

EzQuik™ Model V2

Ground Mounting System GMS-V2 Installation Manual (AS/NZ1170)



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MicroSolar System

EzQuik™

Solar PV Module Ground Mounting System

INTRODUCTION

EzQuik

Thank you for choosing EzQuik.

This manual provides easy step-by-step installation instructions. For additional information, please contact us by email on info@microsolarsystem.com.au or your local distributor in Australia.

EzQuik Ground Mounting System is specifically designed ground mounting system for PV modules. It could be comfortably used in all sorts of different installation environment, from large size commercial system or small residential requirement. This system use high quality pre-assembled steel and aluminum extrusions, providing high safety factors and low installation cost, extremely easy to install.

It's a smart system of engineered components that allows installers to quickly assemble them without worrying earthing issues. No more extra wiring is required to earth each PV Module. With *EzQuik* you'll be able to solve virtually any PV module mounting challenge and meet the requirements of your local authority.

Technical support: *EzQuik* will be upgraded according to the changes of latest compliance documentation, and government requirements. Person-to-person customer service, and design assistance to help you solve any challenges you may come across.

This is why *EzQuik* is one of the most widely used mounting systems.

The mounting systems are compliant with applicable local or Australian building codes:

AS 1170.2 part 2:	Wind Loads
AS/NZS 3000:2007	The Wiring Rules
AS/NZS 5033:2005	Installation of photovoltaic (PV) arrays

BEFORE YOU BEGIN

Verify that all components are included and consistent with you order.

To avoid conflicts, never modify or combine the system with components that are not made by **MSS**. Otherwise, warranty provided for this system will be voided.

This manual provides detailed instruction of system structure installation and fixing of PV modules on the system. Before putting up this system, please make sure foundation of the installation venue meets the requirements from local authority. Also, please make sure product model number matches the one showing on the installation manual. And confirm you have prepared all essential tools. In order to speed up the installation

process and improve accuracy, MSS recommends using laser level meter to check the level of system and position of Post support.

Installer's Responsibilities and Planning

Please review this manual thoroughly before installing your *EzQuik* system.

This manual provides (1) engineering supporting documentation for building permit applications in Australia relating to MSS's *EzQuik* Aluminum Solar PV Module Mounting System, and (2) Planning and assembly instructions for *EzQuik*.

EzQuik products, when is installed in accordance with this guideline, will be structurally adequate and meet the structural requirements of the various wind speed regions in Australia in accordance with AS 1170.2 SAA part 2 Loading Code – wind loads. MSS provides limited warranty on *EzQuik* products.

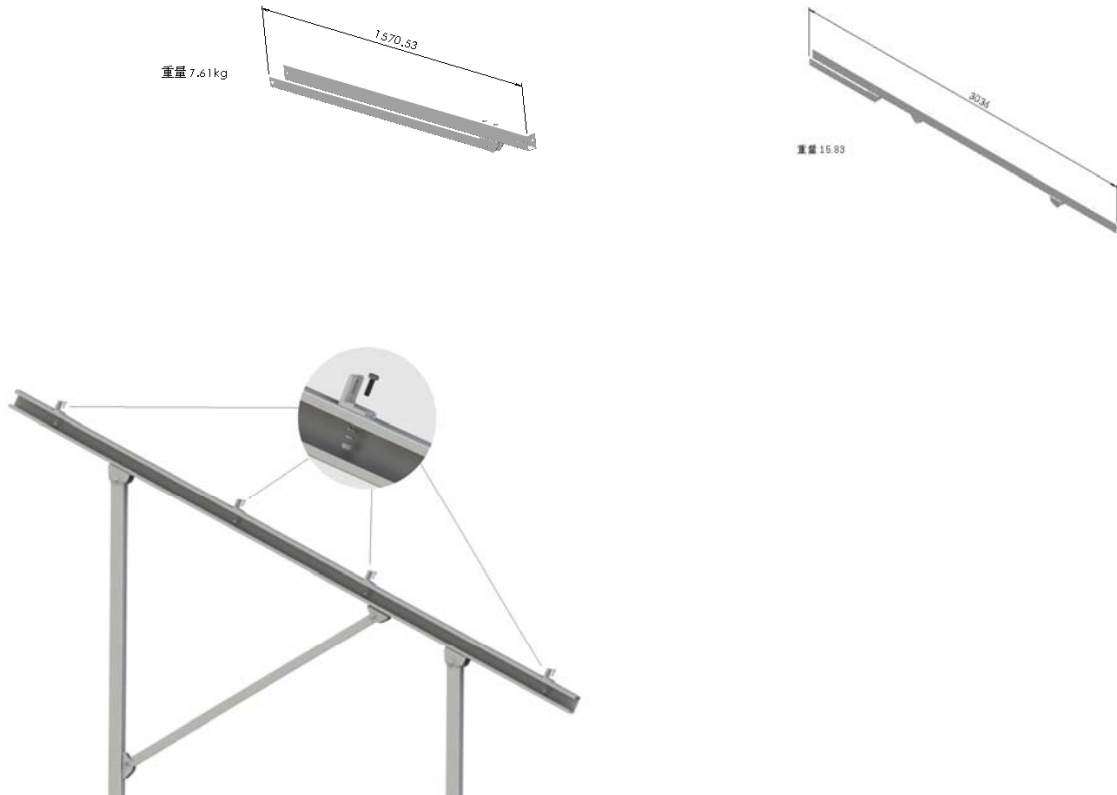
EzQuik products, when is installed in accordance with this guideline, will be structurally adequate and meet the structural requirements of the various wind speed regions in Australia in accordance with AS 1170.2 SAA part 2 Loading Code – wind loads, Installation of roof tiles AS2050, Design and installation of sheet roof and wall cladding AS/NZS 1562.1, AS 3000 Wiring Rules and AS 5033 Installation of PV arrays. MSS provides limited warranty on *EzQuik* products.

