

9.0 INSPECTION AND MAINTENANCE LOG:

EQUIPMENT RECORD				
Product:				
Model & Type/Identification		Trade Name	Identification Number	
Manufacturer		Address	Tel, fax, email and website	
Year of manufacture/life expiry date		Purchase date	Date first put into use	
Other relevant information (e.g. document number)				
PERIODIC EXAMINATION AND REPAIR HISTORY				
Date	Reason for entry (periodic examination or repair)	Defects noted, repairs carried out and other relevant information	Name and signature of competent person	Periodic examination next due date



HORIZONTAL LIFELINE SYSTEM (Ref. A400160)
INSTRUCTION MANUAL

This manual is intended to meet the Manufacturer's Instructions as recommended by OSHA and should be used as part of an employee training program.

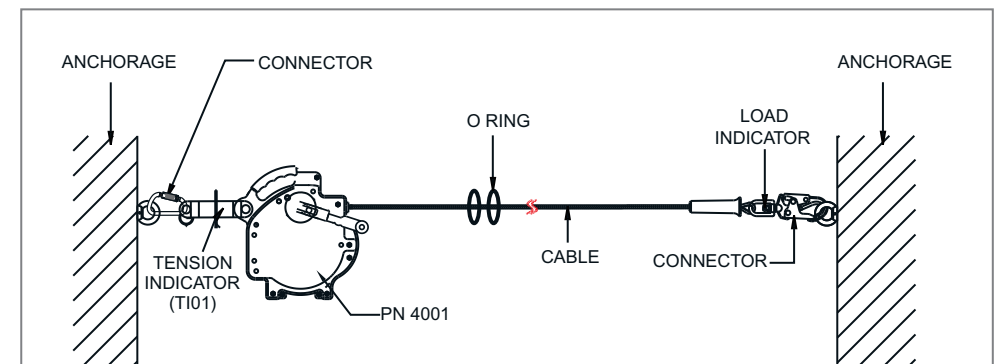
GENERAL WORK PRODUCTS LLC 4912 MEHURIN STREET JEFFERSON, LA 70121

Warning: This product is part of a fall arrest 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 user must read and follow the manufacturer's instructions for each component or part of the complete system. 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.

Important: If you have questions on the use, care, or suitability of this equipment for your application, contact Palmer Safety.

Important: Before using this equipment, record the product identification information from the ID label into the inspection and maintenance log in section 9 of this manual.

Figure 1 - Typical Palmer Safety Horizontal Lifeline System Configuration



DESCRIPTION:

The Palmer Safety Horizontal Lifeline System is a temporary horizontal lifeline system that retracts into a housing for easy storage and portability.

1.0 APPLICATIONS:

1.1 PURPOSE: The Palmer Safety Horizontal Lifeline System is designed for use as an anchoring means for one or two personal fall arrest systems (PFAS). Use the Horizontal Lifeline (HLL) where horizontal mobility and fall protection are required.

For Further Information Contact:

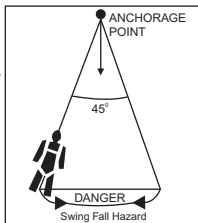


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1.2 LIMITATIONS: Consider the following application limitations before using this equipment:

- A. Horizontal Lifeline Span:** The maximum horizontal lifeline span length is 60 feet (18.3 m), see Figure 1. The span length must be reduced when clearance is limited. See section 3.2 for clearance information.
- B. Capacity:** For a single span use, the maximum capacity of the Horizontal Lifeline System is two persons. The maximum weight of each person, including tools and clothing, is 140 kg.
- C. Body Support:** The Palmer Safety Horizontal Lifeline must only be used with personal fall arrest systems incorporating a full body harness.
- D. Fall Clearance:** There must be sufficient clearance below the worker to arrest a fall before striking the lower level or obstruction.
- E. Free Fall:** Rig and use the personal fall arrest system such that the maximum potential free fall does not exceed government regulatory and subsystem manufacturer's requirements. See section 3.0 and subsystem manufacturer's instructions for more information.

