RELIANCE®
fall protection

USE INSTRUCTIONS
4350 SKYLOC™
LEADING EDGE
SELF-RETRACTING LANYARD

(Previously 4040LE)

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Contents

This manual is intended to meet the Manufacturer's Instructions as required by ANSI Z359.1, ANSI Z359.3, ANSI A10.32-2004, and should be used as part of an employee training program as required by OSHA.

WARNING: This product is one part of a personal fall arrest, restraint, work positioning, personnel riding, climbing, or rescue system. Without the other necessary components in such sub-systems the Self-Retracting Lanyard itself serves no useful purpose. The user must follow the manufacturer's instructions for each component of the system. These instructions must be provided to the user before using this product and retained for ready reference by the user. The user must read, understand (or have explained), and heed all instructions, labels, markings and warnings supplied with this product and with those products intended for use in association with it before using this equipment. The Manufacturer's instructions must be followed for proper use and maintenance of this equipment. National standards and state, provincial and federal laws require the user to be trained before using this product. This manual can be used as part of such user safety training program that is appropriate for the user's occupation. **IMPORTANT: Alterations or misuse of this product or failure to follow instructions may result in serious injury or death.** If you have questions on the use, care, or suitability of this equipment for your application, contact RELIANCE Industries, LLC for information.

DESCRIPTION

The Skyloc™ leading Edge Self-Retracting Lifeline (LESRL) is designed to be a component in a personal fall arrest systems (PFAS). It may be used in most situations where a combination of worker mobility and fall protection or restraint is required (i.e. inspection work, general construction, maintenance work, oil production, confined space work, etc.). The Skyloc™ LESRL is designed for use by a single person weighing 310-lb. (body weight plus tools). Protected by a steel housing, the Skyloc™ LESRL features a cam-action pawl system ensuring positive lock-up even in the most demanding environments. The standard cable length of 40 ft. allows the Skyloc™ to be mounted overhead or directly to walking working surface while used in fall restraint mode. The LESRL can be configured as a fall restraint device by locking the cable to a fixed length, thus eliminating the fall hazard. Fall restraint mode must be used under the supervision of a competent person. 7/32" oversized cable and an external shock pack is in place incase of a fall over a leading edge.

The Pelican™ Snaphook's unique hook body design prevents the accidental "false engagement" to the harness dorsal d-ring, while the hook swivel provides an easy to see load-indicator showing whether the Skyloc™ has been exposed to a fall arrest load and needs to be removed from service.

