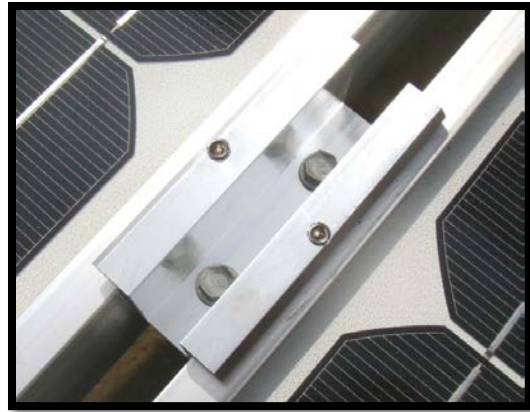


SkyGrip™ Solar Top Grounding Middle Clamp- INSTALLATION GUIDE

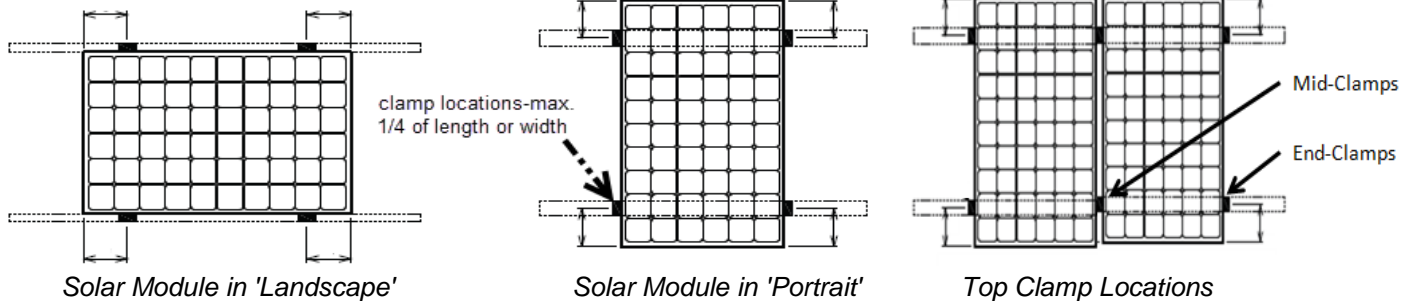
Product Features

- ❖ PV Module Mounting & Grounding Clamp
- ❖ One Part For Varied Module Frame Heights
- ❖ Removes Cost of Other Grounding Devices
- ❖ Replaces Copper Lugs & Wire Management
- ❖ Improves Time of Installation
- ❖ Choice of Clamp Hardware -TEK Screws or Bolt
- ❖ Reusable if PV Module is Replaced
- ❖ ETL Listed – UL467 US & Canada



The SkyGrip 'TGMC' is engineered to perform structural Top-Down fastening and superior ground bonding of coated aluminum solar module frames to galvanized or painted steel with self drilling screws or bolt (or aluminum structures with bolt). This aluminum middle-clamp is applicable for securing and grounding solar modules of frame heights from 31-50mm. Can be installed using two dual heat treated #12-14 self drilling screws, or a single 5/16" stainless steel bolt. The 'cup-point' set screws when secure penetrate anodized and conformal coated module frames for a lasting, corrosion resistant grounded connection from the solar module to supporting rails.

Top clamp attachments may be installed on the solar module's short or long side of the aluminum frame. Follow the solar module manufacturer's mounting instructions for clamp placement guidelines. Two (2) Middle Clamps are required between adjacent modules providing a minimum of two grounding intersections between first & last module (example: if row = 7 modules, then Middle Clamp quantity =12). End Clamps (non-grounding) are positioned at the end of the first and last module in a row. Note: Four (4) End-Clamps 'per row' are needed.



