



VERTICAL LIFELINE ASSEMBLY

INSTRUCTION MANUAL

THE INSTRUCTIONS APPLIES TO

THE FOLLOWING MODELS: L25, L50, L100, RGL01, RGL02

VERTICAL LIFELINE ASSEMBLY INSTRUCTIONS

Do not skip this instruction manual. Read the instruction manual carefully before using the equipment. If failed in doing so it may cause serious injury or Death.

IMPORTANT: Read the instruction manual carefully before using the equipment. Failure to do so may cause serious injury or death. These instructions serve as the Manufacturer's Instructions and are to be used as part of an employee training program for the system, as required by OSHA.

THE INSTRUCTION APPLIES TO THE FOLLOWING MODELS: L25, L50, L100, RGL01, RGL02

1. Under Penalty of Law

This manual must be read and understood in its entirety and used as part of a fall protection training program, as required by OSHA or any state/local regulatory agencies. Users must read and fully understand the limitations and proper use of the equipment. All users must be properly trained by their employer prior to use, per OSHA 29 CFR 1910.66, 29 CFR 1926.503, and applicable local standards. When used in accordance with instruction specifications, this product meets or exceeds all applicable OSHA 1926 and ANSI A-10.32-2012 standards for fall protection.

Applicable standards and regulations depend on the application, along with some state-specific regulations. Consult regulatory agencies for more information on personal fall arrest systems and associated components.

NOTE: This User Instruction Manual is not to be removed except by the equipment user. Current User Instruction Manuals must always be available to the user. Read and understand these instructions before using equipment. Do not discard these instructions.

2. Purpose

LSD Vertical Assembly is intended for use as part of a Personal Fall Arrest System (PFAS) or Fall Restraint System. Rope grabs move easily up and down vertical lifelines yet lock instantly in the event of a free fall.

Personal Fall Arrest System (PFAS)

The Vertical Lifeline Assembly can be used as part of a Personal Fall Arrest System, which includes a full body harness, lanyard, rope grab, and lifeline. Maximum permissible free fall is six feet.

Fall Arrest & Fall Restraint

The Vertical Lifeline Assembly can be used as part of a Personal Fall Restraint System to prevent workers from reaching fall hazards. These systems typically include a full body harness, lanyard, rope grab, and lifeline. No vertical free fall is permitted.

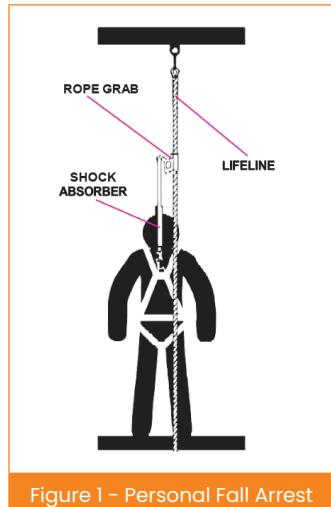


Figure 1 – Personal Fall Arrest

3. Instructions For Use



Do not alter or intentionally misuse this equipment.

- » Personal fall arrest system (PFAS) MUST limit the maximum arrest forces to 1800 lbs. (8 kN) or less.
- » Employees shall be trained in accordance with the requirements of OSHA 29 CFR 1910.66 in the safe use of the system and its components before using a Personal Fall Arrest System.
- » Inspect all personal fall arrest system equipment for wear, damage, and other deterioration prior to each use. Remove defective components from service immediately.
- » Thoroughly evaluate and plan all elements of fall protection system(s) before using this equipment. Make sure that your Personal Fall Arrest System is appropriate for your needs and facility. Calculate fall clearance and swing fall clearance. The amount of clearance required is dependent on the type of connecting subsystem (rope grab, lanyard), the anchorage location, and the amount of stretch in the lifeline.

When calculating distance, be sure to consider:

- » Deceleration Distance
- » Movement of harness attachment element (D-Ring)
- » Free Fall Distance

- » Height of the Worker (how tall is the worker?)
- » Elevation of Anchorage Connector
- » Connecting Subsystems Length
- » Rope Stretch
- » Swing Falls occur when the anchorage point is not directly above the point of a fall. The force of striking an object in a swing may cause serious injury or death. Minimize potential for swing falls by working as close to the anchorage point as possible. Swing falls significantly increase the amount of clearance required.

