THE RAIL-LESS MOUNTING SYSTEM

ROCKIT

www.ecofastensolar.com
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DESIGNED FOR INSTALLERS BY INSTALLERS

RockIt is a rail-less, solar mounting system designed for composition shingle, tile, low slope and metal roofs. This system is UL 2703 certified. RockIt features an innovative one-tool installation method.

Specialized mounting components provide for optimal versatility. RockIt can be installed in both landscape and portrait configurations. It’s easy to position slides are designed for North-South adjustability allowing for proper alignment. In conjunction with its flexibility on a horizontal plane, RockIt’s top-down leveling feature allows for vertical adjustment before, during, or after the installation.

Minimal pre-assembled components allow for reduced installation times as compared to rail-based systems. The unique top-down leveling system gives the installer the ability to level the array before, during and after the installation is complete.
SYSTEM OVERVIEW

FLEXIBLE DESIGN AND LAYOUT
- North-South adjustability
- Layouts in portrait and landscape
- 2 1/2” - 4” vertical adjustment for comp shingle roofs
- 6” - 7” vertical adjustment for tile roofs

FAST INSTALLATION TIME
- Fixed measurement specifications
- Top-down leveling system
- One-tool install
- Integrated bonding

SIMPLIFIED LOGISTICS
- No long rails
- Lightweight, modular components
## Ratings

<table>
<thead>
<tr>
<th>Fire Ratings*</th>
<th>Class A System Fire Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max System Voltage</td>
<td>1500V</td>
</tr>
<tr>
<td>Max Fuse Rating</td>
<td>20A</td>
</tr>
<tr>
<td>Certification</td>
<td>Conforms to UL STD 2703</td>
</tr>
<tr>
<td>Markings</td>
<td>Product listing label is located on the RockIt V3 Mount</td>
</tr>
<tr>
<td>Roof Pitch</td>
<td>2:12 - 12:12</td>
</tr>
<tr>
<td>UL 2703 Allowable Design Load Rating</td>
<td>30 psf downward, 30 psf upward, 20 psf lateral</td>
</tr>
<tr>
<td>Max Module Size</td>
<td>22 sqft</td>
</tr>
<tr>
<td>Maximum Span</td>
<td>6 ft Landscape, 4 ft Portrait</td>
</tr>
<tr>
<td>Maximum Cantilever</td>
<td>1/3 of span</td>
</tr>
<tr>
<td>Multiple use Rated Components (Position Independent)</td>
<td>Rockit V3 Mount, Rockit V3 Coupling, Rockit 2.0 MLPE Clip</td>
</tr>
</tbody>
</table>

*Class A System fire rating with Type 1 & 2 PV modules. Any module-to-roof gap is permitted, with no skirt required.

### UL 2703 Marking Example:

![Marking Example](image)

**ROCKIT SYSTEM**

MFG ID CODE: SSS-QQ-YYYY

Conforms to UL STD 2703

### Torque Specifications

<table>
<thead>
<tr>
<th>Component</th>
<th>Torque (in-lb)</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Lag Screws</td>
<td>N/A</td>
<td>Fully Seat. Use visual indicator of the black EPDM ring around the bonded washer for torquing.</td>
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<tr>
<td>V3 Mount</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>V3 Coupling</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Metal Slide Screw</td>
<td>N/A</td>
<td>Fully Seat. Use visual indicator of the black EPDM ring around the bonded washer for torquing.</td>
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<td>RockIt 2.0 MLPE Clip</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Ground Lug</td>
<td>N/A</td>
<td>Refer to specific ground lug manufacturer’s installation manual</td>
</tr>
<tr>
<td>RockIt Pedestal Screw</td>
<td>150</td>
<td></td>
</tr>
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### Rockit System Specifications

