

# AES RAPTOR SKYNET™



## SKYNET™ FALL PROTECTION SYSTEM



## INSTRUCTION MANUAL

### \* WARNING \*

Serious injury or death may result if this product is used for purposes other than designed. The manufacturer provides the following instructions for the use and care of this equipment. It is the responsibility of the purchaser to understand and convey explicit instruction to each user. The AES Raptor SKYNET™ complies with the requirements of the Federal Occupational Safety and Health Administration (OSHA) when set up and used according to the manufacturers' instructions.

# **AES Raptor, LLC - SKYNET™ Instruction Manual**

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**AES RAPTOR** COMPLETE MOBILE FALL PROTECTION SYSTEM  
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# AES RAPTOR SKYNET™ INSTRUCTION MANUAL

## INTRODUCTION

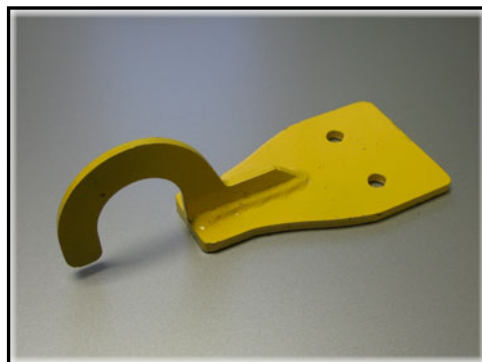
The SKYNET™ Fall Protection System is designed to prevent a worker from falling through a skylight, hole, or opening to the surface below. When a SKYNET™ is placed over a non-curbed skylight, stairwell, hole, or opening, it **MUST** be used in conjunction with the Secure-Attach™ Brackets. The Secure-Attach™ Brackets are attached to the underlying permanent surface using appropriate fasteners.

A Curbed Skylight has a built-up raised edge, as show in the photos below:



The Curb prevents the SKYNET™ frame from slipping away from the opening to be protected.

A Non-Curbed skylight, stairwell opening, hole, or other opening may be flush with the surface and will not prevent the SKYNET™ from being moved aside if bumped into or struck. Therefore, on any NON-CURBED opening, the Secure-Attach™ Brackets **MUST BE USED** for safety and to comply with OSHA regulations 1926.501(b)(4)(i) regarding skylights, hole or opening covers.

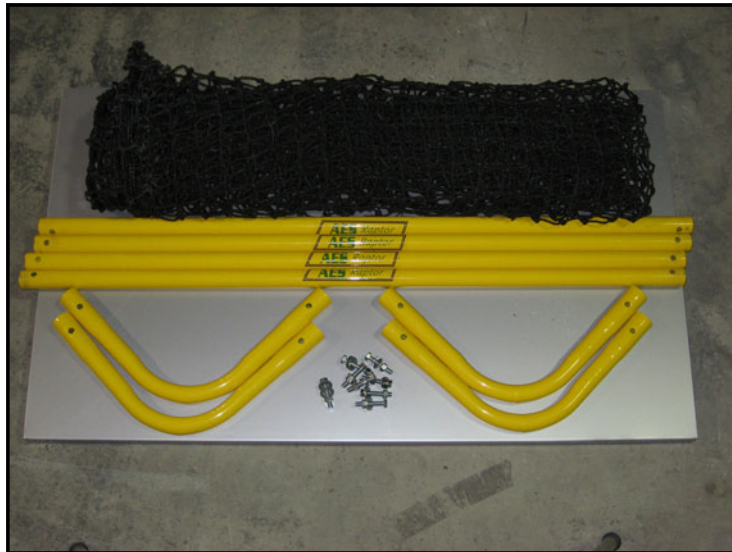


Secure-Attach Bracket

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## DIAGRAM OF PARTS



A Small (3x3 foot) or Standard (6x6 foot) Skynet consists of the following parts, shown laid out in the photo above:

- 1 Net
- 4 Siderails
- 4 Corner Pieces
- 8 Fasteners/Bolts, each consisting of
  - 1 Bolt
  - 2 Washers
  - 1 Nylon Locking Nut

