OCCUPATIONAL PROTECTIVE EQUIPMENT CATALOG

For Professionals... Since 1857®

KLEIN TOOLS®

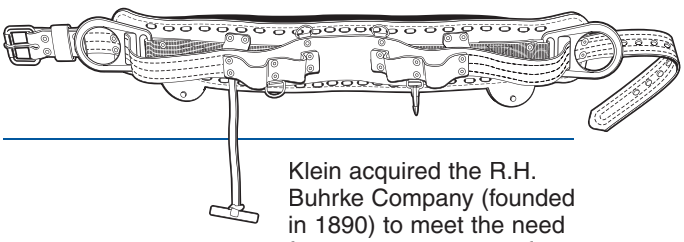
Company History

Klein Tools was founded in 1857 by an industrious German immigrant, Mathias Klein, who began in the hand tool business when a broken side-cutting pliers was brought to his forge shop by a telegraph lineman. Mathias repaired the pliers by forging and finishing a new half for the tool and riveting it to the old half. Soon the lineman returned because the other original half of the pliers had broken and needed replacement. Mathias forged and finished the second half of the pliers and riveted it to the other replacement half – creating the first complete Klein pliers.

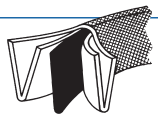
To this day, Klein Tools is proudly owned and managed by the Klein family. Through years of hard work and dedication, Klein has earned the reputation of supplying only the finest quality products for professional hand tool and occupational protective equipment users.

The Growth of Klein Tools Occupational Protective Equipment

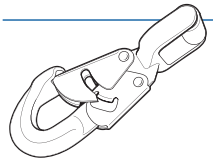
Klein's involvement in the area of OPE dates back to the last century when the first telegraph lines were strung. In addition to providing linemen of that time the finest hand tools available, Klein produced the belts, pole straps, and climbing equipment they required to do their jobs. In the present day, the development of innovative products and well-planned acquisitions has made Klein Tools the brand professionals rely on to get the job done right.



Klein acquired the R.H. Buhrke Company (founded in 1890) to meet the need for an expanded line of OPE and leather/canvas products. This acquisition provided Klein with a more comprehensive selection of occupational protective equipment.



Klein-Kord® is a product innovation Klein created to help make positioning straps, body belts, and climber straps exceptionally long-lasting and strong.



Klein-Lok® locking snap-hooks are a product innovation designed for fall protection needs.

Klein's reputation as a leading producer of professional-quality products is global. Klein Tools products are available worldwide through a well-established network of agents and distributors who stock what is needed for their particular markets.

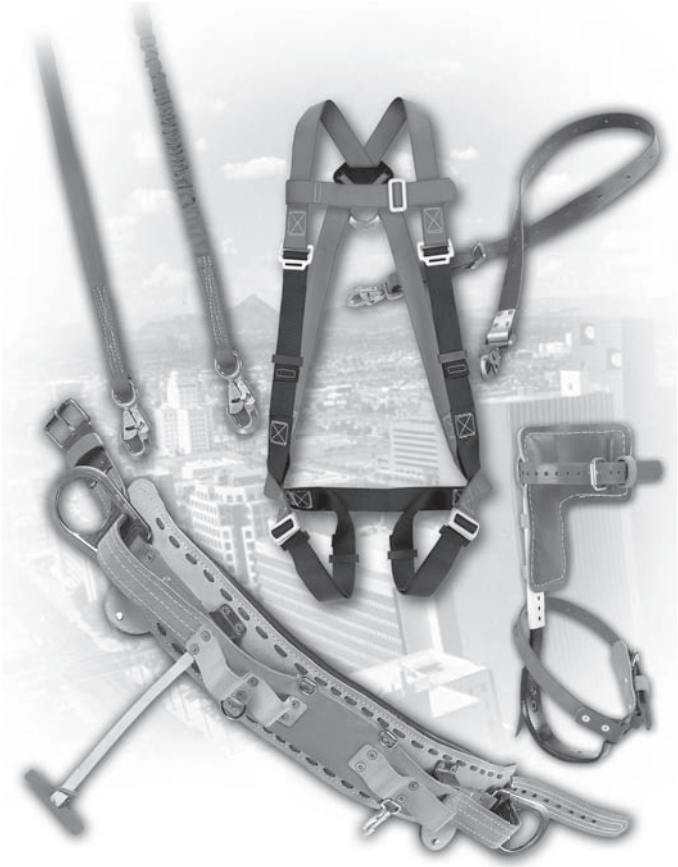
The Klein Difference

Not all professional equipment and hand tools are the same. With Klein Tools, there really is a difference – a difference you can see and feel every time you use them.

What sets Klein apart from other manufacturers are the extra steps we take in order to make our products exceptional in quality and performance. Forged steel D-rings, testing products to meet OSHA regulations, and using the highest-quality U.S. materials are a few of the reasons why professional tool and occupational protective equipment users have and continue to prefer the Klein brand for nearly a century-and-a-half.

In addition, our dedication to quality products makes Klein Tools one of the leading brands used in the maintenance, electrical, construction, and industrial trades. Loyalty to Klein is strong because of Klein's commitment to professionals, and the extra steps Klein takes in making its products exceptional.

The Klein Difference. It's what makes Klein Tools the brand you can depend on.



Occupational Protective Equipment

Introduction

One of the leading occupational dangers in today's workforce is the risk of death or injury due to falls. Falls from ladders, scaffolds, buildings, or other elevations have become the second most significant cause of death in the workplace. (Falls are the number one cause of death in the construction industry.) In addition, falls in the workplace are the third leading cause of injury involving days away from work.

Work-Related Deaths and Injuries by Type of Accident*

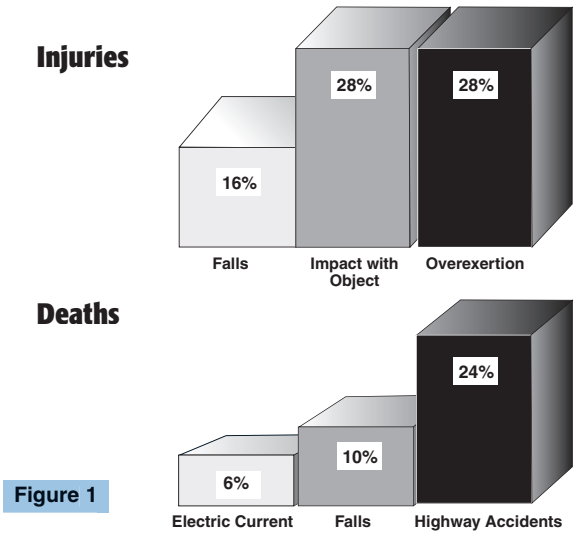


Figure 1

Figure 1: The three major causes of work-related deaths and injuries among American workers are illustrated above. For both number of deaths and injuries, the three causes shown are significantly greater than any other causes. Falls are the second largest cause of deaths and the third largest cause of injuries.

*Source: Bureau of Labor Statistics, U.S. Department of Labor, 1998.

This catalog is a guide to the full line of **Occupational Protective Equipment (OPE)** manufactured by Klein Tools, Inc. to help safeguard professionals in a wide variety of work situations and locations. This specialized OPE catalog is directed to industries concerned with personal occupational protection.

Products in this catalog include the following categories:

- Harnesses
- Connecting Devices
- Lineman's Climbing Equipment
- Pole and Tree Climbers

It is important to note that OPE equipment must be used only for the personal-protective purpose for which it is designed. Misuse can result in serious personal injury or death.

Figure 2

Klein OPE Application Symbols

Klein has developed five easy-to-identify graphic OPE symbols shown in Figure 2 for use throughout the industry. These symbols shown above help to quickly identify the intended use for each OPE item and its function. Each OPE product will have one or more symbols within the product listing as a guide to selection.

Klein components should **NOT** be interchanged with components made by other manufacturers because Klein cannot guarantee that components made by others are properly designed or are free of defects in materials or workmanship.

Klein also publishes a general catalog of hand tools and related equipment used by professional tradesmen in a broad range of industries. The Klein Tools general catalog is available through your local Klein distributor. For additional information regarding OPE equipment, call Klein Tools at 1-800-553-4676.

Klein is a member of major professional trade associations and takes an active role in distributing and promoting the proper use of occupational protective equipment.

WARNING Read, understand, and follow all instructions, cautions, and warnings attached to and/or packed with all occupational protective equipment before each use. Warning tags for the OPE equipment described in this catalog are reproduced in the appendix.

Government Regulations

The major U.S. governmental agency regulating the use of OPE equipment is the Occupational Safety and Health Administration (OSHA). There are other federal, state, or local regulations that may also apply. This, along with so many different industries, applications, and the fact that there are specific requirements, makes it virtually impossible to discuss specifics about OPE systems without knowing all the job-site facts and application limitations.

Know the appropriate regulations. Learn about the types of protective equipment and systems which must be used on the job. OSHA requires employers to know and follow all the OSHA regulations pertaining to their industry and to provide a workplace free from hazards that might cause injuries. OSHA provides consultation assistance, at no charge, to employers who need assistance in training and implementation. For an example of current OSHA regulations pertaining to fall-arrest, as of January, 1995, see Figure 3. **If you have any questions or any doubt as to what regulations apply to you or what safety equipment is required, contact your regional OSHA office.**

Figure 3

OSHA Regulations For Personal Fall Arrest Equipment Listed By Industry and Task

Industry	Pertinent To (task)	OSHA Standard(s)
General Industry OSHA Part 1910	Walking-Working Surfaces OSHA Subpart D	See 1910.27 Fixed Ladders and 1910.28 Safety Requirements for Scaffolding
General Industry OSHA Part 1910	Powered Platforms Manlifts and Vehicle Mounted Work Platforms OSHA Subpart F	See 1910.66 Powered Platforms for Building Maintenance and 1910.67 Vehicle Mounted Elevating and Rotating Work Platforms
General Industry OSHA Part 1910	General Environmental Controls OSHA Subpart J	See 1910.146 Permit Required Confined Spaces
General Industry OSHA Part 1910	Special Industries OSHA Subpart R	See 1910.268 Telecommunications and 1910.269 Electric Power Generation, Transmission and Distribution
Shipyard Equipment OSHA Part 1915	Shipbuilding, Repairing and Shipbreaking Operations	See 1915.159 Personal Fall-Protection Equipment
Marine Terminals OSHA Part 1917	Terminal Facilities OSHA Subpart F	See 1917.118 Fixed Ladders
Construction OSHA Part 1926	Scaffolding OSHA Subpart L	See 1926.451 Scaffolding
Construction OSHA Part 1926	Fall Protection OSHA Subpart M	See 1926.501 Duty to Have Fall Protection and 1926.502 Fall-Protection Systems Criteria and Practices
Construction OSHA Part 1926	Cranes, Derricks, Hoists, Elevators and Conveyors OSHA Subpart N	See 1926.550 Cranes and Derricks
Construction OSHA Part 1926	Excavations OSHA Subpart P	See 1926.651 Specific Excavation Requirements
Construction OSHA Part 1926	Steel Erection OSHA Subpart R	See 1926.750 Flooring Requirements
Construction OSHA Part 1926	Power Transmission and Distribution OSHA Subpart V	See 1926.959 Lineman's Body Belts, Safety Straps and Lanyards
Construction OSHA Part 1926	Stairways and Ladders OSHA Subpart X	See 1926.1051 General Requirements

Although the above OSHA regulations, in force as of January, 1995, generally require workers to utilize fall protection when exposed to a fall of six feet or more, Klein strongly recommends using fall-arrest protection when working at any elevated position.

⚠WARNING Klein components should **NOT** be interchanged with components made by other manufacturers because Klein cannot guarantee that components made by others are properly designed or are free of defects in materials or workmanship.

OPE Systems and the A-B-C Rule

An OPE system is more than just a combination of equipment. In order to function properly, the system must be custom-designed for the specific application, environment, and work-site requirements. A simple rule to follow when assembling an OPE system is the **A-B-C Rule**. The system must contain all of the following components: **(A)** anchorage, **(B)** body wear, and **(C)** connecting device.

(A) Anchorage. OSHA defines anchorage as "a secure point of attachment for lifelines, lanyards, or deceleration devices." A proper choice of anchorage is determined by the type of fall protection needed (i.e., fall-arrest, or fall-arrest combined with positioning, suspension, retrieval, and/or ladder-climbing functions). The anchorage must be identified and evaluated by a competent person, as defined by OSHA, at the job-site before the appropriate OPE equipment can be selected. Typical anchorages could be an I-beam or other structural members.

(B) Body Wear. OPE harnesses and belts are the second component of an OPE system. In order to select the right harness for the job-site requirements, a competent person, as defined by OSHA, must determine the type of fall protection needed, i.e., fall-arrest, or fall-arrest combined with positioning, suspension, retrieval, and/or ladder-climbing capabilities. Whenever there is a risk of a fall, fall-arrest protection must be used. The use of a body belt for fall-arrest was strictly prohibited by OSHA.

(C) Connecting Device. The third component of an OPE system is the connecting device. Examples include lanyards, rope grabs, and deceleration devices. As with anchorages and body wear, the choice of a proper connecting device is dictated by other system components and job-site requirements. Only use connecting devices equipped with locking snap-hooks. After December 31, 1997, the use of connecting devices without locking snap-hooks for use in any fall-arrest system is strictly prohibited by OSHA.

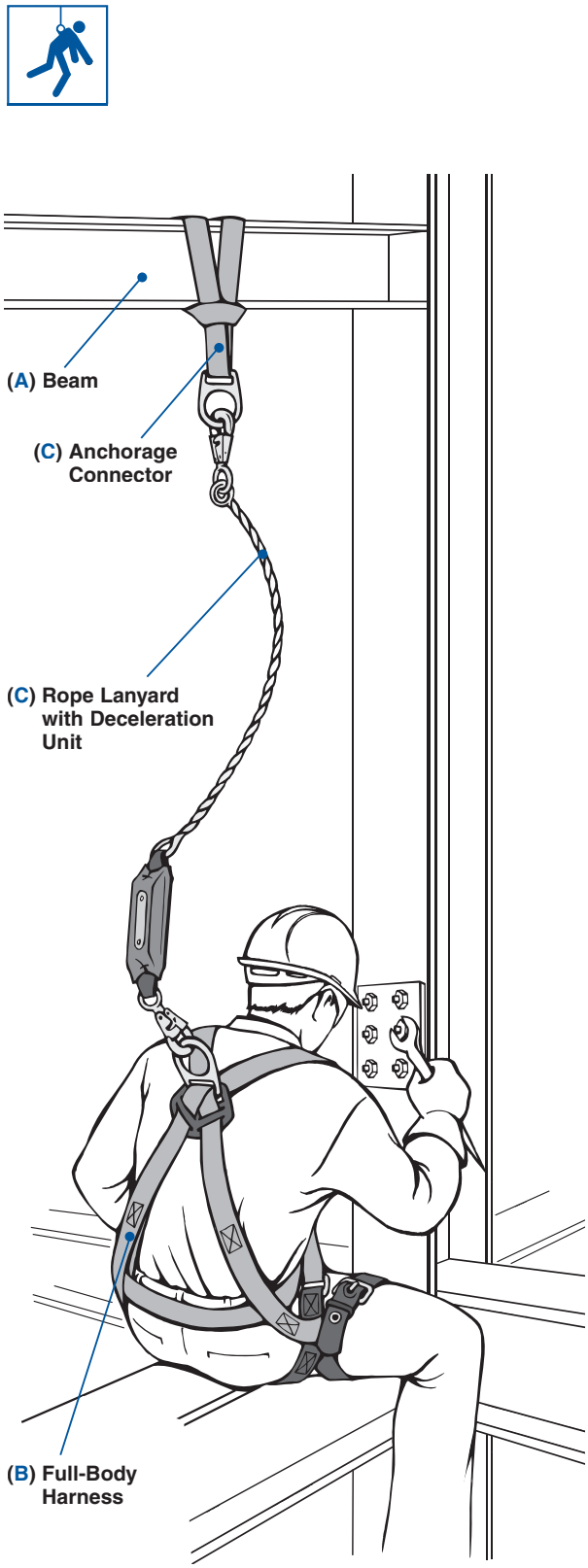


Figure 4

Remember the A-B-C Rule:

To be complete, an OPE system must include all the components of the A-B-C Rule (anchorage, body wear and connecting device). Some systems may include multiple pieces of OPE equipment for a component. The proper choice of equipment depends on specific job-site facts and application limitations. A competent person, as defined by OSHA, must make these equipment decisions.

How OPE Systems Are Used

Klein produces personal fall-protection equipment in five OPE system categories. Each type of system and its associated equipment is designed to help protect against different kinds of risks. The risks which require the use of OPE systems and the proper use of OPE equipment must be fully understood. OPE equipment and systems must be used only for the specific purpose for which they are designed and intended. The following information introduces the basic kinds of OPE systems: fall-arrest and fall-arrest combined with positioning, suspension, retrieval, and/or ladder-climbing functions.

Personal Fall-Arrest System

A **personal fall-arrest system** is required if there is any risk of a worker falling from an elevated position (generally, six feet or more). **NOTE: Know the specific OSHA regulations which pertain to your industry.** OSHA defines a personal fall-arrest system as "a system used to arrest an employee in a fall from a working level." It consists of **(A)** a fall-arrest anchorage capable of supporting a minimum of 5,000 lbs. (22.2 kN) per attached worker and independent of the worker's support; **(B)** a full-body harness designed to distribute the fall-arrest forces over thighs, pelvis, waist, chest and shoulders and equipped with a circle D-ring at the back for attaching a fall-arrest connecting device; and **(C)** a fall-arrest connecting device, such as a lanyard, deceleration device, lifeline, or a combination of these devices equipped with locking snap-hooks. A personal fall-arrest system is a passive protection system which only comes into service when a fall occurs, similar to a seat belt in a car which restrains the wearer only upon impact. For example, in Figure 4, a fall-arrest system would be used by an ironworker bolting steel beams together for a skyscraper. Following the **A-B-C RULE,** the OPE system includes: **(A)** beam, **(B)** full-body harness, and **(C)** choker anchorage connector and lanyard with a deceleration unit.The outlined area in Figure 5 shows the impact-force distribution for a typical full-body, fall-arrest harness. OSHA requires that impact force in a fall NOT exceed an 1,800 lb. (8 kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. To stay under the 1,800 lb.
(8 kN) limit, minimize slack in the fall-arrest connecting device. The use of a deceleration unit will also reduce impact forces.

Remember, a personal fall-arrest system only becomes active in a fall. If equipment is required to help hold or place a worker in position, a separate positioning or suspension system must be used in addition to the fall-arrest system. A personal fall-arrest system is designed only to aid a worker once a fall occurs, and must be used whenever there is danger of falling.

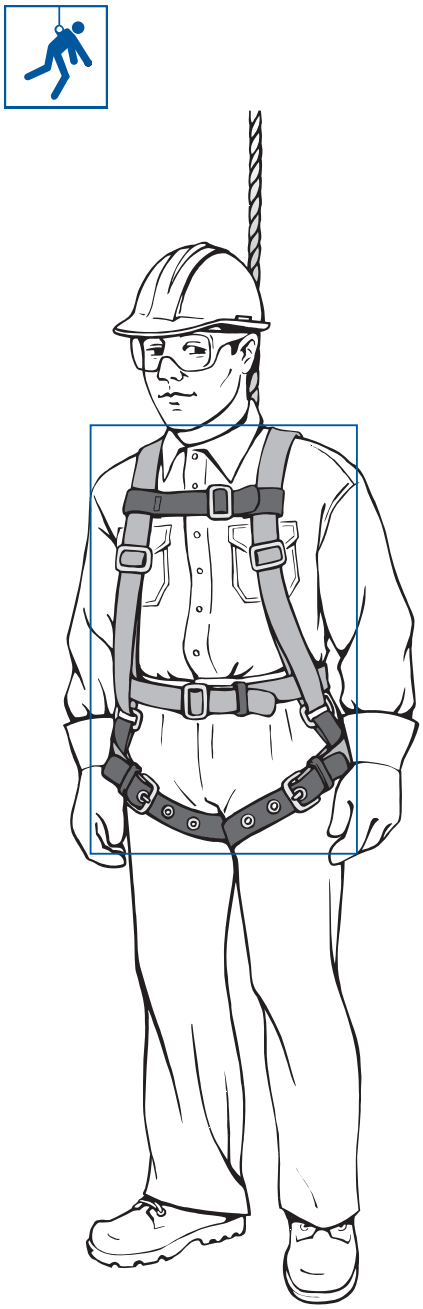


Figure 5

How OPE Systems Are Used

Personal Positioning System

A personal positioning system is required if a worker must be held in place while his hands are free to work. OSHA defines a positioning device system as ". . . a body belt or harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning." If there is risk of a worker falling from an elevated position, (generally, six feet or more), personal fall-arrest protection must also be used.

The worker depicted in Figure 6 is utilizing both a personal positioning system and a personal fall-arrest system. Each system has its own **A-B-C** components.

Since the worker's job requires that both hands be free, he is using a *personal positioning system*. The **(A)** component of the personal positioning system is the vertical support that serves as a positioning anchorage. Positioning anchorages must be capable of supporting at least twice the potential impact load of a worker's fall or 3,000 lbs. (13.3 kN), whichever is greater. The **(B)** component of the personal positioning system is the worker's full-body harness which is equipped with a D-ring at each side for attaching a positioning connecting device. The **(C)** component of the personal positioning system is the positioning lanyard which is equipped with a locking snap-hook at each end. Positioning connecting devices must be rigged so that a worker cannot free fall more than 2 feet.

Also, since the worker is at risk of falling, he is also using a *personal fall-arrest system* as described earlier in this section. For the fall-arrest system, the **(A)** component is the pole structure, the **(B)** component is the full-body harness with rear D-ring, and the **(C)** component is the rope lanyard with attached deceleration unit.

In some cases, fall-arrest protection is not possible when using a personal positioning system. For example, a worker building highway pillars or similar structures may have no overhead anchorages available. In these situations, alternative fall-arrest protection devices, such as safety nets, must be used.

A positioning system is an active system and is in use whenever the worker leans back. The positioning body wear provides solid midriff support, leaving the worker's hands free to get the job done.

Remember, a positioning system is only designed to help hold a worker in place while leaving his hands free to work. When used in conjunction with a fixed anchorage, the positioning system can help prevent a fall. However, positioning equipment is NEVER a replacement for fall-arrest protection. A positioning system must be used only for the positioning assistance for which it was designed. It must not be relied upon to provide fall-arrest or any other kind of protection. Always use the independent fall-arrest features of a positioning harness. *NOTE: Klein positioning harnesses provide a rear D-ring which must be used for fall-arrest protection.*

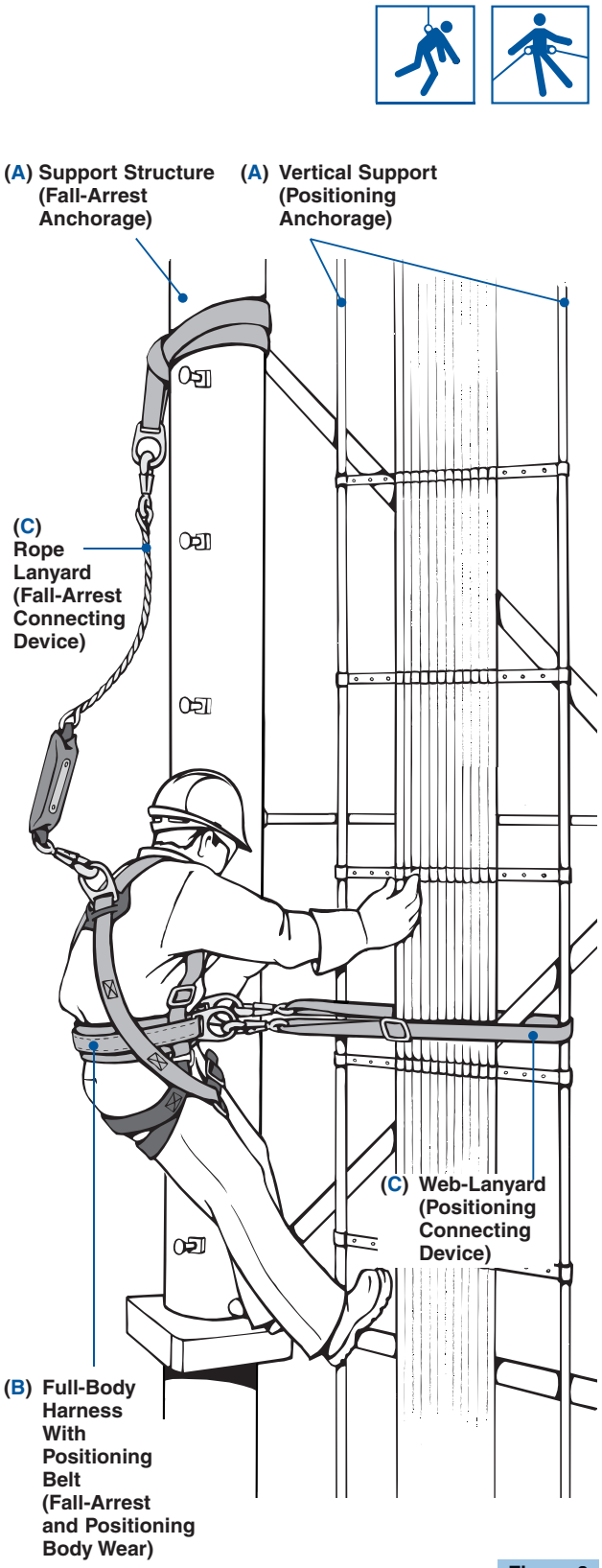


Figure 6

How OPE Systems Are Used

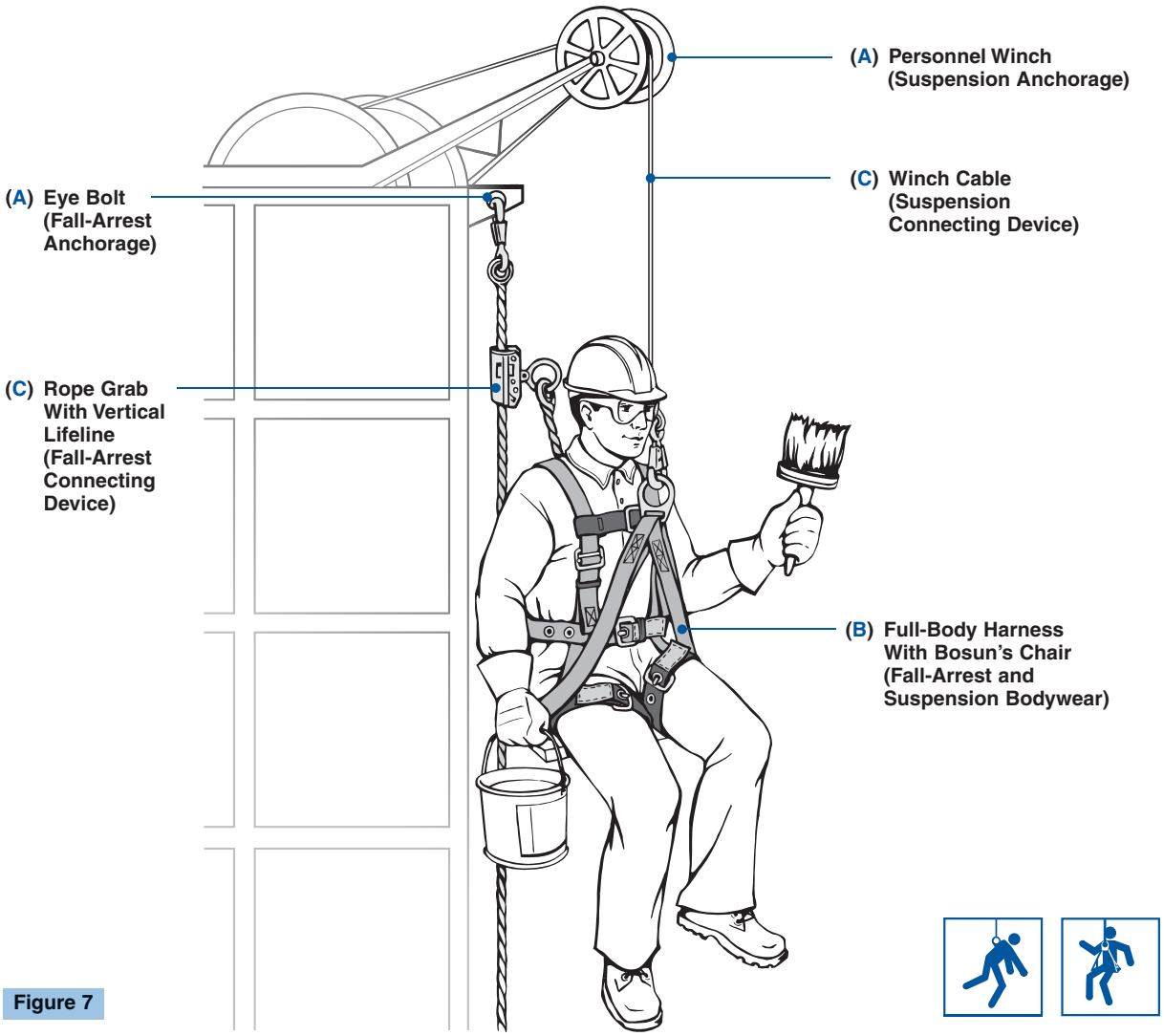


Figure 7

Personal Suspension System

A personal suspension system is required when it is necessary to suspend and hold a worker from above. A typical system involves the use of a winch, cable, and either a bosun's chair or a specially designed suspension harness. A suspension system is an active system (used constantly). Fall-arrest protection must always be used with a suspension system.

For example, the painter depicted in Figure 7 is utilizing both a personal suspension system and a personal fall-arrest system. Each system has its own **A-B-C** components. Since the worker must be suspended from above in order to get to his work area, he is using a *personal suspension system.*

The **(A)** component is the winch that serves as a suspension anchorage. Suspension anchorages must be capable of supporting at least twice the potential impact load of a worker's fall or 3,000 lbs. (13.3 kN), whichever is greater. The **(B)** component is the worker's bosun's-chair harness with front suspension D-ring. The **(C)** component is the winch cable, which is equipped with a locking snap-hook.

Also, since the painter is at risk of falling, he is also using a *personal fall-arrest system* as described earlier in this section. For the fall-arrest system, the **(A)** component is the eye-bolt attached to the structure, the **(B)** component is the full-body harness with rear D-ring, and the **(C)** component is the Rope Grab with vertical life line.

Remember, a suspension system is designed to lower, raise, and suspend a worker at an elevated work station. The suspension attachment points on the harness, such as the front D-ring or seat-strap D-rings, are NOT designed to properly distribute the impact forces that result in arresting a free fall. A suspension system cannot be relied upon to provide fall-arrest protection. Always use the independent fall-arrest features of a suspension harness. *NOTE: Klein suspension harnesses provide a rear D-ring which must be used for fall-arrest protection.*

How OPE Systems Are Used

Personal Retrieval System

A personal retrieval system is required where a worker may need to be rescued from a work location.

For example, the worker depicted in Figure 8 is using both a personal retrieval system and a personal fall-arrest system. Each system has its own **A-B-C** components.

Since the worker is in an area that may contain potentially hazardous conditions, he is using a *personal retrieval system.* The **(A)** component (which is not shown) is the personnel retrieval winch that serves as part of a retrieval anchorage. Retrieval anchorages must be capable of supporting at least twice the potential impact load of a worker's fall or 3,000 lbs. (13.3 kN), whichever is greater. The **(B)** component is the worker's retrieval harness with shoulder D-rings. The **(C)** component is a V-sling which is equipped with locking snap-hooks.

Also since the worker is at risk of falling, he is also utilizing a *personal fall-arrest system* as described earlier in this section. For the fall-arrest system, the **(A)** component (which is not shown) is a suitable structure which is independent of the retrieval anchorage, the **(B)** component is the worker's full-body harness with rear D-ring, and the **(C)** component is the rope lanyard with locking snap-hooks.

Like a fall-arrest system, a retrieval system is a passive system which only becomes active when the worker needs to be removed from the work location.

Remember, a retrieval system is designed to remove a worker from a work location. A retrieval system by itself, however, may not provide all the fall protection a worker requires. Fall-arrest and positioning functions may also be required. The retrieval shoulder D-rings are NOT designed to properly distribute the impact forces that result in arresting a free fall. A retrieval system cannot be relied upon to provide fall-arrest protection. For fall-arrest protection, always use the independent fall-arrest features of a retrieval harness. **NOTE: Klein retrieval harnesses with shoulder retrieval D-rings also provide a rear D-ring which must be used for fall-arrest protection.**

Always Use Fall Protection if There Is a Risk of a Fall

Although OSHA regulations generally require workers to utilize fall protection when exposed to a fall of six feet or more, Klein strongly recommends using fall-arrest protection when working at any elevated position. In addition, OSHA regulations prohibited body belts from being used as part of a fall-arrest system.

Know the appropriate regulations. Learn about the types of protective equipment and systems which must be used on the job. OSHA requires employers to know and follow the OSHA regulations pertaining to their industry, to provide a workplace free from hazards that might cause injuries, and to provide training in rescue procedures. OSHA provides consultation assistance, at no charge, to employers who need assistance in training and implementation. *If you have any questions or any doubt as to what regulations apply to you or what safety equipment is required, contact your regional OSHA office.*

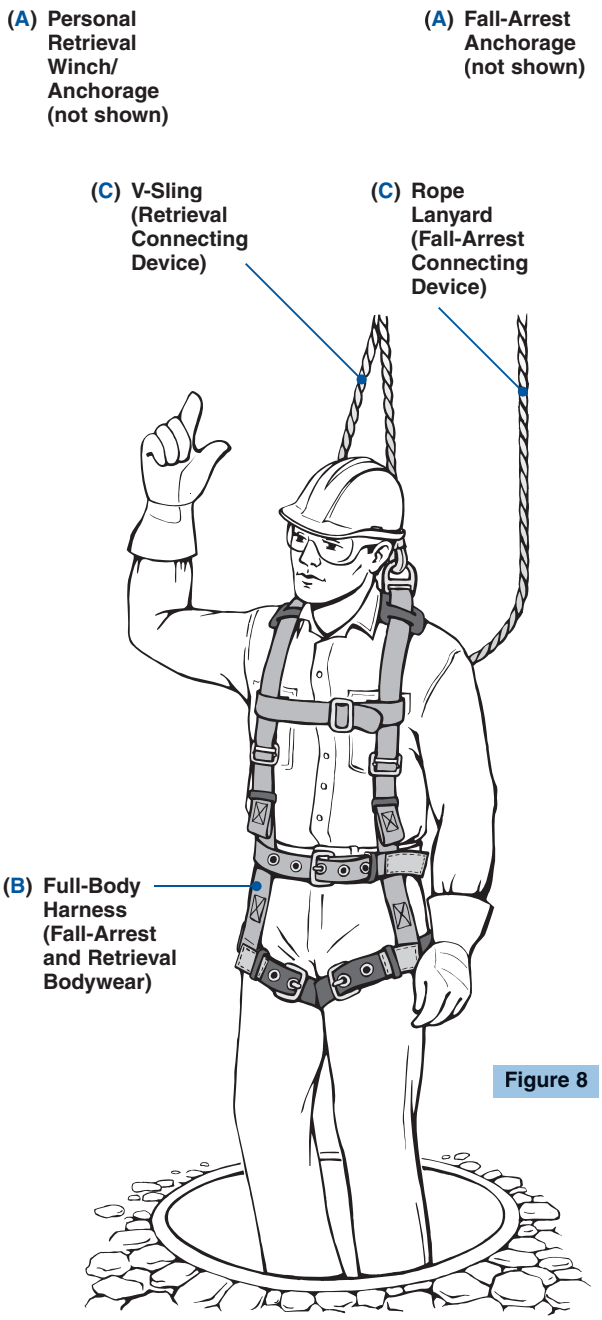


Figure 8

How OPE Systems Are Used

Ladder-Climbing System

A ladder-climbing system is used in order to keep a worker's free fall to a minimum in case the worker's hand or foot slips off a ladder rung or foot peg while he is changing elevation to a new work position.