A.	Connecting Subsystem (Energy Absorbing Lanyard Shown)	
B.	Working Level	
C.	Lower Level or Obstruction	
D.	Free Fall - 6ft. (1.8m) Max. (per ANSI Z359.1)	
E.	Deceleration Distance	
F.	Total Fall Distance Free Fall (D) + Deceleration (E)	

4. Limitations For Use

Do not use this equipment if you are unable to tolerate the impact of a fall arrest. Age and fitness can seriously affect your ability to withstand a fall. Consult with a physician if in doubt. Minors, pregnant women, and anyone with a history of back and/or neck problems must not use this equipment.

Use caution when employing this equipment around machines, electrical hazards, chemical hazards and sharp edges or abrasive surfaces, as contact may cause equipment failure, personal injury, or death.

- » Use only with compatible components of subsystems. Substitutions made with non-approved components may jeopardize compatibility equipment and affect system safety and reliability.
- » This equipment is designed for a single user. Combined weight of user, including clothing, tools, etc. must not exceed weight capacity.
- » This equipment is designed to be used in temperatures ranging from -40°F to +130°F (-40°C - +54°C).
- » Use only with structures capable of supporting static loads required for fall arrest or restraint system as follows:
- » Fall Arrest: Anchorages used for PFAS must be capable of sustaining static loads in the directions permitted by the personal fall arrest system of at least: 3,600 lbs. with certification of

a qualified person; or 5,000 lbs. without certification. When more than one personal fall arrest system is attached to an anchorage, the strengths stated above must be met independently at and for each anchorage location.

- » Fall Restraint: The restraint system must be attached to an anchorage capable of sustaining static loads in the directions permitted by the restraint system of at least 3,000 lbs. When more than a restraint system is attached to an anchorage, the strengths stated above must be met independently at and for each anchorage location.
- » Do not expose this equipment to chemicals or harsh solutions that may have a harmful effect.
- » User must not use or install equipment before receiving proper training from a Competent Person, as defined by OSHA 29 CFR 1926.32(f).
- » Do not alter or modify this product in any way. Only LSD shall make repairs or alterations to the equipment.

5. Connector Compatibility Limitations

LSD Safety equipment must be coupled only to compatible connectors that are suitable to your application. Ensure all connections are compatible in size, shape and strength. Ensure all connectors are fully closed and locked. OSHA 29 CFR 1926.502 prohibits the use of snap hooks to engage to objects unless the following requirements are met:

- » Snap hook must be an ANSI-style locking model.
- » Snap hook must be explicitly designed for such a connection, meaning that the manufacturer of the snap hook specifically it to connect to the equipment in question.

Use of a non-locking snap hook can result in rollout (a process by which a snap hook or carabiner unintentionally disengages from another connector or the object to which it is coupled (ANSI Z359.0-2007). LSD connectors (snap hooks and carabiners) are designed to be used only as specified in each product's user's instructions.

Avoid the following types of connections:

- » Two or more snap hooks or carabiners attached to one D-Ring.
- » A snap hook connected to its integral lanyard.
- » A snap hook connected to a horizontal lifeline.
- » Connection in a manner that results in a load on the gate. NOTE: Large throat opening snap hooks should not be connected to standard size D Rings or similar objects, as such use will result in a load on the gate if the hook or D-Ring twists or rotates. Large throat snap hooks are designed for use on structural elements such as rebar or cross members that are not shaped in such a way that they may capture the gate of the hook.
- » False engagement connections, where protruding features of the snap hook or carabiner may catch on the anchor and seem fully engaged to the anchor point. Always confirm engagement.
- » Connection to snap hooks or carabiners.

- » Direct connection to webbing lanyard, webbing loop, rope lanyard or tie back (unless the manufacturer's instructions for both the lanyard and connector specifically allow such a connection).
- » A snap hook connected to a D-Ring, rebar, or other connection point with improper dimensions or configurations that could cause the snap hook keeper to become depressed by the turning motion of the snap hook, or such that the snap hook or carabiner will not fully close and lock, or that roll-out could occur.

