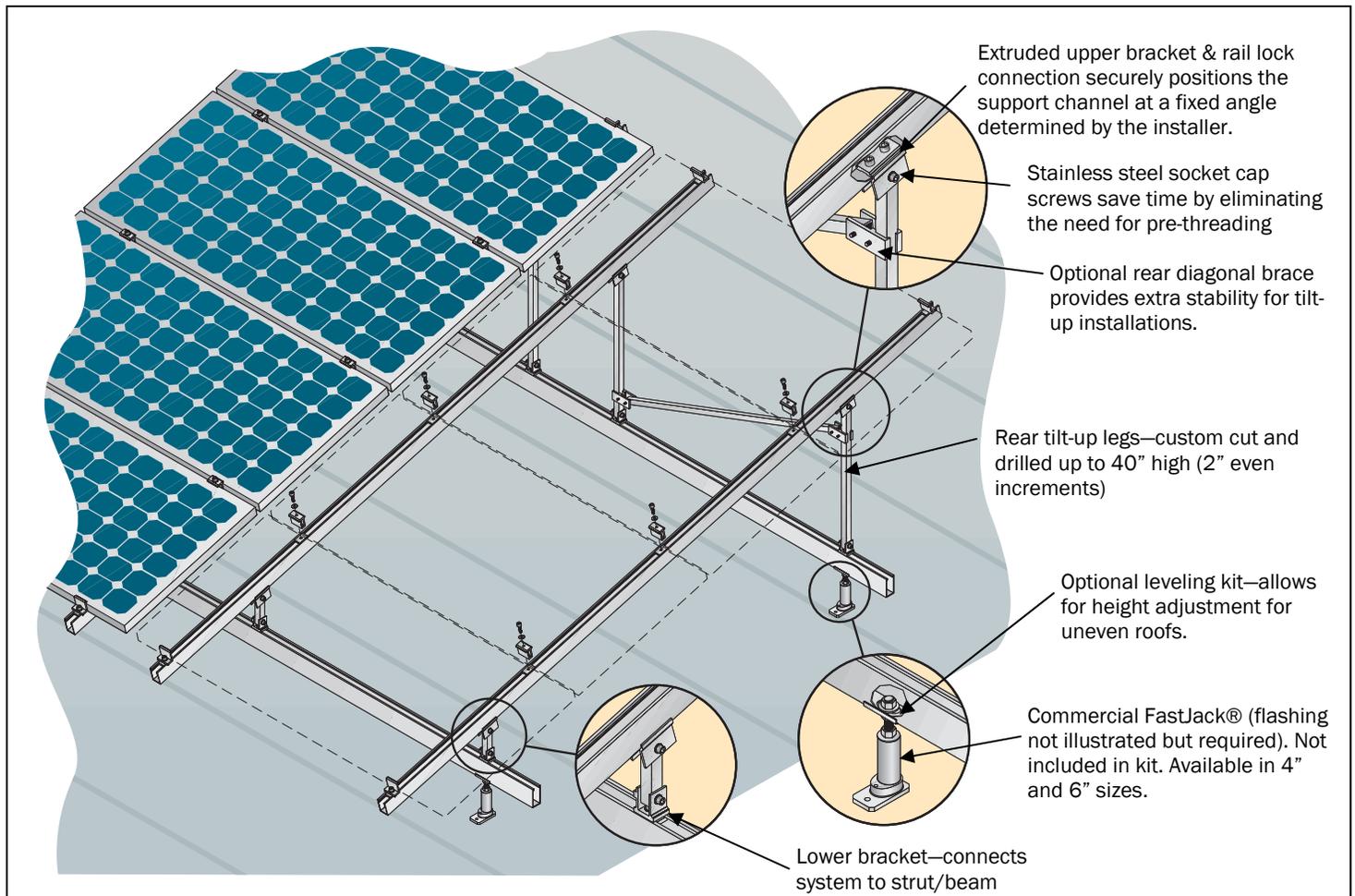


# RoofTrac®

## COMMERCIAL Mounting System

Clamping system patent #6,360,491

# INSTALLATION THEORY



### RECOMMENDED TOOL LIST (main rack):

- Cordless impact wrench
- Measuring tape
- Combination square
- #10 Uni-bit drill bit
- 1/4" Hex driver
- String line
- 1/2" Socket

### RECOMMENDED TOOL LIST (Commercial Fast Jacks):

- Cordless drill
- Cordless impact wrench
- 1/4" drill bit
- 9/16" impact deep socket
- Channel lock pliers
- Crescent wrench (for leveling kit)

