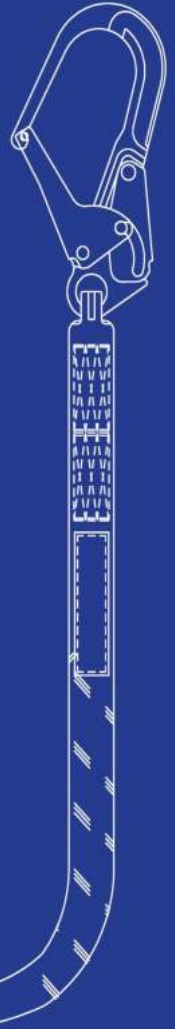


PALMER SAFETY

LANYARD INSTRUCTION MANUAL



THE INSTRUCTIONS APPLIES TO THE FOLLOWING MODELS:

L00046, A00004, C3003, C3002, L414034, L514034, L211111,
L212111 L111411, L114411, L115411, L121133, L121233, L122133,
L122233, L311111, L111111, L112111, L111211, L112211, L151211,
L152211, L114431, L116211, L115211, L111411, L615222, L616222



SHOCK ABSORBING LANYARDS USER 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.*

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This manual must be read and understood in its entirety and used as part of fall protection training program as required by OSHA or any state regularity agency. These instructions are intended to meet the manufacturer instructions as required by ANSI/ASSE Z359.13. The user must fully understand the proper equipment use and limitations.

L00046, A00004, C3003, C3002, L414034, L514034, L211111, L212111 L111411, L114411, L115411, L121133, L121233, L122133, L122233, L311111, L111111, L112111, L111211, L112211, L151211, L152211, L114431, L116211, L115211, L111411, L615222, L616222

THE INSTRUCTIONS APPLIES TO THE FOLLOWING MODELS:

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. 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.

1.0 SPECIFIC INSTRUCTIONS:

1.1 Purpose: Palmer Safety lanyards are to be used as part of a personal restraint, work positioning, suspension, or rescue system. The D-ring extension assembly may also be used as part of a personal fall arrest system only if it is attached to a self-retracting lifeline or an energy absorbing lanyard. Applications include: inspection work, construction, demolition, maintenance, oil production, and confined space rescue.

1.2 Maximum Arrest force and Maximum Elongation/Maximum Deployment distance of personal energy absorber when dynamically tested in accordance with the requirements of ANSI Z359.13 are as follows-

2.0 MATERIAL:

All Palmer Safety Lanyards have been manufactured by using Polyester/Nylon/Aramid/Steel. The Shock absorbing lanyards which have been tested for 6 foot free fall have different colour tracer for identification. As against the above, the lanyards which are tested for 12 foot free fall have different colour tracer for easy distinction. Refer fig.2 for applications.

- A. Restraint:** The lanyard is used to prevent the user from reaching a hazard, such as leading edge work. No vertical free fall possible.
- B. Work Positioning:** The lanyard is used to position or support (with a harness or body belt) the user at the



Figure 1 - Product

work position, such as window washing or steel workers. Two feet maximum free fall.

- C. **Suspension:** The lanyard (generally a Y-type) is used with a chair or other support system to suspend or transport the user vertically, such as in a Easy Seat. No vertical free fall possible.
- D. **Rescue:** The lanyard (generally a Y-type) is used to retrieve a victim in a rescue, such as confined space rescue and retrieval. No vertical free fall possible.
- E. **Fall Arrest:** The D-ring extension is used in-line with a personal fall arrest system to assist in attachment to the system.