An Extended (6x12 foot) Skynet consists of the following parts:

- 1 Net
- 6 Siderails
- 2 Siderail extension pieces
- 4 Corner Pieces
- 12 Fasteners/Bolts, each consisting of
  - 1 Bolt
  - 2 Washers
  - 1 Nylon Locking Nut

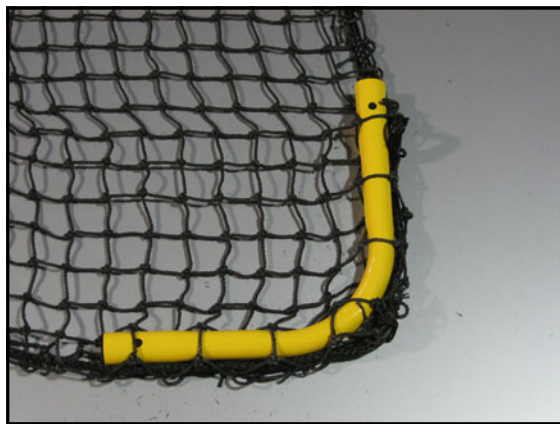
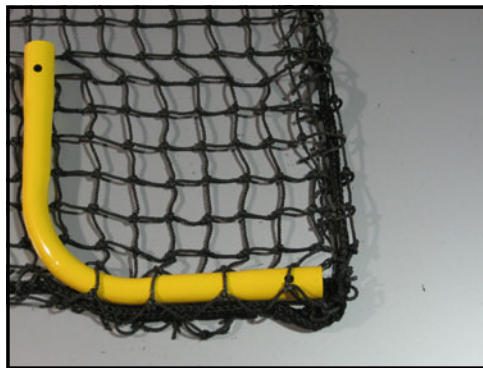
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## 1.0 Assembly

1.1 This section covers assembly of the Small (3x3 foot), Standard (6x6 foot) and Extended (6x12 foot) SKYNET™ models. Custom sized models assemble with the same techniques used. The assembly method varies to some extent, depending on whether or not intermediate side rail connectors are used.

1.2 Preparation. Make sure you have a flat assembly area. This will help in frame alignment and prevent twisting of the frame. The work area should be approximately twice the length and width of the SKYNET™. This is because the side railing will have to be inserted into the netting, beginning at one end.

1.3 Begin by inserting a corner piece approximately 8 (eight) loops from a corner. (Four “over” and four “under” loops) Weave the piece into the netting, using the “over and under” weaving technique. Continue around the corner until piece is completely inserted into the netting, as shown below.



1.4 Then move to one of the ends opposite the installed corner, approximately 8-10 strands from the corner, and begin installing a side rail, using the same “over and under” weaving technique.

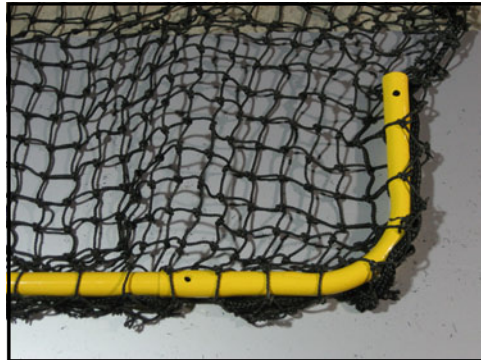
**TIP:**  
“OVER AND UNDER”  
WEAVE.

Looking at the edge of the netting, you will see a pattern in the weave, with some alternating strands going “over” and “under”. When inserting pieces of the SKYNET™, you should always use the same type of strands for going “over” the railing and for going “under” the railing.

