



Solar PV Container

User Manual

Ver 2.0
Date 2024.04.25

FOR 20GP80K

Shanghai HuiJue Network Communication Equipment Co., Ltd

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1.General Information

1.1 Copyright

Information written in this document is subject to change without notice. This document shall not be copied or disclosed to third parties not used for unauthorized purposes without the written permission of SENTA ENERGY.

1.2 Contacts

This document does not cover all versions and details of the product .Also,it does not take into account all events that may affect the product.If information is required beyond the instructions provided in this document,refer to SENTA ENERGY.

1.3 Document Version

Ver 2 .0 Document release date: 2024.04.25

1.4 Warning

The product induces high voltages that may cause electric shocks and burns.For this reason,only personnel with knowledge of electrical hazards can work on the device.Pay attention to safety when transporting and lifting containers; wear gloves and other guards when unfolding and folding the frames.

2.Product Description

2.1 Introduction

This manual aims to provide all necessary information for operating the system. This manual gives recommendations for maintaining the system minimizing downtime. To ensure the proper operation of the system and the security of staff, this manual must be read before operating the Solar PV Container and all instructions must be followed.

The Solar PV Container is a containerized solar power solution. It has been designed with the aim of combining solar electricity production and mobility to provide this electricity everywhere around the world.

2.2 Main Features

The Solar PV Container is a mobile plug and play solution of deployable solar modules to produce green energy.

The Solar PV Container consists of main items listed below:

- *20GP Container (customized)*
- *42 Galvanized Steel Frames*
- *480W ,120pcs N-type TOPCon Half-cut cells, 182 mm, BIFACIAL DOUBLE-GLASS*
- *4 modules on each frame*
- *1 inverter*
- *1 AC and auxiliaries electrical cabinet*
- *1 Electric lock cabinet*

2.3 Other components

The other components included with the Solar PV Container to be used for its installation are listed below:

- *88 Track Supports*
- *2 Transfer Tracks*
- *42 Tracks*
- *4 Frame Stop Locks*
- *84 Frame Fixed Plug-in*
- *46 U-type Track Fixed Locking Screws*

3.Required Tools

A non-exhaustive list of tools for installation of both mechanical and electrical systems is listed here below. The contractor in charge of the installation shall make sure to have as a minimum:

- *Silicone lubricant for greasing joints and wheels during unfolding operation*
- *Expansive foam or sealing cement to seal the reservations in the floor of the container after the passage of cables.*
- *Galva paint or zinc powder for galvanic touch up on frames*
- *Set of electrical screwdrivers for operation on inverter and electrical cabinet*
- *Set of Allen keys for operation on inverter*
- *Wrenches (from 6 to 20,metric system)for operation on frames and safety*
- *Socket or ratchet wrenches (from 6 to 20,metric system) for operation on frames and safety bars;hydraulic crimper*

- *Torque wrench with set of sockets (Allen male, Torx female and female socket) for operation on frames and electrical cabinet*
- *Colson or Colring zip tie (UV resistant, 150 mm and 450 mm length) for repairing fasteners on electric cables*
- *Crimping tool for operation on electric cables*
- *2 Jacks 4T*
- *2 Channel beam (PV Solar frame group for jacking through the jack top)*

4. Safety

The following measures are applicable for all operations carried out during the installation of Solar PV Container :

- *Wear PPE at any time. This includes : safety helmet, safety shoes and gloves*
- *Strictly follow the procedures described in this manual. Do not deviate unless a proper risk analysis has been carried out*
- *Before starting the operation, the leader of the operation is to be clearly identified and should brief all participants to ensure that they are all aware of their respective roles and of the risks*