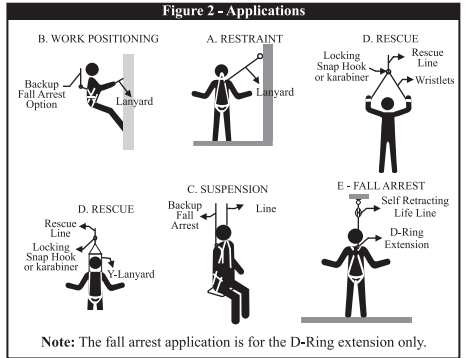
Conditioning:	Ambient Dry	Ambient Wet	Cold Dry	Hot Dry
Personal Energy Absorbers				
6 ft Free Fall				
Max Arrest Force	<=1800 lbs-f	<=1800 lbs-f	<=1800 lbs-f	<=1800 lbs-f
Average Arrest Force	<=900 lbs-f	<=1125 lbs-f	<=1125 lbs-f	<=1125 lbs-f
Max Elongation	48 inches	48 inches	48 inches	48 inches
12 ft Free Fall				
Max Arrest Force	<=1800 lbs-f	<=1800 lbs-f	<=1800 lbs-f	<=1800 lbs-f
Average Arrest Force	<=1350 lbs-f	<=1575 lbs-f	<=1575 lbs-f	<=1575 lbs-f
Max Elongation	60 inches	60 inches	60 inches	60 inches

2.1 Limitations: The following application limitations must be recognized and considered before using this product:

- A. **Capacity:** This equipment is for use by persons with a combined weight (person, clothing, tools, etc.) within the range of 130 lbs - 310 lbs.
- B. **Free Fall:** Lanyards used for work positioning applications must be rigged to minimize any potential vertical free fall. In no case should the potential free fall be greater than two feet. For situations where the free fall may exceed two feet, a backup fall arrest system should be used.

If the D-ring extension assemblies are used in conjunction with a self-retracting lifeline or an energy absorbing lanyard in a fall arrest application, the length of the D-ring extension assembly must be taken into account when calculating the free fall distance and the fall clearance requirements.

- C. **Fall Clearance:** Always ensure fall clearance distance before using lanyards equipped with the Palmer Safety SHOCK Pack. If there is a risk of fall or if the only anchorage is below the attachment points on the harness, it is essential to use a lanyard provided with an energy absorber. Before using a shock-absorbing lanyard, check that there is sufficient fall clearance below the user to prevent any collision with the structure or the ground. See Figure 3.



- D. **Backup Fall Arrest System:** Some applications of this equipment may require the use of a backup fall arrest system; such as when using a Y-lanyard to suspend a person in a Easy Seat.
- E. **Physical and Environmental Hazards:** Use of this equipment in areas with physical or environmental hazards may require additional precautions to reduce the possibility of injury to the user or damage to the equipment. Hazards may include, but are not limited to; heat, chemicals, corrosive environments, high voltage power lines, gases, moving machinery, and sharp edges. Contact Palmer Safety if you have any questions about using this equipment where any physical or environmental hazards exist.
- F. **Training:** This equipment must be used by persons who have been properly trained in its correct application and use.

2.2 Refer to applicable local, state, and federal (OSHA) requirements governing this equipment for more information on lanyards and associated system components.

3.0 SYSTEM REQUIREMENTS :

3.1 **Compatibility Of Components:** Palmer Safety equipment is designed for use with Palmer Safety approved components and subsystems only. Substitutions or replacements made with non-approved components or subsystems may jeopardize compatibility of equipment and may affect the safety and reliability of the complete system.

3.2 **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 Palmer Safety if you have any questions about compatibility. Connectors (hooks, karabiners, and D-rings) must be capable of supporting at least 5,000 lbs. (22.2 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. See Figure 4. Connectors must be compatible in size, shape, and strength. Self-locking snap hooks and karabiners are required by ANSI/ASSE Z359.12 and OSHA.

3.3 **Making Connections:** Only use self-locking snap hooks and karabiners with this equipment. Only use connectors that are suitable to each application. Ensure all connections are compatible in size, shape and strength. Do not use equipment that is not compatible. Ensure all connectors are fully closed and locked. Palmer Safety connectors (snap hooks and karabiners) are designed to be used only as specified in each product's user's instructions. See Figure 5 for inappropriate connections. Palmer Safety snap hooks and karabiners should not be connected:

- A. To a D-ring to which another connector is attached.
- B. In a manner that would result in a load on the gate.
- C. In a false engagement, where features that protrude from the snap hook or karabiner catch on the anchor and without visual confirmation seems to be fully engaged to the anchor point to each other.

