

# GUARDIAN

## FALL PROTECTION



### Product Name: Halo Harness Series

Part #: 481010, 481011, 481012, 481020, 481021, 481022, 481030, 481031, 481032, 481040, 481041, 481042, 481050, 481051, 481052, 481060, 481061, 481062, 481110, 481111, 481112, 481120, 481121, 481122, 481130, 481131, 481132, 481140, 481141, 481142, 481150, 481151, 481152, 481160, 481161, 481162, 481171, 481172, 481210, 481211, 481212, 481220, 481221, 481222, 481230, 481231, 481232, 481330, 481331, 481332, 481333, 481340, 481341, 481342, 481350, 481351, 481352, 481360, 481361, 481362, 481310, 481311, 481312, 481320, 481321, 481322, 481330, 481331, 481332, 481333, 481340, 481341, 481342, 481350, 481351, 481352, 481360, 481361, 481362, 481410, 481411, 481412, 481420, 481421, 481422, 481430, 481431, 481432, 481451, 481460, 481461, 481462, 482010, 482011, 482012, 482020, 482021, 482022, 482030, 482031, 482032, 482040, 482041, 482042, 482050, 482051, 482052, 482060, 482061, 482062, 482110, 482111, 482112, 482120, 482121, 482122, 482130, 482131, 482132, 482140, 482141, 482150, 482151, 482152, 482160, 482161, 482162, 482210, 482211, 482212, 482220, 482221, 482222, 482230, 482231, 482232, 482240, 482241, 482242, 482250, 482251, 482252, 482260, 482261, 482262, 482310, 482311, 482312, 482320, 482321, 482322, 482330, 482331, 482332, 482340, 482341, 482351, 482352, 482360, 482361, 482362, 482410, 482411, 482412, 482431, 482460, 482461, 482462, 493010, 493011, 493012, 493020, 493021, 493022, 493030, 493031, 493032, 493040, 493041, 493042, 493050, 493051, 493052, 493060, 493061, 493062, 493072, 493081, 493110, 493111, 493112, 493120, 493121, 493122, 493130, 493131, 493132, 493140, 493141, 493142, 493150, 493151, 493152, 493160, 493161, 193162, 493210, 493211, 493212, 493220, 493221, 493222, 493230, 493231, 493232, 493241, 493242, 493250, 493251, 493252, 493260, 493261, 493262, 493270, 493271, 493272, 493310, 493311, 493312, 493320, 493321, 493322, 493330, 493331, 493332, 493340, 493341, 493342, 493350, 493351, 493352, 493360, 493361, 493362, 493371, 493372, 493190, 493191, 493192, 481091

### Instruction Manual

**Do not throw away these instructions!**  
**Read and understand these instructions before using equipment!**

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## Introduction

Thank you for purchasing a Guardian Fall Protection Halo Harness. This manual must be read and understood in its entirety, and used as part of an employee training program as required by OSHA or any applicable state agency.


This and any other included instructions must be made available to the user of the equipment. The user must understand how to safely and effectively use the Halo Harness, and all fall safety equipment used in combination with the Halo Harness.

User Information	
Date of First Use:	_____
Serial #:	_____
Trainer:	_____
User:	_____

## Applicable Safety Standards

When used according to instruction specifications, this product meets or exceeds all applicable OSHA 1926 Subpart M, OSHA 1910, ANSI Z359.11-2014, and ANSI A10.32-2012 standards for fall protection. Applicable standards and regulations depend on the type of work being done, and also might include state regulations if applicable. Consult regulatory agencies for more information on personal fall arrest systems and associated components.

## Worker Classifications

	Understand the following definitions of those who work near or who may be exposed to fall hazards.
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**Qualified Person:** A person with an accredited degree or certification, and with extensive experience or sufficient professional standing, who is considered proficient in planning and reviewing the conformity of fall protection and rescue systems.

**Competent Person:** A highly trained and experienced person who is ASSIGNED BY THE EMPLOYER to be responsible for all elements of a fall safety program, including, but not limited to, its regulation, management, and application. A person who is proficient in identifying existing and predictable fall hazards, and who has the authority to stop work in order to eliminate hazards.

**Authorized Person:** A person who is assigned by their employer to work around or be subject to potential or existing fall hazards.

