



# “WISHBONE™”

## OPERATING INSTRUCTIONS

### MANUAL

FOR MODEL

### P.E.R.T.S.™

P/N USA 900-08-804  
USA 900-08-804-H

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Replace all previous releases and revisions

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Wishbone™ Is covered by the following US Patents- 6,648,101 - 6,604,712 and 6,698,544  
Additional US and Foreign patents pending.



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## **SECTION 1.0 DEFINITIONS**

**Anchorage** - Means a secure **Point** of attachment for the Wishbone™ lanyard ends or their extension lanyards and/or combination lanyard/fall shock absorbers, which is independent of the means of supporting or suspending the Authorized Person.

**ANSI**- Stands for the American National Standards Institute.

**Approved**- Means sanctioned, endorsed, accredited, certified, or accepted as satisfactory by a duly constituted and nationally recognized authority or agency.

**Authorized Person(s)**- Means a person approved or assigned by the **Company** to perform a specific duty or duties or to be at a specific location or locations at the job site. (May be the same as End User.)

**Caution(s)** - As used in this manual. Information, instructions, or procedures, which, if not adhered to, could result in personnel injury or equipment damage.

**Company**- The commercial and/or private entity that purchases, owns, uses, or places in service a Wishbone™ Safety Device(s).

**Competent Person**- A person(s) that is capable of identifying existing and predictable hazards in the person(s) surrounding work environment and can take prompt corrective action to eliminate those Hazards.

**Defect (ive)**- Means any characteristic and/or condition(s) that can detrimentally effect the performance of the Wishbone™ Safety Device to work in the proper manner it was designed for.

**De minimis**<sup>2</sup>- under OSHA's de minimis policy, de minimis violation is those, which have no direct or immediate relationship to safety or health. No citation is issued.

**End User** - A person who is using equipment and tools under his own control. (May be the same as Authorized Person)

**Hazards (ous)**- Any environment that can cause or is likely to cause injury or death.

**Manufacturer**- A company that fabricates, builds, assembles, subcontracts or otherwise controls the process of manufacturing products.

**Movable Anchor Point**- A point of Anchorage that, may act as means of support and is movable such as an aerial lift.

**Non-movable Anchor Point**- A point of Anchorage that **poses no reasonably foreseeable risk of failure to safely support the authorized person(s).**

**Notes**: Information, explanations, operating suggestions, which should be taken into consideration.

**Qualified Person**- Means one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his ability to resolve problems relating to the subject matter, the work, or the project.

**Shall**- Means it is mandatory.

**Should**- Means it is recommended.

**Shock Absorbing Device**- Any device that dissipates a substantial amount of energy during a fall arrest, or otherwise limits the energy imposed on an **authorized person(s)** during a fall arrest event. (See caution1.)

**Warnings**- As used in this manual. Information, instructions, or procedures, which, if not adhered to, could result in severe injury, death, or destruction of equipment.



## SECTION 2.0 MODEL DESCRIPTION

The “Wishbone™” safety device Model P.E.R.T.S.™ (Personal Emergency Release System), is a “Y” lanyard type device with two legs for the connection of positioning lanyards of which one leg is automatically releasable. A hinge connects the two legs together forming a “Y”. When the two legs forming the “Y” are pulled apart the hinge will separate and activate the releasable leg. The third end is a swivel double locking snap for connection to a personnel body harness.

### SECTION 2.1 ANSI STANDARDS (American National Standards Institute)

All webbing and components used in these devices meets or exceeds ANSI Z359.1.1992 Standards.

### SECTION 2.2 PRODUCT SPECIFICATIONS

Capacity: 310lbs. maximum personnel load including equipment.

Length: overall 14 inches.

Weight: 1 pound 9 ounces.

Ultimate breaking strength: 5000 pounds or greater.

Hinge frangibility is approximately 200 lbs for aluminum, and approximately 300 lbs for stainless steel. Units with Stainless hinge are identified by an “S” after the serial number.

All specification values stated are for new products as tested. No consideration is given for usage, wear and tear, or age of the product, however one can consider that the stated values will decrease.