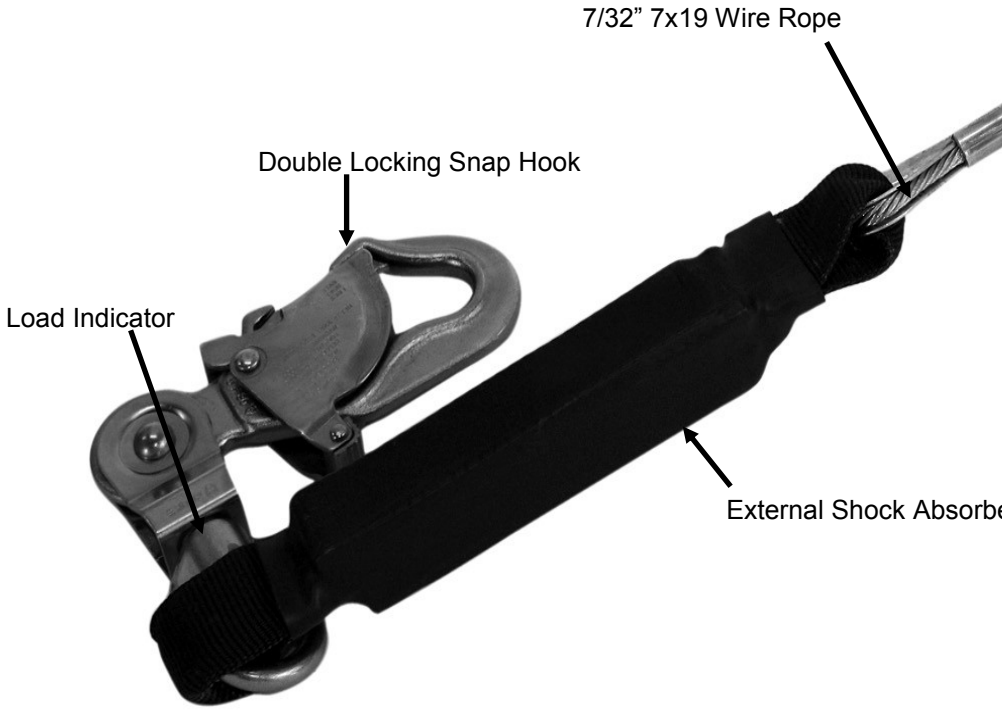
PRODUCT SPECIFICATIONS

Materials of Construction

Housing – Zinc Plated Steel
Snaphook – Forged Alloy Steel
Cable – Galvanized 7x19 7/32” (5.6mm) Wire Rope
Shock Pack– Polyester

Specifications

Weight– 28 Lbs (13kg)
Cable Working Length– 40 feet (12m)
Weight: Capacity: 1 Worker (310lbs/140kg)
Maximum Arrest Force (MAF): 1350lbs (6kN)
Maximum Arrest Distance: 54” (1.4m)



Identifying Components of the Skyloc™ Leading Edge Self-Retracting Lanyard

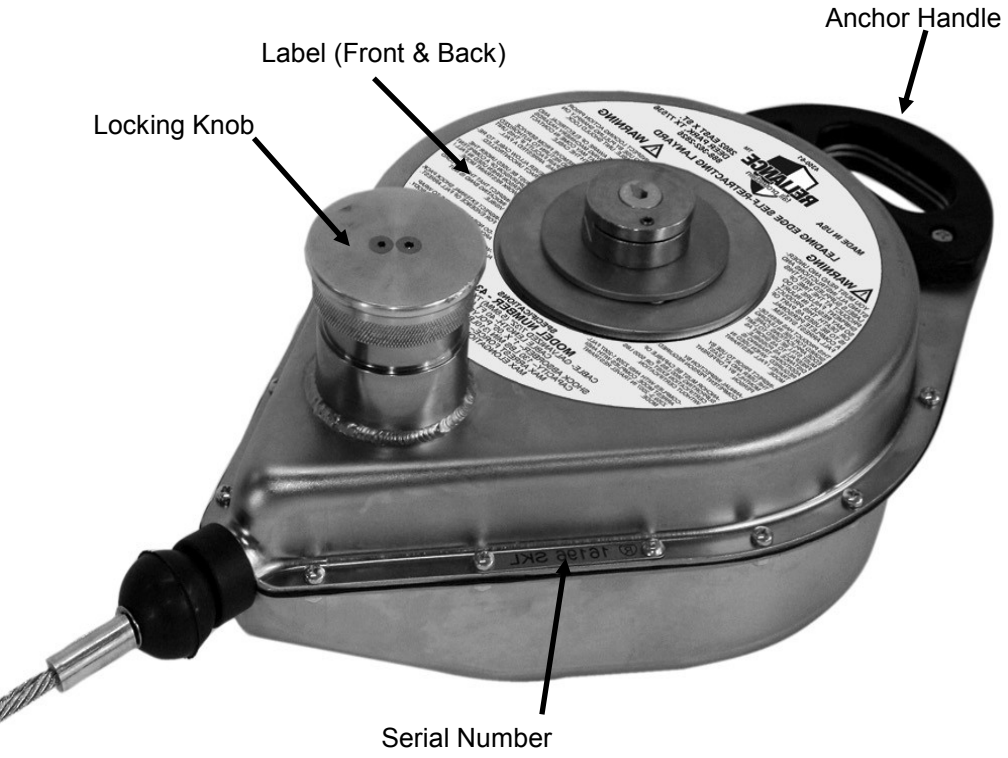


Fig. 1

Anchorage Points

Anchorages and attachment components must be able to withstand a sustained force of 5000 lbs. Anchorages selected for personal fall arrest systems (PFAS) shall have a strength capable of sustaining static loads, applied in the directions permitted by the PFAS, of at least: a) 3,600-lb. when certification exists, or b) 5,000-lb. in the absence of certification. When more than one PFAS is attached to an anchorage, the anchorage strengths set forth in a) and: b) above shall be multiplied by the number of personal fall arrest systems attached to the anchorage. Leading edge anchor position is critical for proper and safe use. Anchor should be directly perpendicular and in line in the area of travel restraint. All leading edges must be taken into consideration when positioning anchor location.