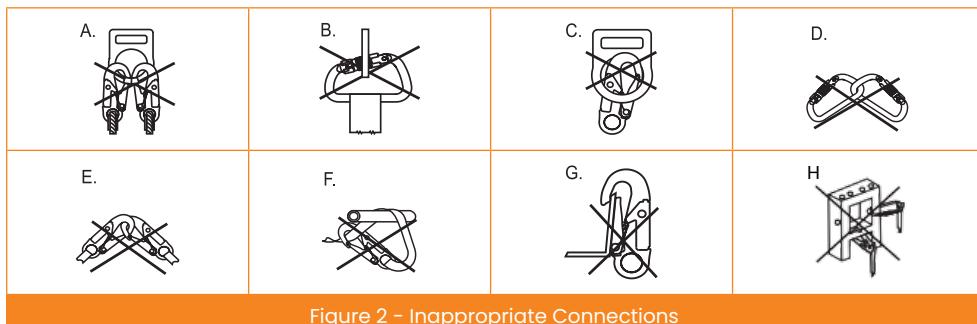


Figure 2 – Inappropriate Connections

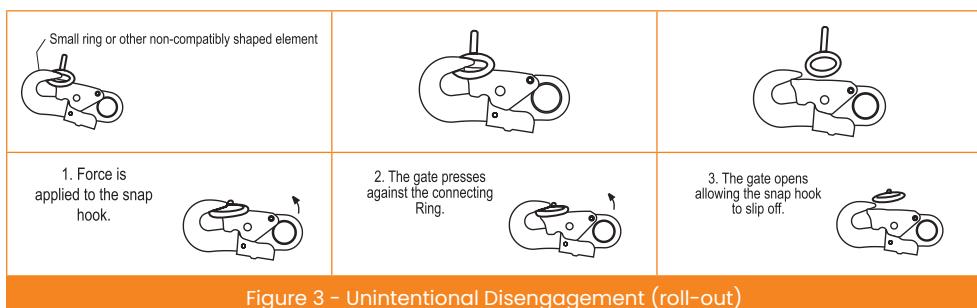


Figure 3 – Unintentional Disengagement (roll-out)

Rope Grab

- » For use by one person only, with maximum weight of 310 lbs. (including clothing, tools, etc.).
- » Do not use if any part of the device appears to be damaged.
- » Do not attempt to service the device or alter it in any way.
- » Attach the device to appropriate vertical lifelines only.
- » Use of this product is not suitable when the user is positioned on an unstable surface, fine grain material, or particulate solids such as sand or coal.
- » Connect rope grabs to the back D-ring of a full-body harness using an approved lanyard.

Rope grab is a personal protective device and should be used for fall protection only. Other uses may result in serious injury or death.

Vertical Lifelines

- » Minimum tensile strength of 5,000 lbs. (22.2kN).
- » Vertical Lifelines must be kept clean.
- » Never allow the lifeline to become slack or to pass under or entwine around arms, legs, neck, or any other obstacle.
- » Do not use if any part of the device appears to be damaged.
- » Do not remove product labeling.
- » Do not tie knots in the lifeline.
- » Lifelines cannot be attached to the working surface. Lifelines must be anchored above the user to prevent a swing fall.

System

- » A Competent Person must ensure the compatibility of all connections and that of the system.
- » Do not use the system if the device does not lock onto the lifeline or if any other component in the system does not operate properly.
- » Allow sufficient safe clearance in the event of a freefall.
- » Stretch with synthetic rope = Length of VLL from Anchorage Connector to Rope Grab position on VLL multiplied by 10%.
- » Shock absorbers require consideration of an additional 48" maximum elongation.
- » System must be rigged to limit the total free fall distance to 6 ft. or less.
- » Do not use if any part of the system appears to be damaged.
- » Do not remove system labeling.
- » Do not use a body belt for fall arrest applications.

6. Performance

Each LSD Vertical Lifeline Assembly has a minimum tensile breaking strength of 5,000 lbs. (22.2 kN) when statically tested in accordance with the requirements of the ANSI Z359.1-2007 standard.

Model/ Part #	Description (Materials & Size)	Length	Width	Standard
L25	3 Strand Polyester Rope with One Snap Hook.	25' Rope	5/8" Diameter	ANSI Z359.15-2014
L50	3 Strand Polyester Rope with One Snap Hook.	50' Rope	5/8" Diameter	ANSI Z359.15-2014
L100	3 Strand Polyester Rope with One Snap Hook.	100' Rope	5/8" Diameter	ANSI Z359.15-2014
RGL01	Rope Grab with Fall Arrester	3'	1" webbing, 1.75" shockpack	ANSI Z359.15-2014
RGL02	Rope Grab with Fall Arrester	3'	1" webbing, 1.75" shockpack	ANSI Z359.15-2014

Approximate elongation for new lifelines in dry conditions is: 5 feet of lifeline elongation.