The installer is solely responsible for:

- Complying with all applicable local or national building codes, including any that may supersede this manual;
- Ensuring that MSS and other products are appropriate for the particular installation and the installation environment;
- Ensuring that the roof, its rafters, connections, and other structural support members can support the array under all code level loading conditions (this total building assembly is referred to as the building structure);
- Using only MSS parts and installer-supplied parts as specified by MSS (substitution of parts may void the warranty and invalidate the letters of certification in all MSS publications);
- Ensuring that lag screws have adequate pullout strength and shear capacities as installed;
- Verifying the strength of any alternate mounting used in lieu of the lag screws.
- Maintaining the waterproof integrity of the roof, including selection of appropriate flashing;
- Ensuring safe installation of all electrical aspects of the PV array;

EzQuik Ground System Components

Components List, refer to fig as below

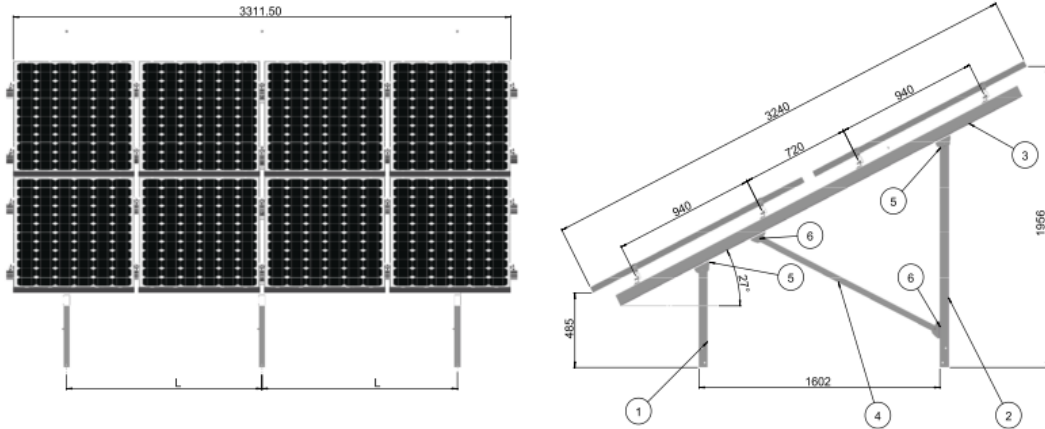


	Item	Material	Profile Dimension (mm)
1	Front Post	Q235(ASTM A36)	60x40x2
2	Back Post	Q235(ASTM A36)	60x40x2
3	Beam	Q235(ASTM A36)	80x45x10x2
4	Brace	Q235(ASTM A36)	40x30x1.8
5	Joint 6040	Q235(ASTM A36)	4 (thickness)
6	Joint 6040	Q235(ASTM A36)	4 (thickness)

