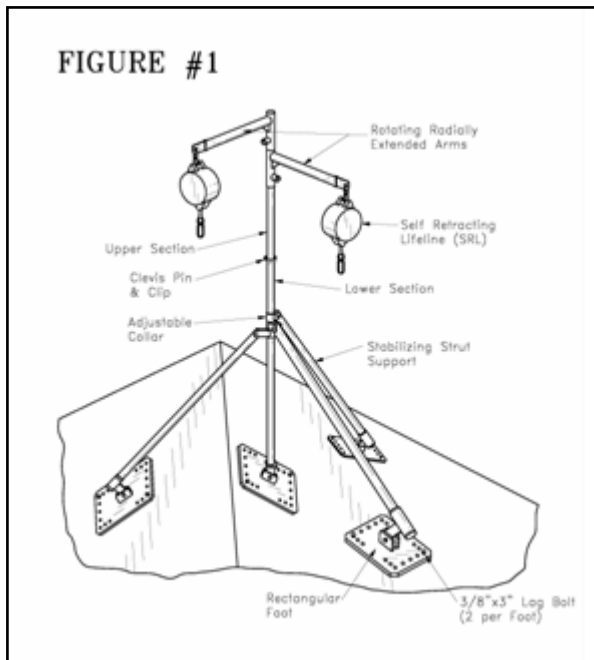


User Instruction Manual for the CSE WhirlieBird™ Personal Fall Arrest System

(Use In Conjunction With Self-Retracting Lifeline and Full Body Harness Instructions)

This manual is intended to meet the "Manufacturer's Instructions" as required by ANSI Z359.1- 1999(Rev) ANSI A10.14-1999(Rev) and should be used as part of an employee training program as required by OSHA.



DESCRIPTION:

Model CSE-WB003:

CSE WhirlieBird™ Personal Fall Arrest System (PFAS)

The WhirlieBird™ includes a vertical central support with a rectangular foot supported by three stabilizing struts with rectangular feet. The vertical central support provides a fixed platform for a pair of rotating radially extended arms for which to attach four 50 foot Self-Retracting Lifelines (SRL). The WhirlieBird™ is split into two separate sections to help make the installation and handling easier. The WhirlieBird™ is attached to the roof substrate with eight 3/8" x 3" lag bolts. The lag bolts are inserted through the holes in the rectangular feet of the central support and support struts into the 2" wide rafters below the substrate. (See Figure 1).

WARNING: *This product is part of a PFAS. The user must read and understand the manufacturer's instructions for the CSE WB, SRL and the Full Body Harness components. These instructions must be provided to the user of this equipment. Manufacturer's instructions must be followed for proper use, care and maintenance of these products. Alterations or misuse of the CSE WB or failure to follow instructions may result in serious injury or death.*

IMPORTANT: *If you have any questions on the use, care, or suitability for use of this safety equipment, contact CSE immediately. This instruction manual is intended to be used in conjunction with the manufacturers instruction manual for the SRL and the Full Body Harness.*

