



User Instructions of Energy Absorbing Lanyard

Complies with ANSI Z359.13-2013

Manufacturer:

Frontline Fall Protection Inc.

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Warning

- This User Instruction Manual is not to be removed except by the user of this equipment.
- Current User Instruction Manuals must always be available to the user.
- Read and understand these instructions before using equipment.
- Do not throw away these instructions.
- Do not wrap the Energy 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 judgement 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 potential 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 for 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.
- Physical harm may still occur even if fall safety equipment functions correctly.
- Sustained post-fall suspension may result in serious injury or death.
- The Energy absorbing lanyards need to avoid contact with sharp edges and abrasive surfaces.
- The Energy absorbing lanyard only can be used with compatible connections.
- User must to remove equipment from field service if it has been subjected to the forces of arresting a fall.
- **FRONTLINE** should provide indicates information necessary in designing fall protection systems, including the arrest force, fall clearance, safety factor, suitable components etc.

1. Limitations for Use

- Energy Absorbing Lanyards marked “ANSI Z359.13” require space for up to 6FT (1.8m) of free fall with a maximum capacity up to 310 lbs (139 kg) including clothing, tools, etc.
- Energy Absorbing Lanyards marked “ANSI Z359.13” and “6ft. Maximum Free Fall” are designed for up to 6FT free fall applications with a maximum capacity up to 310 lbs (139 kg) including clothing, tools, etc.
- Energy Absorbing Lanyards must be used with a full body harness.
- Energy Absorbing Lanyards are designed for a single user.
- Unless explicitly stated otherwise, the maximum allowable free fall distance for lanyards must not exceed 6FT. Energy absorbing lanyards marked “ANSI Z359.13” and “6ft. Maximum Free Fall” are designed for up to 6FT free fall applications with a capacity up to 310 lbs (139kg) including clothing, tools, etc.
- Do not repair equipment on-site unless explicitly permitted by **Frontline Fall Protection Inc.**
- 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 130~310 lbs (59kg~139kg). unless explicitly stated otherwise.

2. Anchorage Requirements

Select a rigid anchorage point capable of supporting required loads. Select appropriate anchorage point that will reduce possible free fall and swing fall hazards and avoid striking an object during a fall. Anchorage should be level (horizontal) in order to prevent the connector from sliding on an incline when in use, which could cause serious injury or death to the user .

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

Anchorage 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.



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.

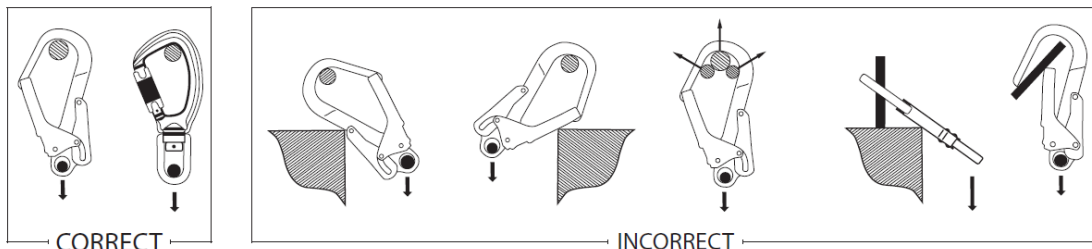
3. Connection Compatibility Limitations

Snap Hooks and Carabiners

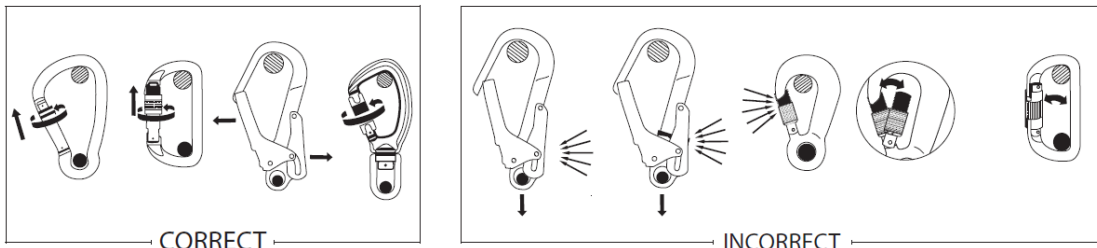
Snap hooks and carabiners used on Frontline Energy Absorbing Lanyards marked with the “ANSI Z359.1-07” or “ANSI Z359.12-09” standard are self-locking with minimal tensile break strength of 5,000 lbs and a 3,600 lbs gate rating.

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, the rescue operation 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.



- It is necessary to protect the snap hook gate with locking gear. See drawings.



- 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.

Need the proper method of coupling the personal energy absorber to adjacent components of the system. 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.