**It is the responsibility of a Qualified or Competent person to supervise the job site and ensure all applicable safety regulations are complied with.**

## Product Specific Applications



**WARNING** Use of equipment in unintended applications may result in serious injury or death. Maximum 1 attachment per connection point.



**Personal Fall Arrest:** Halo Harness may be used to support a MAXIMUM 1 Personal Fall Arrest System (PFAS) for use in Fall Arrest applications. Structure must withstand loads applied in the directions permitted by the system of at least 5,000 lbs. Maximum free fall is 6', or up to 12' if used in combination with equipment explicitly certified for such use. Applicable D-ring: Dorsal.



**Restraint:** Halo Harness may be used in Restraint applications. Restraint systems prevent workers from reaching the leading edge of a fall hazard. Always account for fully deployed length of lanyard/SRL. Structure must withstand loads applied in the directions permitted by the system of at least 1,000 lbs. No free fall is permitted. Restraint systems may only be used on surfaces with slopes up to 4/12 (vertical/horizontal). Applicable D-rings: Dorsal, Chest, Side, Shoulder.



**Work Positioning:** Halo Harness may be used in Work Positioning applications. Work Positioning systems allow a worker to be supported while in suspension and work freely with both hands. Structure must withstand loads applied in the directions permitted by the system of at least 3,000 lbs. Maximum allowable free fall is 2'. Applicable D-rings: Side.



**Rescue/Confined Space:** Halo Harness may be used in Rescue/Confined Space applications. Rescue systems function to safely recover a worker from a confined location or after exposed to a fall. There are various configurations of Rescue systems depending on the type of rescue. Structure must withstand loads applied in the directions permitted by the system of at least 3,000 lbs. No free fall is permitted. Applicable D-rings: Dorsal, Chest, Shoulder.

**For all applications: worker weight capacity range (including all clothing, tools, and equipment) is 130-420 lbs.**

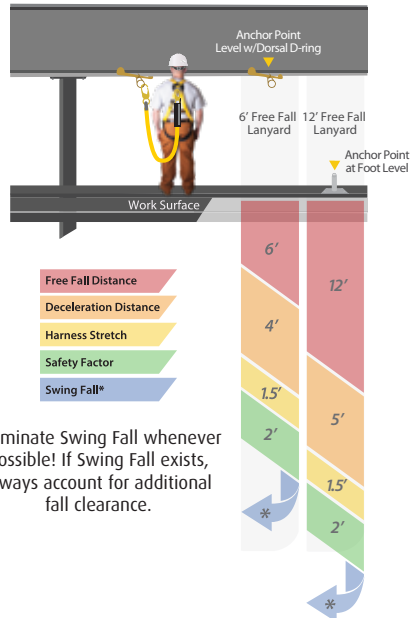
## Limitations

**Fall Clearance:** There must be sufficient clearance below the anchorage connector to arrest a fall before the user strikes the ground or an obstruction. When calculating fall clearance, account for a MINIMUM 2' safety factor, deceleration distance, user height, length of lanyard/SRL, harness stretch, and all other applicable factors.

**Diagram shown is an example fall clearance calculation ONLY.**

**Swing Falls:** Prior to installation or use, make considerations for eliminating or minimizing all swing fall hazards. Swing falls occur when the anchor is not directly above the location where a fall occurs. Always work as close to in line with the anchor point as possible. Swing falls significantly increase the likelihood of serious injury or death in the event of a fall.

Fall clearance calculation shown based on standing worker falling directly in-line with anchor point. Always consider potential swing fall and other hazards when calculating fall clearance.



**Compatibility:** When making connections with Halo Harness, eliminate all possibility of roll-out. Roll-out occurs when interference between a hook and the attachment point causes the hook gate to unintentionally open and release. All connections must be selected and deemed compatible with Halo Harness by a Competent Person. All connector gates must be self-closing and self-locking, and withstand minimum loads of 3,600 lbs. See the following for examples of compatible/incompatible connections:

Connector closed and locked to D-ring. **OK.**



Connector to integral lanyard. **NO.**

Two connectors to same D-ring. **NO.**



Connector directly to webbing. **NO.**

Incompatible or irregular application, which may increase risk of roll-out. **NO.**



Connector directly to horizontal lifeline. **NO.**

Two or more snap hooks or carabiners connected to each other. **NO.**



## Components and Specifications

Materials: polyester, nylon, galvanized steel, stainless steel, and aluminum.  
\*Part #s with "C" at the end are manufactured with Cordura® webbing.