Applicable Standards

Refer to national standards, including ANSI Z359.1, and local, state and federal (OSHA 1910.66, appendix C, 1926.500) requirements for more information on personal fall arrest systems and associated components.

Before Each Use

- » Inspect the rope grab for any damage or soiling (dirt, oil, paint, etc.).
- » Ensure the lifeline is the proper type and size. (5/8" dia. synthetic rope with minimum tensile strength of 5,000 lbs.) for your application.
- » Tie-off the bottom end of the lifeline vertically below the anchorage point to eliminate excess slack.
- » The Rope Grab has been designed and tested to perform properly on LSD 5/8" polyester ropes.
- » Allow for lifeline elongation when determining clearance needed in case of a fall. If using Nylon ropes, significant elongation can happen under load.

Installation

Do not use/install equipment without proper training by a "competent person" as defined by OSHA 29 CFR 1926.32(f).

Rope grab is a personal protective device and should be used for fall protection only. Other uses may result in serious injury or death.

With the arrow pointing upward on the rope grab device, lift upward on the spring- loaded cam handle that connects the gripping cams. Slide the rope grab to the desired position on the lifeline and release the cam handle. The spring-loaded gripping cams will keep the rope grab in position.

NEVER attach the device on the lifeline with the arrow pointing downward; it will not lock onto the lifeline should a fall occur.

Connect device to full-body harness. Rope grabs should only be connected to the back D-ring on the full-body harness.

Tie Offs: The strength of a Personal Fall Arrest System is based on its being attached to an anchoring system which does not reduce the strength of the system. Strength may be reduced by tie-offs using knots, tying around sharp edges, etc. Tie-offs using a knot in a rope lanyard or lifeline (at any location) reduce the lifeline or lanyard strength by 50% or more. Avoid tie-off around an "H" or "I" beam; these tie-offs can reduce the lifeline or lanyard by approximately 70% due to the cutting action of the beam edges.

See what you can do for images similar to what they have.

7. Using the Vertical Lifeline Assembly

IMPORTANT: DO NOT grab the Positioning Device in the event of a fall, accidentally depressing the cam lock can open the unit and cause it to slide on the rope.

- » Inspect all equipment before each use.
- » Attach only to approved anchorages suited for the applications that meet OSHA and any other applicable standards.
- » The system is rated for 5,000 lbs. Shock absorber pack incorporated in the system limit arrest forces on the body to under 900 lbs. when properly used.
- » The maximum weight capacity (including clothing, tools, etc.) for this lifeline is 310 lbs.
- » The rope grab remains locked until the lever is depressed to allow the unit to slide along the lifeline rope. Releasing the lever locks the rope grab in place on the lifeline.
- » Attach shock absorber portion built into the leg of the rope grab to an ANSI- approved body harness.
- » **DO NOT** tie knots in rope lifelines. Knots in rope significantly reduce the rope's strength properties. Limiter knots are permitted at the end of the system to stop rope grab from traveling past the end of lifeline.
- » Do not allow slack in the system; slack can allow a free fall of greater than 6 ft. Rope Grab fall arrester components must be adjusted during use to limit free fall (slack) potential.
- » Do not work above the Rope Grab unless free fall is limited to 6 ft. or less.
- » Do not remove components from lifeline assemblies.
- » Only one person is allowed per vertical lifeline system.

8. Anchorage Strength

In accordance with ANSI Z359.15, any anchorage selected for Personal Fall Arrest Systems must meet all anchorage strength requirements. Anchorages used for PFAS must be capable of sustaining static loads in the direction permitted by the PFAS of at least 3,600 pounds, with certification of a qualified person or 5,000 pounds without certification. When more than one PFAS is attached to an anchorage, the strengths stated above must be met independently at and for each anchorage location. Avoid potential swing fall hazards and obstructions.

