



HIGHT TILT SYSTEM

Install Manual



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UAP PROVIDES
PE STAMPED
CONSTRUCTION
PLANS

Each UAP racking system must be installed per the PE Certified Construction Plans

Pre-construction warranty notes

UAP's racking systems are custom designed and engineered by licensed Professional Engineers (each a "PE") who follow the International Building Code (IBC) and all IBC referenced design and material standards recognized by each project's local jurisdiction. UAP's quality assurance process requires that each UAP racking system be delivered to the client accompanied by PE certified Construction Plans (Plans) including detailed drawings and a structural certification letter with note and calculations.

The top priority of UAP's quality assurance team is to deliver fully engineered and certified Construction Plans that comply with jurisdictional building code and support preservation of human life and safety. For these reasons UAP will only issue a product warranty after a project is installed, duly inspected by a qualified UAP inspector, and found to be 100% compliant with the certified Construction Plans.



UAP High Tilt System Installation Manual



Pre-Construction Safety Notes

Safety is UAP's top priority. Please review these safety guidelines before installing the UAP Racking System.



Personnel

Before starting construction, schedule and conduct a regular safety review and ensure compliance with all OSHA safety procedures and precautions related to rooftop solar installations. Only qualified workers with experience in rooftop construction should perform the installation. The installer must always wear appropriate PPE including fall protection and have adequate electrical knowledge to avoid accidental shock or injury from improper contact with the photovoltaic equipment being installed. Each project must have regular documented safety meetings, a site-specific safety plan, and a dedicated safety officer qualified to administer first-aid.



Roof Anchors

All roof anchors specified in the Plans for attaching the racking system to the host building are selected to meet the calculated loads expected on the roof structure. Use of alternative anchors or attachment methods must pre-approved by UAP in writing. Always follow the anchor manufacturer's instructions and, if required, anchor verification testing must comply with local building codes and ordinances.



Structural Attachment and Roof Load Capacity

Each UAP racking system must be secured to the building structure according to the PE Certified Construction Plans (Plans) provided with the racking system. UAP's structural plans are created based on an assessment of available building plans, completion of the appropriate UAP structural intake form, and on-site surveys. Any irregularities discovered during the post installation and attachment process must be reviewed by UAP's structural engineer before proceeding.



Roof Repairs and Flashing

Repairing and flashing the racking system mounting posts must follow best roofing practices and should be carried out by, or with the approval of, the roofing contractor responsible for any existing installer's warranty, or a roofing contractor certified by the roofing system manufacturer who has committed in advance to the process of recertifying any existing manufacturer's roof warranty.

Required Tools & Equipment



Sliding chop saw



Sawzall



Portable band saw



Drill



Impact drill



Generator



Spare blades



Spare bits



Sockets & Wrenches



Torx 40s



Drivers



Extension cords



Level & Square



Markers



Chalk line



String line



Tape Measure



Knives



UAP Stands

Module rail spacer templates

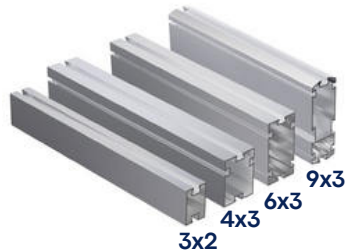
Review module installation manual to make panel rail spacing templates (material doesn't matter but typically wood 2x4s) UAP can provide templates as needed.

JOB SITE PPE



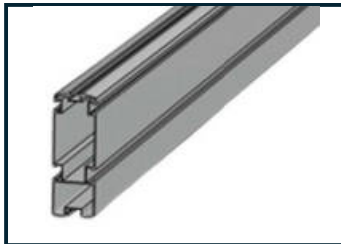
Main Components Parts

Note | Structural Attachments Addressed in Separate Structural Attachment Installation Manual



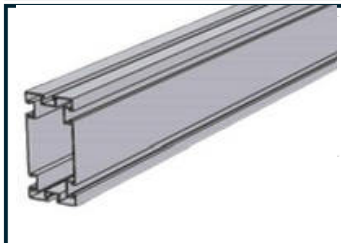
UAP's Fleet

6061-T6/6005 T-6 Aluminum



UAP 9x3 Strut is extruded 6000 Series Aluminum used as a:

- long span top chord to support the UAP 3x2 module rails, or
- high-capacity module rail for green roof applications.



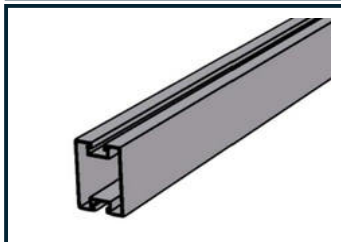
UAP 6x3 Strut is extruded 6000 Series Aluminum used as a:

- A medium span top chord to support the UAP 3x2 module rails, or
- medium-capacity module rail for green roof applications.



UAP 4x3 Strut is extruded 6000 Series Aluminum used as a:

- post to support the main rail [top chord],
- top chord to support the UAP 3x2 module rails,
- high-capacity brace [knee or lateral], or
- high-capacity module rail.



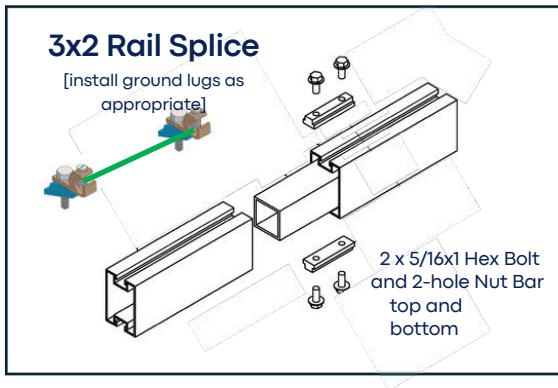
UAP 3x2 Strut is extruded 6000 Series Aluminum used as a:

- panel rail
- brace [knee or lateral]
- high-capacity module rail, or
- array edge stiffener

UAP extruded products are 80% recycled industrial aluminum



Rail & Strut Splices



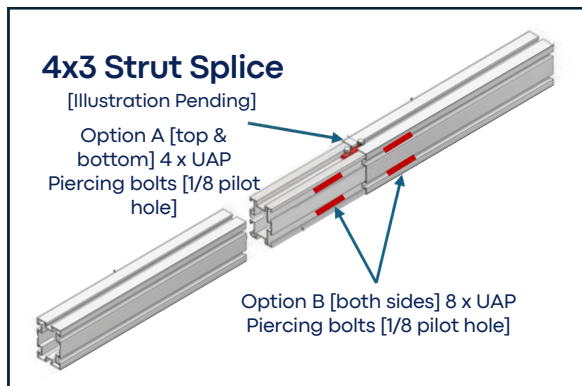
3x2 Splice Kits

For module rail alignment only (no exposure to structural tension)

Each UAP 3x2 Splice Kit includes:

- 4 x 5/16 x 1 SS Hex Bolts and washers,
- 2 x 2-hole Nut Bar
- 4 x 5/16 angle nuts.

Note: 3x2 panel rail splices should be staggered and never used within 4' of the first or last frame in an array.



4x3 Splice Kits

For alignment and structural tension capable

- **Option A** where the 4x3 splice is not exposed to tension.
- **Option B** where 4x3 splice is exposed to tension.

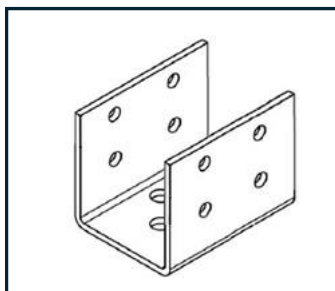
8 x 5/16 SS Piercing bolts (drill a 1/8 pilot hole)



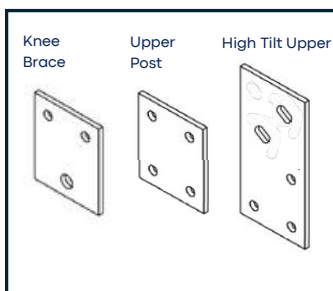
UAP Hardware Components

UAP Hardware is accompanied by stainless steel nuts, bolts, and washers.
Bolts used with Angle Nuts have Loctite glazed threads.