### ACCESSORY ITEMS:

(installation is covered in this manual)

#### Rear Diagonal Brace:

The RoofTrac® Commercial mounting system was engineered with the rear diagonal brace. It is recommended for tilt-up applications.\*

#### Commercial FastJack®:

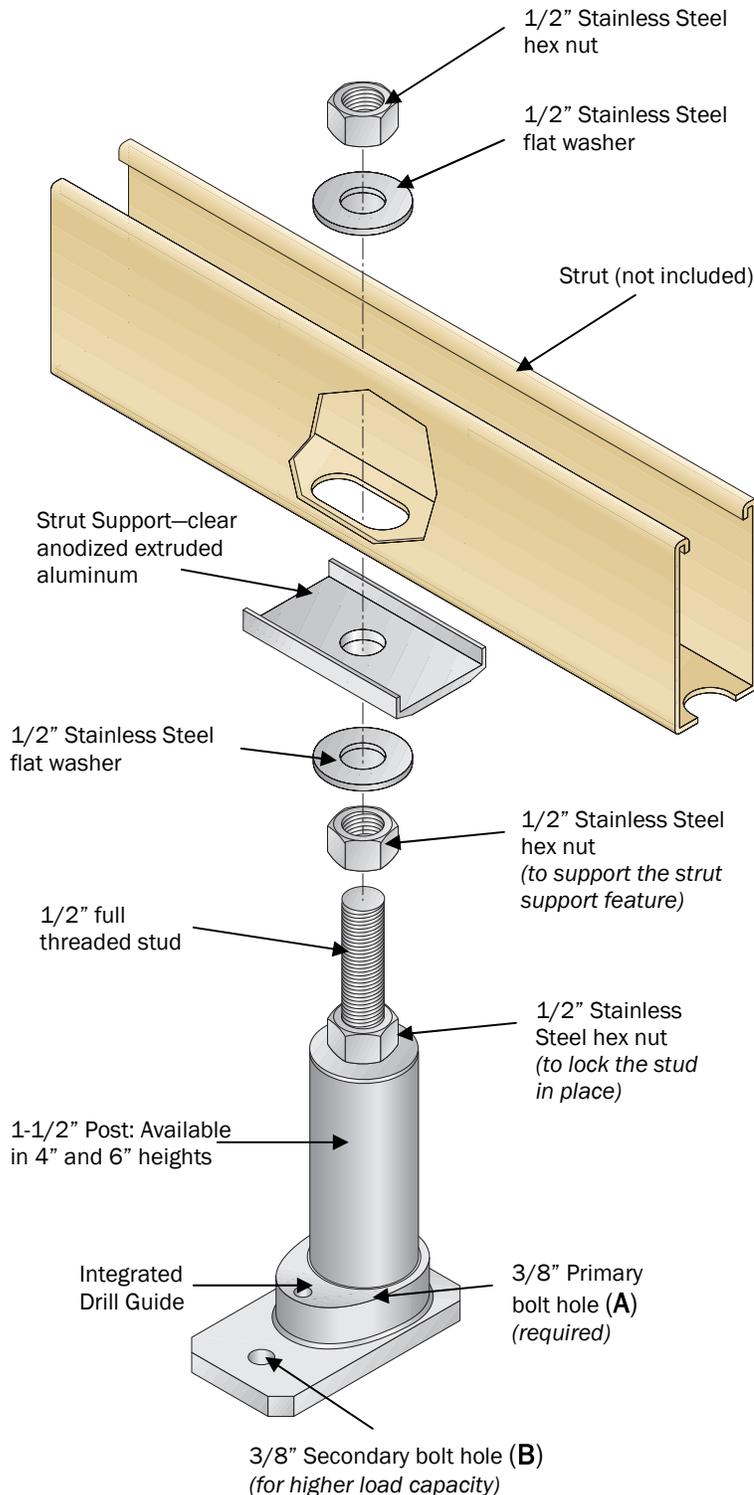
The Commercial FastJack® is an optional way to attach the commercial system—does not include lag bolts

**Leveling Kit** (for the Commercial Fast Jack®):  
Specifically designed for integration into strut.

\*Engineered at 40" maximum height using the diagonal brace.

## STEP 1

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### PLEASE NOTE:

The Commercial Fast Jack and leveling kit assembly is sold separately from the Commercial Roof Trac system. Commercial Fast Jack has been engineered using 2 ea. 3/8" x 4" stainless steel lag bolts into 4" solid fir (*simulated 4" beam*). Other fastening hardware can be used but must be engineered by the installer/engineer for the job. Because of this lag bolts are not included.