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
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<tbody>
<tr>
<td>Leveling Range</td>
<td>3” – 4” off the roof</td>
</tr>
<tr>
<td>Coupling Box Qty</td>
<td>24 units</td>
</tr>
<tr>
<td>Slide Comp/Steel N-S Range</td>
<td>3”</td>
</tr>
<tr>
<td>Slide Tile N-S Range</td>
<td>7”</td>
</tr>
<tr>
<td>Materials</td>
<td>300 series stainless steel, 6000 series aluminum</td>
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<tr>
<td>Skirt Box Qty</td>
<td>8 units</td>
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<tr>
<td>Coating</td>
<td>Black anodization/Mill finish</td>
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<tr>
<td>Mount Box Qty</td>
<td>24 units</td>
</tr>
<tr>
<td>Rockit Slide Box Qty</td>
<td>50 units</td>
</tr>
<tr>
<td>Slide Fastening Hole</td>
<td>5/16” diameter</td>
</tr>
<tr>
<td>Warranty</td>
<td>20 year material and workmanship</td>
</tr>
</tbody>
</table>
SYSTEM COMPONENTS REQUIRED

COMPOSITION SHINGLE

- GF1-GAL-BLK
- GF1-GAL-MLL

TILE

- TF-FLAT SIERRA TAN
- TF-W SIERRA TAN
- TF-S SIERRA TAN

STEEL

- STEELDECK
- SELF PIERCING SCREW

SYSTEM COMPONENTS ACCESSORIES

- CLIP 2.0
- J-PLATE COMP
- CONDUITMOUNT-BRKT
- CONDUITMOUNT-TILE
ROCKIT 3.0 FOR COMPOSITION - MOUNT ASSEMBLY
1. ROCK-IT V3 MNT - ROCK-IT MOUNT V3 BLK
2. ROCK-IT SLDCOMP BLK - ROCK-IT SYS SLIDECOMP 4”
   BLACK 4” lag screw & 5/16” EPDM bonded washer
3. GF1 - BLK, MILL, GAL BLK, or GAL MILL

ROCKIT 3.0 MOUNT ASSEMBLY W/ ARRAY SKIRT
1. ROCK-IT V3 MNT - ROCK-IT MOUNT V3 BLK
2. ROCK-IT V3 SKIRT - Portrait & Landscape - 32MM&38MM or
   35MM&40MM mid clamp cap & skirt end cap

ROCKIT 3.0 COUPLING ASSEMBLY W/ ARRAY SKIRT
1. ROCK-IT V3 COUPL - ROCK-IT COUPLING V3 BLK
2. ROCK-IT V3 SKIRT - Portrait & Landscape - 32MM&38MM or
   35MM&40MM mid clamp cap & skirt end cap
ROCKIT 3.0 FOR COMPOSITION - MOUNT COMP
1. ROCK-IT V3 MNT - ROCK-IT MOUNT V3 BLK
2. ROCK-IT SLDCOMP BLK - ROCK-IT SYS SLIDECOMP 4” BLACK 4” lag screw & 5/16” EPDM bonded washer
3. GF1 - BLK, MILL, GAL BLK, or GAL MILL

ROCKIT 3.0 FOR S TILE - MOUNT ASSEMBLY
1. ROCK-IT V3 MNT - ROCK-IT MOUNT V3 BLK
2. ROCK-IT SLIDETILE V2 - ROCK-IT SYSTEM SLIDE TILE 8” 4” lag bolt & 5/16” EPDM bonded washer
3. TF-S SIERRA TAN - TILE FLASHING S-SIERRA TAN
4. TILE BASE-S LITE - TILE BASE-S LITE ASSEM

ROCKIT STEEL 3.0 - MOUNT ASSEMBLY
1. ROCK-IT V3 MNT - ROCK-IT MOUNT V3 BLK
2. ROCK-IT STEELDECK
MODULE SPACING

STRUCTURAL ATTACHMENT POINTS
- Find the required structural attachment points.
- Mark these using a vertical (N-S) chalk line on the center of the rafters.

SPACING
- Spacing may vary depending upon project specific structural requirements: i.e. high snow and wind load areas may require lesser bracket spacing in the E-W axis vs. the maximum spacing.
- Max spacing is 48" OC for portrait orientation and 72" OC for landscape orientation.
- Consult project layout diagram for project specific bracket spacing on the roof.
- Install RockIt mounts to predetermined mount spacing.

