



ENERGY ABSORBING LANYARD

INSTRUCTION MANUAL

These instructions apply to the following model(s) manufactured after Jan 1st, 2024

- LS01 6ft. Single leg Shock absorber lanyard, $\frac{3}{4}$ " hook Yellow webbing, black color shock pack.
- LS02 6ft. Single leg Shock absorbing lanyard, $2\frac{1}{4}$ " hook. Yellow webbing, black color shock pack.
- LD03 6ft. Double leg Shock absorbing lanyard, $\frac{3}{4}$ " hook. Yellow webbing, black color shock pack.
- LD04 6ft. Double leg Shock absorbing lanyard, $2\frac{1}{4}$ " hook. Yellow webbing, black color shock pack.
- LS05 3ft. Single leg Shock absorbing lanyard, $\frac{3}{4}$ " hook Yellow webbing, black color shock pack.
- LS06 6ft. Single leg, non stretch, internal shock absorbing lanyard, $\frac{3}{4}$ " hook. Yellow webbing.

ENERGY ABSORBING LANYARD 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.

It is crucial to thoroughly read and comprehend this manual, incorporate it as part of a fall protection training program as required by OSHA or any state regulatory agency. These instructions are designed to meet the manufacturer instructions as required by ANSI Z359.13-2013 and OSHA. The user must fully understand the proper equipment use and limitations entirely.

These instructions apply to the following model(s) manufactured after Jan 1st, 2024:

LS01 6ft. Single leg Shock absorber lanyard, $\frac{3}{4}$ " hook.
Yellow webbing, black color shock pack.

LS02 6ft. Single leg Shock absorbing lanyard, $2\frac{1}{4}$ " hook.
Yellow webbing, black color shock pack.

LD03 6ft. Double leg Shock absorbing lanyard, $\frac{3}{4}$ " hook.
Yellow webbing, black color shock pack.

LD04 6ft. Double leg Shock absorbing lanyard, $2\frac{1}{4}$ " hook.
Yellow webbing, black color shock pack.

LS05 3ft. Single leg Shock absorbing lanyard, $\frac{3}{4}$ " hook.
Yellow webbing, black color shock pack.

LS06 6ft. Single leg, non stretch, internal shock absorbing lanyard, $\frac{3}{4}$ " hook.
Yellow webbing.

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. These instructions are intended to meet industry standards required by ANSI Z359.13-2013. The user must read and fully understand the limitations and proper use of the equipment and be properly trained by the employer prior to use.

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. Warning

This product is part of a personal restraint, work positioning, suspension, or rescue system. The user must read and follow the manufacturer's instructions for each component or part of the complete system. These instructions must be provided to the user of this equipment. The user must read and understand these instructions or have them explained to them before using this equipment. The manufacturer's instructions must be followed for proper use and maintenance of this product. Alterations or misuse of this product or failure to follow instructions may result in serious injury or death.

3. Instructions For Use

- » Do not wrap the LSD Shock Absorbing Lanyards around any structure and connect the lanyard back onto itself, unless the lanyard has been specifically designed to do so.
- » Striking objects horizontally due to the pendulum effect of a swing fall may cause serious injury or death.
- » Always attach an unused lanyard to a lanyard storage keeper when not in use. Never attach the unused leg of the lanyard to the harness at any other location.
- » The regulations included herein are for reference only. They are not all-inclusive and not intended to replace a Competent Person's judgment or knowledge of federal or state standards.
- » The analysis of the workplace must anticipate where workers will be performing tasks, the routes they will take to reach their tasks, and the potential/existing exposure to fall hazards.
- » Fall protection equipment must be chosen by a Competent Person. Selections must account for all potentially hazardous workplace conditions.
- » All fall protection equipment should be purchased in a new and unused condition.
- » Select and install fall protection systems under the supervision of a Competent Person. Fall protection systems must be used in a compliant manner.
- » Fall protection systems must be designed in compliance with all federal, state, and local safety regulations.
- » Forces applied to anchors must be calculated by a Competent Person.
- » Harnesses and connectors selected must be compliant with manufacturer's instructions and must be of compatible size and configuration.
- » A pre-planned rescue procedure is required as part of a complete fall protection program. The rescue plan must be project specific. The rescue plan must either allow employees to rescue themselves or provide an alternative means for their prompt rescue. Store rescue equipment in an easily accessible and clearly marked area.
- » A Competent Person must train Authorized Persons to correctly erect, disassemble, inspect, maintain, store, and use equipment. Training must include the correct use of personal fall