*(Continued on page 4)*

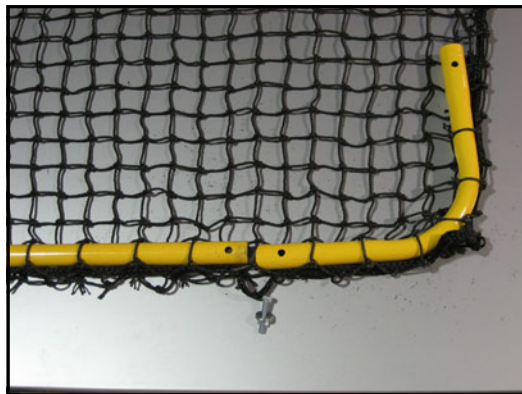
1.5 Insert the side rail piece into the corner piece. Line up the installation holes, and place a 3/8" bolt through the hole. Make sure there are washers at each end of the bolt before attaching nylon nut.

**DO NOT TIGHTEN LOCKNUTS UNTIL FRAME ASSEMBLY IS COMPLETED.**



1.6 Install a another corner piece in the corner to which the installed side rail will fit. Start at the side of the corner away from the rail, and weave the corner piece into the netting using the standard “over and under” weaving technique.

1.7 Connect the newly installed corner to the installed side rail using the Bolt Hole Alignment tip and the bolt/washer/locknut combination described.



**TIP:  
BOLT HOLE ALIGNMENT.**

With a new frame, bolt-hole alignment can be difficult because of tight tolerances.

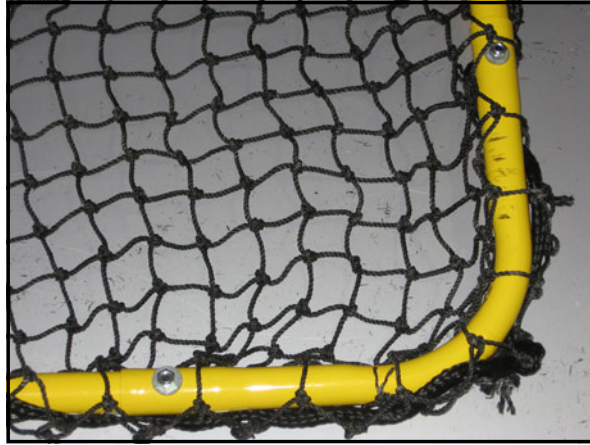
When aligning the connecting holes on the SKYNET™ frame, you will find it easier if you use a screwdriver or other metal pin device to help “force” the alignment of the holes.

*(Continued on page 5)*

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1.8 Work your way around the SKYNET™, attaching rail side members and corners in sequence, using the “over and under” weaving technique.



1.9 When the entire frame assembly has been completed, begin final tightening of the bolt/washer/locknut assemblies.

The completed SKYNET™ should appear as shown below, when placed on a curbed skylight.



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## 2.0 Applications

2.1 The AES Raptor SKYNET™ is to be used as a cover for skylights, stairwells, holes or openings. The AES Raptor Skynet may be used where worker mobility and fall protection are required.

2.2 The AES Raptor SKYNET™ should be used as a part of a complete written fall protection system plan.

2.3 When set up properly, the AES Raptor SKYNET™ protects workers from falls through a skylight, stairwell, hole, or opening.

2.4 The AES Raptor SKYNET™ may be moved quickly and easily from location to location, but may also be anchored in a semi-permanent or permanent position by utilizing the Optional Secure-Attach™ Brackets.

## 3.0 Use and Limitations

3.1 The SKYNET™ can be used with virtually any surface. On surfaces with a slope of 4:12 or lower, the SKYNET™ may be used without the optional Secure-Attach™ Brackets. On slopes greater than 4:12, the Secure-Attach™ Bracket System must be used.

3.2 Recommended Surfaces include any surface with a slope of 4:12 or less unattached. When attached to the fixed roof system with the Secure-Attach™ Brackets and appropriate fasteners, any surface is acceptable.

3.3 Retire the SKYNET™ from use if it shows signs of excessive wear, chemical damage, burn damage, and/or ultraviolet deterioration.