For part-specific description, configuration, color, and size, please visit [www.guardianfall.com](http://www.guardianfall.com) or contact our customer service department at 800-466-6385.



## Installation and Use

All PFAS equipment must be selected and deemed compatible with Halo Harness by a Competent Person. ALWAYS follow all instructions of all equipment used in combination with Halo Harness. NEVER attach connector to any place on harness other than D-ring. Connector gate must be self-closing and self-locking, and must withstand minimum load of 3,600 lbs. Any excess strap webbing MUST be stored in harness webbing keepers.

To connect Pass-Through Buckle, angle male buckle so it is positioned to pass up and through female buckle. Fully insert male buckle so that it lies flat on top of female buckle.



To connect Tongue Buckle, pull webbing strap through framed tongue component, and insert framed tongue through grommet to secure.

Roller and Friction Adjustments allow the user to make adjustments to Halo Harness straps. Feed webbing through buckle, and slide the buckle down on the strap to tighten, or slide the buckle up on the strap to loosen.



Quick Connect Buckles are activated by engaging two release levers simultaneously to release the male piece from the female receiver. Adjustments are made by feeding webbing through the male end using a friction style buckle.

**Dorsal D-ring, chest strap, shoulder straps, and leg straps  
MUST be fitted for each individual user.**



1. Hold at dorsal D-ring, and fully inspect harness according to specifications of this instruction manual. Ensure all straps are not twisted and all buckles are unfastened.



2. Place harness shoulder straps over shoulders. Ensure dorsal D-ring faces out, and is adjusted to rest between the middle of the shoulder blades.



3. Connect leg straps around thighs. Ensure there is no twisting of webbing. Leg straps should never dangle or hang loose.



4. Adjust chest strap height to lower chest level, approximately 6" from top of shoulders. Connect chest strap. Ensure there is no twisting of webbing.



5. Adjust chest, leg, and shoulder straps so they fit snugly, but still allow for a full range of movement.

### WARNING

**Any twisting of webbing, or straps that are fitted too loose or too tight, can significantly increase the risk of serious injury or death in the event of a fall.**

Some steps of donning a harness may require assistance from another person. Upon completely donning a harness, Guardian Fall Protection recommends that another person, with knowledge of the safe and correct use of the harness, inspect to ensure the harness is being worn correctly.

## Maintenance, Cleaning, and Storage

If Halo Harness fails inspection in any way, immediately remove it from service and contact Guardian to inquire about its return or repair.

Cleaning after use is important for maintaining the safety and longevity of Halo Harness. Remove all dirt, corrosives, and contaminants from Halo Harness before and after each use. If Halo Harness cannot be cleaned with plain water, use mild soap and water, then rinse and wipe dry. NEVER clean Halo Harness with corrosive substances.

When not in use, store equipment where it will not be affected by heat, light, excessive moisture, chemicals, or other degrading elements.

## Inspection

Prior to EACH use, inspect Halo Harness for deficiencies, including, but not limited to, corrosion, deformation, pits, burrs, rough surfaces, sharp edges, cracking, rust, paint buildup, excessive heating, alteration, broken stitching, fraying, and missing or illegible labels. IMMEDIATELY remove Halo Harness from service if defects or damage are found, or if exposed to forces of fall arrest.

Ensure that applicable work area is free of all damage, including, but not limited to, debris, rot, rust, decay, cracking, and hazardous materials. Ensure that selected work area will support the application-specific minimum loads set forth in this instruction manual. Work area MUST be stable.

At least every 12 months, a Competent Person other than the user must inspect Halo Harness. **Competent Person inspections MUST be recorded in inspection log in instruction manual and on equipment inspection grid label. The Competent Person must sign their initials in the box corresponding to the month and year the inspection took place.**

During inspection, consider all applications and hazards Halo Harness have been subjected to.

## Inspection Log

Date of First Use: \_\_\_\_\_.

**Product lifetime is indefinite, as long as product passes all inspection requirements. User must inspect prior to EACH use. Competent Person other than user must complete formal inspection at least every 12 months. Competent Person to inspect and initial.**

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

**This inspection log must be specific to one Halo Harness. Separate inspection logs must be used for each Halo Harness. All inspection records must be made visible and available to all users at all times.**

**If equipment fails inspection IMMEDIATELY REMOVE FROM SERVICE.**

## Safety Information



Failure to understand and comply with safety regulations may result in serious injury or death. Regulations included herein are not all-inclusive, are for reference only, and are not intended to replace a Competent Person's judgment or knowledge of federal or state standards.

