



USER INSTRUCTION MANUAL ENERGY ABSORBING LANYARDS

THESE INSTRUCTIONS APPLY TO THE FOLLOWING MODELS:

UFL201101, UFL201101(03), UFL201101(04), UFL201111, UFL201121, UFL201121(03),
UFL201121(04), UFL201131, UFL201301, UFL201331, UFL201402, UFL201421, UFL201422,
UFL201423, UFL201433, UFL201601, UFA710203(36), UFA710303(30), UFL201621,
UFL201622, UFL201701, UFL201721, UFL201740, UFL201750, UFL204101, UFL204102,
UFL204111, UFL204112, UFL204121, UFL204131, UFL206101, UFL206111, UFL206121,
UFL206131, UFL206214, UFL206234, UFL201611 and UFZ800100



This manufacturer's user instruction manual meets the requirements of ANSI Z359.18-2017. As per OSHA, this manual should be used as a part of an employee training program.

▲ WARNING

The products enumerated in this instruction manual are a part of a personal protective, work support or rescue system. It is important that the user reads and follows the manufacturer's instructions for each component of the system. This manual contains information which is important to the user's safety and should be kept in a safe place for future reference as needed. The instructions provided in this manual are meant for the use of this equipment and should be read thoroughly and understood by the user before the equipment is used. Manufacturer's instructions must be properly followed for the correct use and maintenance of this equipment. Please contact KStrong for any questions regarding use of this equipment.

Fall arrest systems and equipment are life saving products and are designed to reduce the potential of serious injury in the event of a fall. The victim of a fall may also experience adverse effects due to prolonged suspension in a full body harness (FBH). However, it is important to note that the user may experience an impact of force on their body in the event of a fall. In case there is a doubt about the user's ability to utilize this product, the user must consult a physician. Pregnant women and minors are not considered fit for the use of this equipment.

TRAINING:

In order to ensure that the user is familiar with the instructions provided in this manual, it becomes the responsibility of the employer and user to undergo training in proper inspection, use and maintenance of this equipment.

TECHNICAL SPECIFICATIONS :

S. No.	KStrong Lanyard Model	Construction of Webbing	Hardware	Minimum Breaking Strength	Conformity
1.	UFL201101	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
2.	UFL201101(03)	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
3.	UFL201101(04)	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
4.	UFL201111	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
5.	UFL201121	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
6.	UFL201121(03)	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
7.	UFL201121(04)	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
8.	UFL201131	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
9.	UFL201301	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
10.	UFL201331	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
11.	UFL201402	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
12.	UFL201421	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
13.	UFL201422	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
14.	UFL201423	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
15.	UFL201433	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
16.	UFL201601	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
17.	UFL201611	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
18.	UFA710203(36)	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
19.	UFA710303(30)	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
20.	UFL201621	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
21.	UFL201622	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
22.	UFL201701	Aramid and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
23.	UFL201721	Aramid and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
24.	UFL201740	Aramid and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
25.	UFL201750	Aramid and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
26.	UFL204101	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
27.	UFL204102	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
28.	UFL204111	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
29.	UFL204112	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
30.	UFL204121	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
31.	UFL204131	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013

32.	UFL206101	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
33.	UFL206111	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
34.	UFL206121	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
35.	UFL206131	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
36.	UFL206214	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
37.	UFL206234	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013
38.	UFZ800100	Polyester and Nylon	Steel	5000 lbs.	ANSI Z359.13-2013

Note: For Usage and instructions of lanyards UFL204102 and UFL204112 with Harness UFH10101P, Please refer KStrong Harness User instruction manual.

The maximum arrest force of the personal energy absorber when dynamically tested in accordance with ANSI Z359.13 is 1800 lbs. The maximum elongation of the personal energy absorber when dynamically tested in accordance with the same standard is 48 inches. When the weight of the user is 220 lbs. (100 kg) with a free fall distance of 6 ft., the maximum allowable elongation is 37 inches (95 cm).