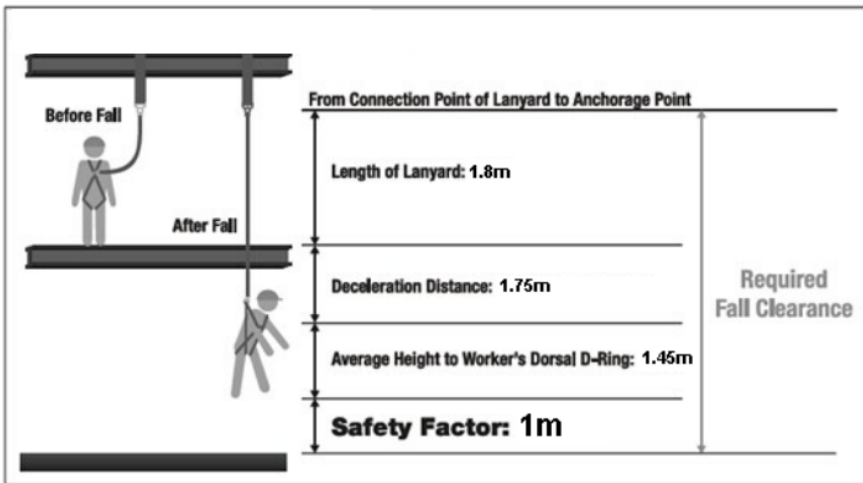
4. Fall Clearance/Clear Fall Charts

Clearance Requirements

The illustration is an example of how to calculate fall clearance when using an energy absorbing lanyard.

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

Using the Frontline Energy Absorbing Lanyard will require a total fall clearance of approximately 6 m 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 .



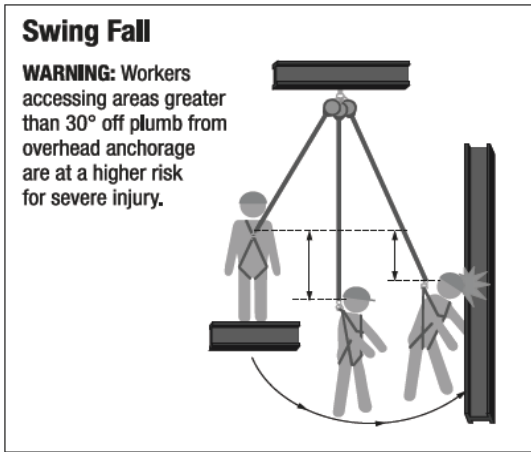
Swing Fall

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.



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.



5. 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.


- Energy 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.
- Load indicators must not be deployed.
- Damaged and other deteriorated or defective components must be immediately removed from service.

Connecting Energy Absorbing Lanyards That Have a Shock-Pack

Energy Absorbing Lanyards with a shock-pack must be connected in a specific location. The Energy 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 Energy absorber 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 Energy Absorbers

Personal Energy 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.

Connecting to Anchorage or Anchorage Connector

Connect energy absorber to end of the lanyard to the full body harness.

Connect the other end of the lanyard to the anchorage or anchorage connector.

100% Tie off considerations : Energy absorbing Y-type,twin leg or double lanyards can be used to provide continuous fall protection while moving. The worker can move to a new location while one lanyard leg is attached. Attach the free (unused) lanyard leg,then disconnect the attached leg.This procedure may be repeated as a new location is reached.

Energy absorber portion of the lanyard must be connected to the Dorsal D-ring only.

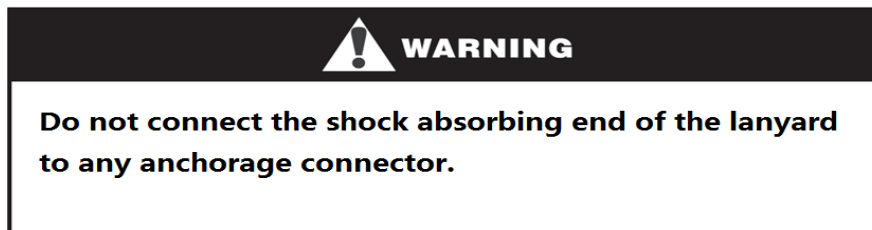
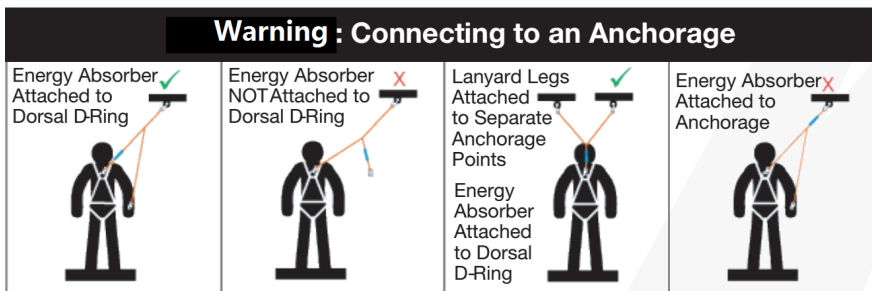
Do not attach the energy absorber to the anchorage.

