



P.O. BOX 17010  
FORT SMITH, AR 72917-7010

(479) 646-4114

February 11, 2011

Subject: Rheem SolPak Active Solar Water Heating Package System

To whom it may concern:

The SolPak Solar Collectors have been analyzed based on the requirements of the latest currently adopted Florida Building Codes 2007 with 2009 Supplements, Uniform Building Codes and the American Society of Civil Engineers Minimum Design Loads for Buildings and Other Structures, ASCE 7-05. The analysis determined that the SolPak collectors installed in accordance with the attached Hurricane Installation Kit Instructions can conform to the building code anchoring and unit integrity requirements for buildings up to 33 feet in height exposed to a 3-second wind gust at a maximum wind speed of no greater than 146 miles per hour for an Exposure C Category.

A Hurricane Kit Installation is required for the following conditions:

SolPak System	Minimum Wind Load Pressure	Maximum Wind Load Pressure
RS80-40BP	30 psf	46 psf
RSO80-40BP	30 psf	46 psf
RS80-48BP	30 psf	70 psf
RS120-64BP	30 psf	55 psf
RSO120-64BP	30 psf	55 psf

Thank you for your attention to this matter.

Submitted by:  
Rheem Manufacturing

*Diane Marie Jacobs PhD, PE*  
Diane Marie Jacobs, PhD, P.E.  
FL Reg No. 69325  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

Attachment: Hurricane Kit Installation Instructions

# Hurricane Kit Installation

Hurricane kit to be installed when wind load is between 30psf and 55psf(RS32-BP/BC) or 70psf (RS24-BP/BC).



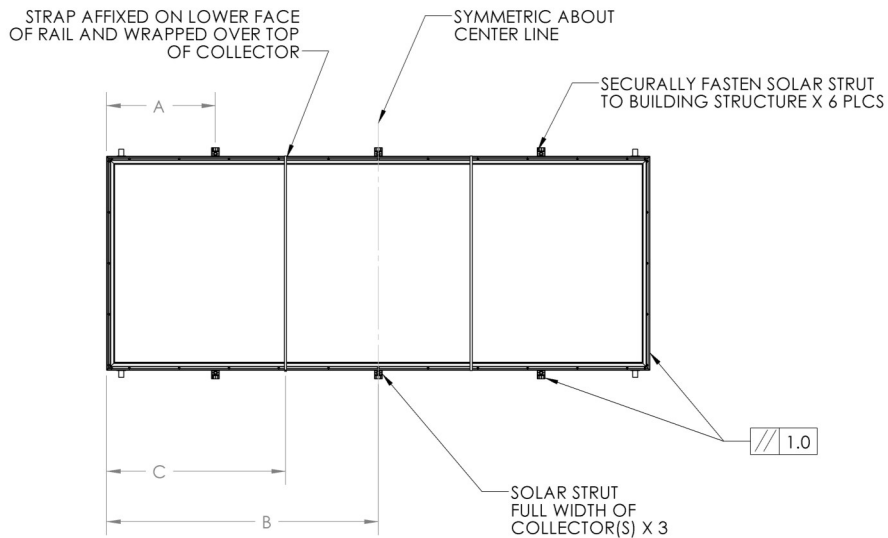
## Kit Contents:

- (2) - Polymer Coated Stainless Steel Straps
- (6) - Mounting Assemblies (C-SSN)
- (3) - Anodized Solar Struts
- (4) - Anodized Rivets
- (6) - Hanger Bolt Assemblies