1.0 APPLICATIONS:

- 1.1 PURPOSE:** CSE Model No. CSE-WB003 WhirlieBird™ is designed to be used as a temporary installed anchorage platform on wood frame structures. The WhirlieBird™ may be used as part of a PFAS. The WhirlieBird™ is designed for use with any 50' SRL device. Do not hang, lift or support tools or equipment from the WhirlieBird™ or attach guylines for antennas, phone lines, etc.
- 1.2 LIMITATIONS:** The following application limitations must be recognized and considered before using this product (also reference SRL instruction manual):
 - A. ROOF STRUCTURE:** The WhirlieBird™ is intended to be installed on wood members (roof truss, rafter, cord, etc.) between the sizes of 2x4 and 2x12. The roof structure must be capable of meeting the anchorage strength requirements as set forth in Section 2.3. Consult CSE before using the WhirlieBird™ on any other roof substrate materials.
 - B. CAPACITY:** The WhirlieBird™ is designed for use by four persons with a combined weight (person, clothing, tools, etc.) of no more than 1,240 lbs. Up to four personal SRL's may be connected to the WhirlieBird™ at any time.
 - C. PERSONAL FALL ARREST SYSTEM:** The WhirlieBird™ is specifically designed to be used in conjunction with the full-body harnesses and steel self-locking carabiners. Other equipment selected for use with the WhirlieBird™ must meet the system performance and other criteria as stated in Section 2.0.
 - D. LOCKING SPEED:** Situations which do not allow for an unobstructed fall path should be avoided. Working in very confined or cramped spaces may not allow the body to reach sufficient speed to cause the SRL to lock should a fall occur. Working on slowly shifting material such as loose shingles may not allow enough speed build-up to cause the SRL to lock. A similar situation may occur on low pitched roofs where a worker may slide instead of fall. A clear path is needed to ensure positive locking of the SRL.
 - E. CORROSION:** Use near sea water or other corrosive environments may require more frequent inspections or servicing (replacement) to ensure corrosion damage is not affecting the performance of the product.
 - F. CHEMICAL HAZARDS:** Solutions containing acid, alkali, or other caustic chemicals, especially at elevated temperatures, may cause damage to this equipment. Consult CSE if doubt exists concerning installing this equipment where chemical hazards are present.
 - G. ELECTICAL HAZARDS:** Do not install the CSE WhirlieBird™ where it or any user may come into contact with electrical power lines.
 - H. TRAINING:** This equipment is intended to be installed and used by persons who have been properly trained in its correct application and use. Installation and use of this equipment must be supervised by a qualified person, as defined by OSHA fall protection standards.
- 1.3** Refer to national consensus (including ANSI Z359.1-1999 and ANSI A10.14-1999), applicable local, state, and federal (OSHA) requirements governing this PFAS, including CSE WB, SRL, Full Body Harness and carabiner connectors.

2.0 SYSTEM REQUIREMENTS:

2.1 COMPATIBILITY OF COMPONENTS AND SUBSYSTEMS: This equipment is designed for use with CSE approved components or subsystems (harnesses, SRL's, D-rings, nuts, bolts, etc.). Substitutes or replacements made with non-approved components, subsystems, or both may jeopardize compatibility between equipment and could affect the reliability and safety of the complete system. Contact CSE if you have questions about compatibility of equipment.

2.2 COMPATIBILITY OF CONNECTORS: Connectors (hooks, carabineers, etc.) must be capable of supporting 5,000 lbs. (22kN) minimum. Caution must be taken to ensure compatibility between connecting hooks and the connection point. See Section 3.5 on making connections. Non-compatible connectors may accidentally disengage (roll-out). Connectors must be compatible in size, shape and strength. **Self-locking snap hooks and self-closing carabineers are required by ANSI Z359.1-1992 and highly recommended by CSE. Per OSHA 1926.502(d), as of January 1, 1998, the use of a non-locking snap hook as part of a PFAS and positioning device is prohibited.**

2.3 ANCHORAGE STRENGTH: The anchorage to which the WhirlieBird™ is installed must meet minimum strength(s) as given below for the applications selected:

FALL ARREST: Per ANSI Z359.1-1999(Rev) – Anchorages selected for Personal Fall Arrest systems (PFAS) shall have a strength capable of sustaining static loads in the direction(s) permitted by Personal Fall Arrest system (PFAS) when in use of at least (A) 7,200 lbs (32kN) when certification exists (reference ANSI Z359.1-1999(Rev) for certification definition), or (B) 10,000 lbs. (44.4kN) in the absence of certification.

Per OSHA 1926.502(d) – 1926 Subpart M, Appendix C and Cal OSHA 1724(f) - 1670, Subchapter 4, Article 24 – Anchorages used for attachment of PFAS shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 10,000 lbs. per WhirlieBird™ attached, or be designed, installed and used as part of a complete PFAS which maintains a safety factor of at least two and is under the supervision of a qualified person as defined by OSHA.