IMPORTANT INFORMATION:

- It is important to inspect the equipment according to the manufacturer's instructions before each use.
- Inspection of equipment should be done on a regular basis by a qualified person and the results should be recorded in the inspection log.
- DO NOT REMOVE product labels which include important warnings and information for the "Authorized Person".
- "Authorized Person" is a person who is exposed to fall hazards during the course of their work. This individual requires formal training in the use of personal fall protection equipment and systems. The term "Authorized Person" may be used interchangeably with "User" and "End-User".
- DO NOT ALTER the equipment in any way.
- Always send the equipment back to the manufacturer, or to the persons or entities authorized in writing by the manufacturer, for any repairs if required.
- Never use any natural material like manila, cotton, etc. as part of the Fall Protection System.
- Fall protection equipment should only be used for the purpose for which it has been designed.
- This equipment should never be used for towing and hoisting or for any other purpose than its intended use.
- A competent person must ensure compatibility of the system to minimize any potential for accidental disengagement.
- Authorized persons or users shall be trained on all warnings and instructions provided in this manual.
- It is important for all authorized persons and users to refer to the applicable ANSI Standards and to the regulations governing occupational safety.
- Take proper precautions to remove any debris, material, obstructions, etc., from the work area which could cause injury, or otherwise interfere with the functioning of the system.
- KStrong Anchors should be used only with the combinations of components, sub-systems or both which may affect or interfere with the safe function of one another. Be certain that connecting devices are compatible and that other elements of the PFAS are safe and compatible before use.
- Always check for obstructions below the work area to make sure that the potential fall path is clear.
- Keep the equipment away from anything that could damage it such as sharp edges, rough or abrasive surfaces, high temperature surfaces, heat and welding sources, moving machinery, electrical hazards, etc.
- It is important to keep in mind environmental hazards when selecting fall protection equipment.
- Do not expose the equipment to chemicals, highly corrosive or caustic environments, or to direct sunlight and UV radiation, which may cause UV degradation.
- Such harmful environments require a more frequent inspection and servicing program of the fall protection equipment to maintain the integrity and safety of the equipment. Contact KStrong if in doubt.
- All the synthetic material of fall protection equipment must be protected from slag, hot sparks, open flames or other heat sources.
- It is recommended that heat resistant materials are used in such applications. It is important to allow adequate fall clearance below the work surface.
- Always have a Rescue Plan ready and at hand when using this equipment.

WARNING

- Immediately discard any product which is exhibiting unusual wear, deformity or deterioration.
- Immediately remove from service any equipment that has been subjected to a fall.

COMPONENT COMPATIBILITY:

Component compatibility with KStrong manufactured fall protection equipment is ensured by strictly following the instructions for each type of equipment used. However, if the user utilizes combinations of components or sub systems that are manufactured by others, only a "qualified" or "competent" person (as defined in OSHA) can ensure the compatibility. If substitutions or replacements are made with non-approved components or sub systems, then this may severely affect the compatibility of the equipment, making the complete system unsafe for use.

COMPATIBILITY OF CONNECTORS:

To ensure the compatibility of the connectors with their connecting element, it is important to safeguard that the sizes and shapes of the connectors and the connecting elements do not allow their gate mechanisms to open inadvertently, notwithstanding their orientation with each other. All hooks, carabiners, D-rings and other such connectors must be capable of supporting a min. force of 5000 lbs. (23 kN). All connectors must be compatible with all system components like anchorages, etc. Never use equipment which is not compatible as this may cause the connectors to disengage unintentionally. All connectors must be compatible in shape and size. As per ANSI Z359.12 and OSHA, only self-locking snap hooks and carabiners may be used.

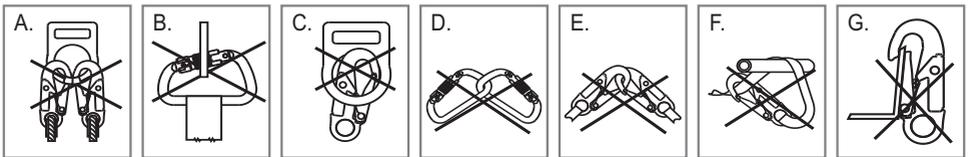
CONNECTIONS USING CONNECTORS:

Ensure that only self-locking snap hooks and carabiners are used with this equipment. All connections should be compatible in size, shape and strength. The connectors used should be suitable to each application. Ensure that they are fully closed and locked while in use.

NEVER USE INAPPROPRIATE CONNECTIONS:

While using KStrong snap hooks and carabiners, they should not be connected as below:

- Two or more connectors should never be attached to a single D-ring.
- Never attach a connector that could result in a load on its gate.
- Connectors should not be connected in a false engagement. It should be visually confirmed that the connector is fully engaged to the anchor point. Avoid conditions that allow for features that protrude from the connectors to catch on the anchor, giving a false sense of being connected.
- Connectors should not be connected to each other.
- Connectors should not be connected directly to the webbing or to the rope lanyard or tie back, unless specifically allowed by the manufacturer.
- Connectors should not be connected to any object which does not allow the connector gate to close or lock. Anchor shapes that allow roll out to occur should never be used for connection. If the anchor, to which the snap hook or carabiner is attached, is under sized or irregular in shape, then this may allow for the gate of the connector to come in contact with the anchor, thereby causing the connector to open up and possibly disengage from the anchor. This is known as roll out of the connector.