ARRAY SKIRT SECTIONS
- The RockIt array skirt sections are the width of a typical 60 cell module.
- Use the RockIt array skirt as a guide to lay out module placement.

THE DISTANCE
- The distance between the rows of mounts is calculated by the module dimension N-S plus 1.5".
- Lag screw should be installed as close to center of exposed shingle as possible.
- The minimum distance between the lag screw and the edge of the shingle is 1/2".
STAGGERED LAYOUT WITH STAGGERED MOUNTING POINTS

- The array layout instructions in this installation manual offer a general overview of layout. Periodically, due to a variety of factors (roof obstacles, shading, etc.) other layouts are required.
  - RockIt Mount
  - RockIt Coupling

CANTILEVER & OFFSET

- Cantilever: Maximum cantilever is 1/3 bracket spacing. For portrait orientation installations, check layout prior to installing.
- Offset: offset from all roof edges depends on wind speed, snow loads, local fire and building codes per location.
**FLASHING & SLIDE INSTALLATION**

**VERSION 2.1 PUBLISHED: 7/29/2020**

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### SNAP LINES
- Locate the rafters and snap horizontal and vertical lines to mark the installation position for each GF1 flashing.

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### PILOT HOLE
- Drill a pilot hole (1/4" diameter) for the lag bolt. Backfill with sealant. EcoFasten recommends an EPDM mastic.

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### INSERT FLASHING
- Insert the flashing so the top part is under the next row of shingles and pushed far enough up slope to prevent water infiltration through vertical joint in shingles. The leading edge of flashing must butt against upper row of nails to prevent turning when torqued.

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### INSERT LAG BOLT
- Line up pilot hole with flashing hole.
- Insert the lag bolt through the EPDM bonded washer, the RockIt slide, the gasketed hole in the flashing and into the rafter.
- Torque: The range is between 100-140 torque inch-pounds depending on the type of wood and time of year. The visual indicator for proper torque is when the EPDM on the underside of the bonded washer begins to push out the sides as the washer compresses. If using an impact wrench to install the fasteners be careful not to over torque the fastener. You may need to stop and use a ratchet to finish the install.

*The Engineer of Record shall check capacity of rafter to support lag screw loading.*
INSTALL ECOFASTEN FLASHING WITH ROCKIT MOUNTS

- Follow EcoFasten installation instructions for flashings and brackets.
- Optimum vertical distance between lag bolts is 1 5/16" plus module dimension.
- Set mounts on eave most row so that the Rockit pedestal is on the South end of Rockit slide.
- Set mounts on all upper rows to the North end of Rockit slides.

INSTALL ROCKIT ARRAY SKIRT ONTO EAVE MOUNTS

- Slide Rockit array skirt into front channel on Rockit shelf.
- Tighten mid clamp bolt, clamping Rockit array skirt to mount.
- Torque to 200 in-lb.

INSTALL ROCKIT ARRAY SKIRTS WITH END CAPS

- Array skirt end caps are pre-installed on the East end of each skirt section, and are used to couple the skirt sections where needed.

INSTALL ROCKIT COUPLINGS WITH A LOAD BEARING FOOT

- Prior to mounting on the roof, snap the bearing foot into the bottom of the Rockit coupling.
- Each load bearing foot is set to the same height as the Rockit mounts - adjust accordingly.
- Use a load bearing foot when joining 4 panels with a coupling.
5. INSTALL ROCKIT COUPLINGS AND ARRAY SKIRT
- On eave row only, slide Rock-It array skirt onto Rockit coupling shelf.
- Torque to 200 in-lbs.

6. ALIGN & STRAIGHTEN 1ST ROW WITH ROCKIT ARRAY SKIRT
- Refer back to pg. 7, prior to starting this step.
- Use North-South adjustment of the Rockit Pedestal to straighten Rockit array skirt.
- Torque screw on side of Rockit pedestal to 150 in-lbs to secure it to the Rockit slide. The first row of Rockit mounts and array skirts should be level and aligned, with panel gaps evenly spaced before installing the level nut caps.