arrest systems, the ability to recognize fall hazards, and how to reduce the dangers of fall hazards.

- » **NEVER** use any fall protection equipment to hang, lift, support, or hoist tools or equipment unless that equipment is explicitly certified for such use.
- » Equipment must be inspected by a Competent Person at least every six months.
- » Equipment must be inspected for defects including (but not limited to): the absence of required labels or markings, improper form/fit/function, evidence of cracks, sharp edges, deformation, corrosion, excessive heating, alteration, excessive wear, fraying, knotting, abrasion, and absence of parts. Equipment that fails inspection in any way must immediately be removed from use or repaired by an entity approved by Life Safety Devices.
- » Physical harm may still occur even if fall safety equipment functions correctly.
- » Sustained post-fall suspension may result in serious injury or death.

4. Limitations For Use

- » Life Safety Devices Shock Absorbing Lanyards marked “ANSI Z359.13-2013” require space for up to 6 feet (1.8m) of free fall with a maximum capacity up to 310 lbs. (141 kg), including clothing, tools, etc.
- » Life Safety Devices Shock Absorbing Lanyards marked “ANSI Z359.13-2013” and “6ft. Maximum Free Fall” are designed for up to 6-foot free fall applications with a maximum capacity up to 310 lbs. (141 kg), including clothing, tools, etc.
- » Life Safety Devices Shock Absorbing Lanyards marked “ANSI Z359.13-2013” and “12ft. Maximum Free Fall” are designed for up to 12-foot free fall applications with a capacity up to 310 lb. (141 kg) including clothing, tools, etc.
- » Life Safety Devices Shock Absorbing Lanyards must be used with a full body harness.
- » Life Safety Devices Shock Absorbing Lanyards are designed for a single user.
- » Unless explicitly stated otherwise, the maximum allowable free fall distance for lanyards must not exceed 6 feet. Shock absorbing lanyards marked “ANSI Z359.13-2013” and “12ft. Maximum Free Fall” are designed for up to 12-foot free fall applications with a capacity up to 310 lb. (141 kg) including clothing, tools, etc.
- » Do not repair equipment on-site unless explicitly permitted by Life Safety Devices.
- » Snap hooks, carabiners, and other connectors must be selected and applied in a compatible fashion. All risk of disengagement must be eliminated. All snap hooks and carabiners must be self-closing and must never be connected to each other.
- » Age, fitness, and health conditions can seriously affect the worker in the event of a fall.
- » Consult a doctor if there is any reason to doubt a user’s ability to set up the equipment or withstand and safely absorb fall arrest forces.

- » Allowable range of individual worker weight limit (including all equipment) is 130~300lbs (59kg~136kg). unless explicitly stated otherwise.
- » Whenever the shock absorbing lanyard has been subjected to the forces of arresting a fall, it should be removed from service immediately.

5. Anchorage Requirements

All anchorages to which the Personal Shock Absorbers and Shock Absorbing Lanyards attach must meet the requirements of ANSI Z359.18-2017 states:

Anchorage to which personal fall arrest equipment is attached shall be capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two, under the supervision of a qualified person.