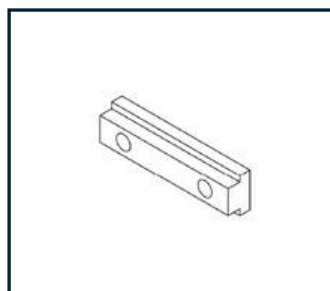
Lower Bracket



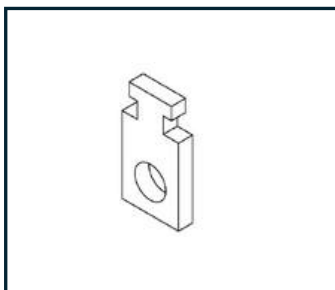
Upper Bracket Plates



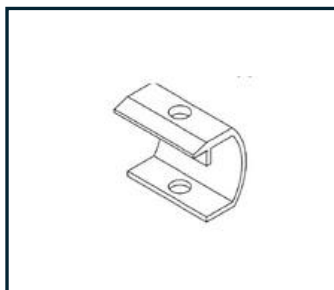
Nut Bar



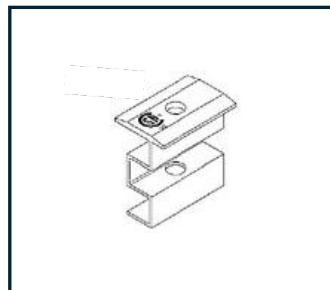
Cleat



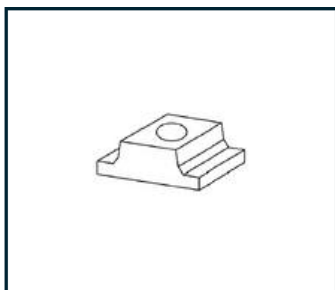
C-Clip



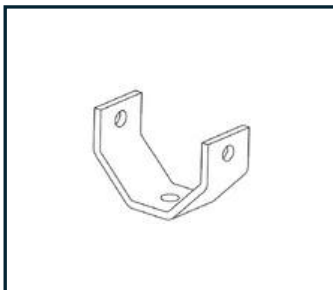
Waffle Clip



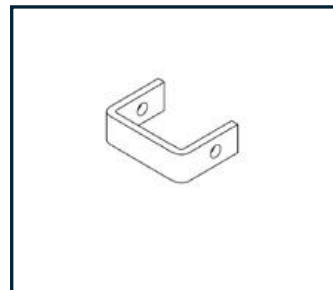
Angle Nut



Outer Bracket



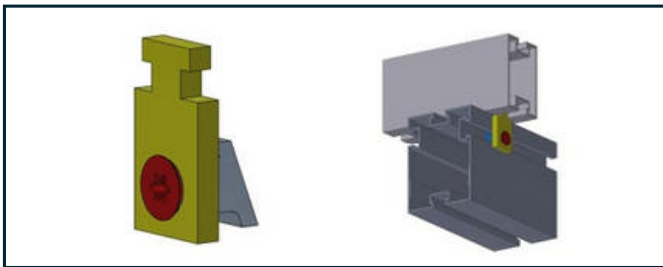
Inner Bracket



UAP Hardware Kit

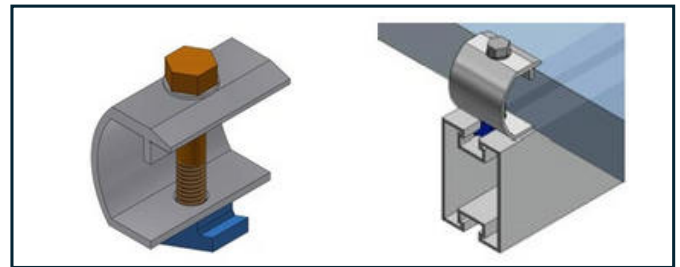
UAP Cleat Kit:

UAP Cleat + UAP Angle Nut + Lobed Flathead Screw Anchors module rails to main support rails



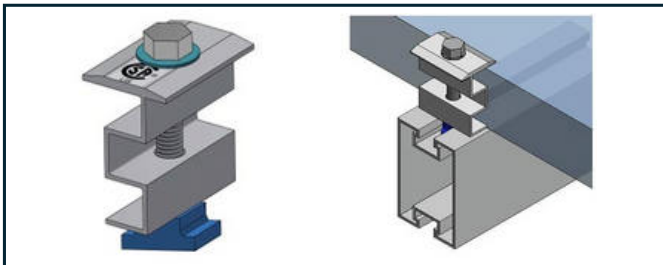
UAP C-Clip Kit:

UAP C-Clip + UAP Angle Nut + 5/16 SS Hex Bolt & Washer
Clamps modules to module rails



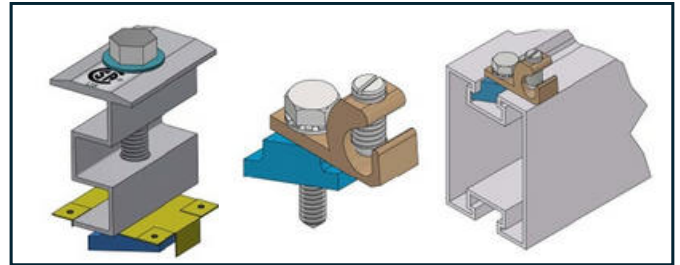
UAP Waffle Clip Kit :

UAP Waffle Clip + UAP Angle Nut + 5/16 SS Hex Bolt & Washer
Clamps modules to module rails



UAP Waffle Grounding Kit:

UAP Waffle Clip Kit + Grounding WEEB
UAP Panel Rail Grounding Kit:
IlSCO 1/0 Grounding Lug + UAP Piercing Screw + UAP Angle Nut



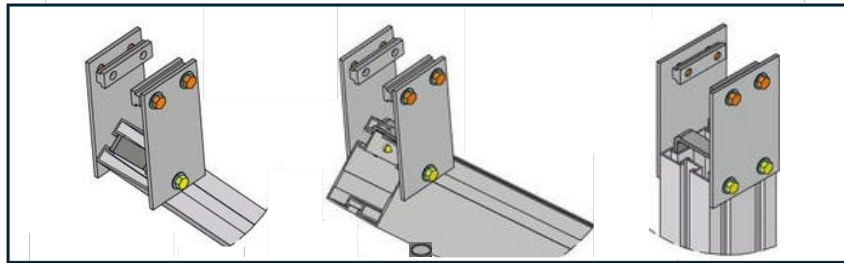
UAP's grounding kits provide UL2703 module to rail grounding



Main Mechanical Attachments

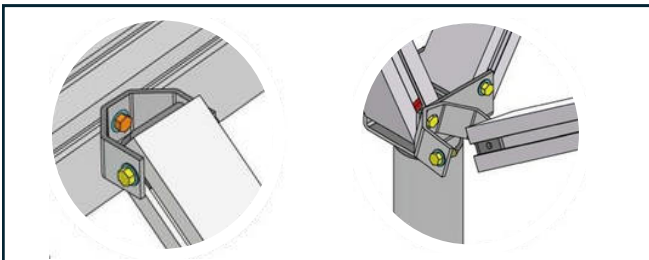
Upper Bracket Kit:

2x - UAP UB Plate + UAP 5/16 Nut Bar + 2x - 5/16 x 1" SS Hex Bolt w/Loctite + 2x or 4x - UAP 5/16 x 1.25" SS Piercing Bolts + 1 or 2 UAP U-Nuts Attaches 4x3 and 6x3 top chords to knee bracing and support posts



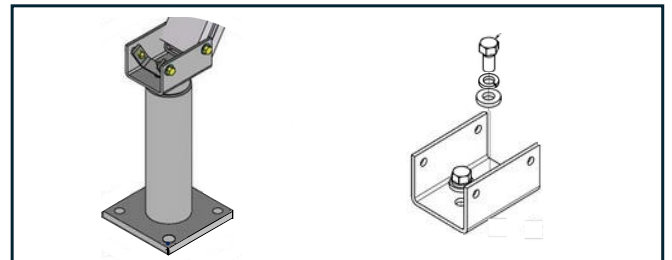
UAP Outer Bracket Kit:

UAP Outer Bracket + 5/16 x 5" SS Through Bolt + Washer Set + Nut Attaches lateral braces to the adjacent frames



UAP Lower Bracket Kit for Posts:

UAP Lower Bracket + 2x - 1/2 x 1" SS Hex Bolt + Washer Set + 4x 5/16 x 1.25" UAP 5/16 SS Piercing Screw + Washer + 2x UAP 5/16 U-Nut



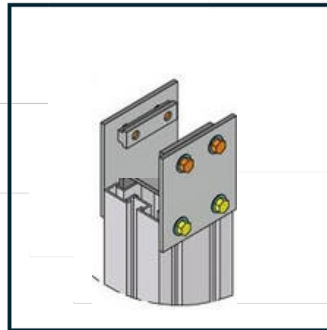
UAP extruded products are 80% recycled industrial aluminum



Main Mechanical Attachments

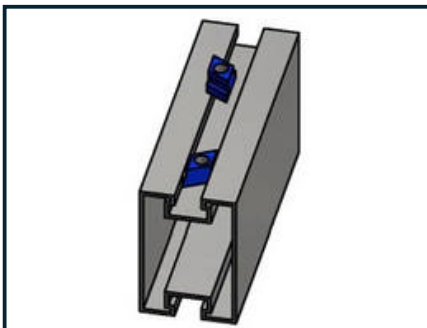
Upper Bracket Kit:

2x UAP UB Plate + 2x UAP 5/16 Nut Bar + 4x - 5/16 x 1" SS Hex Bolt w/Loctite + 4x UAP 5/16 x 1.25" SS Piercing Bolts + 2x UAP U-Nuts
Attaches 4x3 support post to 6x3 and 9x3 top chords



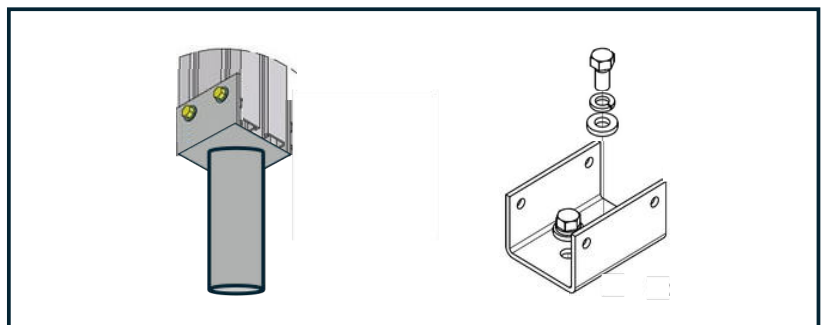
UAP – AN31 Angle Nut:

UAP 5/16 fasteners are one of UAPs Main attachment components.