**\*\*\* WARNING \*\*\***

**THE SURFACE MUST BE ABLE TO HOLD THE WEIGHT OF THE SKYNET (APPROXIMATELY 40 POUNDS) AND UP TO 210 POUNDS OF WEIGHT FOR ONE WORKER.**



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## 4.0 Setup

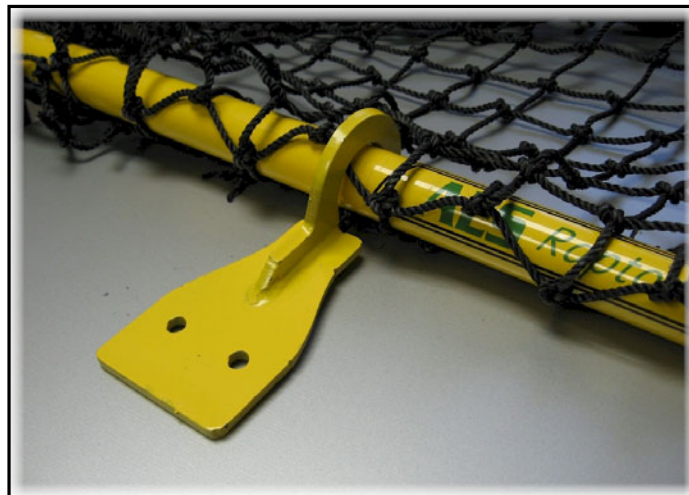
4.1 To set up the SKYNET™, simply place it over a curbed skylight, keeping an even amount of space on each side, between the SKYNET™ and the curb.

4.2 If the SKYNET™ is installed in a semi-permanent or permanent location with the Secure-Attach™ Brackets, refer to the steps below:

4.3 First determine if the Secure-Attach™ Brackets are desired around the entire perimeter of the SKYNET™. If temporary access to the skylight, stairwell, hole, or opening is desired, and only when other proper fall protection systems are available and in use, the Secure-Attach™ Brackets may be attached to only one side of the SKYNET™, allowing it to be rotated up and away from the skylight, stairwell, hole, or opening.



4.4 To fasten the Secure-Attach™ Brackets, simply place them over the edge rail of the SKYNET™ as shown, usually in the middle of the side rail. Secure the bracket to the surface or roof using appropriate length and type of fasteners for the permanent surface.



## 5.0 After a Fall

**AFTER A FALL: EQUIPMENT WHICH HAS BEEN SUBJECTED TO FALL ARREST FORCES MUST BE REMOVED FROM SERVICE IMMEDIATELY FOR INSPECTION.**

## 6.0 Before Each Use

6.1 OSHA 1926.502 requires that before operating the system there must be an inspection for damaged equipment.

### INSPECTION STEPS

STEP 1: Check for loose, bent or damaged parts.

STEP 2: Check fasteners/connectors for distortion, cracks, or other damage.

STEP 3: Check netting for wear before each use.  
— DO NOT USE if netting is frayed, abraded, or cut in any way.

STEP 4: Check Frame for wear before each use.  
— DO NOT USE if frame is bent, warped, or corroded.

STEP 5: All labels must be present and fully legible.  
— Copies of labels are in Appendix A.

**\*\*\* WARNING \*\*\***

**DO NOT OPERATE DAMAGED EQUIPMENT.  
DO NOT OPERATE EQUIPMENT THAT HAS BEEN MODIFIED.**

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## **MAINTENANCE AND CARE:**

- A. Inspect all AES Raptor equipment and parts before and after each use.
- B. Regularly inspect all fasteners. Damaged or missing fasteners can severely hinder the safety factor of the SKYNET™.
- C. Regularly inspect the netting. While the netting is designed to withstand severe weather over time, it should still be inspected for any torn, unraveled, or cut strands, or excessive slippage of the knots.
- D. Regularly inspect the frame. The frame is cold-rolled steel, but should be inspected for warping, bending, distortion, or any rust or corrosion.
- D. Maintain paint finish to prevent corrosion.

## **7.0 General Safety**

7.1 USE COMMON SENSE! Most accidents can be avoided by using common sense and concentrating on the job to be done.

7.2 The AES Raptor SKYNET™ should not be used by persons whose ability or alertness is impaired by fatigue, intoxicating beverages, illegal or prescription drugs, or any other physical cause that exposes the user or others to injury.