3.0 OPERATION AND USAGE:

WARNING: Do not alter or intentionally misuse this equipment; your safety may depend on it. Consult CSE when using this equipment in combination with components or subsystems other than those described in this manual. Use caution when using this equipment around moving machinery and electrical hazards. Use caution when using this equipment around sharp edges and chemical hazards.

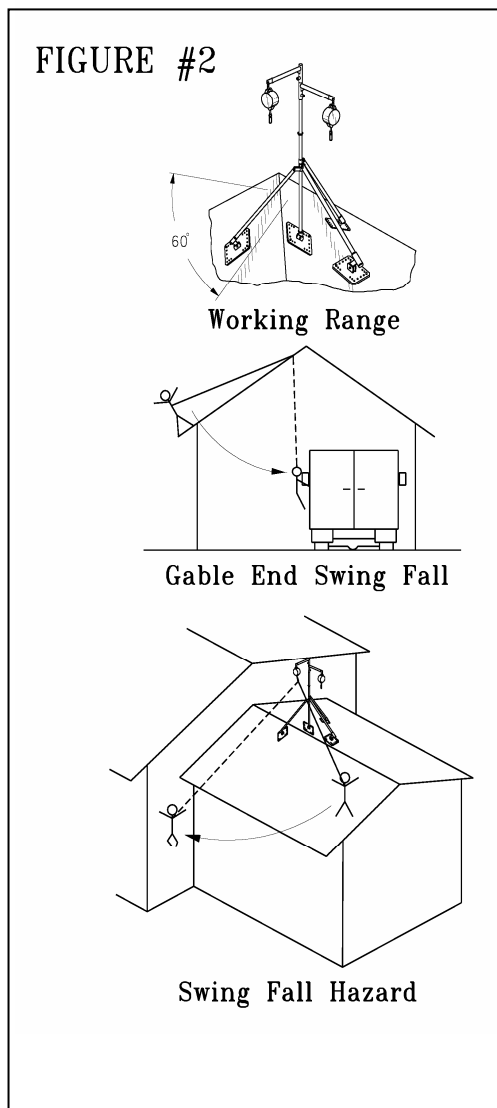
WARNING: Consult your doctor if there is any reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a worker's ability to withstand falls. Pregnant women or minors must never use a CSE WhirlieBird™.

3.1 BEFORE EACH USE of this equipment, carefully inspect it to ensure that it is in serviceable condition. Check for worn or damaged parts. Ensure the WhirlieBird™ is secure and not distorted. Inspect for sharp edges, burrs, cracks, or corrosion. Inspect other fall arrest equipment in accordance with manufacturer's instructions. Refer to Section 5.0 for further inspection details. Do not use if inspection reveals an unsafe condition.

3.2 PLAN your PFAS before starting your work. Take into consideration factors affecting your safety at any time during use. The following list gives some important points you must consider when planning your system:

A. ANCHORAGE: Select an anchorage point that is rigid and capable of supporting the required loads. See Section 2.3. Locate the WhirlieBird™ in accordance with Section 3.3.

B. OTHER CONSIDERATIONS: Personal Fall Arrest systems must be rigged to limit any free fall to a maximum of 6 feet (OSHA and ANSI Z359.1-1999(Rev) or 5 feet (ANSI A10.14-1991). Avoid working above your anchorage level since an increased free fall distance will result. Avoid working where your line may cross or tangle with that of another worker or another object. Do not allow the SRL to pass under arms or between legs. Never clamp, knot or otherwise prevent the SRL from retracting or being taut; avoid slack line. **Don't ever lengthen the SRL by connecting a lanyard or similar component.**