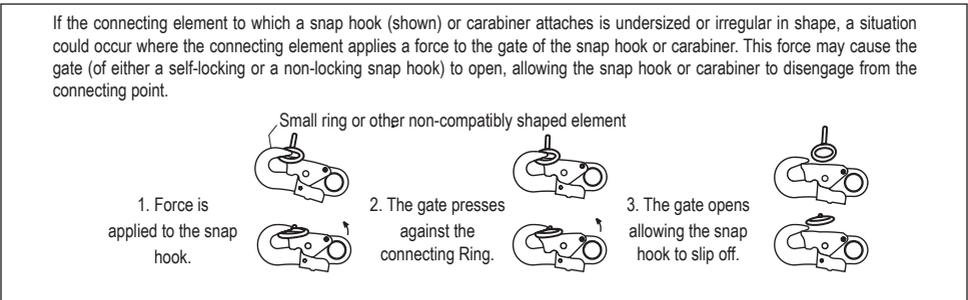
- Do not use connectors on an anchorage object as shown in figure A to G.

▲ WARNING

Large throat opening snap hooks should not be connected to standard size D-rings or similar objects. The reason for this is if the hook or D-ring twists or rotates, then this may result in a load on the gate of the connector. Large throat snap hooks are specifically designed for use on fixed structure elements such as rebar or cross members. These are shaped in such a way that they cannot capture the gate of the hook.

IMPORTANT RESTRICTIONS WHILE MAKING CONNECTIONS

- A snap hook should not be connected into a loop or thimble of a wire rope, or attached to it in any way that may slack the wire rope.
- Do not make connections where the connector locking mechanism can come into contact with a structural member, or other such equipment, as it may potentially unlock the connector and release the connection.
- To connect to a single or a pair of soft loops on a harness, a carabiner that can fully close and lock should only be used. Snap hooks are not allowed for such connections.
- A carabiner may be connected to a loop or ring connector that is already occupied by a choker style connector. Snap hooks are not allowed for such connections.



CONNECTING LOOP OF LANYARD TO HARNESS D-RING

Some lanyards are provided with a web loop at one end and connector at the other end. This web loop is connected to the dorsal attachment D-ring of a harness in the following manner:

<p>Step 1. Insert Lanyard Web Loop through Web Loop or D-ring on harness.</p> <p>Step 2. Insert opposite end of lanyard through the Lanyard Web Loop.</p> <p>Step 3. Pull the Lanyard through the connecting Web Loop so as to secure a tight knot.</p>			
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CONNECTING SUBSYSTEMS:

Use only those connecting subsystems (self-retracting lifeline, lanyard, rope grab and lifeline, cable sleeves) that are suitable for your application. See subsystems manufacturer's instructions for more information. Some harness models have web loop connecting points. Do not use snap hooks to connect to the web loop. Use a self-locking carabiner to connect to a web loop. Ensure that the carabiner is connected in such a way that it does not lead to cross-gate load. Sometimes lanyards may be sewn directly to the web loop forming a permanent connection. Do not make multiple connections onto one web loop.

RESCUE PLAN:

A rescue plan should be well documented and in place before performing work at height. The rescue operation must be performed by trained and competent personnel only. The rescue expert team should supervise the rescue operation performed. It is also advised to work in pairs while working on the site.

ENVIRONMENTAL HAZARDS:

It is important to take additional precautions while using this equipment in the presence of any environmental hazards so as to prevent injury to the user or damage to the equipment.

Environmental hazards may include the following, but are not limited to:

- Chemicals
- Extreme Temperatures
- Corrosive Environments
- Gases
- High Voltage Power Lines
- Sharp Edges
- Moving Machinery and Vehicles

Please contact KStrong for use of this equipment in the presence of any environmental hazard.

▲ WARNING

This equipment is not designed to be used in high temperature environment. It is important to protect this equipment when using near activities like welding or metal cutting. Hot sparks may cause damage to this equipment or burn it. Contact KStrong with any questions regarding the details on use of this equipment in high temperature environment.

ANCHORAGE STRENGTH:

The application type determines the anchorage strength requirement. As per ANSI Z359.1 the necessary anchorage strength for the following applications is listed below:

- **Fall Arrest:** As per OSHA 1926.500 and 1910.66: anchorages that are used for attachment in Personnel Fall Arrest Systems (PFAS) shall be independent of any anchorage being used to support or suspend platforms. They should be capable of withstanding a minimum load of 5000 lbs. (23 kN) per user attached, or should be designed, installed and used as part of a complete PFAS which maintains a safety factor of at least two. Rating of the anchorage should always be done under the supervision of a qualified person. Information regarding designing the fall protection systems are available with KStrong.