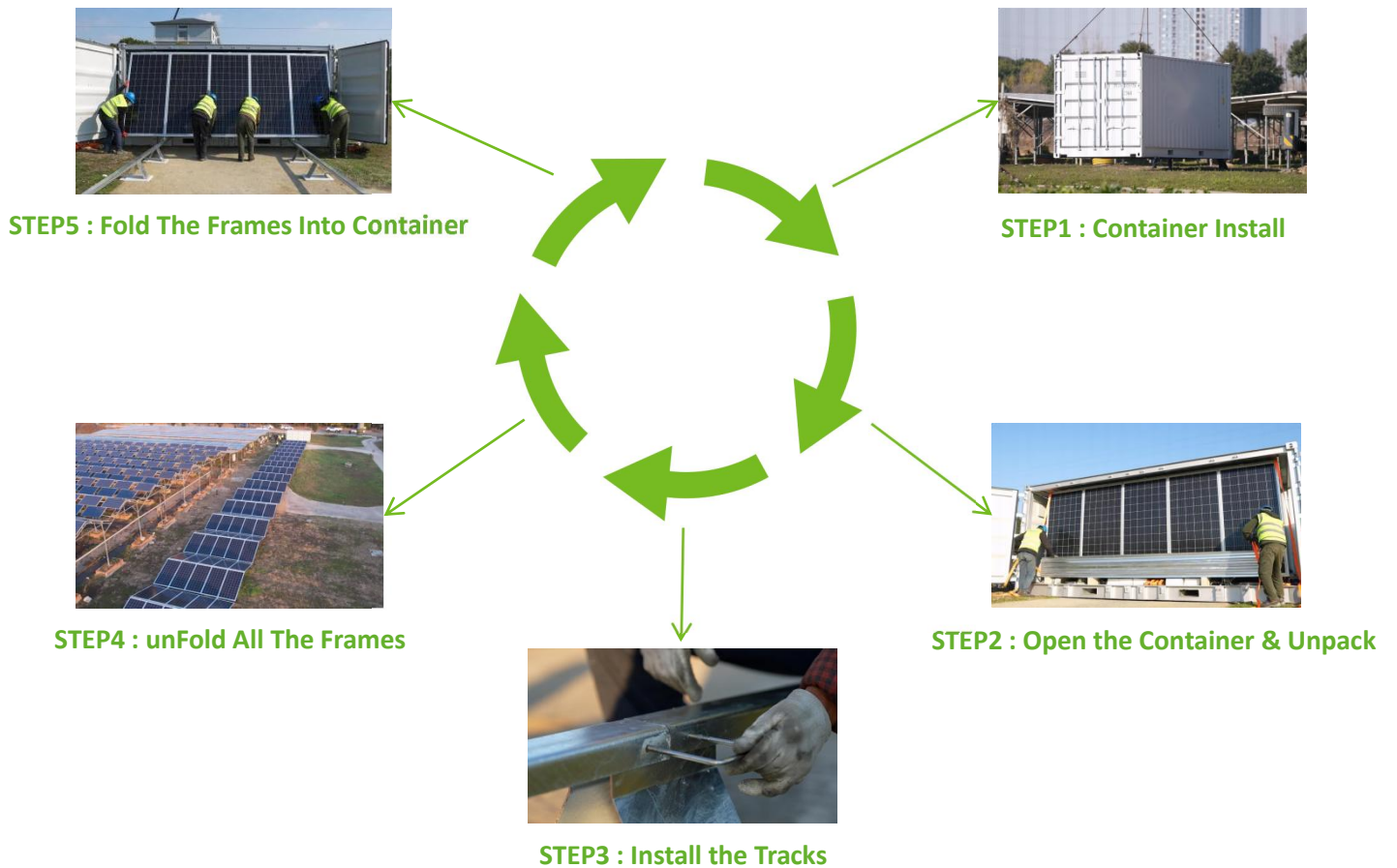
5. Installation Instructions

The following instructions must be done in the precise order they are given. So please, follow this manual step by step to avoid any mistakes or damage to the system.

Please unfold or fold the frame as slowly as possible, too fast speed may damage the mechanical movement structure, and may cause serious personal safety accidents and property damage.

5.1 Mechanical Parts

The scheme below presents the main steps. Each step is detailed afterwards.