Do not attach the free (unused) leg of the lanyard back to the harness at any location unless a specially designed lanyard keeper is provided for this purpose.

Connection of both lanyard legs to separate anchorage points is acceptable.

Never connect more than one person to a Y-type lanyard.

Do not allow any lanyard to pass under arms or legs during use.



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

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 **FRONTLINE** 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.

6. 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. Trainer and trainees must not be exposed to fall hazards during the training course.

7. Inspection

Frequency

Energy absorbing lanyards must be inspected prior to each use and annually by a "Competent Person" other than the user. And the Energy absorbing lanyards need to be inspected every six month.

To Inspect Components

All components of the Energy Absorbing Lanyards must be inspected.

All snap hooks and carabiners on product 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 6-8 inches 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.

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.

8. Cleaning, Maintenance, and Storage

Cleaning

Energy Absorbing Lanyards can be wiped down with a mild detergent (e.g. Laundry) and wiped 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 Energy Absorbing Lanyards requiring maintenance must be tagged “unusable” and removed from service.

Storage

- When not in use, Energy 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.

9. Material

The Energy absorbing lanyard was made by polyester webbing and tear webbing.

It's maximum arrest force shall not exceed 8kN and the average arrest force shall not exceed 4kN, and the maximum elongation shall not exceed 48 inches.

10. Labeling

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

Label 1

Etiqueta No. 1/3		DO NOT REMOVE THIS LABEL/NO QUITTE ESTA ETIQUETA	
FRONTLINE FALL PROTECTION	Model/Modelo:	XXXXXX	Capacity/Capacidad: (Included worker weight, clothing and tools) (Incluye ropa, herramienta y peso del usuario.) 130-310 Lbs.
	Material/Materiales	Polyester/ Poliéster	
	Class	6 FT FF	
	Date Made/Fecha Fabricación:	mm/yy	Free Fall Limit/Distancia Máxima de Caída Libre: (6 ft./1.8 m)/(6 pies/1.8mst)
	Serial No./Número Serie:	XXXXXX	Length / longitud (6 ft./1.8 m)/(6 pies/1.8mst)
	Meets/Cumple:	ANSI Z359.13-2013 OSHA 1926 OSHA 1910	Tests Carried By/Puebas Realizadas por:
	Made In/Hecho en:	CHINA	Max deployment distance/ Distancia máxima de despliegue (48inch/1.2m)/(48pulgada/1.2mst)

Label 2

Etiqueta No. 2/3		DO NOT REMOVE THIS LABEL/NO QUITTE ESTA ETIQUETA WARNING/PRECAUCION:	
FRONTLINE FALL PROTECTION	Read & heed all instructions in user manual supplied with lanyard. Need to avoid contact with sharp edges and abrasive surfaces. Need to make only compatible connections. Remove from service if subjected to fall arrest. Failure to follow warnings and instructions can result in serious injury or death.		
	Lea y siga todas las instrucciones del manual del usuario que acompaña al accesorio. Necesidad de evitar el contacto con bordes afilados y superficies abrasivas. Necesito hacer solo conexiones compatibles. Retire de uso si ha sido sometido a la detención de una caída. El no seguir las advertencias e instrucciones puede producir lesiones graves o la muerte.		

Label 3

Etiqueta No. 3/3		DO NOT REMOVE THIS LABEL/NO QUITTE ESTA ETIQUETA		
FRONTLINE FALL PROTECTION	Mark/ Punch On Grip- Marque /Perfore en la Red.			
	1- Initial In Service Date/Fecha Inicio Servicio.	J F M A M J J A S O N D		
	2- Date Of Passed Inspection/Fecha de Inspección Aprobada.	2023		
	3- Competent Person To Inspect Every Six Months.	2024		
	4- Inspect Before Each Use / Inspeccione Antes De Cada Uso.	2025		
	Punch/Perfore:	2026		
	2027			

Label 4 for energy absorbing lanyard - 3.5 in×1.25 in (8.9 cm×3.6 cm)

Warning: User Capacity Range 130-310lbs.

6ft. **900lbs.**

Maximum Free Fall

Average Arresting Force

Maximum Deployment Distance 48"

Forces may increase when cold and/or wet

Read Instructions Before Use

Label 5 for the Y-lanyard.