UAP Lower Bracket Kit for Posts:

UAP Lower Bracket + 2x - 1/2 x 1" SS Hex Bolt + Washer Set + 4x 5/16 x 1.25" UAP 5/16 SS Piercing Screw + Washer + 2x UAP 5/16 U-Nut



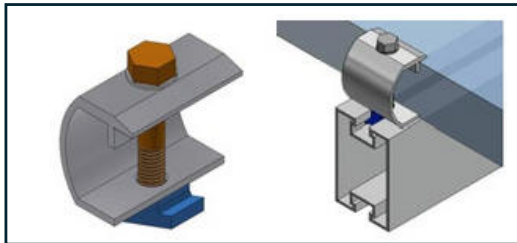
UAP extruded products are 80% recycled industrial aluminum



UAP Hardware Kit Pre Assemblies

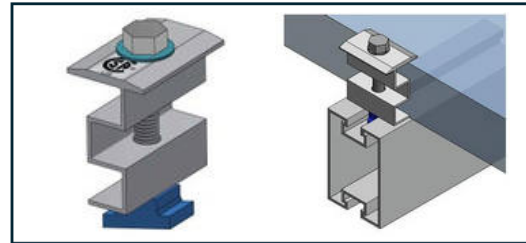
UAP C-Clip Kit:

C-Clip + Angle Nut + 5/16 SS Hex Bolt & Washer Clamps modules to module rails



UAP Waffle Clip Kit :

Waffle Clip + Angle Nut + 5/16 SS Hex Bolt & Washer Clamps modules to module rails

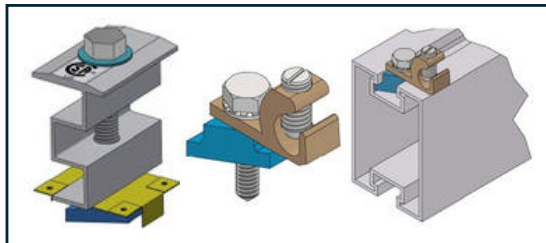


UAP Waffle Grounding Kit:

UAP Waffle Clip Kit + Grounding WEEB

UAP Panel Rail Grounding Kit:

IlSCO 1/0 Grounding Lug + UAP Piercing Screw + UAP Angle Nut



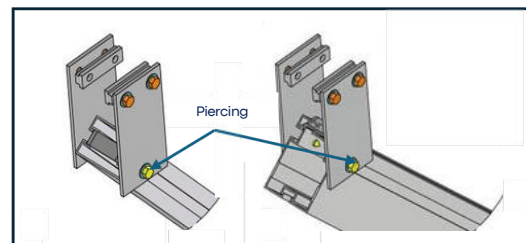
UAP's grounding kits for UL2703 module to rail grounding

UAP Upper Bracket Kit:

2x-Upper Bracket Plate+2x5/16 Nut Bar+4x-5/16x1" SS

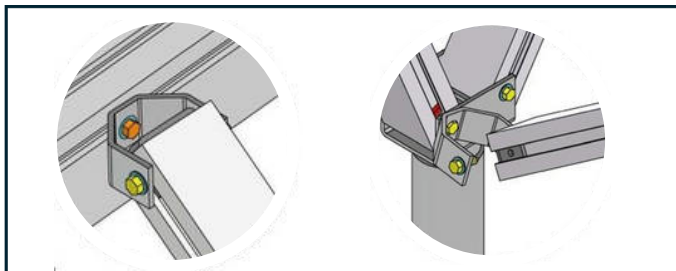
Hex Bolt+2x5/16x1.25" SS Piercing Bolts+1xU-Nuts Attaches

4x3 top chords to 3x2 and 4x3 knee bracing



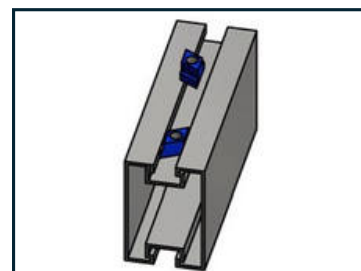
UAP Outer Bracket Kit:

UAP Outer Bracket + 5/16 x 5" SS Through Bolt + Washer Set + Nut
Attaches lateral braces to the upper and lower sides of adjacent frames.



Note

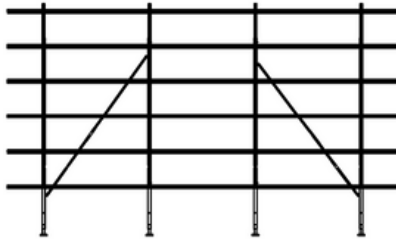
UAP – AN31 Angle Nut must turn 90° to fully engage the keyway



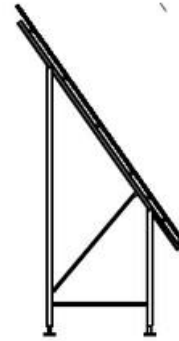
High Tilt System Installation Manual

Typical Frame Arrangement

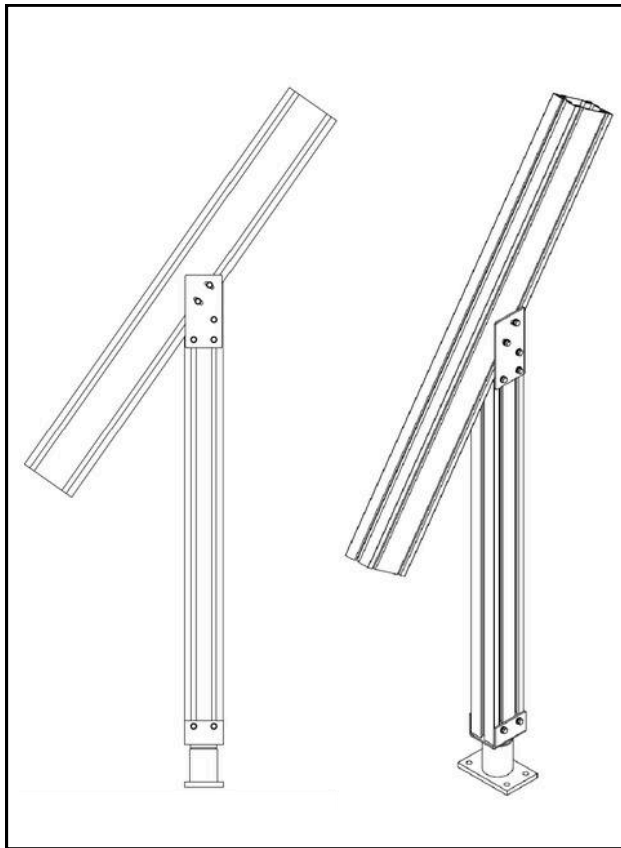
Front View



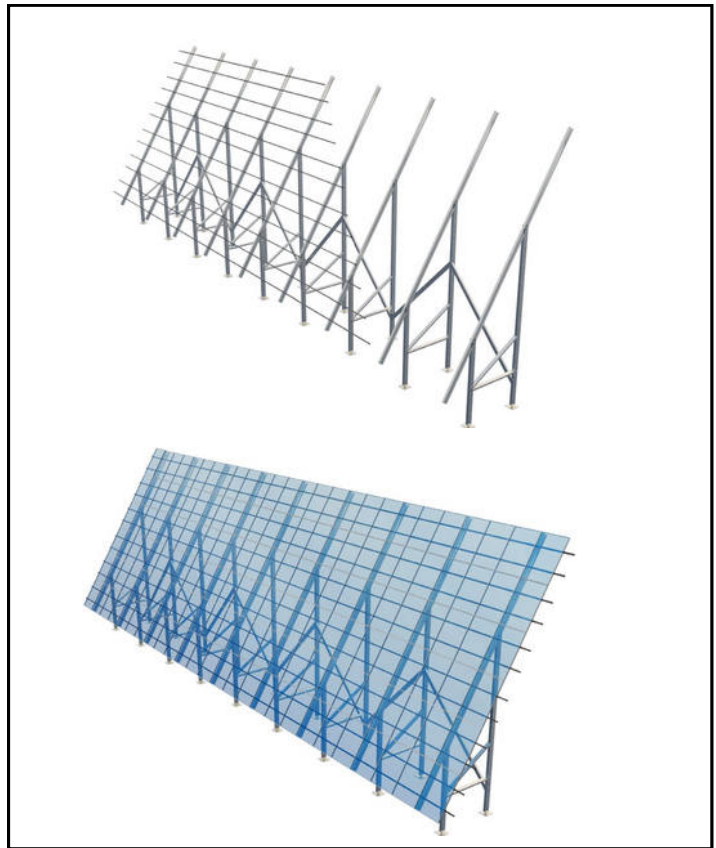
Side View



High Tilt



High Tilt v-6

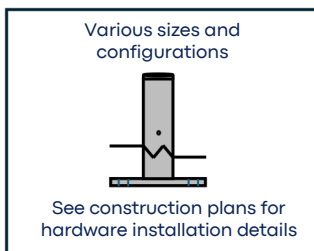


High Tilt Posts and Structural Members

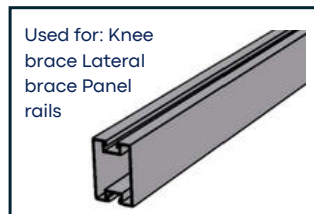
Note | UAP Installation Manual for Attachment Posts is a separate document available upon request.

- Field cut UAP's Posts, Rails, and/or Strut as directed in the PE approved plans (the "Plans").
- Follow layout guidelines in the Plans to be sure splice points fall within designated areas.
- Be sure the knee brace angles are within the tolerances specified in the Plans.
- Upon completion of the racking system UAP will conduct a QC inspection as part of the Warranty process.

