructions
6172 Ratchet Strap Bypass

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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 this horizontal lifeline system.

The Ratchet Strap Bypass Bracket **MUST NOT** be used as a personal fall arrest anchorage. The Bracket is to be used only as a bypass component of a horizontal lifeline system that has been approved by a Qualified Person.

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 Ratchet Strap Bypass Bracket for Rebar is an intermediate support bracket for use with Skyline™ Horizontal Lifeline systems. The Bracket allows for the rapid installation of a bypass bracket without the need for tools. The Bypass Bracket helps provide support for the lifeline in long span lifeline systems while still allowing a user to slide his snaphook from one side of the bracket to the other without having to disconnect. The user can remain attached to the horizontal lifeline at all times by simply manipulating his attachment through the fingers of the Bypass Bracket.

The Bypass Bracket is clamped onto a concrete (or fireproofed) column (circular or square) that is commonly used by the concrete construction industry. By simply passing the ratchet strap of the bracket around the column, the Bracket may be locked into place by tightening down with the ratchet, allowing for easy installation and removal as horizontal lifelines are moved to other locations.

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 Clamp-on Bypass Bracket **MUST NOT** be used as a personal fall arrest anchorage. The Bracket is to be used as a component of a horizontal lifeline system that has been approved by a Qualified Person.

To install the Ratchet Strap Bypass Bracket

1. Measure the height of the horizontal lifeline attachment point. This is the height that the inside bottom of the Bypass Bracket loop must be attached at to keep the lifeline level.
2. Pull the free end of the ratchet strap from the ratchet if it is not already.
3. Place the bracket onto the face of the column and hold in place.

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4. Insert the ratchet strap into the slots on the side of the bracket plate. NOTE: If the bracket is to be used on square columns or columns with sharp or protruding edges, then edge conditioners or wear sleeves must be used to minimize the cutting effect of those sharp edges.
5. Insert the end of the ratchet strap into the take-up mandrel of the ratchet and pull out most of the slack.
6. Raise bypass bracket to the proper height and begin to tighten to the column face by ratcheting up the slack. Do not tighten fully yet.

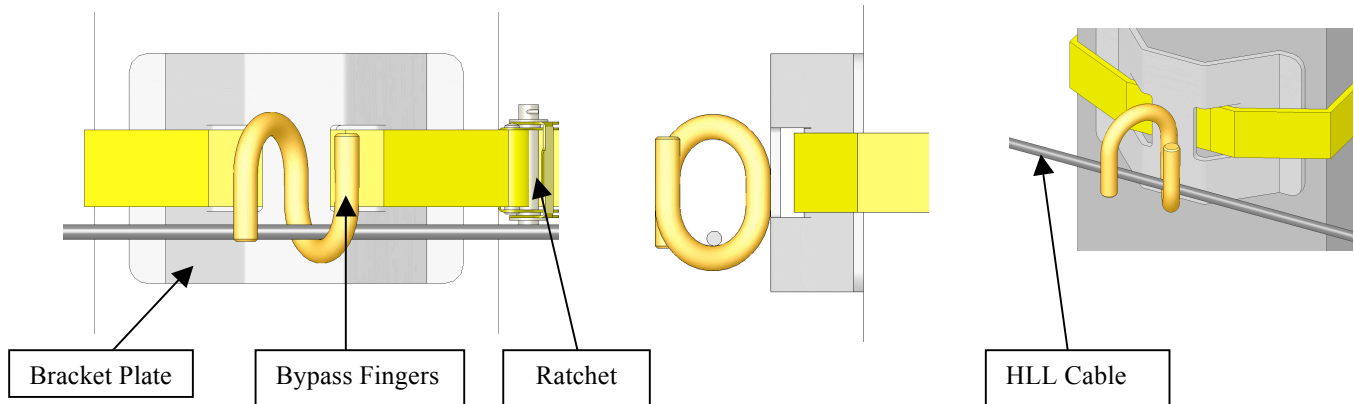


Figure 1

7. If the bracket is being used on square columns, adjust the wear pads over the corners of the column to help protect the ratchet strap. For round columns, try to adjust the pads to cover the webbing evenly.
8. Slide bracket into proper position on column face so that the horizontal lifeline cable will pass through the fingers properly. Continue to tighten ratchet until no slack remains in the strap (see Fig. 1).
9. Verify that the webbing makes at least one full revolution on the mandrel and lay back on itself on the mandrel of the ratchet. If it does not, the ratchet must be loosened, a little slack must be added back into the strap and the ratchet retightened. The webbing must make a minimum of one full revolution on the mandrel to generate full strength.
10. The cable of the horizontal lifeline may now be passed through the finger of the bypass. The cable must be passed through the bypass bracket prior to tensioning the lifeline.
11. Any excess strap may be coiled up to prevent a tripping hazard.

The Ratchet Bypass bracket is removed by reversing the above steps.



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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).
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 Ratchet Strap Bypass Bracket must be inspected each day prior to use as part of the general lifeline inspection. The Bracket should be inspected to insure that the ratchet, ratchet strap, and bypass fingers are present and intact. The plate of the bypass bracket should not be dented, and no corrosion should be present. The ratchet strap should show no signs of fraying, cuts, weld strikes, or other damage that would serve to weaken the strap. Any strap showing these signs must be removed from service immediately. The Bracket also should be checked at various times throughout the day to ensure



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that it remains tightly fastened to the column. 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.

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.



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The Ratchet Strap Bypass Bracket MUST NOT be used directly as a personal fall arrest anchorage. The Bracket is to be used as a component of a horizontal lifeline system that has been approved by a Qualified Person.

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.

Warranty

Products manufactured by Reliance Industries LLC are warranted against factory defects in workmanship and materials for a period of two years from date of purchase by the owner (end user) or for a period of one year from date first used, provided that this period shall not exceed two years from date of shipment to distributor. Upon notice of product defect or fault, Reliance Industries LLC will promptly repair or replace all defective items. Reliance Industries LLC reserves the right to elect to have any defective item returned to its manufacturing plant, authorized service center or distributor for inspection before making a repair or replacement. This warranty does not cover equipment damages or defects resulting from abuse, damage in transit, or other damage beyond the control of Reliance Industries. This warranty applies only to the original purchaser and is the only one applicable to our products and services, and is in lieu of all other warranties, expressed or implied. When products offered by Reliance Industries LLC are manufactured by a third party. Original equipment manufacturer (OEM) warranty shall apply and may be outside the control of Reliance Industries LLC.

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						
Ratchet present and functioning						
Ratchet strap intact						
Bypass Fingers present (1 up, 1 down)						
Back plate flat and not deformed						

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