Tools

- A. Battery Powered Drill-Variable Speed/Adj. Torque Clutch
- B. Magnetic Hex Driver 5/16" (for self drilling screw)
- C. Torque Wrench 0-150in-lbs
- D. Adjustable Torque Screwdriver 2 to 30in-lbs
- E. 1/4" Hex Insert Bit - 3/32" Hex Drive

Hardware

- F. ELCO 'Dril-flex' #12-14 x 2" Self Drilling Screws (2/clamp)
- G. TGMC Top Grounding Middle Clamp
- H. Optional: 5/16"-18 x 1-1/2" Bolt & Serrated Flange Nut

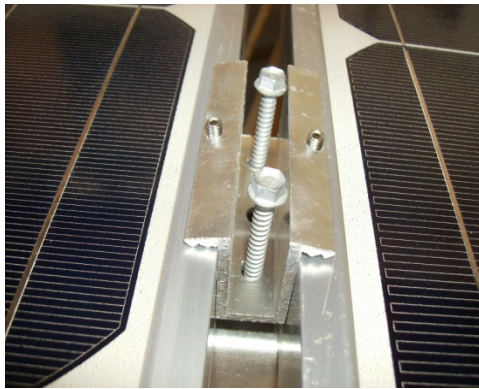


A. Battery Powered Drill B. 5/16" Hex Driver C. Torque Wrench D. Torque Screwdriver E. Hex Bit-3/32"

INSTALLATION SEQUENCE – TGMC-2 With Self Drilling Screws into #14 to #10ga. Steel;



1. Position the TGMC over the support rail, snug in-between solar modules.



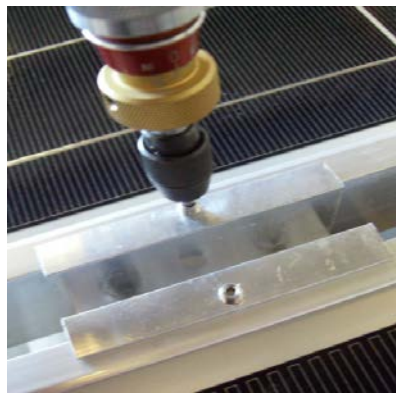
2. Place two #12 x 2" self drilling screws into The two holes & insure alignment W/rail.



3. Set to 'screw' mode, adjust drill torque clutch setting to achieve 30 to 36in-lbs.



4. Using a 5/16" magnetic driver-drill screws into sheet metal until secure, check W/torque wrench to 30 to 36in-lbs.

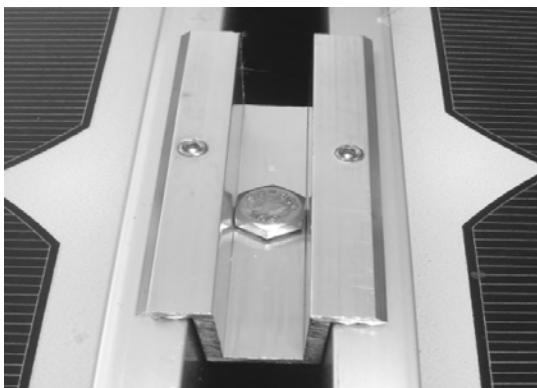


5. Adjust torque screwdriver to 20in-lbs use 3/32" hex bit, torque set screws.

Notes:

- Use only self drilling screws which are dual heat treated for ductility and resistance to hydrogen-assisted corrosion failures, with a galvanic barrier coating for corrosive environments-salt spray tested 2000 hours per ASTM B117.
- Do not over torque fasteners beyond the recommended values, this may cause damage to fasteners or the solar module frames.
- Do not use percussion drills or impact drivers or corded AC drills to install self drilling screws as they will cause micro-crack damage to case hardened fasteners or strip sheet metal by over-torque.

INSTALLATION SEQUENCE – TGMC-1 With Single 5/16" Bolt;



SkyGrip is designed to captivate the head of 5/16" hex bolt, the supporting rails will need pre-drilled 3/8" dia. holes for the bolt (or can be steel strut, a 5/16" socket head bolt and strut nut). Place the bolt through the center hole of the clamp. Place clamp snug between modules and insert bolt into rail, apply the serrated flange nut. Using torque wrench fasten the flange nut (or bolt) to 120in-lbs. Adjust the torque screwdriver to 20in-lbs. Use a 3/32" hex bit, torque both set screws.