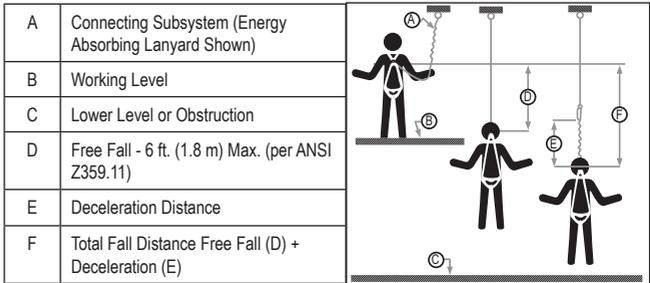
- **Work Positioning:** The structure to which the work positioning system (WPS) is attached must be able to sustain a static load of min. 3000 lbs. (13.3 kN), applied in the directions permitted by the work positioning system. Or, it should be able to sustain two times the potential impact load, whichever is greater; see 1926.502. However, if more than one work positioning system is attached to an anchorage then the strength mentioned above must be multiplied by the number of WPS attached to the anchorage.
- **Restraint:** The strength requirement of anchorages which are selected for restraint and travel restraint systems is minimum of 1000 lbs. (4.5 kN) static load applied in the directions permitted by the system. If more than one restraint and travel restraint system is attached to anchorage, then the 1000 lbs. shall be multiplied by the number of systems attached to the anchorage to determine the min. strength requirement.
- **Rescue:** The minimum strength of the anchorage selected for rescue should be such that it is capable of sustaining a static load of minimum 3000 lbs. (13.3 kN) applied in the direction permitted by the system. To determine the strength requirement of the anchorage if more than one rescue system is attached, multiply 3000 lbs. (13.3 kN) by the number of the systems attached to the anchorage.

GENERAL LIMITATIONS OF FALL ARREST SYSTEM AND REQUIREMENTS:

It is important to consider the below mentioned limitations before using or installing this equipment:-

- The capacity of the KStrong full body harness is up to 310 lbs. (140 kg) hence, the combined weight (clothes, tools, shoes etc.) of a person using these harnesses should not be more than 310 lbs. It is important to ensure that all the components in the system are rated to a capacity which is appropriate to the application.

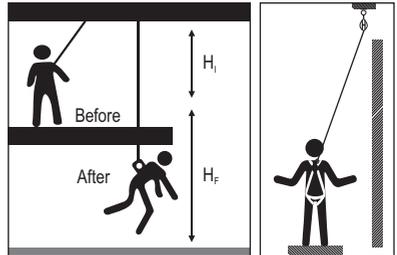
- **Free Fall:** As per ANSI Z359.11 the personal fall arrest systems used with this equipment must be rigged in such a way that the free fall does not exceed 6 ft. (1.8 m). Restraint systems must be rigged in such a way that no vertical free fall is possible. Work positioning systems are required to be rigged in a way that the free fall does not exceed 2 ft. (0.6 m). Personal riding systems must be rigged so that there is no vertical free fall possible. Climbing systems must be rigged so that free fall is less than 18 inches (46 cm). Rescue systems must be rigged in such a way that there is no vertical free fall. Contact KStrong for any further information needed.



possible. Climbing systems must be rigged so that free fall is less than 18 inches (46 cm). Rescue systems must be rigged in such a way that there is no vertical free fall. Contact KStrong for any further information needed.

- **Fall Clearance:** There should be sufficient clearance below the user to allow the system to arrest a fall so as to prevent the user from striking the ground or any other obstruction. The clearance required depends upon the following factors:

- $H_s - H_3 = H_f - H_1$ (Harness stretch should be \leq (less than equal to) 18 inches)
- Anchorage location
- Type of connecting subsystem used (energy absorbing lanyard, self retracting lifeline (SRL), etc.)

