

RexRack



SunEarth RexRack Installation Manual



***SunEarth RexRack
Low Slope Roof Installation***

Thank you for purchasing SunEarth's RexRack System. The use of all stainless steel hardware and 6063-T6 structural aluminum make SunEarth's RexRack a simple, strong and durable solution for your racking needs. It accommodates tilt angles from 20° to 60° from horizontal and is compatible with all SunEarth solar collectors.

The RexRack components consist of 6063-T6 anodized aluminum mounting feet, support strut, rear leg as well as collectors clips and stainless steel fasteners that can withstand the harshest weather conditions. The components have factory machined holes to expedite field installation.

SunEarth's RexRack has been designed to allow installation on all roof types. Always maintain a tilt angle greater than 10° from horizontal.

RexRack should not be used in areas that experience positive panel loading (snow) greater than 60 psf or negative panel loading (wind) greater than 60 psf. If expected loading exceeds these values please contact SunEarth for other mounting options.

The use of mounting systems that do not conform to the materials and methods detailed in this or any of SunEarth's other published installation manuals, guidelines, and technical bulletins is not recommended and may void your collector warranty.

RexRack — Location

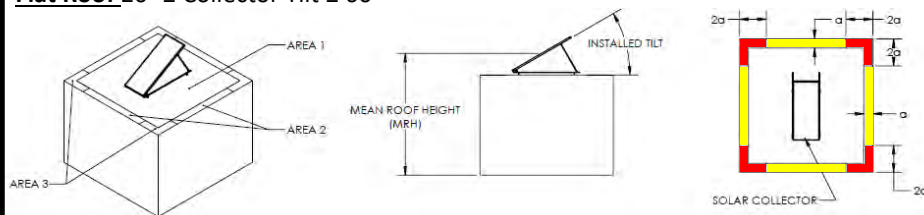


The optimal siting of the solar collector is facing true south. If this is not possible the annual performance will suffer very little if the collector is oriented no more than 45° east or west of true south.

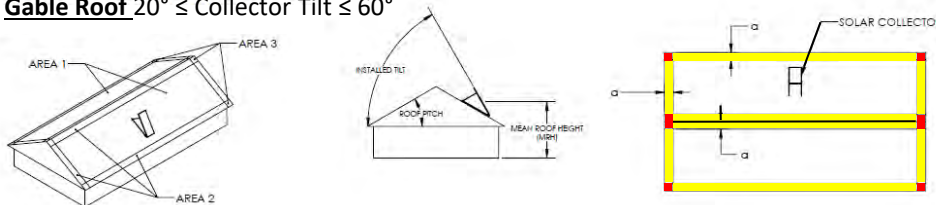
The solar collector should be placed on the roof in an area and orientation that minimizes wind and snow loading. Wind loads are highest near the edges and ridge of the roof. It is not advisable to install solar collectors in locations 2 (yellow) and 3 (red) on the plan view shown on the left.

Note: If either the roof length or width is less than 30 feet then “a” is equal to 3 feet. Otherwise dimension “a” is 10% of the least horizontal dimension “LHD” or 40% of the mean roof height “MRH” whichever is smaller, but not less than either 4% of the least horizontal dimension of the building or 3 feet as stated in Minimum Design Loads for Buildings and Other Structures, American Society of Civil Engineers (ASCE) 7-05.

Flat Roof $20^\circ \leq \text{Collector Tilt} \leq 60^\circ$



Gable Roof $20^\circ \leq \text{Collector Tilt} \leq 60^\circ$



Example: If the installation site has a roof that is 35 feet wide, 60 feet long and has a mean roof height of 30 feet.

$$10\% \text{ of "LHD"} = 0.10 \times 35 = 3.5$$

$$4\% \text{ of "LHD"} = 0.04 \times 35 = 1.4$$

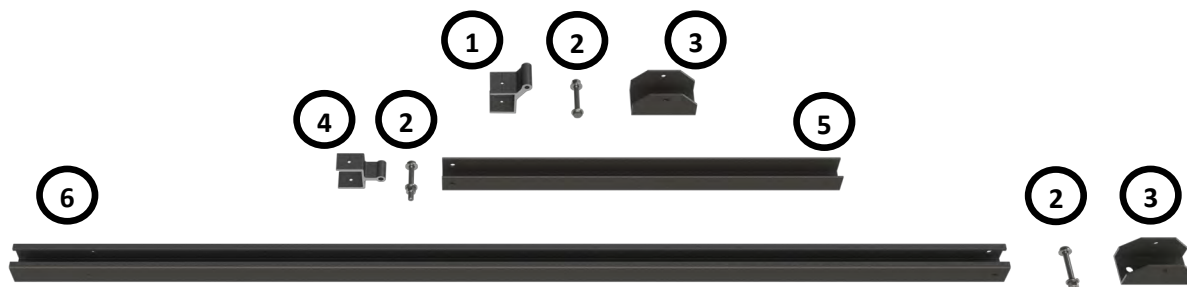
$$40\% \text{ of "MRH"} = 0.40 \times 30 = 12$$

a = 3.5 feet since $1.4 < 3 < \underline{3.5} < 12$

Therefore collectors should be installed at least 3.5 feet away from any roof peak or edge.

RexRack — Tilt Kit Components

Includes



Front Foot Assembly Part # MTG-FF-BA

	Qty.	Description
1	1 ea.	Front Hinge Bracket (Black Anodized Shown)
2	1 ea.	Fastener Assembly
3	1 ea.	Mounting Foot (Black Anodized Shown)

Table 1

Rear Telescoping Leg Assembly Part # MTG-RTL-2441/3865/5897/86122

	Qty.	Description
2	2ea.	Fastener Assembly
3	1 ea.	Mounting Foot (Black Anodized Shown)
4	1 ea.	Rear Hinge Bracket (Black Anodized Shown)
5	1 ea.	Rear Leg Slider (Black Anodized Shown)
6	1 ea.	Rear Leg (Black Anodized Shown)

Table 2

Verify that all components shown to the left have been received before proceeding with installation.

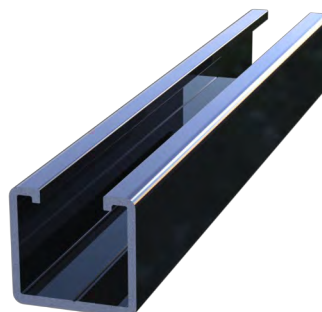
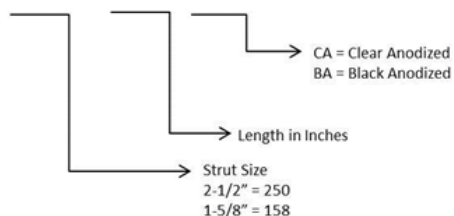
Note: Mounting Feet should never be attached directly to the roof surface without best practice flashing methods. Roof attachment products such as standoffs, hanger bolts, etc. should be implemented to allow proper flashing.

RexRack — Additional Components

Support Strut

Part Number Designation

10070-###-###-XX



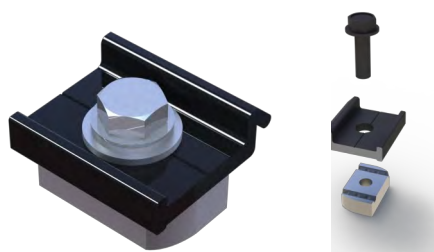
Example: 10070-158-240-BA = 1-5/8" Support Strut 20' in Length and Black Anodized

Support Strut Splice*Optional



C-SSN

4 Required per Collector



Self Drilling Screw



SunEarth Part #	Required Number of Screws
MTG-FF-XX	3
MTG-RTL-XXXX	5

Table 3

The Support Strut (10070-###-###-XX) is used to support the collectors in addition allowing for attachment of the Front Foot Assembly (MTG-FF-XX) and Rear Telescoping leg Assembly (MTG-RTL-2441/3865/5897/86122).

The Support Strut Splice (MTG-SPLICE-8) is used to extend the Support Strut for lengths greater than 27 feet or as required.

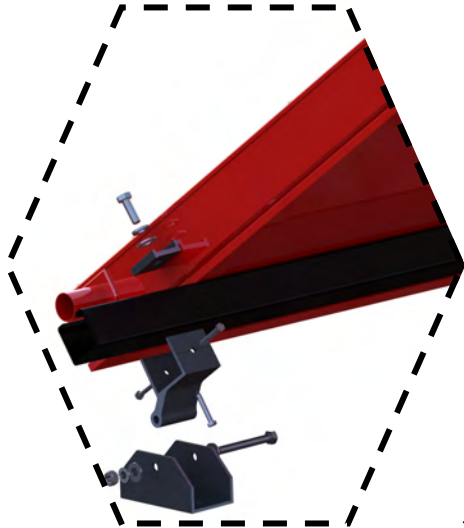
The Collector Mounting Assembly (C-SSN) attaches the collector to the RexRack, 4 required per collector.

The Self Drilling Screws (14BW12X3/4) are used to both fix the length of the rear telescoping legs and secure the hinges to the Support Strut. **See Table 3**

Note: Mounting Feet should never be attached directly to the roof surface without best practice flashing methods. Roof attachment products such as standoffs, hanger bolts, etc. should be implemented to allow proper flashing.

RexRack — Assembly Details

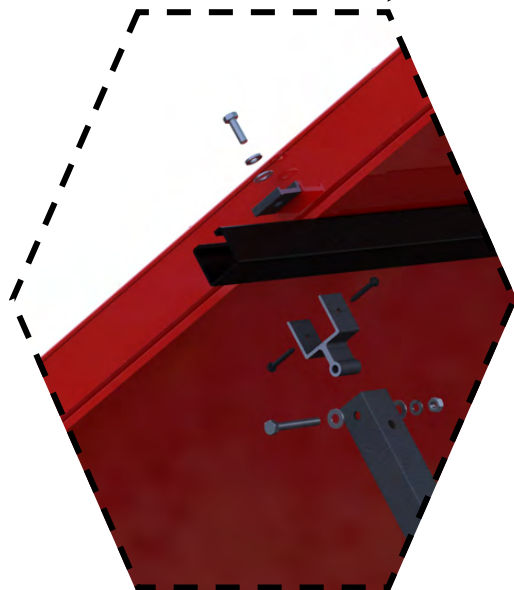
Front Foot



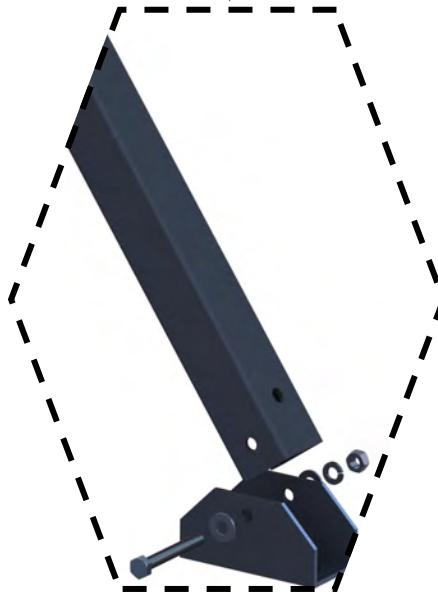
The Front Foot assembly consists of the Front Hinge Bracket nesting in the Front Foot and attachment with one (1) fastener assembly per front foot. The low support strut is then nested in the Front Hinge Bracket and secured with three (3) self-drilling screws as shown.