F. Swing Falls: Swing falls occur when the anchorage point is not directly overhead. The force of striking an object in a swing fall may cause serious injury or death. Minimize swing falls by working as directly below the anchorage point as possible. Do not permit a swing fall if injury could occur. Swing falls will significantly increase the clearance required when a self retracting lifeline or other variable length connecting subsystem is used. If a swing fall situation exists in your application, contact Palmer Safety before proceeding.



- G. Connecting Subsystem:** Each person's connecting subsystem must limit fall arrest forces to 900 lbs. (4.0 kN) or less.
- H. Anchorages:** The Palmer Safety Horizontal Lifeline System must be installed on anchorages having minimum strength of 12 kN
- I. Environmental Hazards:** Use of this equipment in areas where physical or environmental hazards are present 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; high heat, caustic chemicals, corrosive environments, high voltage power lines, explosive or toxic gases, moving machinery, or sharp edges. Contact Palmer Safety if you have questions about using this equipment where physical or environmental hazards exist.
- J. Training:** This equipment must be installed and used by persons trained in its correct application and use.

1.3 APPLICABLE STANDARDS: EN 795:2012 type C & TS16415:2013 type C Refer to national standards, including local, state, and federal (OSHA) requirements for more information on work positioning systems and associated components.

2.0 SYSTEM REQUIREMENTS:

2.1 COMPATIBILITY OF CONNECTORS: 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 effect the safety and reliability of the complete system.

2.2 COMPATIBILITY: 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.

- Annually:** This equipment must be inspected according to steps listed in section 5.4 by a competent person, other than the user, at least annually. Record the results of each inspection in the inspection and maintenance log in section 9.

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

5.6 If inspection reveals an unsafe or defective condition, remove the HLL from service and contact an authorized service center for repair

6.0 MAINTENANCE, SERVICING, STORAGE

- 6.1** Periodically clean the exterior of the unit with water and mild soap solution. Position the unit so excess water can drain out. Clean labels as required. Wipe off hardware with a clean, dry cloth.
- 6.2** Clean the lifeline with water and mild soap solution. Rinse and thoroughly air dry. Do not force dry with heat. An excessive buildup of dirt, paint, etc., may prevent the lifeline from fully retracting.

Warning: If the lifeline contacts acids, remove unit from service and wash with water and mild soap solution. Inspect unit before returning to service.

- 6.3** Lifeline replacement and additional maintenance and servicing procedures must be completed by an authorized service center. Do not lubricate any parts. Do not disassemble the unit. See section 5 for inspection frequency.
- 6.4** Clean and store body support and associated system components according to manufacturer's instructions.
- 6.5** Store the unit in a cool, dry, clean environment, out of direct sunlight. Avoid areas where chemical vapors may exist. Inspect the unit after extended storage.
- 6.6 USER EQUIPMENT:** Maintain, service, and store each piece of user equipment according to its manufacturer's instructions.

7.0 SPECIFICATIONS:

7.1 MATERIALS:

- Lifeline: Wire Rope, 6 mm diameter, 7x19 galvanized steel
- Karabiners: Zinc plated high tensile alloy steel, (23 kN) minimum tensile strength
- Thimbles: Galvanized steel
- Ferrules: Aluminum

7.2 LIFESPAN: The estimated product Lifespan is 10 years from the date of manufacturing. The following factors can reduce the Lifespan of the product : intense use, contact with chemical substances, specially aggressive environment, extreme temperature exposure, UV exposure, abrasion, cuts, violent impacts, bad use or maintenance.

8.0 LABELING:

8.1 The following labels must be present and fully legible:



the anchorages. Retract the lifeline back into the housing by connecting the crank handle more likely to the winch shaft and rotate counterclockwise. Ensure there are no knots or kinks in the lifeline as you retract it.