## WHEN USING THE COMMERCIAL FASTJACK AND LEVELING KIT

### STEP 1—ATTACH THE COMMERCIAL FAST JACK:

(Commercial Fast Jack and leveling kit are sold separately from the Commercial Roof Trac system)

#### A: Attach Commercial Fast Jacks to the structural load beams:\*\*

After determining proper placement of Fast Jacks per engineering plan, use the 1/4" drill guide to drill pilot holes in the location of the primary and secondary bolt locations. Install the primary (required) 3/8" bolt and secondary bolt (if required), in the 2 holes located in the Fast Jack base.

When using 2 bolt installation, install the primary 3/8" bolt under the stanchion (A) and the secondary (*optional*) bolt offset in the front of the base (B). After securing the base to the roof, screw in the post stanchion and tighten with the channel lock pliers.

#### B: Using leveling feature:

Adjust the leveling stud into the stanchion leaving at least 1" of minimum engagement. Refer to illustration and install the leveling kit hardware.

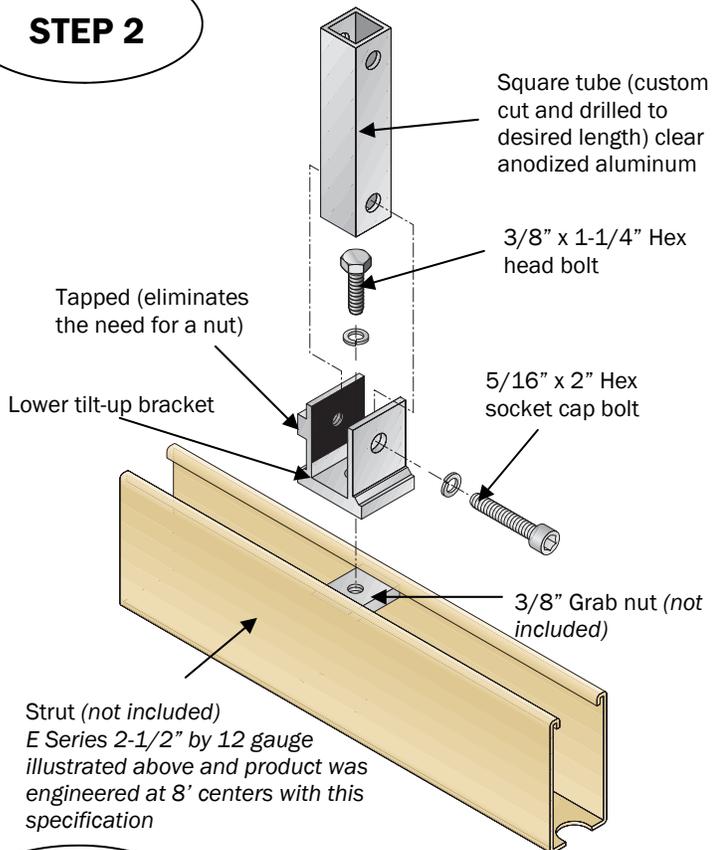
#### C: Install strut: (*not included in kit*)

After attaching all stanchions, position the strut/beam on top of the strut supports with the bottom resting on the inside of the support.

#### D: Level the array:

Level the strut to desired height then tighten the 2 bottom nuts under the strut support by using a crescent wrench.

## STEP 2



## STEP 2—ATTACH THE LOWER TILT LEG ASSEMBLY:

### A: Attach the lower bracket to strut:

Insert the 3/8" grab nut into the strut channel. Place the lower tilt-up bracket on top of the strut. Using a combination or square, tighten the 3/8" bolt to the grab nut insuring that the bracket is 90° to the strut (see illustration for proper orientation).