The worker depicted in Figure 9 is utilizing a ladder-climbing system. The worker also has equipment necessary for personal fall-arrest and personal positioning protection, which he will utilize once he reaches his work area. Each system has its own **A-B-C** components.

For the *personal ladder-climbing system*, the **(A)** component is the vertical wire attached to the ladder and tower structure that serves as an anchorage for the cable grab device, the **(B)** component is the worker's ladder-climbing harness designed to distribute the forces over thighs, pelvis, waist, chest, and shoulders and equipped with a circle D-ring at the back for attaching a fall-arrest connecting device and a frontal D-ring (not for fall-arrest) for attaching a ladder-climbing device, and the **(C)** component is the cable-grab with locking carabiner which is connected to the ladder. The maximum length of the connection between the center line of the anchorage cable and the frontal D-ring on the ladder-climbing harness shall not exceed 9 inches.

When the worker reaches the work area, and before he unhooks his ladder-climbing system, he must hook up and utilize his *personal fall-arrest system*. For the fall-arrest system, the **(A)** component will be the support structure, the **(B)** component will be the ladder-climbing harness with rear D-ring, and the **(C)** component will be the rope lanyard with attached deceleration unit.

Additionally, if the worker needs to work with both hands free when he reaches his work area, he must hook up and utilize his *personal positioning system* in addition to his personal fall-arrest system. For the positioning system, the **(A)** component will be the vertical support that serves as a positioning anchorage. The **(B)** component will be the ladder-climbing harness which is equipped with a D-ring at each side for attaching a positioning connecting device. The **(C)** component will be the positioning lanyard which is equipped with a locking snap-hook at each end.

It is important to note that a ladder-climbing system is designed to limit a worker's movement while climbing a ladder. The frontal D-ring is NOT designed to properly distribute the impact forces that result in arresting a fall from height. A ladder-climbing system cannot be relied upon to provide fall-arrest protection. When climbing fixed ladders, know and follow ANSI A14.3 (Safety Requirement for Fixed Ladders).

NOTE: Klein ladder-climbing harnesses provide a rear D-ring which must be used for fall-arrest protection and side D-rings for positioning.

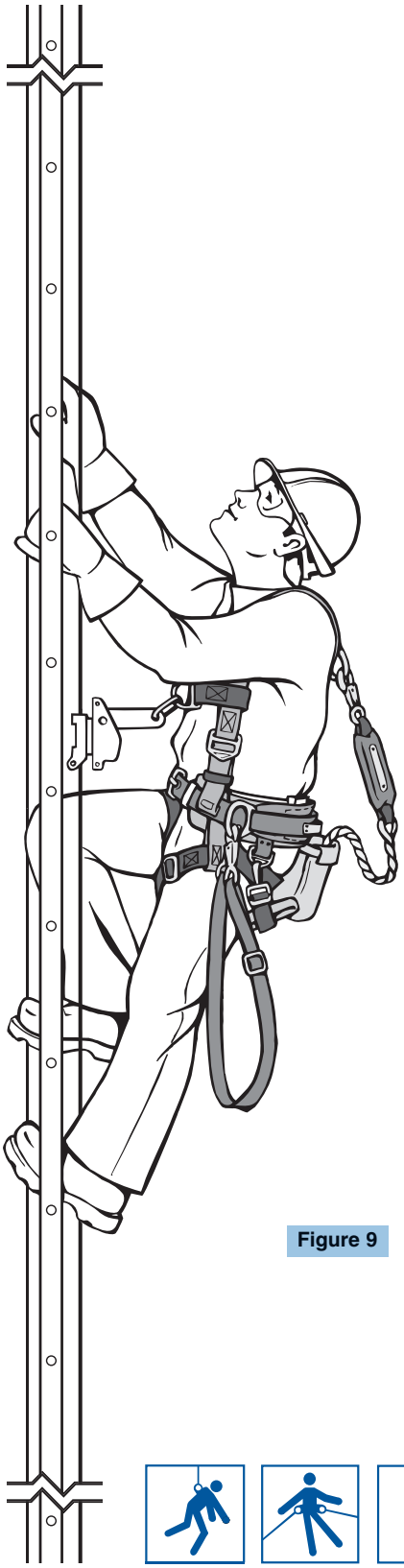


Figure 9

How to Select OPE System Components

When selecting OPE equipment, employers must understand the government regulations and the purposes for which specific items are intended. They need to know the specific working conditions and how that equipment must be combined with an anchorage to form a complete OPE system. In addition, the employer must train his workers to identify, maintain, and use OPE equipment correctly. The following instructions are intended to help explain the equipment selection process.

1. Understand the job. Are workers going where they will need fall protection? Will positioning equipment be needed to get the job done? Will it be necessary for a person to be suspended from a structure? Does the job environment require retrieval equipment? Do you need to hold a job-site meeting prior to starting the work? All risks that will be encountered must be taken into consideration. Understand and be prepared to follow rescue procedures.

2. Identify the specific job requirements. Determine suitable anchorages. In addition to personal fall protection, does the job require nets, hand rails, or other non-personal fall protection? Decide whether additional anchorages will be needed and/or if any special engineering will be required to meet safety regulations. If an engineered system for personal fall-arrest protection is required, it shall be designed, installed, and used pursuant to OSHA regulations and under the supervision of a qualified person, as defined by OSHA.

3. Know the appropriate regulations. Learn about the types of OPE equipment and systems that must be used on the job. Know and follow state and local regulations that pertain to your industry. OSHA requires employers to know and follow the OSHA regulations pertaining to their industry and to provide a workplace free from hazards that might cause injuries. OSHA provides consultation assistance, at no charge, to employers who need assistance in training and implementation. *If you have any questions or any doubt as to what regulations apply to you or what safety equipment is required, contact your regional OSHA office.*

4. Determine which OPE system(s) are needed. Based upon job requirements and appropriate regulations, choose that fall-arrest system or fall-arrest system combined with positioning, suspension, retrieval, and/or ladder-climbing systems that will satisfy the specific requirements. Always follow the **A-B-C RULE**. Each system used must contain at least one **(A)** anchorage, one **(B)** body wear, and one **(C)** connecting device.

5. Select the proper OPE equipment. The major selection criteria for OPE equipment will be dictated by the OPE system(s) required. OSHA's Final Rule of Fall Protection in the Construction Industry requires workers to utilize fall protection when exposed to a fall of six feet or more. The Final Rule also mandates the use of fall-arrest harnesses and locking snap-hooks. Therefore, fall-arrest body belts and non-locking snap-hooks cannot be used.

As described earlier, types of OPE systems offering fall protection are as follows:

- **Fall-arrest systems**
- **Positioning systems**
- **Suspension systems**
- **Retrieval systems**
- **Ladder-climbing systems**

6. Use Klein's identifying symbols. These symbols tell at a glance the intended purpose for each piece of OPE equipment. Symbols help assure selection of the proper equipment.

Fall-Arrest | Positioning | Suspension | Retrieval | Ladder Climbing

7. For technical product information, call the Klein Tools Sales Department, toll free at 1-800-553-4676.

⚠WARNING: Never attempt to repair or modify any part or component of any OPE equipment.

⚠WARNING: It is important that a competent person as defined by OSHA select OPE system components to fit the specific job requirements. Incorrect component choices can cause serious injury or death.

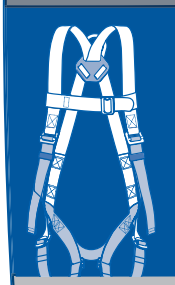
NOTE: For clarity, photos in this catalog do not show any warning tags or labels, which are attached to each product.

Harnesses

Klein Tools harnesses are designed to meet and/or exceed OSHA regulations and have the features to get the job done comfortably.

For Professionals... Since 1857®

Harnesses



Introduction – Harnesses

Klein manufactures a full line of Occupational Protective Equipment (OPE). When using the **A-B-C Rule**, the harness becomes a **B** component of an OPE system for fall protection. Klein harnesses are designed to arrest free falls and distribute impact forces over thighs, pelvis, waist, chest, and shoulders as required by OSHA. In addition to fall-arrest protection, many Klein full-body harnesses have features which permit additional OPE applications (e.g., positioning, suspension, retrieval, and/or ladder-climbing) in selectable integrated units.

Workers who use Klein OPE harnesses must be instructed on how to use each harness correctly. In addition, they must read, understand, and follow all instructions and warnings contained in this catalog and any warnings or instructions attached to and/or packed with the product and all other tools, devices, and equipment before each use.

Each Klein harness is equipped with either a durable, plastic card warning packet or a tear-resistant Tyvek® material label permanently attached to the harness. The packet or label provides detailed information regarding the use, care, and inspection of the harness, along with an inspection-recording grid, the manufacturer's name, system size, model number, and year of manufacture. Klein Tools' toll-free telephone number (1-800-553-4676) is also provided for easy user access.

Types of Klein Harnesses and General Rules for Their Proper Use

The photos and descriptions on these pages illustrate the basic types of Klein harnesses. Most Klein harnesses have leg, seat, chest, and shoulder straps made of nylon webbing to distribute impact forces of a fall over thighs, pelvis, chest, and shoulders.

1. Fall-Arrest Harnesses have a fall-arrest D-ring attached to the upper middle of the back. Klein offers four styles of this full-body harness.

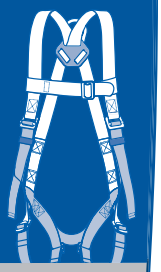
The *87020 style* harness has seat, chest, shoulder, and leg straps and a waist belt with friction-style buckle, designed to distribute impact forces of a fall over thighs, pelvis, waist, chest, and shoulders. This harness can also provide a positioning function by adding a Klein positioning belt, which inserts through special belt loops on the harness backstraps.

The *87074 style* harness is designed for workers on transmission towers and other elevated sites. It has an Ultra-Hyde™ lined waist belt and leg straps designed to distribute impact forces of a fall over thighs, pelvis, waist, chest, and shoulders.

The *87140* and *87141 Klein-Lite® style* harnesses have lightweight polyester seat, chest, shoulder, and leg straps. The *87140* harness has leg straps with easy-connect hardware. The *87141* harness has leg straps with tongue buckles.

When using any Klein harness, always follow the A-B-C rule.
See pages 6 to 11 for details.

Cat. No. 87140 shown



2. Fall-Arrest/Positioning Harnesses have a fall-arrest D-ring attached to the upper middle of the back and positioning D-rings attached to each side. Klein offers six styles of this full-body harness. These harnesses are designed to hold a worker in place while leaving his hands free to work, and include seat, chest, shoulder, and leg straps.

The *87810 style* harness includes an integral positioning tool belt with a tongue buckle and Softee™ Pad.

The *87820 style* harness includes an integral positioning tool belt with a friction buckle and Softee™ Pad.

The *87080 style* harness has Ultra-Hyde™ lined leg straps and an integral positioning tool belt with Ultra-Hyde™ lining and a tongue buckle.

The *87830 style* harness has cushioned body and shoulder pads and features an integral positioning tool belt.

The *87144* and *87145 style* harnesses have lightweight polyester construction. The *87144* harness has leg straps with easy-connect hardware. The *87145* harness has leg straps with tongue buckles.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Cat. No. 87810 shown

3. Fall-Arrest/Retrieval Harnesses have a fall-arrest D-ring (attached to the upper middle of the back) and two retrieval D-rings (attached to the harness shoulder straps and seat, chest, shoulder, and leg straps). Klein offers two styles of this full-body harness.

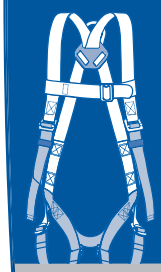
The *87090 style* harness has an Ultra-Hyde™ lined waist belt and leg straps. The *87840 style* harness can also provide a positioning function by adding a Klein positioning belt, inserted through special belt loops on the harness backstraps.

These harnesses are designed for retrieval of a worker from a tank, manhole, shaft, tunnel, or other confined or non-confined space.

When used in accordance with OSHA 1910.146 Permit Required Confined Space procedures, the rear fall-arrest D-ring may also be connected to retrieval connecting devices that meet OSHA standards.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Cat. No. 87090 shown



Introduction – Harnesses

4. Fall-Arrest/Suspension Harness has a fall-arrest D-ring (attached to the upper middle of the back), and two attached suspension D-rings (positioned in the lower front portion of the harness). Klein's *87012 style* harness is a parachute-type, full-body harness with leg, seat, waist, chest, and shoulder straps, and it includes a V-sling suspension connecting device.

This harness keeps the worker in an upright position when the V-sling is held taut. The V-sling and front D-rings on the harness are for suspension purposes only and are NOT to be used for fall-arrest.

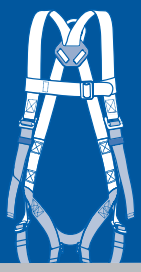
When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Cat. No. 87012 shown

5. Fall-Arrest Suspension Harness with Bosun's Chair features a fall-arrest D-ring (attached to the upper middle of the back), a suspension D-ring (attached in front), and an integral suspension chair (Bosun's chair) for extra comfort in normal use. Klein's *87044 style* harness has leg, waist, chest, and shoulder straps that distribute fall-arrest forces over thighs, pelvis, waist, chest, and shoulders.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Cat. No. 87044 shown



6. Fall-Arrest/Positioning/Retrieval Harnesses have a fall-arrest D-ring (attached to the upper middle of the back), two positioning D-rings (one attached to each side), and two retrieval D-rings (one attached to each of the harness shoulder straps). Klein's *87850 style* harnesses have leg, seat, chest, and shoulder straps, and an integral positioning/tool belt with tongue buckle.

These harnesses allow for retrieval of workers from tanks, manholes, or other areas where retrieval may be required.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Cat. No. 87850 shown

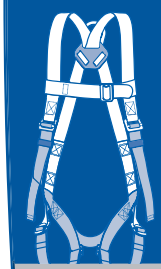
7. Fall-Arrest/Positioning/Suspension Tree Trimmer's Harness features a fall-arrest D-ring (attached to the upper middle of the back), two positioning D-rings (one attached to each side of the belt), and two upward-facing suspension D-rings (attached to each side of the harness seat straps).

Klein's *87891 style* saddle harness also features leg, seat, chest, and shoulder straps, an integral positioning/suspension saddle-style belt with tongue buckle, and a Softee™ back pad and seat straps.

This specialized harness, designed for tree-trimming professionals, meets ANSI Z-133.1. Know and follow ANSI Z-133.1 guidelines before using this harness.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Cat. No. 87891 shown



Fall-Arrest Harnesses

Features:

Friction slide adjusters hold shoulder straps in place so the user does not need to readjust for each use.

Color contrasting shoulder and leg straps simplify putting harness on.

Fall-arrest D-ring with roller. Drop-forged circle D-ring has corrosion-resistant finish, wear-minimizing roller, and is proof-loaded to meet OSHA regulations. Easily adjusts for proper fit and function.

Seat strap adds extra comfort and support.

Fall-arrest harnesses are designed to arrest free falls and distribute impact forces as required by OSHA.

Identity and warning tags and/or labels (not shown) are reminders of proper application and inspection procedures. The Klein name, model, date of manufacture, and OPE-system application symbol(s) are permanently and clearly inscribed on these tags and labels.

Harnesses are certified and compliant with ANSI and CSA requirements.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Sizing Table

Use your waist size to determine the correct ordering size.

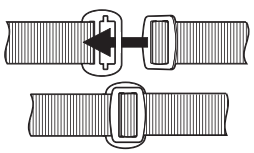
Waist Size Range	Size
32" to 40" (813 – 1016 mm)	Small
36" to 44" (914 – 1118 mm)	Medium
40" to 48" (1016 – 1219 mm)	Large
44" to 52" (1118 – 1321 mm)	Extra Large
48" to 56" (1219 – 1422 mm)	2X Large

Fall-Arrest Harness – Klein-Lite®

Additional features:

- *Lightweight polyester construction for comfortable all-day use, and improved chemical resistance compared to nylon.*
- *One "universal" size fits most people.*
- *Easy-connect leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *Straps have friction-style buckles for adjustments over a continuous range of sizes.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87140	Universal	2.4



With Easy-Connect Hardware

Fall-Arrest Harness – Klein-Lite®

Additional features:

- *Lightweight polyester construction for comfortable all-day use and improved chemical resistance compared to nylon.*
- *One "universal" size fits most people.*
- *Leg straps have tongue buckles and grommets for a comfortable fit and positive buckle connection.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87141	Universal	2.4

Fall-Arrest Harness

Additional features:

- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Tongue buckles with grommeted leg straps provide comfortable fit over a range of sizes.*
- *Waist strap has friction-style buckle for adjustments over a continuous range of sizes.*
- *For workers who also need positioning in addition to fall-arrest, this harness allows insertion of an existing positioning belt. Belt inserts through 5" (127 mm) backstrap loops on the harness. (See Figure A.)*

Cat. No.	Size Description	Shipping Weight (lbs.)
87020	Medium	3.6
87021	Large	3.7
87022	Extra Large	4.2
87023	2X Large	4.1

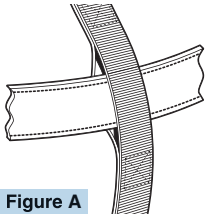
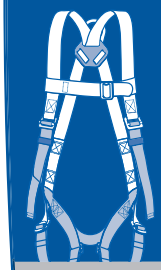


Figure A



Fall-Arrest Harnesses

Fall-Arrest Harness

Additional features:

- *Ultra-Hyde™ lined waist and leg straps. Ultra-Hyde™ is a material that looks and feels like leather, yet requires little maintenance.*
- *Durable 1-3/4" (44 mm) Type 19, or equivalent, nylon webbing harness construction.*
- *Waist and leg straps have tongue buckles and grommets for a comfortable fit and positive buckle connection.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87074	Medium	5.2
87075	Large	5.4
87076	Extra Large	5.7

Fall-Arrest Harness Set – Klein-Lite® Tradesman's Set

- *Includes Fall-Arrest Harness Cat. No. 87140 and Deceleration Lanyard Cat. No. 87473.*
- *87140 Harness features:*
  - *— One "universal" size*
  - *— Lightweight polyester construction*
  - *— Easy-connect leg buckles*
- *87473 Lanyard features:*
  - *— Energy-absorbing polyester inner core*
  - *— Orange tubular nylon webbing outer shell*
  - *— Two Klein-Lok® locking snap-hooks*

Cat. No.	Size Description	Shipping Weight (lbs.)
87150	87140 Harness and 87473 Deceleration Lanyard	2.4

Fall-Arrest/Positioning Harnesses

Features:

Friction slide adjusters hold shoulder straps in place so the user does not need to readjust for each use.

Color contrasting shoulder and leg straps simplify putting harness on.

Fall-arrest D-ring with roller. Drop-forged circle D-ring has corrosion-resistant finish, wear-minimizing roller, and is proof-loaded to meet OSHA regulations. Easily adjusts for proper fit and function.

Seat strap adds extra comfort and support.

Two positioning D-rings. Drop-forged circle D-rings have corrosion-resistant finish, wear-minimizing rollers, and are proof-loaded to meet OSHA regulations.

Fall-arrest/positioning harnesses are designed to arrest free falls and distribute impact forces as required by OSHA.

Identity and warning tags and/or labels (not shown) are reminders of proper application and inspection procedures. The Klein name, model, date of manufacture, and OPE-system application symbol(s) are permanently and clearly inscribed on those tags and labels.

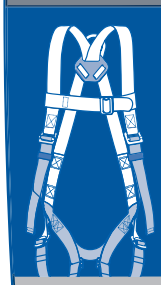
Harnesses are certified and compliant with ANSI and CSA requirements.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Sizing Table

Use your waist size to determine the correct ordering size.

Waist Size Range	Size
32" to 40" (813 – 1016 mm)	Small
36" to 44" (914 – 1118 mm)	Medium
40" to 48" (1016 – 1219 mm)	Large
44" to 52" (1118 – 1321 mm)	Extra Large
48" to 56" (1219 – 1422 mm)	2X Large



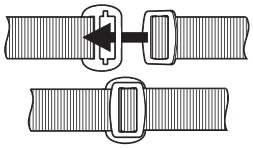
Fall-Arrest/Positioning Harnesses

Fall-Arrest/Positioning Harness – Klein-Lite®

Additional Features:

- *Lightweight polyester construction for comfortable all-day use and improved chemical resistance compared to nylon.*
- *One "universal" size fits most people.*
- *Easy-connect leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *Chest and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87144	Universal	3.8



With Easy-Connect Hardware

Fall-Arrest/Positioning Harness – Klein-Lite®

Additional Features:

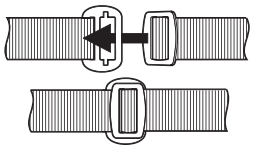
- *Lightweight polyester construction for comfortable all-day use and improved chemical resistance compared to nylon.*
- *One "universal" size fits most people.*
- *Leg straps have tongue buckles and grommets for a comfortable fit and positive buckle connection.*
- *Chest and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87145	Universal	3.8

Fall-Arrest/Positioning Harness

Additional Features:

- *Permanently attached waist belt can conveniently hold slotted and tunnel-loop pouches/holders.*
- *3" Softee™ waist pad is made of non-abrasive nylon and provides extra comfort during prolonged use.*
- *Belt adjuster pads provide superior fit and increased comfort for better tool weight distribution.*
- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Easy-connect chest and leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *Waist belt has tongue buckle and grommets for a comfortable fit and positive buckle connection.*



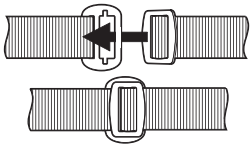
With Easy-Connect Hardware

Cat. No.	Size Description	Shipping Weight (lbs.)
87810	Small	6.3
87811	Medium	6.4
87812	Large	6.4
87813	Extra Large	6.9
87814	2X Large	6.9

Fall-Arrest/Positioning Harness

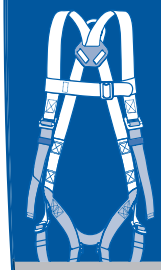
Additional Features:

- *Permanently attached waist belt can conveniently hold tunnel-loop pouches/holders.*
- *Waist belt is permanently attached to harness on one end and inserts through 5" (127 mm) backstrap loops for a wide range of sizes and increased comfort from better tool weight distribution.*
- *3" Softee™ waist pad is made of non-abrasive nylon webbing harness construction.*
- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Easy-connect chest and leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *Waist belt has friction-style buckle for adjustments over a continuous range of sizes.*



With Easy-Connect Hardware

Cat. No.	Size Description	Shipping Weight (lbs.)
87820	Small	6.2
87821	Medium	6.4
87822	Large	6.5
87823	Extra Large	6.5
87824	2X Large	7.0



Fall-Arrest/Positioning Harnesses

Fall-Arrest/Positioning Harness – Tower Work

Additional Features:

- *Heavy-duty harness design is suited for workers on transmission towers and other elevated sites.*
- *Ultra-Hyde™ lined waist and leg straps. Ultra-Hyde™ is a material that looks and feels like leather, yet requires little maintenance.*
- *Durable 1-3/4" (44 mm) Type 19, or equivalent, nylon webbing harness construction.*
- *Chest and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*
- *Waist and leg straps have tongue buckles and grommets for a comfortable fit and positive buckle connection.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87080	Medium	6.2
87081	Large	6.4
87082	Extra Large	6.5

Fall-Arrest/Positioning Harness – Iron Work

Additional Features:

- *Permanently attached waist belt can conveniently hold bolt bags, tie wire reels, bull pins holders, and slotted or tunnel-looped pouches/holders.*
- *5" (127 mm) cushioned body pad provides added support and comfort when working in a positioning stance.*
- *Shoulder pads help cushion the weight of the harness when fully loaded with equipment.*
- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Chest and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*
- *Waist and leg straps have tongue buckles and grommets for a comfortable fit and positive buckle connection.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87830	Medium	7.5
87831	Large	7.7
87832	Extra Large	7.9

Fall-Arrest/Retrieval Harnesses

Features:

Retrieval D-rings. Forged adjustable parachute-type D-rings for quick retrieval. **Shoulder D-rings are for retrieval purposes only and are NOT to be used for fall-arrest.**

Friction slide adjusters hold shoulder straps in place so the user does not need to readjust for each use.

Fall-arrest D-ring with roller. Drop-forged circle D-ring has corrosion-resistant finish, wear-minimizing roller, and is proof-loaded to meet OSHA regulations. Easily adjusts for proper fit and function.

Seat strap adds extra comfort in normal use as well as support after a fall.

Color contrasting shoulder and leg straps simplify putting harness on.

Fall-arrest/retrieval harnesses are designed to arrest free falls and distribute impact forces as required by OSHA.

Identity and warning tags and/or labels (not shown) are reminders of proper application and inspection procedures. The Klein name, model, date of manufacture, and OPE-system application symbol(s) are permanently and clearly inscribed on these tags and labels.

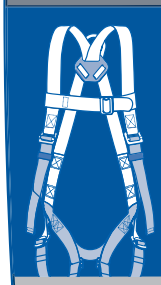
Harnesses are certified and compliant with ANSI and CSA requirements.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Sizing Table

Use your waist size to determine the correct ordering size.

Waist Size Range	Size
32" to 40" (813 – 1016 mm)	Small
36" to 44" (914 – 1118 mm)	Medium
40" to 48" (1016 – 1219 mm)	Large
44" to 52" (1118 – 1321 mm)	Extra Large
48" to 56" (1219 – 1422 mm)	2X Large



Fall-Arrest/Retrieval Harnesses

Fall-Arrest/Retrieval Harness

Additional Features:

- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Waist, chest, and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*
- *Easy-connect chest and leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *An optional V-sling for retrieval use can be added by ordering Cat. No. 87420.*
- *For workers who also need positioning in addition to fall-arrest and retrieval, this harness allows insertion of an existing Klein positioning belt. Belt inserts through 5" (127 mm) backstrap loops on the harness. (See Figure A.)*

Cat. No.	Size Description	Shipping Weight (lbs.)
87840	Medium	5.2
87841	Large	5.0
87842	Extra Large	5.0

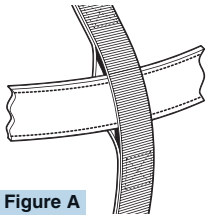
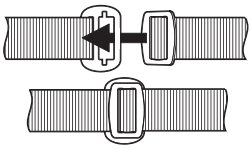


Figure A



With Easy-Connect Hardware

Fall-Arrest/Retrieval Harness – Tower Work

Additional Features:

- *Heavy-duty harness design is suited for workers on transmission towers and other elevated sites.*
- *Ultra-Hyde™ lined waist and leg straps. Ultra-Hyde™ is a material that looks and feels like leather, yet requires little maintenance.*
- *Durable 1-3/4" (44 mm) Type 19, or equivalent, nylon webbing harness construction.*
- *Chest and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*
- *Waist and leg straps have tongue buckles and grommets for a comfortable fit and positive buckle connection.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87090	Medium	6.2
87091	Large	6.3
87092	Extra Large	6.3

Fall-Arrest/Suspension Harnesses

Features:

Friction-style buckles for adjustments over a continuous range of sizes.

Suspension D-rings. Drop-forged circle D-rings have corrosion-resistant finish, wear-minimizing rollers, and are proof-loaded to meet OSHA regulations.

Fall-arrest D-ring with roller. Drop-forged circle D-ring has corrosion-resistant finish, wear-minimizing roller and is proof-loaded to meet OSHA regulations. Easily adjusts for proper fit and function.

Seat strap adds extra comfort in normal use as well as support after a fall.

Fall-arrest/suspension harnesses are designed to arrest free falls and distribute impact forces as required by OSHA.

Identity and warning tags and/or labels (not shown) are reminders of proper application and inspection procedures. The Klein name, model, date of manufacture, and OPE-system application symbol(s) are permanently and clearly inscribed on these tags and labels.

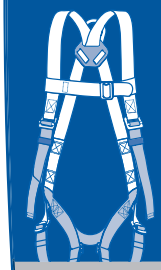
Harnesses are certified and compliant with ANSI and CSA requirements.

When using any Klein harness, always follow the A-B-C rule. See pages 6 to 11 for details.

Sizing Table

Use your waist size to determine the correct ordering size.

Waist Size Range	Size
32" to 40" (813 – 1016 mm)	Small
36" to 44" (914 – 1118 mm)	Medium
40" to 48" (1016 – 1219 mm)	Large
44" to 52" (1118 – 1321 mm)	Extra Large
48" to 56" (1219 – 1422 mm)	2X Large



Fall-Arrest/Suspension Harnesses

Fall-Arrest/Suspension Harness

Additional Features:

- *Harness comes with 5' (1.5 m) long, 1/2" (13 mm) diameter nylon filament V-sling with locking snap-hooks for suspension.*
- *V-sling design places worker in upright position when held taut. V-sling is for suspension purposes only and is NOT to be used for fall-arrest.*
- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Waist and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87012	Medium	7.9

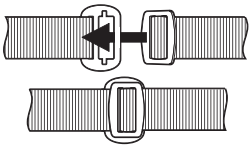
Specialty Harnesses

Fall-Arrest/Positioning/Retrieval Harness

Features:

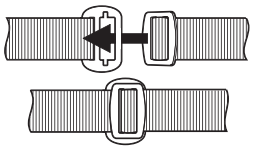
- *Permanently attached waist belt can conveniently hold tunnel-loop pouches/holders.*
- *Waist belt is permanently attached to harness on one end and inserts through 5" (127 mm) backstrap loops for a wide range of sizes and increased comfort from better tool weight distribution.*
- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Easy-connect chest and leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *Waist belt has tongue buckle and grommets for a comfortable fit and positive buckle connection.*
- *Harness is certified and compliant with ANSI and CSA requirements.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87850	Small	6.5
87851	Medium	6.5
87852	Large	6.6
87853	Extra Large	6.7



With Easy-Connect Hardware

Fall-Arrest/Positioning Harness – Tower Work



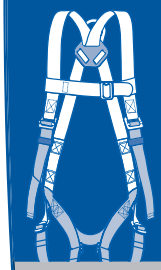
With Easy-Connect Hardware

Features:

- *Heavy-duty harness design is ideal for workers on transmission towers and other elevated sites.*
- *5" x 17" (127 mm x 43 cm) x 1/2" (13 mm) thick, padded leather seat cushion for hours of comfort and support.*
- *Chest D-ring for convenient ladder climbing applications.*
- *Seat cushion is removable and attaches with two snap-hooks and includes two leather pads near connecting hardware for added comfort.*
- *Semi-floating lineman's style body belt with tool loops is built into the harness.*
- *Waist belt can conveniently hold slotted and tunnel-loop pouches/holders.*
- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Contoured shoulder pads help cushion the weight of the harness when fully loaded with equipment for improved comfort.*
- *Easy-connect chest and leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *Accessories include: glove-bag ring, two-way knife snap, and tape thong.*
- *Harness is certified and compliant with ANSI and CSA requirements.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87962	Small	12
87963	Medium	12
87964	Large	12
87965	Extra Large	13

Seat cushion attachment close-up

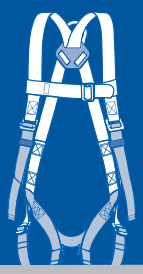


Fall-Arrest/Suspension Harness with Bosun's Chair

Features:

- *Permanently attached Bosun's chair provides an excellent workstation for prolonged suspension jobs.*
- *Bosun's chair has one forged circle D-ring with roller at front for attaching to a suspension-connecting device.*
- *12" x 24" (30 x 61 cm) x 1" (25 mm) thick, laminated wood seat is reinforced on the underside with metal cleats.*
- *Web support sling crosses on the underside of the chair and is woven through four seat slots and cleats.*
- *Ultra-Hyde™ lined waist and leg straps. Ultra-Hyde™ is a material that looks and feels like leather, yet requires little maintenance.*
- *Durable 1-3/4" (44 mm) Type 19, or equivalent, nylon webbing harness construction.*
- *Chest and shoulder straps have friction-style buckles for adjustments over a continuous range of sizes.*
- *Waist and leg straps have tongue buckles and grommets for a comfortable fit and positive buckle connection.*
- *Harness is certified and compliant with ANSI and CSA requirements and meets OSHA standard 1910.28.*

Cat. No.	Size Description	Shipping Weight (lbs.)
87044	Medium	13.6

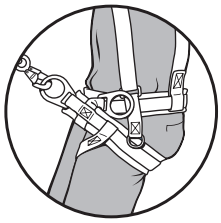


Fall-Arrest/Positioning/Suspension Harness – Tree Trimming Work

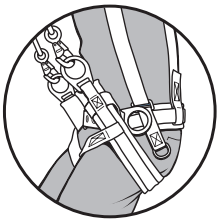
Features:

- *Permanently attached tree-trimmer's belt has four forged circle D-rings with rollers (two upward-facing on saddle for suspension and two forward-facing on waist belt for positioning).*
- *Durable 1-3/4" (44 mm) Type 13, or equivalent, nylon webbing harness construction.*
- *Softee™ back and seat pads are made of non-abrasive nylon for extra comfort during prolonged use.*
- *Easy-connect chest and leg buckles with friction-slide adjusters for quick engagement/disengagement.*
- *An optional V-sling for suspension use can be added by ordering Cat. No. 87420.*
- *Harness is certified and compliant with ANSI and CSA requirements.*

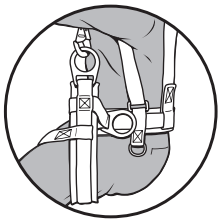
Cat. No.	Size Description	Shipping Weight (lbs.)
87890	Small	8.3
87891	Medium	8.2
87892	Large	8.6
87893	Extra Large	8.5



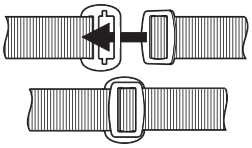
Seat strap allows worker to lean back.



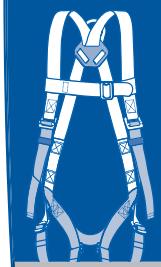
Seat strap allows for semi-sitting position.



In full sitting position, worker can be lifted or lowered as needed.



With Easy-Connect Hardware



Warning Tags and Labels – Harnesses

Klein attaches highly-durable warning and instruction tags/labels to its OPE products. In the event any of these tags or labels become unattached, lost, or damaged, contact the Klein Tools Sales Department, toll-free, at 1-800-553-4676 for information on how to have the tags replaced free of charge.

Types of OPE Warning Tags/Labels

This section contains black and white reproductions of Klein OPE warning tags/labels. They are organized by product category. Some warning information for connecting devices is printed on a durable label wrapped around the lanyard.

A set of plastic warning tags is attached to the majority of OPE products.