- *Ensure that the floor for placing containers is smooth and solid, and the horizontal error does not exceed 3°*
- *Use a crane with a lifting capacity of ≥ 25 tons to lift the container from the truck*
- *The landing process is as slow as possible, because too fast falling speed may damage the container or the equipment inside*

STEP 1 Preparation before installation

- *Open the front/side doors and check that the inverter is securely attached*
- *Check that the frames are still stored vertically and that wheels are above the internal Tracks*
- *Remove the strap*
- *Remove the triangular wooden stoppers on either side of the front gate and take the track off one by one*
- *Take the track support off the side door*
- *Take out the Support Base and Jack under the PV solar frame group*

CAUTION: Be careful to not damage the PV Modules



STEP 2 Installation Steps

- *Install the Support Base to the Track support first*



- *Lay the two transfer tracks near the container and measure the levelness of the tracks with a level to keep them as level as possible*



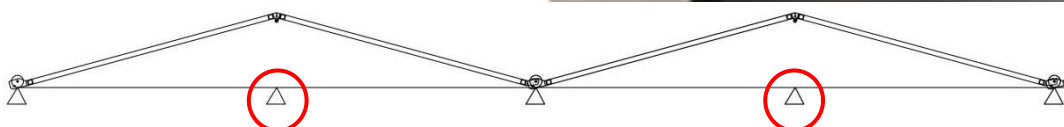
- *Make sure that the two tracks near the container are of the same height (The level bubble should be in the middle)*



- *Install all the tracks, note that the joints of each track are secured with U-screws, and fasten the nuts tightly*



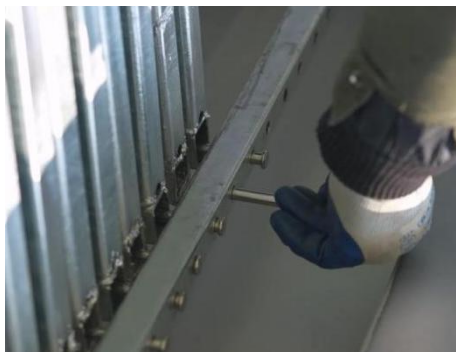
- *After all the tracks are installed, the flatness of the tracks is calibrated by drawing straight lines; Place two Track stops at the opposite end of the container on the last Track supports. Secure the Track stops by inserting a U-screw.*



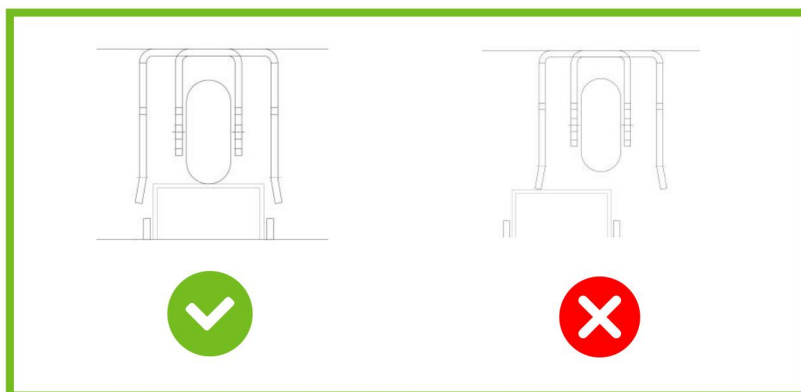
! **CAUTION:** **!**

Track support must be placed in the middle of the single track

- *Remove the latch on the two fixed square pipes with round holes at the lower end of the PV Solar frame group, put the jacking square pipes under the PV frame group, and put the two jacks on the same side at the same time. After pressing the jacking frame group, take out the pad tall wooden square on one side and let the wheel fall on the track in the Container.*