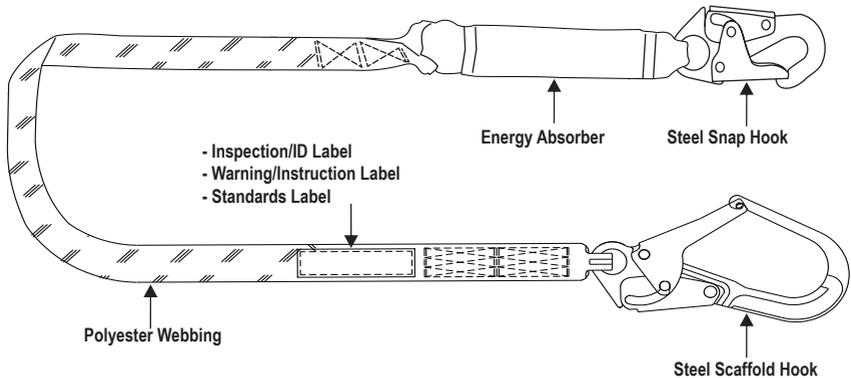


If the only available anchorage is situated below the attachment on the harness; and if there is a risk of fall, then it is essential to use a lanyard with a properly rated energy absorber. It is important to ensure that there is sufficient fall clearance below the user, before using a shock absorbing lanyard. If the weight of the wearer is 220 lbs. and the fall factor is two, we can calculate the fall clearance (which will be equal to the stopping distance $H(2L + 5.74 \text{ ft.}) +$ an additional distance of 3.28 ft).

<p>Calculating Total Fall Distances: Total Fall Clearance below worker is calculated from Anchorage Connection. Free Fall Distance + Energy Absorber Deceleration Distance + Worker height + Safety Factor. Care must be taken to ensure that the total fall distance is clear of obstructions; such as equipment, to avoid contact with a lower level.</p> <p>Free Fall Distance + Energy Absorber Deceleration Distance + Worker height + Safety Factor = 19 ft. (5.8 m)</p> <p>Free Fall Distance + Energy Absorber Deceleration Distance + Worker height + Safety Factor = 20 ft. (6.1 m)</p>	<p>6 ft. free Fall</p> <p>Total 19 ft. from Anchorage</p>	<p>Anchorage</p> <ul style="list-style-type: none"> 6 ft. Length of Energy Absorbing Lanyard 4 ft. Deceleration Distance 6 ft. Height of Worker 3 ft. Safety Factor
	<p>12 ft Free Fall</p> <p>Total 20 ft. from Anchorage</p>	<ul style="list-style-type: none"> 6 ft. Length of Energy Absorbing Lanyard 5 ft. Deceleration Distance 6 ft. Height of Worker 3 ft. Safety Factor <p> This Application requires a special EA lanyard</p>

- Swing Falls:** Swing fall occurs when the position of the anchorage point is not directly above the point where a fall occurs. In such a case if a fall were to occur, it will result in pendulum swing of the fall victim and may also cause them to strike nearby objects with a force. This may cause serious injury or even death. Such swing falls may be minimized by ensuring that the anchorage is directly overhead, and by working as close to the anchorage point as possible. Swing falls will substantially increase the fall clearance required when a SRL or other variable length connecting subsystem is used.
- Extended Suspension:** Using a full body harness: A FBH is not intended for use in extended suspension applications. If the user is going to be suspended for an extended length of time, it is recommended that some form of a seat support be used. KStrong recommends a seat board, suspension work seat, seat sling, or a boatswain chair. Contact KStrong for more information on these items.
- Periodic Examination:** Always keep the instructions provided with the product. Take the information from the markings on the product and enter this information in the identification sheet. To ensure the safety of the user, it is essential to check the condition of the equipment through periodic examinations of the product. This equipment must be examined by a qualified person at least once in a six months, strictly complying with the manufacturer's instructions. Also, record the previous check on the attached sheet. If the equipment is in heavy usage or is used in a harsh environment, then the frequency of inspection should be increased in accordance with regulations. Also check that the markings on the product are legible.

Illustration of Lanyard



PURPOSE

KStrong energy absorbing lanyards are to be used as components in a personal fall arrest system. KStrong work positioning lanyards are to be used as components of a work positioning system. Energy absorbing lanyards are specially designed to limit the fall impact forces on the body of the user to less than the required levels.

KStrong energy absorbing lanyards made of aramid webbing should be used when working with tools, material and environments of high temperature such as foundries, welding, fire services, steel fabrication, oil industry, etc.

APPLICATION

Personal Fall Arrest: KStrong energy absorbing lanyards are used as a component of personal fall arrest systems. A full body harness along with a connecting energy absorbing lanyard typically constitutes a personal fall arrest system. The energy absorbing element limits the maximum arresting force to less than 1800 lbs. (8 kN). The D-ring or the attachment element on the back of a full body harness should be connected to the energy absorbing lanyard for a complete fall arrest system. KStrong energy absorbing lanyards are to be used as part of personal fall arrest systems for applications like inspection work, confined space rescue, construction and demolition, maintenance jobs, etc., where the possibility of a fall exists.