- C. **TOTAL FALL DISTANCE:** Should a fall occur, there must be sufficient clearance in the fall area to arrest the fall before striking the ground or other object. The total fall distance is the distance measured from the onset of a fall to the point where the fall is arrested. A number of factors can influence total fall distance, including user's weight, anchorage location relative to the fall (swing fall), Full Body Harness with a dorsal D-ring, etc.
- D. **SWING FALLS:** Swing falls occur when the anchorage point is not directly above the point where a fall occurs. The force of striking an object while swinging (horizontal speed of the user due to the pendulum effect) can be great and may cause serious injury. Swing falls can be minimized by working as directly below the anchorage point as possible. The SRL will activate (lock-up) regardless of its orientation and location point (the WhirlieBird™ radially rotating arms provide a work area on both sides of the roof ridge/anchor). (See Figure #2). Also in a swing fall situation, the total vertical fall distance of the user will be greater than if the user had fallen vertically directly below the anchorage point. The user must therefore account for an increase in the total free fall distance and the area needed to safely arrest the fall. Do not captivate the lifeline of an SRL; it may affect the performance of its braking.
- E. **SHARP EDGES:** Avoid working where the connecting subsystem (SRL, Full Body Harness, etc.) or other system components will be in contact with, or abrade against unprotected sharp edges. If working with this equipment near sharp edges is unavoidable, protection against cutting must be provided by using a heavy pad or other means over the exposed sharp edge.
- F. **RESCUE:** Should a fall occur, the user (employer) must have a rescue plan and the means at hand to implement it.
- G. **AFTER A FALL:** If the SRL, carabiner connectors or the Full Body Harness have been subjected to forces resulting from the arrest of a fall, it must be immediately removed from service and returned to the manufacturer for possible repair.

3.3 INSTALLATION REQUIREMENTS:

A. WhirlieBird™ ROOF PLAN:

Before installing the WhirlieBird™, a plan should be established as to where the WhirlieBird™(s) will be placed on the roof (see Figure #3). The following are guidelines on locating the WhirlieBird™:

The WhirlieBird™ should be located at the ridge and at least 6ft away from any exposed roof edge. On very small roof areas, locate the roof anchor as far from the roof edge as possible. The WhirlieBird™ can also be installed on the flat portion of the roof; caution should be used to prevent SRL wear on a shed ridge condition.

B. ROOF FRAMING:

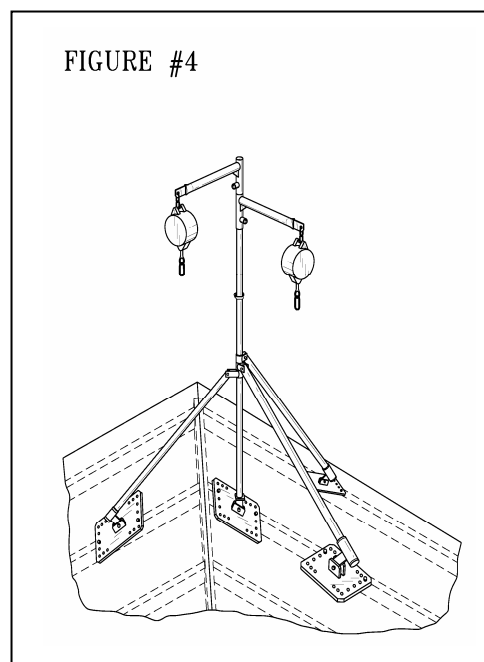
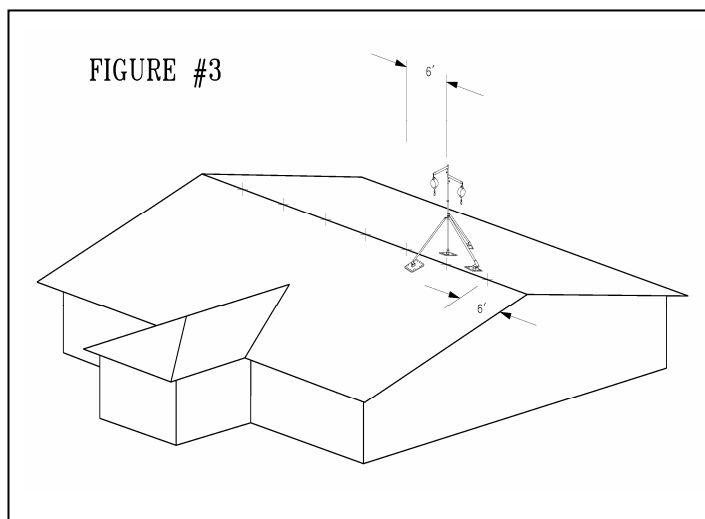
Roof framing members to which the WhirlieBird™ is attached must be in good condition. Members must be free of splits, cracks, large knots or other defects that may weaken the member. Figure #4 shows how the WhirlieBird™ would look once in place. The roof framing structure must be capable of withstanding the loads given in Section 2.3.