Do not alter equipment. Do not misuse equipment.

Workplace conditions, including, but not limited to, flame, corrosive chemicals, electrical shock, sharp objects, machinery, abrasive substances, weather conditions, and uneven surfaces, must be assessed by a Competent Person before fall protection equipment is selected.

The analysis of the workplace must anticipate where workers will be performing their duties, the routes they will take to reach their work, and the potential and existing fall hazards they may be exposed to. Fall protection equipment must be chosen by a Competent Person. Selections must account for all potential hazardous workplace conditions. All fall protection equipment should be purchased new and in an unused condition.

Fall protection systems must be selected and installed under the supervision of a Competent Person, and used in a compliant manner. Fall protection systems must be designed in a manner compliant with all federal, state, and safety regulations. Forces applied to anchors must be calculated by a Competent Person.

Unless explicitly stated otherwise, the maximum allowable free fall distance for lanyards must not exceed 6'. No free fall allowed for non-LE SRLs. Class A SRLs must arrest falls within 24"; Class B SRLs must arrest falls within 54".

Harnesses and connectors selected must be compliant with manufacturer's instructions, and must be of compatible size and configuration. Snap hooks, carabiners, and other connectors must be selected and applied in a compatible fashion. All risk of disengagement must be eliminated. All snap hooks and carabiners must be self-locking and self-closing, and must never be connected to each other.

A pre-planned rescue procedure in the case of a fall is required. The rescue plan must be project-specific. The rescue plan must allow for employees to rescue themselves, or provide an alternative means for their prompt rescue. Store rescue equipment in an easily accessible and clearly marked area.

Training of Authorized Persons to correctly erect, disassemble, inspect, maintain, store, and use equipment must be provided by a Competent Person. Training must include the ability to recognize fall hazards, minimize the likelihood of fall hazards, and the correct use of personal fall arrest systems.

NEVER use fall protection equipment of any kind to hang, lift, support, or hoist tools or equipment, unless explicitly certified for such use.

Equipment subjected to forces of fall arrest must immediately be removed from use.

Age, fitness, and health conditions can seriously affect the worker should a fall occur. Consult a doctor if there is any reason to doubt a user's ability to withstand and safely absorb fall arrest forces or perform set-up of equipment. Pregnant women and minors must not use this equipment.

Physical harm may still occur even if fall safety equipment functions correctly. Sustained post-fall suspension may result in serious injury or death. Use trauma relief straps to reduce the effects of suspension trauma.

## Labels

Labels located  
beneath protective  
webbing cover



**GUARDIAN**  
FALL PROTECTION

**Size:**

- S    S-M    M    L  
 S-L    M-L    M-XL    L-XL  
 XL    XXL    XL-XXL

**Material:** Polyester & steel

**Part #:** [REDACTED]

**DOM:** [REDACTED]

**Serial #:** [REDACTED]

**WARNING**

Prior to use, understand all manufacturer instructions included with equipment at time of shipment. Improper use of this equipment could result in serious injury or death.

IMMEDIATELY remove from service if subjected to a fall or if harness fails inspection.

**ADVERTENCIA**

Seguir las instrucciones de fabricación incluidas con el equipo, al tiempo del transporte, de la fábrica, antes de usar. Uso impropio de este equipo puede resultar en heridas serias o muerte.

INMEDIATAMENTE quite de servicio si súbdito a una caída accesorio o si la falla la inspección.

Guardian Fall Protection  
6305 S. 231st St.  
Kent, WA 98032

90693 (Rev. A)

**Compliant with:**

OSHA 1910, OSHA 1926 Subpart M, ANSI Z359.11-2014, and ANSI A10.32-2012.

**Capacity Range:** 130-420 lbs.

Make only compatible connections. Prior to use, inspect equipment for rips, tears, fraying, or any possible structural deficiency that might compromise the equipment in a fall. Avoid contact with sharp and abrasive surfaces.

**Cumplir con:**

OSHA 1910, OSHA 1926 Subpart M, ANSI Z359.11-2014, y ANSI A10.32-2012.