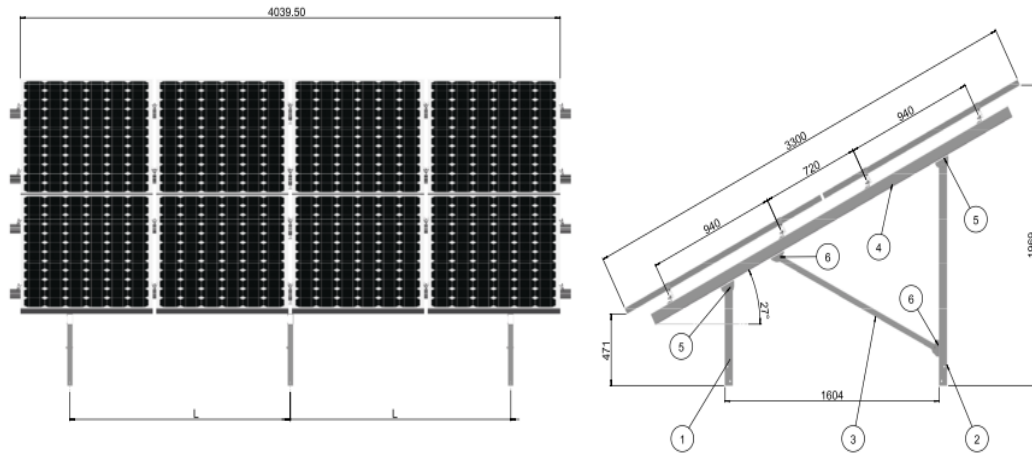
Installation Planning

EzQuik Ground Mounting System V2 is compatible for panels from 1500mm to 1820mm long.

Design for panels 808mm x 1580mm



Design for panels 990mm x 1640mm



Minimum spacing (L)

For EzQuik Ground Mounting System V2, the spacing (L) is determined by the wind zone as below.

Wind Zone	A	B	C	D
Wind speed (Vp m/s)	41	49	57	69
L Spacing (mm)	2300	2300	1800	-

Construction of Mounting System

The Posts can be bolted onto either Post Anchor (PSA) as left fig of below or Ground Foot (MSGF) or Earth Auger however, that depends on site conditions



PSA



MSGF



Earth Auger

Use Earth Auger

In Wind Zone A, Earth Auger could formed part of the foundation of the ground mount system, providing installation site is composed of solid soil and no rocks within 1m depth range. Depth requirement for Earth Auger is not less than 850mm.

Use MSGF

If prefabricated reinforced concrete exists, and its area more than 1.5 Sq.m and thickness is not thinner than 100mm, with strength not less than 25Mpa, then recommend using 2xM12 Grade 5.8 Carbon Steel anchor studs with Ramset Chemset REO502 chemical injection anchoring system to fix MSGF.



Use PSA

When using PSA the footings should be taken down to firm subsoils and to depths required in plans or specifications. See table as below.

Table 1

wind zone	A	B	C	D
Wind Speed Vp (m/s)	47	57	66	80
Foundation Size	400x400x740	500x500x750	500x500x800	500x500x900
	440x440x600	570x570x600	595x595x600	600x600x600
Concrete Volumn (CuM)	0.118	0.194	0.212	0.224

The top surface of footing should slope away from support or posts to prevent water ponding as in fig 1.

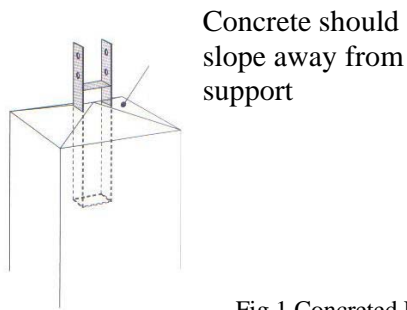


Fig 1 Concreted PSA

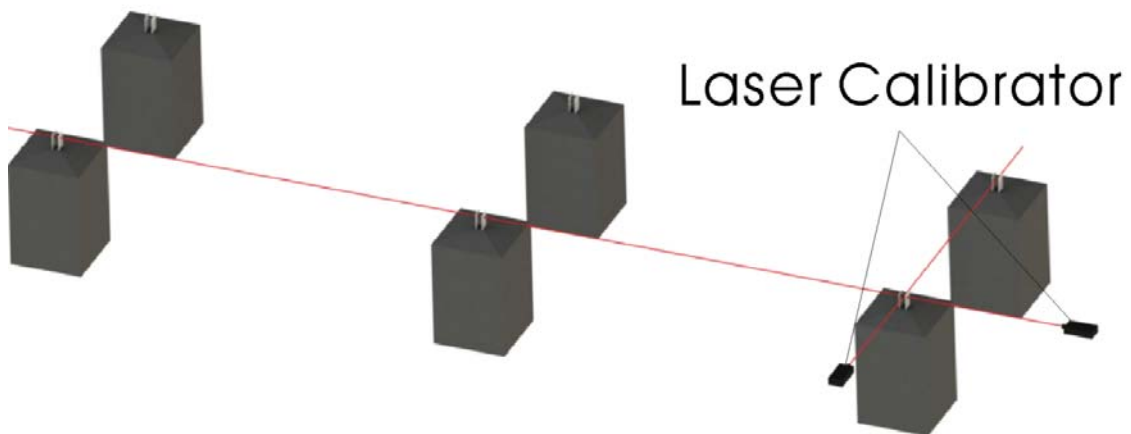
The post support (PSA) can be embedded in concrete prior to or after attaching the post as fig. below, but we recommend the latter.