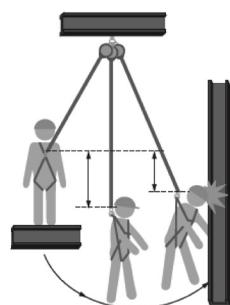
Table 2 – Anchorage Strength Requirements		
Fall Arrest¹	Non-Certified Anchorage:	5,000lbs (22.2 kN)
	Certified Anchorage ² :	2 Times the Maximum Arresting Force for Certified Anchorage
Restraint¹	Non-Certified Anchorage	1,000 (4,5 kN)
	Certified Anchorages ² :	2 times the foreseeable force for certified anchorages.
Work Positioning¹	Non-Certified Anchorage	3,000 lbs (13.3 kN)
	Certified Anchorages ² :	2 times the foreseeable force for certified anchorage.
Rescue¹	Non-Certified Anchorage	3,000 lbs (13.3 kN)
	Certified Anchorages ² :	5 times the foreseeable force for certified anchorage.
Climbing	Structure which a climbing system is attached must sustain the loads required by that particular system. See the instructions for the climbing system for requirements.	

¹ *Multiple Systems: When more than one of the defined systems is attached to an anchorage, the strength defined for non-certified or certified anchorage shall be multiplied by the number of systems attached to the anchorage.*

² *Certified Anchorage: An anchorage for fall arrest, positioning, restraint, or rescue systems that a qualified person certifies to be capable of supporting the potential fall force that meet the criteria for a certified anchorage prescribed in this standard.*

Swing Falls

Minimize swing fall by working as directly below the anchorage point as possible. Worker movement should remain within 30 degrees maximum deflection of the lifeline from the vertical line directly below the anchorage point. (Figure 4). Do not permit a swing fall if an injury occur.



Free Fall

The maximum free-fall distance allowed for use in a Personal Fall Arrest System is six feet. Do not work above the anchorage point to avoid increased free-fall distance. Do not use this device at or below foot level. Using it at or below foot-level will increase your free-fall distance beyond the allowable limits set by OSHA and exceed the capabilities of this device to safely arrest a fall.

Fall Arrest Forces

The Personal Fall Arrest System must limit fall arrest forces to 1800 lbs. maximum (8kN). Deceleration distance should not be allowed to exceed 48'.

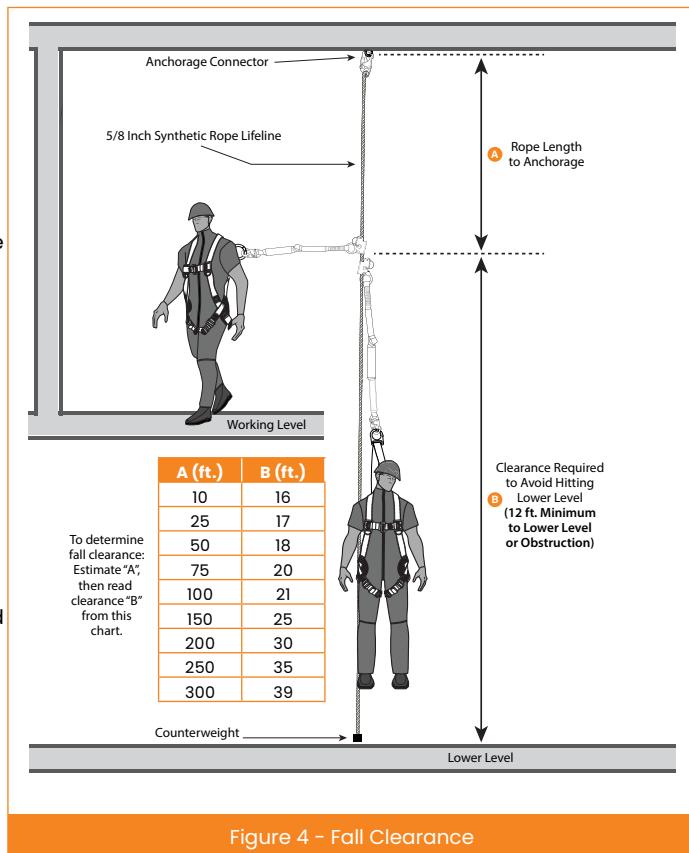
Fall Clearance

Make certain enough clearance exists in your fall path to prevent striking an object. The amount of clearance needed is dependent upon the type of connecting subsystem used and anchorage location. See Figure 4 for estimating fall clearance.

Calculating Total Fall Distances:

Sharp Edges

Avoid working where your lifeline, lifeline subsystem, or other system components will be in contact with, or abrade against, unprotected sharp edges. Do not loop a lifeline around small diameter structural members.



9. Rescue

Users must have a written rescue plan and the means to implement it. This plan must provide prompt employee rescue or assure that employees have the ability to rescue themselves in the event of fall.