## Tools Required:

- Drill
- No. 30 Drill Bit
- 9/32" Drill Bit
- Measuring Tape
- Rivet Gun

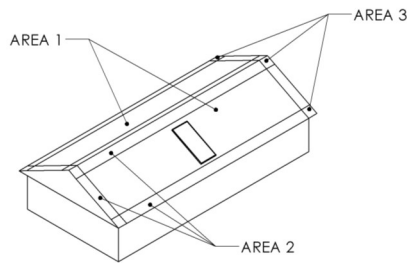
## Installation Dimensions



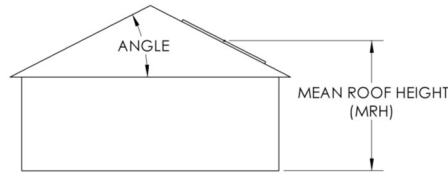
COLLECTOR MODEL	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"
RS40-BP/BC	24 1/2 INCH	61 1/8 INCH	40 1/4 INCH
RS32-BP/BC	19 9/16 INCH	49 1/8 INCH	32 1/2 INCH
RS24-BP/BC	19 9/16 INCH	49 1/8 INCH	32 1/2 INCH

# Array Placement

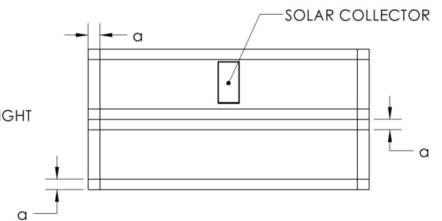
## GABLE ROOF    $7^\circ < \text{ANGLE} < 45^\circ$



Side View

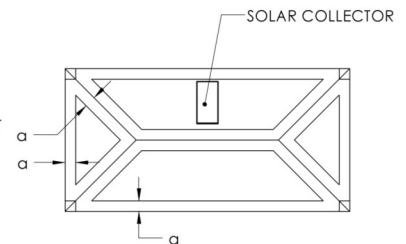
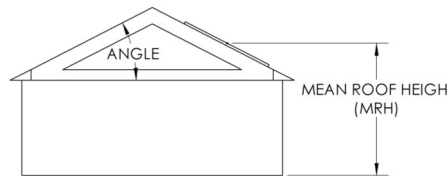
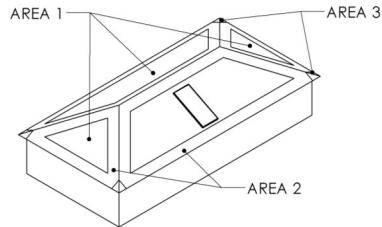


Top View



SOLAR COLLECTOR(S) TO BE INSTALLED IN AREA 1 OF ROOF. EDGES AND CORNERS (AREA 2 & 3) ARE TO BE AVOIDED

## HIP ROOF    $7^\circ < \text{ANGLE} < 27^\circ$



### Placement of the Array is Critical in areas of High Wind Velocity.

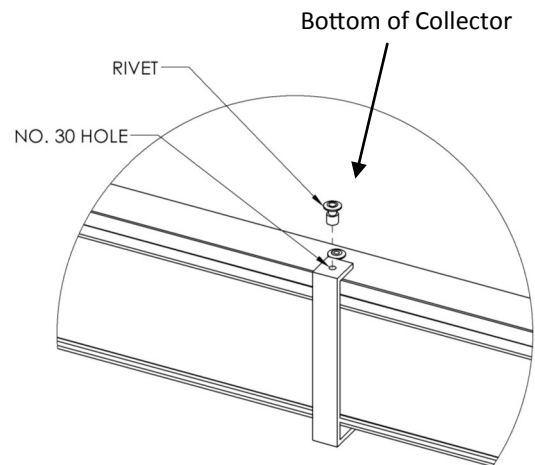
- Adequate space must be left open for fire access and wind stabilization
- Collectors installed in Roof Areas 2 & 3 will be subjected to wind loading beyond the stated capability in this instruction sheet.
- Roof corners and edges are defined by the dimension "a" which is dependent upon building geometry.
- See Table below to find dimension "a". Compare table value to 40% of the mean roof height and use smaller value for dimension "a"

Roof Height	Least Horizontal Dimension (ft)											
	10	15	20	25	30	40	50	60	70	80	90	100
10	3	3	3	3	3	4	4	4	4	4	4	4
15	3	3	3	3	3	4	5	6	6	6	6	6
20	3	3	3	3	3	4	5	6	7	8	8	8
25	3	3	3	3	3	4	5	6	7	8	9	10
30	3	3	3	3	3	4	5	6	7	8	9	10