ANSI Z359.18-2017 states that anchorages in a personal fall arrest system must have a strength capable of sustaining static loads, applied in all permitted directions by the system, of at least:

- a). Two (2) times the maximum arresting force permitted on the system when certification exists;
or
- b). 5,000 pounds (22.2 kN) in the absence of certification.

The strength in (a) and (b) must be multiplied by the number of personal fall arrest systems attached to the anchorage when more than one personal fall arrest system is attached to the anchorage. Anchorages should be located as vertically as possible above the user's head and be positioned as not to exceed the maximum allowable free fall for the system.

6. Anchorage Connectors

Anchorage connectors are components that couple the personal fall arrest system to the anchorage. In accordance with ANSI, the anchorage connector must be capable of withstanding (without breaking) a 5,000 lb. (22.2 kN) load and the anchorage must be able to withstand a 3,600 lb. (16 kN) load without cracking or permanent deformation visible to the unaided eye.

The strength of all anchorage connectors must be multiplied by the maximum number of personal fall arrest systems attached.

A mobile anchorage connector should be used to provide lateral mobility and help prevent the possibility of a swing fall.

Life Safety Devices Shock Absorbing Lanyards have a minimum breaking strength of 5,000 lb. (22.2kN) when used as directed in the User Instruction Manual.



WARNING

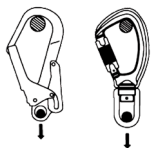
If a shock absorbing lanyard is used with a cross-arm anchorage connector, other anchorage extension, horizontal lifeline, or extended D-ring, the additional length provided by these components must be taken into consideration during the clearance calculation process.

7. Snap Hooks and Carabiners

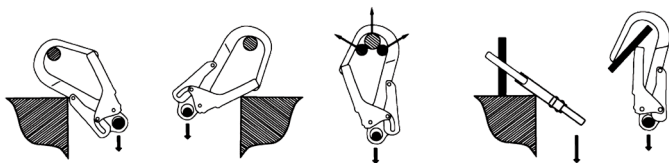
Snap hooks and carabiners used on Life Safety Devices Shock Absorbing Lanyards marked with the "ANSI Z359.1-07" or "ANSI Z359.12-2019" standard are self-locking with minimal tensile break strength of 5,000 lb. and a 3,600 lb. gate rating.

Basic Rules Of Using The Snap Hook

- » Before each use, a close visual examination of the snap hook components (body, gate, locking gear) must be carried out in respect of mechanical, chemical and thermal defects. The examination must be done by a person who is going to use the snap hook. In the case of any defect, doubt of correct condition of the snap hook do not use the snap hook.
- » Using the snap hook, in connection with the fall arrest system, must be compatible with manual instructions of the fall arrest systems and obligatory standards.
- » The snap hooks with manual locking (e.g. screw locking) shall be acceptable only in cases where the user does not have to attach and remove the snap hook many times a working day.
- » During use the snap hook must be protected from any contact with acids, solvents, basics, open fire, hot metal drops and sharp edges. If you have any doubts about the conditions where the snap hook will be used, ask the producer.
- » Before using the fall arrest system, rescue operations must be introduced to avoid any danger that can happen during the use of the equipment.
- » The shape of the structural anchor point should not let self-acting snap hook disconnection. See drawings.

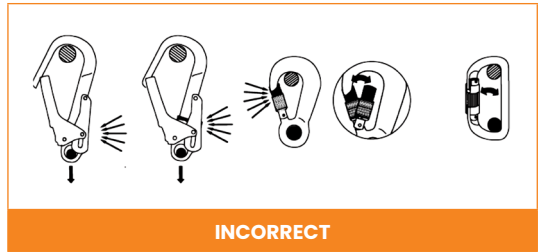
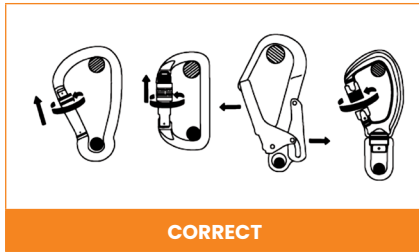