The Rear Foot sub-assembly consists of the Rear Telescoping Leg being nested in the Rear Foot and attachment with one (1) fastener assembly per foot.

Leg Attachment



Rear Foot



The Leg attachment consists of the Rear Hinge bracket nesting in the Rear Telescoping Leg and attachment with one (1) fastener assembly per leg. The upper support strut is then nested in the rear Hinge bracket and secured with two (2) self-drilling screws.

RexRack — Layout

Portrait Configuration Only



SunEarth's RexRack layout is outlined for the different RexRack models dependent on collector and desired tilt angle. Please reference appropriate sheet for your application.

SunEarth's RexRack is not an appropriate mounting solution for locations that experience positive panel loading (snow) greater than 60 psf or negative panel loading (wind) greater than 60 psf. If expected loading exceeds these values please contact SunEarth for other mounting options.

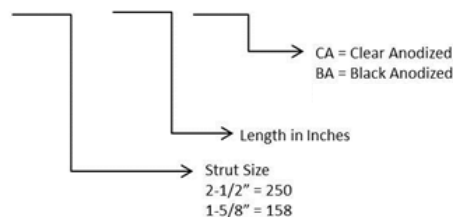
RexRack — Support Strut Length, Copper Coupling

Support Strut



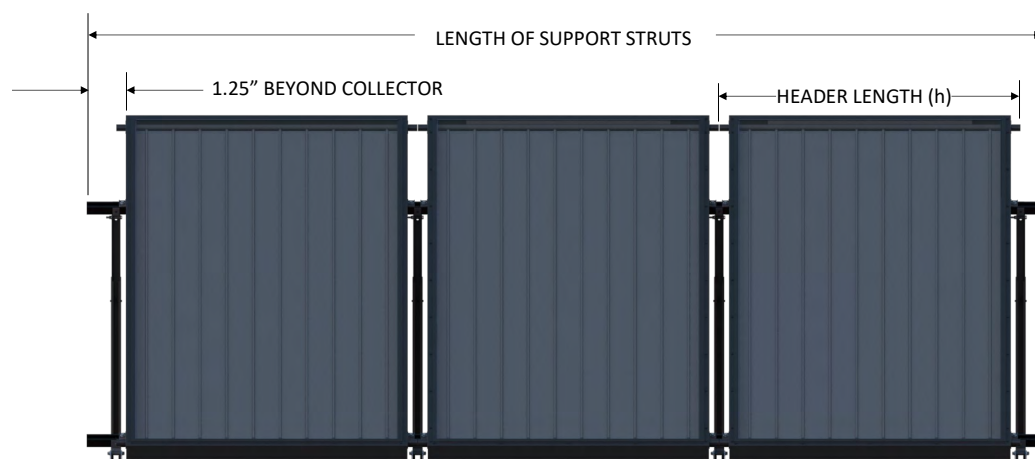
Part Number Designation

10070-###-###-XX



	Quantity					
SunEarth Collector #	1	2	3	4	5	6
XX-40-#.#	10070-158-052-XX	10070-158-104-XX	10070-158-158-XX	10070-158-244-XX	10070-158-288-XX	10070-158-324-XX
XX-32-#.#	10070-158-052-XX	10070-158-104-XX	10070-158-158-XX	10070-158-244-XX	10070-158-288-XX	10070-158-324-XX
XX-24-#.#	10070-158-052-XX	10070-158-082-XX	10070-158-120-XX	10070-158-158-XX	10070-158-204-XX	10070-158-244-XX
XX-21-#.#	10070-158-052-XX	10070-158-104-XX	10070-158-158-XX	10070-158-204-XX	10070-158-244-XX	10070-158-288-XX

Table 4



Calculate the required length of the Support Struts (10070-###-###-XX). This will be the widest feature of the row. The length of the support strut follows the formula outlined below.

$$\text{Support Strut Length} = (\# \text{ of Collectors}) * (h + 0.125") - (0.875")$$

SunEarth Collector #	Header Length (h)
XX-40-#.#	51.375"
XX-32-#.#	51.375"
XX-24-#.#	39.375"
XX-21-#.#	43.375"

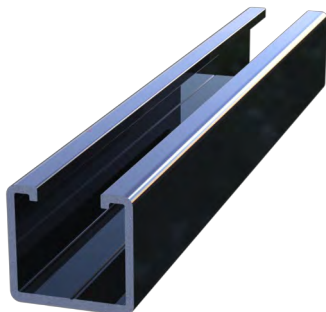
Example: Given (6) SunEarth EP-40 collectors. Required length of each Support Strut = $(6 * (51.375 + 0.125) - 0.875) = 309.875"$

In this example two options are available.

1. A single 27' piece of Support Strut (10070-158-324-BA).
2. Two pieces of 158" Support Strut (10070-158-158-BA) with a Support Strut Splice (MTG-SPLICE-8) to connect the 2 sections.

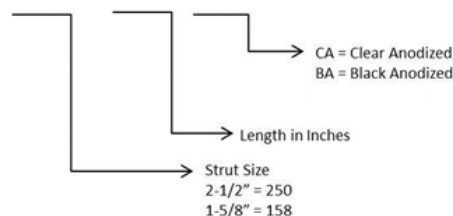
RexRack — Support Strut Length, Union

Support Strut



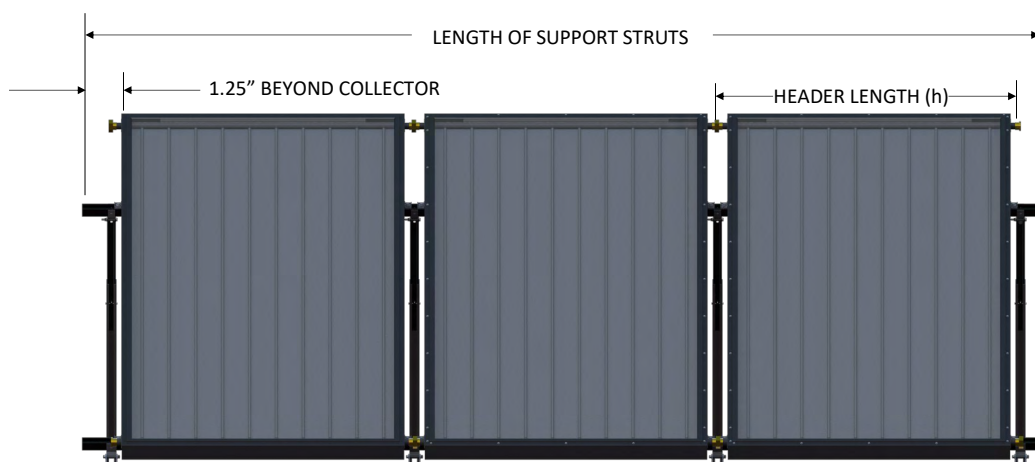
Part Number Designation

10070-###-###-XX



SunEarth Collector #	Quantity					
	1	2	3	4	5	6
TRB/EP-40-2-XX	10070-158-052-XX	10070-158-104-XX	10070-158-158-XX	10070-158-244-XX	10070-158-288-XX	10070-158-324-XX
TRB/EP-32-XX	10070-158-052-XX	10070-158-104-XX	10070-158-158-XX	10070-158-244-XX	10070-158-288-XX	10070-158-324-XX
EP-24-XX	10070-158-052-XX	10070-158-082-XX	10070-158-120-XX	10070-158-204-XX	10070-158-204-XX	10070-158-244-XX
EP-21-XX	10070-158-052-XX	10070-158-104-XX	10070-158-158-XX	10070-158-204-XX	10070-158-244-XX	10070-158-288-XX

Table 4



Calculate the required length of the Support Struts (10070-###-###-XX). This will be the widest feature of the row. The length of the support strut follows the formula outlined below.

(UNION-SET-1) Support Strut Length = (# of Collectors) * (h + 0.25") + (2.5")

(UNION-SET-1.5) Support Strut Length = (# of Collectors) * (h + 0.375") + (2.5")

SunEarth Collector #	Header Length (h)
TRB/EP-40-XX	51.375"
TRB/EP-32-XX	51.375"
EP-24-XX	39.75"
EP-21-XX	43.375"