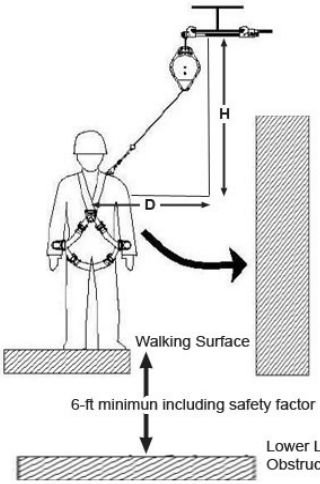
Consideration of Workplace Geometry

A careful examination must be made of the workplace by a Competent Person before the selection or installation of Skyloc™ anchorage points. Consideration must be given both to the movement of materials (Will cranes be used to “fly” equipment or parts in?) and workers around the workplace to ensure that potentially hazardous situations are avoided. Areas where overhead cranes or gantries are used must be examined to verify that neither the moving loads or lifting wires can interfere or snag the extended wire rope of a Skyloc™ LESRL causing a worker to be dislodged.

Overhead lighting and electrical cables must also be identified to insure that installation of the SRL is sufficiently far enough away so that the cable can never contact the wire creating an electrocution hazard. Consideration of obstacles present in the work area must include ALL locations that COULD be reached if the entire length of wire rope were extracted from the LESRL. Obstacles that pose no threat when a worker is on a platform, for example, may be exposed to a dangerous situation should he climb downwards or moves laterally towards another work surface. Although 7/32” wire rope is used on the LESRL, cable should be protected from damage when passing over sharp edges or near objects where the cable could become lodged or pinched through the use of edge protectors that are not abrasive to the lifeline. When significant changes in angle are encountered, directional sheaves should be used or the LESRL anchorage point should be relocated to a location that prevents contact with the sharp edge. Contact Reliance if you should need more information.Avoid installations where debris, contaminants, and other objects falling from above could damage the Skyloc™ or its cable.

Extreme caution must also be exercised when considering the use of the Skyloc™ LESRL as a means of fall protection in areas where a user is working on a sloped surface such as a pitched roof or tank bottom, or on piles of loose material (such as grain or sand) that may shift or slide. If the user falls or begins to slide on such a surface, the Skyloc™ lanyard may not be extracted fast enough for the device to lock-up (typically, lanyard must be extracted around 5-6ft/sec. for the unit to lock-up,) and arrest the sliding fall. The user might continue to slide over a roof edge, or into some other hazardous zone causing injury or death. The use of a travel restriction system or a work-positioning system may be more appropriate for such locations and should be considered first. Contact Reliance Engineering for help in selecting equipment for these applications.

Swing Fall Hazards: When used in fall arrest mode care must be taken to recognize the possibility of swing falls that may occur when the Skyloc™ LESRL is located above the worker, but not **DIRECTLY** overhead (as shown in Figure 2). If the worker falls in such a situation, there is a possibility of a swing fall that may bring him into contact with objects below or to the side of him, possibly causing serious injury or death. These objects must be removed or the SRL and/or anchorage point be repositioned directly over the worker to help reduce the risk of a swing fall. A Competent Person should always be consulted if there exists a possibility of a swing fall occurring. The worker must be trained to understand that the width of his allowable work area can never exceed the anchorage height of the retractable over his walking/working surface. For example, if a worker in a building with 10-ft. floors walks 20-ft. away from his anchorage he could fall and strike the floor below before his fall would extract any cable from the retractable. If an object is in his swing path (or that of the cable) a hazardous situation exists. Two factors become evident in this situation. First, due to the swing fall, horizontal speed of the worker may be high enough to cause injury if an obstacle in the swing fall path is struck by either the user or the cable. The hazard increases as the initial (before fall) length of extended cable is increased and as the initial angle which the cable makes with the vertical is increased. In the extreme case where a user has extended 90 feet of cable at an angle of 30 degrees with the vertical, the user can theoretically develop a horizontal speed of about 19 mph. By comparison, if the user has extended 50 feet of cable at an angle of 15 degrees with the vertical, the user may develop a horizontal speed of about 7 mph. This situation is clearly more tolerable but it may still Dangerous if hazards such as rigid or sharp objects, electrical conductors, or powered equipment are in the swing fall path.



