

## 组件装卸、拆包及安装指导手册

# Unloading, Dismounting and Installing guide of Module

### 前言 Introduction

- 在装卸、拆包和安装光伏组件之前，请仔细阅读本手册。因为光伏组件本身具有的特定电气特性及本身结构构成的特性，请严格遵守当地电气设备安装的相关法律法规及标准的要求，请严格遵守当地关于劳动保护的相关法律法规及标准的要求。
- Please read this manual carefully before PV module unloading, dismounting and installing. Due to the character of PV module is compose by specific electric and itself. So, comply with relevant laws and regulations and standards of local electric equipment installation strictly, and comply with relevant laws and regulations and standards of local labor protection strictly.
- 请确保组件装卸及安装人员是经过相关职业培训的合格人员或在具有相关资质工程技术人员的充分指导下进行相关的工作。
- Please make sure that loading and unloading people have passed relevant professional training or have been sufficient directed by relevant engineers and technicians when they are loading and unloading.
- 请勿损坏或刮伤组件的前后表面，请勿在组件表面潮湿的情况下进行相关的搬运或安装操作，以防止触电。
- Don't damage or scratching the front and back cover of module, and moving or installing under the circumstance that the surface of module is wet, in case of electric shock.

### 安全预防 Security prevention

- 当光伏组件暴露在阳光下时将产生连续的电流。因此存在触电或造成燃烧的可能。即使在断开与电路或负载连接的情况下，光伏组件也会产生非安全等级的电压。所以在组件可能暴露于阳光下的情况下，搬运或安装组件的过程

中请采用采用电气绝缘工具和电气绝缘橡胶手套。光伏组件本身并无相应的开关装置，当用非透光性材料遮盖光伏组件的前面板或将光伏组件的前面板翻至放在光滑的平面上时，光伏组件将处于非工作状态。日照强度、地面水面及冰雪的反射、气温等环境因素均会影响到光伏组件的电压、电流及功率输出。

- It would produce a continuous current when the PV module exposed under the sunshine, which caused the probabilities of electric shock and burning. Even though in the disconnection and load connection, PV module will also produce insecurity voltage. So when the module exposed under the sunshine in possible, please use the electrical insulation tools and rubber gloves in the process of moving or installing. There is no corresponding switches device in the PV module, when the materials with not pervious to light be used to cover the front panel of the module or put the front panel of the module face to the smooth surface, the PV module will be out of work. The intensity of sunshine, reflection of ground, water, and ice, temperature, and others environmental factors all will affect the voltage, current, and power output of module.
- 晶科光伏组件的前后表面分别由钢化玻璃、高分子材料背板构成。在装卸、拆包及安装过程中需要小心处理。在前面板玻璃破裂或背板破损的情况下，接触组件的表面或边框时可能会有触电的危险，尤其是在潮湿的环境条件下。此类破损组件需要谨慎处理。
- The front and back panel of Jinko's PV module are separate composed by tempered glass and high polymer materials back sheet. Please be careful in the process of unloading, dismounting, and installing. When the tempered glass or the high polymer materials broken or damaged, electric shock would be happened if someone touch the surface or components of the module which should be dangerous, especially in some damp environment conditions. Please be careful to deal with these kind of damaged modules.

- 晶科光伏组件的中间部分由电池片、EVA 构成。由于电池片本身具有的易碎易裂的物理特性。在装卸、搬运、拆包和安装过程中，需要采取一定的预防措施以避免可能发生的电池片隐裂或破损情况。电池片的隐裂或破损均会影响光伏组件的电压、电流及功率输出。
- The middle part of Jinko's PV module is composed by cells and EVA. Due to the fragile physical property of cells, prevent measures should be took to avoid potential micro-crack or damage. Both Micro-crack and damage of cells would affect the voltage, current and power output of module.
- 晶科光伏组件被设计应用于某些应用环境，不包括外太空、海底以及聚光光伏系统，也不适合应用于可能部分或全部长期浸没在水中的场合。
- Jinko's PV module should be designed and applied for some application environment, except outer space, seafloor and spotlight PV system, and also do not suit to apply for the part or whole situation that immersion in water.
- 不要拆解或移去组件的任何部分包括标签、二极管等，除非事先被许可。将光伏组件或其拆解下来的某些组成部分用于非发电用途时，相关可靠性将得不到保证，并会导致相关的质保条款失效。
- Do not dismounting or remove any parts of module, including label, diode and so on, without permit previously. If use the PV module or some components from it for generate electricity, relevant reliability would not have guarantee and make relevant warranty items do not effective.
- 在有可燃性气体、蒸汽或可爆炸性气体、蒸汽、粉末存在的环境中，进行光伏组件相关作业时，要严格遵守相应的安全操作规程，避免任何的火星可能造成的安全事故。
- In the environment with combustibile gas, steam or explosibility gas, vapour and powder, doing relevant job of PV module should comply with corresponding safety operation specification strictly, in case of any accidents by sparks.