**Rango de Capacidad:** 130-420 lbs.

Nomás haga compatible conexiones. Inspeccionar el equipo antes de usar; que no este desgarrado, deshilachado, deshebrado o cual es quiere estructural incapacidad que pueda comprometer el equipo en una caída. Evitar contacto con orillas filosas o abrasivo.

Made in China / Hecho en China

**INSPECTION GRID**

User must inspect prior to EACH use. Competent Person must complete formal inspection every 12 months. Competent Person to inspect and initial.

Date of First Use: \_\_\_\_\_

**Product lifetime is indefinite as long as equipment passes pre-use and Competent Person inspections.**

MO	YR	20	20	20	20	20
J						
F						
M						
A						
M						
J						
A						
S						
O						
N						
D						

If equipment fails inspection  
IMMEDIATELY REMOVE FROM SERVICE

**DO NOT REMOVE LABELS**

ANSI Z359 recognizes the use of this harness only within the capacity range of 130-310 lbs. However, this harness will still comply with all ANSI Z359 design, performance, and testing requirements when used by workers weighing up to 420 lbs., as well as workers weighing less than 130 lbs., provided harness can be fitted properly and is used in combination with fall protection equipment rated for applicable user weight. Competent Person must ensure fall protection system will limit maximum potential arrest forces to no more than 1,800 lbs.



## Trauma Strap

Part #:10733

**PRIOR TO USE, READ AND UNDERSTAND ALL INSTRUCTIONS INCLUDED WITH EQUIPMENT AT TIME OF SHIPMENT.**

Maximum worker capacity: 420 lbs.

Materials: nylon, polyester, and steel.

The Trauma Strap is not to be used as an anchor, lanyard, or any other form of fall protection, except in the manner detailed by these instructions.

Seek medical attention immediately if exposed to a fall/suspension.

The Trauma Strap is not intended to replace a rescue plan. The employer must always have a jobsite-specific rescue plan in place, and the means to implement that plan.

Misuse or alteration to this product may result in **SERIOUS INJURY OR DEATH!**

### INSPECTION:

Prior to each use, inspect Trauma Strap for any frays, cuts, broken fibers, burns, discoloration, knots, tears, abrasions, cracking, rust, and any other damage. If any of these conditions exist, **IMMEDIATELY** remove Trauma Strap from service. Competent Person must inspect at least every 6 months.

### MAINTENANCE:

Cleaning after use is important for maintaining the safety and longevity of the Trauma Strap. Remove all dirt, corrosives, and contaminants from Trauma Strap before and after each use. If Trauma Strap cannot be cleaned with plain water, use mild soap and water, then rinse and wipe dry. To fully dry, unravel the contents and hang them to dry. **NEVER** clean Trauma Strap with corrosive substances. When not in use, store equipment where it will not be affected by heat, light, excessive moisture, chemicals, or other degrading elements.

### ATTACHMENT:

Install Trauma Strap immediately above where leg straps meet side/shoulder straps as shown.

1. Pass Trauma Strap web loop behind harness strap and pull back around.



2. Pull Trauma Strap pouch through web loop and choke down to harness strap. Pouch must be on outside of harness strap.



3. Secure Trauma Strap snap buckle around harness strap.



4. Repeat steps 1-3 on second side.



5. Trauma Strap is now installed and ready to use.



**USE:**

**1**  
Unzip Trauma Strap pouches fitted on both sides of the harness.



**2**  
Connect the strap end to the ring end, and ensure strap buckle is fully locked and secured.



**3**  
Put your feet into the loop that you have made.



**4**  
Stand on the loop and examine pressure on thighs.



**5**  
Adjust strap as necessary to accommodate your height.



## ANSI Z359.11 Annex A

**Note: This information from the Z359.11 standard is required to be included in the instruction manual for the end user:**

ANSI/ASSE Z359 Requirements for Proper Use and Maintenance of Full Body Harnesses (Note: These are general requirements and information provided by ANSI/ASSE Z359, the Manufacturer of this equipment may impose more stringent restrictions on the use of the products they manufacture, see the Manufacturer's instructions.)