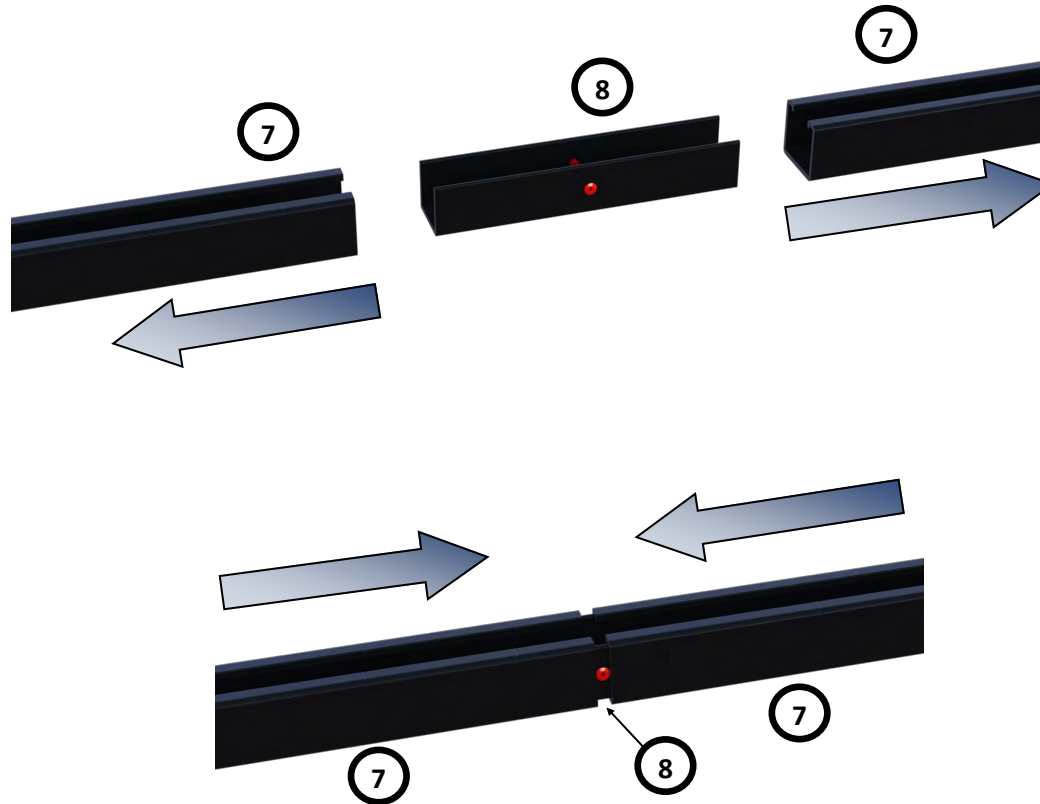
Example: Given **(6) SunEarth EP-40** collectors. Required length of each Support Strut = $(6 * (51.375 + .25) + 2.5) = 312.25"$

In this example two options are available.

1. A single 27' piece of Support Strut (10070-158-324-BA).
2. Two pieces of 158" Support Strut (10070-158-158-BA) with a Support Strut Splice (MTG-SPLICE-8) to connect the 2 sections.

RexRack — Splice Information

Support Strut Splice*Optional



	SunEarth Part #	Description
7	10070-###-###-XX	Support Strut
8	MTG-SPLICE-8	Support Strut Splice

Table 5

Support Strut is available in lengths up to 27'. If the calculated Support Strut length is longer than 27' then a Support Strut Splice must be implemented.

For 1-5/8" Support Strut the Support Strut Splice MTG-SPLICE-8 is used by sliding the splice into one Support Strut until touching the riveted stop, shown in **RED** for illustrative purposes. Then the other Support Strut is slid onto the splice until it touches the rivet stop.

The Support Strut Splice MTG-SPLICE-8 has been designed so that no additional fasteners are required while continuing to allow for thermal expansion and contraction of the Support Strut.

RexRack —EP/TRB/TR-40-2 Layout

SunEarth Collector Part # EP/TRB/TR-40-2



RexRack Layout Dimensions

Tilt Angle (B)					Rafter Spacing	
	Leg 90° from Collector		Leg 70° from Collector		Leg Spacing (E)	
	Leg Length (A)	Foot Spacing (C)	Leg Length (A)	Foot Spacing (D)	16"	24"
10	-	-	-	-	48	48
15	24.6	94.9	23.8	86.5	48	48
20	33.4	97.6	31.4	86.2	48	48
25	42.8	101.2	38.9	86.5	48	48
30	52.9	105.9	46.6	87.5	48	48
35	64.2	111.9	54.5	89.2	48	48
40	76.9	119.7	62.7	91.7	48	48
45	91.7	129.7	71.5	95.1	48	48
50	-	-	81.1	99.5	48	48
55	-	-	91.7	105.2	48	48
60	-	-	103.7	112.5	48	48

Table 6

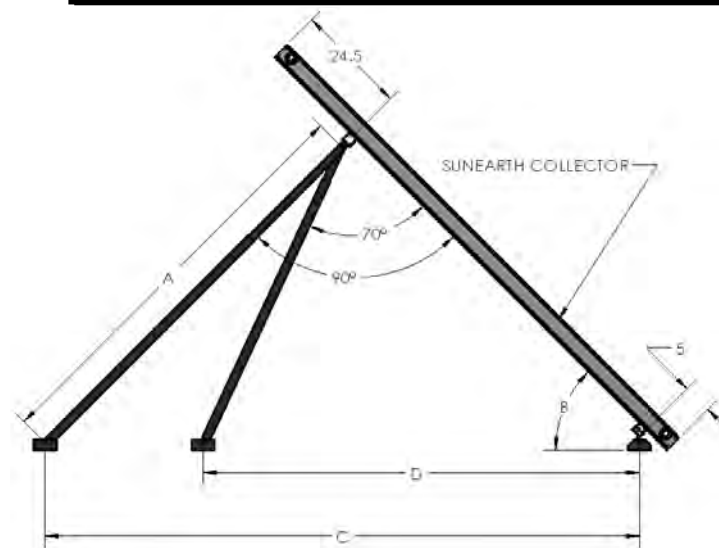
Rear Telescoping Leg Assembly Part # MTG-RTL-1828/2441/3865/5897/86122	
	Adjustment Range
MTG-RTL-1828-XX	18" to 28"
MTG-RTL-2441-XX	24" to 41"
MTG-RTL-3865-XX	38" to 65"
MTG-RTL-5897-XX	58" to 97"
MTG-RTL-86122-XX	86" to 122"

Table 7

Table 6 provides detail on the proper placement of the RexRack feet for SunEarth Collector(s).

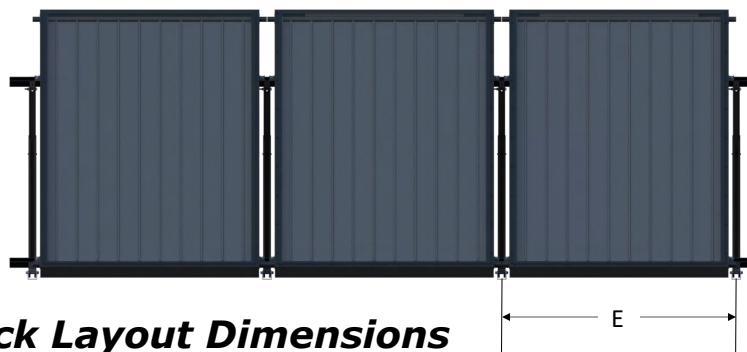
If the rafter spacing is not 16" or 24" on center, position the RexRack feet such that the collector "overhang" is less than 12". The maximum allowable Leg Spacing (E) is 60" on center for installations utilizing 1-5/8" Solar Strut.

Note: All tilt angles are taken for the racking only, relative to horizontal. Roof pitch must be added or subtracted as appropriate to calculate the collector tilt. A general rule of thumb is collector tilt should be equal to local latitude plus 10°.



RexRack — EP/TRB/TR-32 Layout

SunEarth Collector Part # EP/TRB/TR-32



RexRack Layout Dimensions

Tilt Angle (B)	Leg 90° from Collector		Leg 70° from Collector		Rafter Spacing	
	Leg Length (A)		Foot Spacing (C)		Leg Spacing (E)	
					16"	24"
10	-	-	-	-	48	48
15	19.4	75.1	18.8	68.4	48	48
20	26.4	77.2	24.8	68.1	48	48
25	33.8	80.0	30.8	68.4	48	48
30	41.9	83.7	36.8	69.2	48	48
35	50.8	88.5	43.1	70.5	48	48
40	60.8	94.6	49.6	72.5	48	48
45	72.5	102.5	56.6	75.2	48	48
50	86.4	112.8	64.1	78.7	48	48
55	-	-	72.5	83.2	48	48
60	-	-	82.0	88.9	48	48

Table 8

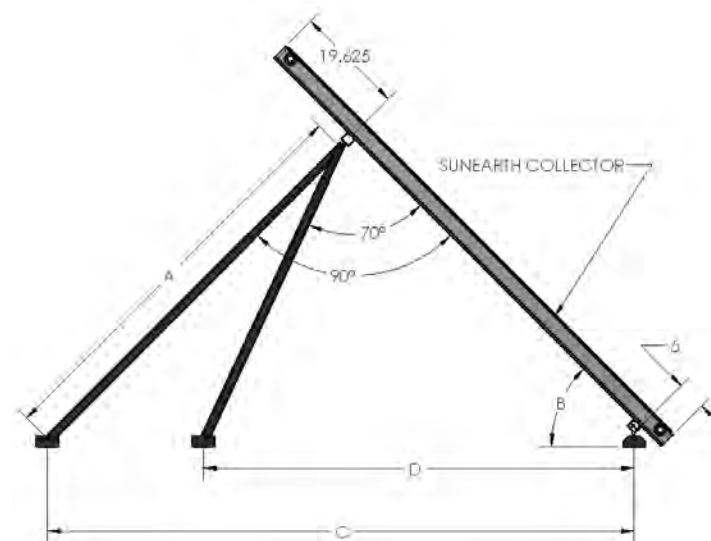
Rear Telescoping Leg Assembly Part # MTG-RTL-1828/2441/3865/5897/86122	
	Adjustment Range
MTG-RTL-1828-XX	18" to 28"
MTG-RTL-2441-XX	24" to 41"
MTG-RTL-3865-XX	38" to 65"
MTG-RTL-5897-XX	58" to 97"
MTG-RTL-86122-XX	86" to 122"

Table 7

Table 8 provides detail on the proper placement of the RexRack feet for SunEarth Collector(s).

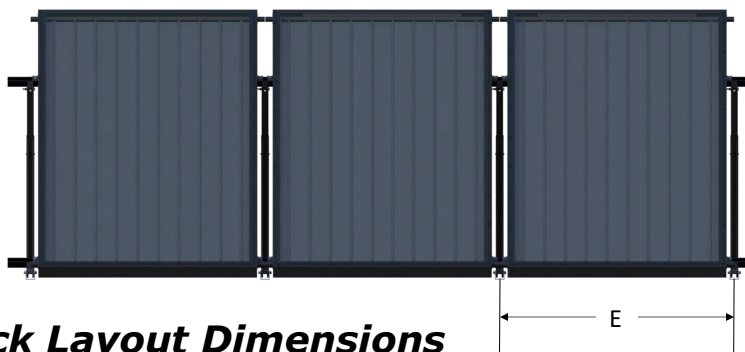
If the rafter spacing is not 16" or 24" on center, position the RexRack feet such that the collector "overhang" is less than 12". The maximum allowable Leg Spacing (E) is 60" on center for installations utilizing 1-5/8" Solar Strut.