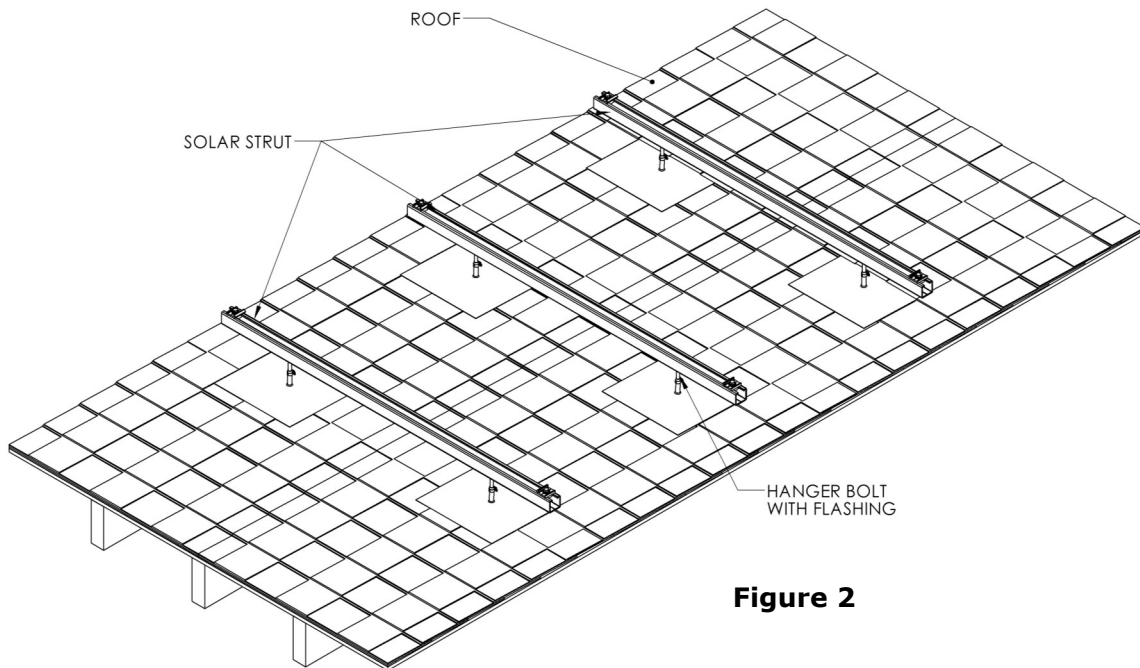
## Step 1:

- Measure and Drill No. 30 hole through strap end and bottom of collector side rail per **Installation Dimensions**. Install rivet as shown in **Figure 1**. Pull strap tight over top of collector and affix opposite side.
- Repeat for second strap