The 6 foot minimum with a safety clearance factor assumes the fall occurs from a standing position and the SRL is located overhead. Due to the foot-print of the SRL, the minimum anchorage elevation is considered to be 6.5 to 7-ft.

If the worker is kneeling or crouching near an edge when the fall occurs, an additional 3 foot clearance is needed.

If the worker is not directly below the SRL, additional clearance is needed.

Therefore If the worker is 50 feet directly below the SRL, the recommended work zone is 20 feet in any direction.

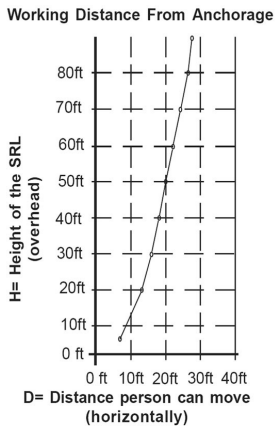


Fig. 2

CAPACITY: The SRL is for use by persons with a combined weight (person, clothing, tools, etc.) of 110 lbs. minimum and 310 lbs. maximum. No more than one person can connect to an LESRL.
Note: Certain Models have capacity up to 440 lbs. Contact Reliance Industries if higher capacity models are needed.

LOCKING SPEED: Situations which do not allow for an unobstructed fall path should be avoided. Working in confined or cramped spaces may not allow sufficient speed to cause the LESRL to lock in a fall. Working on slowly shifting materials, such as sand or grain, may not allow sufficient speed to cause the LESRL to lock. A similar situation may occur on low pitched roofs, where a worker may slide instead of fall. A clear path is required to ensure positive locking of the LESRL.

NORMAL OPERATION FALL ARREST MODE: Normal operation in fall arrest mode will allow the full length of the lifeline to extend and retract with no hesitation when extending and no slack when retracting as the worker moves at normal speeds. If a fall occurs, a speed sensing pawl system will activate, stopping the fall and absorbing much of the energy created. On most Reliance Industries LESRL models, falls that occur near the end of the lifeline travel, the reserve lifeline system will ensure a reduced impact fall arrest. If a fall has been arrested, the LESRL must removed from service and inspected.

NORMAL OPERATION FALL RESTRAINT MODE: Normal operation in fall restraint mode allows the user to set the max travel based on worksite geometry. When working with an assistant standing by the 4350 unit, attach LESRL to back D-ring of harness and walk to within 2 feet of the closest leading edge. When positioned no closer than 2 feet from the leading edge, have the assistant rotate the locking knob 90 degrees. This will set

your max radius of travel from your anchor point. In the event of a fall over the leading edge, the locking knob shear pin will engage and the unit will work as a standard SRL. The external shock absorber is in place to prevent arresting forces from exceeding 1350lbs if the internal brake of the LESRL is isolated due to friction over leading edges.

COMPLETE PFAS REQUIREMENTS

TRAINING: This equipment must be installed and used by persons trained in its correct application and use. Refer to national standards, including ANSI Z359.1, ANSI Z359.3, ANSI A10.32 and applicable local, state, and federal (OSHA) requirements governing this equipment for more information on personal fall arrest systems and associated system components

ANCHOR REQUIREMENTS: As with all PFAS, anchor strength and location is essential for the proper function of this equipment. Both ANSI and OSHA have provided minimum anchor requirements.

ANSI Z359.1 Anchor Requirements: Anchorages selected for PFAS shall have strength capable of sustaining static loads, applied in the directions permitted by the PFAS, of at least: (a) two times the maximum arrest force permitted on the system when certification exists, or (b) 5000 lbs (22.2kN) in the absence of certification. When more than one PFAS is attached to an anchorage, the anchor strengths set forth in (a) and (b) must be multiplied by the number of PFAS attached to the anchor structure. Refer to ANSI Z359.2-2007 for further guidance on anchorage certification.

COMPATIBILITY OF COMPONENTS: All Reliance Industries equipment has been specifically designed for use with all other Reliance Industries products.