Note: All tilt angles are taken for the racking only, relative to horizontal. Roof pitch must be added or subtracted as appropriate to calculate the collector tilt. A general rule of thumb is collector tilt should be equal to local latitude plus 10°.



RexRack —EP-24 Layout

SunEarth Collector Part # EP-24



RexRack Layout Dimensions

Tilt Angle (B)	Leg 90° from Collector		Leg 70° from Collector		Rafter Spacing	
	Leg Length (A)	Foot Spacing (C)	Leg Length (A)	Foot Spacing (D)	Leg Spacing (E)	
					16"	24"
10	-	-	-	-	48	48
15	19.4	75.1	18.8	68.4	48	48
20	26.4	77.2	24.8	68.1	48	48
25	33.8	80.0	30.8	68.4	48	48
30	41.9	83.7	36.8	69.2	48	48
35	50.8	88.5	43.1	70.5	48	48
40	60.8	94.6	49.6	72.5	48	48
45	72.5	102.5	56.6	75.2	48	48
50	86.4	112.8	64.1	78.7	48	48
55	-	-	72.5	83.2	48	48
60	-	-	82.0	88.9	48	48

Table 10

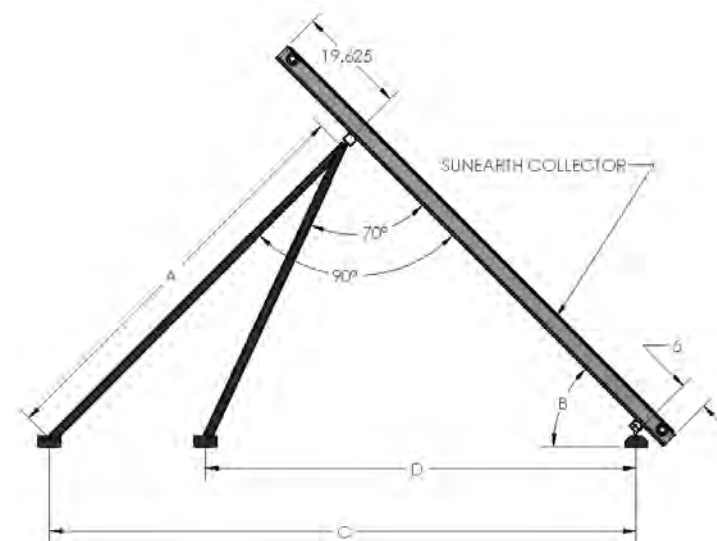
Rear Telescoping Leg Assembly Part # MTG-RTL-1828/2441/3865/5897/86122	
	Adjustment Range
MTG-RTL-1828-XX	18" to 28"
MTG-RTL-2441-XX	24" to 41"
MTG-RTL-3865-XX	38" to 65"
MTG-RTL-5897-XX	58" to 97"
MTG-RTL-86122-XX	86" to 122"

Table 7

Table 9 provides detail on the proper placement of the RexRack feet for SunEarth Collector(s).

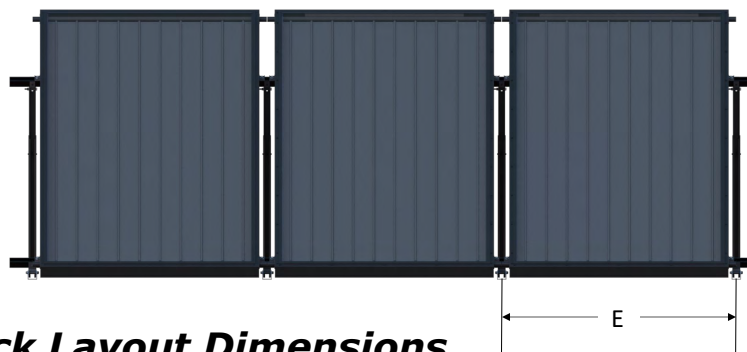
If the rafter spacing is not 16" or 24" on center, position the RexRack feet such that the collector "overhang" is less than 12". The maximum allowable Leg Spacing (E) is 60" on center for installations utilizing 1-5/8" Solar Strut.

Note: All tilt angles are taken for the racking only, relative to horizontal. Roof pitch must be added or subtracted as appropriate to calculate the collector tilt. A general rule of thumb is collector tilt should be equal to local latitude plus 10°.



RexRack —EP-21 Layout

SunEarth Collector Part #EP-21



RexRack Layout Dimensions

Tilt Angle (B)	Leg 90° from Collector		Leg 70° from Collector		Rafter Spacing	
	Leg Length (A)	Foot Spacing (C)	Leg Length (A)	Foot Spacing (D)	Leg Spacing (E)	
					16"	24"
10	-	-	-	-	48	48
15	-	-	-	-	48	48
20	18.3	53.4	17.2	47.2	48	48
25	23.4	55.4	21.3	47.4	48	48
30	29.0	58.0	25.5	47.9	48	48
35	35.2	61.3	29.8	48.8	48	48
40	42.1	65.5	34.3	50.2	48	48
45	50.2	71.0	39.2	52.0	48	48
50	59.8	78.1	44.4	54.5	48	48
55	71.7	87.5	50.2	57.6	48	48
60	86.9	100.4	56.8	61.6	48	48

Table 11

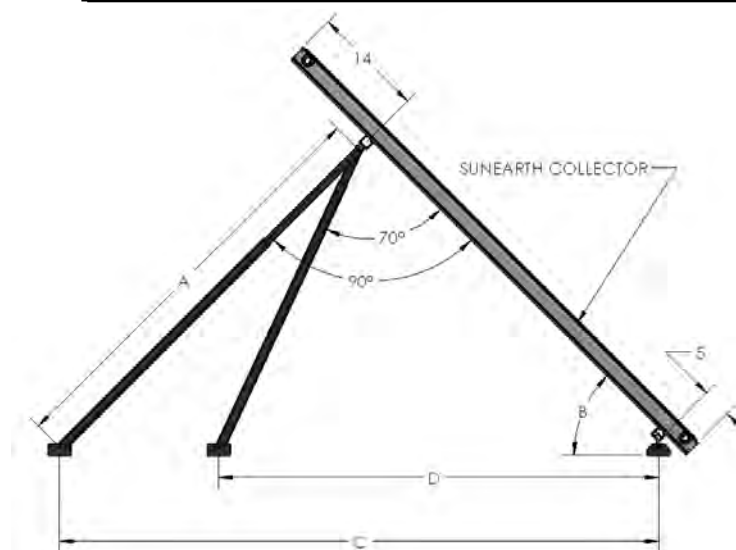
Rear Telescoping Leg Assembly Part # MTG-RTL-1828/2441/3865/5897/86122	
	Adjustment Range
MTG-RTL-1828-XX	18" to 28"
MTG-RTL-2441-XX	24" to 41"
MTG-RTL-3865-XX	38" to 65"
MTG-RTL-5897-XX	58" to 97"
MTG-RTL-86122-XX	86" to 122"

Table 7

Table 10 provides detail on the proper placement of the RexRack feet for SunEarth Collector(s).

If the rafter spacing is not 16" or 24" on center, position the RexRack feet such that the collector "overhang" is less than 12". The maximum allowable Leg Spacing (E) is 60" on center for installations utilizing 1-5/8" Solar Strut.

Note: All tilt angles are taken for the racking only, relative to horizontal. Roof pitch must be added or subtracted as appropriate to calculate the collector tilt. A general rule of thumb is collector tilt should be equal to local latitude plus 10°.



RexRack —TRB/TR-20 Layout

SunEarth Collector Part #TRB/TR-20



RexRack Layout Dimensions

Tilt Angle (B)	Leg 90° from Collector		Leg 70° from Collector		Rafter Spacing	
	Leg Length (A)	Foot Spacing (C)	Leg Length (A)	Foot Spacing (D)	Leg Spacing (E)	
					16"	24"
10	-	-	-	-	48	48
15	-	-	-	-	48	48
20	-	-	-	-	48	48
25	20.5	48.4	18.6	41.4	48	48
30	25.3	50.7	22.3	41.9	48	48
35	30.7	53.6	26.1	42.7	48	48
40	36.8	57.3	30.0	43.9	48	48
45	43.9	62.1	34.3	45.5	48	48
50	52.3	68.3	38.8	47.6	48	48
55	62.7	76.5	43.9	50.4	48	48
60	76.0	87.8	49.6	53.9	48	48

Table 11

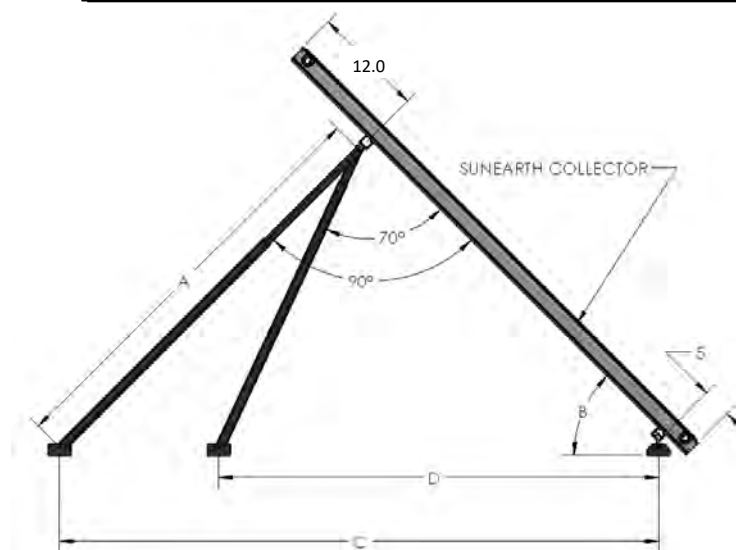
Rear Telescoping Leg Assembly Part # MTG-RTL-1828/2441/3865/5897/86122	
	Adjustment Range
MTG-RTL-1828-XX	18" to 28"
MTG-RTL-2441-XX	24" to 41"
MTG-RTL-3865-XX	38" to 65"
MTG-RTL-5897-XX	58" to 97"
MTG-RTL-86122-XX	86" to 122"

Table 7

Table 10 provides detail on the proper placement of the RexRack feet for SunEarth Collector(s).

If the rafter spacing is not 16" or 24" on center, position the RexRack feet such that the collector "overhang" is less than 12". The maximum allowable Leg Spacing (E) is 60" on center for installations utilizing 1-5/8" Solar Strut.