4.0 TRAINING

- 4.1** It is the responsibility of all users of this equipment to understand these instructions, and are 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.

WARNING: *Both ends of the lifeline must be securely attached to appropriate anchors when in use. Never attach the end of the lifeline to a harness to use it in the manner of a winch or SRL.*

5.0 INSPECTION:

- 5.1 BEFORE EACH INSTALLATION:** Inspect the system components according to these or other manufacturer's instructions. System components must be formally inspected by a competent person (other than the user) at least annually. Formal inspections should concentrate on visible signs of deterioration or damage to the system components. Items found to be defective must be replaced. Do not use components if inspection reveals an unsafe or defective condition. Record the results of each formal inspection in the Inspection and Maintenance log in section 9.

- 5.2 INSTALLED SYSTEMS:** An inspection of the HLL system by a competent person must be completed after the system is installed. The system must be periodically inspected by a competent person when left installed for an extended period, and prior to each day's use. Periodic inspections should be performed at least monthly, or more frequently when site conditions and use warrant. Inspections of installed systems should include the inspection steps listed in section 5.4.

5.3 BEFORE SYSTEM USE:

- Step 1:** Inspect all screws, bolts and nuts. Ensure they are securely attached and tight. Check to see if any bolts, nuts or other parts are missing, or have been substituted or altered in any way. Inspect covers, housings, guards, etc. Ensure they are free of cracks, dents, or other damage.
- Step 2:** Inspect metal components for rust or corrosion that may affect their strength or operation.
- Step 3:** Inspect the wire rope for rust, corrosion, broken wires, or other obvious faults. Inspect the synthetic rope for burnt, broken threads, or other obvious faults. Inspect all karabiners and connectors securing the HLL assembly to ensure they are present and properly installed. Inspect the sleeves at the end of the lifeline for damage such as cracks, dents or distortion.
- Step 4:** Inspect the impact indicator at the end of the lifeline. If the pin is broken, the system has been exposed to an impact force. The system must not be used if the indicator is broken. See Figure 12.
- Step 5:** Pull sharply on the lifeline close to the device end to ensure that the lifeline is secured.
- Step 6:** Repeat step 4 of section 3.2 of this manual to ensure that the lifeline is under the correct tension. If not necessary, do not apply any extra-tension on the lifeline during this operation, just make sure that the crank handle "clicks".
- Step 7:** Inspect system labels. The labels must be present and fully legible. Replace labels if missing or illegible.

Important: *If this equipment is subjected to the forces of a fall arrest, it must be removed from service and destroyed.*

- 5.4** If inspection reveals an unsafe or defective condition, remove unit from service.

- 5.5 USER EQUIPMENT:** Inspect harnesses and energy absorbing lanyards or SRL's used with the HLL system according to manufacturer's instructions.

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. Connectors must be compatible in size, shape, and strength.

- 2.3 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 instructions.

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.*

- C.** In a false engagement, where features that protrude from the snap hook or carabiner catch on the anchor, and without visual confirmation seems to be fully engaged to the anchor point.
- D.** To each other.
- E.** Directly to webbing or rope lanyard or tie-back (unless the manufacturer's instructions for both the lanyard and connector specifically allows such a connection).
- F.** To any object which is shaped or dimensioned such that the snap hook or karabiners will not close and lock, or that roll-out could occur.

2.4 ANCHORAGE STRENGTH:

Structural anchorage points must be rigid, and capable of supporting at least 12 kN along the axis of the horizontal lifeline.

Warning: *Anchorage must be rigid. Large deformations of the anchorage will affect system performance, and may increase the required fall clearance below the system, which could result in serious injury or death.*

- 2.5 CONNECTING SUBSYSTEM:** The connecting subsystem is the portion of the personal fall arrest system that is used to connect between the horizontal lifeline subsystem and harness fall arrest attachment element. The connecting subsystem must limit forces applied to the horizontal lifeline to 900 lbs. (4.0 kN) or less.