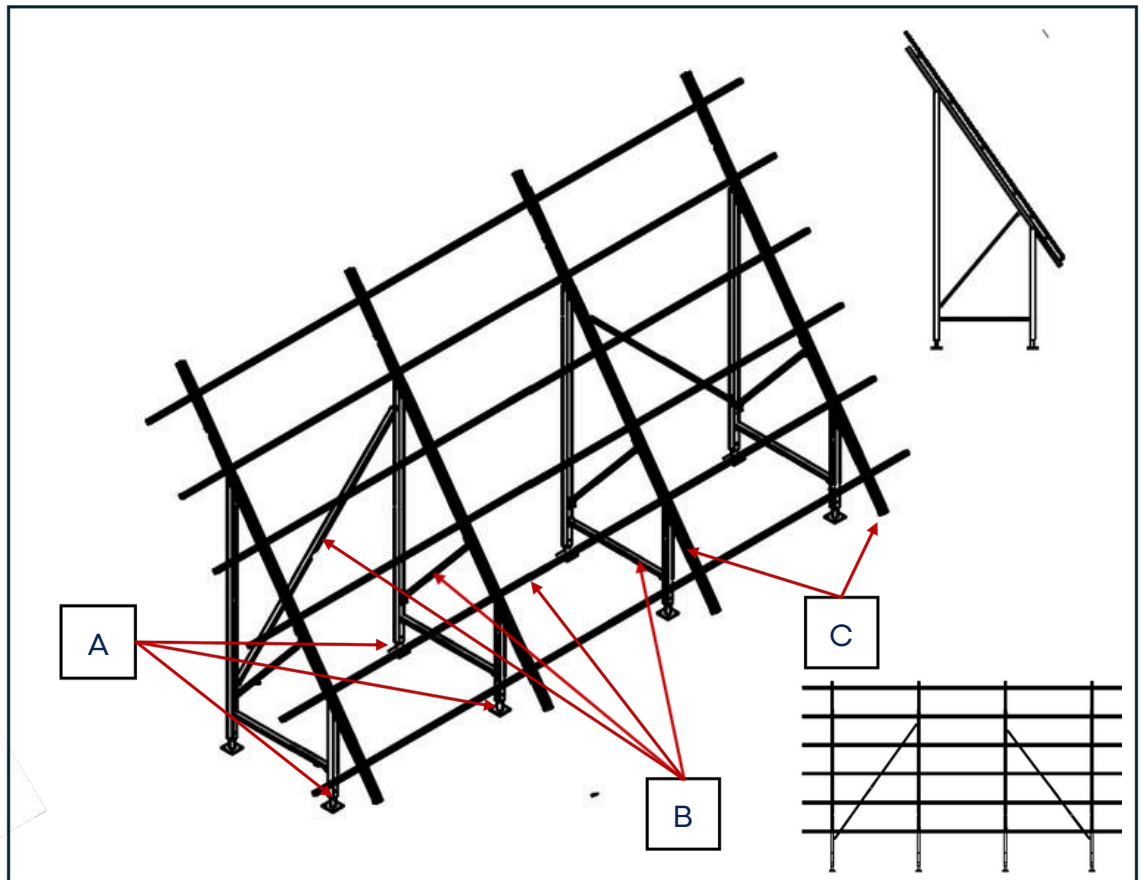
A - Attachment Post



B - UAP 3x2 Rail



C - UAP 6x3 or 9x3



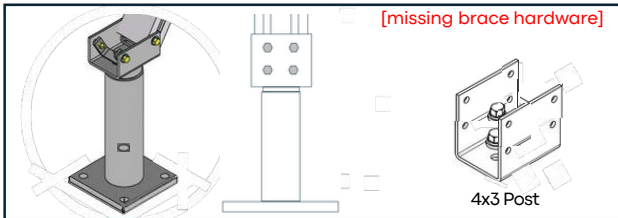
High Tilt Mechanical Attachments

D - UAP Lower Bracket Kit for Posts:

UAP Lower Bracket + 2x - $\frac{1}{2}$ x 1" SS Hex Bolt + Washer Set + 4x 5/16 x 1.25" UAP 5/16 SS Piercing Screw + Washer + 2x UAP 5/16 U-Nut
Bracket installed after roof repair to accommodate a boot

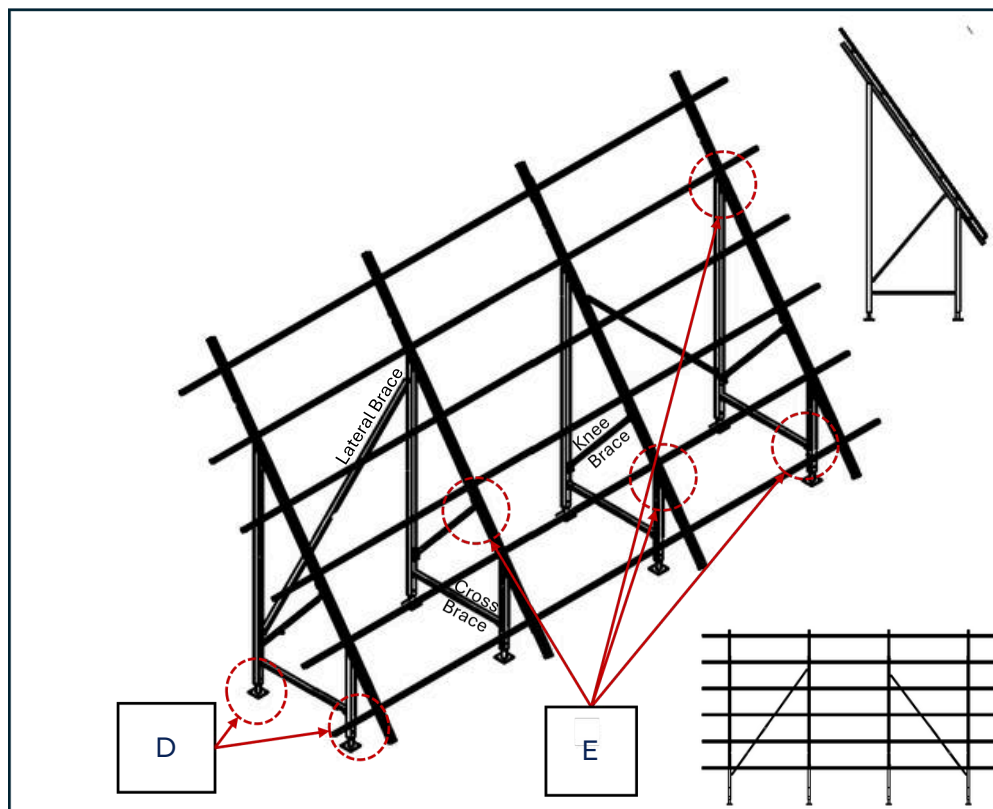
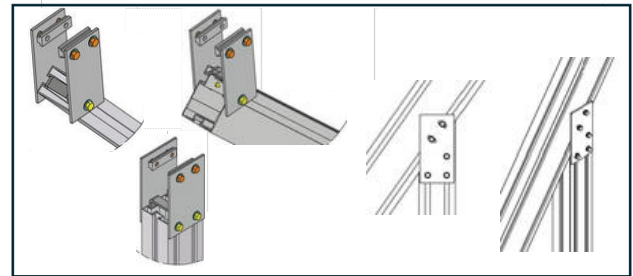
Illustration
Pending

[missing brace hardware]



E - Upper Bracket Kit:

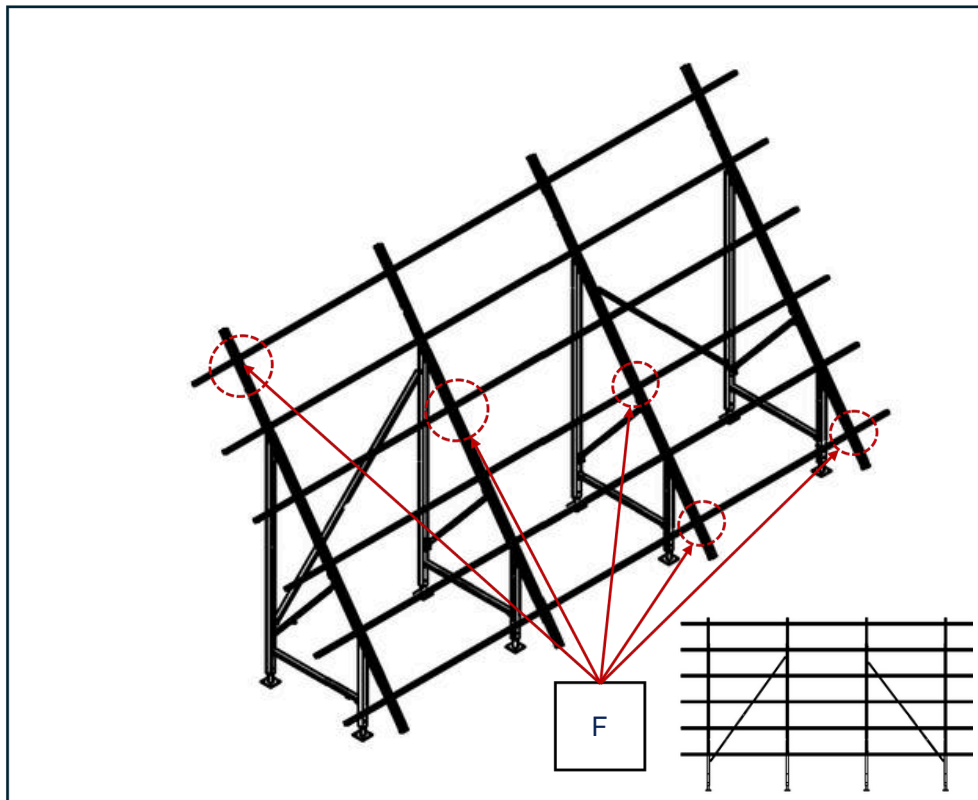
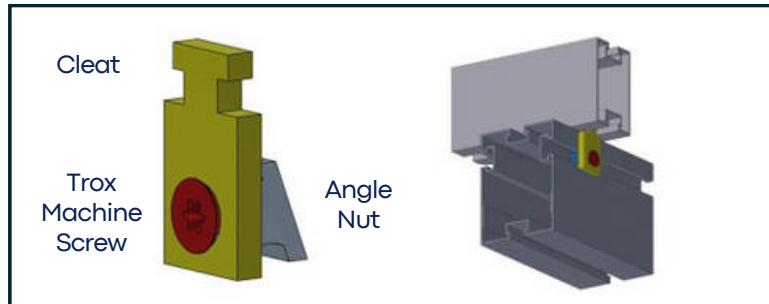
2x - UAP Upper Bracket Plate + 2x UAP 5/16 Nut Bar + 4x - 5/16 x 1" SS Hex Bolt w/Loctite + 2x or 4x - UAP 5/16 x 1.25" SS Piercing Bolts + 1x or 2x UAP U-Nuts
Attaches 4x3 and 6x3 top chords to 3x2 and 4x3 knee bracing and support posts



High Tilt Mechanical Attachments

F - UAP Cleat Kit:

UAP Cleat + UAP Angle Nut + Lobed Flathead SS Machine Screw
Anchors module rails to main support rails.