When using Reliance Industries products as part of a personal fall arrest system (PFAS) with components manufactured by other manufactures, a competent person must evaluate the PFAS to ensure component compatibility. Contact Reliance Industries for any assistance you may need in determining compatibility.

Note:

Determining whether two or more pieces of equipment are compatible requires consideration of the configuration in which the resulting PFAS or subsystem will be used. It is possible for two components to be compatible with each other when properly configured and used, but to be incompatible when configured and/or used in a different manner.

For example, certain connectors may be compatible with a particular anchorage connector if the anchorage connector is located overhead, but not if the anchorage connector is located at the users feet.

COMPATIBILITY OF CONNECTORS: All hardware utilized by Reliance Industries complies with ANSI Z359.1 – 2007. It is the user's responsibility to ensure hardware compatibility throughout the PFAS. Check with a qualified or competent person to confirm connector compatibility connectors used as part of a PFAS must be rated for a tensile strength of 5000 lbs (22.2kN) minimum. All snap hooks and carabiners must be self-closing and self-locking and be of a shape, size and configuration that would prevent accidental opening or disconnection.

Once the Skyloc™ has been secured into position, extract a few feet of cable slowly to verify that there is tension on the line and the retraction spring is functioning correctly.

Prior to Use: Give the cable a quick, sharp tug causing the unit to lock -up proving that the braking mechanism is operating correctly. Slowly allow the cable to be retracted back into the unit under the power of the retraction spring. CAUTION: The cable must always be released slowly and in a controlled manner when rewinding the cable back into the unit; it should never be fully released in an uncontrollable manner. Allowing the cable to retract in an uncontrolled fashion could cause damage to the Skyloc, the workplace, or other users in the area. Always use a tagline attached to the snaphook to help guide the wire rope back into the unit when it is installed to far overhead to reach directly; this will also help in pulling the snaphook down to the user for connection to his harness.

The Skyloc™ Self-Retracting Lifeline is now ready for inspection prior to use.

Leading Edge Self-Retracting Lifeline Installation Procedures

Installation methods are not limited to bow shackles or carabiners. Custom brackets are available for permanent or specialized installations. Contact Reliance Engineering to help identify specific installation methods for your situation.

NOTE: Approved fall protection must be worn during Skyloc™ LESRL installation at all times. Do not use the LESRL as a method of personal fall protection until the system has been completely installed, inspected, and approved for use by a Qualified Person.

Installation of the Skyloc™ LESRL begins with the identification of a suitable anchor point. Because the 4350 LESRL's can be used with the unit attached to an anchor point overhead or at the walking working surface, anchor location selection is critical to proper use.

Use Instructions Fall Arrest Mode:

1. Inspect unit prior to use as outlined in this manual.
2. Insure Locking Knob is inline with the cable (See Fig. 4).
3. Give a sharp tug to cable. Unit should lock. If unit does not lock, return for service. If the Locking Knob spins when cable is extracted, remove from service. The unit may have seen a load in fall restraint mode and the internal shear pin needs to be replaced.
4. Select suitable anchor point as outlined in this manual. Unit should be anchored thru the anchor handle or as directed by Reliance for custom designed brackets.
5. Connect double locking Snap Hook to back (Dorsal) D-Ring.
6. Unit is now ready for use.

Use Instructions Fall Restraint Mode:

1. Inspect unit prior to use as outlined in this manual.
2. Insure Locking Knob is inline with the cable (See Fig. 4).
3. Give a sharp tug to cable. Unit should lock. If unit does not lock, return for service. If the Locking Knob spins when cable is extracted, remove from service. The unit may have seen a load in fall restraint mode and the internal shear pin needs to be replaced.
4. Select suitable anchor point as outlined in this manual. Unit should be anchored thru the anchor handle or as directed by Reliance for custom designed brackets.
5. Connect double locking Snap Hook to back (Dorsal) D-Ring.
6. The unit is now ready to switch to Fall Restraint Mode.