Note: All tilt angles are taken for the racking only, relative to horizontal. Roof pitch must be added or subtracted as appropriate to calculate the collector tilt. A general rule of thumb is collector tilt should be equal to local latitude plus 10°.



RexRack — Order Sheet

RexRack Parts list

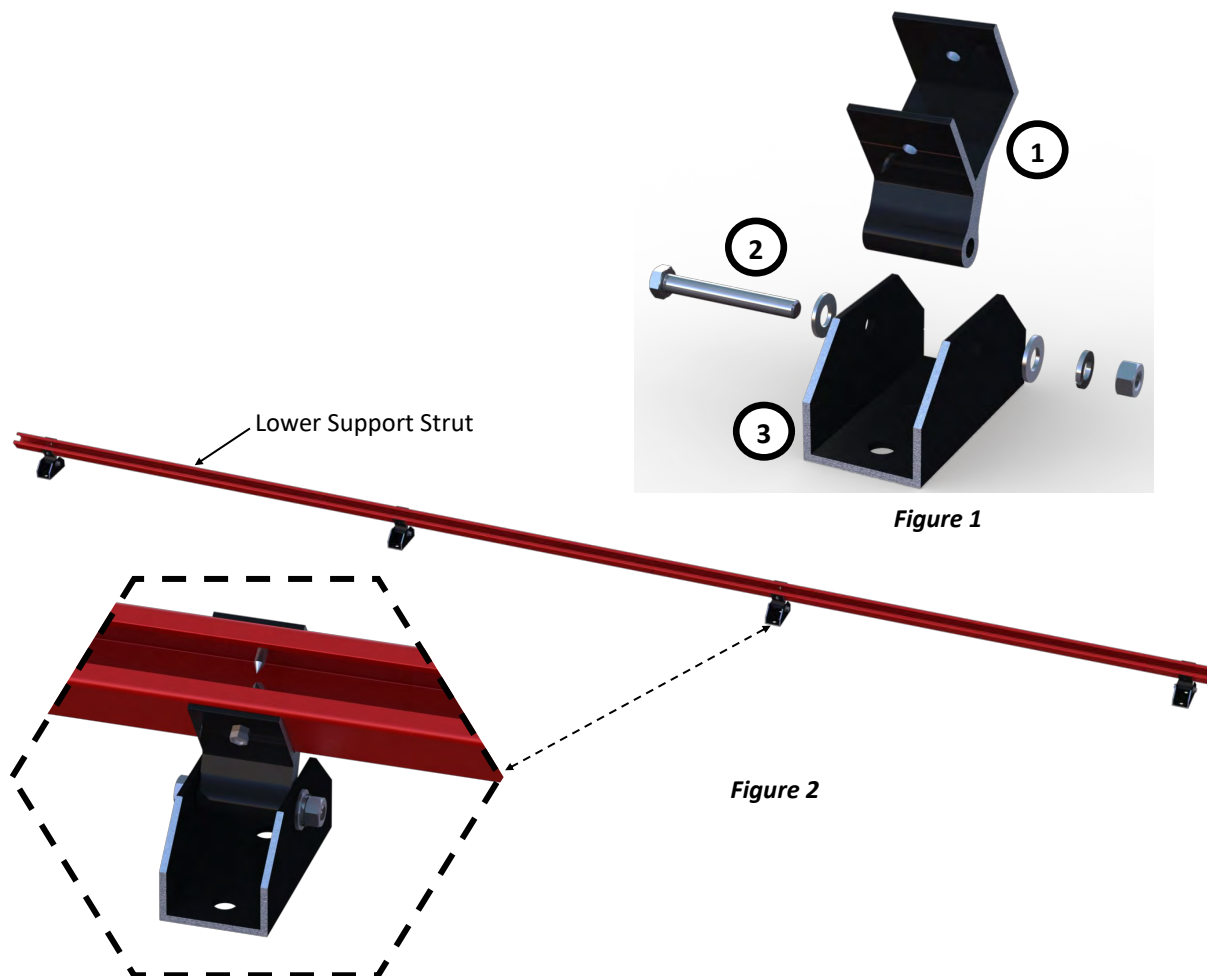
Item	Length	# of Parts	PN	Page	Notes:
Collector Mounting Assembly	N/A		C-SSN	4	
Support Strut			10070- - -	7	
Support Strut Splice*	N/A		MTG-Splice-8	8	
Rear Telescoping Leg Assembly			MTG-RTL- -	9-12	
Front Foot Assembly	N/A		MTG-FF-	9-12	
Self Drilling Screws	N/A		14BW12X3/4	4	

Example: Given **(6) SunEarth EP-40** collectors to be installed at a 45° tilt.

Sample RexRack Parts list

Item	Length	# of Parts	PN	Page	Notes:
Collector Mounting Assembly	N/A	24	C-SSN	4	4 Per Collector. 4*6=24
Support Strut	158"x2	4	10070-158-158-BA	7	311.5" per Support Strut. 2 Support Struts Required
Support Strut Splice*	N/A	2	MTG-Splice-8	8	Splices Required Since Each Support Strut Made of 2 Pieces
Rear Telescoping Leg Assembly	71.5"	7	MTG-RTL-5897-BA	9	Assumed Spacing of 48" OC
Front Foot Assembly	N/A	7	MTG-FF-BA	9	Quantity is equal to Rear Telescoping Leg
Self Drilling Screws	N/A	56	14BW12X3/4	4	3 per Front Foot Assembly, 5 Per Rear Telescoping Leg

RexRack — Front Mounting Foot Installation



1. Mark the location of the Front Mounting Feet on the main mounting surface as outlined on *Tables 6, 8, 9 & 10*.
2. Securely fasten the Front Mounting Feet to the main mounting surface using acceptable fastening methods for the mounting surface as well as local codes and conditions. ***Check that all Front Mounting Feet are level and co-planar in respect to each other by adding shims as needed.**
3. Insert the Front Hinge Bracket into the Front Mounting Foot with the opening of the channel facing away from the mounting surface. Insert Fastener Assembly thru Front Mounting Foot and Front Hinge Bracket. As shown in *Figure 1*.
4. Insert Lower Support Strut, shown in **RED** for illustrative purposes, into the Front Hinge Bracket and secure with three (3) Self Drilling Screws per Mounting Foot as shown in *Figure 2*.

Front Foot Assembly Part # MTG-FF-BA		
	Qty.	Description
1	1 ea.	Front Hinge Bracket (Black Anodized Shown)
2	1 ea.	Fastener Assembly
3	1 ea.	Mounting Foot (Black Anodized Shown)

Table 1

Note: Always follow all local building codes, ordinances and regulations when creating roof penetrations as well as standard roofing trade practices.

RexRack — Rear Telescoping Leg Assembly Installation

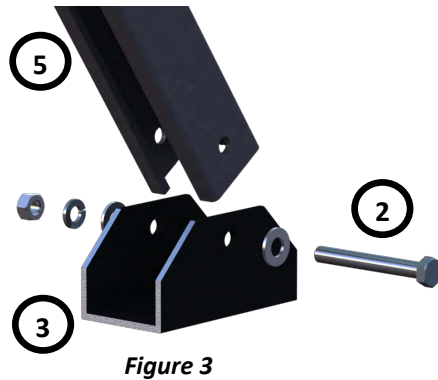


Figure 3

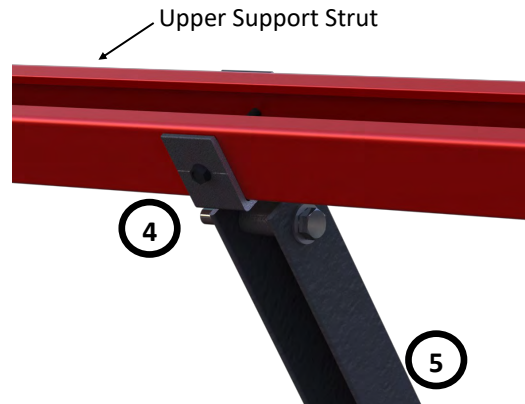


Figure 4

1. Mark the location of the Rear Mounting Feet on the main mounting surface as outlined on *Tables 6, 8, 9 & 10*.
2. Securely fasten the Rear Mounting Feet to the main mounting surface using acceptable fastening methods for the mounting surface as well as local codes and conditions.
3. Position the Rear Telescoping Leg Assembly on the Rear Mounting Foot with the opening of the channel facing the front foot. Insert Fastener Assembly thru the Rear Mounting Foot and the Rear Telescoping Leg Assembly. As shown in *Figure 3*.
4. Insert Upper Support Strut, shown in **RED**, into the Rear Hinge Bracket and secure with two (2) Self Drilling Screws per Mounting Foot as shown in *Figure 4*.

Note: Always follow all local building codes, ordinances and regulations when creating roof penetrations as well as standard roofing trade practices.

Rear Telescoping Leg Assembly Part # MTG-RTL-2441/3865/5897/86122		
	Qty.	Description
2	2ea.	Fastener Assembly
3	1 ea.	Mounting Foot (Black Anodized Shown)
4	1 ea.	Rear Hinge Bracket (Black Anodized Shown)
5	1 ea.	Rear Leg Slider (Black Anodized Shown)
6	1 ea.	Rear Leg (Black Anodized Shown)

Table 2

RexRack — Rear Telescoping Leg Assembly Installation

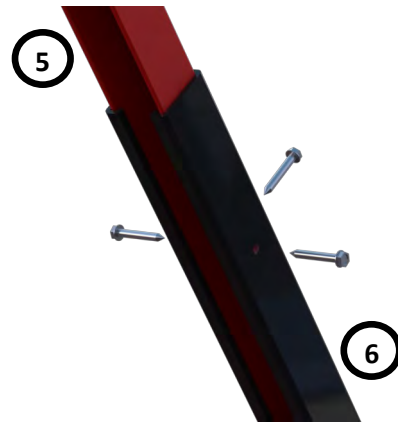


Figure 5

5. Set the Rear Telescoping Leg Assembly length as outlined in *Tables 6, 8, 9 & 10*.
6. Secure every Rear Leg Slider, shown in **RED**, to every Rear Leg with three (3) Self Drilling Screws as shown in *Figure 5*.
7. Swing Rear Telescoping Leg Assemblies with Upper Support backwards and lay flat on mounting surface as shown in *Figure 6*.