7. INSTALL LEVEL NUT CAPS
- Adjust flange level nut to level the system and install one level nut cap into the hole directly over the level nut on each Rockit mount mid clamp. This is to prevent accidental adjustment.
- If further leveling of the first row of panels or array skirt is required after the installation of the level nut caps, remove the mid clamps using the accessible bolt, reinstall the mid clamps with the level nut caps already installed, and re-level.

NOTE: DO NOT REMOVE LEVEL NUT CAPS AFTER THEY HAVE BEEN INSTALLED IN THE ROCKIT MOUNT MID CLAMPS.

8. INSTALL 1ST ROW OF PV MODULES
- Slide upslope RockIt mounts down to engage top of first module.
- Gap between modules (East/West) should be 1/2"
INSTALL SECOND ROW OF ROCKIT COUPLINGS
- Install RockIt couplings on the upslope side of 1st row of panels.

INSTALL ROCKIT ARRAY SKIRT ONTO EAVE MOUNTS
- Torque 2nd row of mid clamps on RockIt mounts and RockIt couplings to 200 in-lb.

INSTALL THE REMAINDER OF ROCKIT COMPONENTS
- Install balance of PV modules, ensuring that the RockIt pedestals are in the appropriate position, then torque mid clamps to secure modules.

NOTE: MANAGE WIRES AFTER EACH ROW OF MODULES IS INSTALLED

INSTALL ROCKIT COUPLINGS WITH A LOAD BEARING FOOT
- When assembly is complete, level all subsequent rows of panels by adjusting flange level nuts (flange level nuts have no torque value).
**TILE FLASHING INSTALLATION**

1. Locate rafter in the typical manner. Remove tile.
2. Remove clear film and align edges of base with edges of butyl tape. Press down firmly on the tile base.
3. Pre-drill lag bolt holes through base and butyl tape.
4. Remove release paper from bottom of butyl tape.
   - Place base in proper location and press down firmly.
   - Backfill holes with sealant. Install lag bolts in pre-drilled locations.
5. Install Flashing.
   - Always install one flashing prior to installing fasteners to verify layout
6. Attach compression bracket with provided 5/16”-18 x 1.25” Hex Bolt and EPDM bonded washer, torque to 120-150 in-lb. (May be attached in either North-South orientation.)

Re-align adjacent tiles as necessary to create a watertight roof connection.

**CONDUIT MOUNT BRACKET FOR TILE ROOFS INSTALLATION**

1. Locate rafter in the typical manner.
   - Remove tile.
2. Pre-drill lag bolts holes through base and backfill holes with RainBuster.
3. Place base in proper location and install lag bolts with washers in pre-drilled locations.
4. Apply RainBuster over screw heads and along leading upslope edge of the base.
5. Install Flashing.
   - Always install one flashing prior to installing fasteners to verify layout
6. Attach compression bracket with provided 5/16”-18 X 1.25” Hex Bolt and EPDM bonded washer, torque to 120-150 in-lb. Re-align adjacent tiles as necessary to create a watertight roof connection.
**ATTACH MOUNTING PROFILES**

- Screw the mounting profiles onto the roof using the self piercing screws. Use a cordless screwdriver or impact driver with a 1/4" hex socket.

\*A WATERTIGHT SEAL HAS BEEN FORMED WHEN THE RUBBER ON THE WASHER CREATES A VISIBLE RING AROUND THE SCREW HEAD.

---

**ATTACH MOUNTING PROFILES**

- Snap horizontal lines to mark the installation position for each Rockit Steel slide

**ROOF MARKING**

- Mark the center of the corrugation and draw a straight line to indicate where the mounting profile must be installed. Double check the ridge width (minimum of 0.75") and metal thickness (26ga).

**EAST-WEST ROOF MARKING**

- Snap horizontal lines to mark the installation position for each Rockit Steel slide

---

**CORRECT INSTALL**

**INCORRECT**

**INCORRECT**

**INCORRECT**

**INCORRECT**

**CORRECT INSTALL**

**TILTED**

**NOT ENOUGH TORQUE**

**TOO MUCH TORQUE**

---
**Pilot hole**

- Drill a pilot hole (1/4" diameter) for the lag bolt. Backfill with sealant. EPDM mastic is recommended.
- Insert the flashing so the top part is under the next row of shingles and pushed far enough up slope to prevent water infiltration through vertical joint in shingles.