### SECTION 3.0 INTENDED USE (see “Warning” box 1)

The Wishbone™ device intended use is the ability to secure personnel loads by connecting to two anchor points at the same time, one anchor point being a **non-movable anchor point (Permanent Structure)** (see definitions in sect.1.1.0.) and the other anchor point being a **movable anchor point (Aerial Lift)**(see definitions sect.1.0). The primary purpose of this configuration is, if the **movable anchor point** fails or moves away while the worker is connected to both anchor points, the Wishbone™ will release the **releasable leg** while maintaining connection to the **non-release leg** supporting the personnel.

### SECTION 4.0 OSHA LETTERS OF INTERPRETATION

OSHA Letter of Interpretation concerning the use of Wishbone™ to belt off to an adjacent structure from an aerial lift that requires belting off to the aerial lift. The excerpt (text in *italics with emphasis by ed.*) reads as follows; *“However, limited situations may exist where an adjacent structure poses no reasonably foreseeable risk of failure. For example, such an instance might arise where the adjacent structure is a completed building or a completed (i.e., fully bolted-up) skeletal steel structure. In those instances, OSHA would consider the violation of §1926.453(b)(2)(iii) to be de minimis<sup>2</sup> and no citation would be issued.”* To view the OSHA letter of interpretation in its entirety go to: <http://www.osha.gov> see interpretations dated 02/02/04. For additional information, see letters of interpretation dated 05/03/01 “Use of Aerial Lifts to Transport workers to Elevated work stations” and the letter of interpretation dated 02/23/04 “Permissibility of attaching welding leads to an occupied aerial lift bucket and using an external lifeline to anchor fall arrest equipment.”

De minimis<sup>2</sup>- under OSHA’s de minimis policy, de minimis violation is those, which have no direct or immediate relationship to safety or health. No citation is issued





## SECTION 5.0 Limitations and Care of Wishbone™(model P.E.R.T.S.™)

1. Wishbone™ is limited to a maximum load of 310lbs including equipment.
2. The hinge gap tolerance shall not exceed .040 thousandths of an inch.
3. Wishbone™ has a suggested service life of 5 years or less from date of manufacture or on condition determined by inspection carried out by a competent person.
4. Wishbone™ lanyard and all of its components must be removed from service upon activation of the release hinge.
5. Remove Wishbone™ from service on condition when there is evidence of discoloration, fading, staining, or lack of suppleness of the webbing, elongation of rivet holes, fraying of webbing or stitching.
6. Remove Wishbone™ from service if subjected to or evidence of heating, melting, or singeing of the webbing.
7. Remove Wishbone™ from service on condition, any of the hardware or material is excessively worn or has excessive play to include nylon line loop that is pinned through the rings, or broken cable strands.
8. Remove Wishbone™ from service for any discrepancies or items found during any inspection including daily inspections.
9. Do not use the **Wishbone® P.E.R.T.S.®** to intentionally lift or suspend a load.

### 5.1 Care of Wishbone® P.E.R.T.S.®

10. Wishbone™ should be kept clean and dry.
11. Wishbone™ should not be exposed to corrosive or caustic elements.
12. Wishbone™ should not be exposed to direct sunlight for extended periods of time (ex. long term storage) it should be stored in a cool dry place.

## SECTION 6.0 REMOVING UNITS FROM SERVICE

Wishbone™ units removed from service shall be rendered permanently unusable by cutting or destroying functionality of the device and its component hardware, unless it is to be returned to the manufacturer to determine serviceability and/or repair.

## SECTION 7.0 ANNUAL INSPECTIONS

A **Competent or Qualified Person(s)** such as a **Company** safety officer shall inspect the Wishbone™ units at least **once a year** (annual). A record by unit serial number of such inspections shall be maintained by the **Company** for each unit inspected to include time in service and any items noted, condition of unit and if removed from service the reason for removal.

## SECTION 8.0 DAILY INSPECTIONS AND BEFORE EACH USE

Prior to first use of the day, and any time conditions warrant the **Authorized Person(s) or End User** shall perform the following inspections:

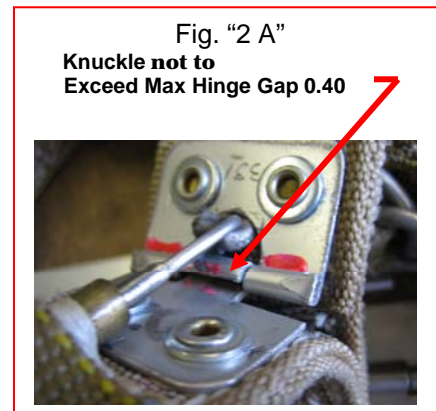
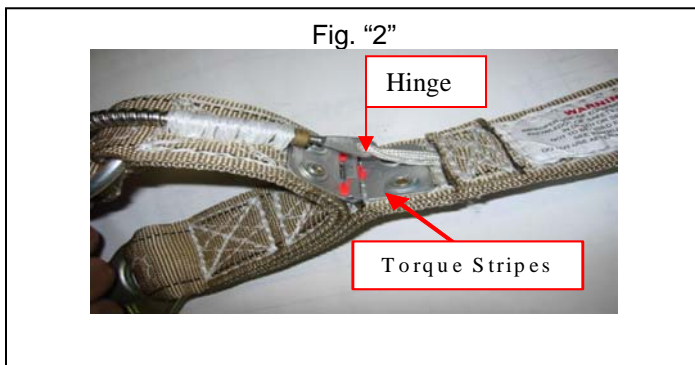
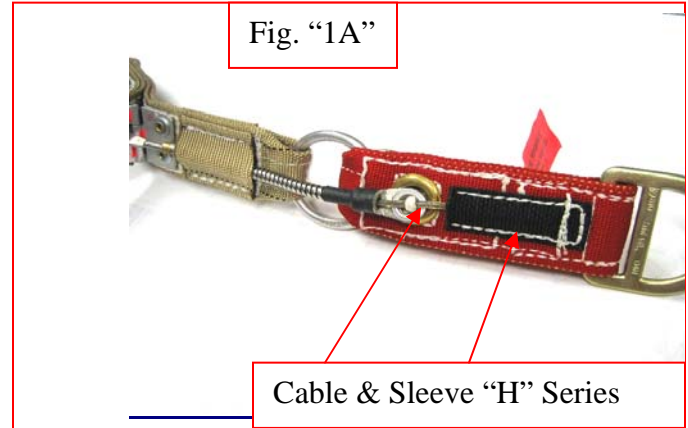
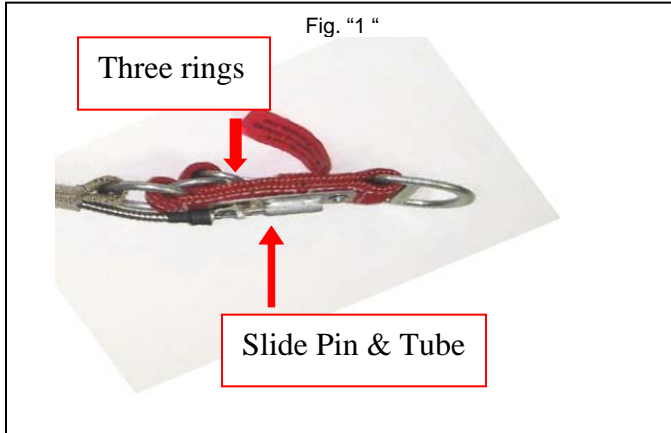
### **8.1 DAILY INSPECTION**

1. Check general condition and security of webbing and attachments.
2. Check that stainless slide pin or cable is engaged through the nylon loop and into the aluminum tube retainer (slide pin) or fabric sleeve (cable) (see Fig."1" & "1A").
3. Check webbing for distortions, heating, burns, discoloration, fraying, staining, fading, wear, frayed or broken stitches.
4. Check hardware for wear, cracks, separation, looseness, and proper function of double locking snap hooks.
5. Check that three interlocking rings are properly connected and that the slide pin is engaged through the nylon loop. (see Fig. "1")
6. Check the torque stripe on the hinge for cracking. If the torque stripe is cracked indicating separation of the hinge measure the hinge gap which **SHALL not** exceed **.040 thousands** of an inch. (see Fig. "2A") If gap exceeds .040 remove unit from service. Unit may be returned to Manufacturer for repair if serviceable.
7. Check to be sure there is nothing preventing the three rings from unfolding if the wishbone™ is activated. (see Fig.1)



**8.2 BEFORE EACH USE:**

- 8. User shall inspect the hinge of the **Wishbone®** unit **before each use** and before each connection of the releasable-leg side to be sure the hinge is intact and that it has not come apart. If the hinge has come apart **do not use or connect** the releasable-leg.
- 9. The Hinge knuckle gap (see Fig.2A ) **shall not exceed .040 thousandths gap** opening. If the hinge gap is .040 thousandths or more remove unit from service and return to manufacturer for inspection and if serviceable, a hinge replacement.