7. Under the supervision of a competent person, have a coworker standing by the 4350 LESRL unit.
8. Walk to the closest leading edge and stop 2 feet from edge. Cable should extract from the unit as you walk.
9. While positioned 2 feet from the closest leading edge, have the worker standing by the unit turn the locking knob 90 degrees. Locking knob should retract into housing. Arrows on Locking Knob will be perpendicular to cable (See Fig. 3).
10. While standing back from leading edge, verify unit is in fall restraint mode by slowly leaning away from unit until body weight is supported by LESRL cable.
11. To return to fall arrest mode, walk away from anchor point allowing slight slack in cable. Worker standing by the unit can now pull up on the locking knob and turn knob 90 degrees. Arrows should be inline with cable (See Fig. 4)

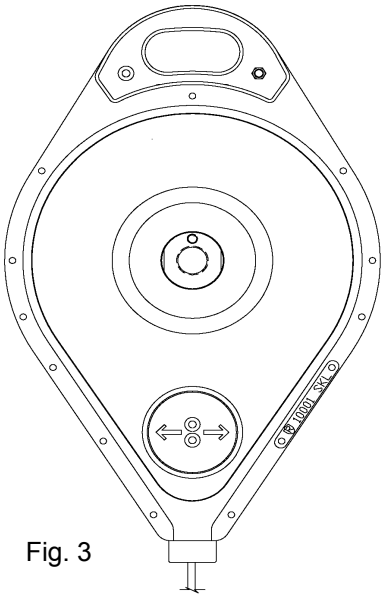


Fig. 3

Fall Restraint Mode

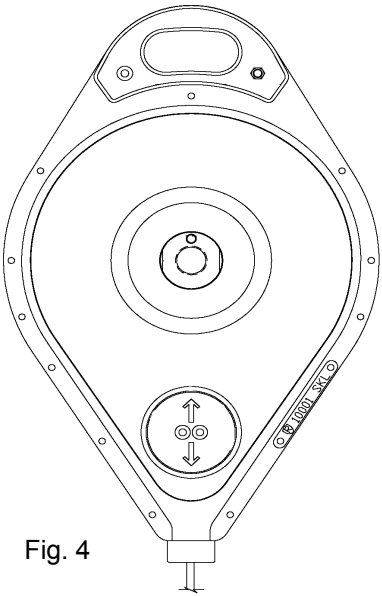


Fig. 4

Fall Arrest Mode

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:

• 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.

• Emergency contact phone numbers (ambulance, hospital, fire department…) and a means to contact them (cell phone, emergency radio).

• List of employees on the site, and the specific tasks they will perform to effect the rescue.

The equipment that will be used to aid in the rescue of any worker should be attached to structural anchorages independent of those used for the personal fall arrest system. During installation of anchorages, tie-off and equipment attachment hard points should be attached, and also clearly marked in such a manner as to provide a means to rescue a worker in any position along the worksite.

Inspection

Prior to each use, the worker must inspect the Skyloc™ LESRL for any physical damage, wear, corrosion, or malfunctioning parts. Verify that the load indicator is not visible by looking to see if the red slide bearing under the swivel eye is exposed. Or the remove from service label is visible on all webbing models . Once the load indicator has been deployed, the LESRL must be returned to a Reliance Industries approved repair facility for evaluation and recertification.

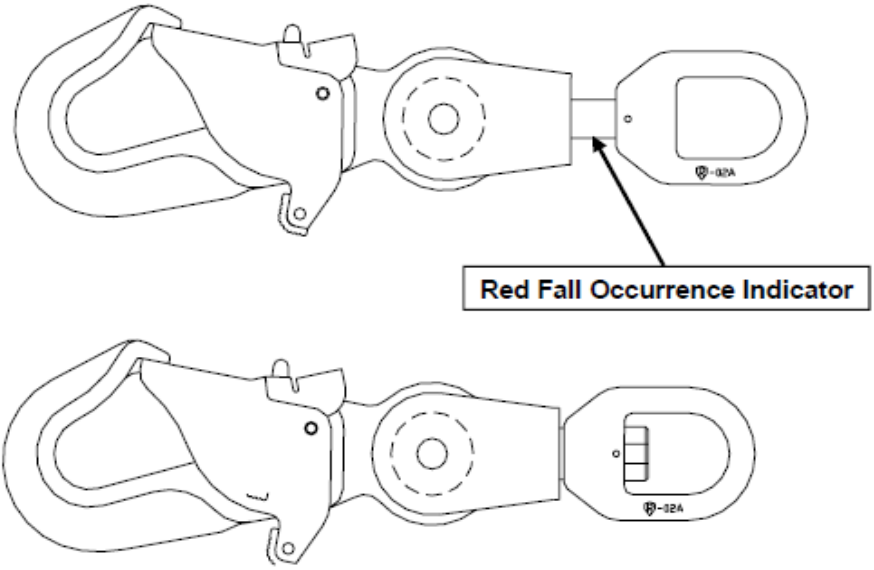
The worker should also verify that conditions around the LESRL location have not changed that may affect its' ability to arrest a fall, such as obstacles or equipment directly below the anchorage point which might create a swing fall.