**Line up**

- Line up pilot hole with GF1 hole.

**Insert lag bolt**

- Insert the lag bolt through the EPDM washer, the conduit mount bracket for composition shingle, the gasketed hole within the flashing and into the roof deck.

**Torque**

- The visual indicator for proper torque is when the EPDM on the underside of the bonded washer begins to push out the sides as the washer compresses. If using an impact wrench to install the fasteners be careful not to over torque the fastener. You may need to stop and use a ratchet to finish the install.

Consult an engineer or go to www.ecofastensolar.com for engineering data.
CONDUIT MOUNT BRACKET FOR TILE ROOFS INSTALLATION

- Hook the strap of the conduit mount over the top of the tile at the desired mounting location.

- Install conduit and conduit clamp (not included).
INSTALL ROCKIT CLIP 2.0 ACCESSORY

- Install the RockIt Clip 2.0
- Slide the RockIt Clip 2.0 onto the lip of the micro-inverter/power optimizer.
- Slide the micro-inverter/power optimizer into the opposite lip of the module frame.
- Tighten the bolt to 150 in-lb to clamp the RockIt Clip 2.0 to the module frame and the micro-inverter/power optimizer to the Rock-It Clip 2.0.
- Ensure that the lip on the clip is tight against the frame and that the micro-inverter/power optimizer flange is tight against the clip flange to avoid rotation during tightening.

ROCKIT CLIP 2.0 IS COMPATIBLE WITH:

- Enphase Products: M250-72, 250-60, M215-60, C250-72, S230, S280, IQ 6, IQ 6+, IQ, IQ7, IQ 7A, IQ 7+, IQ 7X, Q Aggregator
- and SolarEdge Products: P300, P320, P340, P370, P400, P405, P485, P505, P600, P700, P730, P800p, P800s, P850, P860
- See page XX for compatible module list

INSTALL ROCKIT J PLATE ACCESSORY

- Install the J-plate using the GF1 flashing installation instructions Refer back to pg. 11, prior to starting this step.
- Screw the customer-supplied J-box to the J-plate.

INSTALL ROCKIT SHIM CLIP ACCESSORY

- Install array skirt onto first row of array (see installation instructions pages 8-9).
- For 32mm modules, set the array skirt to the 35mm setting and install the skirt clip on upslope Rockit shelf.
- For couplings, attach to array skirt and install 2 skirt clips as shown far left.

Correctly installed shim clip
**THERMAL EXPANSION AND BONDING**

- A thermal expansion gap is required per each continuous 40’ length of modules.
- Omit a coupling and leave a 2” gap in the Rockit array skirt and also between the modules at that point.
- Bonding across the thermal gap should be accomplished with an approved ground lug for each array and an equipment grounding conductor.

**BONDING PATH & ASSEMBLY**

- Rockit 3.0 mount bonds N-S rows of modules
- Rockit 3.0 coupling bonds E-W rows of modules
- Rockit array skirt is bonded to the array via the Rockit mount.
- One approved ground lug is required per continuous PV array.
NECESSARY COMPONENTS

1. One of the following grounding lugs (or any UL2703 Compliant ground Lug):
   - Burndy CL50-1TN Ground Lug (UL2703 - E3514343 / UL 467 - E9999)
   - ILSCO SGB-4 Ground Lug (UL2703 - E354420/ UL 467 - E34440)
   - ILSCO GBL-4DBT (UL2703 - E354420 / UL 467 - E34440)
   - ILSCO GBL-4DBTH (UL2703 - E354420 / UL 467 - E34440)
   - ILSCO GBL-4SS (UL2703 - E354420 / UL 467 - E34440)

INSTALLATION

1. Insert the flange bolt into the module ground hole. Place Star Washer over bolt. Place ground lug over the bolt and Star Washer, and turn to desired orientation.
2. Install Flange Nut.
3. Tighten Flange Nut/Bolt.
4. Place wire in Ground Lug channel and tighten set screw to complete assembly.