3.0 OPERATION AND USE

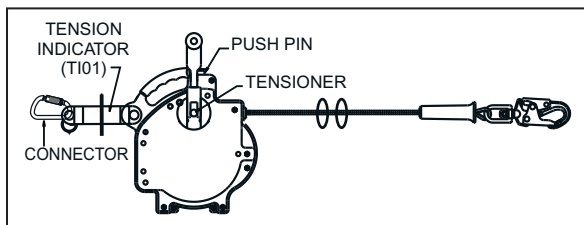
Warning: *Do not alter or intentionally misuse this equipment. Use caution when using this equipment around moving machinery, electrical and chemical hazards, and sharp edges.*

Warning: *Consult your doctor if there is reason to doubt your fitness to absorb the impact from a fall arrest. Age and fitness can affect your ability to withstand fall arrest forces. Pregnant women and minors must not use this system.*

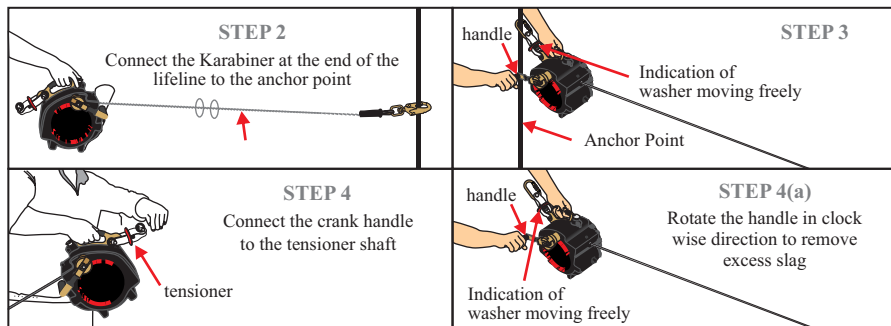
- 3.1 BEFORE EACH USE:** inspect this equipment according to steps listed in section 5.4. Do not use this equipment if inspection reveals an unsafe or defective condition. Plan your use of the fall protection system prior to exposing workers to dangerous situations. Consider all factors affecting your safety before using this system.

- A. READ AND UNDERSTAND all manufacturer's instructions for each component of the personal fall arrest system. All Palmer Safety harnesses and connecting subsystems are supplied with separate user instructions. Keep all instructions for future reference.
- B. Review sections 1 and 2 to ensure system limitations and other requirements have been adhered to. Review applicable information regarding system clearance criteria, and ensure changes have not been made to the system installation (i.e. length), or occurred at the job site, that could affect the required fall clearance. Do not use the system if changes are required.

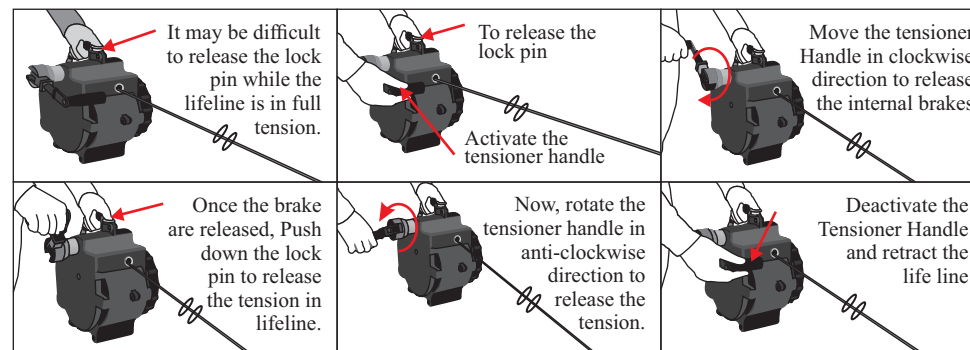
3.2 SYSTEM INSTALLATION: Figure 1 shows typical horizontal lifeline system installations. When using an energy absorbing lanyard to connect to the system, the end anchorages must be located at a height which will limit the free fall to 6 ft. (1.8 m). When using a self retracting lifeline (SRL) to connect to the system, the end anchorages must be located above the user. The SRL, when fully retracted, must be above the harness attachment level. The horizontal lifeline system should be positioned at a level that will minimize free fall while allowing ease of use. The horizontal lifeline should be positioned near the work location to minimize swing fall hazards. The connecting subsystem length should be kept as short as possible to reduce the potential free fall and required clearance distance. Both anchorages must be installed at approximately the same elevation, so that the horizontal lifeline system is not sloped more than 15°.