How to do

Below procedure should be followed regardless which type of ground fixing is chosen.

- Step 1 Base on size providing on table 1, excavate the post holes.
- Step 2 Make sure center of all the holes on all rows and columns are on the same straight line. See pic as below
- Step 3 Bury PSA straight up and ensure the height of all PSA the same. See pic as below



Step 4 Make sure all joints have been tightened.

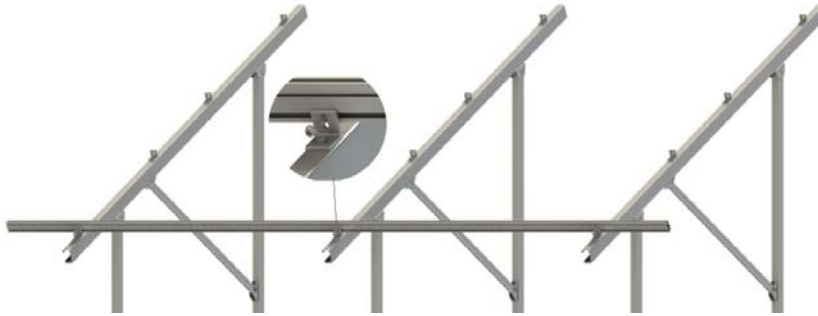


Step 5 Repeat above steps until the whole system has been constructed. See pic as below. Please be reminded all C purlins need to be on the same straight line. The tolerance $\pm 20\text{mm}$ and ± 1.5 degree are allowable



Installing the Rail

Step 1 Before putting up the rails, please double check again all C purlins are on the same straight line. During installation, rail height could be slightly adjusted to make sure all rails are straight and within the range of tolerance.



Please note:

MSS ground mount system is suitable to be used on large scale ground mount projects. On system GMS-V2, there are two factory pre-set brackets in the middle of the beams. If needed, user could adjust the other two brackets position to meet product requirement.

Step 2 Before fixing the rail on the beams, please make sure the rail is long enough, otherwise, please use MSSPL to join the rails. If more than 2 joiners are needed, please leave 1-2mm gap in between each rail to absorb the effect of thermal expansion. And at the same time, make sure they are on the same straight line.



Step 3 Install all rails according the planning.



Installing PV panels

Pick the right size mid and end clamps and lay down all the PV modules.



Please ensure there is 20mm gap between the top and bottom row of PV modules.



Install the earthing lug onto one of the rails from each row of PV modules. And connect the earthing cable to the earth lug according to the wiring rules.



Please note: EzQuik ground mount system is incorporated with built-in earthing system. Except for the earthing lug on the rail, there are no other extra works required to earth the whole system. MSS guarantee that the earthing connection has met Australian Standard AS5033.

Warranty

To the original purchaser of our products, MicroSolar System Pty. Ltd., warrants that all products shall be free of defects in material and workmanship for a period of 10 years at its first installation site, from the date of installation or 60 days after purchase, whichever is earlier.

The warranty does not apply to any foreign residue deposited on the finish. All installations in corrosive atmospheric conditions are excluded. This warranty does not cover damage to the product that occurs during its shipment, storage, or installation.

This warranty shall be voided if installation of the product is not performed in accordance with MSS's written installation instructions and design specifications therein, or if the product has been modified, repaired, or reworked in a manner not previously authorized by MSS in writing, or if the product is installed in an environment for which it was not designed.

MSS shall not be liable for consequential, contingent or incidental damages arising out of the use of the product by purchaser under any circumstances.

Within the specified warranty period, the product shall be reasonably proven to be defective, then MSS shall repair or replace the defective product, or any part thereof, in MSS's sole discretion. Such repair or replacement shall completely satisfy and discharge all of MSS's liability with respect to this limited warranty. Under no circumstances shall MSS be liable for special, indirect or consequential damages arising out of or related to use by purchaser of the product.

Manufacturers of related items, such as PV modules and flashings, may provide written warranties of their own. MSS's limited warranty covers only its product, and related items.

EzQuik[™]

GMS-V2 INSTALLATION MANUAL

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