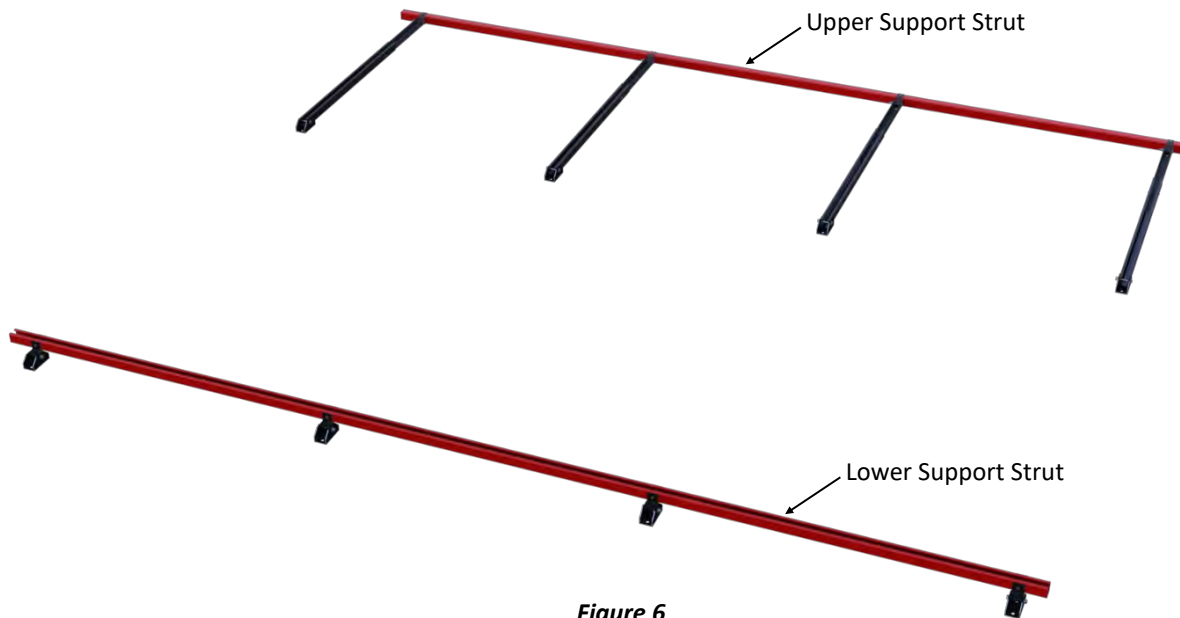


Figure 6

Note: Always follow all local building codes, ordinances and regulations when creating roof penetrations as well as standard roofing trade practices.

RexRack — First Collector Placement

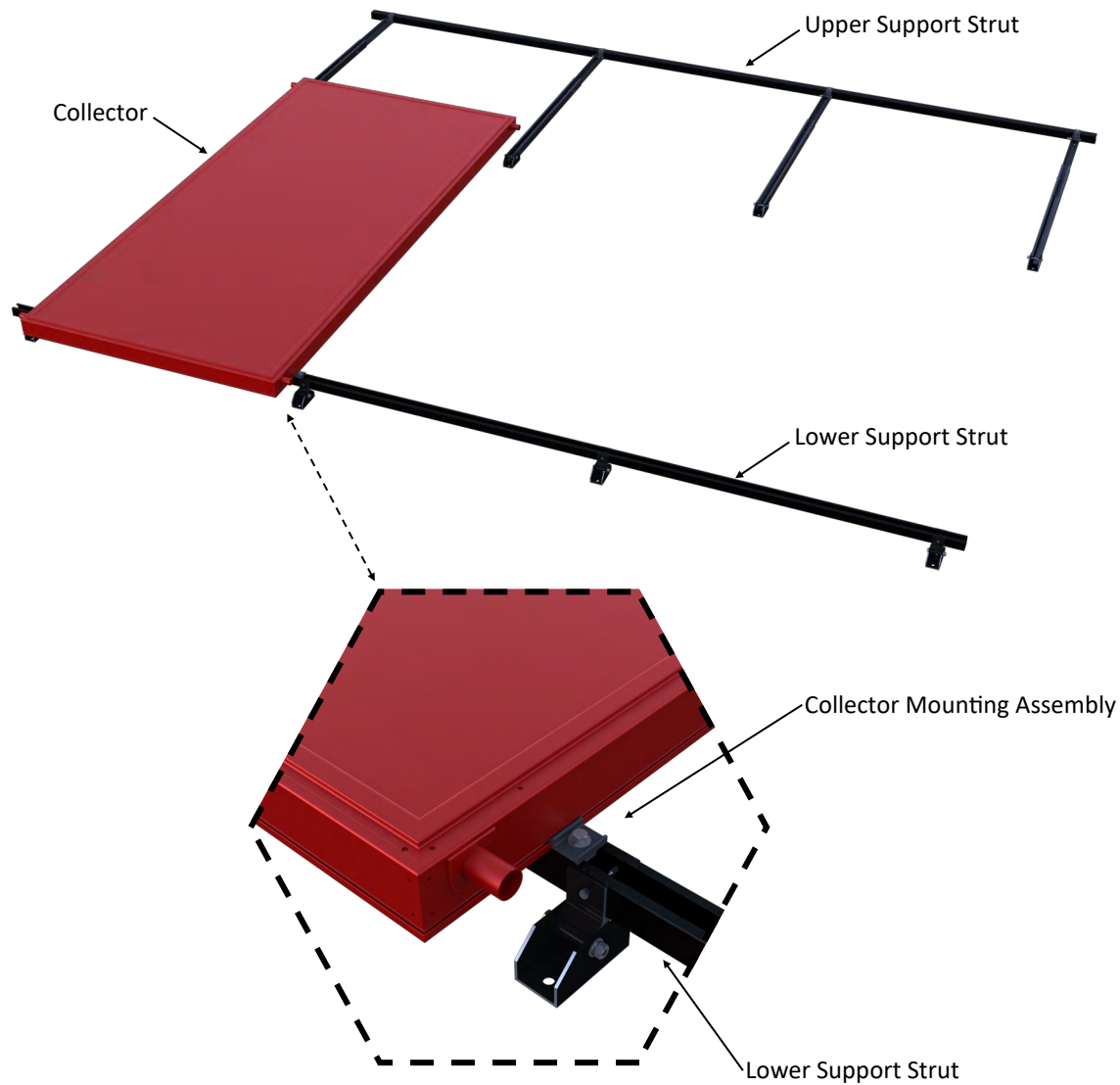


Figure 5

1. Place the first Collector face up on the Lower Support Strut with the lower end of the Collector overhung 5" beyond the Lower Support Strut. As shown in *Figure 5*.
2. Position Collector inboard with the Collectors long end a minimum of 1.5" from the edge of the Lower Support Strut.
3. Install two (2) C-SSN Collector Mounting Assemblies on the Lower Support Strut and torque to 19 ft*lbs (26 N*m).