LIMITATION OF USE OF KStrong ENERGY ABSORBING LANYARDS

These lanyards are designed in such a way that they work in sync with other elements of a personal fall arrest system. While they are designed to arrest a fall from height, they also minimize the impact load on the wearer. KStrong recommends that only those components or sub systems of the PFAS manufactured by KStrong are used in combination. If other manufacturer's equipment is used, then this should be ensured for compatibility by a qualified person only. If substitutions or replacements are made with non-approved components of sub-systems, then this may severely affect the compatibility of the equipment, making the complete system unsafe for use.

LANYARDS FOR FOLLOWING TEMPERATURE ENVIRONMENTS

There is a limitation to the use of lanyards with Aramid webbing which are designed for use in high temperature environments. It is important to note the following limitation:

- At exposure from 800°F to 900°F, Aramid webbing begins to char.
- Aramid webbing can withstand limited contact exposure to temperatures up to 1000°F.
- Polyester webbing starts to lose its strength between 300°F to 400°F.

INSPECTION OF ENERGY ABSORBING FALL ARREST LANYARDS

It is mandatory to have a detailed visual inspection of all the harnesses, lanyards, connectors, etc. prior to each use. This ensures that the equipment is in good condition and is operating correctly. If there are any doubts regarding the safe state of the product or if the product has been used to arrest a fall, then immediately remove the equipment from service. Contact KStrong for a qualified authorized repair center. Check the back-shoulder straps of the harness for the fall indicator, which should be intact. If a fall indicator is found to be deployed, then the harness should be removed from use immediately. Never attempt to repair or modify Personal Protective Equipment (PPE).

FORMAL INSPECTION

It is mandatory that a competent person, other than the user, perform a formal inspection of the PFAS and its components once at least every six months. This frequency should be altered on the basis of conditions for use or exposure. The inspection results should be recorded in the inspection and maintenance log at the end of this manual.

PRE-USE INSPECTION CHECK OF THE LANYARDS

The energy absorbing lanyards should be inspected prior to each use as per the following guidelines:

- Step 1:** Locate the impact indicator on the internal shock absorbing lanyards. The stitched impact indicator is located in a section of a textile label that is folded back upon itself and held in its place with a specific stitch pattern. This stitch opens up releasing the warning sign on the unfolded label, when the lanyard is subjected to a fall. If the impact indicator is found to have been released, then the lanyard should be immediately removed from service.
- Step 2:** Check the lanyard hardware for any damage, break, distortion, sharp edges, burrs, cracks, worn parts or corrosion. Ensure that the connecting hooks are functioning properly. The connector and hook gates must work smoothly, and lock fully upon closing.
- Step 3:** Check the webbing of the lanyard for any damaged, frayed or broken fibers, or cuts. Check the entire length of the lanyard on both sides for any discoloration, abrasion, molds, burns, knots, excessive soiling, heavy paint build up and rust staining. The lanyard should be free of all of these. Look out for any brown, discolored or brittle damage due to ultraviolet radiation. The lanyard should not show any signs of fraying, unsplicing, unlaying, kinking, knotting, roping, excessive aging and excessive soiling, abrasion, alteration, needed or excessive lubrication, excessive aging and excessive wear. Strength of the webbing will be significantly reduced by any of the aforementioned damages. Pulled, cut or broken stitches may be an indication that the lanyard has been subjected to a fall. In all of the above cases, the lanyard must be removed from service immediately.

Step4: In case of a wire rope lanyard, wear protective hand gloves and inspect the full length of the wire rope, by passing the cable through the gloved hands. Flex the wire back and forth at small intervals (of a few inches) of the length of the cable, to reveal any broken strands. Never attempt to pull the wire strands out of the rope. The wire rope should also be free from any corrosion. The rope lanyard should not show any signs of fraying, unsplicing, unlaying, kinking, knotting, roping, excessive elongation, chemical attack, excessive soiling, abrasion, alteration, needed or excessive lubrication, excessive aging and excessive wear. The energy absorbing wire rope lanyard should be removed from service immediately if any of the following are found to be true regarding any lay of the wire rope (Lay= length of the wire rope that it takes for a strand to complete one twist of the rope):