Post Installation

- Concrete Decks >5" Cast Concrete
- Decks [straight waffle] Steel Bar-Joist
- Wood Truss
- Other [Gypsum Plank, Wood Joist, Concrete in Corrugated Steel Pan, Precast Hollow Core Concrete Slab, etc.]

Note: Each post installation guide is based on either an in-person site visit by UAP's structural engineer or an intake form provided through the Universal Renewables website. In cases where the roof structure is variable (changes from one type of structure to another) the appropriate intake form must be completed.

In cases where a change in roof structure is detected during the Post installation, UAP must be contacted and the attachment strategy confirmed by UAP's structural engineer.



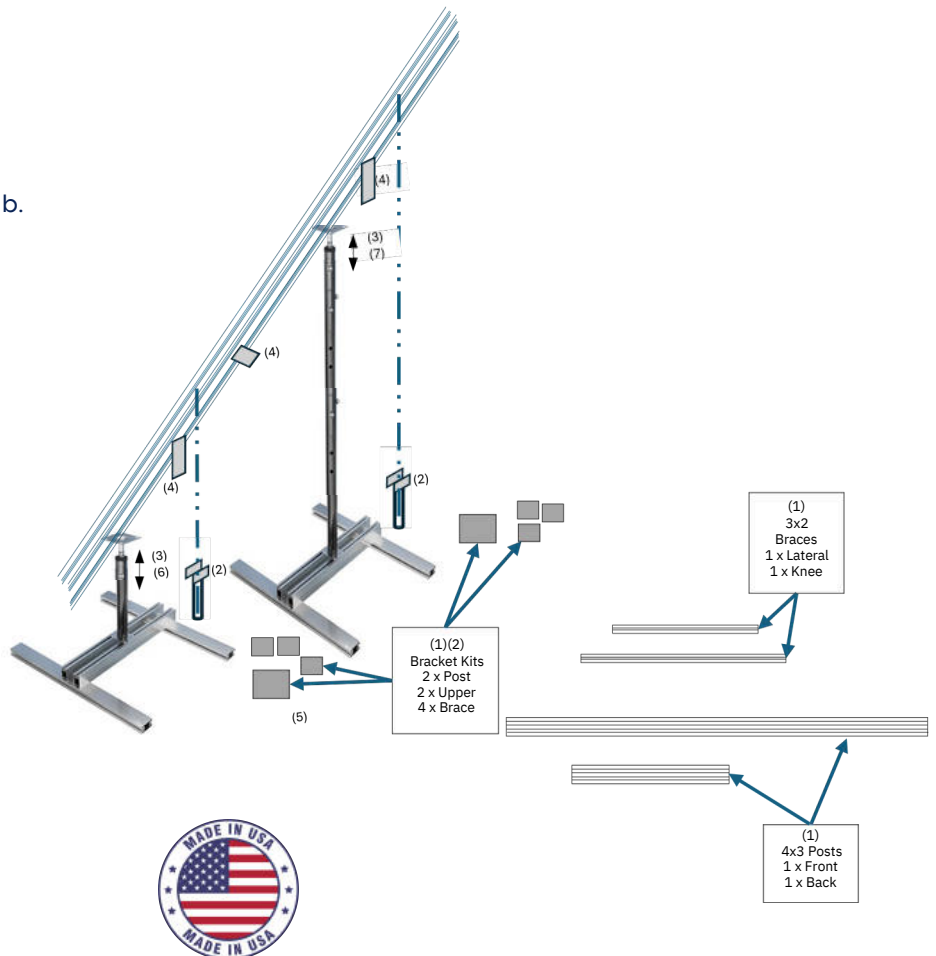
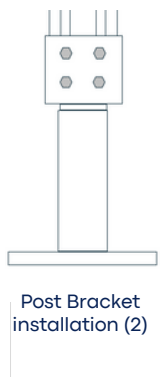
High Tilt Frame Assembly

Illustrations Pending

1. Distribute hardware and bracing kits as illustrated in the Plans
2. Install lower bracket hardware on pre-installed posts, review Plans to verify correct lower bracket kit is installed [4x3 vs knee brace + 4x3], torque to 25 ft.lb. and torque mark.
3. Set two UAP support stands in line and directly above the first set of pre-installed frame posts.
4. Slide the UAP upper post and knee brace bracket plates from the kits into the lower slot on each side of the top chord [arrange near each of the attachment points]
5. Put the 6x3 or 9x3 top chord provided with the racking system on top of the stands [follow Plans for length of beam, spacing from first and last frame post, and to identify splice locations if called for]
6. Adjust the UAP stand leveling screws on the low end until the top chord reaches the height and tilt angle call for in the Plans.
7. Adjust the stand on the high end until the correct tilt angle is achieved [double check the low end, adjust each UAP stand as needed].

Torque Schedule

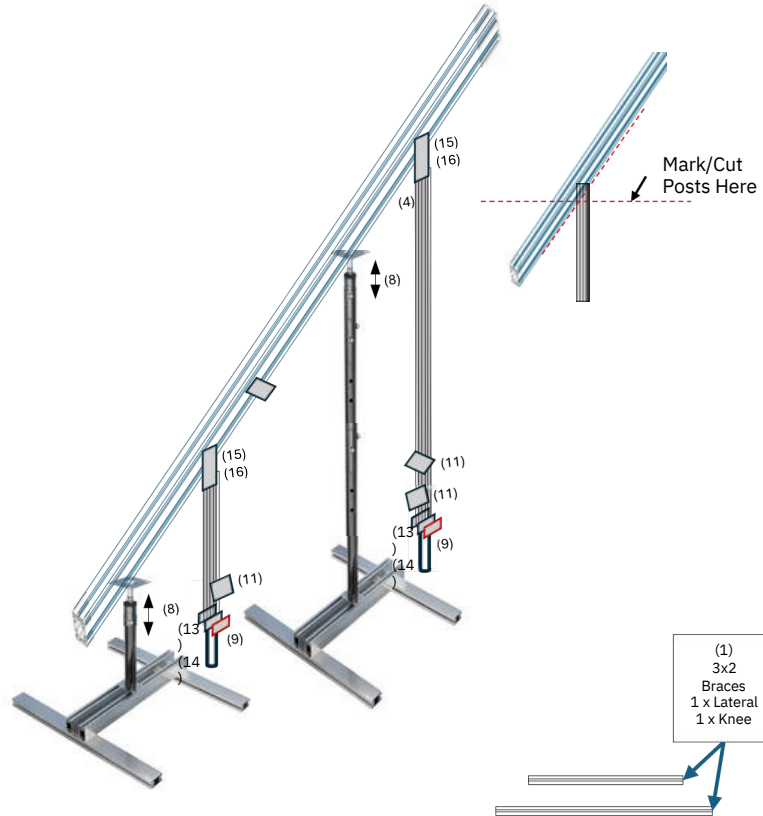
- 1/2" lower bracket bolts to 40 ft.lb.
- 5/16" hex and piercing bolts to 12 ft.lb.
- Trox Machine Screws 12 ft.lb.
- Panel clips to 10 ft.lb.



High Tilt Frame Assembly

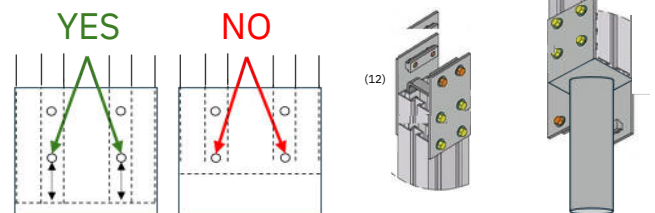
Illustrations Pending

8. Make a final adjustment to the Top Chord tilt angle using height adjustment screw on the UAP stand.
9. Place a measuring bracket on each preinstalled post in the frame and set the short post in the bracket. Bring the short post to the base of the top chord and use a level to align with the point on the top chord perpendicular to the roof, mark the post with a sharpie on the low side of the angle so, when the post is cut, it can connect the preinstalled post to the bottom of the top chord and be straight and true. Repeat the process using the tall post. [be sure to measure at each post location so each post is measured/cut to fit].
10. Using a chop saw, cut each length of 4x3 to the measurements taken from step 9 [Cut at 90°].
11. Loosely install the knee and cross brace brackets in their respective keyways in each newly cut 4x3 posts.
12. Install 4 "U" nuts in each newly cut 4x3 posts.
13. Fit the new 4x3 posts into their respective lower brackets, adjust [square using the level], and predrill holes for the piercing bolts using a 1/8" metal bit.
14. Tighten all 8 lower bracket 5/16 piercing bolts on each post until they pierce the 4x3 wall, then stop.
15. Adjust the preinstalled upper brackets [square], torque the 5/16 hex bolts in the top chord keyway to 12 ft.-lb. and torque mark.
16. Predrill holes for the upper bracket piercing bolts tighten the 5/16 piercing bolts until they pierce the 4x3 wall, then torque to 12 ft.-lb. and torque mark.
17. Torque the lower bracket piercing bolts to 12 ft.-lb. and torque mark.