**SECTION 9.0 WHAT TO DO IF YOU FIND A PROBLEM RESULTING FROM INSPECTION**

Upon conducting an inspection any questions or uncertainty regarding the condition, or suitability for use, or **defects** found, the unit shall be removed from service and directed to your **Company's Competent or Qualified Person(s)** (i.e. safety officer) for disposition of the unit. The unit may be returned to the **manufacturer** for inspections and if serviceable repair. Check with manufacturer for repair costs.



## SECTION 10.0 PROPER CONNECTIONS OF Wishbone™(model P.E.R.T.S.™)

1. Connect the double locking snap swivel to a personnel body harness or safety device such as a shock arrester that is connected to the body harness.
2. Connect the releasable leg with “D” ring end (red webbing end) with position lanyard extension to an anchor point that is movable such as Aerial lift equipment.
3. Connect the non-releasable “D” ring end with position lanyard to an anchor point that is non-movable such as an adjacent permanent structure. While connected to only one anchor point you may have both P.E.R.T.S.® legs connected to the same anchor point or the use the Non-Releaseable leg as the primary connection leg.

**NOTE 1:** When connected with one of the P.E.R.T.S.® legs to an anchor point do not pull or stretch with the free Leg, Lanyard End trying to connect to the second anchor point. This puts undue stress on the hinge and could cause the hinge excess wear and to migrate partially open.

**NOTE 2:** Do not drop the free Leg, lanyard end of the P.E.R.T.S.® unit while the one leg lanyard end is connected, the weight of the lanyard free end hook, and any attached hardware, may apply unwanted loads to the hinge if dropped and could result in undue wear on the hinge or cause it to migrate open.

## SECTION 11.0 STEPS TO PROPER CONNECTIONS

**Step 1** – Connect the double locking snap swivel “A” (see Fig.”3”) to appropriate body harness connection point.

**Step 2** – Connect the Non-Release Leg end “B” (see Fig. “3”), with Lanyard extension, to a **Primary Anchor Point**, typically the Aerial Lift Boom, helicopter or other movable platform.

**Step 3** – Connect Releasable Leg Red end connection “C” (see Fig. “3”) with any lanyard extensions to a **Secondary Anchor Point**, typically the Aerial Lift Bucket, helicopter, or other movable platform.

## SECTION 12.0 TRANSFERRING TO AND FROM AN AERIAL LIFT

Use the same procedures as in **SECTION 11.0, Step 1** through **Step 3** above.

**In addition: To transfer from the Aerial Lift to adjacent work area**

**Step 4** – Release and Re-Connect the Non-Release Leg end connection “B” (see Fig.”3”) with any lanyard extensions to a **Non-movable Anchor Point**. Typically on permanent adjacent structure once in work position.