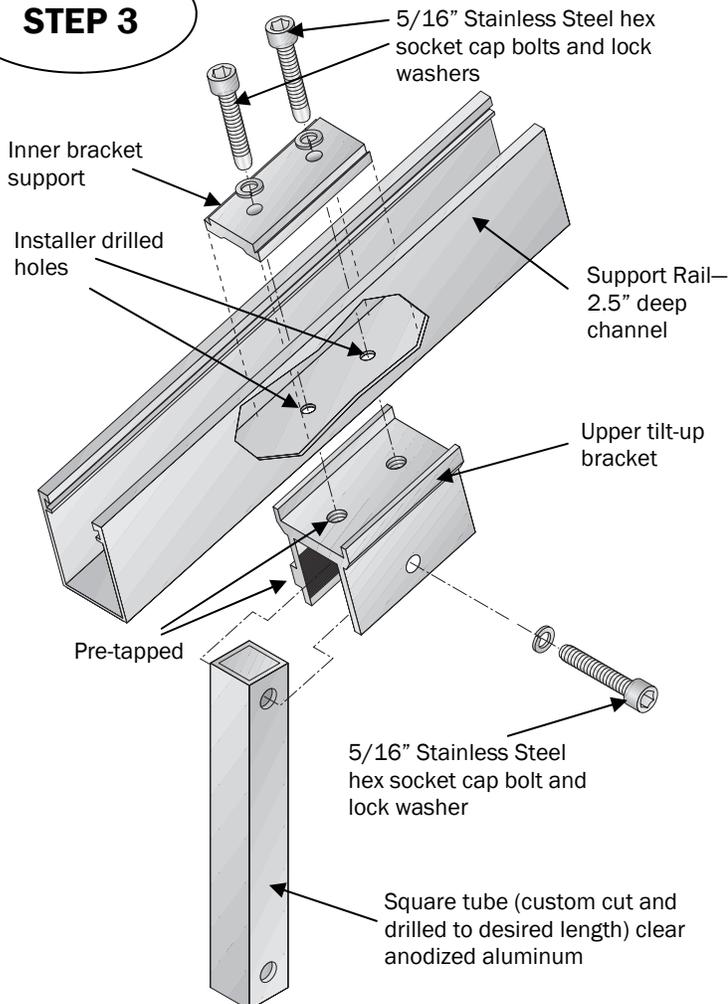
### B: Install the tilt-up leg into lower bracket:

See illustration to the left—place the 5/16" lock washer over the 5/16" x 2" socket cap bolt.

**C: Repeat above 2 steps for all lower tilt-up bracket connections.**

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## STEP 3



## STEP 3—ATTACH THE UPPER BRACKET:

### A: Attach the upper bracket to the rail:

Turn the support rail so the open part of the channel is facing sideways resting on 2 saw horses. Place the upper bracket on the bottom of the rail aligning the holes with the holes in the rail. Place the inner bracket support inside the rail aligning the holes. Attach the bracket with 2 ea. 5/16" x 1" hex socket cap bolts and lock washers. Repeat for entire array.

### B: Attach the tilt-up leg to the upper bracket:

Place the upper part of the square tube (with the lower part still engaged with the lower tilt-up assembly) into the upper bracket—aligning the holes. Attach with a 5/16" x 2" hex socket cap bolt and lock washer. Do not fully tighten—you will need to adjust angle later. Repeat for entire array.

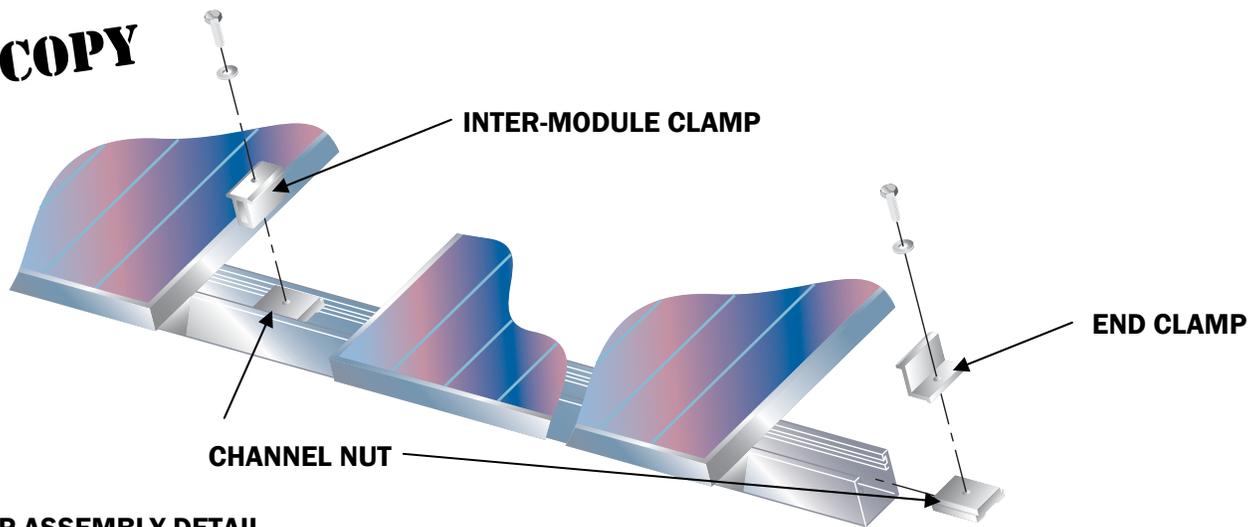
### C: Set array to desired up-right position.