1. It is essential that the users of this type of equipment receive proper training and instruction, including detailed procedures for the safe use of such equipment in their work application. ANSI/ASSE Z359.2, *Minimum Requirements for a Comprehensive Managed Fall Protection Program*, establishes guidelines and requirements for an employer's managed fall protection program, including policies, duties and training; fall protection procedures; eliminating and controlling fall hazards; rescue procedures; incident investigations; and evaluating program effectiveness.
2. Correct fit of a Full Body Harness is essential to proper performance. Users must be trained to select the size and maintain the fit of their Full Body Harness.
3. Users must follow manufacturer's instructions for proper fit and sizing, paying particular attention to ensure that buckles are connected and aligned correctly, leg straps and shoulder straps are kept snug at all times, chest straps are located in the middle chest area and leg straps are positioned and snug to avoid contact with the genitalia should a fall occur.
4. Full Body Harnesses which meet ANSI/ASSE Z359.11 are intended to be used with other components of a Personal Fall Arrest system that limit maximum arrest forces to 1800 pounds (8kN) or less.
5. Suspension intolerance, also called suspension trauma or orthostatic intolerance, is a serious condition that can be controlled with good harness design, prompt rescue and post fall suspension relief devices. A conscious user may deploy a suspension relief device allowing the user to remove tension from around the legs, freeing blood flow, which can delay the onset of suspension intolerance. An attachment element extender is not intended to be attached directly to an anchorage or anchorage connector for fall arrest. An energy absorber must be used to limit maximum arrest forces to 1800 pounds (8kN). The length of the attachment element extender may affect free fall distances and free fall clearance calculations.
6. Full Body Harness (FBH) Stretch, the amount the FBH component of a personal fall arrest system will stretch and deform during a fall, can contribute to the overall elongation of the system in stopping a fall. It is important to include the increase in fall distance created by FBH Stretch, as well as the FBH connector length, the settling of the user's body in the FBH and all other contributing factors when calculating total clearance required for a particular fall arrest system.
7. When not in use, unused lanyard legs that are still attached to a Fully Body Harness D-ring should not be attached to a work positioning element or any other structural element on the Full Body Harness unless deemed acceptable by the competent person and manufacturer of the lanyard. This is especially important when using some types of "Y" style lanyards, as some load may be transmitted to the user through the unused lanyard leg if it is not able to release from the harness. The lanyard parking attachment is generally located in the sternal area to help reduce tripping and entanglement hazards.
8. Loose ends of straps can get caught in machinery or cause accidental disengagement of an adjuster. All Full Body Harnesses shall include keepers or other components which serve to control the loose ends of straps.
9. Due to the nature of soft loop connections, it is recommended that soft loop attachments only be used to connect with other soft loops or carabiners. Snaphooks should not be used unless approved for the application by the manufacturer.

**Sections 11-17 provide additional information concerning the location and use of various attachments that may be provided on this FBH.**

**10. Dorsal** - The dorsal attachment element shall be used as the primary fall arrest attachment, unless the application allows the use of an alternate attachment. The dorsal attachment may also be used for travel restraint or rescue. When supported by the dorsal attachment during a fall, the design of the Full Body Harness shall direct load through the shoulder straps supporting the user, and around the thighs. Supporting the user, post fall, by the dorsal attachment will result in an upright body position with a slight lean to the front with some slight pressure to the lower chest. Considerations should be made when choosing a sliding versus fixed dorsal attachment element. Sliding dorsal attachments are generally easier to adjust to different user sizes, and allow a more vertical rest position post fall, but can increase FBH Stretch.

**11. Sternal** - The sternal attachment may be used as an alternative fall arrest attachment in applications where the dorsal attachment is determined to be inappropriate by a competent person, and where there is no chance to fall in a direction other than feet first. Accepted practical uses for a sternal attachment include, but are not limited to, ladder climbing with a guided type fall arrester, ladder climbing with an overhead self-retracting lifeline for fall arrest, work positioning and rope access. The sternal attachment may also be used for travel restraint or rescue.

When supported by the sternal attachment during a fall, the design of the Full Body Harness shall direct load through the shoulder straps supporting the user, and around the thighs. Supporting the user, post fall, by the sternal attachment will result in roughly a sitting or cradled body position with weight concentrated on the thighs, buttocks and lower back. Supporting the user during work positioning by this sternal attachment will result in an approximate upright body position.

If the sternal attachment is used for fall arrest, the competent person evaluating the application should take measures to ensure that a fall can only occur feet first. This may include limiting the allowable free fall distance. It may be possible for a sternal attachment incorporated into an adjustment style chest strap to cause the chest strap to slide up and possibly choke the user during a fall, extraction, suspension, etc. The competent person should consider Full Body Harness models with a fixed sternal attachment for these applications.