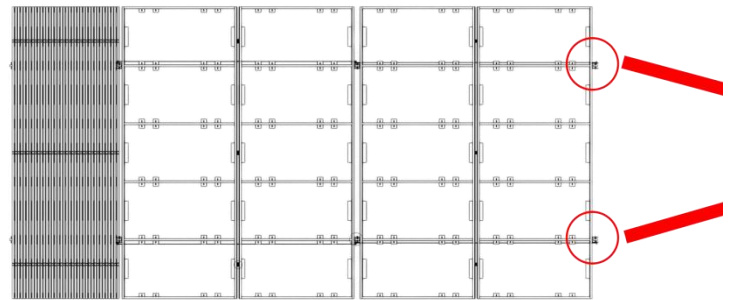
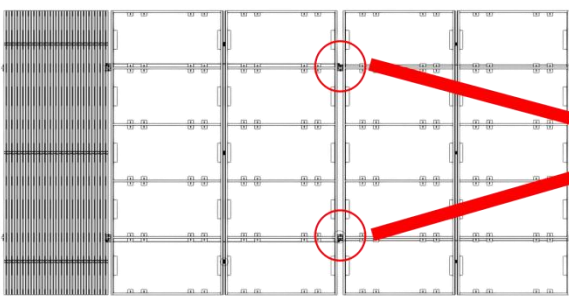
After removing the wooden beam, then release the jack, make sure the wheel is on the track surface



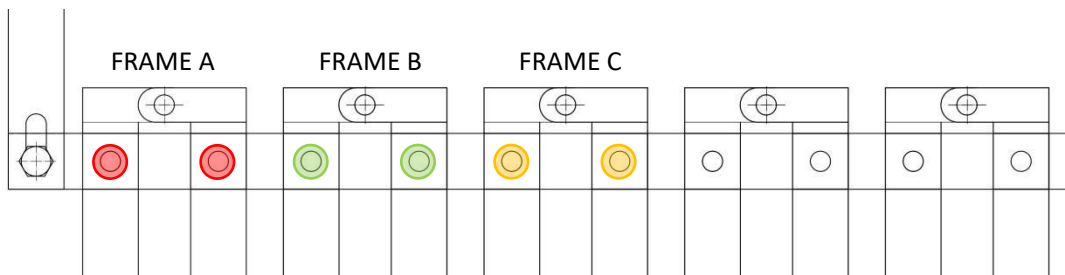
- Remove the safety latch above the first set of frames and slowly unfold the first set of frames (this process depends on the actual situation to determine whether mechanical assistance is required)



- **Unfold the frame A manually and install slings around brackets between 2nd and 3rd frame. Never use the brackets of the 1st frame**