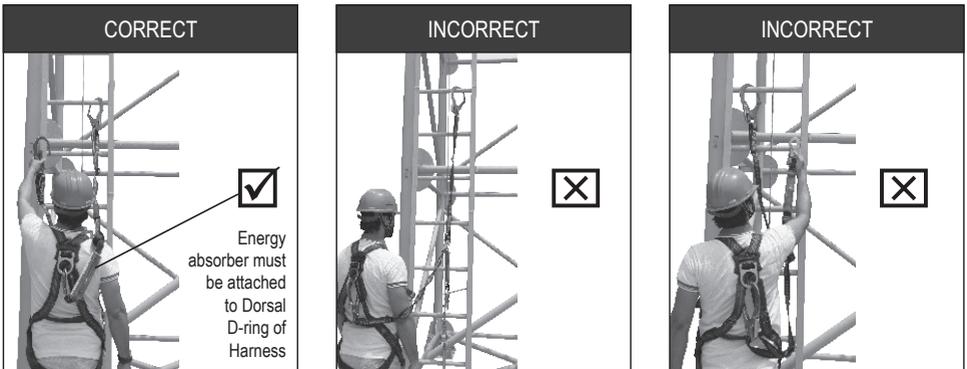
- There are a minimum of 6 randomly distributed broken wires in one lay.
- There are a minimum of 3 broken wires in one strand in one lay.
- Also, remove the wire rope lanyard from service immediately if there are any broken wires within one inch of either of the swaged ends of the wire rope lanyard.

Step 5: The energy absorber should not show any signs of it having been activated. There should not be any evidence of any elongation. The energy absorber cover should be secure, and not torn or damaged.

Step 6: Check that all labels are intact and fully legible.

If inspection reveals an unsuitable, unsafe condition of the energy absorbing lanyard, or of any other sub unit of the fall arrest system, then the unit must be Immediately removed from further use. Only KStrong and parties who are authorized may conduct repairs to the equipment.

HOW TO CONNECT THE ENERGY ABSORBING LANYARD TO AN ANCHORAGE



Only the energy absorbing end of the lanyard is to be connected to the dorsal attachment D-ring of a full body harness. The non-energy absorbing end should be connected to the anchorage connector. Never use additional energy absorbers or energy absorbing lanyards, if one is already attached to the subsystem.

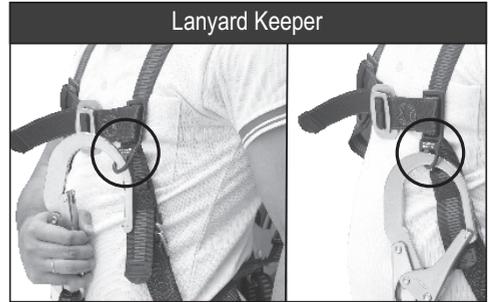
HOW TO USE Y-TYPE, TWIN LEG LANYARDS

These lanyards are also known as 100% tie-off lanyards, since they provide continuous fall protection while moving up, down or sideways along structures at a height. The user first attaches to an anchor point with one leg of the lanyard. They move to the next position with the unused leg of the lanyard in hand. They then attach the unused leg of the lanyard to a new anchor position, while disconnecting the first leg. The user must repeat this process until they reach their desired position. The following precautions must additionally be taken:

- Only the energy absorbing end of the Y-Lanyard should be connected to the dorsal D-ring of the full body harness.
- The energy absorbing end of the lanyard should never be connected to the anchorage point.
- The unused leg of the lanyard should never be attached back to any other point on the full body harness, except to the lanyard keeper, which is specifically intended for this purpose.
- It is acceptable to connect the two legs of the lanyard to two separate anchorage points.
- The lanyard should not pass under the arms or legs of the user during use.
- Never connect more than one person to a twin lanyard at a time.
- When traversing from one anchor point to another, make sure that the distance between the two anchor points is not more than the length of the lanyard.

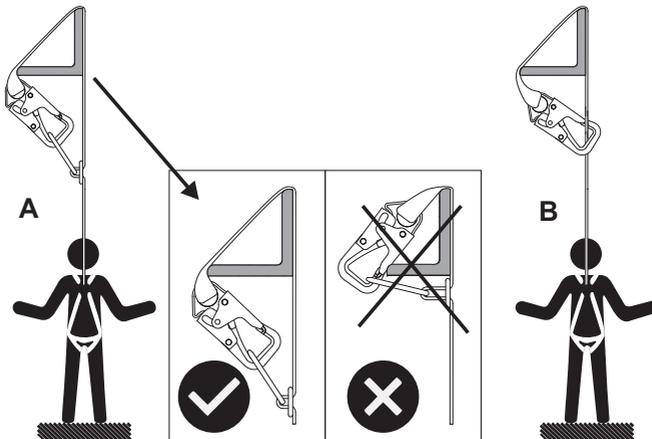
LANYARD KEEPER

- When not in use, unused lanyard legs that are still attached to a full body harness D-ring should not be attached to a work positioning element or any other structural element on the full body harness unless deemed acceptable by the competent person. This is especially important when using some types of “Y” style lanyards, as some load may be transmitted to the user through the unused lanyard leg if it is not able to release from the harness. KStrong harnesses come with lanyard keepers located at the sternal area, specially meant for parking the unused leg of the lanyard. These also reduce tripping and entanglement hazards of the lanyard.