CORRECT



INCORRECT

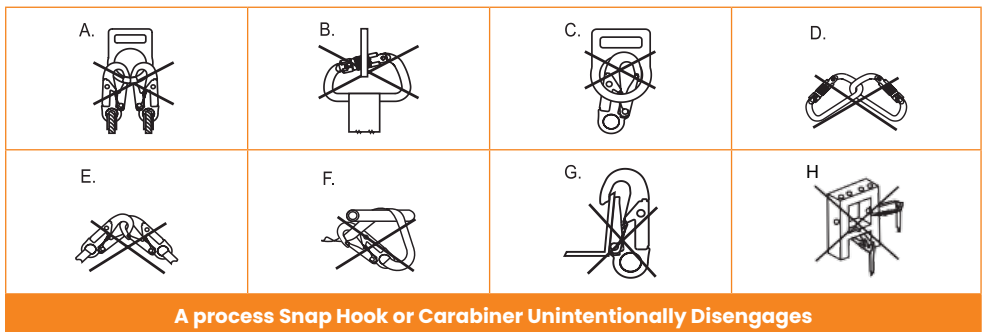
» It is necessary to protect the snap hook gate with locking gear. See drawing.



- » The length of the snap hook should be taken into account when used in any fall arrest system as it will influence the length of a fall.
- » It must be taken into consideration that some situations during use may reduce the strength of the snap hook, e.g. connecting to wide straps.

The following conditions can result in rollout* when a non-locking snap hook is used. Avoid the following connections:

- » Direct connection of a snap hook to horizontal lifeline.
- » Two (or more) snap hooks connected to one D-ring.
- » Two snap hooks connected to each other.
- » A snap hook connected back on its integral lanyard.
- » A snap hook connected to a webbing loop or webbing lanyard.
- » Improper dimensions of the D-ring, rebar, or other connection point in relation to the snap hook dimensions that would allow the snap hook keeper to be depressed by a turning motion of the snap hook.



Rollout: A process by which a snap hook or carabiner unintentionally disengages from another connector or object to which it is coupled. (ANSI Z359.12-2019)

8. Fall Clearance/Clear Fall Charts

Clearance Requirements

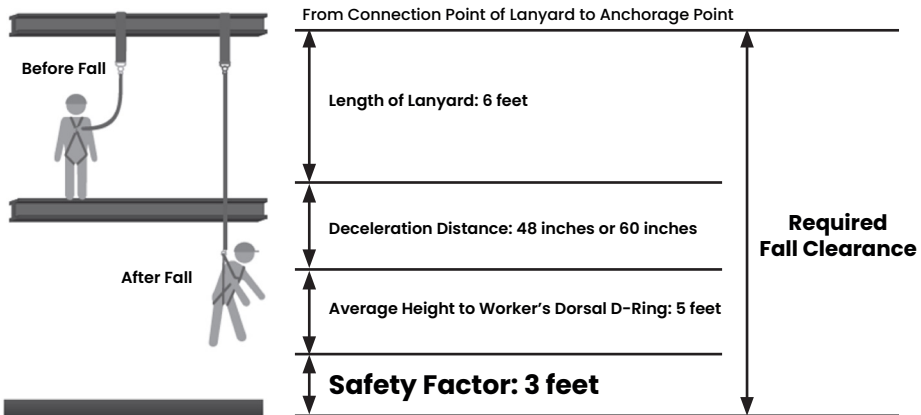
The illustration is an example of how to calculate fall clearance when using a self-retracting lanyard or a shock-absorbing lanyard.