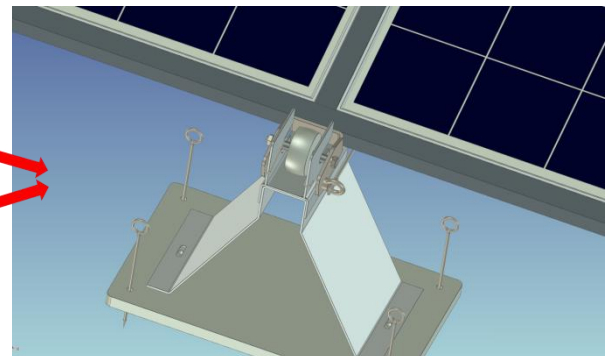
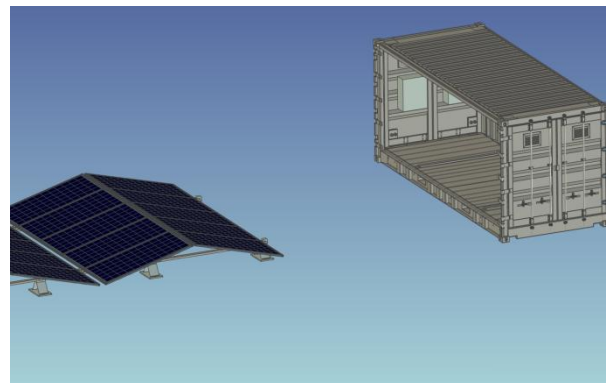
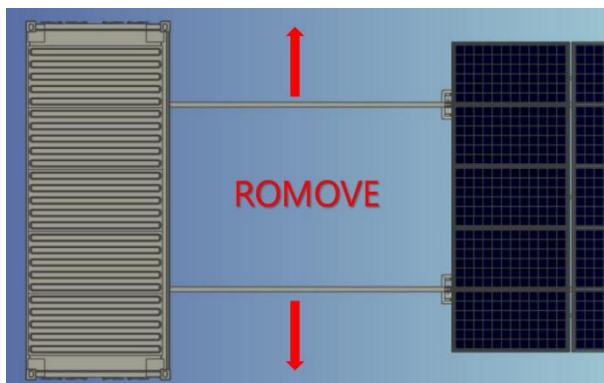
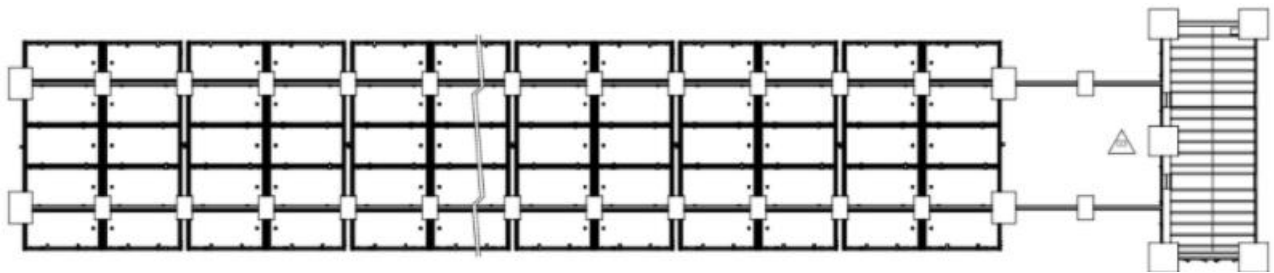


- **Please note that during the unfold frame, be sure to proceed slowly; After the previous set of frames is fully unfolded, the safety latch of the next set of frames must be removed before the next set of frames can unfold**

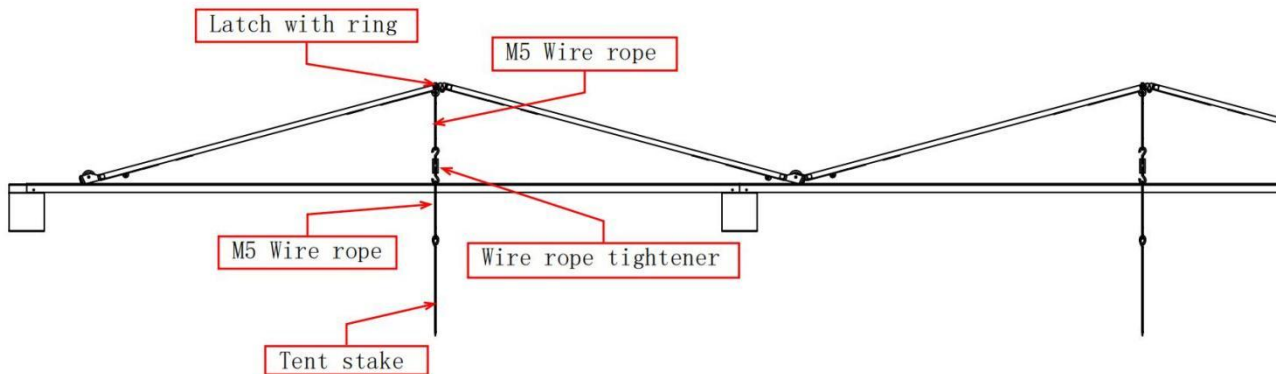


For Example : When frame A is fully unfolded, the safety latch of frame B must be removed immediately and the frame B must be held in place to prevent frame B from tipping over; When frame Group B begins to unfold, it does not need to be held