Torque Schedule

- 1/2" lower bracket bolts to 40 ft.lb.
- 5/16" hex and piercing bolts to 12 ft.lb.
- Trox Machine Screws 12 ft.lb.
- Panel clips to 10 ft.lb.



High Tilt Frame Assembly

Illustrations Pending

18. Move UAP stands to the far end of the array and align with the last frame [or move to center or next frame of array if last frame already installed].

19. Install the "U" nuts in each end of the 3x2 knee brace and predrill piercing bolt holes with a 1/8" bit.

20. Fit the 3x2 knee brace to the proper depth in the respective sides of its brackets on the tall post and the top chord [see illustration], adjust angle and brackets according to Plans.

21. Loosely install the piercing bolts to hold the brace in place while the brackets are tightened.

22. Tighten the 5/16 bolts on each of the four brackets, torque to 12 ft.-lb. and mark.

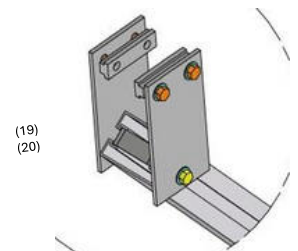
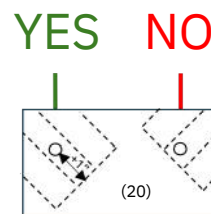
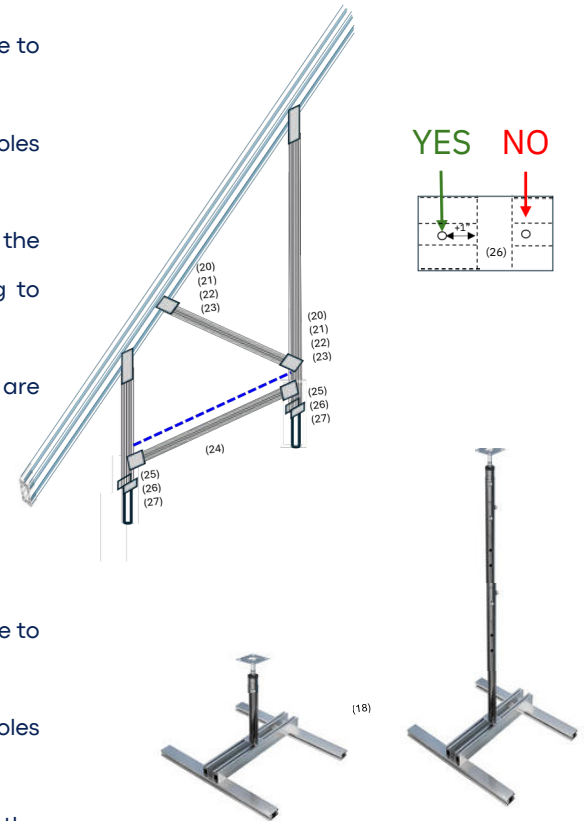
23. Tighten all four of the 5/16 piercing bolts until they pierce the 3x2 wall, torque to 12 ft.-lb. and mark.

24. Measure the distance between the front and back post and cut the 3x2 cross brace to length.

25. Install the "U" nuts in each end of the 3x2 cross brace and pre-drill piercing bolt holes with a 1/8" bit.

26. Fit the 3x2 cross brace to the proper depth in the respective sides of its brackets on the front and rear posts [see illustration], adjust level and brackets according to Plans.

27. Repeat 21 – 23.



Torque Schedule

- 1/2" lower bracket bolts to 40 ft.lb.
- 5/16" hex and piercing bolts to 12 ft.lb.
- Trox Machine Screws 12 ft.lb.
- Panel clips to 10 ft.lb.

(4)

Lower bracket w/brace illustration



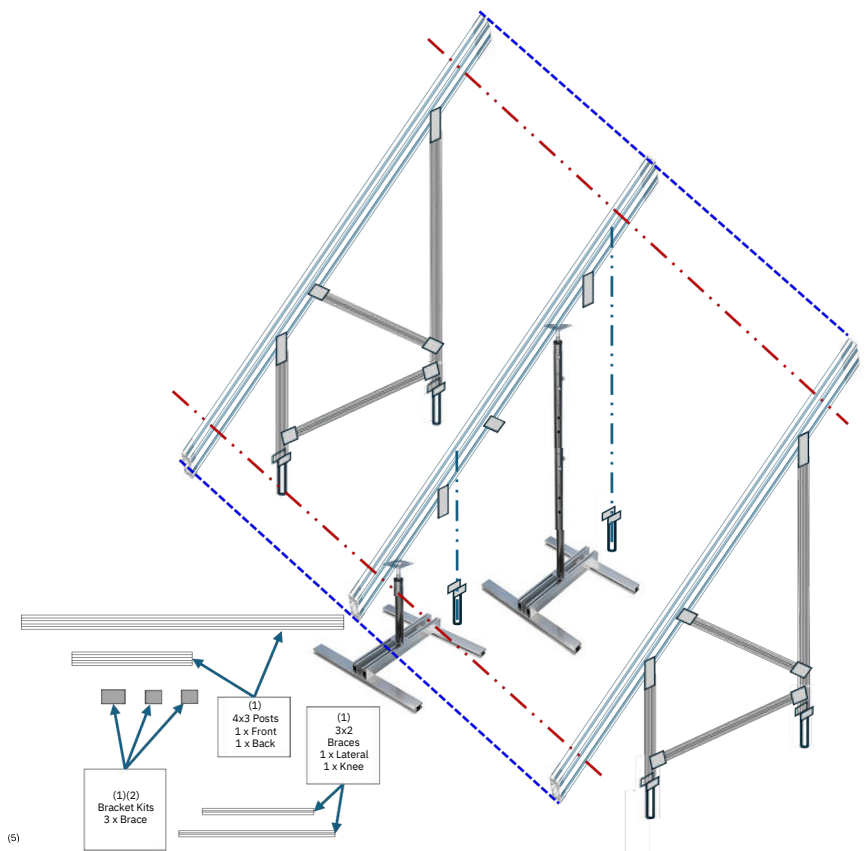
High Tilt Frame Assembly

Illustrations Pending

28. Double check the Plans and alignment of the UAP stands over the frame posts of the next frame in the array.
29. Repeat items 1 – 27 being sure the ends of the Top Chords are aligned and square with all frames, then readjust heights and verify the tilt.
30. Run two string-lines [or lasers] from the first frame to the last frame [brace frames temporarily using a level to verify they are straight, keep string line taught]
31. Measure distance between both ends of the leveled and braced frames to be sure they are the same.
32. Move UAP stands to the middle [next] frame, repeat steps 1-27
33. Adjust the low end of the Top Chord to the string line and the end of the Top Chord should be in line with the ends of the previously installed Top Chords. Readjust until aligned.
34. Repeat item 32 until all frames are installed.
35. When all the frames are installed check for alignment and make minor adjustments by loosening the upper plates at the nut bar [once tightened do not loosen the piercing bolts].

Torque Schedule

- 1/2" lower bracket bolts to 40 ft.lb.
- 5/16" hex and piercing bolts to 12 ft.lb.
- Trox Machine Screws 12 ft.lb.
- Panel clips to 10 ft.lb.



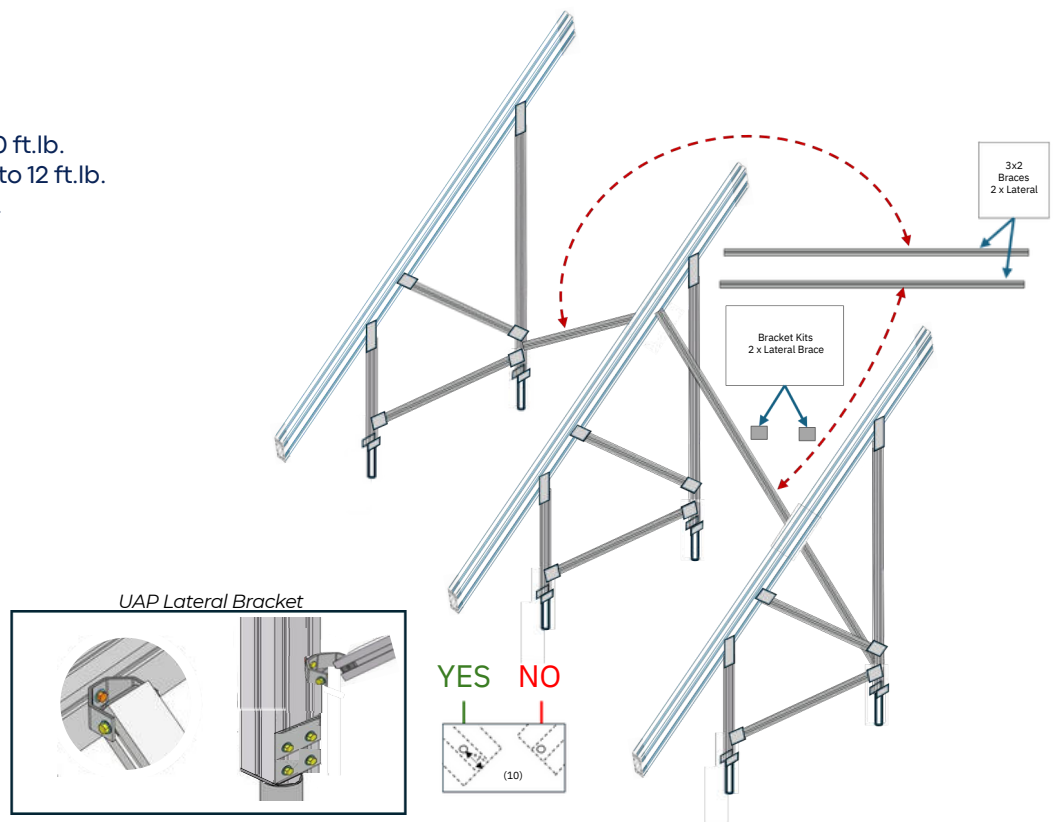
High Tilt Frame Assembly

Illustrations Pending

36. Layout the cross-bracing kits per the Plans.
37. Locate and mark the upper and lower Outer Bracket installation points per the Plans.
38. Loosely install the upper and lower lateral brackets [use hardware kits].
39. Using a level adjust the frames on the high side of the brace so they are vertical and true, check for level throughout the brace installation.
40. Turn the upper and lower Outer Brackets until parallel, tighten the upper bracket, torque to 12 ft.-lb. and mark.
41. Measure the distance between the upper and lower Outer Bracket bolt holes, add 2.5 inches [take time to get it right].
42. Cut the 3x2 rail to the adjusted measurement, install the "U" nuts and pre-drill 1/8" pilot holes for the piercing bolts.
43. Slide lateral bracket angle nuts into the 3x2 cross brace keyways +1".
44. Adjust the lateral braces so they are fully engaged , trimming as needed to perfect the fit.
45. Tighten piercing bolts until they pierce the 3x2 wall, then torque to 12 ft.-lb. and mark.
46. Repeat items 37 – 45 until all cross bracing is installed.