Each set contains four types of warning/information tags:

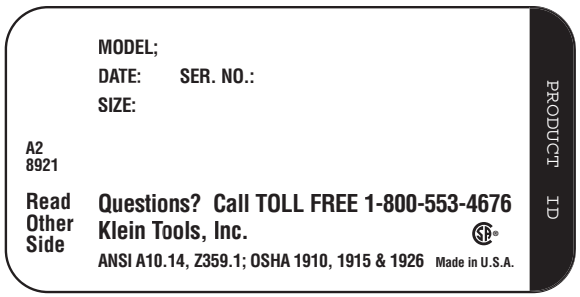
1. **A General Hazard Tag** will be attached to each OPE product.
2. **General Warning Tags** will be included on all OPE products in a particular category. For example, all OPE harnesses will have general harness warning tags.
3. **Specific Warning Tags** will be included for each class of products within a particular category. For example, Cat. No. 87012 and 87020 harnesses have their own specific warning tags.
4. **A Product ID Tag** will be attached to each OPE product.

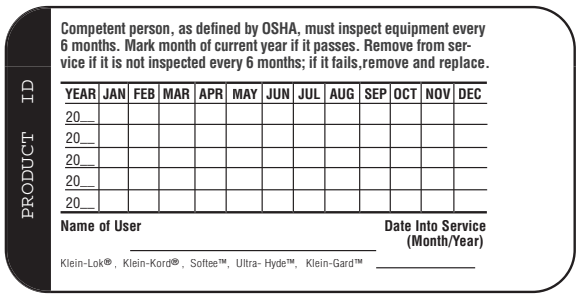
General Hazard Tag for All OPE Products

This tag is the first in a set of warning tags which will be attached to each Klein OPE product.

Product ID Tag for All OPE Harnesses

This tag (front and back sides shown) is the last in a set of warning tags which will be attached to each Klein OPE harness.





Tag for Lightweight Fall-Arrest Harnesses

87140, 87141

For Fall-Arrest Use Only

DO NOT REMOVE THIS LABEL

READ BEFORE USE — **Model:** **Length:** **Date:** — READ BEFORE USE

■ **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all other occupational protective equipment before each use.
■ For use by **properly trained professionals** only.
■ **Employer –** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
■ Harness **must** be worn so that the fall-arrest D-ring is centered in back.
■ **Fall-arrest anchorage must** support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
■ Attach fall-arrest connecting devices that meet OSHA standards only to the rear fall-arrest D-ring.
■ **Rig to avoid contact with structures below in the event of a fall.** The free-fall distance must not exceed 6 ft.(1.8m). If using a deceleration unit, add 3-1/2 ft. (1m) to free-fall distance to allow for unit extension.
■ **For fall arrest, always** keep anchorage at or above shoulder height to minimize fall distance.
■ OPE equipment **must be destroyed** if subjected to impact loading.
■ OSHA requires that impact force in a fall **NOT** exceed an 1,800 lb.. (8kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting device or use deceleration unit to stay under 1,800 lbs. (8kN).
■ Whenever there is risk of a fall, personal fall-arrest protection must be used. Therefore, when working at an elevated position, always attach the fall-arrest D-ring in the back of the harness to an approved fall-arrest anchorage with a suitable fall-arrest lanyard or other connecting device. Where not possible, use alternative fall-arrest protection.
■ **Always visually check** that: 1) each snap hook freely engages the intended D-ring or anchorage, and 2) the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
■ **Always visually check** that all buckles and connectors are properly closed before each use.
■ **Before each use check that:** OPE equipment is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, 2) rivets are not bent, loose or missing, 3) buckles, D-rings and other hardware are not distorted or cracked, 4) buckle tongue does not bind on buckle and buckle holes are not damaged, and 5) hook keepers are free of burrs, functioning properly, clean and not bent. **If the OPE equipment does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**
■ **Never** allow this equipment to come in contact with fire, high-temperature surfaces, welding sparks, or other heat sources.
■ Harnesses **must** be properly sized and adjusted to fit user. **Always** wear harness snug to avoid injury.
■ **Only use** locking snap hooks.
■ OPE equipment must **only** be used for the specific purpose for which it is designed and intended.
■ **Never** punch additional holes in or alter any OPE equipment in any way.
■ **Never** attach ladder or rebar hooks onto a D-ring.
■ **Never** attach multiple snap hooks onto a D-ring.
■ **Never** attach anything to a D-ring other than a single, locking snap hook. The existence of another object attached to a D-ring may prevent or falsely indicate snap-hook engagement.
■ For **personal** use only. **NOT** for towing or hoisting.
■ **NOT** for recreational or sporting use.
■ Assume the responsibility for determining that your OPE harness and equipment are in excellent condition at all times.
■ Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
■ Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers, because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.

INSPECTION GRID

Competent person, as defined by OSHA, must inspect equipment every 6 months. Mark month of current year if it passes. Remove from service if it is not inspected every 6 months; if it fails, remove and replace.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
20_____												
20_____												
20_____												
20_____												
20_____												

Name of User _____

Date Into Service (Month/Year)_____

QUESTIONS?
Call TOLL FREE at 1-800-553-4676
Klein Tools, Inc.
OSHA 1910, 1915 & 1926
ANSI A10.14, ANSI Z359.1 **Made in U.S.A.**
Klein-Lite®, Klein-Lok®, Klein-Kord®, Softee™, Ultra-Hyde™

139131
T-126

Tag for Lightweight Fall-Arrest/Positioning Harnesses

87144, 87145, LH5249 style, LH5266 style, LH5268 style, LH5278 style, LH5282 style

For Fall-Arrest and Positioning Use Only

DO NOT REMOVE THIS LABEL

READ BEFORE USE — **Model:** **Length:** **Date:** — READ BEFORE USE

■ **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all other occupational protective equipment before each use.
■ For use by **properly trained professionals** only.
■ **Employer –** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
■ Harness **must** be worn so that the fall-arrest D-ring is centered in back.
■ **Fall-arrest anchorage must** support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
■ Attach fall-arrest connecting devices that meet OSHA standards only to the rear fall-arrest D-ring.
■ Attach positioning connecting devices that meet OSHA standards only to the side D-rings. Side D-rings are **NOT** for fall arrest.
■ **Positioning anchorages must** support at least twice the potential impact load of an employee's fall or 3,000 lbs. (13.3kN), whichever is greater.
■ **Rig to avoid contact with structures below in the event of a fall.** The free-fall distance must not exceed 6 ft. (1.8m). If using a deceleration unit, add 3-1/2 ft. (1m) to free-fall distance to allow for unit extension.
■ **For fall arrest, always** keep anchorage at or above shoulder height to minimize fall distance.
■ OPE equipment **must be destroyed** if subjected to impact loading.
■ OSHA requires that impact force in a fall **NOT** exceed an 1,800 lb. (8kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting device or use deceleration unit to stay under 1,800 lbs. (8kN).
■ Whenever there is risk of a fall, personal fall-arrest protection must be used. Therefore, when working at an elevated position, always attach the fall-arrest D-ring in the back of the harness to an approved fall-arrest anchorage with a suitable fall-arrest lanyard or other connecting device. Where not possible, use alternative fall-arrest protection.
■ **Always visually check** that: 1) each snap hook freely engages the intended D-ring or anchorage, and 2) the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
■ **Always visually check** that all buckles and connectors are properly closed before each use.
■ **Before each use check that:** OPE equipment is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, 2) rivets are not bent, loose or missing, 3) buckles, D-rings and other hardware are not distorted or cracked, 4) buckle tongue does not bind on buckle and buckle holes are not damaged, and 5) hook keepers are free of burrs, functioning properly, clean and not bent. **If the OPE equipment does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**
■ **Never** allow this equipment to come in contact with fire, high-temperature surfaces, welding sparks, or other heat sources.
■ Harnesses **must** be properly sized and adjusted to fit user. **Always** wear harness snug to avoid injury.
■ **Only use** locking snap hooks.
■ OPE equipment must **only** be used for the specific purpose for which it is designed and intended.
■ **Never** punch additional holes in or alter any OPE equipment in any way.
■ **Never** attach ladder or rebar hooks onto a D-ring.
■ **Never** attach multiple snap hooks onto a D-ring.
■ **Never** attach anything to a D-ring other than a single, locking snap hook. The existence of another object attached to a D-ring may prevent or falsely indicate snap-hook engagement.
■ For **personal** use only. **NOT** for towing or hoisting.
■ **NOT** for recreational or sporting use.
■ Assume the responsibility for determining that your OPE harness and equipment are in excellent condition at all times.
■ Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
■ Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers, because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.

INSPECTION GRID

Competent person, as defined by OSHA, must inspect equipment every 6 months. Mark month of current year if it passes. Remove from service if it is not inspected every 6 months; if it fails, remove and replace.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
20_____												
20_____												
20_____												
20_____												
20_____												

Name of User _____

Date Into Service (Month/Year)_____

QUESTIONS?
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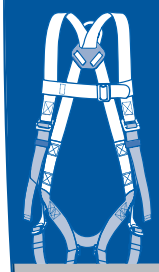
139132
T-127



Warning Tags and Labels – Harnesses

General Tags: Fall-Arrest Harness Catalog Numbers

87012, 87020, 87021, 87022, 87023, 87044, 87074, 87075, 87076, 87080, 87081, 87082, 87090, 87091, 87092, 87093, 87810, 87811, 87812, 87813, 87814, 87820, 87821, 87822, 87823, 87824, 87829, 87830, 87831, 87832, 87840, 87841, 87842, 87850, 87851, 87852, 87853, 87854, 87890, 87891, 87892, 87893

WARNINGS

- For use by **properly trained professionals** only.
- For **personal** use only. **NOT** for towing or hoisting.
- **NOT** for recreational or sporting use.
- Harnesses **must** be properly sized and adjusted to fit user. **Always** wear harness snug to avoid injury.
- **Only use** locking snap hooks.

B2 1 592

- OPE equipment must **only** be used for the specific purpose for which it is designed and intended.
- OPE equipment **must be destroyed** if subjected to impact loading.

Read Other Side

WARNINGS

- **Always** visually check that: 1) each snap hook freely engages the intended D-ring or anchorage, and 2) the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
- **Always visually check** that all buckles and connectors are properly closed before each use.

Read Next Tag

WARNINGS

- Never attach ladder or rebar hooks onto a D-ring.
- **Never** attach multiple snap hooks onto a D-ring.
- **Never** attach anything to a D-ring other than a single, locking snap hook. The existence of another object attached to a D-ring may prevent or falsely indicate snap-hook engagement.

B2 3. 592

- Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
- **Employer –** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.

Read Other Side

WARNINGS

- **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all occupational protective equipment before each use.
- Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.

Read Next Tag

WARNINGS

- **Before each use check that:** 1) OPE equipment is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, 2) rivets are not bent, loose or missing, 3) buckles, D-rings and other hardware are not distorted or cracked, 4) buckle tongue does not bind on buckle and buckle holes are not damaged, and 5) hook keepers are free of burrs, functioning properly, clean and not bent. **If the OPE equipment does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**

B2 2 592

Read Other Side

WARNINGS

- Assume the responsibility for determining that your OPE harness and equipment are in excellent condition at all times.
- Whenever there is a risk of a fall, personal fall-arrest protection must be used. Therefore, when working at an elevated position, always attach the fall-arrest D-ring in the back of the harness to an approved fall-arrest anchorage with a suitable fall-arrest lanyard or other connecting device. Where not possible, use alternative fall-arrest protection.
- **Never** punch additional holes or alter any OPE equipment in any way.

Read Next Tag

HOMOLOGUÉ CSA

HARNAIS DE SÉCURITÉ
Z259.10 ANSI Z359.1

- **AVERTISSEMENT:** Ne pas réutiliser un harnais ayant déjà interrompu la chute d'un utilisateur.
- **AVERTISSEMENT:** Ajuster la sangle pectorale à mi-hauteur de la poitrine.
- **AVERTISSEMENT:** Au cours d'une opération de sauvetage, le ou les cordages ne devraient être fixés qu'à l'anneau simple monté à l'arrière ou aux deux anneaux coulissants en forme de D montés sur les épaules.

CSA B2 1 693

Read Other Side

KLEIN TOOLS INC., CHICAGO, IL USA LM91642

CSA CERTIFIED

FULL-BODY HARNESS
Z259.10 ANSI Z359.1

- **WARNING:** Any unit harness which has seen fall arresting service should not be used after such service.
- **WARNING:** The chest strap should be positioned at the mid-chest level.
- **WARNING:** During a rescue, the line or lines should be attached only to the single-mounted back D-ring and/or to both shoulder- mounted sliding D-rings.

Read Next Tag

KLEIN TOOLS INC., CHICAGO, IL USA LM91642

Specific Tags: Fall-Arrest Harness Catalog Numbers

87020, 87021, 87022, 87023, 87074, 87075, 87076

WARNINGS

For Fall-Arrest Use Only

- Harness **must** be worn so that the fall-arrest D-ring is centered in back.
- **Fall-arrest anchorage must** support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.

C2a 1 592

Read Other Side

WARNINGS

- Attach fall-arrest connecting devices that meet OSHA standards only to the rear fall-arrest D-ring.
- **Rig to avoid contact with structures below in the event of a fall.** The free-fall distance must not exceed 6 ft. (1.8m). If using a deceleration unit, add 3-1/2 ft. (1m) to the free-fall distance to allow for unit extension.
- **For fall-arrest, always** keep anchorage at or above shoulder height to minimize fall distance.

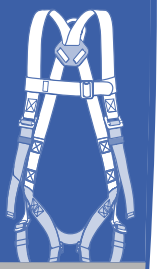
Read Next Tag

WARNINGS

- OSHA requires that impact force in a fall NOT exceed an 1,800 lb. (8kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting device or use deceleration unit to stay under 1,800 lbs. (8kN).

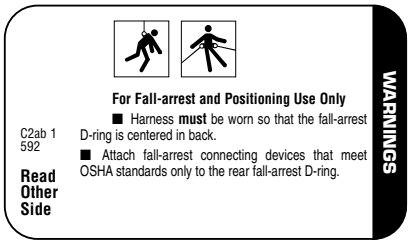
C2a 2. 592

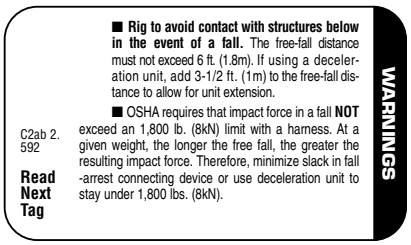
Read Next Tag

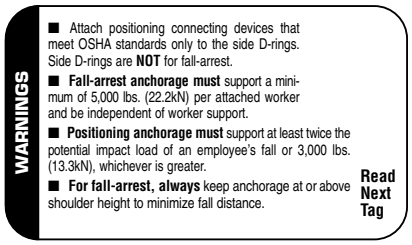


Specific Tags: Fall-Arrest/Positioning Harness Catalog Numbers

87080, 87081, 87082, 87810, 87811, 87812, 87813, 87814, 87820, 87821, 87822, 87823, 87824, 87829, 87830, 87831, 87832, 87962, 87963, 87964, 87965

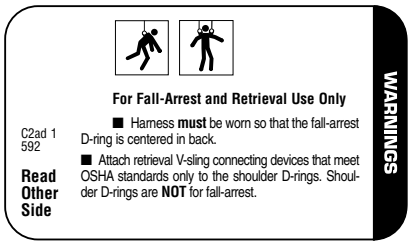


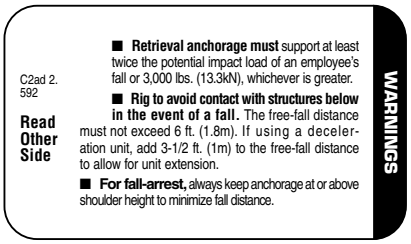


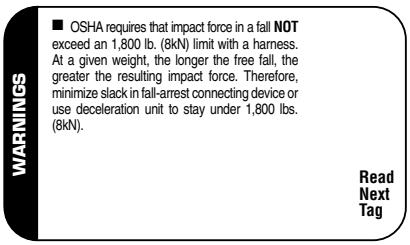


Specific Tags: Fall-Arrest/Retrieval Harness Catalog Numbers

87090, 87091, 87092, 87093, 87840, 87841, 87842

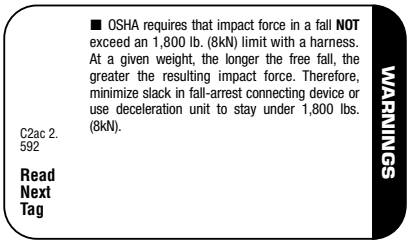


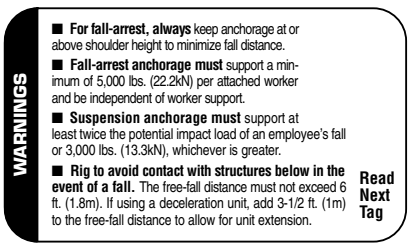


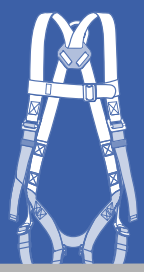


Specific Tags: Fall-Arrest/Suspension Bosun's Chair/Harness Catalog Numbers

87044



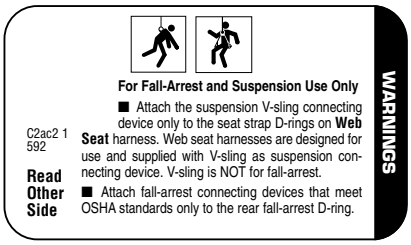


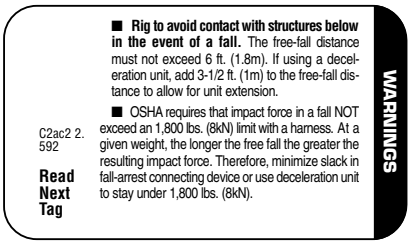


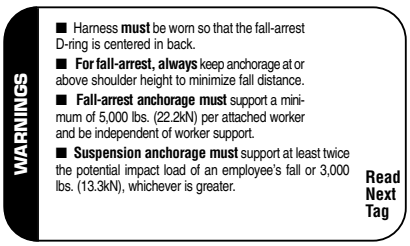
Warning Tags and Labels – Harnesses

Specific Tags: Fall-Arrest/Suspension Web Seat Harness Catalog Numbers

87012

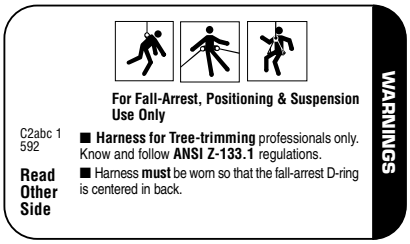


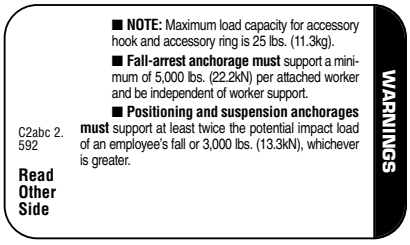


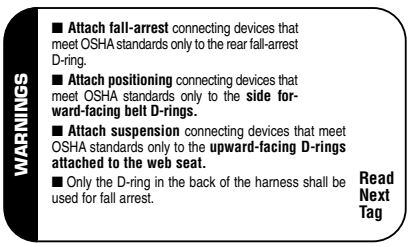


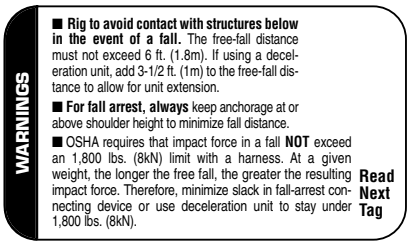
Specific Tags: Fall-Arrest/Positioning/Suspension Harness Catalog Numbers

87890, 87891, 87892, 87893



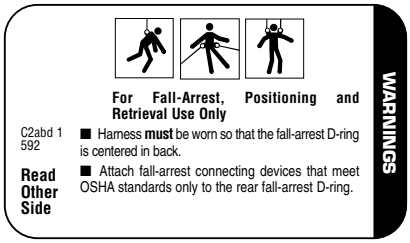


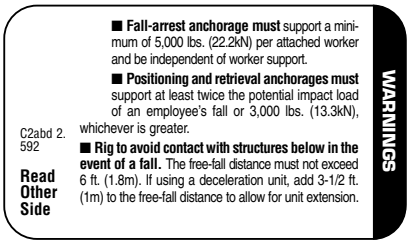


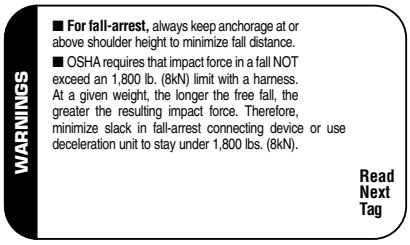


Specific Tags: Fall-Arrest/Positioning/Retrieval Harness Catalog Numbers

87850, 87851, 87852, 87853, 87854







Connecting Devices

The Klein Tools line of connecting devices serves many applications from fall-arrest to positioning, suspension, and retrieval.

For Professionals... Since 1857®

Introduction – Connecting Devices

Klein manufactures a full line of occupational protective equipment (OPE) connecting devices. When using the **A-B-C Rule,** each connecting device becomes a **(C)** component of an OPE system for the fall-protection system. Based upon job specifications and appropriate regulations, choose a fall-arrest, or fall-arrest system combined with positioning, suspension, and/or retrieval systems that will satisfy the specific requirement. Always follow the **A-B-C Rule.** Each system must contain at least one **(A)** anchorage, one **(B)** body wear, and one **(C)** connecting device. The proper choice of connecting devices depends upon the other OPE equipment to be used, specific job-site facts, and application limitations. A competent person, as defined by OSHA, must make these equipment, job-site, and application decisions.

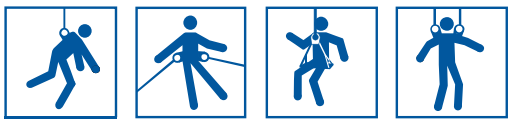
OSHA regulations require fall-arrest protection if there is a risk of falling (generally from a height of six feet or more). Additionally, the use of connecting devices without locking snap-hooks in any fall-arrest system is strictly prohibited by OSHA.

Each connecting device offered by Klein Tools is designed to help protect against different kinds of risks. The following section shows the types of connecting devices and explains how each becomes part of these basic OPE systems: fall-arrest, positioning, suspension, and/or retrieval functions.

Each Klein connecting device is equipped with a warning card packet or label permanently attached to the connecting device. These provide detailed information regarding the use, care, and inspection of the connecting device, along with an inspection-recording grid, the manufacturer's name, length, model number, and year of manufacture. Klein Tools' toll-free telephone number is also provided for easy user access.

⚠WARNING Double-check the intended function of any Klein connecting device before using it. Proper OPE system applications are identified in this catalog and are printed clearly with each product. Misuse of a connecting device or any other piece of OPE equipment can result in serious injury or death.

Types and Applications of Connecting Devices



Fall-Arrest | Positioning | Suspension | Retrieval

Klein connecting devices are designed for the following fall-protection applications indicated with a ●

TYPE	FA	POS	SUS	RET
Nylon-Filament Rope Lanyards	*	●	●	●
Polypropylene Rope Lanyards	*	●	●	●
Nylon-Webbing Lanyards	*	●	●	●
Nylon-Filament V-Slings			●	●
Aircraft-Cable Lanyards		●	●	●
Deceleration Units	●			
Anchorage Connectors	●			
Boom Straps	●			
Pigtail Anchorage Connectors	●			
Nylon-Webbing Deceleration Lanyards	●			

*These lanyards can be used in a fall-arrest system if a deceleration unit is added.

Job and application environments vary and may not be compatible with some connecting device materials. For example, nylon rope lanyards should not be used near welding splatter, open flames, or other heat sources. See the "Physical Properties of Materials" section in the Appendix for more detail.

Selecting the Right Connecting Devices

Klein offers connecting devices for each of the following fall-protection uses:

- Fall-Arrest
- Positioning
- Suspension
- Retrieval

Many connecting devices can be properly used in more than one OPE system application. Some connecting devices, however, can be used for only one application. The intended use of each Klein OPE connecting device can be identified by one or more Klein use/function symbols printed on each product warning tag or warning packet. By careful selection, a connecting device can be chosen that offers the necessary features for the work to be done.

Choose a connecting device that is compatible with the OPE system you wish to use. Remember, OSHA prohibits the use of connecting devices with non-locking snap-hooks in fall-arrest applications. Make sure your connecting devices are equipped with locking snap-hooks. Some types of connecting devices are: deceleration units, rope grabs, lanyards with wire pigtail, nylon rope V-slings, nylon rope lanyards, cable

lanyards or webbing lanyards. The decision to use a particular connecting device or a combination of connecting devices (such as one for suspension, another for fall-arrest) in your fall-protection system is based not only on the specific job, but also on your job-site environment. Sharp-edged fall-arrest anchorages, such as I-beams, may require a nylon rope lanyard with wire pigtail; on the other hand, exposure to welding splatter requires a steel-cable lanyard.

Depending on the job, longer or shorter lengths of a connecting device may be required and are available by special order. Required length of all connecting devices should be determined before reaching the elevated position. Be sure the connecting device you choose for a job is designed and marked for that particular use. Misuse of a connecting device or any other piece of OPE equipment can result in serious injury or death. Know the job before selecting the connecting device.

Fall-Arrest System: Fall-arrest connecting devices must be short enough and attached to a fall-arrest anchorage in a manner that will limit a worker's free-fall to 6 ft. per OSHA regulations. OSHA also requires that the maximum impact force for a harness system be under 1,800 lbs.

To most effectively minimize the free-fall distance when rigging a fall-arrest system: 1) use as short a length fall-arrest connecting device as possible, 2) minimize the amount of slack and 3) always keep the fall-arrest anchorage above shoulder height.

Positioning Systems: Positioning connecting devices are intended to hold the worker close enough to the work position so that he will be able to get the job done with his hands free. The required length for the positioning connecting device depends upon the size of the structure to be used as the positioning anchorage.

Suspension Systems: Suspension connecting devices are often attached to winches, pulleys, and other mechanical devices. The length of a suspension connecting device depends on the job-site and equipment used to vertically hold the worker at the correct height to do the job.

Retrieval Systems: Choose the shortest lanyard with a minimum amount of slack in order to allow fast removal of a worker in a potentially dangerous situation. The lanyard, however, should be long enough to allow the worker to move around and get the job done.

Sizing an OPE Connecting Device

Connecting devices are measured from bearing point to bearing point (Figure 10a). The undeployed length (or range of lengths, if connecting device is adjustable) is clearly printed on the warning tag or label. This is the undeployed connecting device length.

The distance between the harness bearing point (fall-arrest D-ring) and the anchorage connector bearing point (anchorage connector D-ring) must be determined before choosing the proper length connecting device (Figure 10b). This is true for all OPE system applications, but accuracy is most important in fall-arrest systems.

Always rig connecting devices so that in a fall, you avoid contact with structures below. As a general rule, allow an additional 3.5 ft. (1 m) to each fall-arrest connecting device to account for the following connecting device extension factors:

- **Elasticity (stretch) upon impact or load (rope or web lanyards)**
- **Extension upon impact (deceleration devices)**

Any free-fall distance (slack in the connecting device) must also be added to this 3.5 ft. (1 m) connecting device extension factor to determine the minimum distance to any structure below. To determine free-fall distance, subtract the distance between the harness and the anchorage connector bearing points from the undeployed connecting device length (keeping in mind the height of the worker). In any situation, the total free-fall distance must not exceed 6 ft. (1.8 m). See Figure 10c.

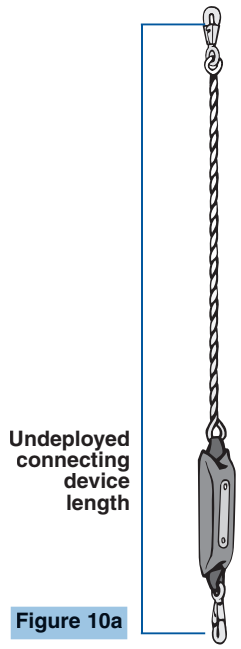


Figure 10a

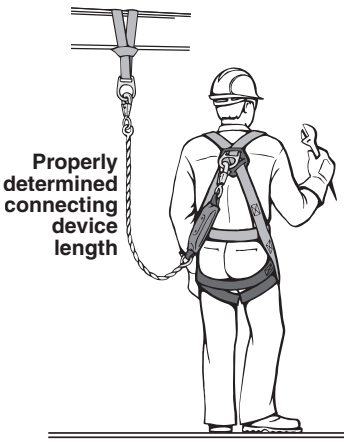


Figure 10b

Figure 10c

Nylon-Filament Rope Lanyards

Nylon-Filament Rope Lanyard – Fixed Length

- *Long-strand nylon-filament construction provides very high tensile strength and excellent elasticity.*
- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *For use in positioning, suspension, or retrieval systems. Can also be used with a deceleration unit for fall-arrest.*

Cat. No.	Length	Shipping Weight (lbs.)
1/2" (13 mm) Diameter		
87417	4' (1.2 m)	1.55
87418	5' (1.5 m)	1.70
87419	6' (1.8 m)	1.80
5/8" (16 mm) Diameter*		
87435*	4' (1.2 m)	1.90
87436*	5' (1.5 m)	2.20
87437*	6' (1.8 m)	2.10

**Conforms to CSA, ANSI Z359.1-1992 (R1999), and CALOSHA*

NOTE: Rope lanyards can be used with a deceleration unit for fall-arrest.

Nylon-Filament Rope Lanyard – Adjustable Length

- *Convenient adjustable length.*
- *Long-strand nylon-filament construction provides very high tensile strength and excellent elasticity.*
- *Equipped with two permanently attached, drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *For use in positioning, suspension, or retrieval systems. Can also be used with a deceleration unit for fall-arrest.*

Cat. No.	Adjustable Length Range	Shipping Weight (lbs.)
1/2" (13 mm) Diameter		
87428	3.5' – 5' (1.1 m – 1.5 m)	1.80
87429	4' – 6' (1.2 m – 1.8 m)	1.85
5/8" (16 mm) Diameter*		
87430*	4' – 6' (1.2 m – 1.8 m)	2.30

**Conforms to ANSI Z359.1-1992 (R1999) and CALOSHA*

NOTE: Rope lanyards can be used with a deceleration unit for fall-arrest.

NOTE: Special-length lanyards are available and can be ordered through your authorized Klein Tools distributor.

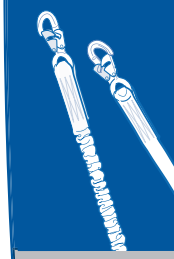
Polypropylene Rope Lanyard – Fixed Length

- *Polypropylene has excellent dielectric characteristics and is suited for use around live electrical lines, energized equipment, and other electrical OPE applications.*
- *Extreme care should always be taken to keep metal snap-hooks (and any other metal hardware) away from electrical lines and energized equipment.*
- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Polypropylene rope lanyards are less elastic than nylon ropes, but offer good elasticity when subjected to impact loading.*
- *For use in positioning, suspension, or retrieval systems. Can also be used with a deceleration unit for fall-arrest.*
- *Rope diameter is 9/16".*

NOTE: Rope lanyards can be used with a deceleration unit for fall-arrest.

Cat. No.	Length	Shipping Weight (lbs.)
87422	5' (1.5 m)	1.85
87423	6' (1.8 m)	1.80

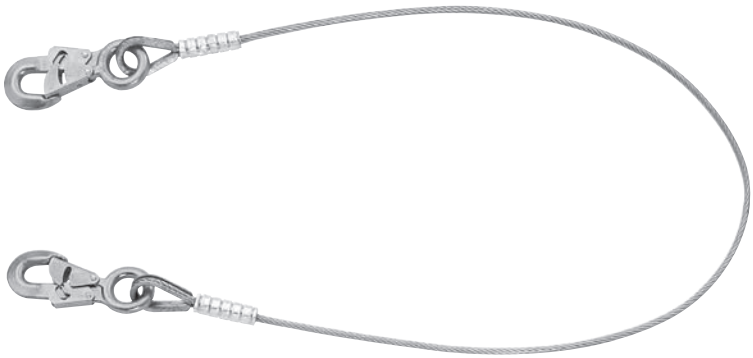
NOTE: Special-length lanyards are available and can be ordered through your authorized Klein Tools distributor.



Aircraft-Cable Lanyard

Aircraft-Cable Lanyard – Fixed Length

- *Superior resistance to hostile environments; recommended lanyard of choice for welders.*
- *Lanyard can be used around hazards such as open flame, rough-edged structural members, and welding splatter. It will not, however, resist the flame of a torch.*
- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Strong, flexible steel cable is 7/32" (6 mm) in diameter and is vinyl-coated for a total diameter of 9/32" (7 mm).*
- *For use in positioning, suspension, or retrieval systems. Can also be used with a Klein deceleration unit for fall-arrest.*



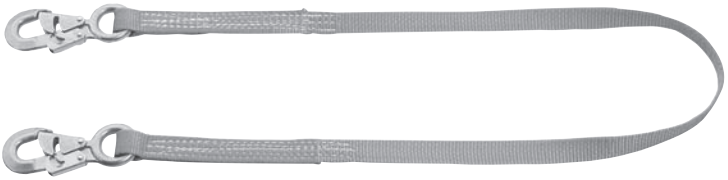
Cat. No.	Length	Shipping Weight (lbs.)
87414	5' (1.5 m)	2.0
87415	6' (1.8 m)	2.0

NOTE: Always use a deceleration unit with aircraft-cable lanyards for fall-arrest.

⚠WARNING: Aircraft cable must NEVER be used around electrical lines or energized equipment.

Nylon-Webbing Lanyard – Fixed Length

- *Nylon-webbing lanyards are ideal for positioning and in situations where the worker is often turning or moving around (webbing will not reverse-twist [hockle]).*
- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *1" (25 mm) wide orange nylon webbing impregnated with resin for greater durability and abrasion resistance.*
- *For use in positioning, suspension, or retrieval systems. Can also be used with a deceleration unit for fall-arrest.*
- *Lanyard is certified and compliant with CSA and ANSI requirements.*



Cat. No.	Length	Shipping Weight (lbs.)
87431	5' (1.5 m)	1.65
87432	6' (1.8 m)	1.70

NOTE: Nylon-webbing lanyards can be used with a deceleration unit for fall-arrest.

Nylon-Webbing Lanyard – Adjustable Length

- *Convenient adjustable length.*
- *Nylon-webbing lanyards are ideal for positioning and in situations where the worker is often turning or moving around (webbing will not reverse-twist [hockle]).*
- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *1" (25 mm) wide orange nylon webbing impregnated with resin for greater durability and abrasion resistance.*
- *For use in positioning, suspension, or retrieval systems. Can also be used with a deceleration unit for fall-arrest.*

Cat. No.	Adjustable Length Range	Shipping Weight (lbs.)
87433	6-1/2' – 10' (2 – 3 m)	2.10

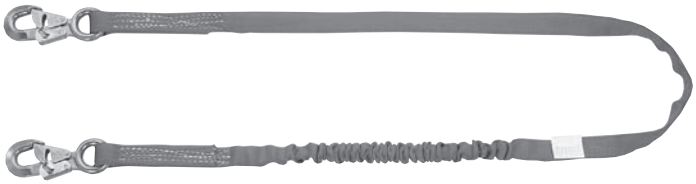
NOTE: Nylon-webbing lanyards can be used with a deceleration unit for fall-arrest.