Lift each side of the assembly to the desired height and tighten the lower then upper tilt-up bracket supports.

### D: Install the modules.

Install the lower module first by engaging the end clamps at the bottom then progressively adding modules and inter-module clamps. (Refer to next page for installation of the modules)

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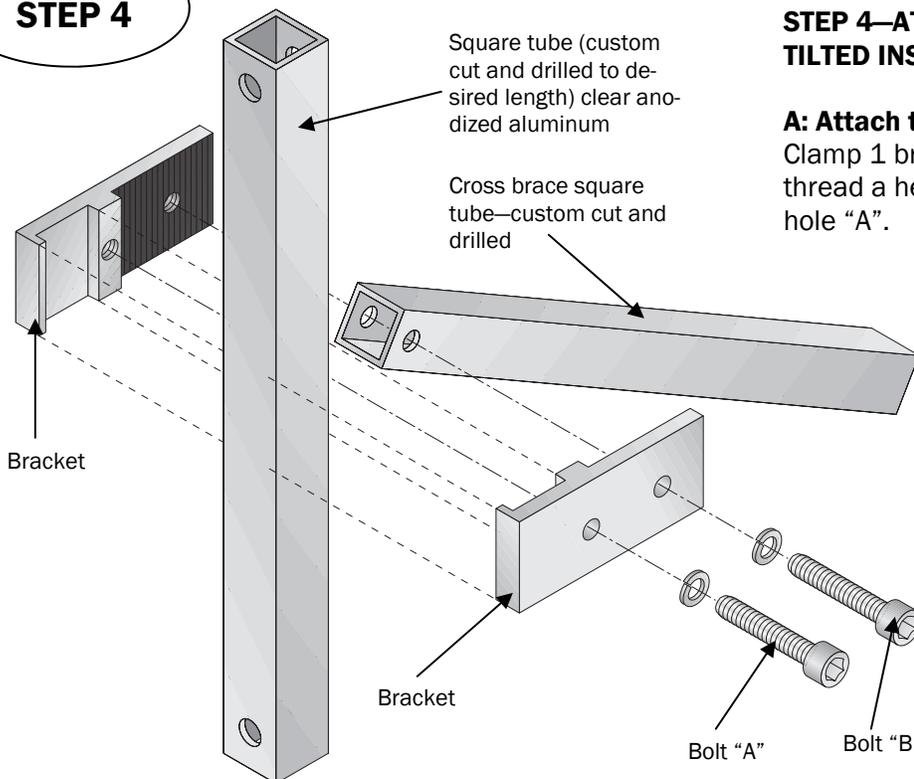


**MODULE CLAMP ASSEMBLY DETAIL**

After the support rails have been installed to the attachments, you are now ready to install the solar modules. There are two sets of clamps; the outside clamps (end clamp) and the inter-module clamps that install between the modules. For convenience, it is advisable to pre-thread or start the bolt, lock washer and clamp into the sliding insert prior to bringing them up to the roof. Slide the two end clamps near the end of the support rail and install your end module (first). Carefully square the module to the frame and tighten the clamps using a 1/2" box wrench or drive socket. **DO NOT OVER-TIGHTEN**, we recommend a maximum torque of 20 foot pounds to prevent damage to the module glass. After the first module is secured, slide two inter-module clamp sets onto the first module. They are designed to stay in place freeing you up to slide and align the next module into place. Repeat this procedure until all modules are installed onto the support rail. Upon installation of the last module in the panel, install the module end clamp to complete the installation.

Please note that all module end clamps are proprietary and specially extruded to fit a specific brand of module. Since many of these tolerances are very small, we install a die line (marker) to differentiate the correct die per module frame.

**STEP 4**



**STEP 4—ATTACH THE REAR DIAGONAL BRACE (FOR TILTED INSTALLATIONS):**

**A: Attach the brackets:**

Clamp 1 bracket on both sides of the tilt-up leg and thread a hex cap screw and lock washer through bolt hole "A".

**B: Engage the cross brace:**

Place the ends of the cross brace tube into the center of the two brackets aligning the drilled holes. Thread a hex cap screw and lock washer through bolt hole "B" to secure the leg in place. Repeat on other end of the brace (other tilt-up leg).

**C: Secure the entire assembly.**

Move brackets into an angle (roughly 45° from one rear leg to the next) and secure by tightening the bolts (20 ft. lbs. Do not over-torque).

\*Engineered at 40" maximum height using the diagonal brace.