C. WhirlieBird™ INSTALLATION:

The WhirlieBird™ must be installed in accordance with the previously discussed roof plan. Site work rules must be followed regarding when an installed WhirlieBird™ is ready for use (lag bolts in rafter, etc.). The WhirlieBird™ must not be installed or used until the sheathing is in place. Do not install the WhirlieBird™ over existing shingles or roofing material. The rectangular feet must be directly on top of the felt underlayment over the wood sheathing.

TOOLS & MATERIALS NEEDED TO INSTALL THE CSE WhirlieBird™:

- One 24-Volt Cordless Drill With Socket Driver
- One 9/16" Socket
- One 9/16" Box Wrench
- Eight 3/8" X 3" Lag Bolts
- Four 16D Penny Nails
- Colored Keel Chalk



ATTACHING THE WhirlieBird™ TO THE ROOF:

The WhirlieBird™ should be loaded on the roof with the felt underlayment. Installation begins by locating an area of the roof for placement of the WhirlieBird™ (the best location for the WhirlieBird™ is typically near the center of the roof along the ridge so the 50' SRL will reach all areas of the roof.) Felt underlayment is placed on the roof sheathing, making sure to allow enough felt salvage for the proper tie-in of the felt underlayment when the rest of the roof is dried-in. Then, mark the rafter locations on the felt with colored keel chalk. Set the lower portion of the WhirlieBird™ in place, line up the rafter lines with the holes in each rectangular foot (this may require that you loosen the adjustment bolts on one or all of the support strut collars in order to line up the holes in the feet to the rafters). Next, temporarily install one 16D nail in one of the holes of the rectangular foot of the central support. Then, temporarily install a 16D nail in each of the rectangular feet of the three support struts (while doing this make sure the central support pole is plumb to the roof pitch). Then, re-tighten the adjustment bolts on each collar of the support struts. (See Figure #5)

Next, the lag bolts are driven into the rafters by inserting the head of the bolts into the 9/16" socket attached to the cordless drill and driving it flush with each of the rectangular feet. It is MANDATORY that the lag bolts always go into the rafter (you will know that you have driven the lag bolt into the rafter when the lag bolt tightens and the drill "cocks" in your hand). Repeat this process until you have two lag bolts in each rectangular foot, then remove the four 16D nails. After this is completed, insert the upper portion of the WhirlieBird™ into the top of the central support and install the clevis pin and locking clip to secure it. (See Figure #6)

WARNING: The lag bolts must go through the sheathing and into the roof member (rafter). If they do not, the WhirlieBird™ will not hold the rated loads and serious injury or death could occur.

WARNING: Use only new 3/8"x 3" long lag bolts for each new installation.

3.4 BODY SUPPORT:

When using the CSE WhirlieBird™ device with an attached SRL, it is required to use a Full Body Harness. The SRL cable should be attached to the D-ring on the back between the shoulders (dorsal D-Ring).