## 标准和规范 **Standards and norms**

- 光伏组件作为光伏发电系统的组成部分之一，在进行安装时必须遵守当地有关的机械、电气安装规范、标准、法律法规的要求。
- PV module as a constituent part of PV generating system, should comply with the requirements of local relevant machine, electric installation specification, standards and laws and regulations during installing.
- 晶科的光伏组件符合 IEC61215, IEC61730 和 UL1703 标准的要求。
- Jinko's module in according with IEC61215, IEC61730 and UL1730.

## 组件装卸、拆包及安装

### Unloading, dismounting and installation of module

- 组件到货后，用户应及时检查产品的外包装情况，如果发现有外包装损坏的情况请做好记录并拍照。
- After module arrived, users should check the package in time, and take notes and pictures once found the damaged package.
- 在装卸、运输及堆放过程中，组件均应有合适的包装并保持包装的完整性。在实际使用之前，请保持组件的初始包装。
- Modules should have suitable package and keep completeness. And keep module initial package before use it.
- 装卸时，应以包装托盘为单位进行；装卸过程中应以托盘作为起运或起吊受力平面，避免托盘上的组件侧面受挤压或尖锐物体的碰撞。
- Package pallet should be the unit during unloading. The pallet should be a force plane for shipment or lifted in the process of unloading, in case of the pressure by one side of module on pallet or crash by edges.
- 在组件保管场所，组件堆放高度不要超过组件使用手册中的规定堆放高度。
- The stacked height should not higher than the ruled height in the user's guide in module custody place.
- 无托盘组件堆放时，要检查确认地面相对平坦，堆放地点不应明显凹凸不平或存在尖锐杂物如砂石、木头、金属等。
- The ground should be smooth when there is no pallet module to pile up. The stacked place should not concave-convex or exist sundries such as

dinas, woods, and metal, and so on.

- 组件保管场所应尽量干燥，远离潮湿场所。
- Module custody place should be dry as far as possible and keep away from damp place.
- 拆包时，需选择合适的工具，防止在剪掉包装带和密封胶带时损坏组件，特别避免组件正面钢化玻璃、背面背板、铝框等的划伤。
- Suitable tools should be selected during dismounting, in case of damage the module when cutting the packaging tape and sealing up the adhesive, especially to avoid scratching on front cover, back sheet and frame, and so on.
- 请遵照组件产品手册中关于拆包的相关说明。（备注遵照组件包装上盖印刷的拆包说明）
- Please comply with the relevant description for dismounting in product manual.( remark: Comply with dismounting description that print on package)
- 不允许以抓住组件电缆的方式来拖拽、移动和运输组件。
- Do not allow to drag, move and transport modules with the cable.
- 参照包装箱上的双人标志来搬运组件，避免只抓住单侧组件边框来搬移组件。
- Moving module refers to the signs on the package. Do not move modules with only holding one side of the frame.
- 组件本身的结构及机械物理性能设计不允许在组件表面站立或行走。实际安装过程中，只允许沿组件边框处站立或行走，站立或行走的落脚点必须在组件安装的支撑紧固点周围。不允许在组件安装的支撑紧固点周围意外的区域，如：组件的四角、电池片分布区域及其它边沿区域站立或行走。
- Standing or walking on module's surface not allow to the structure and machinery physical performance itself. In the process of real installing, people could just stand or walk along module's frame and the foothold of standing or walking should surround the support fastening point that module installed. Do not allow the area beyond the surrounding of support fastening point that module installed, like: Standing or walking along

quadrangle, cells distribution area and other areas.

- 不遵守以上装卸、拆包及安装原则，可能会造成光伏组件产品的损坏或性能下降，并导致产品质保失效。
- If don't comply with the unloading, dismounting and installing rules above, may cause the PV module damage, performance decline and product warranty does not effective.