NOTE: Special-length lanyards are available and can be ordered through your authorized Klein Tools distributor.

Klein-Lite® Nylon-Webbing Deceleration Lanyards

Klein-Lite® Nylon-Webbing Deceleration Lanyard – Fixed Length

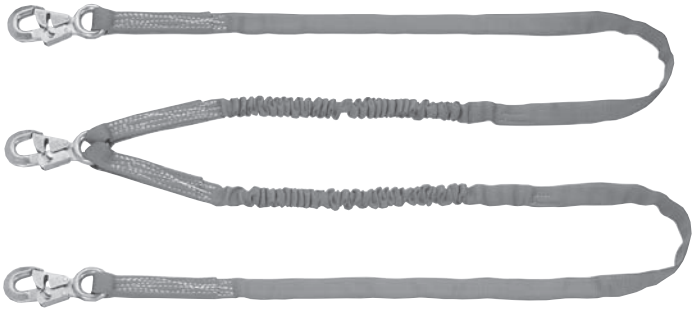
- *Contains energy-absorbing inner core made of polyester. Core is protected by an outer shell made of orange tubular nylon webbing.*
- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Designed solely for use in fall-arrest systems.*



Cat. No.	Length	Shipping Weight (lbs.)
87473	6' (1.8 m)	2.0

Klein-Lite® Twin-Leg Nylon-Webbing Deceleration Lanyard – Fixed Length

- *Designed for use in 100% tie-off fall-arrest systems. Allows attachment to a new fall-arrest anchorage with one lanyard leg, while staying connected to the original fall-arrest anchorage with the remaining lanyard leg.*
- *Each leg contains an energy-absorbing inner core made of polyester. Each core is protected by an outer shell made of orange tubular nylon webbing.*
- *Equipped with three drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Designed solely for use in fall-arrest systems.*

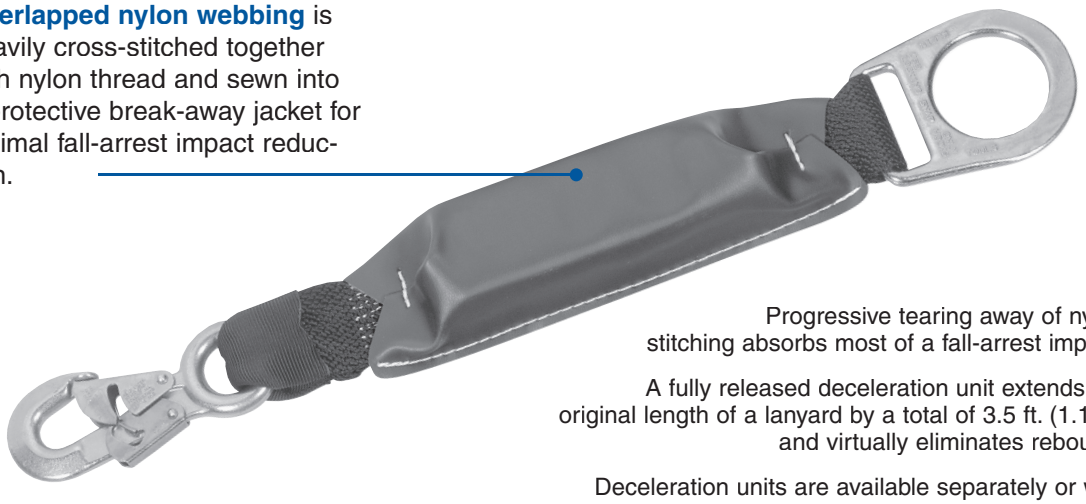


Cat. No.	Length	Shipping Weight (lbs.)
87475	6' (1.8 m)	3.7

⚠WARNING: The uncovering of a red-lettered warning label(s) indicates that the unit was subjected to a severe impact force; therefore, the unit must not be used and must be disposed of immediately.

Features:

Overlapped nylon webbing is heavily cross-stitched together with nylon thread and sewn into a protective break-away jacket for optimal fall-arrest impact reduction.



Progressive tearing away of nylon stitching absorbs most of a fall-arrest impact.

A fully released deceleration unit extends the original length of a lanyard by a total of 3.5 ft. (1.1 m) and virtually eliminates rebound.

Deceleration units are available separately or with permanently attached lanyards made of nylon rope, aircraft cable, or nylon webbing.

All Klein deceleration units are certified and compliant with ANSI and CSA requirements.

On Klein deceleration units, a red warning label stitched to the overlapped nylon webbing inside the protective break-away jacket will identify a used lanyard and direct the disposal of the unit.

⚠WARNING: Deceleration units are designed solely for use in fall-arrest systems.

Deceleration Unit

- *Equipped with one drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hook with 11/16" (17 mm) throat opening.*
- *Drop-forged circle D-ring has corrosion-resistant finish, wear-minimizing roller, and is proof-loaded to meet OSHA regulations.*

Cat. No.	Length	Shipping Weight (lbs.)
87409	20" (508 mm)	1.60

Deceleration Units

Deceleration Unit with Nylon Rope Lanyard

- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Deceleration unit is attached to a 1/2" (13 mm) diameter nylon-filament rope lanyard.*
- *Long-strand nylon filament lanyard construction provides high tensile strength and good abrasion resistance.*
- *Designed solely for use in fall-arrest systems.*

Cat. No.	Length	Shipping Weight (lbs.)
87410	5' (1.5 m)	2.05

Deceleration Unit with Aircraft-Cable Lanyard – Klein-Lok® Snap-Hook

- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Deceleration unit is attached to a vinyl-coated flexible steel cable that is 7/32" (6 mm) in diameter and has a total diameter of 9/32" (7 mm).*
- *Designed solely for use in fall-arrest systems.*

Cat. No.	Length	Shipping Weight (lbs.)
87411	5' (1.5 m)	2.70

⚠WARNING: Aircraft cable must NEVER be used around electrical lines or energized equipment.

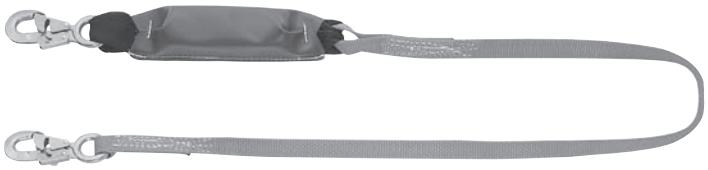
Deceleration Unit with Aircraft-Cable Lanyard – D-Ring

- *Durable forged circle D-ring has corrosion-resistant finish, friction-minimizing roller, and is proof-loaded to meet OSHA regulations.*
- *Equipped with one drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hook with 11/16" (17 mm) throat opening.*
- *Deceleration unit is attached to a vinyl-coated flexible steel cable that is 7/32" (6 mm) in diameter and has a total diameter of 9/32" (7 mm).*
- *Aircraft-cable lanyards can be used around hazards such as open flame, rough-edged structural members, and welding splatter. They will not, however, resist the flame of a torch.*
- *Typical applications include anchoring to I-beams, columns, piers, and oil-rigs.*
- *Designed solely for use in fall-arrest systems.*

Cat. No.	Length	Shipping Weight (lbs.)
87412	5' (1.5 m)	2.55

Deceleration Unit with Nylon-Webbing Lanyard

- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Deceleration unit is attached to 1" (25 mm) wide orange nylon-webbing lanyard impregnated with resin for greater durability and abrasion resistance.*
- *Nylon-webbing lanyards are ideal for situations where the worker is often turning or moving around (webbing will not reverse-twist [hockle]).*
- *Designed solely for use in fall-arrest systems.*



Cat. No.	Length	Shipping Weight (lbs.)
87468	6' (1.8 m)	2.00

⚠WARNING: Aircraft cable must NEVER be used around electrical lines or energized equipment.

Deceleration Units

Deceleration Unit with Dual Nylon-Rope Lanyard

- *Designed for use in 100% tie-off fall-arrest systems. Allows attachment to a new fall-arrest anchorage with one lanyard leg, while staying connected to the original fall-arrest anchorage with the remaining lanyard leg.*
- *Deceleration unit is attached to two 1/2" (13 mm) diameter nylon-filament rope lanyards.*
- *Long-strand nylon-filament lanyard construction provides high tensile strength and excellent elasticity.*
- *Equipped with three drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Designed solely for use in fall-arrest systems.*

Cat. No.	Length	Shipping Weight (lbs.)
87413	6' (1.8 m)	3.10

Deceleration Unit with Dual Nylon-Webbing Lanyard

- *Designed for use in 100% tie-off fall-arrest systems. Allows attachment to a new fall-arrest anchorage with one lanyard leg, while staying connected to the original fall-arrest anchorage with the remaining lanyard leg.*
- *Deceleration unit is attached to two 1" (25 mm) orange nylon-webbing lanyards impregnated with resin for greater durability and abrasion resistance.*
- *Equipped with three drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Nylon-webbing lanyards are ideal for situations where the worker is often turning or moving around (webbing will not reverse-twist [hockle]).*
- *Designed solely for use in fall-arrest systems.*

Cat. No.	Length	Shipping Weight (lbs.)
87416	6' (1.8 m)	3.00

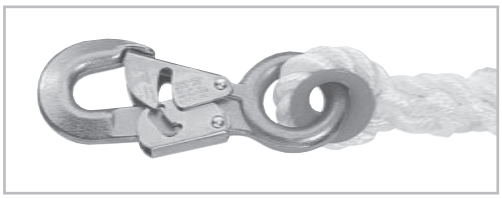
NOTE: Special-length lanyards are available and can be ordered through your authorized Klein Tools distributor.

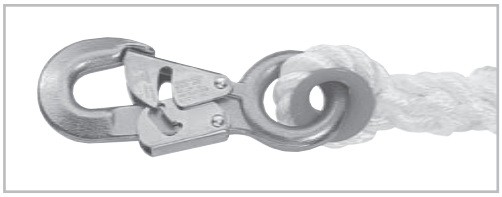
V-Sling with Nylon Rope

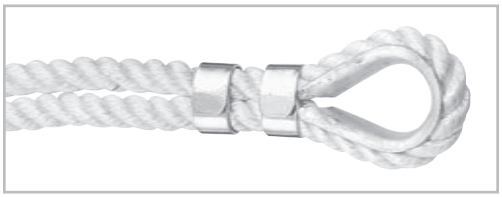
- *Equipped with two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Snap-hooks can connect to the shoulder D-rings of retrieval harnesses or the seat-strap D-rings of suspension harnesses.*
- *Long-strand 1/2" (13 mm) diameter nylon-filament rope construction for high tensile strength and excellent elasticity.*
- *Rope thimble at top has 1-1/8" (29 mm) diameter eye.*
- *Snap-hooks and rope thimble are permanently spliced onto the sling.*

Cat. No.	Overall Length	Shipping Weight (lbs.)
87420	5' (1.5 m)	2.25

NOTE: For retrieval and suspension purposes only; NOT to be used for fall-arrest.







Anchorage Connectors

Nylon-Filament Rope Lanyard – Adjustable Length and Wire Pigtail

- *Unique and versatile connecting device designed for use in fall-arrest systems. Suited for workers on transmission towers and other elevated sites.*
- *The wire pigtail is constructed from 7/32" (6 mm) flexible steel cable and is coated in durable vinyl for a total diameter of 9/32" (7 mm).*
- *The pigtail is designed to wrap around structural members with sharp edges and attach back onto itself using a Klein-Lok® snap-hook.* ***Never attach rope-lanyard end back onto itself.***
- *This connecting device must only be fastened to structures (or other anchorages) that are capable of supporting 5,000 lbs.*
- *The adjustable long-strand nylon filament lanyard is 1/2" (13 mm) in diameter and is permanently attached to the pigtail end.*
- *The lanyard has two drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*

Cat. No.	Pigtail Length	Adjustable Length Range	Shipping Weight (lbs.)
87470	24" (61 cm)	7' – 12' (2m – 4m)	3.10
87471	48" (122 cm)	10' – 18' (3m – 6m)	3.70

Nylon Choker Anchorage Connector

- *This anchorage connector can be used to fasten around an I-beam or similar structure to provide a compatible anchorage for attaching a fall-arrest connecting device.*
- *This connecting device must only be fastened to structures (or other anchorages) that are capable of supporting 5,000 lbs.*
- *Unique half-twist design allows the 2" (51 mm) wide nylon webbing to remain flat and in continuous contact with the structural member. This feature reduces wear and stress on the webbing.*
- *Durable forged circle D-ring has corrosion-resistant finish, wear-minimizing roller, and is 100% proof-loaded to meet OSHA regulations.*

Cat. No.	Connecting Cable Length	Shipping Weight (lbs.)
87920	3' (.9 m)	1.36
87921	5' (1.5 m)	1.70

NOTE: This is NOT an occupational protective belt for personal use.

NOTE: Special-length anchorage connectors are available and can be ordered through your authorized Klein Tools distributor.

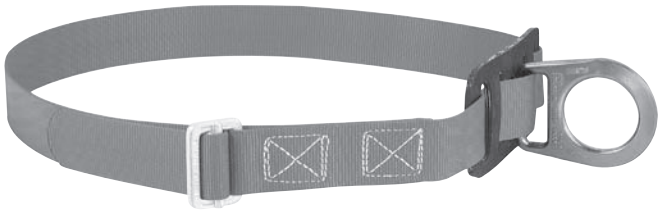
Wire Rope Anchorage Connector

- *Unique and versatile anchorage connector designed for use in a fall-arrest system. Ideal for tradesmen working on structural steel or at other elevated sites where it is otherwise difficult or impossible to attach a fall-arrest system.*
- *The wire connecting cable is constructed from 5/16" (8 mm) flexible steel cable and is coated in durable vinyl for a total diameter of 3/8" (10 mm).*
- *Durable forged circle D-rings have corrosion-resistant finish, wear-minimizing roller, and are 100% proof-loaded to meet OSHA regulations.*
- *1-3/4" (44 mm) impregnated nylon webbing for durability and abrasion resistance.*
- *Equipped with one drop-forged steel, corrosion-resistant Klein-Lok® locking snap-hook with 11/16" (17 mm) throat opening.*
- *The distance from the end of the webbing to the bearing point on the top D-ring is 14" (36 cm).*

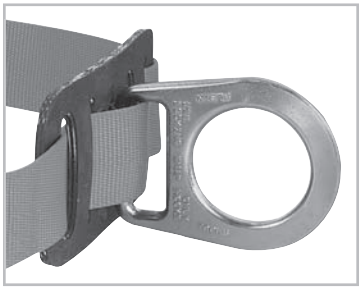
Cat. No.	Connecting Cable Length	Shipping Weight (lbs.)
87480	36" (91 cm)	2.70
87481	54" (137 cm)	3.00

Boom Strap

Nylon Boom Strap with Friction Buckle



- ***This is NOT an occupational protective belt for personal use. It is designed to provide a proper anchorage on a boom.***
- *Fastens snugly around aerial basket booms to provide an anchorage for attaching a fall-arrest lanyard.*
- *1-3/4" (44 mm) wide resin-treated Type 10 nylon-webbing construction for long-lasting life.*
- *Conforms around boom shapes up to 48" (1.2 m) in circumference.*
- *Friction buckle for tight adjustments.*
- *Drop-forged circle D-ring with pad to hold D-ring in position.*



Cat. No.	Length	Shipping Weight (lbs.)
87916	54" (1.4 m)	1.25

NOTE: Boom strap secures around an aerial basket boom. It provides a suitable anchorage for connecting a worker's fall-arrest lanyard. It is NOT an occupational protective belt to be used as part of the worker's personal OPE gear.

NOTE: Special-length anchorage connectors are available and can be ordered through your authorized Klein Tools distributor.

Warning Tags and Labels – Connecting Devices

Klein attaches highly-durable warning and instruction tags/labels to its OPE products. In the event any of these tags or labels become unattached, lost, or damaged, contact the Klein Tools Sales Department, toll-free, at 1-800-553-4676 for information on how to have the tags replaced free of charge.

Types of OPE Warning Tags/Labels

This section contains black and white reproductions of Klein OPE warning tags/labels. They are organized by product category. Some warning information for connecting devices is printed on a durable label wrapped around the lanyard.

A set of plastic warning tags is attached to the majority of OPE products.

Each set contains four types of warning/information tags:

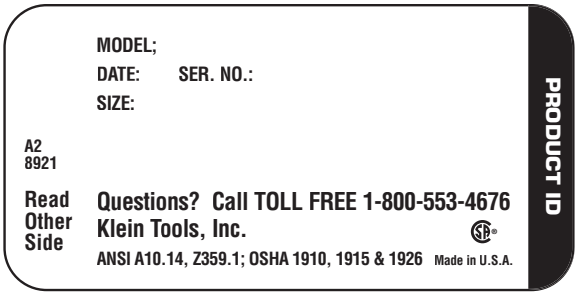
1. **A General Hazard Tag** will be attached to each OPE product.
2. **General Warning Tags** will be included on all OPE products in a particular category. For example, all OPE harnesses will have general harness warning tags.
3. **Specific Warning Tags** will be included for each class of products within a particular category. For example, Cat. No. 87012 and 87020 harnesses have their own specific warning tags.
4. **A Product ID Tag** will be attached to each OPE product.

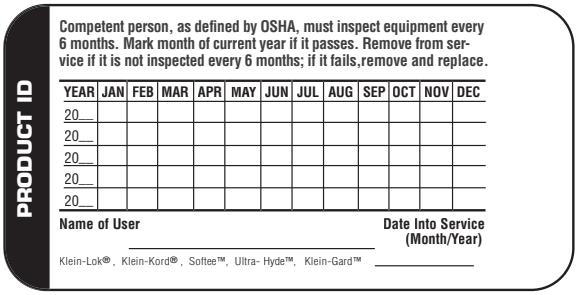
General Hazard Tag for All OPE Products

This tag is the first in a set of warning tags which will be attached to each Klein OPE product.

Product ID Tag for OPE Connecting Devices

For connecting devices with warning tag packets, this tag (front and back sides shown) is the last in a set of warning tags which will be attached to each Klein OPE product.





Rope and Webbing Lanyard Catalog Numbers

87417, 87418, 87419, 87422, 87423, 87428, 87429, 87430

DO NOT REMOVE THIS LABEL

For Positioning, Suspension & Retrieval Use Only

Model: **Length:** **Date:**

- For use by **properly trained professionals only.**
- Occupational Protective Equipment (OPE) must only be used for the specific purpose for which it is designed and intended.
- Rope and webbing lanyards can be used with a deceleration unit for fall arrest.
- For **personal** use only, **NOT** towing or hoisting.
- **Not** for recreational or sporting use.
- **Never** allow a lanyard to come in contact with moving or rotating machinery. Use pouch to store lanyard when not in use.
- **Never** allow a rope or webbing lanyard to come in contact with high-temperature surfaces, welding or other heat sources. Instead, only use an aircraft-cable lanyard.
- **Never** attach a lanyard back onto itself or attach multiple lanyards together.
- **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
- A lanyard or any other connecting device must be destroyed if subjected to impact loading.
- **Always** attach snap hook to proper anchorage for the intended use or the proper D-ring of the harness or belt. **For fall arrest,** use rear fall-arrest D-ring. **For positioning,** use forward-facing side D-rings. **For suspension,** use seat strap or upward-facing, side D-rings. **For retrieval,** use shoulder D-rings (or rear D-ring in accordance with OSHA 1910.146).
- A beam or other sharp structural member could cut or damage a lanyard. Regardless, a lanyard should never be wrapped around an anchorage and attached back onto itself. For fall-arrest, if anchorage does not provide a proper attachment point, use a boom strap, choker anchorage connector or lanyard with wire pigtail.

QUESTIONS?

Call TOLL FREE 1-800-553-4676

Klein Tools, Inc.

T-100

OSHA 1910, 1915 & 1926.
ANSI A10.14

Made in U.S.A.

- **Never** work without independent fall-arrest protection if there is danger of a fall.
- **Fall-arrest anchorages** must support a minimum of 5,000 lbs. (22.2 kN) per attached worker and be independent of worker support. **Positioning, suspension and retrieval anchorages** must be capable of supporting a worker's fall or 3,000 lbs. (13.3 kN) whichever is greater.
- **OSHA** requires that impact force in a fall not exceed an 1,800 lb. (8 kN) limit with a harness or a 900 lb. (4 kN) limit with a belt. Therefore, minimized slack in fall-arrest connecting devices or use deceleration unit to stay under these limits.
- Use **only** with harness or belt meeting government standards for intended use. As of January 1, 1998, fall-arrest body belts will no longer meet OSHA requirements for fall-arrest and shall no longer be used.
- For fall arrest, **always** keep anchorage above rear fall-arrest D-ring, and minimize slack in the lanyard. If climbing above anchorage, attach to a new anchorage higher up.
- **Rig to avoid contact with structures below in a fall.** Free-fall distance must not exceed 6 ft. (1.8 m). To allow for deceleration unit extension, add 3-1/2 ft. (1 m) to free-fall distance.
- **Always** visually check that: **1)** each snap hook freely engages the intended D-ring or anchorage, and **2)** the snap-hook keeper (latch) is completely closed with each use. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
- Snap hooks attached onto D-rings must have less than 3/4" (19 mm) throat opening. Never attach ladder or rebar hooks onto D-rings
- **Never** join two snap hooks together. They are **NOT** intended to be used that way, and could twist apart.
- **Never** attach multiple snap hooks onto a D-ring.
- Make sure each hook is positioned so that its keeper is **never** load bearing.
- **Never** disable locking keeper (latch) on snap hook, punch holes in or alter a connecting device in any way.
- **Before each use check that: 1)** unit is free of burns, cuts, abrasions, broken stands or stitches, kinks, knots or excessive wear, **2)** locking snap hooks are not distorted or cracked, and hook keepers are free of burrs, functioning properly, clean and not bent. If the lanyard does not pass inspection, **it should be removed from service immediately and destroyed. Replace immediately.**
- **Employer–** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
- **Read, understand and follow** all instructions and cautions attached to and/or packed with this and all occupational protective equipment before each use.

Klein-Lok®, Klein-Kord®, Softee™, Ultra-Hyde™

Rope and Webbing Lanyard Catalog Numbers

87431, 87432, 87433, 87435, 87436, 87437

DO NOT REMOVE THIS LABEL

For Positioning, Suspension & Retrieval Use Only

Model: **Length:** **Date:**

- For use by **properly trained professionals only.**
- Occupational Protective Equipment (OPE) must only be used for the specific purpose for which it is designed and intended.
- Rope and webbing lanyards can be used with a deceleration unit for fall arrest.
- For **personal** use only, **NOT** towing or hoisting.
- **Not** for recreational or sporting use.
- **Never** allow a lanyard to come in contact with moving or rotating machinery. Use pouch to store lanyard when not in use.
- **Never** allow a rope or webbing lanyard to come in contact with high-temperature surfaces, welding or other heat sources. Instead, only use an aircraft-cable lanyard.
- **Never** attach a lanyard back onto itself or attach multiple lanyards together.
- **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
- A lanyard or any other connecting device must be destroyed if subjected to impact loading.
- **Always** attach snap hook to proper anchorage for the intended use or the proper D-ring of the harness or belt. **For fall arrest,** use rear fall-arrest D-ring. **For positioning,** use forward-facing side D-rings. **For suspension,** use seat strap or upward-facing, side D-rings. **For retrieval,** use shoulder D-rings (or rear D-ring in accordance with OSHA 1910.146).
- A beam or other sharp structural member could cut or damage a lanyard. Regardless, a lanyard should never be wrapped around an anchorage and attached back onto itself. For fall-arrest, if anchorage does not provide a proper attachment point, use a boom strap, choker anchorage connector or lanyard with wire pigtail.

QUESTIONS?

Call TOLL FREE 1-800-553-4676

Klein Tools, Inc.

T-124

Z259.1 LM91642
OSHA 1910, 1915 & 1926.
ANSI A10.14 & Z359.1

Made in U.S.A.

- **Never** work without independent fall-arrest protection if there is danger of a fall.
- **Fall-arrest anchorages** must support a minimum of 5,000 lbs. (22.2 kN) per attached worker and be independent of worker support. **Positioning, suspension and retrieval anchorages** must be capable of supporting a worker's fall or 3,000 lbs. (13.3 kN) whichever is greater.
- **OSHA** requires that impact force in a fall not exceed an 1,800 lb. (8 kN) limit with a harness. Therefore, minimized slack in fall-arrest connecting devices or use deceleration unit to stay under these limits.
- Use **only** with harness or belt meeting government standards for intended use. As of January 1, 1998, fall-arrest body belts will no longer meet OSHA requirements for fall-arrest and shall no longer be used.
- For fall arrest, **always** keep anchorage above rear fall-arrest D-ring, and minimize slack in the lanyard. If climbing above anchorage, attach to a new anchorage higher up.
- **Rig to avoid contact with structures below in a fall.** Free-fall distance must not exceed 6 ft. (1.8 m). To allow for deceleration unit extension, add 3-1/2 ft. (1 m) to free-fall distance.
- **Always** visually check that: **1)** each snap hook freely engages the intended D-ring or anchorage, and **2)** the snap-hook keeper (latch) is completely closed with each use. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
- Snap hooks attached onto D-rings must have less than 3/4" (19 mm) throat opening. Never attach ladder or rebar hooks onto D-rings.
- **Never** join two snap hooks together. They are **NOT** intended to be used that way, and could twist apart.
- **Never** attach multiple snap hooks onto a D-ring.
- Make sure each hook is positioned so that its keeper is **never** load bearing.
- **Never** disable locking keeper (latch) on snap hook, punch holes in or alter a connecting device in any way.
- **Before each use check that: 1)** unit is free of burns, cuts, abrasions, broken stands or stitches, kinks, knots or excessive wear, **2)** locking snap hooks are not distorted or cracked, and hook keepers are free of burrs, functioning properly, clean and not bent. If the lanyard does not pass inspection, **it should be removed from service immediately and destroyed. Replace immediately.**
- **Employer—**Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
- **Read, understand and follow** all instructions and cautions attached to and/or packed with this and all occupational protective equipment before each use.

Klein-Lok®, Klein-Kord®, Softee™, Ultra-Hyde™

Warning Tags and Labels – Connecting Devices

Aircraft-Cable Lanyard Catalog Numbers

87414, 87415

DO NOT REMOVE THIS LABEL

For Positioning, Suspension & Retrieval Use Only

Model: **Length:** **Date:**

- Do not use lanyard near electrical lines or equipment.
- A shock absorbing device must be used with this lanyard for fall-arrest.
- Always attach snap hook to proper anchorage for the intended use or the proper D-ring of the belt, harness, or bosun s chair. **For positioning,** use designated side D-rings. **For suspension,** use designated seat strap or other proper D-rings. **For retrieval,** use designated shoulder or other proper D-rings.
- **Positioning, suspension and retrieval anchor points** must support **your weight** plus any additional job related load.
- **Never** attach lanyard back onto itself.
- **Never** attach multiple lanyards together.
- For use by **properly trained professionals only.**
- Use equipment only for the specific purpose for which it is designed and intended.
- Connecting devices must be destroyed if subjected to impact loading.
- **Always** visually check that: **1)** each hook engages D-ring or anchor point, **2)** keeper is completely closed with each use. **Never** rely solely on feel or sound in attempting to determine that hook is engaged.

QUESTIONS?

Call TOLL FREE 1-800-323-3664

Klein Tools, Inc.

T-102
393

OSHA 1910, 1915 & 1926.
ANSI A10.14

Made in U.S.A.

- Use **only** with belt, harness or bosun's chair meeting government standards for intended use.
- **Before each use check that: 1)** unit is free of burns, cuts, abrasions, kinks, knots, broken strands and excessive wear, **2)** hooks, D-rings and buckles (if any) are not distorted or cracked, **3)** hook keepers are free of burrs, functioning properly, clean and not bent. **4)** breakaway jacket on deceleration units has **no** broken stitches, tears, stretch marks or other evidence of impact loading. **5) Remove from service, destroy and discard unit if it does not pass this inspection and replace immediately.**
- Make sure each hook is positioned so that its keeper is **never** load bearing.
- For **personal** use only, **NOT** towing or hoisting.
- Snap hooks attached onto D-rings must have less that 3/4" (19 mm) throat opening. **Never** attach ladder or rebar hooks onto D-rings.
- **Never** disable locking keeper (latch) on snap hook, punch holes in or alter a connecting device in any way.
- **Never** join two snap hooks together. They are **NOT** intended to be used that way, and may twist apart.
- **Never** attach multiple snap hooks onto a D-ring.
- **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
- **Never** work without independent fall-arrest protection if there is danger of a fall.
- **Employer—** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
- **Read, understand and follow** all instructions and cautions attached to and/or packed with this and all occupational protective equipment before each use.

V-Sling Catalog Number

87420

DO NOT REMOVE THIS LABEL

For Suspension and Retrieval Use Only

Model: **Length:** **Date:**

- For use by properly trained professionals only.
- OPE equipment must only be used for the specific purpose for which it is designed and intended.
- Connecting devices **must be destroyed** if subjected to impact loading.
- **ONLY** attach locking snap hooks to the proper D-rings on harness. **For Suspension,** use designated seat strap or other proper D-rings. **For Retrieval,** use designated shoulder or other proper D-rings. **Read instructions provided with your harness.**
- Use only with harness meeting OSHA standards for intended use.
- **Suspension and retrieval anchorages** must support at least twice the potential impact load of an employee s fall or 3,000 lbs. (13.3kN), whichever is greater.
- **Whenever there is a risk of a fall,** personal fall-arrest protection must be used. **Fall-arrest** anchorage must support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
- **Never** join two snap hooks together. They are **NOT** intended to be used that way, and could twist apart.

QUESTIONS?

Call TOLL FREE 1-800-323-3664

Klein Tools, Inc.

T-103
592

OSHA 1910, 1915 & 1926.
ANSI A10.14

Made in U.S.A.

- **Only use** locking snap hooks.
- For personal use only. **NOT** for towing or hoisting material loads.
- **Always visually check that: 1)** each snap hook freely engages the intended D-ring on harness, and **2)** the snap-hook keeper (latch) is completely closed with each use. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged. Have a co-worker check for proper engagement.
- Make sure each snap hook is positioned so that its keeper (latch) is never load bearing.
- **Before each use check that: 1)** unit is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, **2)** locking snap hooks and thimble are not distorted or cracked, **3)** hook keepers are free of burrs, functioning properly, clean and not bent. **If the unit does not pass inspection, it should be removed from service immediately and destroyed. Replace immediately.**
- **Never** attach multiple snap hooks onto a D-ring.
- **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
- **Never** attach a lanyard back onto itself or attach multiple lanyards together.
- **Never** allow V-sling to straddle beam or any anchorage.
- **Only** attach rope thimble eye of V-sling to a suspension or retrieval device equipped with locking connectors meeting OSHA standards.
- **Never** wrap a rope lanyard around a beam or other sharp structural member. The rope could be cut or damaged. Instead, use boom strap or choker anchorage attachment.
- **Never** allow a rope or webbing lanyard to come in contact with high-temperature surfaces, welding or other heat sources.
- Do **NOT** use units with steel cable near electrical lines or equipment.
- **Never** disable locking keeper (latch) on snap hook or alter a connecting device in any way.
- **NOT** for recreational or sporting use.
- Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
- Assume the responsibility for determining that your OPE equipment is in excellent condition at all times.
- **Employer–** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings before allowing use of equipment.
- **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all occupational protective equipment before each use.

Pigtail Lanyard Catalog Numbers

87470, 87471

■ For use by properly trained professionals only.
■ Do **NOT** use units with steel cable near electrical lines or equipment.
■ OPE equipment must only be used for the specific purpose for which it is designed and intended.
■ Connecting devices **must be destroyed** if subjected to impact loading.
■ Use only with harness meeting OSHA standards for fall-arrest.
■ **Whenever there is a risk of a fall,** personal fall-arrest protection must be used.
■ **ONLY** attach snap hook on end of lanyard without steel cable pigtail to the rear fall-arrest D-ring on harness.
■ **Never** wrap a rope lanyard around a beam. It is **NOT** intended to be used that way and could result in serious injury or death. Instead, **always** wrap **STEEL CABLE PIGTAIL** around structural anchorage (i.e., beam) and attach cable eye to the locking snap hook.
■ **Fall-arrest anchorage** must support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
■ OSHA requires that impact force in a fall **NOT** exceed an 1,800 lb. (8kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting device or use deceleration unit to stay under 1,800 lbs. (8kN).

QUESTIONS?
Call TOLL FREE 1-800-323-3664
Klein Tools, Inc.

T-123
592

OSHA 1910, 1915 & 1926.
ANSI A10.14

Made in U.S.A.

■ **Only use** locking snap hooks.
■ **Rig to avoid contact with structures below in a fall.** Free-fall distance must not exceed 6 ft. (1.8m). To allow for deceleration unit extension, add 3-1/2 ft. (1m) to free-fall distance.
■ **Always visually check that: 1)** Snap hook at end of lanyard without pigtail freely engages the center back fall-arrest D-ring on harness, **2)** snap-hook at base of steel cable pigtail freely engages eye, and 3) the snap-hook keeper (latch) is completely closed with each use. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged. Have a co-worker check for proper engagement.
■ Make sure each snap hook is positioned so that its keeper (latch) is never load bearing.
■ **Before each use check that: 1)** unit is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, **2)** locking snap hooks and thimble are not distorted or cracked, **3)** hook keepers are free of burrs, functioning properly, clean and not bent. **If the unit does not pass inspection, it should be removed from service immediately and destroyed. Replace immediately.**
■ For personal use only. **NOT** for towing or hoisting material load.
■ **Never** attach multiple snap hooks onto a D-ring.
■ **Never** join two snap hooks together. They are **NOT** intended to be used that way, and could twist apart.
■ **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
■ **Never** attach a lanyard back onto itself or attach multiple lanyards together,
■ **Never** allow a rope or webbing lanyard to come in contact with high-temperature surfaces, welding or other heat sources.
■ **Never** disable locking keeper (latch) on snap hook or alter a connecting device in any way.
■ **Not** for recreational or sporting use.
■ **Employer** – Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings before allowing use of equipment.
■ **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all occupational protective equipment before each use.