**Note:** Straps must be parallel to end of collector within 1 inch.



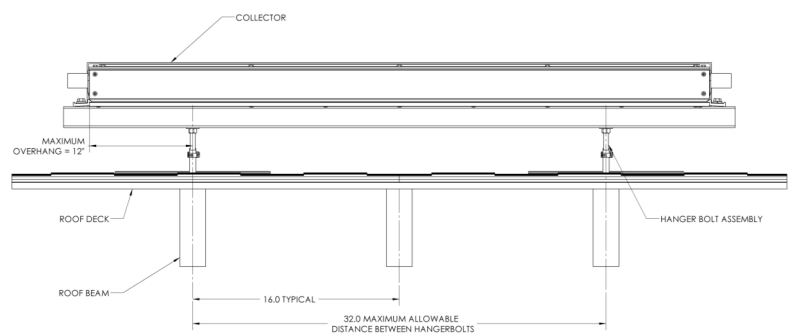
**Figure 1**



**Figure 2**

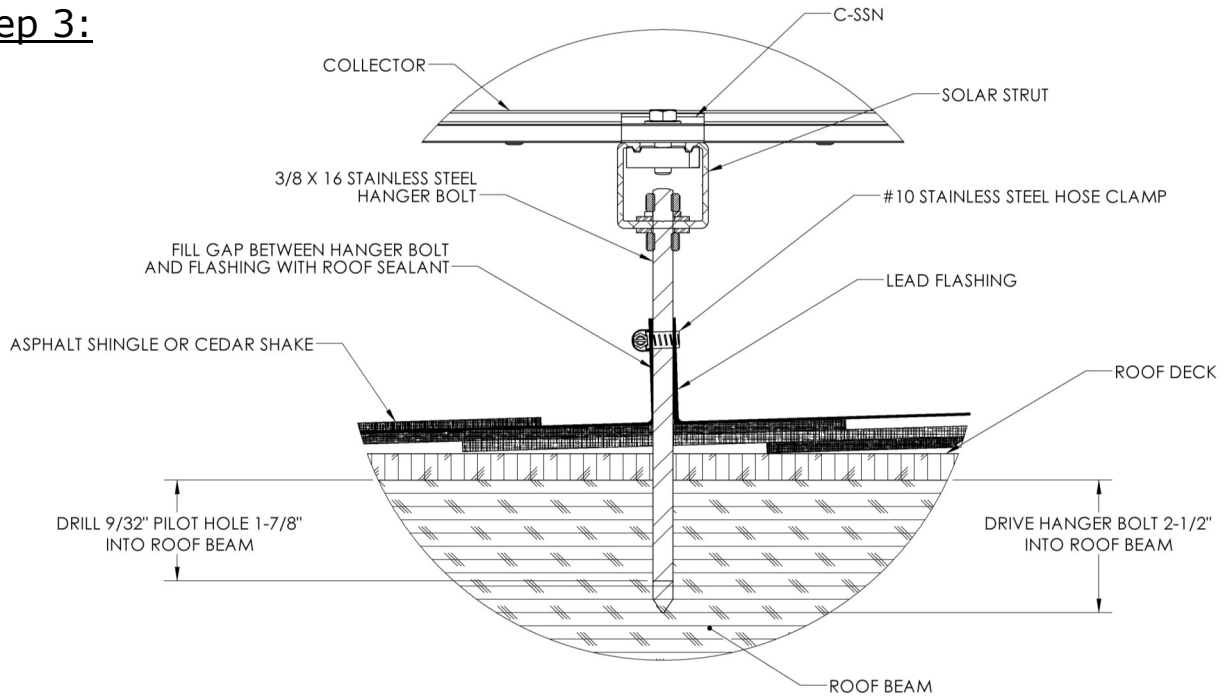
## Step 2:

- Layout Racking as shown in **Figure 2**
- Position 3 Solar Struts per **Installation Dimensions**
- Distance between Hanger Bolts should be no more than 32 inches see **Figure 3**. If distance between Roof Beams is larger than 16 inches then additional Hanger Bolts will be required.
- Mark Position of Hanger Bolts



**Figure 3**

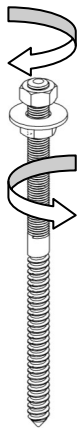
### Step 3:



**Figure 4**

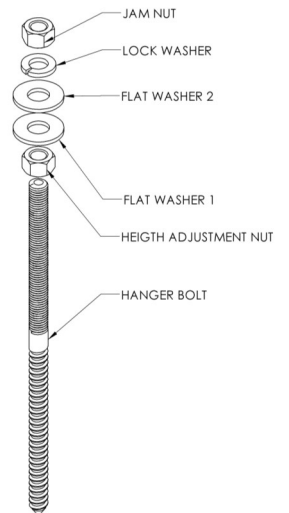
- Using 9/32" Drill Bit, Drill Pilot Hole 1-7/8" Deep into Roof Beam as shown in **Figure 4**
- Pilot Hole must be in center of Roof beam