**12. Frontal** - The frontal attachment serves as a ladder climbing connection for guided type fall arresters where there is no chance to fall in a direction other than feet first, or may be used for work positioning. Supporting the user, post fall or during work positioning, by the frontal attachment will result in a sitting body position, with the upper torso upright, with weight concentrated on the thighs and buttocks. When supported by the frontal attachment the design of the Full Body Harness shall direct load directly around the thighs and under the buttocks by means of the sub-pelvic strap. If the frontal attachment is used for fall arrest, the competent person evaluating the application should take measures to ensure that a fall can only occur feet first. This may include limiting the allowable free fall distance.

**13. Shoulder** - The shoulder attachment elements shall be used as a pair, and are an acceptable attachment for rescue and entry/retrieval. The shoulder attachment elements shall not be used for fall arrest. It is recommended that the shoulder attachment elements be used in conjunction with a yoke which incorporates a spreader element to keep the Full Body Harness shoulder straps separate.

**14. Waist, Rear** - The waist, rear attachment shall be used solely for travel restraint. The waist, rear attachment element shall not be used for fall arrest. Under no circumstances is it acceptable to use the waist, rear attachment for purposes other than travel restraint. The waist, rear attachment shall only be subjected to minimal loading through the waist of the user, and shall never be used to support the full weight of the user.

**15. Hip** - The hip attachment elements shall be used as a pair, and shall be used solely for work positioning. The hip attachment elements shall not be used for fall arrest. Hip attachments are often used for work positioning by arborists, utility workers climbing poles and construction workers tying rebar and climbing on form walls. Users are cautioned against using the hip attachment elements (or any other rigid point on the Full Body Harness) to store the unused end of a fall arrest lanyard, as this may cause a tripping hazard, or, in the case of multiple leg lanyards, could cause adverse loading to the Full Body Harness and the wearer through the unused portion of the lanyard.

**16. Suspension seat** - The suspension seat attachment elements shall be used as a pair, and shall be used solely for work positioning. The suspension seat attachment elements shall not be used for fall arrest. Suspension seat attachments are often used for prolonged work activities where the user is suspended, allowing the user to sit on the suspension seat formed between the two attachment elements. An example of this use would be window washers on large buildings.

#### **USER INSPECTION, MAINTENANCE AND STORAGE OF EQUIPMENT**

Users of personal fall arrest systems shall, at a minimum, comply with all manufacturer instructions regarding the inspection, maintenance and storage of equipment. The user's organization shall retain the manufacturer's instructions and make them readily available to all users. See ANSI/ASSE Z359.2, *Minimum Requirements for a Comprehensive Managed Fall Protection Program*, regarding user inspection, maintenance and storage of equipment.

1. In addition to the inspection requirements set forth in the manufacturer's instructions, the equipment shall be inspected by the user before each use and, additionally, by a competent person, other than the user, at interval of no more than one year for:

- **Absence** or illegibility of markings.
- **Absence** of any elements affecting the equipment form, fit or function.
- **Evidence** of defects in, or damage to, hardware elements including cracks, sharp edges, deformation, corrosion, chemical attack, excessive heating, alteration and excessive wear.
- **Evidence** of defects in or damage to strap or ropes including fraying, unsplicing, unlaying, kinking, knotting, roping, broken or pulled stitches, excessive elongation, chemical attack, excessive soiling, abrasion, alteration, needed or excessive lubrication, excessive aging and excessive wear.

2. Inspection criteria for the equipment shall be set by the user's organization. Such criteria for the equipment shall equal or exceed the criteria established by this standard or the manufacturer's instructions, whichever is greater.

3. When inspection reveals defects in, damage to, or inadequate maintenance of equipment, the equipment shall be permanently removed from service or undergo adequate corrective maintenance, by the original equipment manufacturer or their designate, before return to service.

#### **Maintenance and Storage**

1. Maintenance and storage of equipment shall be conducted by the user's organization in accordance with the manufacturer's instructions. Unique issues, which may arise due to conditions of use, shall be addressed with the manufacturer.

2. Equipment which is in need of, or scheduled for, maintenance shall be tagged as unusable and removed from service.

3. Equipment shall be stored in a manner as to preclude damage from environmental factors such as temperature, light, UV, excessive moisture, oil, chemicals and their vapors or other degrading elements.