- Step 1:** Determine the locations of the end anchorages and evaluate their strengths in accordance with section 2.4. Determine the span length and evaluate the required clearance.
- Step 2:** Connect the termination end of lifeline to the suitable Anchorage Point and Press on the Push pin on top of the housing and hold it down to pay out the required amount of lifeline by pulling out the line. Make sure the crank handle is not connected to any output during this operation. When the Push pin is released, it will spring back up and the lifeline will lock in place. If the lifeline does not lock, do not use. The unit must be returned to an authorized dealer for service.
- Step 3:** Now Connect the lifeline housing to a suitable anchorage point
- Step 4:** Connect the crank handle to the tensioner shaft and remove excess slack by rotating clockwise. The lifeline must be tensioned until a red washer is freely moving.



3.3 SYSTEM UNINSTALLATION:



3.4 OPERATION:

- A. **Personal Fall Arrest System Components:** Inspect and don a full body harness according to the manufacturer's instructions. Attach the connecting subsystem (energy absorbing lanyard or SRL) to the dorsal connection on the harness.
- B. **Connecting to the HLL System:** Approach the work area using the appropriate access equipment. Connect the personal fall arrest system to the HLL. Connectors must meet all compatibility and strength requirements.

Warning: Both ends of the lifeline must be securely attached to appropriate anchors when in use. Never attach the end of the lifeline to a harness to use it in the manner of a winch or SRL.

- C. **Hazardous Situations:** Do not take unnecessary risks, such as jumping or reaching too far from the edge of the working surface. Do not allow the connecting subsystem to pass under arms or between feet. To avoid inadequate clearance, do not climb above the HLL. To avoid swing fall hazards, do not work too far from either side of the HLL.
 - D. **Two Persons Connected to the HLL:** When a person falls while connected to the HLL, the system will deflect. If two persons are connected to the same HLL, and one person falls, the second person may be pulled off the working surface due to deflection. The potential for the second person falling increases as the HLL span length increases. The use of independent HLL systems for each person, or shorter span length, is recommended to minimize the potential of the second person falling.
 - E. **Free Fall:** The personal fall arrest system must be rigged to limit free falls to 6 ft. (1.8 m) or less when using an energy absorbing lanyard, or such that the SRL is overhead and without slack, according to OSHA requirements.
 - F. **Sharp Edges:** Avoid working where the connecting subsystem or other system components will be in contact with, or abrade against, unprotected sharp edges. If working around sharp edges is unavoidable, a protective cover must be used to prevent cutting of the PFAS components.
 - G. **In the Event of a Fall:** The responsible party must have a rescue plan and the ability to implement a rescue. Tolerable suspension time in a full body harness is limited, so a prompt rescue is critical.
 - H. **Rescue:** With the number of potential scenarios for a worker requiring rescue, an on- site rescue team is beneficial. The rescue team is given the tools, both in equipment and techniques, so it can perform a successful rescue. Training should be provided on a periodic basis to ensure rescuers proficiency.
- 3.5 SYSTEM REMOVAL:** When no longer required, the HLL system should be removed from the job site. To slacken the HLL, connect the crank to the tensioner shaft and rotate clockwise for about 20°, press the Push pin simultaneously and allow the crank to rotate counterclockwise. Disconnect the HLL system from