NOTE: Large throat opening snap hooks should not be connected to standard size D-rings or similar objects which 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 fixed structural elements such as rebar or cross members that are not shaped in a way that can capture the gate of the hook.

- D. Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allow such a connection).
- E. To any object which is shaped or dimensioned such that the snap hook or karabiner will not close and lock, or that roll-out could occur.
- F. To any object which is shaped or dimensioned such that the snap hook or karabiner will not close and lock, or that roll-out could occur.
- G. Do not use connector on an anchorage object in the manner depicted in picture-G.
- H. If using personal shock pack then always attach a connecting lanyard which will make the entire system length not more than 6ft. Also the connecting lanyard should be ANSI & OSHA compliant and has capacity of 5000lbs at least.

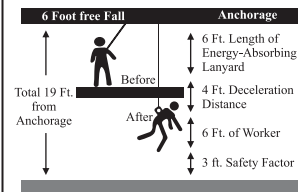
3.4 Max. Arrest Force:-

Maximum arrest force for Y shaped lanyard should be limited to 8kN (1800 lbs).

3.5 Anchorage Strength :

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.

Free Fall Distance + Energy-Absorber Deceleration Distance + Worker height + Safety Factor = 19 Ft. (5.8M)



Free Fall Distance + Energy-Absorber Deceleration Distance + Worker height + Safety Factor = 20 Ft. (6.1M)

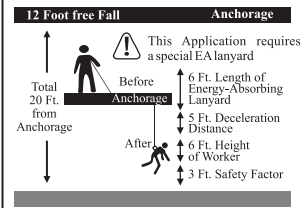


Figure 3

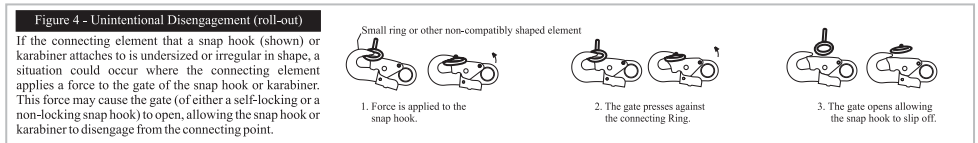
The anchorage strength required is dependent on the application type. The following are guidelines for some application types:

- A. Restraint:** Anchorages must support a minimum of 3,000 lbs. per person attached.
- B. Working Positioning:** Anchorages must support at least 3,000 lbs. per person attached; or be designed, installed, and used under the supervision of a qualified person as part of a complete system, maintaining a safety factor of at least two.
- C. Suspension:** Anchorages must support a minimum of 2,500 lbs. per person attached.
- D. Rescue:** Anchorages must support a minimum of 2,500 lbs. per person attached.

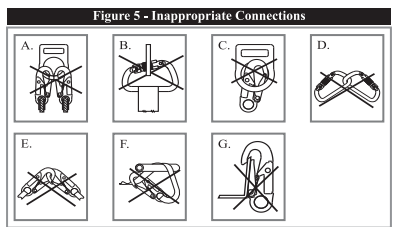
4.0 OPERATION AND USAGE :

WARNING: Do not alter or intentionally misuse this equipment. Consult Palmer Safety when using this equipment in combination with components or subsystems other than those described in this manual. Some subsystem and component combinations may interfere with the operation of this equipment. Use caution when using this equipment around moving machinery, electrical hazards, chemical hazards, and sharp edges.