IMPORTANT: It is important to always adjust the Full Body Harness snugly around your legs and waist.

3.5 CONNECTING THE SRL TO THE WhirlieBird™:

Connect the SRL to each of the radially extended arms by inserting a self-closing gate carabiner into the hole at the end of the arm and then thru the ring at the top of the SRL. Do not use hooks or connectors that will not completely close over the attached SRL. Always follow the manufacturer's instructions supplied with each system component. (See Figure #7).

FIGURE #5

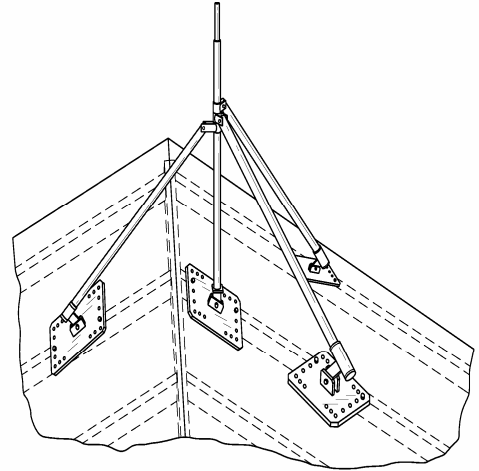


FIGURE #6

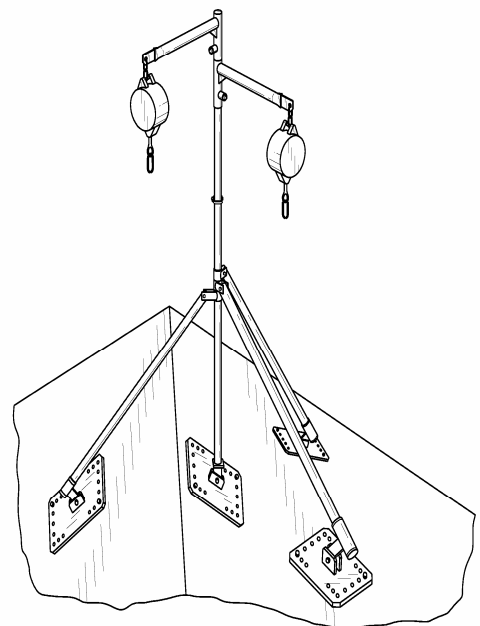
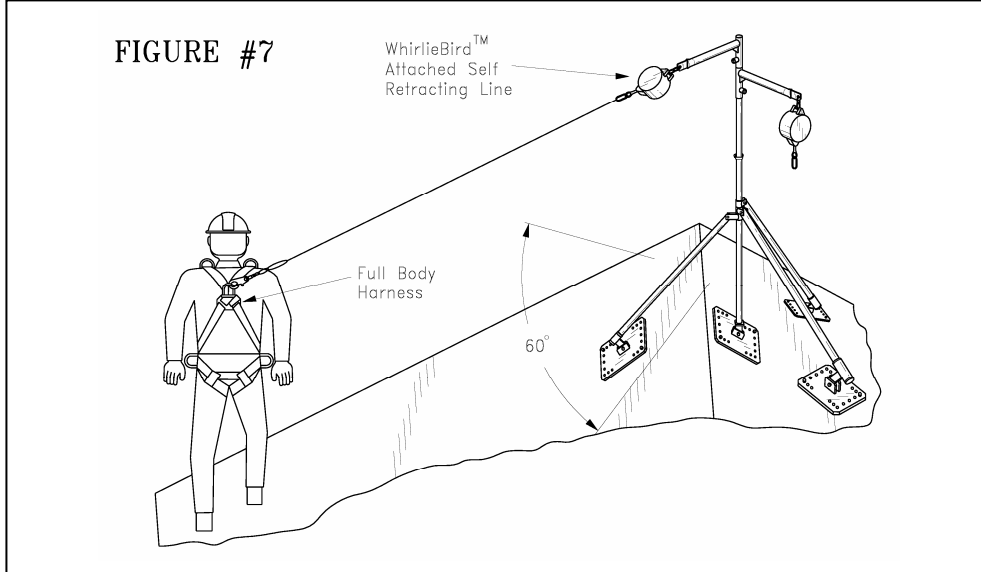