HOW TO USE A TIE-BACK LANYARD

- Regular lanyards should not be used for tie back. Use only KStrong lanyards (Models: UFL201402 and UFL201422) which are specifically meant for tie-back usage. The snap hook at the energy absorber end must be connected to the dorsal D-ring of the user's full body harness. To ensure that the lanyard is properly tied back, make sure to adjust the lanyard as per the diameter of the anchorage, and connect the tie-back snap hook to the D-ring on the lanyard. Ensure that the lanyard is tightly cinched around the anchorage during use.
- Making Connections Using Tie Back Lanyards:**
 - Connecting to webbing, rope lanyard, or tie-back material is only permissible if the instruction manuals for both the lanyard and connector specifically authorize such a connection.
- Anchorage Connection:** The anchorage end of the Lanyard is configured with various Hook, Tie-Back for attaching to anchorage:
 - The accompanying diagram (A) depicts the proper placement of a Tie-Back Lanyard around an angle iron. Ensure the secure fastening of the Tie-Back Lanyard to the anchorage structure according to the provided illustration.
 - Suspend the leg of the Tie-Back Lanyard over the anchorage structure, ensuring there is no twisting of the Lanyard. Arrange the adjustable D-Ring to hang beneath the anchorage structure. Attach the Lanyard Snap Hook to the adjustable D-Ring securely. Confirm that the Lanyard is snugly tightened around the anchorage structure.
 - Ensure that the Snap Hook Gate does not come into contact with the anchorage structure.
 - Using Tie-Back Lanyard that does not have an Adjustable D-Ring:**
 - Tie-back Lanyards without an adjustable D-ring on its webbing (as shown in figure B) shall be directly connected with webbing using the tie-back hook.



ADDITIONAL INFORMATION FOR ENERGY ABSORBING LANYARDS

- Training: It is essential that the users of this type of equipment receive proper training and instructions, including detailed procedures for the safe use of such equipment in their work application. ANSI/ASSE Z359.2, minimum requirements for a comprehensive

managed fall protection program, establishes guidelines and requirements for an employer's managed fall protection program. These include policies, duties and training, fall protection procedures, eliminating and controlling fall hazards, rescue procedures, incident investigations, and evaluating program effectiveness.

- KStrong energy absorbing lanyards meet ANSI/ASSE Z359.13 and are intended to be used with other components of a PFAS and limit maximum arrest forces to 1800 lbs. (8 kN) or less.

MAINTENANCE, SERVICE AND STORAGE

- KStrong energy absorbing lanyards can be cleaned with water and a mild soap solution. However, if a lanyard is excessively dirty, or there is a build-up of material like paint, etc., then this may hamper the lanyard from functioning properly. In severe cases, the webbing may be degraded to a point where it weakens. In such a case, remove the lanyard from service.
- Never use bleach or bleach solutions to clean the lanyard as this may damage the webbing. Always dry the lanyard by hanging to air dry. Do not force dry with heat. The hardware should be wiped off with a clean dry cloth. Contact KStrong with any questions.
- Additional maintenance and servicing procedures must be completed by an authorized service center.
- Store the energy absorbing lanyards in a cool dry clean environment, away from direct sunlight. Avoid areas where they may be in the presence of chemical vapors, heat, excessive moisture, oil or other degrading elements. It is extremely important to thoroughly inspect the lanyards after extended storage.
- Equipment in need of or scheduled for maintenance, must be tagged as "unsuitable" and removed from service.

NOTE

- Do not attempt to disassemble the unit or make repairs to the equipment. Send the equipment back to the manufacturer, or persons or entities authorized in writing by the manufacturer to make repairs to the equipment.

Lifespan: The estimated product Lifespan is 10 years from the date of first use. The following factors can reduce the Lifespan of the product: intense use, contact with chemical substances, especially aggressive environments, extreme temperature exposure, UV exposure, abrasions, cuts, violent impacts, bad use or maintenance.

Disclaimer: Prior to use, the end user, must read and understand the manufacturer's instructions supplied with this product at the time of shipment and seek training from their employer's trained personnel on the proper usage of the product. Manufacturer is not liable or responsible for any loss, damage or injury caused or incurred by any person on grounds of improper usage or installation of this product.



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