Before every use, the worker should extract all of the cable and examine it for defects that would affect its overall strength. These defects would include but are not limited to weld strikes or burns, kinks, bends, "bird-caging", bends, bulge spots, outer diameter thinning, broken or snagged wire strands. If a wire rope is showing evidence of any of these defects, the unit should be removed from service immediately until the wire rope is replaced and re-certified. The ferrules of the wire rope by the snaphook should also be examined for cracks , deformation and damage.

After the wire rope has been allowed to retract into the unit, the snap hook should be pulled sharply to verify proper lockup of the unit. If unit fails to lockup when pulled quickly, or if the cable fails to retract properly after lockup, the unit must be removed from service until repaired.

Inspect that all labels are present a legible. Thoroughly inspect snap hooks , external energy absorber and locking knob for indication that the unit has seen fall arrest or fall restraint loading. Snap hooks will show a red band between the swivel and the yoke. Webbing energy absorbers will show an impact load when internal white energy absorbing material is visiable or the “Remove From Service” label is visible.

Inspection Frequency: All Self Retracting Lifelines must be inspected prior to each use by the user, and at least monthly and annually by a competent person. Reliance Self Retracting Lifelines do not need annual recertification provided the annual inspection by the competent person reveals no defects or damage. Any units used in a fall arrest must be removed from service and returned for factory inspection.



Pelican™ Swivel Snaphook with Load Indicator Deployed (Top), and Intact (Bottom)

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 Industries equipment and replacement parts are approved for use in this system. Contact Reliance Industries Engineering with questions and when in need of assistance.

Guarding Against Application Failure

To avoid property damage, injury or death, the User must take reasonable steps to prevent "Application Failure". An application failure may be any unacceptable use, misuse, or application error on the part of the User or System Designer. Because each end user might use this product in a manner different from Reliance Industries testing platform, and because the User might use this product in combination with other manufacturer's products in a manner not evaluated, contemplated, or tested by Reliance, the User or System Designer is ultimately responsible for verifying or validating the suitability and compatibility of this product for use in his application or system. Whenever questions regarding proper use or compatibility arise, please contact Reliance Engineering at (281)-930-8000

Warnings and Limitations

Proper care should always be taken to visually scan the work area prior to use. Remove any obstruction, 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 anywhere but directly below the anchorage point of the LESRL. Be aware of the movements of others using LESRLs or shock-absorbing lanyards in close proximity, knowing that if the lines become crossed or tangled and a fall occurs, the sudden motion could pull others off balance and make rescue more difficult. Do not release the wire rope when extended and allow it to retract back into the unit uncontrollably. Releasing the cable and allowing it to reel itself in uncontrollably could cause damage to the Skyloc™.

The wire rope should be allowed to retract slowly into the unit under its' own power. If the unit is too far overhead to permit this, then a tagline should be attached to the snap hook to help control the line retraction.