*Equipment grounding wire should be sized in accordance with the National Electrical Code, NFPA70 and a minimum of 1/4” clearance is required between bare copper wires and aluminum components.
This racking system may be used to ground and/or mount a PV module complying with UL 1703 or UL 61730 only when the specific module has been evaluated for grounding and/or mounting in compliance with the included instructions.

Unless otherwise noted, “xxx” refers to the module power rating and both black and silver frames are included in the certification.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>List of UL2703 Approved Modules</th>
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<tbody>
<tr>
<td>AXITEC</td>
<td>AXITEC MODULES WITH 35 MM FRAMES</td>
</tr>
<tr>
<td></td>
<td>AC-XXXY/AAZZ</td>
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<tr>
<td></td>
<td>“Y” CAN BE M, P, OR MH; AND “AA” CAN BE BLANK, 125 OR 156; AND “ZZ” CAN BE 60S OR 120S</td>
</tr>
<tr>
<td>CANADIAN SOLAR</td>
<td>CANADIAN SOLAR MODULES WITH 35 AND 40 MM FRAMES</td>
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<tr>
<td></td>
<td>CSBY-XXXZ</td>
</tr>
<tr>
<td></td>
<td>WHERE “B” CAN BE 1, 3 OR 6; “Y” CAN BE H, K, P, OR V; AND “Z” CAN BE M, MS, M-SD, MS-SD, P, PX, OR P-SD</td>
</tr>
<tr>
<td>ET SOLAR</td>
<td>ET SOLAR MODULES WITH 35 MM FRAMES</td>
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<tr>
<td></td>
<td>ET-Y660XXXAA</td>
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<tr>
<td></td>
<td>WHERE “Y” CAN BE P, L, OR M; AND “AA” CAN BE WB, WW, BB, WBG, WWG, WBAC, WBCO, WWCO, WWBCO OR BBAC</td>
</tr>
<tr>
<td>HANWHA Q CELLS</td>
<td>Hanwha Q CELLS Modules with 32, 35 and 40mm frames</td>
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<tr>
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<td>aaYY-ZZ-xxx</td>
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<td>HYUNDAI</td>
<td>HUYNDAI MODULES WITH 35 MM FRAMES</td>
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<tr>
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<td>HIY-XXXXZ</td>
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<td>WHERE “Y” CAN BE A, M OR S; AND “ZZ” CAN BE HG, KI, MF, MG, SG, RG, RG (BK), OR TG</td>
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<tr>
<td>Brand</td>
<td>Modules Details</td>
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<tr>
<td>---------------</td>
<td>---------------------------------------------------------------------------------</td>
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<tr>
<td>ITEK</td>
<td>Modules with 40 mm frames&lt;br&gt;IT-XXX-YY&lt;br&gt;“YY” can be blank, HE, or SE</td>
</tr>
<tr>
<td>JA SOLAR</td>
<td>Modules with 35 and 40 frames&lt;br&gt;JAYZZ-60BB-XX/AA&lt;br&gt;Where YY can be M, P, M6 or P6; ZZ can be blank, (K), (L), (R), (V), (BK), (FA), (SE), (TG), (FA)(R), (K)(SE), (K)(TG), (L)(BK), (L)(TG), (R)(BK), (R)(TG), (V)(BK), (BK)(TG), or (L)(BK)(TG); “BB” can be blank, S01, SO2, SO3, S09, S10; and AA can be MP, SI, SC, PR, RE, 3BB, 4BB, 4BB/RE, 4BB/1500V, PR/1500V, 5BB</td>
</tr>
<tr>
<td>JINKO</td>
<td>Modules with 35 and 40 mm frames&lt;br&gt;JKMYXXXZZ-XX&lt;br&gt;Where “Y” can either be blank or S; “ZZ” can be M, P, PP, or -V; and “AA” can be blank, 60, 60B, 60H, 60HB, 60L, 60BL, 60HL, 60HBL, 60-J4, 60B-J4, 60B-EP, 60(PLUS), 60-V, 60-MX, 72H, 72H-V, 72HL-V, 72HBL-V, or 72L-V</td>
</tr>
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<td>LG</td>
<td>Modules with 40mm frames&lt;br&gt;LGXXX1Z-XX&lt;br&gt;“Y” can be A, E, N, Q, or S; “Z” can be C or K; and “BB” can be G4, A5, or V5</td>
</tr>
<tr>
<td>LONGI</td>
<td>Modules with 35 and 40 mm frames&lt;br&gt;LRA-60ZZ-XX/XX&lt;br&gt;Where “A” can be 4 or 6; “ZZ” can be blank, BK, PB, PE, PH, HPB, or HPH</td>
</tr>
<tr>
<td>MISSION SOLAR</td>
<td>Modules with 40 mm frames&lt;br&gt;MSBBEXXXZZAA&lt;br&gt;Where “BB” can be blank or 60A; “ZZ” can be blank, SO or SQ, and “AA” can be blank, 4J, 4S, 5K, 5T, 8T, or 8K</td>
</tr>
<tr>
<td>PANASONIC</td>
<td>Modules with 40 mm frames&lt;br&gt;VBHNXXXYYYYZA&lt;br&gt;“YY” can be either SA or KA; “ZZ” can be either 03, 04, 17 or 18; and “A” can be blank, E or G</td>
</tr>
<tr>
<td>REC</td>
<td>Modules with 30 and 38 mm frames&lt;br&gt;RECXYYYZZ&lt;br&gt;Where YY can be AA, M, NP, PE, PE72, TP, TP2, TP2M, TP2SM, or TP2S; and ZZ can be blank, BLACK, BLK, BLK2, SLV, or 72</td>
</tr>
</tbody>
</table>