- 4.1 Before Each Use** of this equipment, carefully inspect it to assure that it is in serviceable condition. Check for worn or damaged parts. Ensure that all hardware is present and secure. Inspect for sharp edges, burrs, cracks, or corrosion. Ensure self-locking snap hooks or karabiners work properly. See Figure 7. Inspect the rope or webbing for wear, cuts, burns, frayed edges, breaks, or other damage. Refer to section 6.0 for further inspection details. Do not use if inspection reveals an unsafe condition.
- 4.2 Plan your restraint, working positioning, suspension, or rescue system before starting your work.** Consider all factors that affect your safety at any time during use. The following list gives some important points to consider

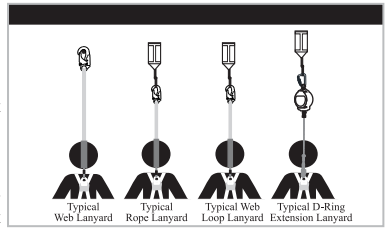


WARNING: Anchorages used for restraint, rescue, or suspension may only be used where there is no possible vertical free fall. These anchorages do not have sufficient strength for work positioning or fall arrest. Do not connect work positioning or fall arrest systems to these anchorages. Anchorages intended for work positioning may not be suitable for use for fall arrest systems (fall greater than two feet) and should not be used for fall arrest unless specifically designed to do so. See Figure 6



when planning your system.

- A. Section 2.B.** For work positioning systems, the anchorage location must be selected to limit the free fall to two feet, to reduce swing fall hazards, and to avoid striking an object during a fall. See Figures 8.
- B. Free Fall:** Depending on the lanyard type and the application, the allowable free fall for 6ft Lanyard, maximum free fall allowed is 6ft and for 12ft Lanyard, maximum 12ft

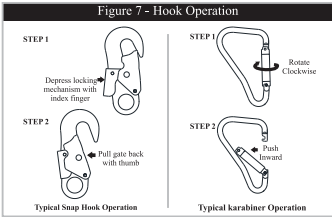


WARNING: Consult your doctor if there is reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a worker's ability to withstand falls. Pregnant women and minors must not use this equipment.

free fall is allowed. See section 1.2.

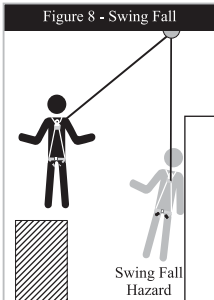
- C. Fall Clearance:** Should a fall occur, there must be sufficient clearance in the fall area to arrest the fall before striking the ground or other objects.

- D. **Backup Fall Arrest:** Some suspension and work positioning applications of this equipment may require a backup fall arrest system and independent fall arrest anchorage. See OSHA guidelines when designing the system.
- E. **Sharp Edges:** Avoid working where the lanyard, subsystem, or other system components will be in contact with, or abrade against unprotected sharp edges. Do not loop the lanyard around small diameter structural members. If working with this equipment near sharp edges is unavoidable, protection against cutting must be provided by using a heavy pad or other means over the exposed sharp edge.
- F. **Rescue:** Should a fall occur, the user (employer) must have a rescue plan and the means at hand to implement it.
- G. **After A Fall:** Any equipment which has been subjected to the forces of arresting a fall must be removed from service immediately and destroyed or contact a factory authorized service center for repair.



5.0 TRAINING:

It is the responsibility of all users of this equipment to understand these instructions, and to be trained in the correct installation, use, and maintenance of this equipment. These individuals must be aware of the consequences of improper installation or use of this equipment. This user manual is not a substitute for a comprehensive training program. Training must be provided on a periodic basis to ensure proficiency of the users.



6.0 INSPECTION

6.1 Frequency:

- Before each use visually inspect the equipment.
- The lanyard must be inspected by a competent person other than the user preferably every six month or at least annually. See section 6.2 for guidelines. Record the results of each inspection in the inspection log

WARNING: Follow the manufacturer's instructions for associated equipment (full body harness, work seat, etc.) used in your restraint, work positioning, suspension, or rescue system.

found in section 10.0.

6.2 Inspection Steps:

6.2.1 Inspection criteria for the equipment shall be set by the user's organization and the inspection criteria shall equal or exceed the criteria established by the standard ANSI/ASSE Z359.13 or the manufacturer's instructions.

IMPORTANT: Training must be conducted without exposing the trainee to a fall hazard. Training should be repeated periodically.