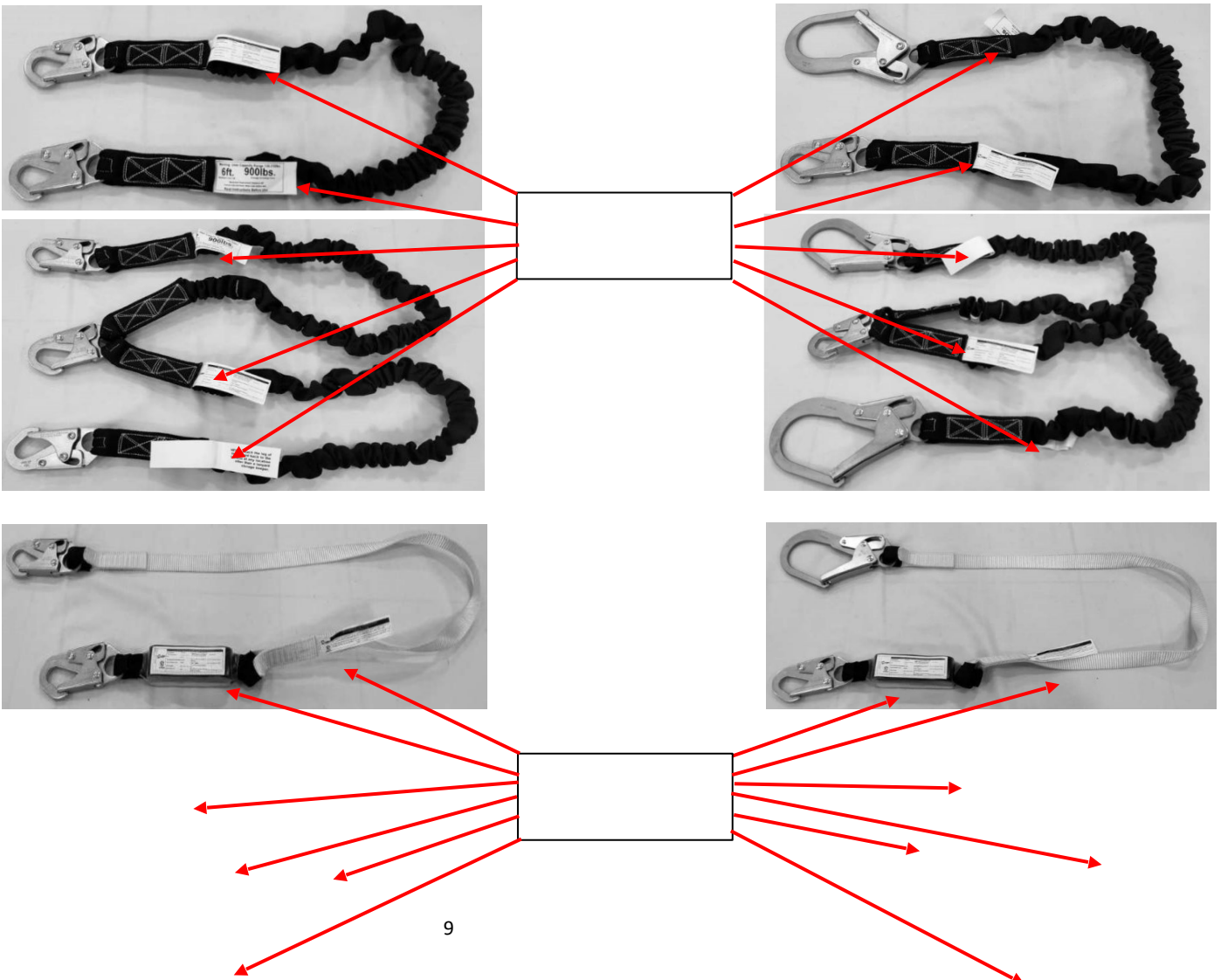
NEVER attach the leg of the lanyard back to the harness at any location other than a lanyard storage keeper.

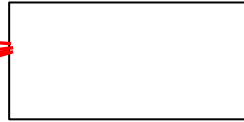
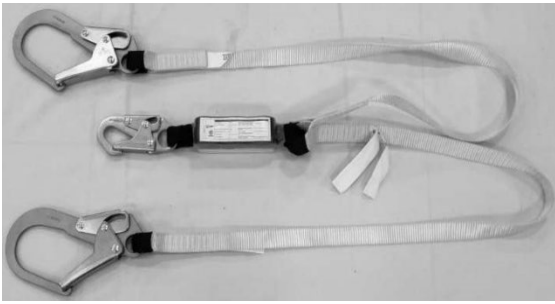
Label 6 for warning which inside the energy absorber.

WARNING!!! REMOVE FROM SERVICE!!!

This lanyard has been subjected to arrest forces

Labeling location shows:





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.

Inspection Record

Date	Pass/ Fail	Comments/actions	Next Inspection Due	Signed
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Manufacture:

Frontline Fall Protection Inc.

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