RexRack — First Collector Installation

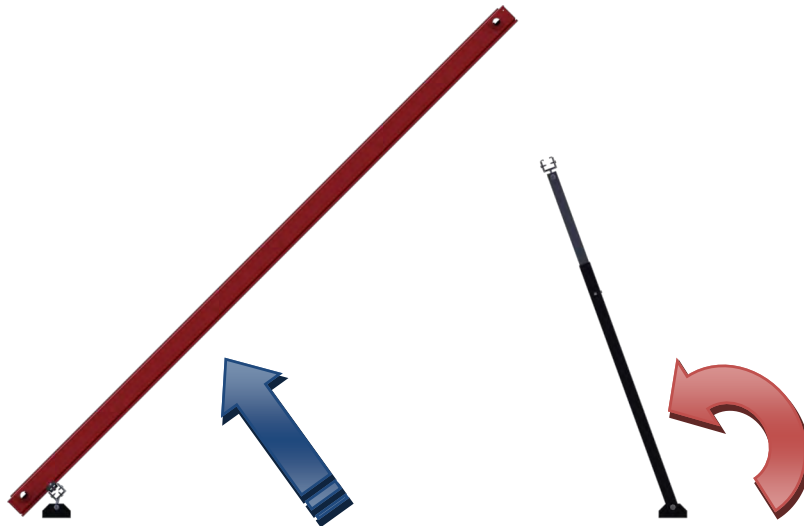


Figure 6

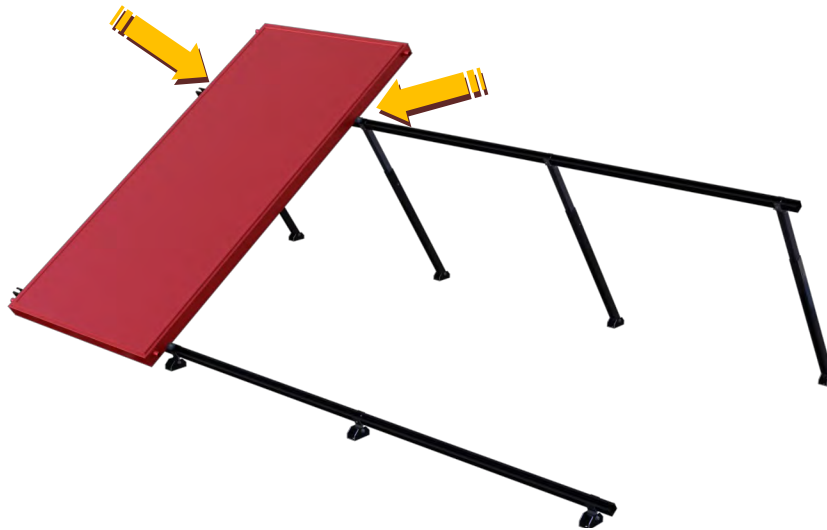
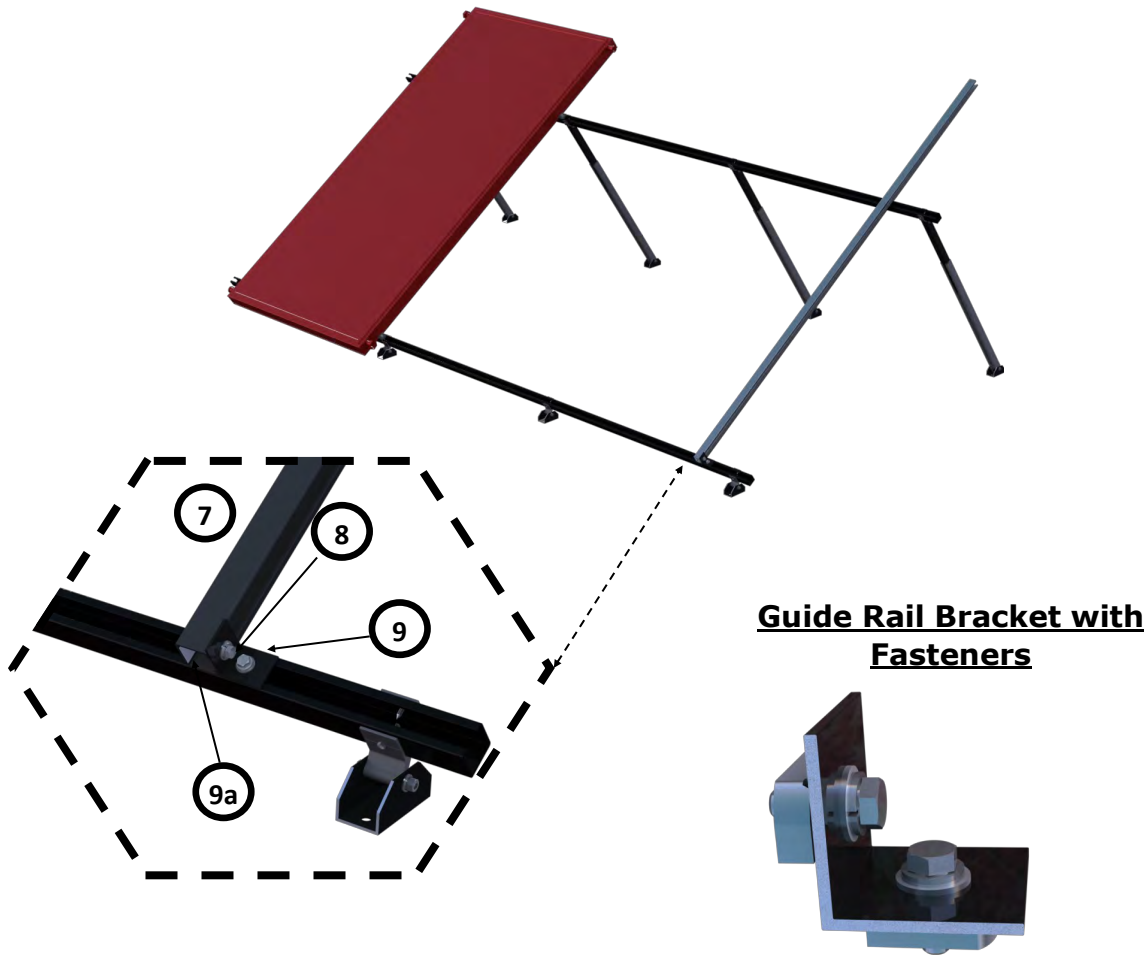


Figure 7

4. Raise Collector.
5. Swing rear leg assembly and position the Upper Support Strut so that it is 20% inboard of the Collectors top edge. As shown in *Figure 6*.
6. Install two (2) C-SSN Collector Mounting Assemblies on the Upper Support Strut and torque to 19 ft*lbs (26 N*m). As shown in *Figure 7*.

RexRack — Guide Rail Placement



Guide Rail Bracket with Fasteners

1. Attach Rail Brackets to the Rail, using the scale integral to the Rail, at the appropriate Collector Support Strut spacing (x) and torque to 19 ft*lbs (26 N*m).

SunEarth Collector #	Support Strut Spacing (x)
EC/EP/SB-40-XX	91.75"
EC/EP/SB-32-XX	72.5"
EC/EP/SB-24-XX	72.5"
EC/EP-21-XX	50.125"

2. Place Rail Brackets on Upper and Lower Supports Struts and torque to 19 ft*lbs (26 N*m).
3. Check that Upper and Lower Support Struts are co-planar. If adjustments are necessary the three (3) Self Drilling Screws can be removed from the telescoping legs. Following which the legs can be adjusted and the three (3) Self Drilling Screws re-installed.

Guide Rail Assembly Part # MTG-TS-BA		
	Qty.	Description
7	1 ea.	Rail (Black Anodized Shown)
8	4 ea.	SSN-38 Fastener Assembly
9	2 ea.	Rail Bracket (Black Anodized Shown)
9a	1 ea.	Integral Scale

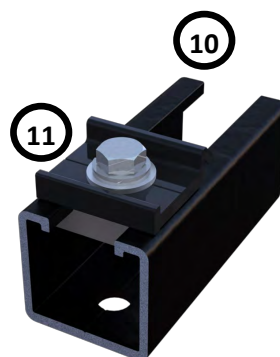
Table 3

RexRack — Collector Helping Hand Placement



1. Install two (2) Helping Hands on Collector per *Table 4*, shown in **RED**. Torque to 19 ft*lbs (26 N*m).
2. Place Collector on Rack. Allowing Collector to be supported by Helping Hands.

Helping Hand



SunEarth Collector #	Helping Hand Placement from Upper End of Collector
TRB/TR/EP-40-2-XX	22.75"
TRB/TR/EP-32-XX	18"
TRB/TR-26-XX	14.25"
EP-24-XX	18"
EP-21-XX	13.625"
TRB/TR-20-XX	10.25"

Table 4

Helping Hand Part # MTG-HH-BA		
	Qty.	Description
10	2 ea.	SolarStrut (Black Anodized Shown)
11	2 ea.	C-SSN Collector Mounting Assembly

Table 5

RexRack — Additional Collector Installation



Figure 8



Figure 9

Copper Coupling Method

1. Slip two (2) copper couplings on the Collector headers.
2. Slide Collector into position while aligning header couplings. As shown in *Figure 8*.
3. With the Collector in position install four (4) C-SSN, Collector Mounting Assemblies. Torque to 19 ft*lbs (26 N*m).
4. Sweat Copper Couplings.
5. Remove Helping Hands and install on the next Collector.
6. Follow steps 1-5 until the final Collector, shown in **RED**, is installed prior to which the Guide Rail is removed. As shown in *Figure 9*.

RexRack — Additional Collector Installation

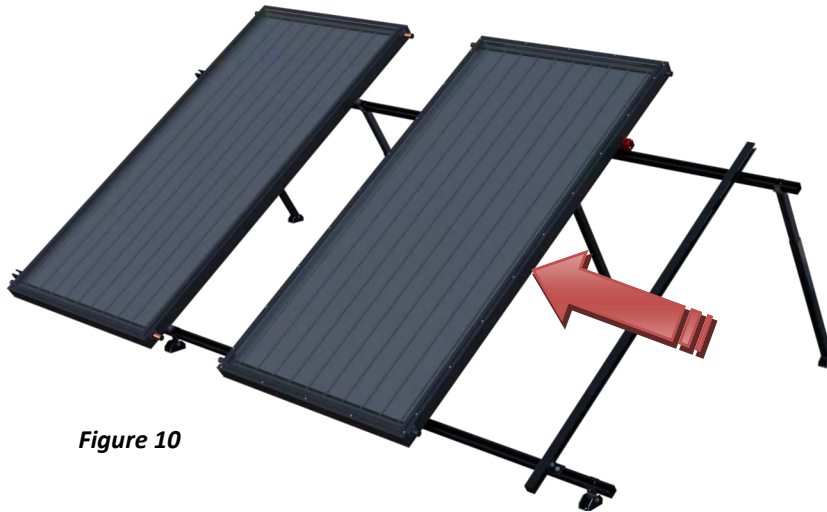


Figure 10



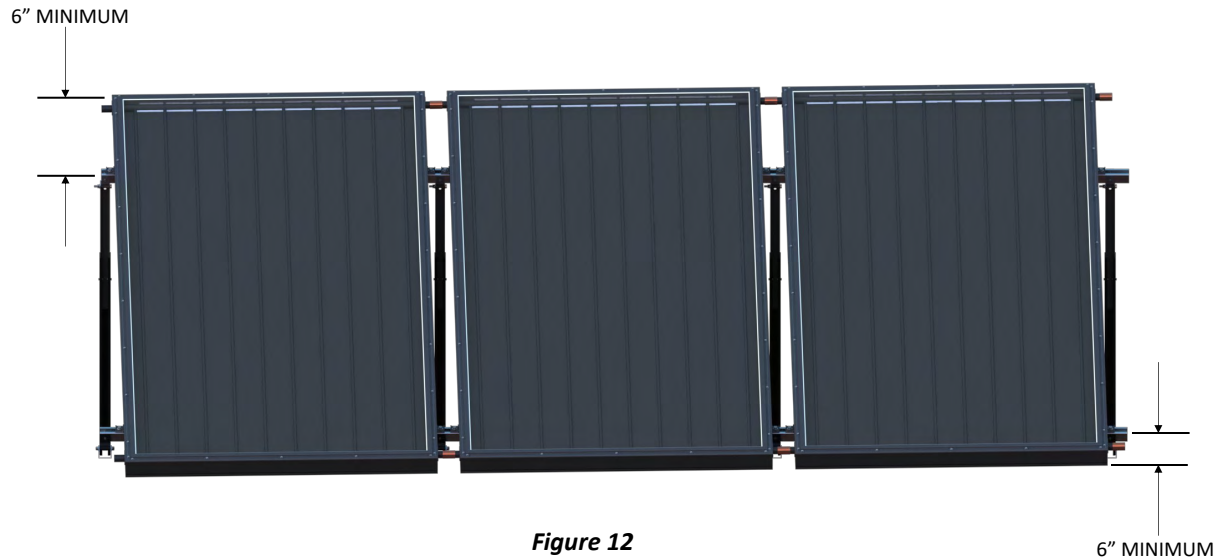
Figure 11

Union Method

1. Slide Collector into position while aligning header Unions. As shown in *Figure 10*.
2. Insert O-Rings and tighten Unions ensuring that O-Ring is not damaged.*
3. With the Collector in position install four (4) C-SSN, Collector Mounting Assemblies. Torque to 19 ft*lbs (26 N*m).
4. Remove Helping Hands and install on the next Collector.
5. Follow steps 1-5 until the final Collector, shown in **RED**, is installed prior to which the Guide Rail is removed. As shown in *Figure 11*.

***Note:** Always use a pipe wrench to back up the Union when tightening in order to avoid damaging the header pipe and internal riser tubes.