Torque Schedule

- 1/2" lower bracket bolts to 40 ft.lb.
- 5/16" hex and piercing bolts to 12 ft.lb.
- Trox Machine Screws 12 ft.lb.
- Panel clips to 10 ft.lb.



High Tilt Panel Rail Installation

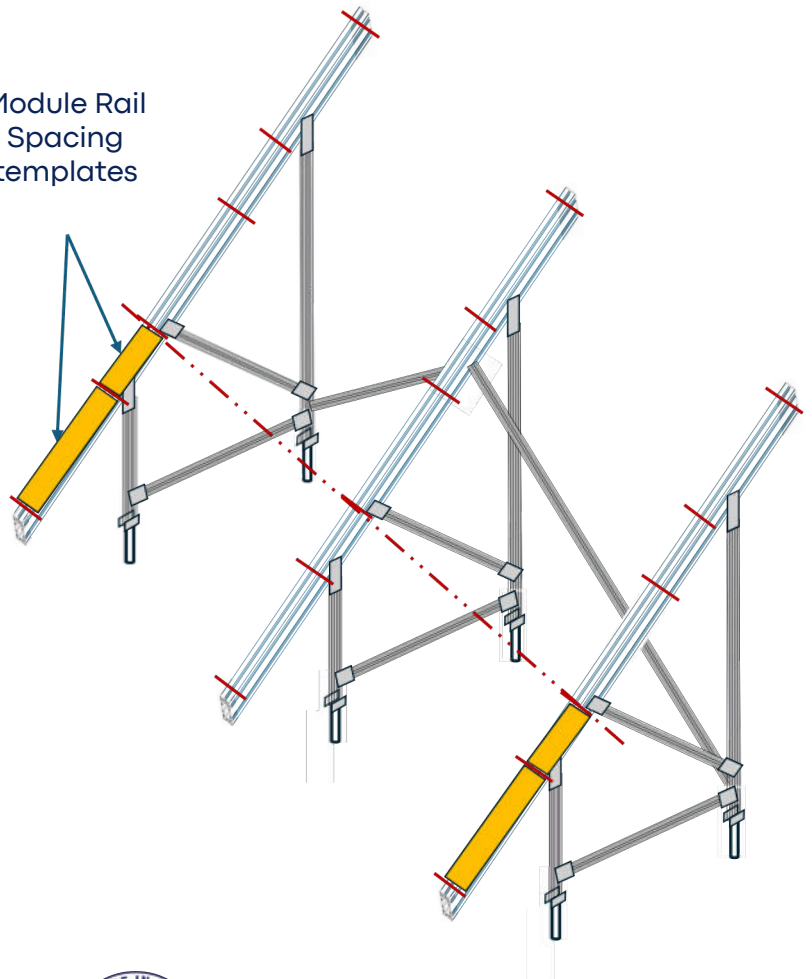
Illustrations Pending

47. Check the solar module make and model against the equipment specified in the Plans, if different check with UAP to verify hardware specifications.
48. Using the rail spacing provided in the module installation manual, make spacers from 2x4 lumber, be sure to account for the module rail thickness [make two of each length]
49. Locate the measurement for the starting point on the Plans, typically several inches from the low end of the Top Chord.
50. Use the spacers to mark the panel rail locations across the first and last frames, verify the last panel rail falls on the same spot on the first and last frames [measure from the end of the Top Chord]
51. Run a string line between the first and last Top Chord as shown in the diagram and using the spacers mark each panel rail location.

Notes

Review module installation manual to make panel rail spacing templates [material doesn't matter but typically wood 2x4s] UAP can provide templates as needed.

Module Rail
Spacing
templates



Markers

String line



High Tilt Panel Rail Installation

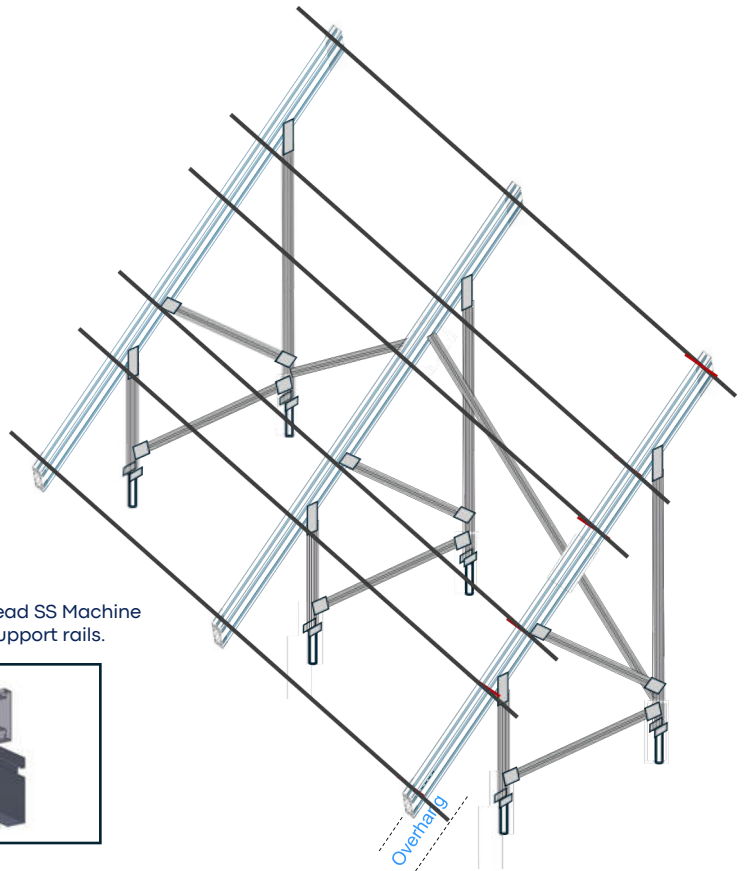
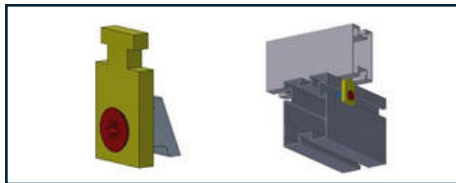
Illustrations Pending

52. Lay the panel rails across the top chords, adjust the overhang according to the Plans [trim excess after module installation].
53. Install panel rail splices [bond where needed - see splice detail].
54. Align panel rails across parallel frame marks [Item 50-51].
55. Distribute the Cleat Kits – two for each location where a panel rail crosses over a Top Chord.
56. Install the cleat Kits by inserting the cleat key in the panel rail keyway and the angle nut into the Top Chord keyway.
57. Beginning at the first frame tighten the machine bolts on both sides of the top chord using a Torx T-40 driver be sure the angle nut fully engages the keyway and torque to 12 ft.lb., and mark.
58. If a frame is not already level [vertical above the frame posts] - use a level to adjust the frame so it is vertical and true, then install the cleats along that top chord [Items 52-57].

Torque Schedule

- 1/2" lower bracket bolts to 40 ft.lb.
- 5/16" hex and piercing bolts to 12 ft.lb.
- Trox Machine Screws 12 ft.lb.
- Panel clips to 10 ft.lb.

UAP Cleat Kit:
UAP Cleat + UAP Angle Nut + Lobed Flathead SS Machine
Screw Anchors module rails to main support rails.

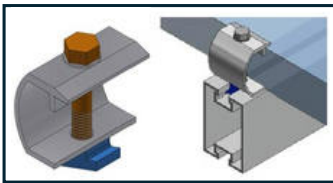


High Tilt Module Installation

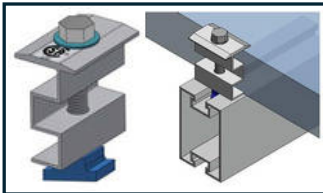
Illustrations Pending

59. Lay the panels in portrait along the first frame leaving a 1/2" gap between modules.
60. Align with the frame according to module manufacturer's installation manual and install the C Clip Kits by inserting the angle nut into the panel rail keyway and torque to specifications being sure the angle nut rotates fully engaging the keyway.
61. Set panels in portrait along the top of the array building across from the first column of modules.
62. Align with the panel rails and install the Waffle Clip Kits by inserting the angle nut into the panel rail keyway and torque to specifications, being sure the angle nut rotates fully engaging the keyway. [Note: be sure to follow UL 2703 grounding and bonding procedures by installing the grounding clamps and lugs per grounding instructions on following page.]
63. Repeat items 59-62 until all modules are installed.
64. Install Grounding Lugs on the panel rails adjacent to grounding clamps [ground wire not included].