The image below shows a shock-absorbing lanyard anchored overhead with the Life Safety Devices anchoring lanyard and the other end connected to the dorsal D-ring of a full body harness. Note that the length of your shock-absorbing lanyard in relation to where it is attached is directly related to the amount of fall clearance that you will need. When using a shock-absorbing lanyard, include the following distances in your calculations:

Using the Life Safety Devices Shock-Absorbing Lanyard will require a total fall clearance of approximately 18feet (5.5m) as measured from the anchorage point of lanyard to the nearest obstruction below. The total fall clearance combines the sum of the length of the lanyard, the maximum elongation of the lanyard, the average distance between the worker's dorsal D-ring , and the safety factor.

Using an extended free fall (12 foot) Shock Absorbing Lanyard will require a total fall clearance of approximately 20 feet (6.1 meters) when anchored at foot level and measured from the anchorage point of lanyard to the nearest obstruction below. The total fall clearance combines the sum of the length of the lanyard, free fall distance, the maximum elongation of the lanyard (5 feet or 1.5 meters), the average distance between the worker's dorsal D-ring, (5 feet or 1.5 meters), and the safety factor (3 feet or 0.9 meters).

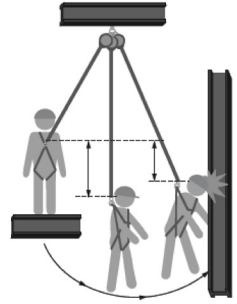
Shock-Absorbing Lanyard (SAL)



Swing Fall

To minimize the possibility of a swing fall, work as directly under the anchorage connector as possible. Striking objects horizontally, due to the pendulum effect, may cause serious injury.

Swing falls also increase the vertical fall distance of a worker, compared to a fall directly below the anchorage connector. Swing falls may be reduced by using overhead anchorage connectors that move with the worker.



WARNING

Workers accessing areas greater than 30° off-plumb from overhead anchorage are at a higher risk for severe injury.

Striking objects horizontally due to the pendulum effect of a swing fall may cause serious injury or death.

9. Operation

Before Each Use

Users of personal fall arrest systems must have a rescue plan in place if the users cannot rescue themselves or carry out the rescue.

- » Life Safety Devices Shock Absorbing Lanyards must be inspected prior to each use for wear, damage, and other deterioration.
- » All snap hooks and carabiners on product must be able to close and lock.
- » All webbing and rope must be inspected for tears, cuts, fraying, abrasion, discoloration, or other signs of wear and damage. The sewn terminations must be secure, complete, and not visibly damaged. All rope splices must be secure.
- » Cable must be inspected for kinks, broken strands, corrosion, abrasion, or other signs of wear and damage.
- » Swaged terminations must be secure with the thimble tight and not visibly damaged.
- » Load indicators must not be deployed.
- » Damaged and other deteriorated or defective components must be immediately removed from service

Connecting Shock Absorbing Lanyards That Have a Shock-Pack

Life Safety Devices Shock Absorbing Lanyards with a shock-pack must be connected in a specific location. The shock absorbing end of the lanyard must connect to the dorsal D-ring of the full body harness. The opposite end of the lanyard is to be connected to the anchorage connector.

Connecting Y-Lanyards

Y-Lanyards are designed for single person use only. The shock absorbing end of the lanyard must be connected to the dorsal D-ring of the full body harness. Attach one leg of the Y-Lanyard to the anchorage connector and the unused lanyard leg to an approved lanyard storage keeper on the harness.



WARNING

Do not connect the shock absorbing end of the lanyard to any anchorage connector.

Never attach the unused leg of the lanyard back to the harness at any location other than a lanyard storage keeper.

When using Y-Lanyards to move between fall protection systems, attach the unused leg of the lanyard to the new location before disconnecting the first lanyard leg. Connection of both lanyard legs to separate anchorage connectors while transitioning between systems is acceptable.

Connecting Personal Shock Absorbers

Personal shock absorbers should be connected to the dorsal D-ring of the full body harness first, then connected to the rest of the fall arrest system.

10. Compatibility of Components and Subsystems

This equipment is designed for use with ANSI approved components and subsystems. Substitutions or replacements made with non-approved components or subsystems may be incompatible and may jeopardize the safety and reliability of the complete system.