RexRack — Drainback Considerations



For drainback systems Collectors can be angled in order to ensure the Collectors are fully drained when the pump stops. As shown in *Figure 12*.

When angling Collectors a minimum distance of 6" must be maintained between the Collector ends and the Support Struts.

In cases where many collectors are to be placed in a single row the skewing of the collectors can be mirrored to create a chevron pattern. As shown in *Figure 13*.



RexRack — Seismic Considerations



Figure 14

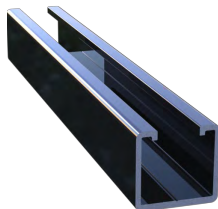
For installations where Seismic forces must be considered then the addition of a diagonal brace is required.. Shown as **RED** in *Figure 14*.

The brace consists of SolarStrut affixed to the RexRack Rear Telescoping Legs utilizing SSN-38 hardware assemblies.

One (1) diagonal brace is required for every six (6) Collectors in a continuous row.

SolarStrut

10070-###-###-XX

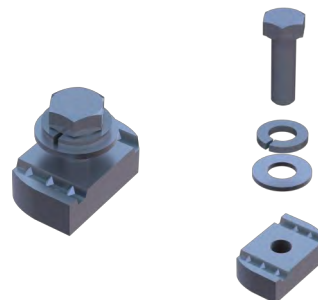


CA = Clear Anodized
BA = Black Anodized
MF = Mill Finish

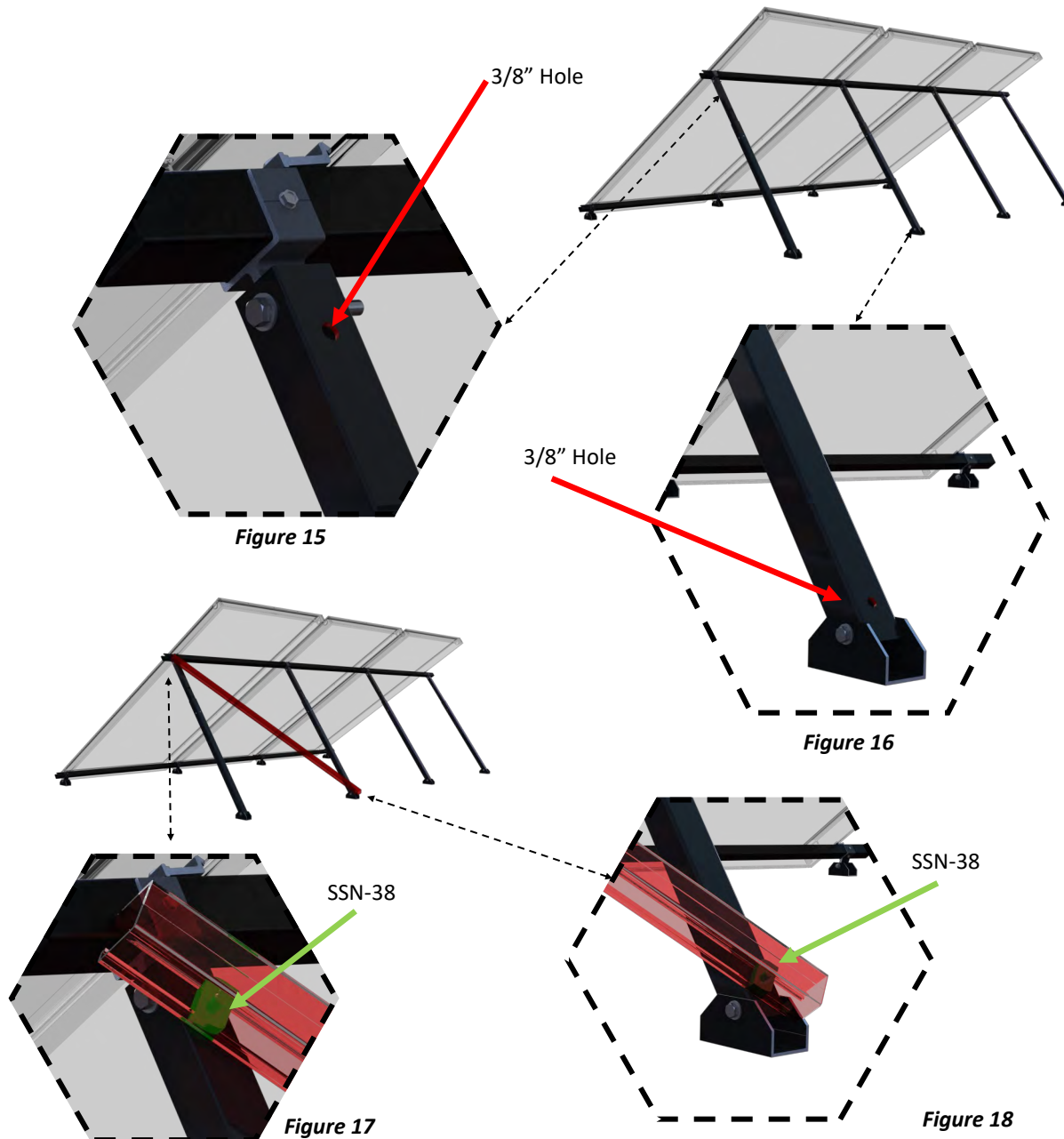
Length in inches

Strut Size
2-1/2" = 250
1-5/8" = 158

SSN-38



RexRack — Diagonal Brace Installation



1. Drill 3/8" hole 1-1/2" from the top of the Rear Telescoping Leg Slider. Shown as **RED** in *Figure 15*.
2. Drill 3/8" hole 1-1/2" from the bottom of the adjacent Rear Telescoping Leg. Shown as **RED** in *Figure 16*.
3. Install SSN-38 hardware assemblies in the drilled holes. Shown as **GREEN** in *Figures 17 & 18*.
4. Slide SolarStrut onto SSN-38 hardware assemblies.
5. Torque SSN-38 hardware assemblies to 19 ft*lbs (26 N*m).

RexRack — Warranty



SUNEARTH INC.
Quality Solar Energy Products

LIMITED PRODUCT WARRANTY

This warranty only applies to the following SunEarth products (hereinafter SunEarth Products):

MOUNTING HARDWARE: SolarStrut, SunEarth Mounting Clips, Flush Mount Foot
TILT RACKS: RexRack, Universal Tilt Rack, Landscape Rack

Under conditions of normal use and service the above SunEarth Mounting Structures are warranted to the original user at the original installation site to be free from substantial defects in material and workmanship of the structural components of the products for a period of **10 years** (Structural Warranty Period) except of the anodized finish, which will be free from visible peeling, cracking or chalking under normal atmospheric conditions for a period of **3 years** (Finish Warranty Period) pursuant to the exclusions detailed in this written warranty statement. The warranty period for both structural and finish warranties shall be from the date of sale to the end user. SunEarth's liability for these SunEarth Products shall be limited to repairing or replacing at SunEarth's sole option, without charge, F.O.B. SunEarth's factory or an authorized SunEarth distributor or service center. SunEarth will not be liable for any costs of transportation, inspection, removal, reinstallation, or any other labor or freight charges that may arise in connection with a warranty claim.

THIS WARRANTY DOES NOT APPLY

This warranty **does not apply** to the following: (1) conditions resulting from a failed component or part that is not part of the above listed SunEarth Products; (2) to conditions resulting from misuse, abuse, neglect, accident, alteration or modification by anyone other than SunEarth; (3) to damage occurring during shipping, handling, storage or installation of the SunEarth Products; (4) to damage caused by installation methods, including mounting, that do not conform to relevant national, state or local codes and ordinances, good industry practices, or to current applicable SunEarth manuals, diagrams, technical bulletins, or written installation instructions; (5) to cosmetic discoloration of the product; (6) to rust or corrosion of the components; (7) to installations in corrosive atmospheric conditions; (8) to foreign residue deposited on the finish; (9) to conditions resulting from floods, earthquakes, winds, fire, lightning, snow, ice, hail or circumstances beyond SunEarth's control; (10) to any cause unrelated to materials and workmanship.

The Finish Warranty is VOID if the practices specified by AAMA 609 & 610-02 – "Cleaning and Maintenance for Architecturally Finished Aluminum" (www.aamanet.org) are not followed by Purchaser for SunEarth's aluminum based products.

The warranty does not cover any defect that has not been reported in writing to SunEarth within ten (10) days after discovery of such defect.

If one of the above SunEarth Products is purchased outside the United States certain conditions of this warranty may **NOT** apply. Please contact your local SunEarth distributor or dealer for details.

LIMITED WARRANTY

EXCEPT AS EXPRESSLY PROVIDED IN THIS WARRANTY, THE ABOVE SUNEARTH PRODUCTS ARE PROVIDED WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR ANY WARRANTY OR NON-INFRINGEMENT. SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

LIMITATIONS OF REMEDIES

IN NO EVENT SHALL SUNEARTH BE LIABLE FOR ANY DAMAGES FOR LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, ARISING OUT OF THE USE OR INABILITY TO USE THE ABOVE SUNEARTH PRODUCTS, OR FOR ANY CLAIM BY A THIRD PARTY. SOME STATES DO NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

EXCLUSIVE AGREEMENT

THIS WARRANTY CONSTITUTES THE ENTIRE, COMPLETE, FINAL, AND EXCLUSIVE AGREEMENT FOR THE SUNEARTH PRODUCTS LISTED ABOVE. THIS WARRANTY SUPERSEDES ANY PROPOSAL, AGREEMENT, OR REPRESENTATION, OR ANY OTHER COMMUNICATION, EITHER WRITTEN OR ORAL, MADE BETWEEN SUNEARTH AND SUNEARTH'S DISTRIBUTORS OR DEALERS, OR BETWEEN SUNEARTH AND THE END CONSUMER.

TO MAKE A CLAIM

To obtain service under this warranty, the product in question must be returned to the distributor or dealer of SunEarth products nearest you, or an authorized SunEarth service center. Each claim must be accompanied by documentation providing the following:

- 1) Owner's name, address, email address, and phone number
- 2) Installation contractor's name, email address, and phone number
- 3) Original sales receipt
- 4) Product model number(s)
- 5) Date of installation
- 6) Date of failure
- 7) Reason for failure
- 8) Pictures of the suspected manufacturing defect – digital pictures of the suspected manufacturing defect also need to be submitted

If you have any warranty questions, contact your installation contractor or SunEarth at (909) 434-3100.