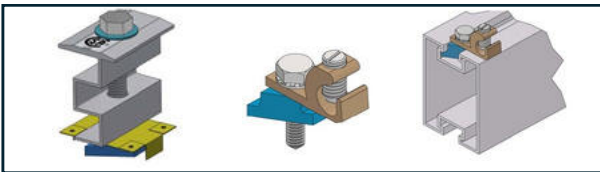
UAP C-Clip Kit:



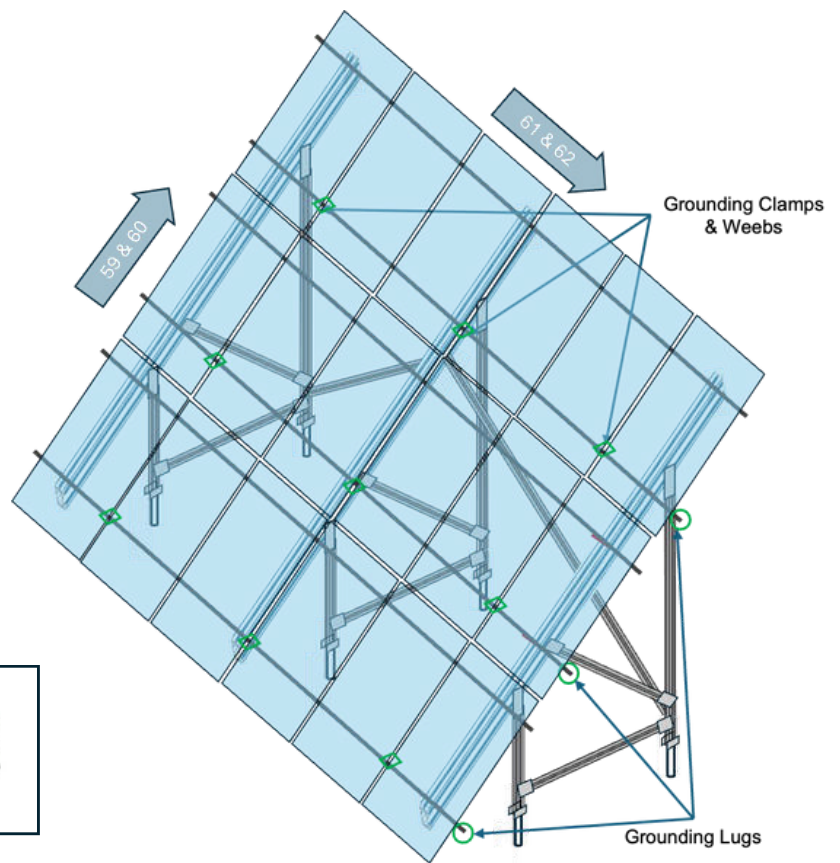
UAP Waffle Clip Kit :



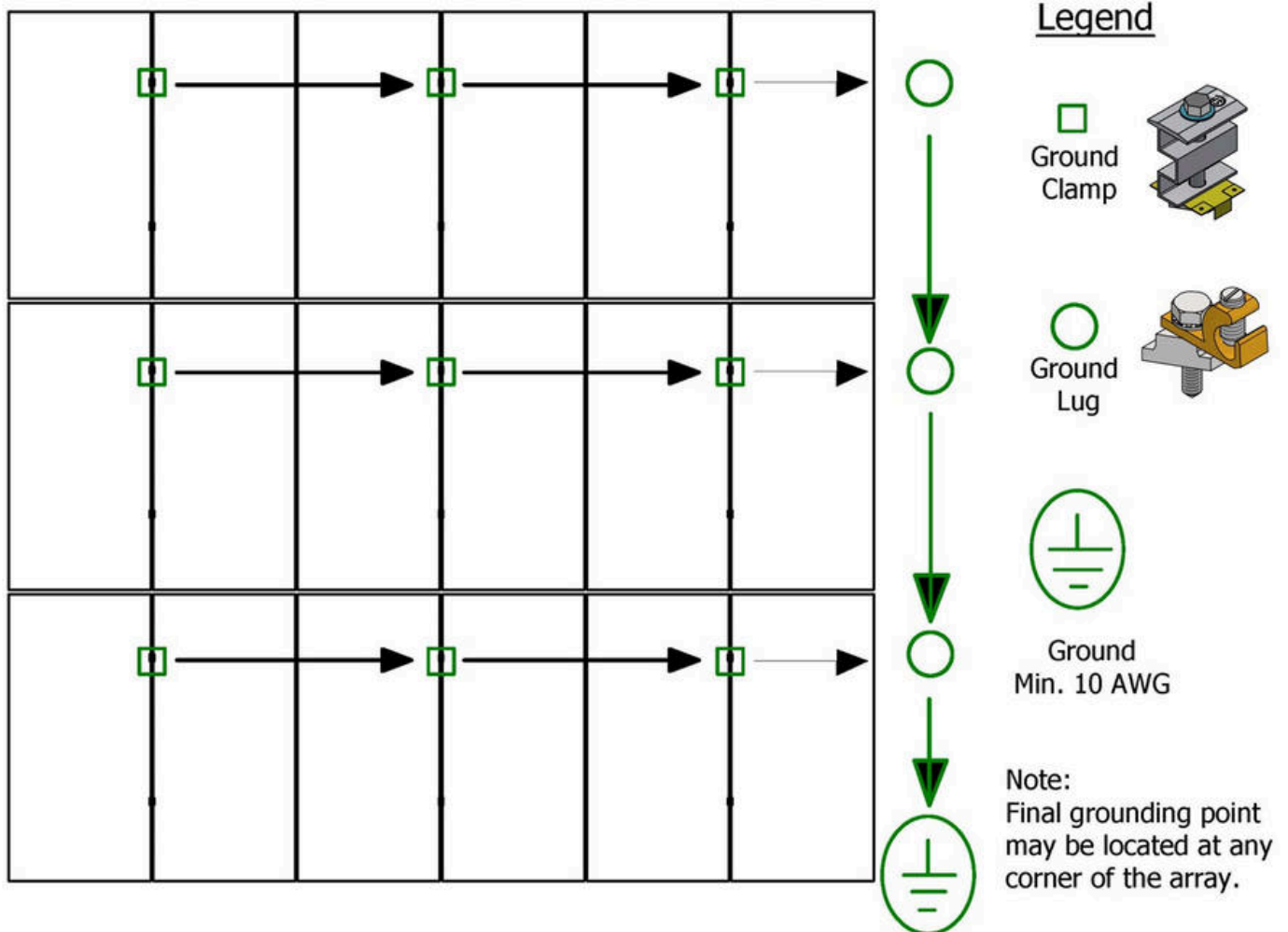
UAP Waffle Clamp & Panel Rail Grounding Kits:



UAP's grounding kits for UL2703 module to rail grounding



Typical Grounding System





Notes

UL2703 verified compatible modules [Note: UAP is constantly updating the list of UL2703 compatible modules – let us know your preferred module and we will submit for approval]

Modules tested to date are from the following manufacturers: Aptos Solar; Canadian Solar, Elin Energy; Heliene; Hyundai; JA Solar; Longi; Maxis; Meyer Burger; Mission Solar; M Solar; Panasonic; Phono Solar; Q-Cells; REC Solar; Runergy; SEG Solar; Silfab Solar; Solar 4 America, Solaria; Star Solar, Sunpower.

Grounding/Bonding

- Only grounding/bonding devices listed in this manual have been approved for use with this racking and qualified per UL2703 installation details provided in this document
- This racking system may be used to ground and/or mount a PV module complying with UL2703 only when the specific modules has been evaluated for grounding and/or mounting in compliance with the included instructions.
- Installation must be done in strict accordance with this instruction manual and the UAP provided site-specific plans
- Routine maintenance of a module shall not involve breaking or disturbing the bonding path of the system unless appropriate measures are taken to reestablish the bonding path.

Periodic Inspection

Periodic re-inspection of installed racking components must take place to identify any loose components, loose fasteners or corrosion. Loose or corroded components or fasteners must be tightened to specifications or replaced immediately per UAP approved O&M procedures.

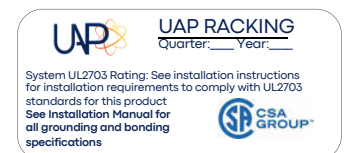
Design Load Rating

System Level Allowable Design Load Rating: Custom design load ratings are evaluated and approved by UAP's structural engineer and provided with each set of site-specific plans.

This system is designed to be expandable and is not limited by a maximum number of PV modules. The size of customer specified PV modules is evaluated by UAP's structural engineer and accounted for in the approved PE certified plans. Modular rail lengths can accommodate up to +30 modules in portrait or 14 modules in landscape according to the racking configuration.

Label

After the racking system is fully assembled, a single Marking Label should be applied to the rail at the edge of the array. **Note: The sticker label should be placed such that it is visible, but not outward facing.**



Notes

UL2703 verified compatible modules [Note: UAP is constantly updating the list of UL2703 compatible modules – let us know your preferred module and we will submit for approval]

Modules tested to date are from the following manufacturers: Aptos Solar; Canadian Solar, Elin Energy; Heliene; Hyundai; JA Solar; Longi; Maxis; Meyer Burger; Mission Solar; M Solar; Panasonic; Phono Solar; Q-Cells; REC Solar; Runergy; SEG Solar; Silfab Solar; Solar 4 America, Solaria; Star Solar, Sunpower.

Sharp Edges and Piercing Module Clamps

Ensure wiring is kept away from any sharp edges that may have resulted from cutting rails etc. Module clamping kits include preinstalled bonding nodes which are designed to pierce the module frame when tightened to proper torque.

Site-Specific Engineering Drawings

This manual is to be used in conjunction with the UAP provided site-specific engineering drawings and related installation details developed and approved for your specific project.