10. After a Fall is Incurred

Components which have been subjected to fall arrest forces must be removed from service immediately.

11. General Use Considerations

Avoid work where a lifeline may cross or tangle the lifeline of another worker. Do not allow lifelines to pass under worker's arms or between worker's feet.

12. Making Connections

When using a hook to connect components to an anchorage, ensure roll-out cannot occur when using a snap hook to connect components to an anchorage. Use self-locking snap hooks and carabiners to reduce the possibility of roll-out. Follow manufacturer's instructions for each component of the system.

Connecting to an Anchorage or Anchorage Connector

- » Lifelines or lifeline subsystems supplied with connecting hooks should be connected to the anchorage properly.
- » The connection must support 3,600lbs with certification, 5,000lbs without certification per worker.
- » Knots must not be used for load bearing end terminations. See ANSI Z359.1. Some knots reduce lifeline strength fifty percent or more.
- » If the user splices end terminations, proper procedures must be followed to ensure compatibility in size, shape, and strength.

Connecting Rope Grab to Lifeline

- » Ensure the rope grab is in the "UP" position as indicated on the product. The "UP" end of the rope grab must be oriented towards the anchorage when installed onto the lifeline. NOTE: The synthetic rope grab incorporates a gravity-lock bracket that slides out of the hinge pin to prevent the lifeline sleeve from mating with the rope grab cam when not held upright.
- » Test the rope grab operation by pulling down on the locking cam. The rope grab must lock onto the lifeline and prevent any descent on the lifeline once the cam is engaged.

- » The integral energy absorbing lanyard ensures that the device limits maximum fall arrest forces. Rope grab must only be used with the integral energy absorbing lanyard.
- » User must allow for up to 48" of deceleration distance when calculating necessary fall space.
- » Connecting to the Body Wear:
- » Rope Grabs should only be connected to the back D-Ring on the full-body harness.

13. Training

Employers are responsible for providing training to any employee who may be exposed to fall hazards in order to enable the employee to recognize and reduce them. Training must be conducted by a competent or qualified person. Trainers and trainees must not be exposed to failing hazards during training courses.

14. Inspection

Note: Keep all instructions available for reference.

Record the date of first use

Record all observations and results of each inspection in your Hog Tracker account or inspection log. If the inspection reveals any defect, inadequate maintenance, or unsafe condition, remove Self Retracting Lifeline from service immediately.

Any equipment that has been subjected to the forces of arresting a fall must be removed from service immediately.

Note: Equipment must not be altered in any way, including attempted repair. Only manufacturers, or entities authorized in writing by the manufacturer, may make repairs to this product.

- » Equipment must be free of corrosion, chemical attack, alteration, excessive heating or extreme wear.
- » All markings must be legible and attached to the equipment.
- » Inspect Rope Grab, buckles, D-rings, snap hooks and thimbles for evidence of distortion, sharp edges, burrs, cracks, worn parts or corrosion.
- » Make sure buckles work correctly and move freely.
- » Snap hook gate spring provides tension to keep the snap hook gate closed in a locked position; snap hook must close flat and exhibit no sideways play. Rivets and grommets must be tightly set in the material with no distortion.

- » All webbing must be free of frayed or broken fiber, pulled stitches, tears, abrasions, mold, burns or discoloration.
- » Inspect rope by twisting. Inspect webbing by pressing to bend webbing over a 1½ inch diameter object. Rope must be free of cuts, fraying or signs of wear.
- » Shock absorbing devices must show no evidence of elongation.

Note: If inspection reveals any defective condition, remove from service immediately.

15. Maintenance & Cleaning

Wash Rope Grab with a liquid that will dissolve or wash away all contamination. Allow Rope Grab to dry completely. To clean lifeline rope & webbing, wipe off all surface dirt. Use solution of water and mild detergent to clean away contaminants. Wipe dry with clean cloth. Hang away from heat to dry. Store this equipment in a cool, dry, and clean environment that is out of direct light when not in use to prevent UV degradation.

Frequency

All equipment must be visually inspected prior to each use according to the manufacturer's instructions included at time of shipment. Inspections must be performed by a Competent Person other than the user (as defined by OSHA) a minimum of twice per year.