Klein-Lite® Nylon-Webbing Deceleration Lanyard Catalog Number

87473

■ **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all occupational protective equipment before each use.
■ For use by **properly trained professionals** only.
■ **Employer**— Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
■ Occupational Protective Equipment (OPE) must **only** be used for the specific purpose for which it is designed and intended.
■ **Never** use this deceleration lanyard for positioning, suspension, or retrieval. When activated, unit will extend and cause the worker to drop 3-1/2 ft.
■ Connecting devices **must be destroyed** if subjected to impact loading.
■ Make sure each snap hook is positioned so that its keeper (latch) is **never** load bearing.
■ **Only** use with a harness meeting OSHA fall-arrest standards.
■ **Always** visually check that: **1)** each snap hook freely engages the intended D-ring or anchorage, and **2)** the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the middle back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
■ **Before each use, check that: 1)** unit is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, **2)** locking snap hooks and D-rings are not distorted or cracked, and hook keepers are free of burrs, functioning properly, clean and not bent. **If the unit does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**

■ **1)** Attach locking snap hook on gathered end of deceleration lanyard to the center back fall-arrest D-ring of the harness. **2)** Attach locking snap hook on opposite end of deceleration lanyard only to an approved fall-arrest anchorage.
■ **For fall arrest,** always keep anchorage at or above shoulder height to minimize fall distance.
■ OSHA requires that impact force in a fall **NOT** exceed an 1,800 lb. limit with a harness. Proper use of this unit will allow compliance with these limits.
■ At a given weight, the longer the free-fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting devices and properly utilize this unit to stay under these limits.
■ **Rig to avoid contact with structures below in a fall.** The free-fall distance must not exceed 6 ft. (1.8m). To allow for deceleration lanyard extension, add 3-1/2 ft. (1m) to free-fall distance.
■ Fall-arrest anchorage must support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
■ **Never** attach multiple snap hooks onto a D-ring.
■ **Never** join two snap hooks together. They are **NOT** intended to be used that way and could twist apart.
■ **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
■ **Never** attach a lanyard back onto itself or attach multiple lanyards together.
■ **Never** wrap a rope lanyard around a beam or other sharp structural member. It could be cut or damaged. Instead, use specialized lanyard with wire pigtail, boom strap or choker anchorage connector.
■ **Never** allow this equipment, rope or webbing lanyard to come in contact with high-temperature surfaces, welding or other heat sources.
■ **Never** disable locking keeper (latch) on snap hook, punch holes in or alter a connecting device in any way.
■ For **personal** use only. **NOT** for towing or hoisting.
■ **Not** for recreational or sporting use.
■ Assume the responsibility for determining that your OPE equipment is in excellent condition at all times.
■ Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
■ Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.
■ As of January 1, 1998, fall-arrest body belts will no longer meet OSHA requirements for fall-arrest and shall no longer be used.

QUESTIONS?
Call TOLL FREE 1-800-553-4676
Klein Tools, Inc.

OSHA 1910, 1915 & 1926.
ANSI A10.14, ANSI Z359.1

Made in U.S.A.

T-128
999

Warning Tags and Labels – Connecting Devices

Klein-Lite® Twin Leg Nylon-Webbing Deceleration Lanyard Catalog Number

87475

For Fall Arrest Use Only

DO NOT REMOVE THIS LABEL

Model: **Size:** **Date:**

READ BEFORE USE

READ BEFORE USE

■ **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all occupational protective equipment before each use.
■ For use by **properly trained professionals** only.
■ **Employer**— Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
■ Occupational Protective Equipment (OPE) must **only** be used for the specific purpose for which it is designed and intended.
■ **Never** use this deceleration lanyard for positioning, suspension, or retrieval. When activated, unit will extend and cause the worker to drop 3-1/2 feet.
■ Connecting devices **must be destroyed** if subjected to impact loading.
■ Make sure each snap hook is positioned so that its keeper (latch) is **never** load bearing.
■ **Only** use with a harness meeting OSHA fall-arrest standards.
■ **Always** visually check that: **1)** each snap hook freely engages the intended D-ring or anchorage, and **2)** the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the middle back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
■ **Before each use, check that: 1)** unit is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, **2)** locking snap hooks and D-rings are not distorted or cracked, and hook keepers are free of burrs, functioning properly, clean and not bent. **If the unit does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**
■ **1)** Attach locking snap hook on gathered end of deceleration lanyard to the center back fall-arrest D-ring of the harness. **2)** Attach locking snap hook on opposite end of deceleration lanyard only to an approved fall-arrest anchorage.
■ **For fall arrest,** always keep anchorage at or above shoulder height to minimize fall distance.
■ OSHA requires that impact force in a fall **NOT** exceed an 1,800 lb. limit with a harness. Proper use of this unit will allow compliance with these limits.

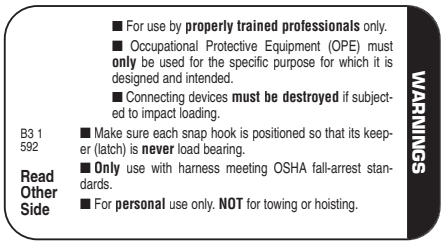
■ At a given weight, the longer the free-fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting devices and properly utilize this unit to stay under these limits.
■ **Rig to avoid contact with structures below in a fall.** The free-fall distance must not exceed 6 feet (1.8m). To allow for deceleration lanyard extension, add 3-1/2 feet (1m) to free-fall distance.
■ Fall-arrest anchorage must support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
■ **Never** attach multiple snap hooks onto a D-ring.
■ **Never** join two snap hooks together. They are **NOT** intended to be used that way and could twist apart.
■ **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
■ **Never** attach a lanyard back onto itself or attach multiple lanyards together.
■ **Never** wrap a rope lanyard around a beam or other sharp structural member. It could be cut or damaged. Instead, use specialized lanyard with wire pigtail, boom strap or choker anchorage connector.
■ **Never** allow this equipment, rope or webbing lanyard to come in contact with high-temperature surfaces, welding or other heat sources.
■ **Never** disable locking keeper (latch) on snap hook, punch holes in or alter a connecting device in any way.
■ For **personal** use only. **NOT** for towing or hoisting.
■ **Not** for recreational or sporting use.
■ Assume the responsibility for determining that your OPE equipment is in excellent condition at all times.
■ Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
■ Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.
■ To ensure 100% tie-off of your fall-arrest protection equipment**, ALWAYS** keep at least one lanyard-end locking snap hook attached to a fall-arrest anchorage as you change your work location. Start by securing both lanyard-end locking snap hooks to separate fall-arrest anchorages. To change your work location, detach one lanyard-end locking snap hook, move to the new location, and attach locking snap hook to new fall-arrest anchorage. Establish your balance. Detach the remaining lanyard-end locking snap hook from your previous anchorage and attach to new fall-arrest anchorage. Repeat these steps as you continue to move.

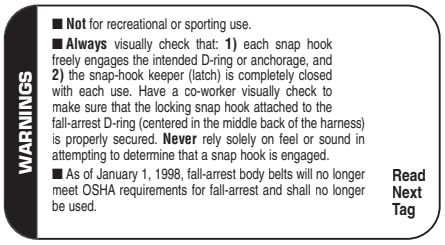
QUESTIONS?
Call TOLL-FREE 1-800-553-4676
Klein Tools, Inc.
OSHA 1910, 1915 & 1926
ANSI A10.14, ANSI Z359.1 **Made in U.S.A.**
Klein-Lite®, Klein-Lok®, Klein-Kord®, Softee™, Ultra-Hyde™

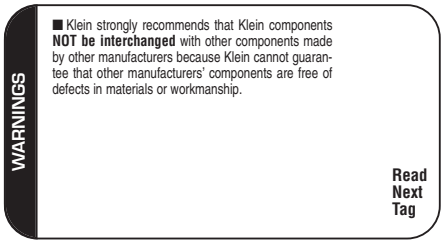
T-134
101

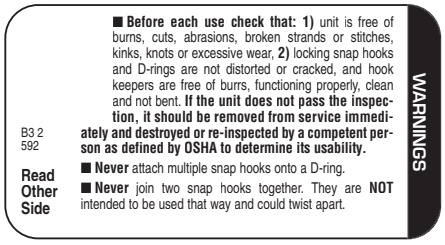
General Tags: Deceleration Unit Catalog Numbers

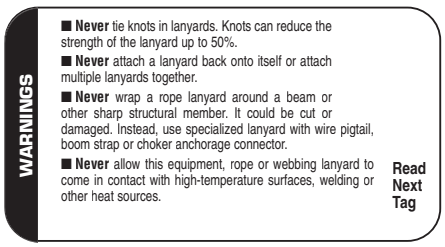
87409, 87410, 87411, 87412, 87413, 87416, 87468

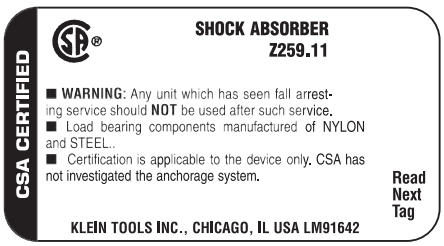






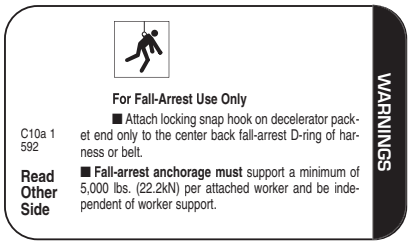


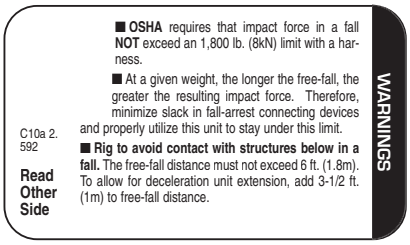


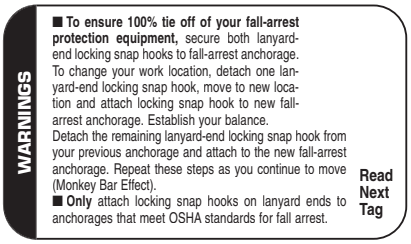


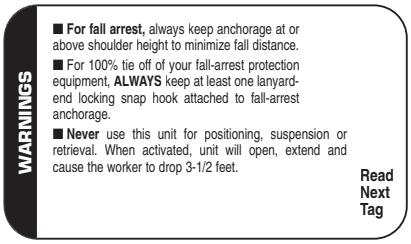
Specific Tags: Deceleration Unit with Dual Lanyards Catalog Number

87413, 87416





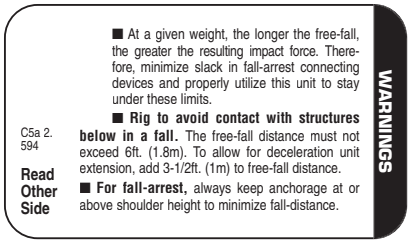




Warning Tags and Labels – Connecting Devices

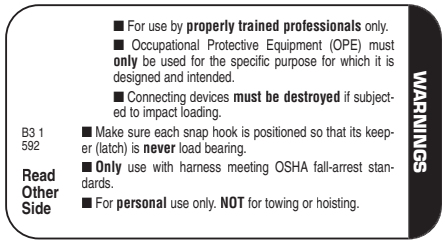
Specific Tags: Deceleration Unit Catalog Numbers

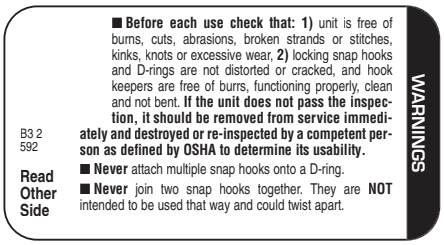
87409, 87410, 87411, 87412, 87468



General Tags: Rope Grab Catalog Numbers

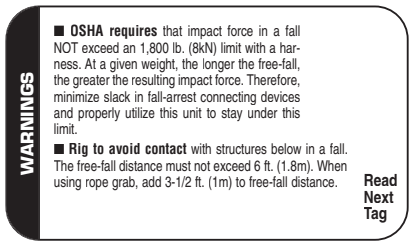
87406, 87407

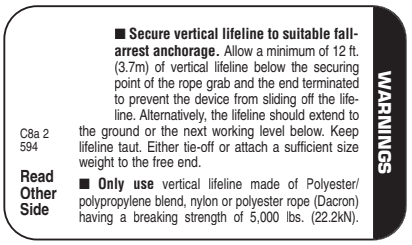


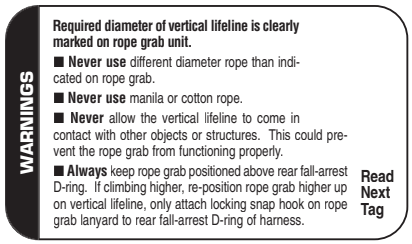


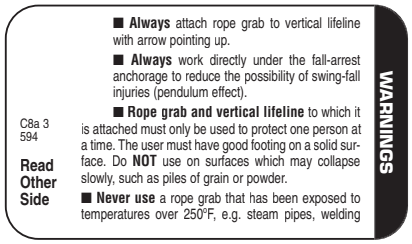
Specific Tags: Rope Grab Catalog Numbers

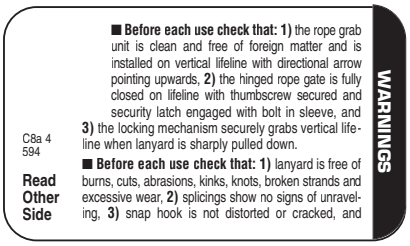
87406, 87407

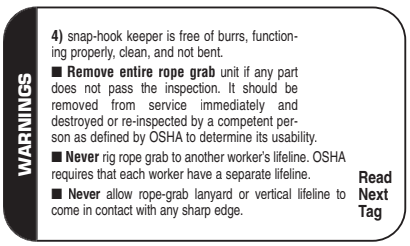


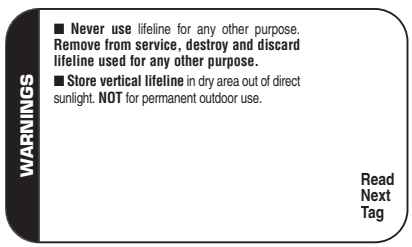












Warning Tags and Labels – Connecting Devices

General Tags: Anchorage Connector Catalog Numbers

87916, 87920, 87921

WARNINGS

- For use by **properly trained professionals** only.
- Occupational Protective Equipment (OPE) must **only** be used for the specific purpose for which it is designed and intended.
- Connecting devices **must be destroyed** if subjected to impact loading.

B3 1 592

- Make sure each snap hook is positioned so that its keeper (latch) is **never** load bearing.
- **Only** use with harness meeting OSHA fall-arrest standards.
- For **personal** use only. **NOT** for towing or hoisting.

Read Other Side

WARNINGS

- **Never** disable locking keeper (latch) on snap hook, punch holes in or alter a connecting device in any way.
- Assume the responsibility for determining that your OPE equipment is in excellent condition at all times.
- Store your OPE equipment in a clean, dry area such as a tool chest or storage room.

B3 3. 592

- **Employer –** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
- **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all occupational protective equipment before each use.

Read Other Side

WARNINGS

- **Not** for recreational or sporting use.
- **Always** visually check that: **1)** each snap hook freely engages the intended D-ring or anchorage, and **2)** the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the middle back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
- As of January 1, 1998, fall-arrest body belts will no longer meet OSHA requirements for fall-arrest and shall no longer be used.

Read Next Tag

WARNINGS

- Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.

Read Next Tag

WARNINGS

- **Before each use check that: 1)** unit is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, **2)** locking snap hooks and D-rings are not distorted or cracked, and hook keepers are free of burrs, functioning properly, clean and not bent. **If the unit does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**

B3 2 592

- **Never** attach multiple snap hooks onto a D-ring.
- **Never** join two snap hooks together. They are **NOT** intended to be used that way and could twist apart.

Read Other Side

WARNINGS

- **Never** tie knots in lanyards. Knots can reduce the strength of the lanyard up to 50%.
- **Never** attach a lanyard back onto itself or attach multiple lanyards together.
- **Never** wrap a rope lanyard around a beam or other sharp structural member. It could be cut or damaged. Instead, use specialized lanyard with wire pigtail, boom strap or choker anchorage connector.
- **Never** allow this equipment, rope or webbing lanyard to come in contact with high-temperature surfaces, welding or other heat sources.

Read Next Tag

Specific Tags: Anchorage Connector Catalog Numbers

87916, 87920, 87921

WARNINGS

For Fall-Arrest Use Only

- Boom strap and choker anchorage connectors are designed to add an attachment point to an aerial boom, I-Beam or similar structural member in order to make a compatible fall-arrest anchorage.

C9a 1 592

- A boom strap or choker anchorage connector is **NOT** an occupational protective belt for personal use.

Read Other Side

WARNINGS

- **OSHA** requires that impact force in a fall **NOT** exceed an 1,800 lbs. (8kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting device or use deceleration unit to stay under this limit.

C9a 2. 592

- **Securely attach** boom strap or choker anchorage connector to aerial boom, I-Beam or similar structural member of sufficient strength to support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.

Read Next Tag

WARNINGS

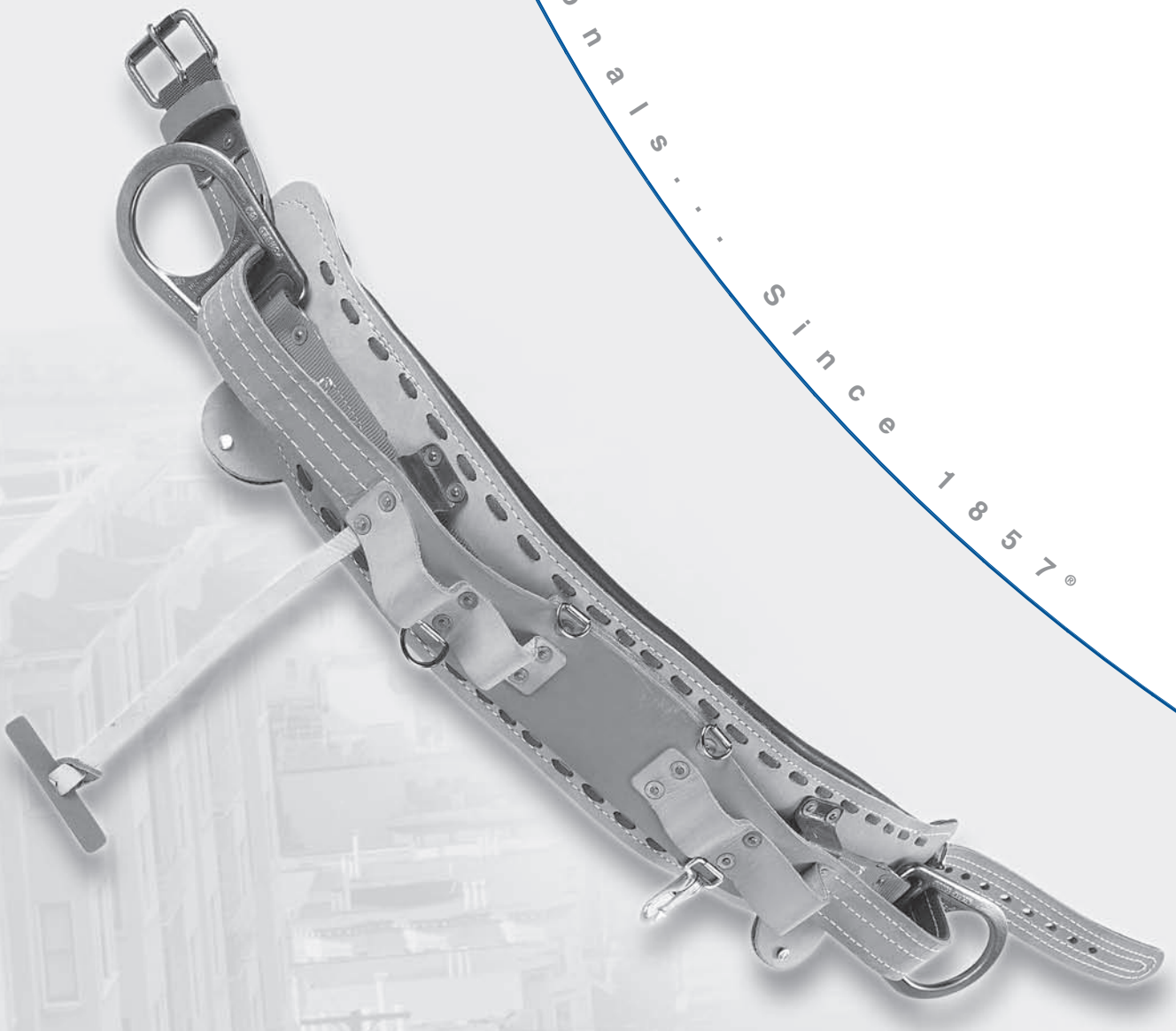
- **Fall-arrest anchorage** must support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker suprffport.
- Only attach connecting devices that meet OSHA standards for fall-arrest to the D-ring of this equipment.
- Only use OPE harnesses that meet OSHA standards for fall-arrest.

Read Next Tag

Lineman's Climbing Equipment

For Professionals... Since 1857®

Klein Tools lineman's climbing equipment meets or exceeds applicable OSHA, ASTM, and CSA standards and provides the comfort and choices professionals depend on.



Introduction – Lineman's Climbing Equipment

Klein manufactures a full line of lineman's body belts and positioning straps (for positioning applications), and harnesses (for fall-arrest/positioning applications) designed to comply with OSHA criteria and applicable ASTM and CSA requirements.

Note: Klein lineman's body belts are for positioning applications only and should not be used alone as a personal fall-arrest system, as defined under OSHA's 1926 Subpart M. (For fall-arrest needs, see the Lineman's Harness information on page 67.)

The positioning symbol shown in Figure 1 appears on warning and instruction tags attached to each body belt. This symbol identifies the belt's OPE function.

Klein lineman's body belts are available in full-floating, semi-floating, or fixed styles. They meet or exceed all OSHA regulations, which apply to positioning device systems, for power utilities (OSHA 1926.959) and telecommunications (OSHA 1910.268). They also meet or exceed standards ASTM F 887 and CSA Z259.3. Each belt has a permanent tag, which identifies model number, serial number, size, and date of manufacture.

Klein positioning straps are available in the following lengths: 5'8" (1.7 m), 6' (1.8 m), 6'6" (2.0 m), 7' (2.1 m), and 8' (2.4 m). They are designed to conform with OSHA standards 1910.268 and 1926.959.

All individuals who use Klein lineman's body belts, positioning straps, and harnesses must be instructed in how to use that equipment correctly. Also, they must read, understand, and follow all instructions and warnings packed with the product before each use.

Figure 1

Types of Klein Lineman's Body Belts

Full-Floating Belt:

- Allows 4" (102 mm) lateral movement of the D-rings during use (a maximum of 2" on each side).
- D-rings easily adjust to lineman's positioning changes on the pole. As a result, the positioning strap slides against the pole less frequently, and strap wear is reduced.
- Any load or pull on the D-rings will not bind tools in the tool loops.
- Does not allow lateral movement of the belt strap with the tool loops.

Cat. No. 5278N shown

Semi-Floating Belt:

- Allows lateral movement of the belt strap with the tool loops prior to wearing the body belt.
- Any load or pull on the D-rings will not bind tools in the tool loops.
- Does not allow lateral movement of the D-rings.

Cat. No. 5266N shown

Fixed Belt:

- Does not allow lateral movement of the D-rings or belt strap with the tool loops.

Cat. No. 5268N shown

Materials Used in Lineman's Climbing Equipment

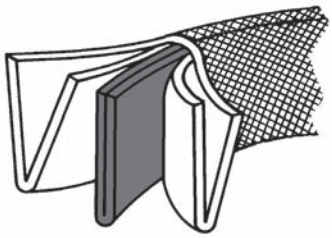
Klein-Kord®

Klein lineman's belt straps, billets, and pocket tabs are made of Klein-Kord®. Klein-Kord® is an exceptionally strong, multi-ply filament nylon fabric that is neoprene-impregnated, folded, and vulcanized.

Klein-Kord® is abrasion-resistant, non-conductive, virtually free from stretch, and flexible for ease of use and durability. It has excellent chemical resistance and is virtually unaffected by creosote and other pole-treatment chemicals. In addition, its properties and wear characteristics remain essentially unchanged at temperatures up to 250°F (121°C).

Shown at right is Klein's six-ply Klein-Kord®, which is 1-3/4" (44 mm) wide. The center plies of Klein-Kord® are red at the core. When the red plies appear, remove the product from use and replace it. This "early warning" feature is yet another safety measure provided by Klein Tools.

Note: The red center plies may become discolored in use. Therefore, visual inspection for wear before use is mandatory.



Six-ply Klein-Kord® with red center plies

Drop-Forged Steel Hardware

Klein D-rings, snap-hooks, and tongue buckles are made of drop-forged steel with a corrosion-resistant finish. All of this Klein hardware is tested to meet or exceed applicable standards and OSHA requirements.

Nylon Webbing

Klein uses a high-quality, commercial-grade nylon. The nylon webbing is impregnated with resin for extra durability and abrasion resistance.

Leather

Rolled-edge, chrome-tanned leather is used for cushioning in all Klein lineman's belts. These cushions have sponge-rubber cores for added comfort. Other components, such as tool loops, are made of latigo leather, hand-laced and stitched to the belt cushion. Tape thong straps are constructed from long-lasting leather with a vulcanized fiber cross-piece. On top-of-the-line belts, straps are covered with harness leather.

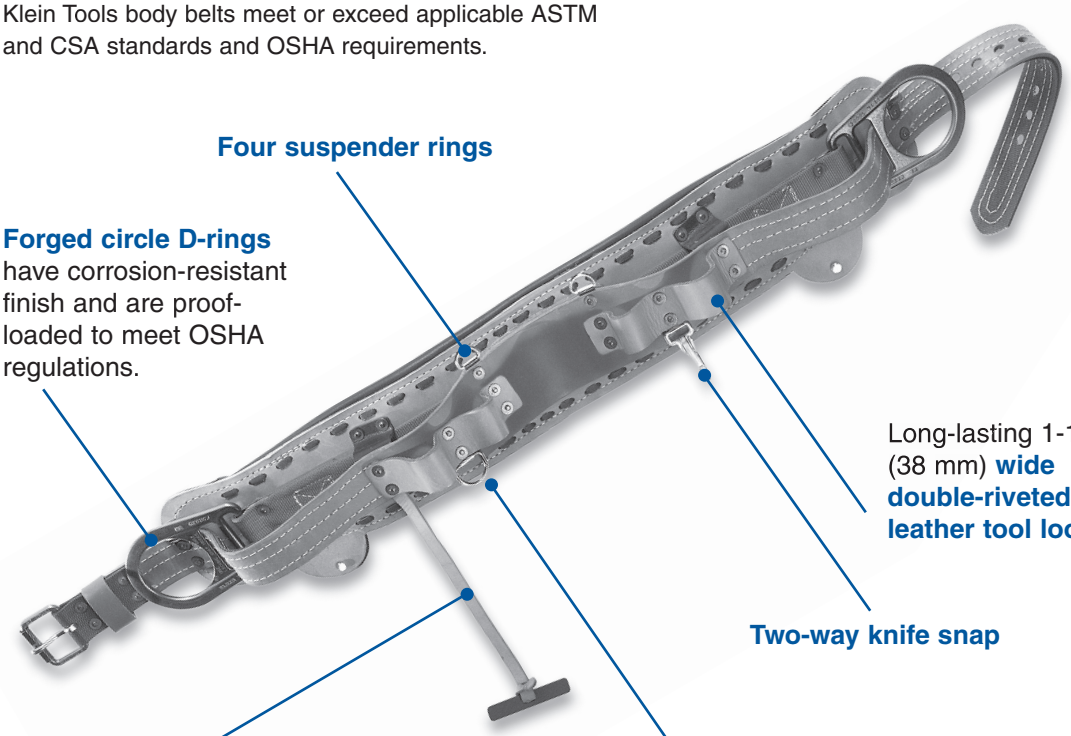
Nickel Plating

Klein knife snaps, glove-bag rings, and suspender rings are nickel plated for durability and corrosion resistance.

Lineman's Body Belts

Features:

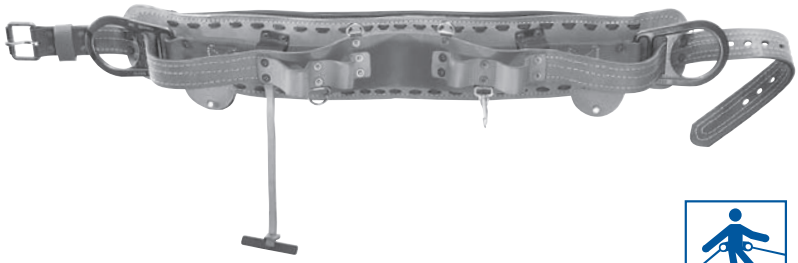
Klein Tools body belts meet or exceed applicable ASTM and CSA standards and OSHA requirements.



Full-Floating Body Belts

Deluxe Full-Floating Body Belt – Style No. 5278N*

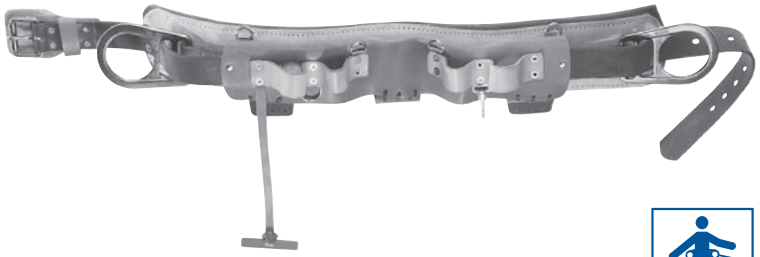
- *Latigo-leather belt pad is laced and stitched with two pocket tabs.*
- *Rolled-edge leather belt cushion for comfort when leaning back. 5" (127 mm) overall width.*
- *Padded for maximum comfort and body fit.*
- *1-3/4" (44 mm) wide Klein-Kord® belt strap covered with top-grain harness leather for long-lasting use.*
- *Full-floating D-ring web strap with straight double-bar D-rings.*



*See page 68 for body belt ordering procedure.

Standard-Plus Full-Floating Body Belt – Style No. 5249N*

- *Leather belt pad with two pocket tabs.*
- *Latigo-leather hood prevents placing tools between belt pad and D-ring web straps.*
- *Rolled-edge leather belt cushion for comfort when leaning back. 5" (127 mm) overall width.*
- *Padded for maximum comfort and body fit.*
- *1-3/4" (44 mm) wide belt strap made of 6-ply Klein-Kord®.*
- *Full-floating D-ring web strap with straight double-bar D-rings.*



Standard Full-Floating Body Belt – Style No. 5282N*

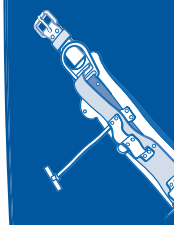
- *Klein-Kord® belt pad with two pocket tabs.*
- *Rolled-edge leather belt cushion for comfort when leaning back. 5" (127 mm) overall width.*
- *Padded for maximum comfort and body fit.*
- *1-3/4" (44 mm) wide belt strap made of 6-ply Klein-Kord®.*
- *Full-floating D-ring web strap with straight double-bar D-rings.*

Semi-Floating Body Belt

Semi-Floating Body Belt – Style No. 5266N*

- *Klein-Kord® belt pad with two pocket tabs.*
- *Rolled-edge leather belt cushion for comfort when leaning back. 4-3/4" (120.6 mm) overall width.*
- *Padded for maximum comfort and body fit.*
- *1-3/4" (44 mm) wide belt strap made of 6-ply Klein-Kord®.*
- *Equipped with straight double-bar D-rings.*
- *Hand-line clip.*

*See page 68 for body belt ordering procedure.



Lineman's Body Belts & Positioning Straps

Fixed Body Belt

Fixed Body Belt – Style No. 5268N*

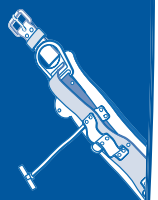
- *Klein-Kord® belt pad with two pocket tabs.*
- *4-3/4" (120.6 mm) rolled-edge leather belt cushion with no padding.*
- *1-3/4" (44 mm) wide belt strap made of 6-ply Klein-Kord®.*
- *Equipped with straight double-bar D-rings.*

Positioning Straps

- *Adjustable straps are 1-3/4" (44 mm) wide.*
- *Made of 6-ply Klein-Kord® for maximum wear and chemical resistance.*
- *Drop-forged, single tongue adjustment buckle has a corrosion-resistant finish.*
- *Two drop-forged steel Klein-Lok® locking snap-hooks with 11/16" (17 mm) throat opening.*
- *Red wear indicator located in the center.*

Cat. No.	Maximum Length	Minimum Length	Adjustable Range
KL5295-L*	5'8" (1.7 m)	3'10" (1.17 m)	1'10" (0.5 m)
KL5295-6L*	6' (1.8 m)	4' (1.2 m)	2' (0.6 m)
KL5295-6-6L*	6'6" (2.0 m)	4'3" (1.3 m)	2'3" (0.7 m)
KL5295-7L*	7' (2.1 m)	4'6" (1.35 m)	2'6" (0.8 m)
KL5295-8L*	8' (2.4 m)	5'6" (1.7 m)	2'6" (0.8 m)

**Depending on the application, choose a positioning strap that allows you to work at arm's length from the pole or other positioning anchorage.*



*See page 68 for body belt ordering procedure.

Lineman's Harness

- *The Lineman's Harness is a fall-arrest harness permanently attached to a body belt (choose one of the five body belts listed earlier in this section).*
- *Features include:*
  - *— Tough 1-3/4" (44 mm) Type 13 nylon webbing.*
  - *— Adjustable shoulder straps.*
  - *— Convenient detachable, synthetic lamb's wool shoulder pads.*
  - *— Easy-connect chest and leg buckles.*
  - *— Adjustable D-ring at back with roller.*
- *The maximum tool and body weight for this product is 310 lbs.*
- *This is a special order item. See harness ordering procedure on page 69 for details.*

Tape Thong

- *Long-lasting leather thong with fiber bar at end.*
- *Conveniently fits all standard electrical tape rolls.*
- *Slotted at the top for easy attachment to the belt.*

Cat. No.	Length
5130	12" (30 cm)

Two-Way Knife Snap

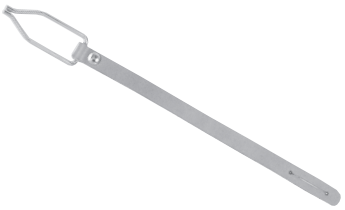
- *Easily attaches to belts with screw type rivets.*
- *Long-lasting leather strap construction.*

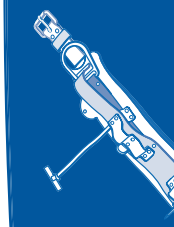
Cat. No.	Length
5131	4-1/2" (11 cm)

Handline Clip

- *Long-lasting leather thong slotted at the top for easy attachment to the belt.*
- *8 to 12 lbs. of tension will release handline should it snag.*

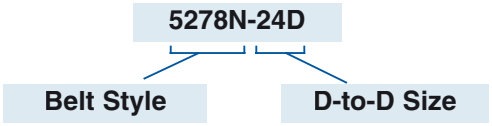
Cat. No.	Length
5133	10-1/2" (27 cm)





Body Belt Ordering Procedure

The catalog number used to order a Lineman's Body Belt is made up of specific parts. Each part of the number refers to a component or component size. The following is a typical example of a catalog number: 5278N-24D



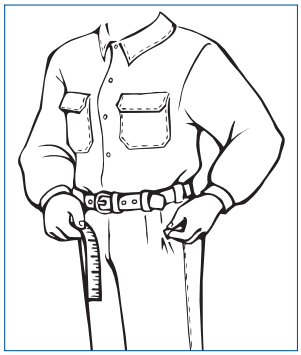
Use the following ordering procedure to properly identify and select each component in order to create a catalog number for your Lineman's Body Belt.

1. Know the job and regulations governing performance requirements for the equipment needed.

2. Select the belt style. Klein lineman's body belts are available in a choice of full-floating, semi-floating, and fixed styles, and feature the choice of belt pad size. All Klein lineman's body belts have chrome-tanned leather cushions for greater comfort. Full-floating belts allow lateral movement of the D-rings during use. Semi-floating and fixed-style belts allow no lateral movement of the D-rings.

3. Select the proper belt size. The comfort of a lineman's belt depends on the construction of the belt and the location of the D-rings. The D-rings should be located about 1" (25 mm) in front of the hip bones.