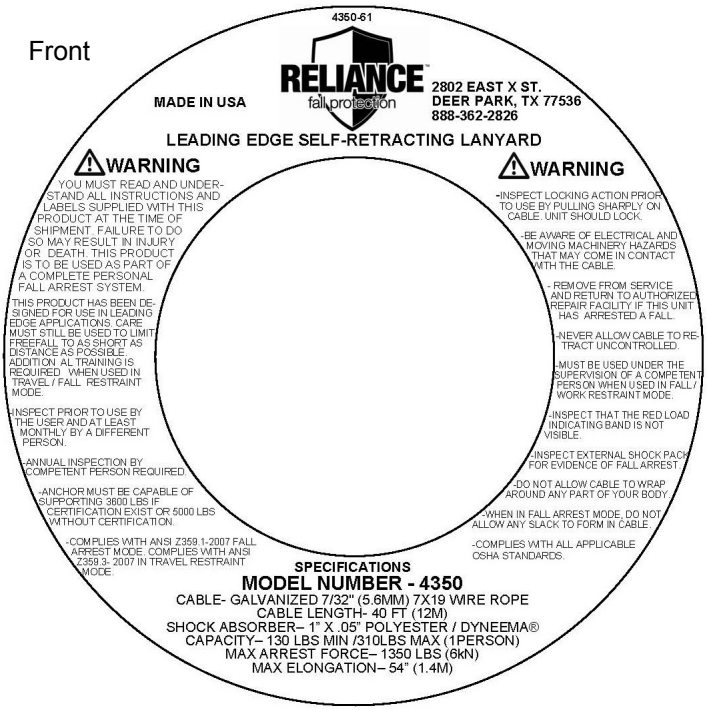
In the course of use, do not allow the wire rope (web) to wrap around arms or legs, or become entangled in clothing or other items. In the event of a fall, they could cause injury, or prevent the Skyloc™ from functioning properly.

Do not tie knots in the wire rope of the unit. Tying knots in wire rope) reduces the overall strength of the wire rope. Only connect to the Skyloc ™ by using the Pelican™ swivel snap to connect to the dorsal (back) d-ring of a full-body harness. Do not cross lines with another worker. Should the lines become entangled, a fall by one worker could dislodge others. Plan and place SRLs to prevent workers from crossing safety lines. Any Skyloc™ Self Retracting Lifeline that has the load indicator of the swivel snap showing (deployed) has seen a fall-arrest load and must be returned to Reliance Industries for evaluation, repair, and recertification. Units must not be reset in the field or allowed to be used until recertification has taken place.

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

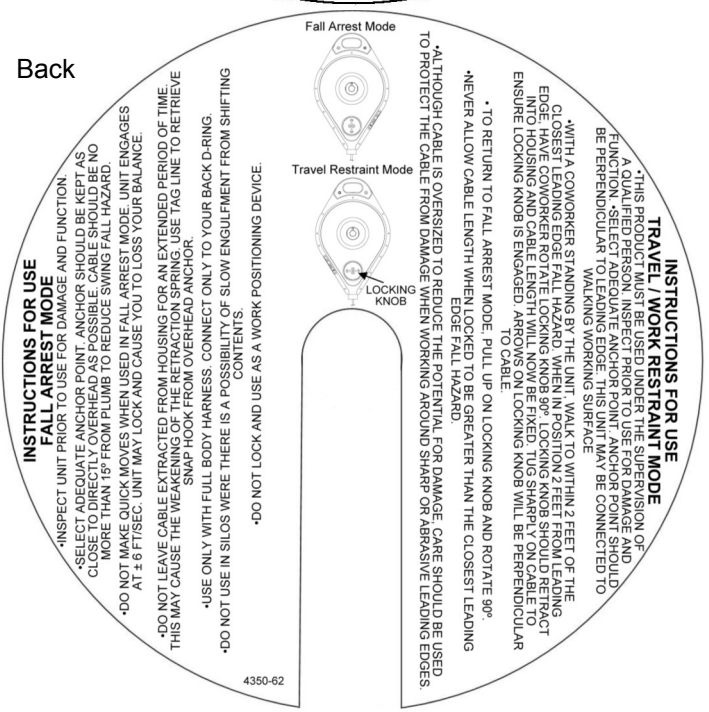
Labeling

Front



Side

Back



Inspection Log for Skyloc™ Self-Retracting Lifelines

Company: _____ Location:_____ Date:_____
Job Site: _____ Skyloc™ Part Number: _____ Serial Number.: _____

Describe non-conforming conditions in the boxes below:

Inspection Criteria	Missing parts	Corrosion	Deformed Parts	Cracked Parts/ Broken Wires	Excessive Loading
Skyloc™ ID Tag and Warning Label?					
S/N ID Tag present?					
Housing?					
Housing Fasteners?					
Snaphook?					
Rubber ball?					
Wire rope? Webbing?					
Wire rope ferrules/ fittings? Stitching?					
Extraction/Retraction?					
Lock-up?					
Handle? Swivel?					

RELIANCE fall protection®

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?_____

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.