### Step 4:



**Figure 5**

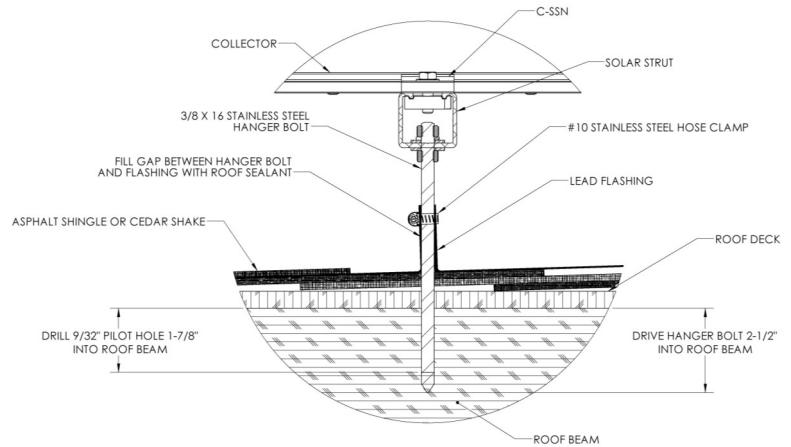
- Lock Height Adjustment Nut and Jam Nut together with a Flat Washer **Figure 5**
- Utilizing Jam Nut, Drive Hanger Bolt into Roof Beam 2-1/2 Inches
- Hanger Bolt and Hardware must be Stainless Steel



**Figure 6**

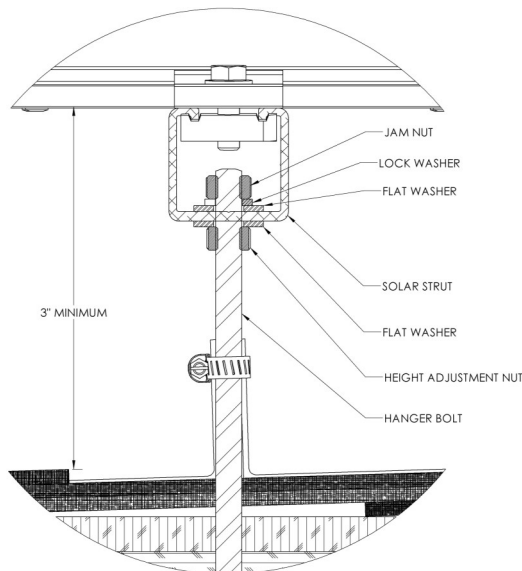
## Step 5:

- Remove Jam Nut and Flat Washer from Hanger Bolt
- Slip Lead Flashing Over hanger Bolt and slide base under shingle as shown in **Figure 7**
- Position Stainless Steel hose Clamp 1/2" from opening of Lead Flashing
- Tighten Stainless Steel Hose Clamp until Post of Flashing is sealed against hanger Bolt



**Figure 7**

## Step 6:

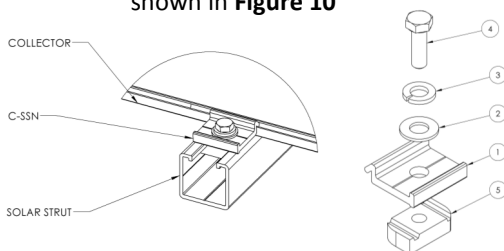


**Figure 8**

- Install Height Adjustment Nut and Flat Washer 1
- Place Solar Strut and position Adjustment Nut so that the Solar Strut is level and true.
- Confirm that the top of the Solar Strut is **NOT** less than 3 inches from the Roof Surface see **Figure 8**.
- Install Flat Washer 2, Lock Washer and Jam Nut
- Torque Jam Nut to Specification shown in **Figure 10** while securing Height Adjustment Nut

## Step 7:

- Install (6) C-SSN Mounting Assemblies as shown in **Figure 9** on Solar Strut
- Torque Fasteners to specification shown in **Figure 10**



**Figure 9**

### TORQUE SPECIFICATION:

1. Dry fastener, free of any lubricant and clean of chips and foreign matter
2. Specification  $\pm 10\%$  of total

FASTENER SIZE	IN*LB	FT*LB
3/8" X 16	230	19

**Figure 10**

**Note:** Do **NOT** over tighten Mounting Hardware to do so can damage fasteners