FIGURE #7



3.6 CONNECTING THE SRL TO THE BODY HARNESS:

Connection to the installed WhirlieBird™ may be made by attaching the self-locking carabiner at the end of the SRL to the back D-ring (fall arrest attachment point) of the user's Full Body Harness. When connecting, make sure connections are fully closed and locked. Figure #7 illustrates proper connection of the equipment to the WhirlieBird™. Always protect SRL from abrading against sharp or abrasive surfaces on the roof. Make sure all connections are compatible in size, shape and strength. Never connect more than four persons to any single WhirlieBird™ at a time.

3.7 NORMAL OPERATION:

Once attached, the worker is free to move about within recommended working areas (60° from anchor) at normal speeds. The SRL will allow up to 50 ft. of the lifeline to extend and retract. Should a fall occur, a speed sensing brake system will activate, stopping the fall and absorbing much of the energy created. If a fall has been arrested, the system must be taken out of service and inspected (see Section 5.0). Sudden or quick movements should be avoided during the normal work operation since this may cause the SRL to lock-up.

WARNING: Read and follow manufacturer's instructions for associated equipment (SRL, Full Body Harness, etc.) when used with the WhirlieBird™ PFAS.

4.0 TRAINING:

4.1 It is the responsibility of the purchaser of this equipment to ensure the users are familiar with these instructions, trained in the correct care and use of, and are aware of the operating characteristics, application limits and the consequences of improper use of this equipment.

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

5.0 INSPECTION:

5.1 **FREQUENCY:** Before each use, visually inspect per steps listed in Sections 5.2 and 5.3.

IMPORTANT: If the SRL, carabiner connectors or the Full Body Harness have been subjected to forces resulting from the arrest of a fall, it must be immediately removed from service and returned to the manufacturer for possible repair. See Section 5.2.

5.2 INSPECTION STEPS: (refer to instruction manual of the manufacturer's SRL inspection procedures)

- Step #1: Inspect the WhirlieBird™ for physical damage. Look carefully for any signs of cracks or deformities in the metal. Make certain the support struts and feet are not bent or deformed in any way and that they pivot correctly.
- Step #2: Inspect the WhirlieBird™ for signs of excessive corrosion. Make certain the pair of rotating radially extended arms swivel 360° properly and that the SRL is attached to the anchor securely.
- Step #3: Ensure the condition of the roof will support the WhirlieBird™ loads; see Section 2.3. A WhirlieBird™ connected to rotted or deteriorated wood should not be used.
- Step #4: Ensure the WhirlieBird™ is still securely attached to the roof structure. See Section 3.3.
- Step #5: Inspect each system component or subsystem (SRL, Full Body Harness, etc.) per associated manufacturer's instructions.
- Step #6: Record the inspection date and results in the Detailed Inspection and Maintenance Log (see Section 9.0).

5.3 If inspection reveals a defective condition, remove unit from service immediately and contact factory authorized service center for repair.

NOTE: Only the manufacturer or parties authorized in writing by CSE may make repairs to this equipment.

6.0 MAINTENANCE – SERVICING – STORAGE:

- 6.1 Clean the WhirlieBird™ with a mild soap detergent solution. Excessive build-up of dirt, tar, etc. may prevent the WhirlieBird™ from working properly. Grease needs to be applied periodically to the pair of rotating radially extended arms at the zirk fittings for smooth swiveling action. If you have any questions concerning the condition of your WhirlieBird™, or have any doubt about putting it into service, contact CSE immediately. Refer to the SRL manufacturer instructions for maintenance, servicing, and storage procedures on their SRL.
- 6.2 Additional maintenance and servicing procedures (replacement parts) must be completed by a factory authorized service center. Authorization must be in writing.