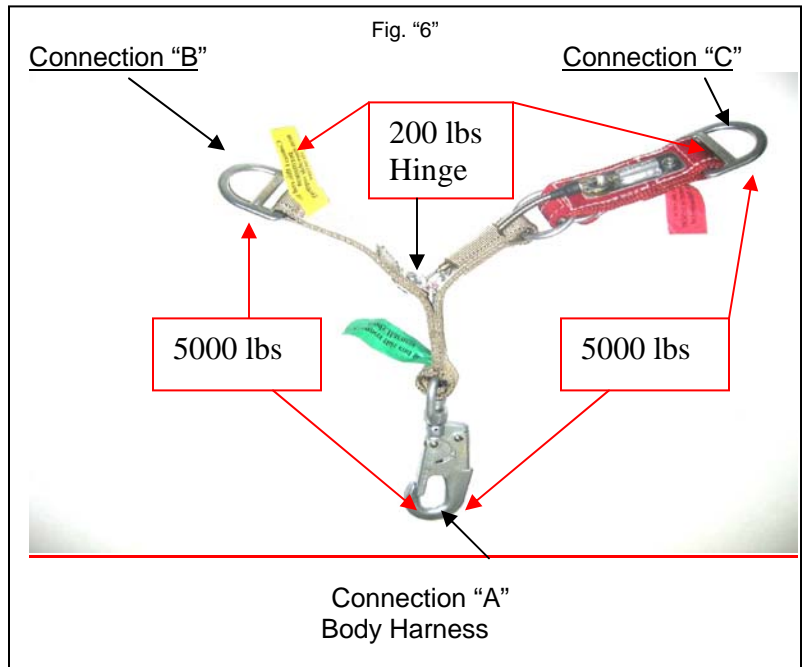
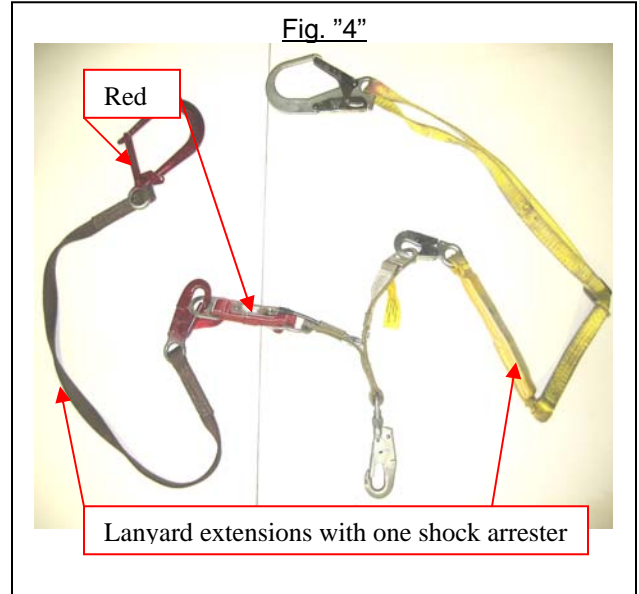
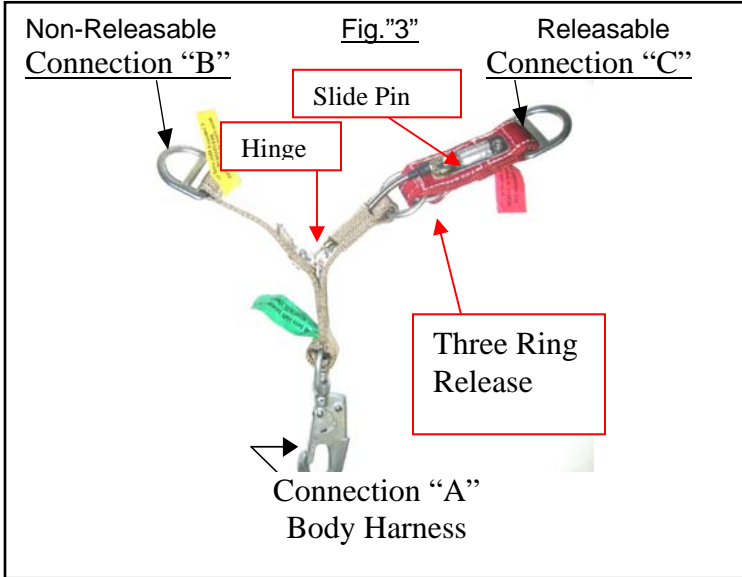
**Step 5** –Remove Releasable Leg lanyard “C” end from the **Aerial Lift anchor point** and complete the transfer. Park the Releasable Leg lanyard either to anchor point or to Non-Release leg.

**Step 6** – **Transfer to the Aerial lift from adjacent work area** - reverse **Step 5** above and then remove Non-Releaseable Leg connection “B” end from the **non-movable anchor point** and complete the transfer to the Aerial lift. Once on the aerial lift connect the Non-Releaseable Leg to the lift boom primary anchor point. (See additional “Example of Uses and Connections” Section 15.0)



**SECTION 13.0 COLOR CODE RELEASABLE CONNECTION**

**COLOR CODING:** When adding positioning lanyards and/or arrester equipment to the “Wishbone™” “D” ring ends the user should color-code the releasable connection lanyard extension hardware the same as the “Wishbone™” releasable end webbing color, “red”. (See Fig. 3, 4)