- After all the frames have been unfolded, remove the transfer Tracks and install Frame stop locks at the end of the Tracks near the side of the container



! Additional frame and ground fastening steps



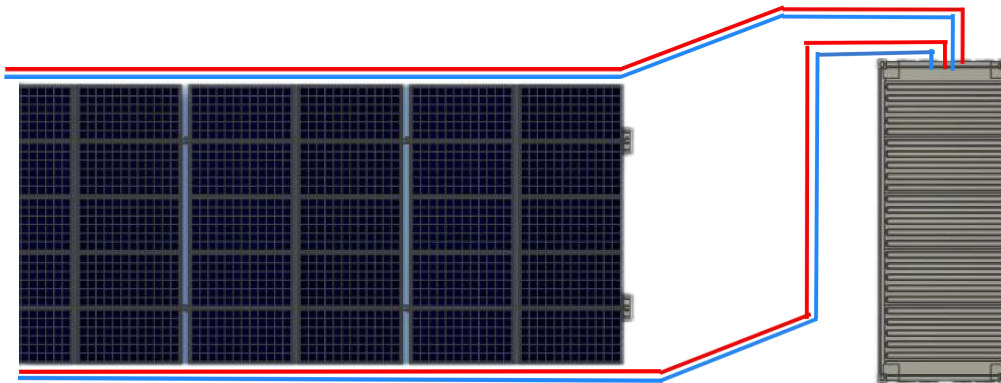
- *In order to ensure the safety of use in areas with high wind, we recommend that the upper end of each set of frames be fitted with a ground fixed nail scheme*