6.2.2 Inspection criteria shall include

- Absence or illegibility of markings.
- Absence of any elements affecting the equipment form, fit or function
- Inspect the lanyard hardware (snap hooks, adjusters, thimbles, spreader bar, etc.). These items must not be damaged, broken, distorted, or have any sharp edges, burrs, cracks, worn parts, or corrosion. Ensure the connecting hooks work properly. The hook gates must move freely and lock upon closing. Ensure the

IMPORTANT: If this equipment has been subjected to forces resulting from the arrest of a fall, it must be immediately removed from service and destroyed or returned to Palmer Safety for possible repair. See section 6.2. for inspecting the equipment.

IMPORTANT: Extreme working conditions (harsh environment, prolonged use, etc.) may require increasing the frequency of inspections.

adjusters, if present, work properly.

- Inspect the webbing. The material must be free of frayed, cut, or broken fibers. Check for tears, abrasions, mold, burns, or discoloration. Inspect the stitching. Check for pulled or cut stitches.
 - The webbing must be free of knots, excessive soiling, heavy paint buildup, and rust staining. Check for chemical or heat damage, indicated by brown, discolored, or brittle areas. Check for ultraviolet damage, indicated by discoloration and the presence of splinters or slivers on the webbing surface. All of these above factors are known to reduce the webbing strength. Damaged or questionable webbing should be replaced.
- 6.3 Inspect the labels. All labels must be present and fully legible. See section 8.0.
- 6.4 Record the inspection date and results on the inspection log. See section 10.0.
- 6.5 If inspection reveals a defective condition, remove the unit from service immediately and destroy, or contact a factory authorized service center for repair.

IMPORTANT: Only Palmer Safety or parties authorized in writing may make repairs to this equipment.

7.0 MAINTENANCE-SERVICING-STORAGE :

- 7.1 Clean the lanyard with water and a mild detergent solution. Wipe the hardware off with a clean, dry cloth, and hang it to air dry. Do not force dry with heat. If you have any questions regarding the cleaning of this equipment, or require more information contact Palmer Safety. An excessive buildup of dirt, paint, etc., may prevent the lanyard from working properly, and in severe cases degrade the webbing to a point where it has become weakened and should be removed from service. If you have any questions concerning the condition of your lanyard, or have any doubt about putting it into service, contact Palmer Safety.
- 7.2 Additional maintenance and servicing procedures (i.e. replacement parts) must be completed by a factory authorized service center. Authorization must be in writing.
- 7.3 Equipment which is in need of or scheduled for maintenance shall be tagged as “unusable” and removed from service.
- 7.4 Store the lanyard in a cool, dry, clean environment out of direct sunlight. Avoid areas where chemical vapors may exist. Thoroughly inspect the lanyard after extended storage.
- 7.5 Inspection & maintenance log.

8.0 LABELING & GENERAL MARKING REQUIREMENTS :

- 8.1 Markings are provided in English
- 8.2 The legibility and attachment of required markings shall endure for the life of the component, subsystem or system being marked.
- 8.3 Equipment shall be marked with the following:
- Part no and model designation
 - Year of manufacture
 - Manufacture name or logo
 - Capacity rating

YR	J	F	M	A	M	J	J	A	S	O	N	D

USER MUST INSPECT BEFORE EACH USE.
Competent Person to inspect and initial
at least every 6 months.
(Date of First Use (please complete)) _____
Service life of product is 5 years from Date of First Use

- Serial number
- Standard number
- Manufacturer's instructions for the use of equipment and warnings to be followed to avoid contact with sharp edges, abrasive surfaces and need to make only compatible connections.

CHECK CARD

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:

INSPECTION DATE:	INSPECTIONS ITEMS NOTED	CORRECTIVE ACTION	MAINTENANCE PERFORMED
Approved by:			
Approved by:			
Approved by:			
Approved by:			
Approved by:			
Approved by:			
Approved by:			
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Approved by:			
Approved by:			



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