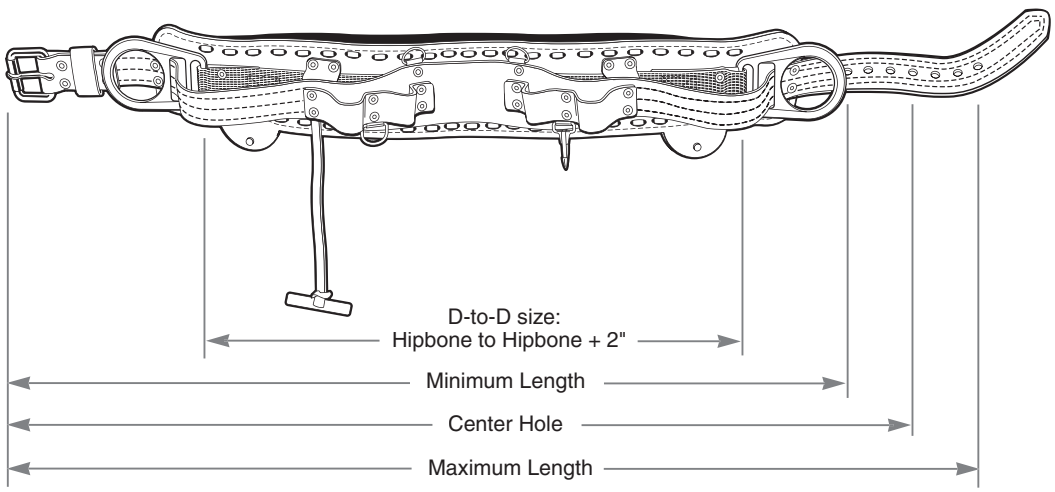
Never order Klein lineman's body belts by waist size. Always order Klein lineman's body belts by the desired distance between D-rings.



Size your body belt using a tape measure (Figure 1). To obtain the correct D-to-D (D-ring to D-ring) size, measure around the back from hipbone to hipbone and then add 2" (51 mm).

Figure 1

The Lineman's Belt Sizing Table (shown below) contains more information on selecting the proper belt size. For non-standard sizes, please call the Klein Tools Sales Department at 1-800-553-4676.



Lineman's Belt Sizing Table*

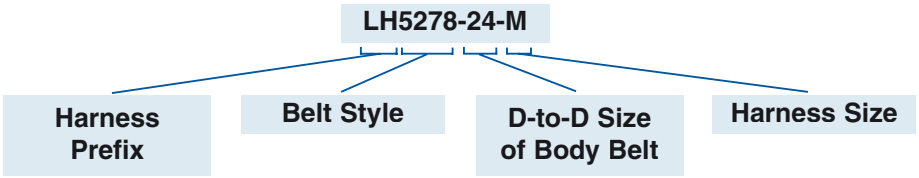
D-to-D Distance**	18D (46)	19D (48)	20D (51)	21D (53)	22D (56)	23D (58)	24D (61)	25D (64)	26D (66)	27D (69)	28D (71)	29D (74)	30D (76)
Minimum Length	32 (81)	33 (84)	34 (86)	36 (91)	37 (94)	38 (97)	40 (102)	41 (104)	42 (107)	44 (112)	45 (114)	46 (117)	47 (119)
Center-Hole Distance	36 (91)	37 (94)	38 (97)	40 (102)	41 (104)	42 (107)	44 (112)	45 (114)	46 (117)	48 (122)	49 (124)	50 (127)	51 (130)
Maximum Length	40 (102)	41 (104)	42 (107)	44 (112)	45 (114)	46 (117)	48 (122)	49 (124)	50 (127)	52 (132)	53 (135)	54 (137)	55 (140)

* All measurements are listed in inches and (cm). This table shows the maximum and minimum lengths and center-hole distances for the full range of standard D-to-D measurements. A belt sized for the proper D-to-D size will fit correctly with buckle tongue engaged in the center hole.

** Non-standard D-to-D sizes can be special ordered; please call the Klein Tools Sales Department at 1-800-553-4676.

Harness Ordering Procedure

The catalog number used to order a Lineman's Harness is made up of specific parts. Each part of the number refers to a component or component size. The following is a typical example of a catalog number: LH5278-24-M



In addition to the body belt ordering procedure to determine D-to-D Size, use the following guidelines to properly identify and select the Lineman's Harness catalog number.

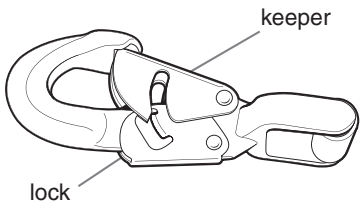
Selecting the Proper Harness Size. Harnesses are available in standard sizes of medium or large. The D-to-D size for your belt normally determines the harness size (see below). If a different size is needed, alter this part of the catalog number. If you need a non-standard size harness, please call the Klein Tools Sales Department at 1-800-553-4676.

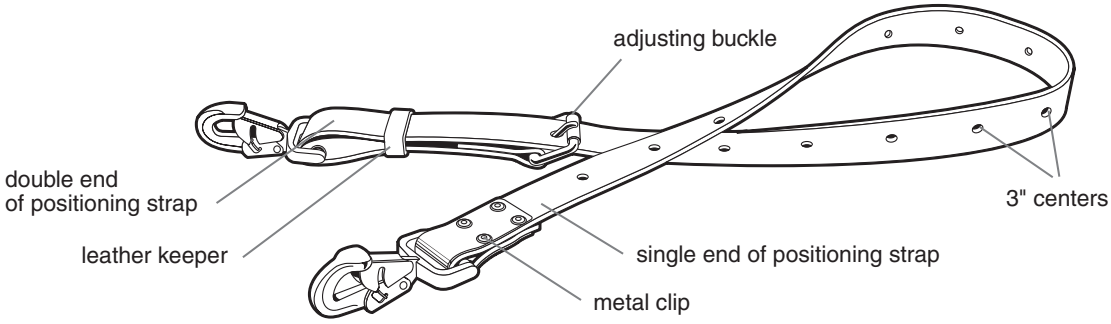
D-to-D Size	Harness Size
Up to 26 inches (6.6 cm)	Medium
27-30 inches (6.8 - 7.6 cm)	Large

Positioning Straps Ordering Procedure

Depending on your application, choose a positioning strap that allows you to work at arms' length from the pole or other positioning anchorage. Lineman's Positioning Straps are adjustable and available in five sizes. For more information, see the following chart:

Catalog Number	Maximum Length	Minimum Length	Adjustable Range
KL5295-L	5'8" (1.7 m)	3'10" (1.17 m)	1'10" (0.5 m)
KL5295-6L	6' (1.8 m)	4' (1.2 m)	2' (0.6 m)
KL5295-6-6L	6'6" (2.0 m)	4'3" (1.3 m)	2'3" (0.7 m)
KL5295-7L	7' (2.1 m)	4'6" (1.35 m)	2'6" (0.8 m)
KL5295-8L	8' (2.4 m)	5'6" (1.7 m)	2'6" (0.8 m)





Warning Tags and Labels – Lineman's Climbing Equipment

Klein attaches highly-durable warning and instruction tags/labels to its OPE products. In the event any of these tags or labels become unattached, lost, or damaged, contact the Klein Tools Sales Department at 1-800-553-4676 for information on how to have the tags replaced free of charge.

Types of OPE Warning Tags/Labels

This section contains black and white reproductions of Klein OPE warning tags/labels. They are organized by product category. Some warning and instructional information may be printed on a durable label wrapped around the product.

A set of plastic warning tags are attached to the majority of OPE products.

Each set contains four types of warning/information tags:

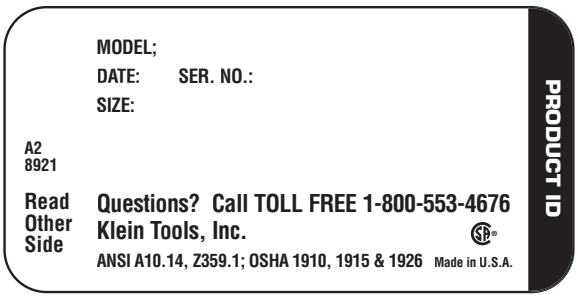
1. **A General Hazard Tag** will be attached to each OPE product.
2. **General Warning Tags** will be included on all OPE products in a particular category. For example, all OPE harnesses will have general harness warning tags.
3. **Specific Warning Tags** will be included for each class of products within a particular category. For example, Cat. No. 87012 and 87020 harnesses have their own specific warning tags.
4. **A Product ID Tag** will be attached to each OPE product.

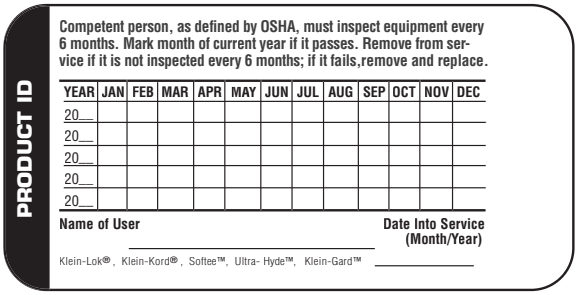
General Hazard Tag for All OPE Products

This tag is the first in a set of warning tags which will be attached to each Klein OPE product.

Product ID Tag for OPE Connecting Devices

For connecting devices with warning tag packets, this tag (front and back sides shown) is the last in a set of warning tags which will be attached to each Klein OPE product.





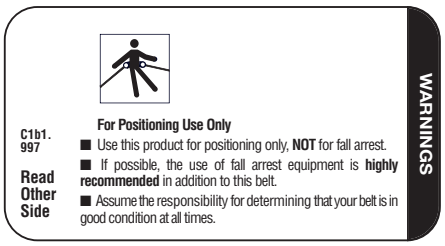
Warning Tags and Labels – Lineman's Climbing Equipment

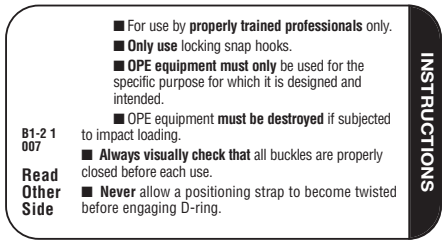
Klein permanently attaches highly durable warning and instruction tags to its lineman's body belts and positioning straps.

If any of these tags become unattached, lost, or damaged, call Klein Tools, toll-free at 1-800-553-4676, for information on how to have the tags replaced free of charge.

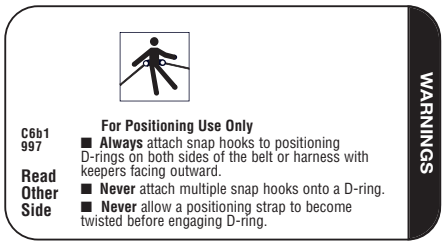
⚠WARNING Klein strongly recommends using fall-arrest protection when working at any elevated position. Therefore, independent fall-arrest equipment should be used in addition to Klein's body belts and positioning straps unless a competent person, as defined by OSHA, has determined that such fall-arrest equipment is not necessary or appropriate.

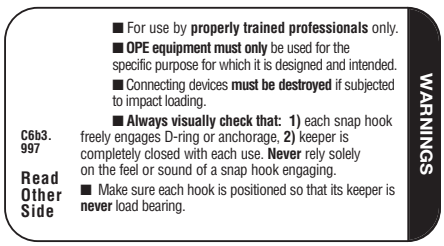
Tags for Lineman's Body Belts





Tags for Lineman's Positioning Strap





Warning Tags and Labels – Lineman's Climbing Equipment

Klein permanently attaches highly durable warning and instruction tags and/or labels to its harnesses. In the event any of these tags and/or labels become unattached, lost, or damaged, contact the Klein Tools Sales Department, toll-free at 1-800-553-4676, for information on how to have the tags and/or labels replaced free of charge.

Tag for Lightweight Fall-Arrest Harnesses

87140, 87141

For Fall-Arrest Use Only

DO NOT REMOVE THIS LABEL

READ BEFORE USE — **Model:** **Length:** **Date:** — READ BEFORE USE

⚠WARNING
A fall could result in serious injury or death. Do not use unless properly trained. Read and follow all instructions and warnings.

- **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all other occupational protective equipment before each use.
- For use by **properly trained professionals** only.
- **Employer –** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
- Harness **must** be worn so that the fall-arrest D-ring is centered in back.
- **Fall-arrest anchorage must** support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
- Attach fall-arrest connecting devices that meet OSHA standards only to the rear fall-arrest D-ring.
- **Rig to avoid contact with structures below in the event of a fall.** The free-fall distance must not exceed 6 ft.(1.8m). If using a deceleration unit, add 3-1/2 ft. (1m) to free-fall distance to allow for unit extension.
- **For fall arrest, always** keep anchorage at or above shoulder height to minimize fall distance.
- OPE equipment **must be destroyed** if subjected to impact loading.
- OSHA requires that impact force in a fall **NOT** exceed an 1,800 lb.. (8kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting device or use deceleration unit to stay under 1,800 lbs. (8kN).
- Whenever there is risk of a fall, personal fall-arrest protection must be used. Therefore, when working at an elevated position, always attach the fall-arrest D-ring in the back of the harness to an approved fall-arrest anchorage with a suitable fall-arrest lanyard or other connecting device. Where not possible, use alternative fall-arrest protection.
- **Always visually check** that: 1) each snap hook freely engages the intended D-ring or anchorage, and 2) the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
- **Always visually check** that all buckles and connectors are properly closed before each use.
- **Before each use check that:** OPE equipment is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, 2) rivets are not bent, loose or missing, 3) buckles, D-rings and other hardware are not distorted or cracked, 4) buckle tongue does not bind on buckle and buckle holes are not damaged, and 5) hook keepers are free of burrs, functioning properly, clean and not bent. **If the OPE equipment does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**
- **Never** allow this equipment to come in contact with fire, high-temperature surfaces, welding sparks, or other heat sources.
- Harnesses **must** be properly sized and adjusted to fit user. **Always** wear harness snug to avoid injury.
- **Only use** locking snap hooks.
- OPE equipment must **only** be used for the specific purpose for which it is designed and intended.
- **Never** punch additional holes in or alter any OPE equipment in any way.
- **Never** attach ladder or rebar hooks onto a D-ring.
- **Never** attach multiple snap hooks onto a D-ring.
- **Never** attach anything to a D-ring other than a single, locking snap hook. The existence of another object attached to a D-ring may prevent or falsely indicate snap-hook engagement.
- For **personal** use only. **NOT** for towing or hoisting.
- **NOT** for recreational or sporting use.
- Assume the responsibility for determining that your OPE harness and equipment are in excellent condition at all times.
- Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
- Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers, because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.

INSPECTION GRID

Competent person, as defined by OSHA, must inspect equipment every 6 months. Mark month of current year if it passes. Remove from service if it is not inspected every 6 months; if it fails, remove and replace.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
20____												
20____												
20____												
20____												
20____												

Name of User _____

Date Into Service (Month/Year) _____

QUESTIONS?
Call TOLL FREE at 1-800-553-4676
Klein Tools, Inc.
OSHA 1910, 1915 & 1926
ANSI A10.14, ANSI Z359.1 **Made in U.S.A.**
Klein-Lite®, Klein-Lok®, Klein-Kord®, Softee™, Ultra-Hyde™

139131
T-126

Tag for Lightweight Fall-Arrest/Positioning Harnesses

87144, 87145, LH5249 style, LH5266 style, LH5268 style, LH5278 style, LH5282 style

For Fall-Arrest and Positioning Use Only

DO NOT REMOVE THIS LABEL

READ BEFORE USE — **Model:** **Length:** **Date:** — READ BEFORE USE

⚠WARNING
A fall could result in serious injury or death. Do not use unless properly trained. Read and follow all instructions and warnings.

- **Read, understand and follow** all instructions, cautions and warnings attached to and/or packed with this and all other occupational protective equipment before each use.
- For use by **properly trained professionals** only.
- **Employer –** Before allowing the use of this equipment, instruct your employees as to its proper use and alert them to these warnings.
- Harness **must** be worn so that the fall-arrest D-ring is centered in back.
- **Fall-arrest anchorage must** support a minimum of 5,000 lbs. (22.2kN) per attached worker and be independent of worker support.
- Attach fall-arrest connecting devices that meet OSHA standards only to the rear fall-arrest D-ring.
- Attach positioning connecting devices that meet OSHA standards only to the side D-rings. Side D-rings are **NOT** for fall arrest.
- **Positioning anchorages must** support at least twice the potential impact load of an employee's fall or 3,000 lbs. (13.3kN), whichever is greater.
- **Rig to avoid contact with structures below in the event of a fall.** The free-fall distance must not exceed 6 ft. (1.8m). If using a deceleration unit, add 3-1/2 ft. (1m) to free-fall distance to allow for unit extension.
- **For fall arrest, always** keep anchorage at or above shoulder height to minimize fall distance.
- OPE equipment **must be destroyed** if subjected to impact loading.
- OSHA requires that impact force in a fall **NOT** exceed an 1,800 lb. (8kN) limit with a harness. At a given weight, the longer the free fall, the greater the resulting impact force. Therefore, minimize slack in fall-arrest connecting device or use deceleration unit to stay under 1,800 lbs. (8kN).
- Whenever there is risk of a fall, personal fall-arrest protection must be used. Therefore, when working at an elevated position, always attach the fall-arrest D-ring in the back of the harness to an approved fall-arrest anchorage with a suitable fall-arrest lanyard or other connecting device. Where not possible, use alternative fall-arrest protection.
- **Always visually check** that: 1) each snap hook freely engages the intended D-ring or anchorage, and 2) the snap-hook keeper (latch) is completely closed with each use. Have a co-worker visually check to make sure that the locking snap hook attached to the fall-arrest D-ring (centered in the back of the harness) is properly secured. **Never** rely solely on feel or sound in attempting to determine that a snap hook is engaged.
- **Always visually check** that all buckles and connectors are properly closed before each use.
- **Before each use check that:** OPE equipment is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots or excessive wear, 2) rivets are not bent, loose or missing, 3) buckles, D-rings and other hardware are not distorted or cracked, 4) buckle tongue does not bind on buckle and buckle holes are not damaged, and 5) hook keepers are free of burrs, functioning properly, clean and not bent. **If the OPE equipment does not pass the inspection, it should be removed from service immediately and destroyed or re-inspected by a competent person as defined by OSHA to determine its usability.**
- **Never** allow this equipment to come in contact with fire, high-temperature surfaces, welding sparks, or other heat sources.
- Harnesses **must** be properly sized and adjusted to fit user. **Always** wear harness snug to avoid injury.
- **Only use** locking snap hooks.
- OPE equipment must **only** be used for the specific purpose for which it is designed and intended.
- **Never** punch additional holes in or alter any OPE equipment in any way.
- **Never** attach ladder or rebar hooks onto a D-ring.
- **Never** attach multiple snap hooks onto a D-ring.
- **Never** attach anything to a D-ring other than a single, locking snap hook. The existence of another object attached to a D-ring may prevent or falsely indicate snap-hook engagement.
- For **personal** use only. **NOT** for towing or hoisting.
- **NOT** for recreational or sporting use.
- Assume the responsibility for determining that your OPE harness and equipment are in excellent condition at all times.
- Store your OPE equipment in a clean, dry area such as a tool chest or storage room.
- Klein strongly recommends that Klein components **NOT be interchanged** with other components made by other manufacturers, because Klein cannot guarantee that other manufacturers' components are free of defects in materials or workmanship.

INSPECTION GRID

Competent person, as defined by OSHA, must inspect equipment every 6 months. Mark month of current year if it passes. Remove from service if it is not inspected every 6 months; if it fails, remove and replace.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
20____												
20____												
20____												
20____												
20____												

Name of User _____

Date Into Service (Month/Year) _____

QUESTIONS?
Call TOLL FREE at 1-800-553-4676
Klein Tools, Inc.
OSHA 1910, 1915 & 1926
ANSI A10.14, ANSI Z359.1 **Made in U.S.A.**
Klein-Lite®, Klein-Lok®, Klein-Kord®, Softee™, Ultra-Hyde™

139132
T-127

Pole and Tree Climbers

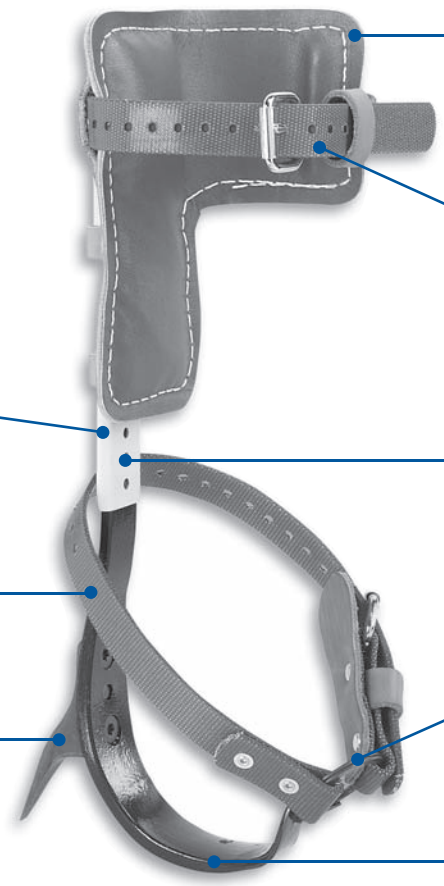
Rugged and durable, Klein Tools pole and tree climbers have the quality and features professionals depend on.

For Professionals . . . Since 1857®

Pole and Tree Climbers

Pole and Tree Climbers

Features:



8" x 8" (203 x 203 mm) cushioned, high-grade leather climber pads for maximum comfort.

Neoprene-impregnated nylon climber straps for long-lasting life.

Adjustable climber length. Steel sleeve moves in 1/4" (6 mm) increments for the most comfortable fit.

Secure sleeve and leg iron connection. Two slotted hex-head bolts with lock washers and barrel-type nuts join the steel sleeve and leg iron together.

Contoured leg irons help position gaffs securely and comfortably.

Steel split ring secures ankle strap in place and allows for quick replacement.

Replaceable gaff firmly attaches to the leg iron with a center pin and two TORX® screws.

4-7/16" (113 mm) wide stirrup provides greater foot support.

Klein manufactures a complete line of rugged, durable lineman's pole climbers and tree climbers. They incorporate all the features that professional users have found most desirable over the years. One example is adjustable sleeves that eliminate the need to buy a variety of different-size climbers. Another example is replaceable gaffs that can be installed in the field. Many companies now replace all gaffs as they become dull, rather than incur the risk of improper resharpening. When resharpening becomes necessary, for those companies or individual users who elect not to replace worn gaffs, Klein offers a gaff-sharpening kit, Cat. No. KG-2.

Professional users recognize the quality that has gone into the design and construction of Klein pole and tree climbers. However, climbers cannot be more reliable than the person using them. Proper training, inspection, and maintenance are absolutely essential to prevent serious injury or even death. The cautions on the following pages apply to climber use. Read, understand, and follow them carefully.

⚠WARNING: Pole and tree climbing equipment is to be used ONLY by individuals who are qualified and properly trained to use this equipment. Improper use of climbing equipment can cause serious injury or death.

Pole Climbers with 1-1/2" Gaffs – Complete Set

1972AR Series

- *Includes 8" x 8" (203 x 203 mm) cushioned leather pad, steel sleeve, leg iron, gaff, split ring, and nylon calf and ankle straps.*
- *C.C.A. pole gaff. Designed to penetrate the hardest salt-treated poles.*
- *To determine size needed, measure from instep to 1" (25 mm) below knee.*
- ***Sold in pairs only.***

Cat. No.	Adjustable Length	Shipping Weight (lbs.)	Replacement Gaff Cat. No.	Replacement Pad Cat. No.	Replacement Calf Strap Cat. No.	Replacement Ankle Strap Cat. No.
CN1972AR	15" – 19" (381 – 483 mm)	6.00	72	8210	5301-18	5301-20
CN1972ARL	17" – 21" (432 – 533 mm)	6.25	72	8210	5301-18	5301-20

Pole Climbers with 1-1/2" Gaffs – Without Pads and Straps

1972AR Series

- ***POLE CLIMBERS ONLY.*** *Includes steel sleeve, leg iron, split ring, and gaff.*
- *C.C.A. pole gaff. Designed to penetrate the hardest salt-treated poles.*
- *To determine size needed, measure from instep to 1" (25 mm) below knee.*
- ***Sold in pairs only.***

Cat. No.	Adjustable Length	Shipping Weight (lbs.)	Replacement Gaff Cat. No.
1972AR	15" – 19" (381 – 483 mm)	4.50	72
1972ARL	17" – 21" (432 – 533 mm)	4.85	72

⚠WARNING: All pole and tree climbers are for use by trained people only.

⚠WARNING: For your protection, Klein recommends that climbers be replaced when original gaff and two replacement gaffs have been used on the climbers.

Pole and Tree Climbers

Pole Climbers with 1-9/16" Gaffs – Complete Set

1986AR Series

- *Gaffs are longer in length and wider in angle than 1-1/2" gaffs for exceptional resistance to cutouts.*
- *Includes 8" x 8" (203 x 203 mm) cushioned leather pad, steel sleeve, leg iron, gaff, split ring, and nylon calf and ankle straps.*
- *To determine size needed, measure from instep to 1" (25 mm) below knee.*
- ***Sold in pairs only.***

Cat. No.	Adjustable Length	Shipping Weight (lbs.)	Replacement Gaff Cat. No.	Replacement Pad Cat. No.	Replacement Calf Strap Cat. No.	Replacement Ankle Strap Cat. No.
CN1986AR	15" – 19" (381 – 483 mm)	6.20	86	8210	5301-18	5301-20
CN1986ARL	17" – 21" (432 – 533 mm)	6.35	86	8210	5301-18	5301-20

Pole Climbers with 1-9/16" Gaffs – Without Pads and Straps

1986AR Series

- ***POLE CLIMBERS ONLY.*** *Includes steel sleeve, leg iron, split ring, and gaff.*
- *Gaffs are longer in length and wider in angle than 1-1/2" gaffs for exceptional resistance to cutouts.*
- *To determine size needed, measure from instep to 1" (25 mm) below knee.*
- ***Sold in pairs only.***

Cat. No.	Adjustable Length	Shipping Weight (lbs.)	Replacement Gaff Cat. No.
1986AR	15" – 19" (381 – 483 mm)	4.50	86

⚠WARNING: All pole and tree climbers are for use by trained people only.

⚠WARNING: For your protection, Klein recommends that climbers be replaced when original gaff and two replacement gaffs have been used on the climbers.

Tree Climbers with 2-3/4" Gaffs – Complete Set

1907AR Series

- *Extra-long gaffs for maximum penetration when climbing trees.*
- *Includes 8" x 8" (203 x 203 mm) cushioned leather pad, steel sleeve, leg iron, gaff, split ring, and nylon calf and ankle straps.*
- *To determine size needed, measure from instep to 1" (25 mm) below knee.*
- ***Sold in pairs only.***

Cat. No.	Adjustable Length	Shipping Weight (lbs.)	Replacement Gaff Cat. No.	Replacement Pad Cat. No.	Replacement Calf Strap Cat. No.	Replacement Ankle Strap Cat. No.
CN1907AR	15" – 19" (381 – 483 mm)	6.20	07	8210	5301-18	5301-20
CN1907ARL	17" – 21" (432 – 533 mm)	6.75	07	8210	5301-18	5301-20

Tree Climbers with 2-3/4" Gaffs – Without Pads and Straps

1907AR Series

- ***TREE CLIMBERS ONLY.*** *Includes steel sleeve, leg iron, split ring, and gaff.*
- *Extra-long gaffs for maximum penetration when climbing trees.*
- *To determine size needed, measure from instep to 1" (25 mm) below knee.*
- ***Sold in pairs only.***

Cat. No.	Adjustable Length	Shipping Weight (lbs.)	Replacement Gaff Cat. No.
1907AR	15" – 19" (381 – 483 mm)	4.85	07
1907ARL	17" – 21" (432 – 533 mm)	4.95	07

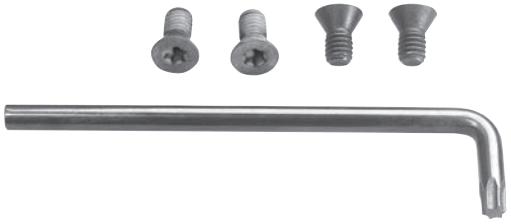
⚠WARNING: All pole and tree climbers are for use by trained people only.

⚠WARNING: For your protection, Klein recommends that climbers be replaced when original gaff and two replacement gaffs have been used on the climbers.

Climber Replacement Parts & Accessories

Replacement Gaffs and Accessories

- *Replacement gaffs include gaffs, TORX® screws, and wrench.*



Cat. No. 86 shown

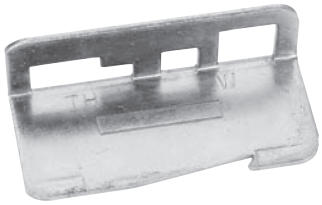
Cat. No.	Description	Qty.	Shipping Weight (lbs.)
Replacement Pole Climbing Gaffs			
72*	1-1/2" (38 mm) Pole Climbing Gaffs (supplied with the 1972AR series)	2	.50
86*	1-9/16" (40 mm) Pole Climbing Gaffs (supplied with the 1986AR series)	2	.60
Replacement Tree Climbing Gaffs			
07*	2-3/4" (70 mm) Tree Climbing Gaffs (supplied with the 1907AR series)	2	.75
Gaff Accessories			
244	Long Gaff Screw (should be ordered with Cat. No. 247)	1	.01
247	Short Gaff Screw (should be ordered with Cat. No. 244)	1	.01
34910	Screw w/Lock Washer Set (for steel sleeve)	4	.01

**Gaffs sold in pairs only.*

Gaff Gauge for Pole and Tree Climbers

- *Convenient climber gaff guide assists with sharpening gaffs, and checking proper gaff width, thickness, and point profiles.*

Cat. No.	Shipping Weight (lbs.)
KG-1	.10



Gaff Sharpening Kit

- *Handy kit contains: 8" fine-tooth file, 3" honing stone, Klein KG-1 gaff gauge, fully-illustrated gaff sharpening instructions, and canvas roll-up case.*

Cat. No.	Description	Shipping Weight (lbs.)
KG-2	Gaff-sharpening kit for pole and tree climbers	.35

⚠WARNING: For your protection, Klein recommends that climbers be replaced when original gaff and two replacement gaffs have been used on the climbers.

TORX® is a registered trademark of the Camcar division of Textron, Inc.

All Klein climber straps are sold in pairs only.
All Klein ankle straps and pads are sold in pairs only.

Snap-On Gaff Guard

- *Coil-spring, plastic coated guard quickly snaps onto pole climbers.*
- ***Sold in pairs only.***

Cat. No.	Description	Shipping Weight (lbs.)
1972G	Snap-on gaff guards for pole climbers	.10

Removable Gaff Guard

- *Long-lasting leather construction with easy-to-remove Velcro™ strap.*
- ***Sold in pairs only.***

Cat. No.	Description	Shipping Weight (lbs.)
1945G	Gaff guards for pole and tree climbers	.10

Climber Pads for Pole and Tree Climbers

- *3/4" (19 mm) thick cushioned right and left "L"-shaped leather pads.*
- ***Sold in pairs only.***

Cat. No.	Overall Size	Shipping Weight (lbs.)
8210	8" x 8" (20 x 20 cm)	.70

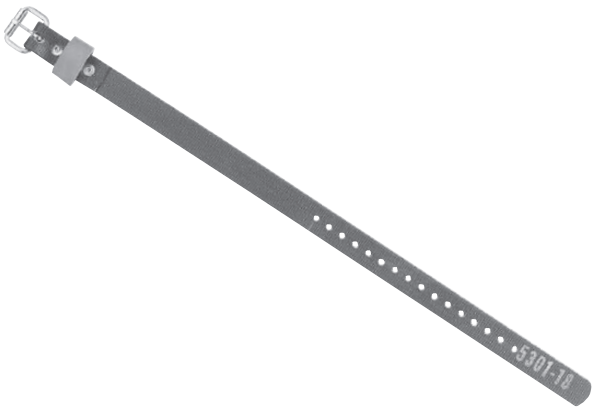
⚠WARNING: For your protection, Klein recommends that climbers be replaced when original gaff and two replacement gaffs have been used on the climbers.

All Klein climber straps are sold in pairs only.
All Klein ankle straps and pads are sold in pairs only.

Climber Replacement Parts & Accessories

Climber Straps for Pole and Tree Climbers

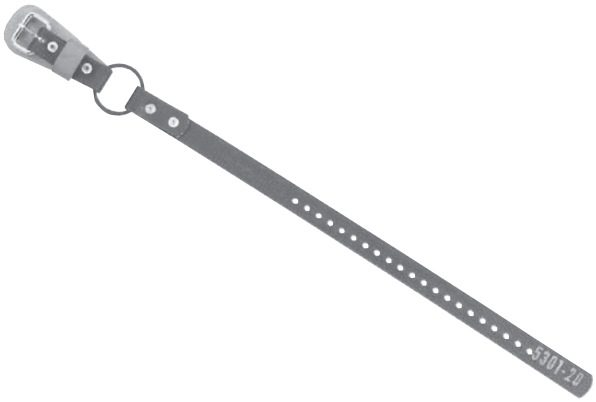
- *Durable neoprene-impregnated nylon strap is chemical/abrasion resistant and non-conductive.*
- *Tongue buckle has roller for easy adjustment.*
- ***Sold in pairs only.***



Cat. No.	Overall Size	Shipping Weight (lbs.)
5301-18	1" x 22" (25 mm x 56 cm)	.35
5301-19	1" x 26" (25 mm x 66 cm)	.40
5301-21	1-1/4" x 22" (32 mm x 56 cm)	.50
5301-22	1-1/4" x 26" (32 mm x 66 cm)	.46

Ankle Straps for Pole and Tree Climbers

- *Durable neoprene-impregnated nylon strap is chemical/abrasion resistant and non-conductive.*
- *Tongue buckle has roller for easy adjustment and a comfortable leather buckle pad.*
- ***Sold in pairs only.***



Cat. No.	Overall Size	Shipping Weight (lbs.)
5301-20	1" x 24" (25 mm x 61 cm)	.50
5301-23	1-1/4" x 24" (32 mm x 61 cm)	.70

⚠WARNING: For your protection, Klein recommends that climbers be replaced when original gaff and two replacement gaffs have been used on the climbers.

All Klein climber straps are sold in pairs only.
All Klein ankle straps and pads are sold in pairs only.

Warning Tags and Labels – Pole and Tree Climbers

Pole and Tree Climber Catalog Numbers

KG-1, KG-2, 07, 72, 86, 1907AR, CN1907AR, 1907ARL, CN1907ARL, 1945G, 1972G, 1972AR, CN1972AR, 1972ARL, CN1972ARL, 1972G, 1986AR, CN1986AR, 1986ARL, CN1986ARL, 5301-18, 5301-19, 5301-20, 5301-21, 5301-22, 5301-23, 8210

■ Climbing equipment is for use **by properly trained professionals only.**

■ **Use climbing equipment only** for the specific purpose for which it is designed and intended.

■ **Klein Tools recommends a combined body, clothing and tool weight of 300 pounds or less for use with our pole and/or tree climbers.**

■ **Always visually check that** all buckles are properly closed before use.