Compatibility of connectors

Connectors are considered to be compatible with connecting elements when they have been designed to work together in such a way that their sizes and shapes do not cause their gate mechanisms to inadvertently open regardless of how they become oriented.

Contact Life Safety Devices if you have any questions about compatibility. Connectors (hooks, carabiners, and D-rings) must be capable of supporting at least 5000lbs (22 kN). Connectors must be compatible with the anchorage or other system components. Do not use equipment that is not compatible. Non-compatible connectors may unintentionally disengage.

11. Performance

Each Life Safety Devices Energy Absorbing Lanyard has been tested in accordance with the requirements of the ANSI Z359.13-2013 standard.

Part No.	Material	Length	Max Elongation	Standard
LS01	Shock absorbing lanyard with one steel hook	1.8m (6.0ft)	1.2m (48.0 inches)	ANSI Z359.13-2013
LS02	Shock absorbing lanyard with Rebar hooks	1.8m (6.0ft)	1.2m (48.0 inches)	ANSI Z359.13-2013
LD03	Twin legged shock absorbing lanyard with steel hooks	1.8m (6.0ft)	1.2m (48.0 inches)	ANSI Z359.13-2013
LD04	Twin legged Shock absorbing lanyard with one steel hook & two rebar hooks	1.8m (6.0ft)	1.2m (48.0 inches)	ANSI Z359.13-2013
LS02	Single leg Shock Absorbing lanyard with one steel hook & one rebar hook	1.8m (6.0ft)	1.2m (48.0 inches)	ANSI Z359.13-2013
LS06	Single leg Internal Energy Absorbing lanyard with one steel hooks	1.8m (6.0ft)	1.2m (48.0 inches)	ANSI Z359.13-2013
RGL01	Rope Grab + Lanyard, 5/8"-3/4" and 3ft lanyard.	0.9m (3.0ft)	1.2m (48.0 inches)	ANSI Z359.15-2014

Maximum Arrest Force and Maximum Elongation deployment distance of personal energy absorbers when dynamically tested in accordance with ANSI Z359.13-2013 are as follows:

6 ft free fall	Personal Energy Absorber	Ambient Dry	Ambient Wet	Cold Dry	Hot Dry
	Max Arrest Force	≤ 1800 lbs. F	≤ 1800 lbs. F	≤ 1800 lbs. F	≤ 1800 lbs. F
	Average Arrest Force	≤ 900 lbs. F	≤ 1575 lbs. F	≤ 1575 lbs. F	≤ 1575 lbs. F
	Maximum Elongation	48 inches	60 inches	60 inches	60 inches

12 ft free fall	Personal Energy Absorber	Ambient Dry	Ambient Wet	Cold Dry	Hot Dry
	Max Arrest Force	≤ 1800 lbs. F	≤ 1800 lbs. F	≤ 1800 lbs. F	≤ 1800 lbs. F
	Average Arrest Force	≤ 1350s. F	≤ 1575 lbs. F	≤ 1575 lbs. F	≤ 1575 lbs. F
	Maximum Elongation	60 inches	60 inches	60 inches	60 inches

12. Training

Employers are responsible for providing training to any employee who may be exposed to fall hazards. Training will enable an employee to recognize and reduce fall hazards. Training must be conducted by a Competent or Qualified Person. Trainers and trainees must not be exposed to fall hazards during the training course.

13. Inspection

Frequency

Life Safety Devices Shock absorbing lanyards must be inspected prior to each use and annually by an "Competent Person" other than the user.

To Inspect components

All components of the Life Safety Devices Shock Absorbing Lanyards must be inspected.

All snap hooks and carabiners on products must be able to self-close and lock.

All hardware must be free of corrosion, chemical attack, alteration, excessive heating, wear cracks, sharp edges, deformation, corrosion, or any evidence of defect.