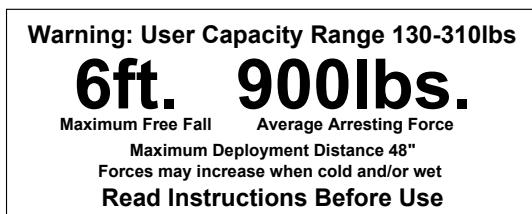
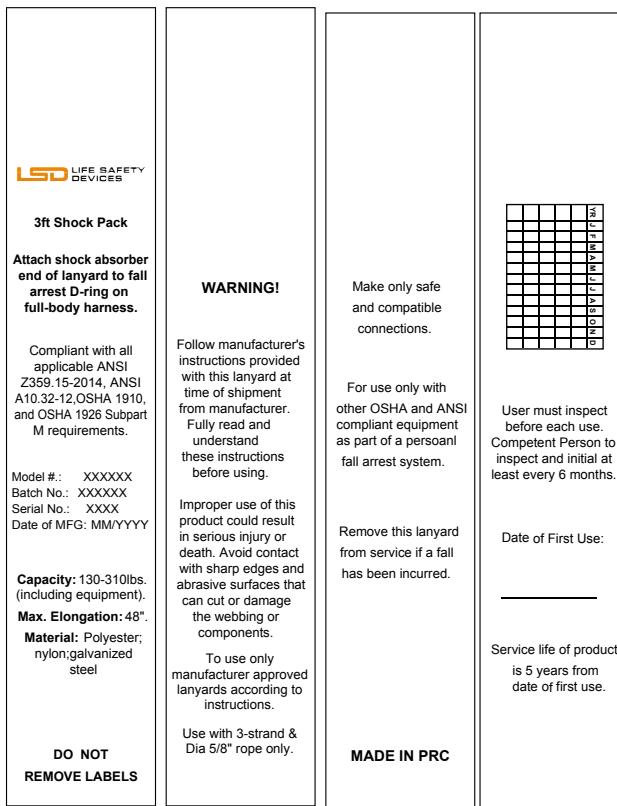
16. Product Labeling

All labeling must be legible and attached to the lifeline or rope grab.

	<p>Serial #: XXXX</p> <p>Batch #: XXXXX</p>	<p>LSD LIFE SAFETY DEVICES</p> <p>Lifeline-XXXX Product #: XXXX</p> <p>Length: XXXX' Date of Manufacture: MM/YYYY</p> <p>PRIOR TO USE: Read and understand manufacturer's instructions included with equipment at time of shipment from manufacturer. Only work with fall arrester RGL01 & RGL02</p> <p>WARNING! Failure to follow instructions included at time of shipment can result in serious injury or death.</p> <p>Worker weight capacity(including all equipment): 130-310lbs. Shock absorber length:12" MAXIMUM combined length of shock absorber and any additional lanyard extension between fall arrester and harness:36"</p> <p>All connections must be selected by a Competent Person and be compatible with this equipment. See instructions for proper attachment methods and installation procedure. Eliminate all risk of lower end termination.</p> <p>PRIOR TO USE, inspect for all potential damage including, but not limited to, rips, tears, fraying, deformation, alteration, broken stitching, and corrosion, that might compromise the equipment in the event of a fall. Avoid contact with sharp and abrasive edges. Lifelines are constructed of 5/8" poly blend rope. Shock absorber made from Nylon Compliant with all OSHA 1926 Subpart M,ANSI Z359.15-2014 regulations.</p> <p>DO NOT REMOVE THIS TAG! Made in PRC</p>
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<p>USER MUST INSPECT BEFORE EACH USE. Competent Person to inspect and initial at least every 6 months.</p> <p>Date of First Use (please complete) _____</p> <p>Service life of product is 5 years from date of First Use.</p>												
YR	J	F	M	A	M	J	J	A	S	O	N	D

Labels for RGL01 and RGL02:



It is recommended that the lanyard be inspected and examined by a competent person for any damages or failures if the need arises, but at least once a year. The observations should be recorded in the table below. In case such damages are observed, the lanyard should be replaced immediately. The lanyard shall only be used within a work positioning system according to EN 358:1999. The instructions for use for the individual components are to be observed.

SERVICE AND INSPECTION RECORD

SERIAL NUMBER:		
MODEL NUMBER:		
DATE PURCHASED:		DATE OF FIRST USE:

Notes

Notes

Life Safety Devices
222 Clifford St.
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www.LSDsafety.com



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