■ **Before each use check that: 1)** gaffs are free of dents, gouges or scratches **2)** gaffs have proper width, thickness, point profile and sharpness. **Only evaluate gaffs with Klein KG-1 gaff gauge. 3) Resharpen, or discard and replace gaffs if they fail inspection.**

■ **Before each use check that: 1)** climber straps and pads are free of burns, cuts, broken stitches or excessive wear, **2)** rivets are not bent, loose or missing, **3)** buckles are not distorted or cracked, tongue does not bind on buckle and buckle holes are not damaged. **4) Remove from service, destroy and discard item if it fails inspection and replace immediately.**

■ **Never** allow this equipment to come in contact with fire, high-temperature surfaces, welding sparks, or other heat sources.

■ **Never** punch holes in or alter a strap or climber.

■ **For leather components:** Leather is subject to deterioration by cracking, wearing thin, tearing, weakening and chemical attack. Carefully maintain with Neat's-foot oil or equivalent. Inspect straps for these conditions before each use. **Remove from service, destroy and discard strap if it shows any signs of deterioration and replace immediately.**

■ **While climbing,** avoid gaff contact with metal, such as pole hardware, tags, nails, poster staples, etc.

■ Poles are **NOT** all alike. Different wood species, climate, pole age, and preservative treatments (Creosote, Penta, CCA) affect climbability, resulting in significant differences in gaff penetration. **Visually check gaff penetration with your full weight on the climber before any climb. If penetration is shallow, use extreme caution.** The gaff could "cut-out," or the increased stress could lead to tip breakage. **For proper penetration,** the minimum underside length of a pole climber gaff is 1-7/16" (37 mm).

■ Trees are **NOT** all alike. Different species and bark thickness affect climbability. **Visually check gaff penetration** as described for pole climbers before any climb. **For proper penetration: 1)** Use a tree-climber gaff with a minimum underside length of 2-1/4" (57 mm). **2)** When bark thickness measures more than 2-1/2" (64 mm), make sure gaff has adequate length for proper penetration of wood under the bark.

■ After climbs, remove climbers to avoid gaff damage from hard surfaces or each other while walking.

■ Use gaff guards to protect gaffs between uses.

■ Limiting gaff replacement on climbers to two times is **highly recommended.**

■ **Employer-** instruct employee as to proper use and warnings before use of equipment.

■ **Read, understand and follow** all information provided with climber before use.

Appendix

Materials Used in Klein OPE Equipment

Materials

Nylon Rope. Nylon rope used in Klein lanyards is a filament-nylon type with long strands that impart a very high-tensile strength and excellent elasticity.

Nylon Webbing. Klein uses a high-quality, commercial-grade nylon sling webbing for its OPE connecting devices. The nylon webbing is impregnated with latex or resin for extra durability and provides excellent abrasion resistance.

Polypropylene Rope. Polypropylene rope used in Klein lanyards is a 9/16" (14 mm) diameter safety-orange type that offers excellent dielectric characteristics, ideal for working near live electrical lines and equipment. Polypropylene rope lanyards also offer good elasticity.

Polyester. Polyester core and webbing used in Klein deceleration lanyards and harnesses resists a wider variety of chemicals than nylon does.

Aircraft Cable. Aircraft-cable lanyards are made of 7/32" (5.6 mm) diameter galvanized-steel cable that is vinyl covered for protection against abrasion. Provides excellent resistance to heat exposure, chemicals, paints, and solvents, although the vinyl coating may melt or char. The galvanized-steel core resists molten metal splatter and will not resist flame of torch.

Drop-Forged Steel. Klein D-rings and snap-hooks are made of drop-forged steel with a corrosion-resistant finish.

General Physical Properties of Materials

The following chart shows the general physical qualities of the various materials used in Klein connecting devices. Due to the wide variety of conditions in the workplace, this information should only be considered as a general guide, and a qualified person should evaluate the specific application and hazards to which the materials will be exposed. If additional information is needed, call Klein Tools, Inc. at 1-800-553-4676.

Type of Material	Exposure to Excessive Heat	Exposure to Chemicals	Exposure to Molten Metal or Flame	Exposure to Paints or Solvents	Exposure Near Live Electrical Lines and Equipment
Nylon	Poor resistance. Becomes brittle, has a shriveled brown appearance. Fibers will break when flexed. Weakens at 300°F (149°C).	Generally good resistance, except around strong acids and phenolic compounds (phenol is present in coal tar and wood tar), which cause it to become brittle.	Poor resistance. Strands fuse together and form hard, shiny spots. Has hard and brittle feel. Will not support combustion.	Generally offers good resistance. However, paint can penetrate into the weave and dry. This can cause webbing to become hard and brittle and can eventually break the fibers. Some solvents may affect fibers (see "Exposure to Chemicals").	Poor protection (no dielectric strength). Provides no protection to exposure to live electrical lines or equipment.
Polyester	Poor resistance. Fibers become brittle and will shrivel, turn brown in color, and break when flexed. Should not be used above 180°F (82°C).	Good resistance to most chemicals, including hydrochloric acid, aqueous alkalies, and many solvents. Exposure to incompatible chemicals may change fiber color and texture, similar to a brownish smudge or smear. Also, fibers will become less elastic, with transverse cracks caused by bending.	Poor resistance. Fiber strands fuse together and become hard, brittle, and shiny.	Generally offers good resistance. However, paint can penetrate into the weave and dry. This can cause webbing to become hard and brittle and can eventually break the fibers. Some solvents may affect fibers (see "Exposure to Chemicals").	Poor protection (no dielectric strength). Provides no protection to exposure to live electrical lines or equipment.
Polypropylene	Poor resistance. Same as nylon, except weakens at 230°F (110°C).	Excellent resistance to most chemicals, but is attacked by chlorinated hydrocarbons at elevated temperatures.	Poor resistance; same as nylon.	Good resistance. However, may be attacked by chlorinated hydrocarbons.	Good protection (high-dielectric strength). Generally provides good protection, when in dry, clean condition, on exposure to live electrical lines and equipment.
Metal (Aircraft Cable, Vinyl Coated)	Excellent resistance.	Excellent resistance.	Good resistance. However, coating may melt or char. (Will not resist the flame of a torch.)	Excellent resistance.	Poor protection (no dielectric strength). Provides no protection against exposure to live electrical lines or equipment.
Klein-Kord®	Similar to nylon; however, neoprene will protect nylon fabric for a period of time.	Excellent resistance to hydrocarbons as used in wood treatment, due to neoprene.	Similar to nylon; however, neoprene helps protect nylon fabric from welding splatter.	Excellent resistance; however, some strong solvents could soften neoprene and attack nylon.	Good protection. Generally provides good protection when in dry, clean condition on exposure to live electrical lines or equipment.

Harness Inspection Procedures

General

1. Check for wear and deterioration. Before each use, carefully inspect your harness for signs of wear, deterioration, or evidence of impact loading. Visually inspect for loose threads, pulled rivets, burns, cuts, distortions, abrasions, or any other evidence of chemical or physical deterioration that may have weakened the material or assembly.

2. Inspect hardware for malfunctions and cracks. Check all snap-hooks, buckles, and D-rings.

3. Remove from service and replace all worn or damaged equipment. If any part does not pass inspection, immediately remove the harness from service and destroy it.

Specific

1. Inspect stitching and webbing. Check stitching for broken, burned, cut, or pulled stitches. Broken strands appear as tufts on the surface. To inspect, hold the webbing with your hands six to eight inches apart. Bend the webbing in an inverted "U" to cause surface tension, exposing problem areas. Inspect all web areas. Damage from cuts, abrasions, corrosives, heat, or chemicals should be apparent. (See Fig. 1)

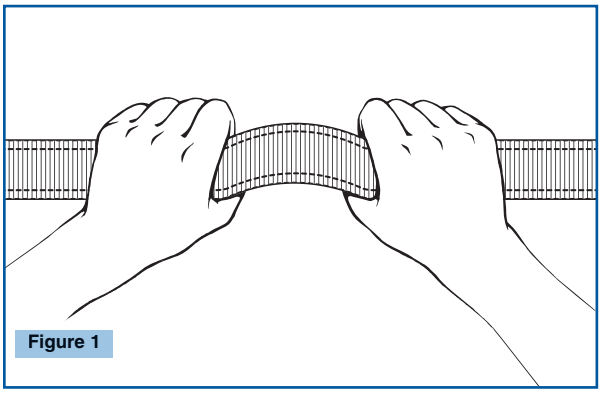


Figure 1

2. Inspect buckle and belt ends. Inspect the ends of all straps, which can wear from repeated opening and closing. Enlarged or distorted holes may indicate excessive wear or damage through impact loading. Harnesses with unusually enlarged or distorted holes should fail inspection. (See Fig. 2)

3. Inspect D-rings. Check all D-rings for distortion. Check D-ring attachment points for unusual wear or damaged fibers. Badly pitted D-rings indicate chemical corrosion, and they should fail inspection. (See Fig. 3)

4. Inspect stitching or rivets at hardware attachment points. For stitched attachment points, check that stitching is not broken, burned, cut, or pulled. Check all riveted attachment points for tightness. Badly pitted rivets indicate chemical corrosion, and they should fail inspection. (See Fig. 4)

5. Inspect tongue buckles. Check all tongue buckles for distortion, sharp edges, and cracks. The tongue should move freely and overlap the frame. Rollers should not be distorted and should roll freely. (See Fig. 5)

NOTE: See page 84 for remaining procedure steps.

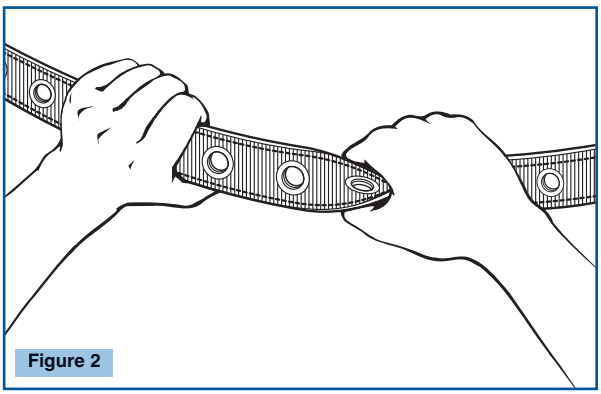


Figure 2

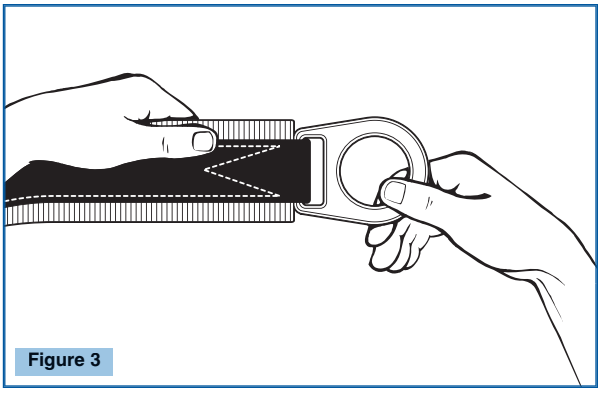


Figure 3

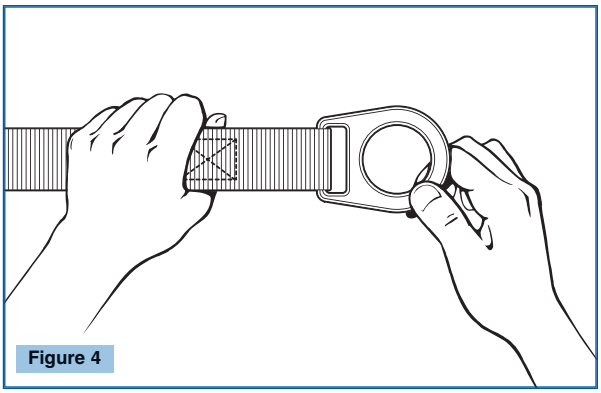


Figure 4

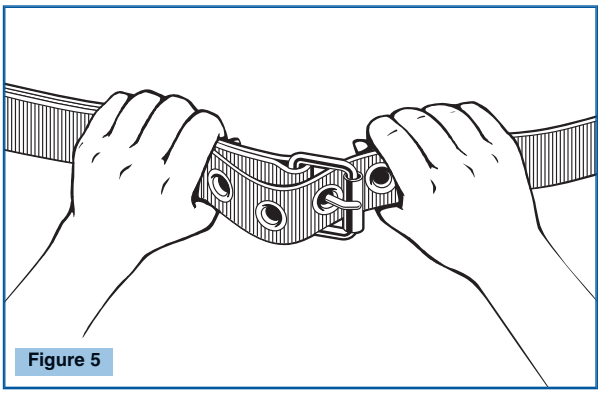


Figure 5

Harness Inspection Procedures (continued)

6. Inspect friction slide adjusters. Check all friction slide adjusters for distortion, sharp edges, and cracks. Make sure outer bars and center bars are straight. Also check corners and attachment points for wear and cracks. (See Fig. 6)

7. Inspect easy-connect buckles. Check easy-connect buckles (square rings) for distortion, sharp edges, and cracks. For stitched attachment points, check that stitching is not broken, burned, cut, or pulled. (See Fig. 7)

8. Inspect friction-style buckles. Check friction-style buckles for sharp edges, cracks, and distortion. Make sure that outer bars and center bar are straight. Also check corners and attachment points for wear. (See Fig. 8)

9. Inspect leather. Leather should be soft and supple. Inspect leather for cracks, tears, burns, brittleness, and other signs of damage, age, or abuse. While the leather components of the system are not load bearing, damaged leather is a sign that the entire harness MAY NOT be in acceptable condition. Re-inspect entire system. Leather should both look and feel good.

10. Destroy or replace worn or damaged harnesses. If evidence of excessive wear, deterioration, or mechanical malfunction is found, the harness should be destroyed. Never work with worn or damaged equipment. Using worn or damaged equipment can cause serious injury or death.

11. The inspector is the most important part of any inspection procedure. Check all equipment thoroughly and follow all safety procedures and guidelines. Don't take any shortcuts. **Important Note:** OSHA requires all employers covered by the Occupational Safety and Health Act to inspect and maintain all tools and equipment used by employees – whether owned by the employees or by the company. All OPE equipment should be inspected before each use, and immediately removed from service if equipment does not pass inspection.

Note – Lineman's Harness:

For information on inspection and maintenance of the body belt that's attached to the Lineman's Harness, see the Klein Lineman's Body Belts and Positioning Straps Inspection Procedures, which are in this catalog's appendix section.

⚠WARNING: Should any unusual condition be noted during inspection which is not specified here, do not use the suspect harness until a competent person as defined by OSHA has made a decision on its usability.

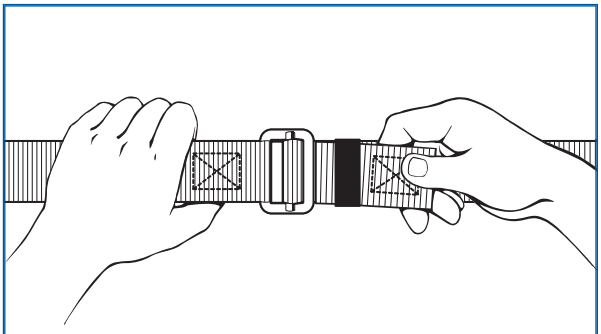


Figure 6

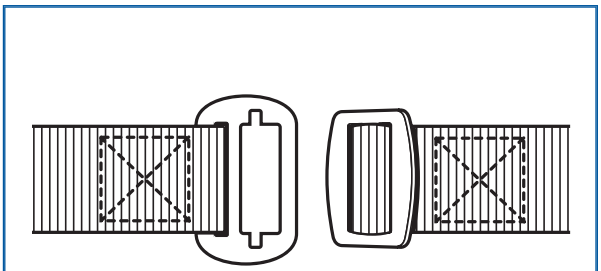


Figure 7

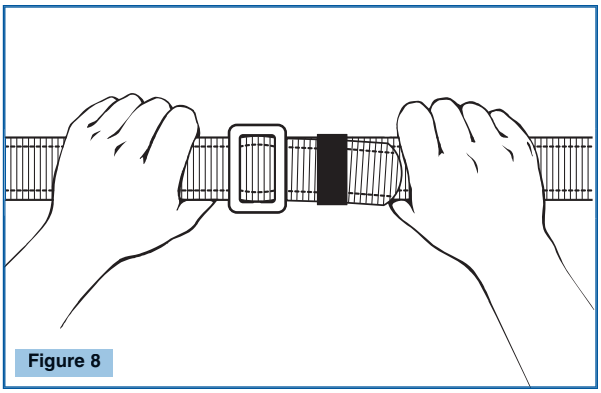


Figure 8

Connecting Devices Inspection Procedures

General

1. Check for wear and deterioration. Before each use, carefully inspect your complete OPE system for signs of wear or deterioration, or evidence of impact loading. Visually inspect for loose threads, pulled rivets, burns, cuts, distortions, abrasions, or other evidence of chemical or physical deterioration that may have weakened the material or assembly.

2. Inspect hardware for malfunctions and cracks. Check all snap-hooks, buckles, and D-rings. Check that snap-hooks are not distorted or cracked, and that the keepers are free of burrs, functioning properly, clean, and not bent.

3. Destroy and replace all worn or damaged equipment. Immediately destroy and replace any component that does not pass inspection.

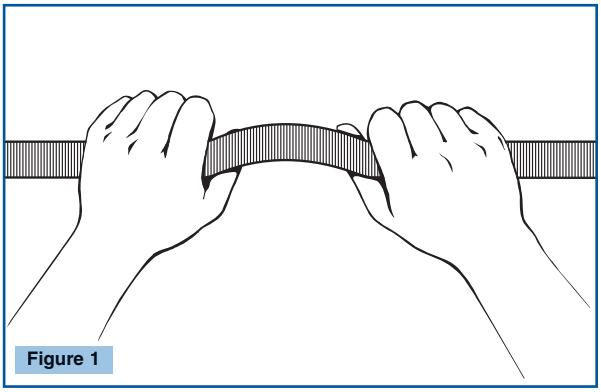


Figure 1

Specific

1. Inspect stitching and webbing. Check stitching for broken, burned, cut, or pulled stitches. Broken strands of webbing appear as tufts on the webbing surface. To visually check for damage caused by corrosives, heat, chemicals, and other conditions, hold the connecting device with your hands six to eight inches apart. Bend the webbing in an inverted "U" to cause surface tension and expose problem areas. Inspect entire length. (See Fig. 1)

For deceleration units, check the stitching for broken, burned, cut, or pulled stitches, and the break-away jacket for cuts, tears, broken stitches, stretch marks, or other evidence of impact load.

NOTE: On Klein deceleration units, the uncovering of a red-lettered warning label inside the leather jacket indicates that the unit was subjected to a severe impact force; therefore, the unit must not be used and must be disposed of immediately.

For deceleration lanyards, check the stitching for broken, burned, cut, or pulled stitches, and/or other evidence of impact load.

NOTE: On Klein deceleration lanyards, the uncovering of a red-lettered warning label indicates that the unit was subjected to a severe impact force; therefore, the unit must not be used and must be disposed of immediately.

For aircraft-cable lanyards, check the full length for breaks, burns, or cuts in the vinyl covering and the aircraft cable.

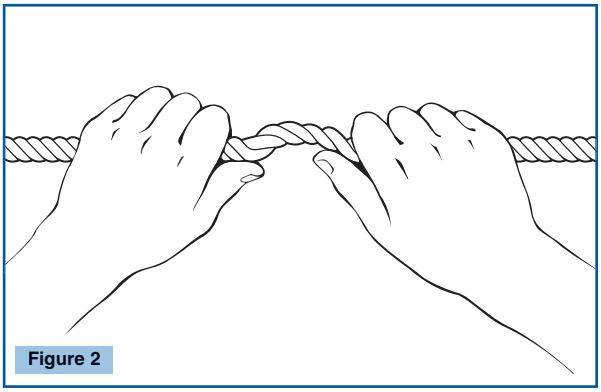


Figure 2

2. Check for broken strands. Inspect rope lanyards for broken strands by twisting the rope slightly to undo the braiding. Inspect the entire lanyard in this manner. Lanyards with broken strands must be discarded. (See Fig. 2)

NOTE: Twisted rope, such as the nylon filament and polypropylene rope used in Klein lanyards, is subject to a condition known as "hockling," which is similar to the reverse twisting we often see in a telephone handset cord. This can be caused by a repetitive twisting movement, such as normal hand rotation in hooking and unhooking, a lanyard dangling freely, or by using the lanyard to suspend equipment. Preventive measures include: 1) never using a lanyard for towing or hoisting, 2) inspecting and smoothing out after each use, and 3) storing neatly.

3. Inspect all snap-hooks, D-rings, and other metal parts. Hardware must be checked for sharp edges and cracks. Rollers should not be distorted in shape and should roll freely. Check all parts, especially corners and attachment points, for wear and cracks. (See Fig. 3)

4. Destroy and replace all worn or damaged OPE equipment. If evidence of excessive wear, deterioration, or mechanical malfunction is observed, replace the equipment immediately. **Never work with worn or damaged OPE equipment. Using damaged or worn equipment can cause injury or death.**

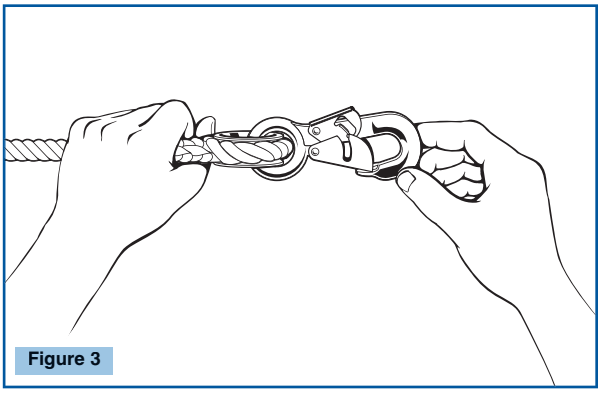


Figure 3

5. The inspector is the most important part of any inspection procedure. Check all equipment thoroughly and follow all safety procedures and guidelines. Do not take any shortcuts; they could result in injury or death.

Important Note: OSHA specifies that all employers covered by the Occupational Safety and Health Act are responsible for inspection and maintenance of all tools and equipment used by employees – whether owned by the employees or by the company. Personal-protection equipment should be inspected before each use, and immediately removed from service if any sign of wear or damage is found.

Choker Anchorage Connector Inspection Procedures

General

1. Check for wear and deterioration. Before each use, carefully inspect your anchorage connector for signs of wear, deterioration, or evidence of impact loading. Visually inspect for loose threads, pulled rivets, burns, cuts, distortions, abrasions, or any other evidence of chemical or physical deterioration that may have weakened the material or assembly.

2. Inspect hardware for malfunctions and cracks. Check all snap-hooks, buckles, and D-rings.

3. Remove from service and replace all worn or damaged equipment. If any part does not pass inspection, immediately remove it from service and destroy it.

Specific

1. Stitching and webbing. Check stitching for broken, burned, cut, or pulled stitches. Broken strands appear as tufts on the surface. To inspect, hold the webbing with your hands six to eight inches apart. Bend the webbing in an inverted "U" to cause surface tension, exposing problem areas. Inspect all web areas. Damage from cuts, abrasions, corrosives, heat, or chemicals should be apparent. (See Fig. 1)

2. Inspect D-ring. The D-ring and roller must be checked for distortion or cracks and the roller should roll freely. All D-ring attachment points should be checked for unusual wear or damaged fibers. Badly pitted D-rings indicate chemical corrosion, and the equipment should be destroyed immediately. (See Fig. 2)

3. Destroy and replace all worn, altered, or damaged OPE equipment. If evidence of excessive wear, deterioration, alteration, or mechanical malfunction is observed, the anchorage connector should be destroyed. Never work with worn or damaged equipment. Using damaged or worn equipment can cause serious injury or death.

4. The inspector is the most important part of any inspection procedure. Check all equipment thoroughly and follow all safety procedures and guidelines. Do not take any shortcuts.

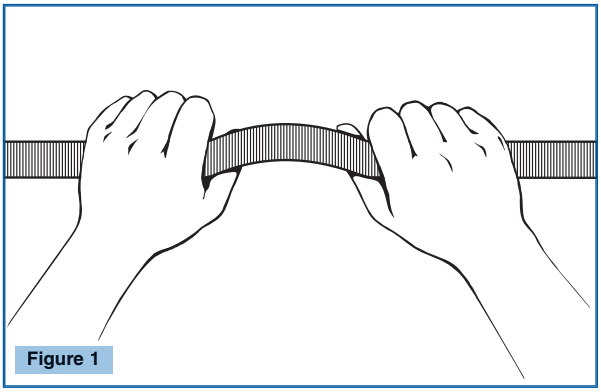


Figure 1

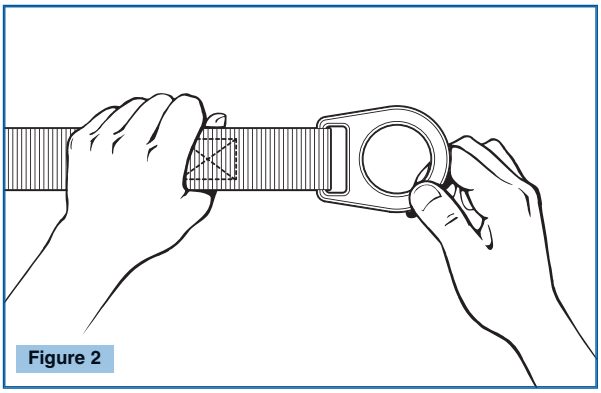


Figure 2

Pigtail Lanyard Inspection Procedures

General

1. Check for wear and deterioration. Before each use check your complete OPE system for general signs of wear, alteration, deterioration, or evidence of impact loading. Determine that unit is free of burns, cuts, abrasions, broken strands or stitches, kinks, knots, or excessive wear; that locking snap-hooks and thimble are not distorted or cracked; that hook keepers are free of burns, functioning properly, clean, and not bent.

2. Inspect hardware for malfunctions and cracks. Check all snap-hooks, buckles, and D-rings.

3. Remove from service and replace all worn, altered, or damaged equipment. If this unit, or any part of the OPE system, does not pass inspection, it should be removed from service immediately and destroyed. Replace immediately.

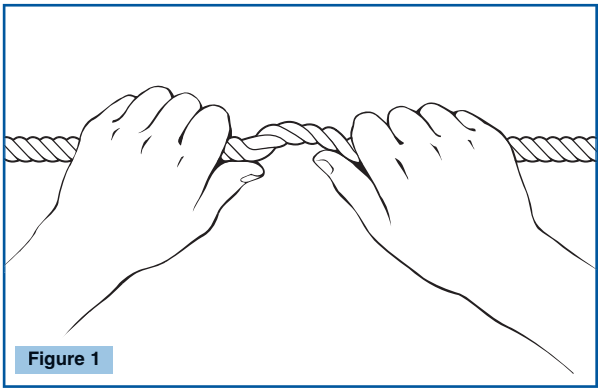


Figure 1

Specific

1. Inspect the lanyard. Inspect entire lanyard for broken strands by twisting the rope slightly in the opposite direction of the natural twist. Check that lanyard is free of burns, cuts, abrasions, knots, and that splicings show no signs of unraveling, especially near thimble. Inspect lanyard for brittle, shriveled, or hard spots that indicate exposure to chemicals or heat. (See Fig. 1)

2. Inspect snap-hooks. Check that snap-hooks are not distorted or cracked and that keeper is free of burns, functioning properly, clean, and not bent. (See Fig. 2)

3. Inspect wire pigtail. Inspect entire length of pigtail for cut, broken, welded, or otherwise damaged cable strands. Check eye for excess distortion that may indicate impact loading.

4. Destroy and replace all worn, altered, or damaged OPE equipment. If evidence of excessive wear, deterioration, or mechanical malfunction is observed, the pigtail lanyard must be destroyed. Never work with worn or damaged equipment. Using damaged, altered, or worn equipment can cause serious injury or death.

5. The inspector is the most important part of any inspection procedure. Assume the responsibility for determining that your OPE equipment is in excellent condition at all times. Check all equipment and follow all safety procedures, guidelines, and warnings. Never take shortcuts.

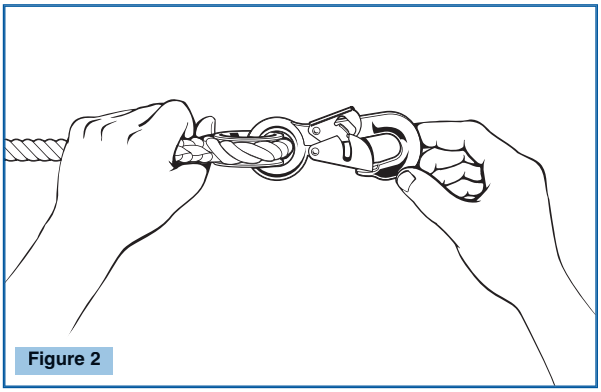


Figure 2

Rope Grab Inspection Procedures

Carefully inspect the entire rope grab and lifeline before each use. Equipment shall be inspected by the user before each use and, additionally, should be inspected by a competent person, as defined by OSHA, (other than the user) at intervals of no more than one year.

1. Inspect entire OPE system. Before each use, carefully inspect the complete fall-arrest system for signs of wear or deterioration, alteration, or evidence of impact loading.

2. Inspect rope grab mechanism. Make sure that the mechanism is clean and free of foreign matter, such as paint, oil, dirt, grit, etc., and is free of any distortion, bends, burrs, sharp edges, cracks, or other deformations and that all moving parts move freely and function properly. (See Fig. 1)

3. Inspect snap-hooks. Check that snap-hooks are not distorted or cracked and that the keeper is free of burrs, functioning properly, clean, and not bent. (See Fig. 2)

4. Inspect the lanyard. Inspect the entire length for broken strands by twisting the rope slightly in the opposite direction of the natural twist. Check that lanyard is free of burns, cuts, abrasions, knots, and that splicings show no signs of unraveling, especially near the thimble. Inspect lanyard for brittle, shriveled, or hard spots that indicate exposure to chemicals or heat. (See Fig. 3)

5. Inspect the vertical lifeline. Inspect the entire length for broken strands by twisting the rope slightly in the opposite direction of the natural twist. Make sure it is: 1) free of oil, grease, or other compounds that would prevent the rope grab from working properly; 2) free of signs of exposure to high temperatures, acids, or other corrosive chemicals; 3) free of dirt or other foreign matter in between or in the strands; and 4) free of burns, cuts, abrasions, kinks, knots, broken strands, unraveling, and excessive wear. (See Fig. 4)

6. Destroy and replace all worn, altered, or damaged OPE equipment. If evidence of excessive wear, deterioration, or mechanical malfunction is observed, the entire unit must be destroyed. Never work with worn or damaged equipment. Using damaged or worn equipment can cause serious injury or death.

7. Should any unusual conditions be noted during the inspection that are not specified here, do not use the suspect equipment until a competent person, as defined by OSHA, makes a decision on its usability.

8. The inspector is the most important part of any inspection procedure. Assume the responsibility of determining that your OPE equipment is in excellent condition at all times. Check all equipment and follow all safety procedures, guidelines, and warnings. Never take shortcuts.

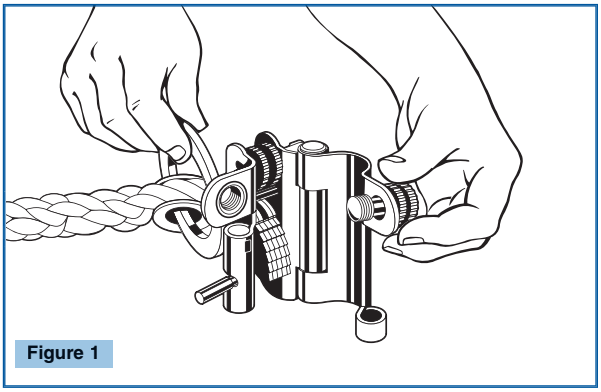


Figure 1

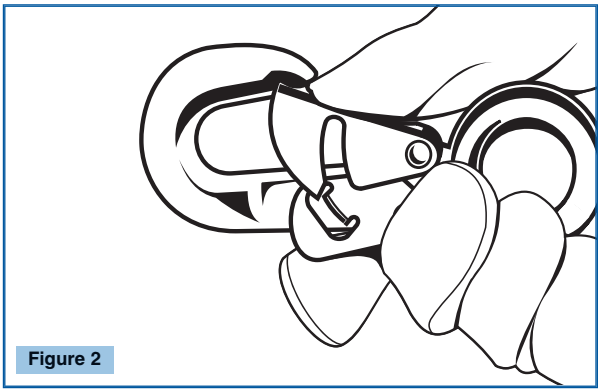


Figure 2

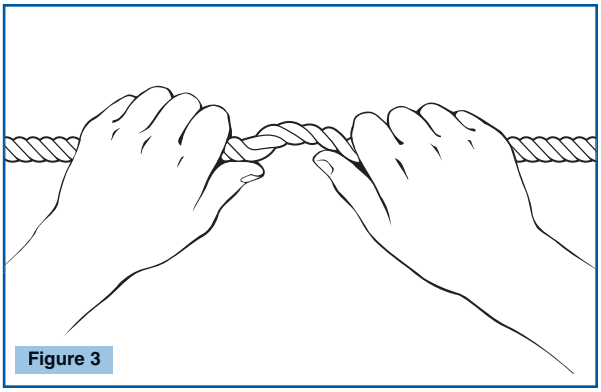


Figure 3

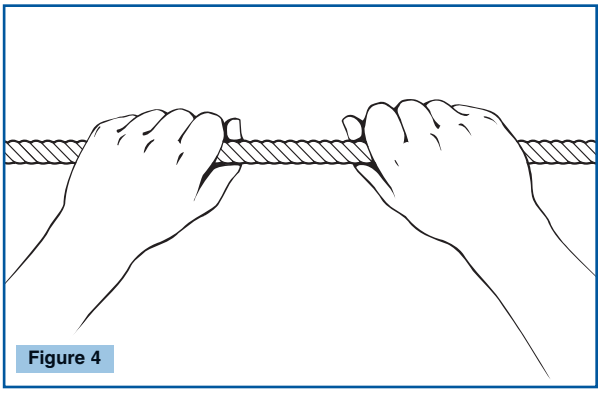


Figure 4

Retractable Lifeline Inspection Procedures

1. Inspect and clear the vicinity around work area of debris and other material that could cause injuries or interfere with the operation of the unit. Be sure that the unit is attached to an approved anchorage that will support 5,000 lbs. (22.2 kN) per attached worker.

2. Check the cable to ensure it moves freely and retracts correctly. If the cable does not pull out smoothly or sticks when retracting, pull all the cable out of the housing and allow it to retract slowly under light tension. While the cable is retracting, check for cuts, kinks, broken strands, excessive wear, foreign substances, or other damage. All cables should be checked regularly for signs of wear. A competent person, for example, a safety director, must schedule regular safety inspections based on the amount of use and working conditions. (See Fig. 1)

⚠CAUTION: Gloves should be worn when inspecting or handling cable.

3. Test cable retraction of the device by pulling out at least 4 feet (1.2 m) of the cable and allowing it to retract slowly back into the housing, while keeping tension on the cable. (See Fig. 2)

⚠CAUTION: Gloves should be worn when inspecting or handling cable.