When using 30mm REC modules, please refer to Rockit Shim Install Manual Version 1.0
<table>
<thead>
<tr>
<th>Brand</th>
<th>Modules and Frame Specifications</th>
</tr>
</thead>
</table>
| **RECOM** | RECOM MODULES WITH 35 AND 40 MM FRAMES  
RCM-XXX-6YY  
WHERE “YY” CAN BE MA, MB, ME OR MF |
| **RENESOLA** | RENESOLA 60-CELL MODULES WITH 40 MM FRAMES  
JCXXXY-ZZ  
| **S-ENERGY** | S-ENERGY 60-CELL MODULES WITH 40 FRAMES  
SNXXXY-ZZ  
“Y” CAN BE M OR P; AND “ZZ” CAN BE 10, OR 15 |
| **SILFAB** | SILFAB MODULES WITH 38 MM FRAMES  
SYY-Z-XXXAB  
WHERE “YY” CAN BE IL, SA, LA, SG OR LG; “Z” CAN BE BLANK, M, P, OR X; “A” CAN BE BLANK, B, H, M, N; AND “B” CAN BE A, L, G, OR T |
| **SOLARIA** | SOLARIA MODULES WITH 40 MM FRAMES  
POWERXT XXXR-ZZ  
“ZZ” CAN BE AC, BD, BX, BY, PD, PX, PZ, WX OR WZ |
| **SUNPOWER** | SUNPOWER MODULES WITH 40 MM FRAMES  
SPR-A-XXX-YY  
YY CAN BE BLANK OR G-AC |
| **SUNPREME** | SUNPREME MODULES WITH 40MM FRAMES  
GXB-XXXT |
| **TRINA** | TRINA MODULES WITH 35 MM FRAMES  
TSM-XXXYZZ  
“YY” CAN BE PA05, PC05, PD05, PX05, DD05, DD05A, DD06, DE05, DX05A; AND “ZZ” CAN BE BLANK OR A,.05, .08, A.05, A.08, A(II), A.05(II), A.08(II), H, H.05, H.08, H.05(II), H.08 (II), M, M(II) |
| **YINGLI** | YGE AND YLM SERIES MODULES WITH 35 AND 40 MM FRAMES |

System components should be periodically re-inspected for loose components, loose fasteners, and corrosion such that if found, the affected components are to be immediately replaced.