## SECTION 14.0 WISHBONE™ RELEASE OPERATION

Connection “A” body harness(see Fig.”6”) and connection “B” to a non-movable anchor point the connection has an ultimate breaking strength of 5000 pounds or more. The same is true for connections “A” and “C”. When non-releasable connection “B” is connected to a **non-movable anchor point** and the releasable connection “C” is connected to a **movable anchor point** and the “C” connection moves apart from the “B” connection, a load is imposed across the hinge (see black arrow Fig.”6”) which will release at approximately 200 pounds (Aluminum hinge) or approximately 300 lbs. (Stainless hinge) depending which hinge is installed . When this happens, the Wishbone™ will pull the slide pin and the three-ring load divider will unfold (see “Warning” box 3) thereby releasing connection “C” from the Wishbone™. The Wishbone™ P.E.R.T.S. safety device can **ONLY** release when the TWO lanyard anchor connections “B” and “C” are connected AND they MUST MOVE APART from one other with an approximate 200lb./300 lb. pull causing the hinge to release. If the any ONE “B” or “C” is connected the Wishbone™ will not release (see Warning box 5.) or if both “B” and “C” are connected it will not release as long as the two anchor points can not move apart.

## SECTION 15.0 EXAMPLES OF USES AND CONNECTIONS (see warning box 2)

**15.1 Working and Transfers, Adjacent Permanent Structures:** An **authorized person(s)** is standing in a movable bucket and lifted by the boom to an elevated position next to a **Permanent Structure**. He is connected to the aerial lift attachment point, with the releasable end lanyard “C” (See Fig.3). When the person is positioned adjacent to a **Permanent Structure**, the person would connect the, non-releasable leg lanyard end “B” (See Fig.3) connector to a Anchor Point on the Non-movable **Permanent Structure**, which is totally independent from the aerial lift. If the boom or bucket should fail or collapse while the **authorized person(s)** is positioned or working next to the **Permanent Structure** the “Wishbone™” system would separate the **authorized person(s)** from the aerial lift as it fell away and the person would remain supported by the **Permanent Structure**. To transfer to the Permanent Structure, disconnect from the aerial lift and complete the transfer to the adjacent **Permanent Structure**.

When Transferring from a Permanent Structure to an Aerial lift, connect the non-releasable leg lanyard end “B” of the Wishbone™ to the Non-Movable Permanent Structure and connect the releasable leg lanyard end “C” to the closest adjacent Aerial Lift attach point. Once the releasable leg lanyard end “C” is connected to the Aerial lift the non-releasable leg lanyard end can be disconnected from the Permanent Structure and the transfer to the Aerial Lift completed. Once in the bucket or platform of the Aerial Lift the non-releasable leg lanyard end can be connected to the Primary Aerial Lift Boom anchor point.

**15.2 Two Point Connection Aerial Lift:** An **authorized person(s)** operating an Aerial lift, attaches the releasable leg lanyard end “C” connection with a short positioning lanyard to the bucket or platform of Aerial Lift (**movable anchor point**), and connects the non-releasable leg lanyard end “B” with shock arrester installed to primary Boom attach point. This connection helps to prevent flip outs and tip outs. In the event the bucket or platform fails the Wishbone™ will release the connection to the bucket or platform leaving the person secured to the boom attachment of the Aerial Lift.

**15.3 Wishbone™ as part of a Fall Arrest System:** When using fall arrest shock absorbing equipment with the Wishbone™ it should be connected between the double locking snap connection of the Wishbone™ and the person’s body harness attach point (refer to equipment manufacturers instructions). Do not use fall arrester shock lanyards that when connected to each wishbone™ Leg end “**B,C**” the two arresters may double the shock load if the two lanyard ends are “Parked” one to each other or connected at the same time. Keep in mind any added length to the lanyard system must take into consideration the potential fall distance. Retract or automatic locking reels may also be used with the Wishbone™ see appropriate manufacturers instructions.



**15.4 Two Point Climbing Connection and Parking lanyard:** The Wishbone™ device with two positioning lanyards attached to the Legs “B,C” can be used while climbing structures as any “Y” or two legged lanyard system. While climbing each lanyard can be connected at different locations on the structure as you move up or down. While at a work position always use the Non-releasable lanyard end connected to the structure **if** the Releasable lanyard end is “Parked” anywhere on the Persons body harness. Either lanyard end can be parked one onto the other or both can be connected to the Permanent Structure. **Never park the Non-Release Leg end to a body harness** while the Release leg end is connected to an anchor point. (See “Warning” box 4 and 5.)

## SECTION 16.0 ALL APPLICATIONS AND USES

There are many applications and uses for the Wishbone™ Model P.E.R.T.S. Personal Emergency Release Tether System. Prior to any application that includes Wishbone™ safety devices a Competent Person (see definitions), should make a risk assessment for the application and determine the proper fall protection required to include the use of the Wishbone™ P.E.R.T.S. device or not, and how it is to be configured for the application.