4. Test braking action (fall-arrest) capability of the device by pulling out approximately 2 feet (0.6 m) of cable from the housing, then giving the cable a quick, hard, downward tug. The cable should stop and lock. (See Fig. 3)

⚠CAUTION: Gloves should be worn when inspecting or handling cable.

5. Inspect the snap-hooks and connecting hardware to be sure they are not distorted or cracked. Be certain the snap-hook keepers are free of burrs, functioning properly, clean, and not bent. Inspect retractable unit housing for distortion, cracks, loose screws, or other damage. Make sure that all connecting hardware is properly fastened and secured. (See Fig. 4)

6. Make sure stopper is clean and free of cuts or cracks.

7. Remove from service immediately if any system function, component, or part does not pass this inspection, or whenever subjected to a severe free fall, and return entire device to Klein Tools, Inc., Service Center, 2070 Bennett Road, Philadelphia, PA 19116 for inspection, repair, and recertification. (Philadelphia Service Center for these products only.) Additionally, repairs and recertification MUST BE performed by the Klein Tools Service Center annually, or more frequently, depending on the system's use and operating conditions.

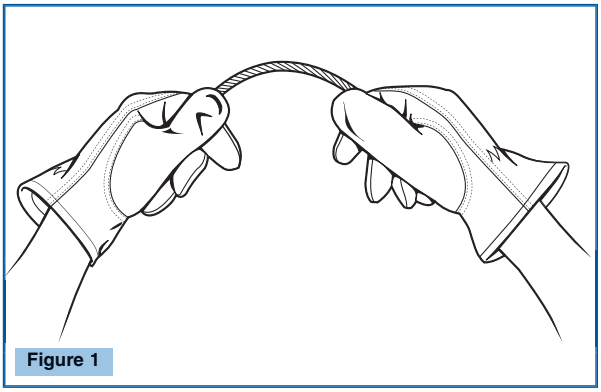


Figure 1

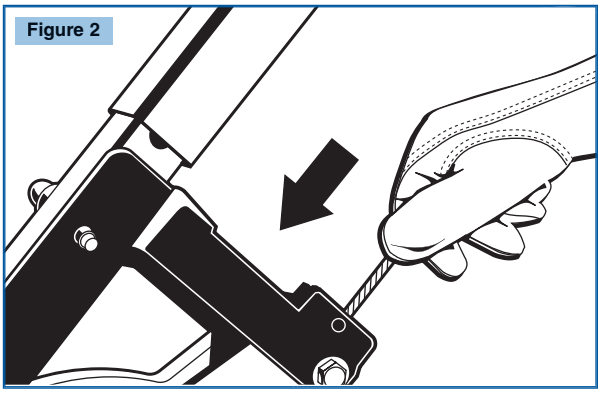
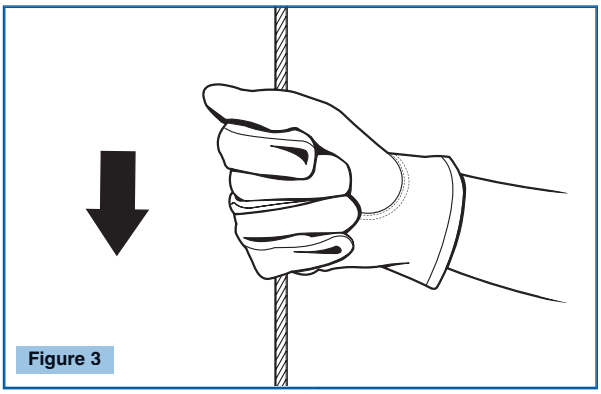


Figure 2



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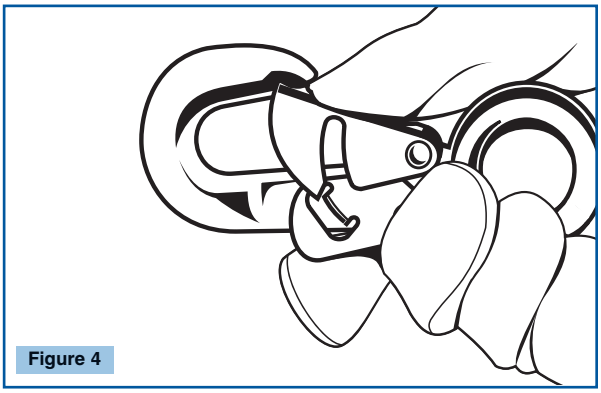


Figure 4

Appendix

2-Way and 3-Way Recovery Systems Inspection Procedures

1. Inspect the work area for debris and other material that could cause injuries or interfere with the operation of the system. Be sure that the tripod is positioned on stable, hard ground before setting it up. The leg chain and all locking pins should again be checked to see that they are correctly securing equipment. (See Fig. 1)

2. Check all the cables to ensure they move freely and retract correctly. If a cable does not pull out smoothly or sticks when retracting, pull all of the cable out of the housing, and allow it to retract slowly under light tension. While the cable is retracting, check for cuts, kinks, broken strands, excessive wear, foreign substances, or other damage. All cables should be checked regularly for signs of wear. A competent person, for example, a safety director, must schedule regular safety inspections based on the amount of use and working conditions. (See Fig. 2)

⚠CAUTION: Gloves should be worn when inspecting or handling cable.

3. While in the fall-arrest mode, **test the cable retraction of the Recovery Unit** by pulling out at least 4 feet (1.2 M) of the cable and allowing it to retract slowly back into the unit housing, keeping tension on the cable. (See Fig. 3)

4. While in the fall-arrest mode, **test the locking action** (fall-arrest) **capability of the Recovery Unit** by pulling out approximately 2 feet (0.6 m) of cable from housing, then give the cable a quick, hard, downward tug. The cable should stop and lock. (See Fig. 4)

⚠CAUTION: Gloves should be worn when inspecting or handling cable.

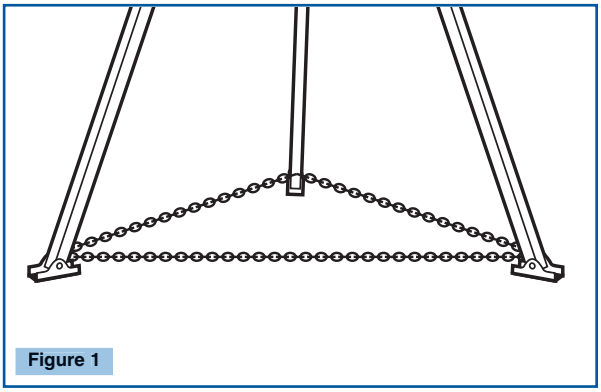


Figure 1

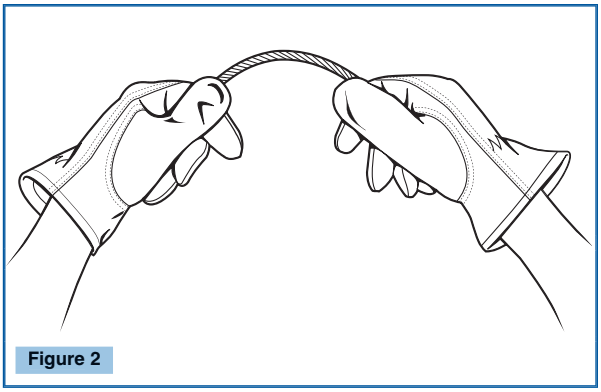


Figure 2

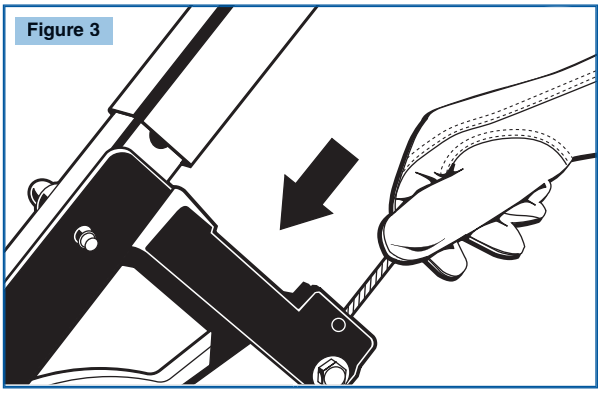


Figure 3

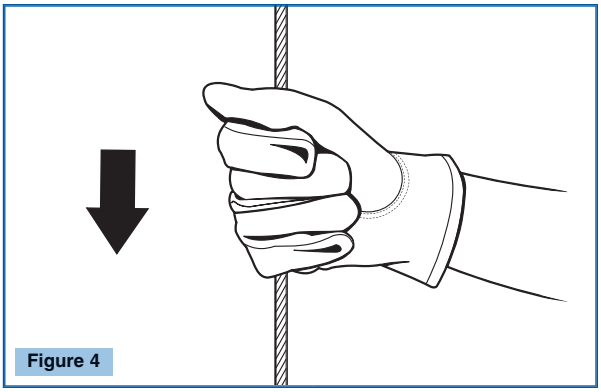


Figure 4

NOTE: See page 91 for remaining procedure steps.

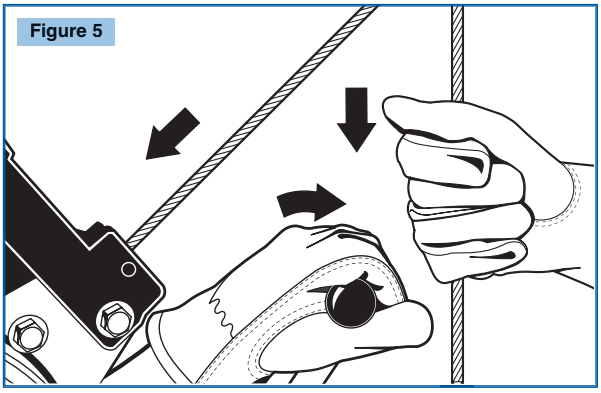
2-Way and 3-Way Recovery Systems Inspection Procedures (continued)

5. While maintaining downward pressure on the cable, **activate recovery operation** (see Operation Procedures for your system in the instructions packed with the product) and crank about one foot of cable back into the housing. (See Fig. 5)

6. Inspect the snap-hooks and connecting hardware to be sure they are not distorted or cracked. Be certain the snap-hook keepers are free of burrs, function properly, and are clean and not bent. (See Fig. 6)

7. Remove from service immediately if any system function, component, or part does not pass this inspection, or whenever subjected to a severe free fall, and return entire device to Klein Tools, Inc., Service Center, 2070 Bennett Road, Philadelphia, PA 19116 for inspection, repair, and recertification. (Philadelphia Service Center for these products only.)

8. Repairs and recertification MUST BE performed by the Klein Tools Service Center annually, or more frequently, depending on the system's use and operating conditions, or whenever subjected to a severe free fall.



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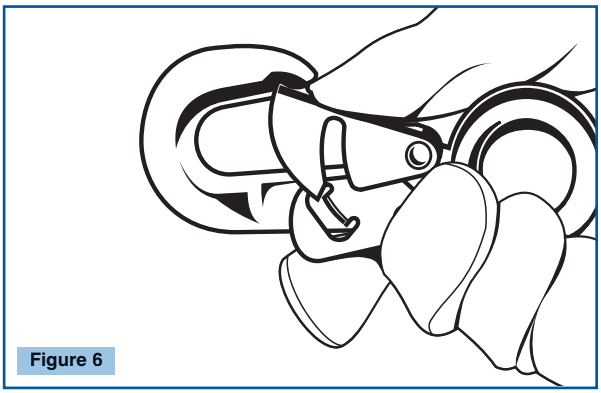


Figure 6

Appendix

Personnel Winch Inspection Procedures

1. Inspect the work area for debris and other material that could cause injuries or interfere with the operation of the system or any device. Be sure that the tripod is positioned on stable, hard ground before setting it up. The leg chain and all locking pins should again be checked to see that they are correctly securing equipment. (See Fig. 1)

2. Check all the cables on the Personnel Winch and all other equipment to ensure they move freely and retract correctly. If a cable does not crank in and out smoothly, crank all of the cable out of the unit and inspect it for cuts, kinks, broken strands, excessive wear, foreign substances, or other damage. All cables should be checked regularly for signs of wear. A competent person, for example, a safety director, must schedule regular safety inspections based on amount of use and working conditions. (See Fig. 2)

⚠CAUTION: Gloves should be worn when inspecting or handling cable.

3. Test the cable retraction (retrieval) capability of the Personnel Winch by cranking out (turn handle in a counterclockwise direction) at least 4 feet (1.2 m) of the cable, and then cranking it slowly back into the unit, while keeping tension on the cable. (See Fig. 3)

4. Test the locking action (suspension) capability of the Personnel Winch by cranking out (turn handle in a counterclockwise direction) approximately 4 feet (1.2 m) of cable from unit, then turn handle in a clockwise direction until two clicks are heard. The cable should now be locked into position until the handle is turned again. The locking action of the unit is for use as a suspension device only. A separate fall-arrest device MUST be used with this unit. (See Fig. 4)

⚠CAUTION: Gloves should be worn when inspecting or handling cable.

⚠WARNING: An independent fall-arrest system must be used with this unit.

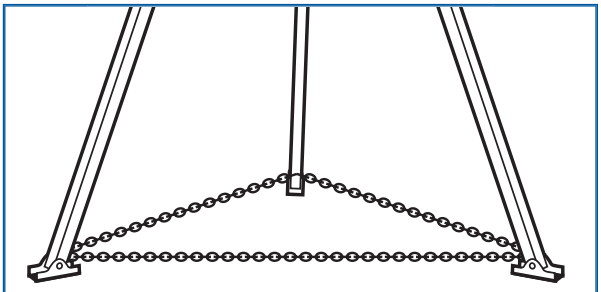


Figure 1

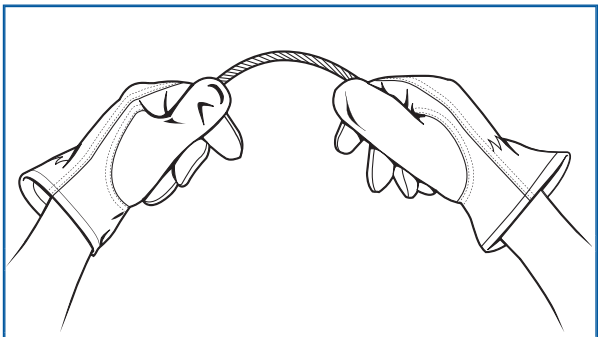


Figure 2

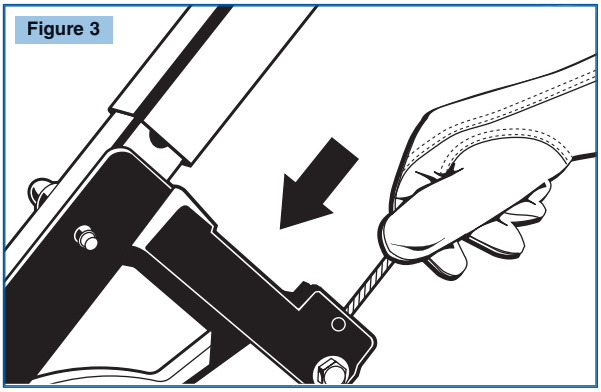


Figure 3

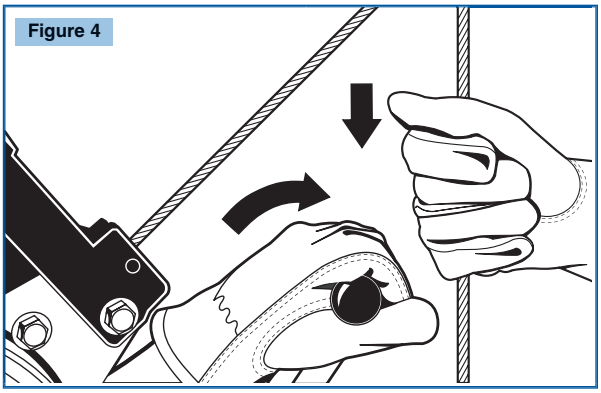


Figure 4

NOTE: See page 93 for remaining procedure steps.

Personnel Winch Inspection Procedures (continued)

5. Inspect the snap-hooks and connecting hardware to be sure they are not distorted or cracked. Be certain the hook keepers are clean, free of burrs, functioning properly, and are not bent. (See Fig. 5)

6. Remove from service immediately if any system function, component or part does not pass this inspection and return entire device to Klein Tools, Inc., Service Center, 2070 Bennett Road, Philadelphia, PA 19116 for inspection, repair, and recertification. (Philadelphia Service Center for these products only.)

7. Repairs and recertification MUST BE performed by the Klein Tools Service Center annually, or more frequently, depending on the system's use and operating conditions, or whenever subjected to a severe free fall.

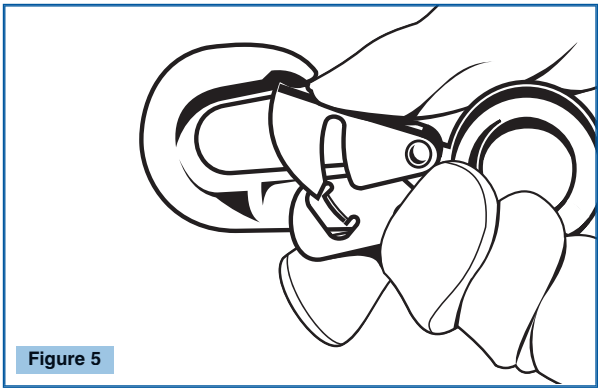


Figure 5

Appendix

Lineman's Climbing Equipment Inspection Procedures

Maintenance Procedures

A written log of all service and inspection dates for this equipment should be maintained by the company safety officer or other competent individual.

1. **Clean and maintain equipment** as recommended. Wash in warm water and mild detergent. Avoid harsh chemical agents, such as degreasing compounds, turpentine, paint thinner, gasoline, and other solvents.

2. **Inspect and lubricate all snap-hooks** after cleaning to make sure they operate properly and close securely. Use Klein Cinch® aerosol lubricant or light motor oil.

3. **Maintain leather parts** with Neat's-foot oil, saddle soap, or equivalent to help prolong life. Let leather dry slowly at room temperature.

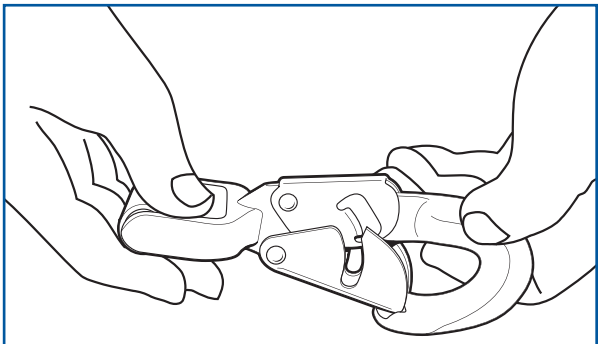


Figure 1

General

1. **Check for wear and deterioration.** Before each use, carefully inspect your OPE equipment for signs of wear, deterioration, or evidence of impact loading. Visually inspect for loose threads, pulled rivets, burns, cuts, abrasions, or evidence of chemical or physical deterioration that may have weakened the material or assembly.

2. **Inspect hardware for malfunctions and cracks,** including belt buckles, D-rings, and positioning-strap snap-hooks. Check that snap-hooks are not distorted or cracked and that the keepers are free of burrs, functioning properly, clean, and not bent. (See Fig. 1)

3. **Destroy and replace all worn or damaged equipment.** Immediately destroy and replace any OPE system component that does not pass inspection.

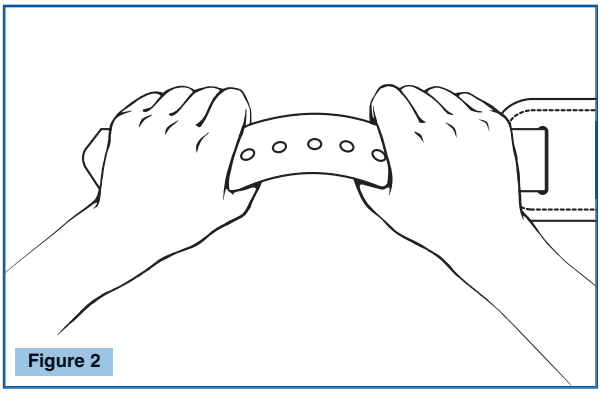


Figure 2

⚠WARNING: Should any unusual conditions be noted during the inspection that are not specified here, do not use the suspect equipment until a qualified individual has made a decision on its usability.

Specific

1. **Straps, stitching, and webbing.** Check entire length of the strap for excessive wear. Inspect the tongue or billet end carefully. This end is subject to considerable wear as a result of repeated buckling and unbuckling of the belt. Also, check for torn or excessively enlarged buckle-tongue holes. Check stitching for broken, cut, or pulled stitches. Check webbing for broken strands that appear as tufts on the surface. (See Fig. 2)

2. **D-rings.** Check all D-rings for distortion. Check D-ring attachment points for unusual wear or damaged fibers. Badly pitted D-rings could indicate chemical corrosion, and the equipment should be replaced immediately. (See Fig. 3)

3. **Tongue buckles.** Check tongue buckles for distortion, sharp edges, and cracks. The tongue should move freely and overlap the frame. Rollers should not be distorted and should roll freely. (See Fig. 4)

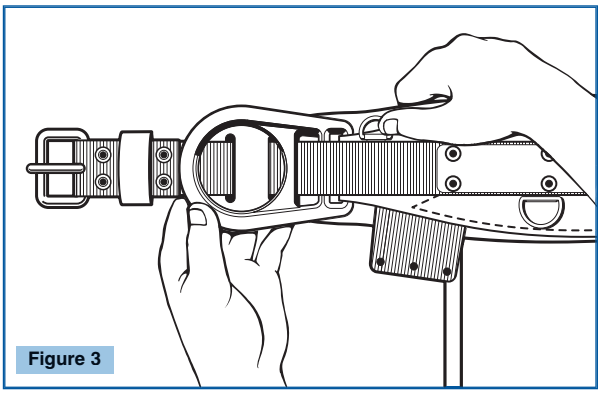


Figure 3

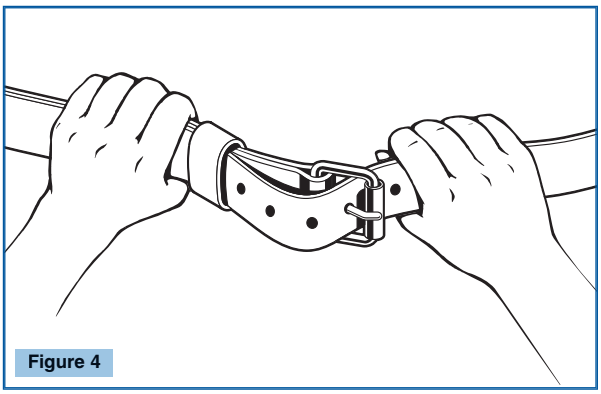


Figure 4

NOTE: See page 95 for remaining procedure steps.

Lineman's Climbing Equipment Inspection Procedures (continued)

4. Stitching or rivets at hardware attachment points. For stitching-attachment points, check that stitching is not broken, burned, cut, or pulled. For riveted attachment points, check all rivets for tightness, especially those at D-ring wear pads. Badly pitted rivets indicate chemical corrosion, and equipment should be replaced immediately. (See Fig. 5)

5. Destroy and replace all worn or damaged OPE equipment. If any evidence of excessive wear, deterioration, or mechanical malfunction is observed, replace equipment immediately. **Never work with worn or damaged OPE equipment. Using damaged or worn equipment can cause serious injury or death.**

6. The inspector is the most important part of any inspection procedure. Check all equipment thoroughly and follow all safety procedures and guidelines. Do not take any shortcuts.

Important Note: OSHA specifies that all employers covered by the Occupational Safety and Health Act are responsible for inspection and maintenance of all tools and equipment used by employees – whether owned by the employees or by the company. Personal-protective equipment should be inspected before each use, and immediately removed from service if any sign of wear or damage is found.

⚠WARNING: If you note any unusual conditions during the inspection that are not specified here, do **NOT** use the suspect equipment until a qualified individual has made a decision on its usability.

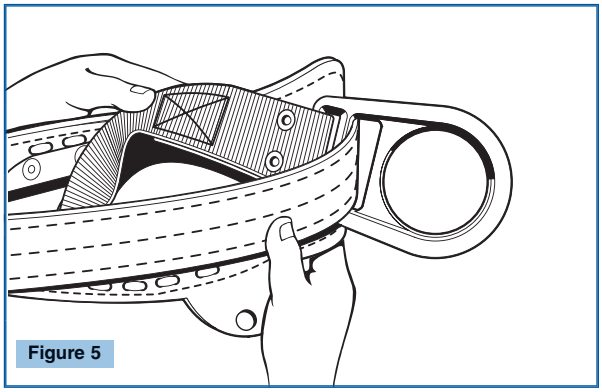


Figure 5

Pole and Tree Climbers Inspection Procedures

General

1. Check for wear and deterioration. Before each use, carefully inspect the complete system for signs of wear, deterioration, or evidence of impact loading. Visually inspect for loose threads, pulled rivets, cuts, abrasions, or other evidence of chemical or physical deterioration that may have weakened the material or assembly.

2. Inspect hardware for malfunctions or cracks. Check all hardware, including rivets and buckles.

3. Destroy and replace all worn or damaged equipment. Immediately destroy and replace any component that does not pass inspection.

Specific

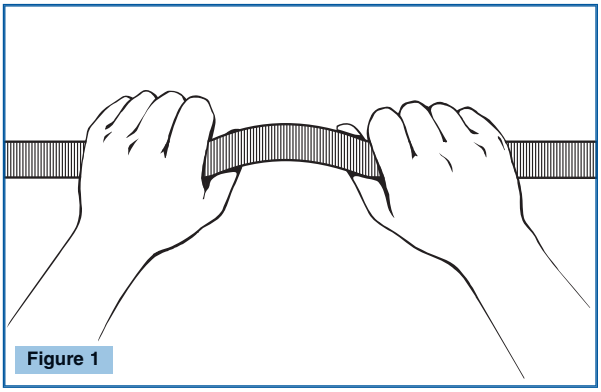
1. Check straps and pads. Make sure straps and pads are free of tears, burns, broken stitches, or excessive wear. Since leather is subject to deterioration, carefully check for cracking, wearing thin, tearing, weakening, chemical attack, or other signs of deterioration. (See Fig. 1)

2. Check rivets, buckles, and other metal parts. Check that rivets are not bent, loose, or missing. Check that all buckles are not distorted or cracked, tongue does not bind on buckle, and buckle holes are not damaged. Also check split ring, leg iron, and steel sleeve for signs of excessive wear or damage. (See Fig. 2)

3. Check gaffs. Check that gaffs are free of dents, gouges, or scratches.

4. Check gaff thickness with Klein gaff gauge. For **pole gaffs** only, insert the gaff as far as possible through the large opening in the gauge marked "TH" (See Fig. 3). Make sure the top ridge is flush against the gauge base. The point of the gaff should fall within the limits formed by the last line and the edge of the gauge as illustrated. If it does, the gaff is the proper thickness, approximately 1" (25.4 mm) from the point. For **pole and tree gaffs,** insert gaff as far as possible through the small opening in the gauge marked "TH" (See Fig. 3). Make sure the top ridge is flush against the gauge base. The point should fall within the center two lines as illustrated. If it does, the gaff is the proper thickness, as measured approximately a 1/2" (12.7 mm) from the point.

5. Check gaff width with Klein gaff gauge. For **pole gaffs** only, insert gaff as far as possible through the large square opening in the gauge marked "W" (See Fig. 4). Make sure the top ridge is flush against the gauge base. The point should fall within the limits formed by the last line and the edge of the gauge as illustrated. If it does, the gaff is the proper width, approximately 1" (25.4 mm) from the point. For **pole and tree gaffs,** insert gaff as far as possible through the small opening in the gauge marked "W" (See Fig. 4). Make sure the top ridge is flush against the gauge base. The point should fall within the limits formed by the center two lines as illustrated. If it does, the gaff is the proper width, approximately a 1/2" (12.7 mm) from the point.



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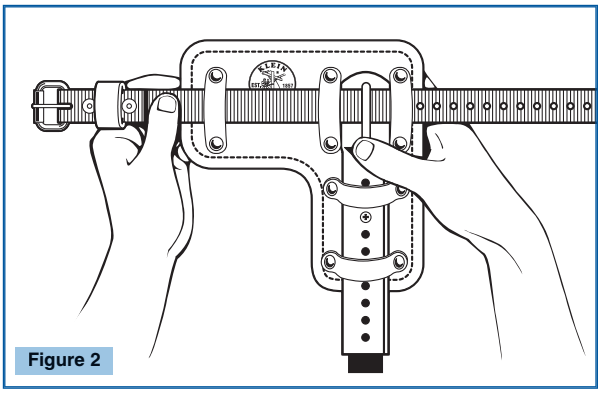

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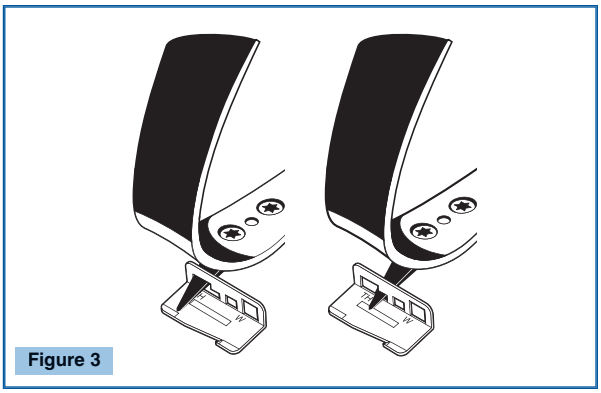

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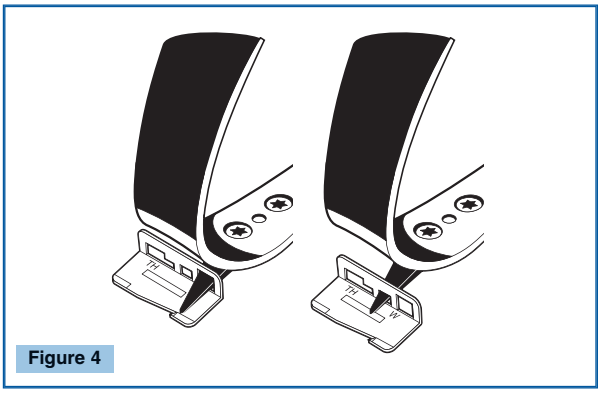


Figure 4

NOTE: See page 97 for remaining procedure steps.

Pole and Tree Climbers Inspection Procedures (continued)

6. Check gaff profile/contour with Klein gaff gauge. For **pole and tree gaffs,** place the side of the gaff along the front edge of the gauge with the gaff point resting in the notch. The point should follow the configuration of the gauge to assure the proper "rounding off" of the tip within 1/4" (6.4 mm) of the point. (See Fig. 5)

Minimum safe length for a **pole-climbing gaff** is 1-7/16" (37.5 mm), measured on the underside of the gaff. Minimum safe length for a **tree-climbing gaff** is the greater of the following: A) 2-1/4" (57 mm), measured on the underside of the gaff, or B) long enough to penetrate the bark on the tree and properly penetrate the core of the tree. Always test the penetration of tree gaffs at the base of the tree before climbing to be sure gaffs extend through the bark and properly penetrate the core of the tree.

7. Check gaff sharpness with the "plane test."

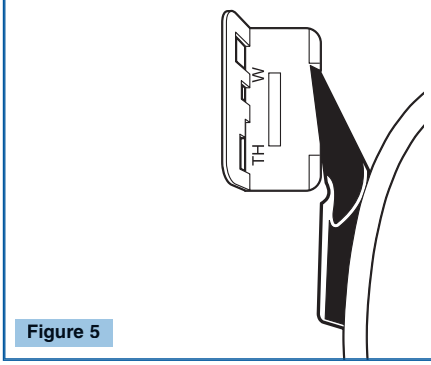
Step 1: Place climber with gaff pointing downward and upper strap loop resting against a horizontal board or pole. Hold the leg iron parallel to the wood surface with the stirrup vertical. Push the climber horizontally in the direction of the gaff without any downward pressure except the weight of the climber. (See Fig. 6)

Step 2: The gaff is properly sharpened if the gaff buries itself in the wood within a few inches of its starting position and can no longer be moved forward (See Fig. 7). The gaff is NOT properly sharpened if the gaff merely slips, slides, or plows a shallow groove in the wood (See Fig. 8). In this case, either replace the gaff following the "Replacement-Gaff Assembly Instructions" or resharpen the gaff following the "Gaff Sharpening Instructions." For free copies of instructions, call Klein Tools at 1-800-553-4676. A resharpened gaff must be tested for proper width, thickness, and point profile, and it must also pass the "plane test" before use.

The "plane test" reveals possible penetration problems not noticeable to the naked eye. Figure 9 shows how a properly sharpened gaff cuts its way into the pole for proper support. Figure 10 shows how an improperly sharpened gaff can "cut-out."

8. Destroy and replace all worn or damaged OPE equipment. If evidence of excessive wear, deterioration, or mechanical malfunction is observed, replace the equipment immediately. Never work with worn or damaged OPE equipment. Using damaged or worn equipment can cause serious injury or death.

9. The inspector is the most important part of the inspection. Check all equipment thoroughly, and follow all safety procedures and guidelines. Do not take any shortcuts.



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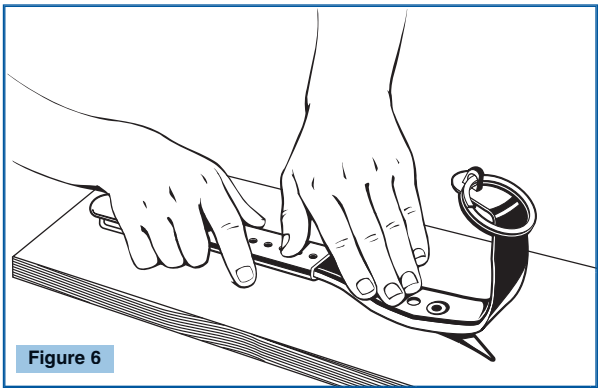
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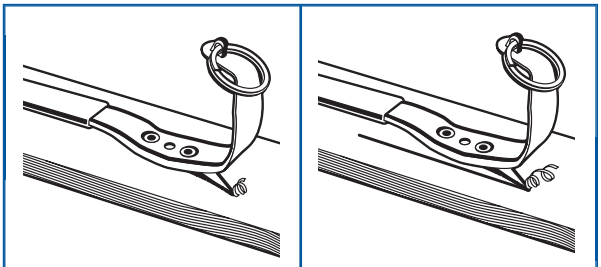
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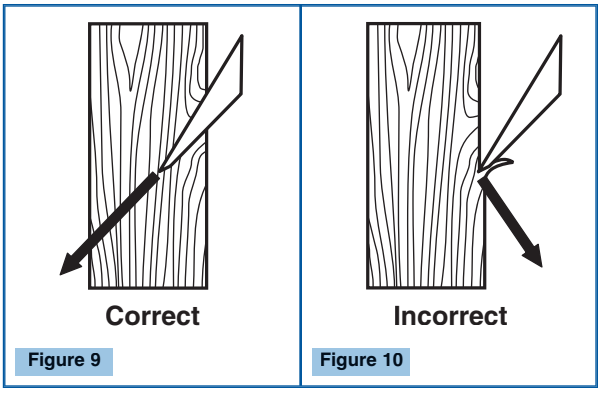
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