STEP 3 Electrical connection

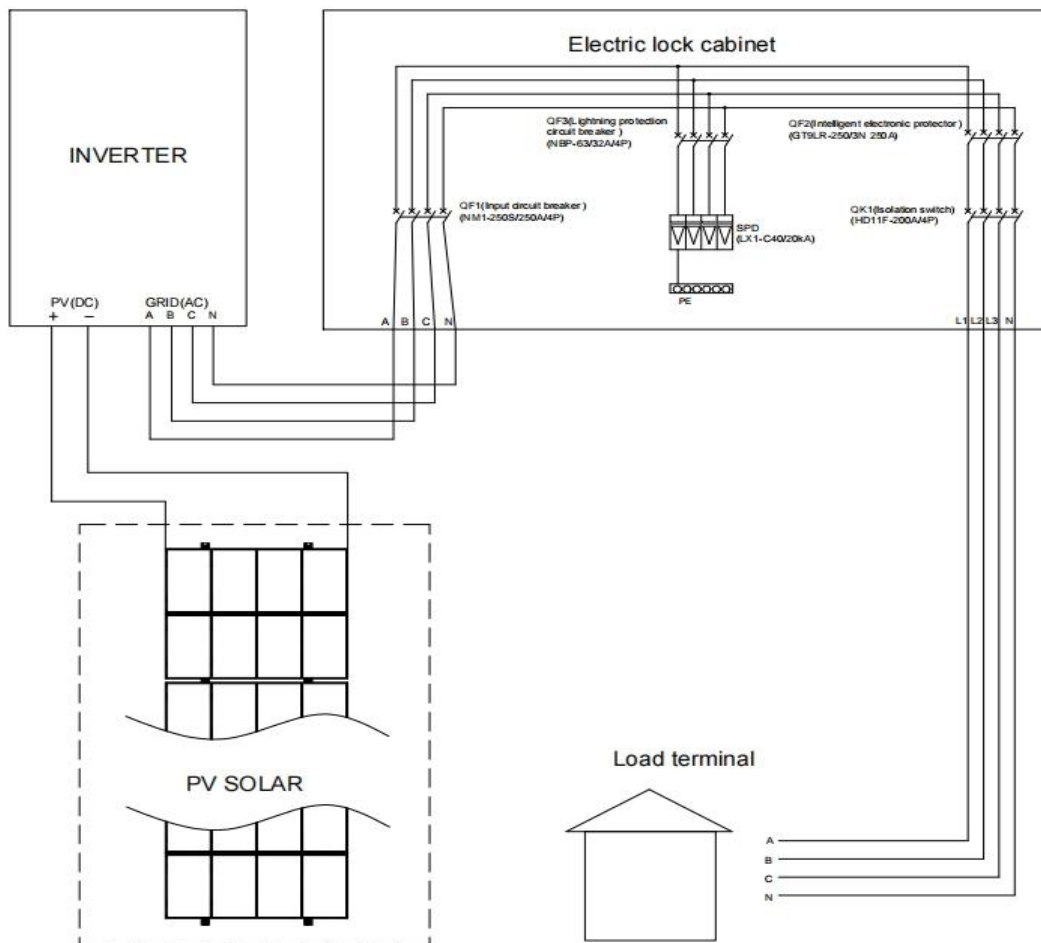


- *Take off the cable hole cover on the side door of the container, and route the PV DC cable through the cable hole(The right hole is used to route DC cables, and the left hole is used to route AC cables)*

- Connect the PV DC cable to the container according to the reference pattern in the figure

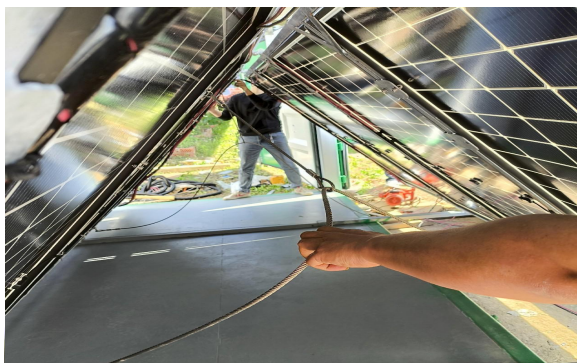
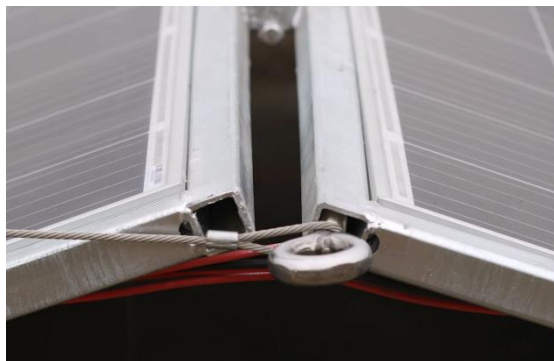


- System connection diagram

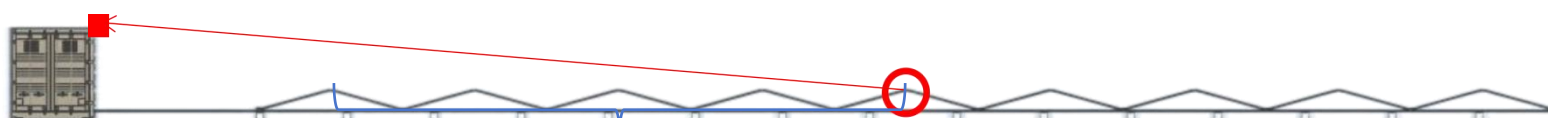


STEP 4 unFold & Transport

- Install the winch, connect the winch to the 24V32Ah lead-acid battery, insert the O-type latch into the PV frame, and connect the O-type ring to the wire rope of the winch



ATTENTION:
Low point is in the
5 sets of frames



5 sets of frames

- Recover all tracks, track supports, and support bases, Make sure to protect the components on one of the outer frames, get all the equipment in place



ShanghaiHuiJueNetworkCommunicationEquipmentCo.,Ltd
No.333FengcunRoad,FengxianDistrt ShanghaiChina

Web:www.hj-ess.com Tel:+86-21-57471000 E-mail:chinahuijue@gmail.com