To Inspect Webbing

Bend a portion of the webbing 15-20 cm into an upside-down 'U' shape. Continue along all webbing inspecting for tears, cuts, fraying, abrasion, discoloration, burns, holes, mold, pulled or broken stitches, or other signs of wear and damage.

Adjust all keepers, buckles, padding, and D-ring to inspect webbing hidden by these components.

The sewn terminations must be secure, complete, and not visibly damaged.

Check all buckles for damage, distortion, cracks, breaks, and rough or sharp edges. Inspect for any unusual wear, frayed or cut fibers, or broken stitching of the buckle attachments. Make sure buckles properly engage.

Double-check the buckle locking mechanism by tugging on both halves of the buckle to make sure it is firmly connected and will not disengage.

All markings must be legible and attached to the product.

All hardware must be free of cracks, sharp edges, deformation, corrosion, or any evidence of defect.

14. Cleaning, Maintenance, and Storage

Cleaning

Life Safety Devices Shock Absorbing Lanyards can be wiped down with a mild detergent and missed with a clean cloth to remove detergent. The hardware can also be wiped down with a clean, dry cloth to remove grease or dirt.

Maintenance

Any Life Safety Devices Shock Absorbing Lanyards requiring maintenance must be tagged “unusable” and removed from service.

Storage

- » When not in use, Life Safety Devices Shock Absorbing Lanyards should be stored in a cool, dry place out of direct sunlight.
- » Do not store in areas where damage from environmental factors such as heat, light, excessive moisture, oil, chemicals and their vapors, or other degrading elements may be present.
- » Do not store damaged equipment or equipment in need of maintenance in the same area as product approved for use. Equipment must be cleaned and dried prior to storage.
- » Equipment that has been stored for an extended period must be inspected as described in these User Instructions prior to use.

All labeling must be legible and attached to the shock absorbing lanyard.

16. Product Guide



NEVER attach the unused leg of the lanyard back to the harness at any location other than a lanyard storage keeper



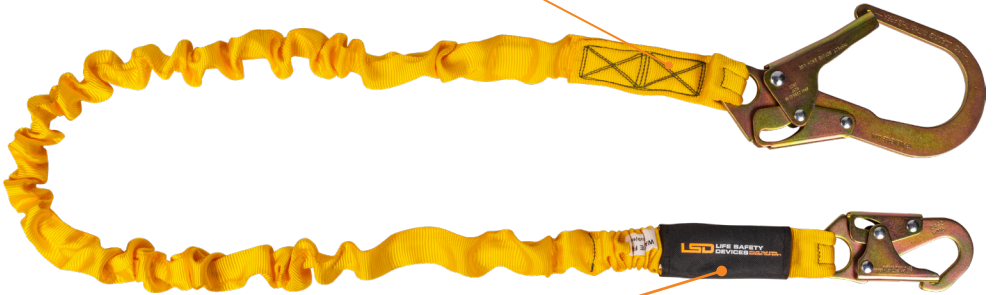
Where user can check the labels

NEVER attach the unused leg of the lanyard back to the harness at any location other than a lanyard storage keeper



Where user can check the labels

NEVER attach the unused leg of the lanyard back to the harness at any location other than a lanyard storage keeper



Where user can check the labels

Where user can check the labels



Notes

If equipment fails inspection IMMEDIATELY REMOVE FROM SERVICE.

User must inspect prior to EACH use.

Competent Person other than user must complete formal inspection at least every 6 months.

Competent Person to inspect and initial. Date of first use: _____.

Product lifetime is 5 years as long as it passes pre-use and Competent Person inspections.
REMOVE FROM SERVICE 5 years after date of first use, or, if not recorded, from date of manufacture.

This inspection log must be specific to one Internal Shock Lanyard. Separate inspection logs must be used for each Internal Shock Lanyard. All inspection records must be made visible and available to all users at all times.

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:

[illegible]

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