7.3 Always wear proper safety attire.

7.4 The SKYNET™ can only be installed following OSHA guidelines, which mandate that a worker should be connected to another fall arrest or restraint system when installing the SKYNET™ over a skylight, stairwell, hole, or opening.

7.4 Do not use the SKYNET™ on holes, stairwells, holes, or openings unless it has been properly fastened to a permanent surface with the Optional Secure-Attach™ Brackets.

7.5. Do not use the SKYNET™ on a surface with a slope greater than 4:12 unless it is fastened to a permanent surface with the Optional Secure-Attach™ Brackets.

## 8.0 Hoisting

### \*\*\* WARNING \*\*\*

- 9.1 Loads may slip or fall if proper Hoist Ring Assembly and lifting procedures are not used.
- 9.2 A falling load may cause serious injury or death.
- 9.3 Do not use with damaged slings or chain. For inspection criteria see ASME B30.9.
- 9.4 Utilize appropriate Rigging Gear suitable for overhead lifting.
- 9.5 Utilize Rigging Gear within the industry standards and the manufacturer's recommendations.
- 9.6 Conduct regular inspection and maintenance of the Rigging Gear.

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## APPENDIX A - Warning Labels

 <b>WARNING:</b> TO PREVENT BODILY INJURY	<b>OWNER</b>
<p>OWNERS AND OPERATORS OF THIS EQUIPMENT SHOULD, PRIOR TO USING -</p> <p>Read the instruction manual. Read all warning labels. Know and comply with all OSHA, state and local regulations concerning roofing.</p>	<p>All employees should be instructed in the proper use of this equipment prior to use. If the employee cannot read or understand English, please provide a translator. This equipment should not be sold to, traded, or given to any other company or individual without instructing them in its proper use and without providing them with all instructions and warning labels.</p>
 <b>ADVERTENCIA:</b> PARA PREVENIR LAS LESIONES CORPORALES	<b>DUENO</b>
<p>Los DUENOS Y LOS OPERADORES DE ESTE EQUIPO DEBEN, ANTES de UTILIZARLO -</p> <p>Leer el manual de instrucciones. Leer todos los rótulos de advertencia. Saber y cumplir todos los reglamentos de OSHA, así como los reglamentos locales y estatales relacionados con el techado.</p>	<p>Todos los empleados deben recibir instrucción sobre el uso apropiado de este equipo antes de utilizarlo. Si el empleado no puede leer o entender inglés, por favor, proporcione un traductor. Este equipo no se debe vender, comerciar ni entregar a ninguna otra compañía o persona sin instruirle en el uso apropiado o sin proporcionarle todas las instrucciones y los rótulos de advertencia.</p>

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## APPENDIX B - Assembly, Inspection and Maintenance Log

DATE IN-SERVICE:	
ASSEMBLED BY: (PRINT NAME)	
SIGNATURE:	
COMPANY:	
INTENDED USE OR OTHER RELEVANT DETAILS:	

DATE:	
INPECTED BY:	
NOTE CONDITION OF:	
FRAME:	
NETTING:	
FASTENERS:	
NOTES:	

DATE:	
INPECTED BY:	
NOTE CONDITION OF:	
FRAME:	
NETTING:	
FASTENERS:	
NOTES:	

# AES RAPTOR SKYNET™ INSTRUCTION MANUAL

## APPENDIX B - Inspection and Maintenance Log

\*\*\* PLEASE COPY THIS EXAMPLE LOG AND REVIEW BEFORE EACH USE  
AND DURING REGULARLY SCHEDULED MAINTENANCE \*\*\*

DATE:	
INPECTED BY:	
NOTE CONDITION OF:	
FRAME:	
NETTING:	
FASTENERS:	
NOTES:	

DATE:	
INPECTED BY:	
NOTE CONDITION OF:	
FRAME:	
NETTING:	
FASTENERS:	
NOTES:	

DATE:	
INPECTED BY:	
NOTE CONDITION OF:	
FRAME:	
NETTING:	
FASTENERS:	
NOTES:	