7.0 SPECIFICATIONS:

- Material:** Schedule 40 pipe and cold rolled / hot rolled steel
- Finish:** Powder Coated Blue Paint
- Static load capacity:** Strength of system maintains a minimum safety factor of 2 as required by OSHA when used according to this user instruction manual (reference OSHA 1926.502 and 1910.66)
- Weight:** Lower Section = 60 lbs - Upper Section = 26 lbs.
- Size:** Lower Section = 40" High x36" Wide – Upper Section = 23" High x32" Wide
- Capacity:** 1,240 lbs (four persons)

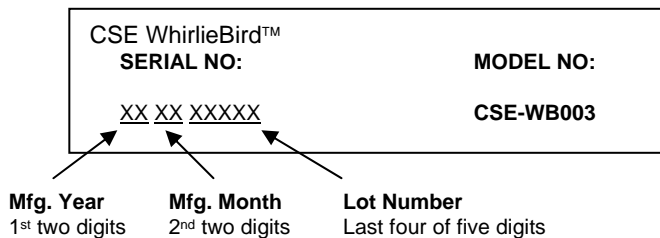
8.0 LABELS:

These labels should be securely attached to the roof anchor and fully legible.

WARNING
 Manufacturer's instructions supplied with this product at time of shipment must be followed for proper use, maintenance and inspection.

Alteration or misuse of this product, or failure to follow instruction may result in serious injury or death. Make only compatible connections.

CSE WhirlieBird™
SPECIFICATIONS:
 CAPACITY: 4 Persons, 1,240 LBS. MAX
 MATERIALS: SCHEDULE 40 PIPE & CARBON STEEL
 MEETS OSHA REQUIREMENTS
INSPECTIONS:
 INSPECT CSE WhirlieBird™ BEFORE EACH USE. DO NOT USE IF INSPECTION REVEALS AN UNSAFE OR DEFECTIVE CONDITION. NOT USER REPAIRABLE.
USE:
 INSTALL OVER ROOF SHEATHING. USE EIGHT 3/8" X 3" LONG LAG BOLTS; TWO IN EACH RECTANGULAR FOOT. LAG BOLTS MUST ENGAGE RAFTER OR WOOD MEMBER COMPLETELY. TO PREVENT SPLITTING, SOME WOOD TYPES MAY REQUIRE PRE-DRILLING OF LAG BOLT HOLES. MUST BE USED WITH SELF-RETRACTING LIFELINE AND FULL BODY HARNESS.



WARNING
 This product is part of a Personal Fall Arrest system (PFAS). The user must read and understand the CSE WhirlieBird™ User Instruction Manual and the instruction manuals for the SRL's and the Full Body Harnesses. Your employer must provide you with these instruction manuals. Manufacturer's instructions must be followed for proper use, care, and maintenance of this product. Alterations or misuse of this product or failure to follow instructions may result in serious injury or death.

Consult your doctor if there is any reason to doubt your fitness to safely absorb the shock from a fall arrest. Age and fitness seriously affect a workers ability to withstand falls. Pregnant women or minors must never use a CSE WhirlieBird™.

WARNING
 The lag bolts must go through the sheathing and into the roof member (rafter). If they do not, the WhirlieBird™ will not hold the rated loads and serious injury or death could occur. Use only new 3/8"x 3" long lag bolts for each new installation.

9.0 DETAILED INSPECTION AND MAINTENANCE LOG: (Add additional pages to log as needed)

DATE OF MANUFACTURE: _____
MODEL NUMBER: _____
DATE PURCHASED: _____

Inspection Date	Inspection Items Noted	Corrective Action Taken	Maintenance Performed
Approved By:			
Approved By:			
Approved By:			
Approved By:			
Approved By:			