## SECTION 17.0 WARNINGS

### WARNING BOX 1.

**WARNING** IMPROPER USE OF Wishbone™ EQUIPMENT OR INADEQUATE WORKING KNOWLEDGE OF THIS SAFETY SYSTEM CAN RESULT IN SEVERE INJURY or DEATH.

### WARNING BOX 2.

**WARNING** AUTHORIZED PERSON(S) USING THE WISHBONE™ SAFETY DEVICE SHALL BE FAMILIAR WITH THE INFORMATION CONTAINED IN THIS MANUAL AND/OR RECEIVE TRAINING IN THE PROPER USE OF SAFETY EQUIPMENT FOR THE APPLICATION BEING PERFORMED.

### WARNING BOX 3.

**WARNING** DO NOT OBSTRUCT THE INTERLOCKING THREE RING SYSTEM, WITH ANY MATERIAL, SUCH AS TAPE, CLOTH, PLASTIC SLEEVE OR CROSSING LANYARD. THE THREE RINGS NEED TO BE ABLE TO UNFOLD IN ORDER FOR THE RELEASABLE END TO DETACH.

### WARNING BOX 4.

**WARNING** WHEN “PARKING” A LANYARD END, ON A PERSONS BODY HARNESS, ALWAYS CONNECT THE “RELEASABLE END “C” TO THE BODY HARNESS. DEPENDING ON THE FALL SYSTEM CONFIGURATION USED THIS WILL INSURE THAT THE WISHBONE™ WILL RELEASE IF THERE IS A SEPARATING LOAD APPLIED ACROSS THE RELEASE HINGE, WITHOUT OVERSTRESSING THE BODY HARNESS. **DO NOT PARK THE NON-RELEASABLE LANYARD END “B” ON A BODY HARNESS, WHILE THE RELEASABLE LEG END IS CONNECTED TO AN ANCHOR POINT.** (CONSULT WITH A FALL SAFETY COMPETENT PERSON FOR YOUR PARTICULAR SITUATION)

**WARNING BOX 5**

**WARNING** When the **releasable-leg/lanyard is connected to an anchor support**, do not let the non-release leg, lanyard end hang free. Always connect the non-release leg, free lanyard end to an anchor point or park it to the hardware of the connected lanyard end. **Never park the non-release leg, lanyard end to your body harness unless you park both legs to the body harness.**

*[If the non-release leg, with lanyard is allowed to hang free or parked to the body harness **AND** allowed to snag on an object, the snag could activate the releasable-leg, lanyard end with the result that the user will then not be connected to any support.]*

**SECTION 18.0 CAUTIONS****CAUTION 1.**

**CAUTION** The Wishbone™ devices are **not** fall shock arrester devices. It is the **authorized person(s)** responsibility to ensure that the Wishbone™ devices are operated in the proper manner and in accordance with the Manufacturer's operating instructions.

**CAUTION 2.**

**CAUTION** When making Wishbone™ connections together with attaching extension lanyards and/or shock arrester(s) the **worker** should not allow the two connections or extension lanyards to twist around each other. The double locking swivel snap hook connection attached to the body harness will allow the two connections and any extensions to untwist, however it is always better to use good safety practices.

**CAUTION 3**

**CAUTION** Do not alter or intentionally misuse this equipment

**CAUTION 4**

**CAUTION** Use caution when using this equipment near sharp or abrasive edges or surfaces.

**CAUTION 5**

**CAUTION** Moving the aerial lift, before disconnecting the Wishbone™ connection, external to the aerial lift while remaining connected with the aerial lift will activate the Wishbone™ Safety device.

**SECTION 19.0 Return, Service and Replacement Policy**

1. **Wishbone® P.E.R.T.S.®** may be returned to Manufacturer for serviceability inspection and hinge replacement if the hinge has migrated open .040 thousandths or more. A service and return shipping charge will be incurred for repaired units.
2. **Wishbone® P.E.R.T.S.®** can not be returned for service if the unit has been activated or the hinge has been completely separated. (see emergency activation below)
3. **Wishbone® P.E.R.T.S.®** unit that has been Activated during an Emergency situation may be replaced by the manufacturer free of charge under certain conditions, contact **WishboneSafety, Inc.** 954-584-7000.