



UNLOADING Manual

2GW
Manufacturing
Capacity



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PARTICULARS

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**CAREFUL UNLOADING.
LASTING PERFORMANCE.**

PV MODULE UNLOADING:

Please handle PV modules with care! Avoid dropping any sharp or heavy objects on them, as this can cause damage. Ensuring their safety helps maintain their efficiency and longevity.



A. PRECAUTIONS FOR FORKLIFT HANDLING

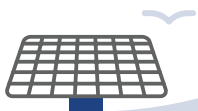
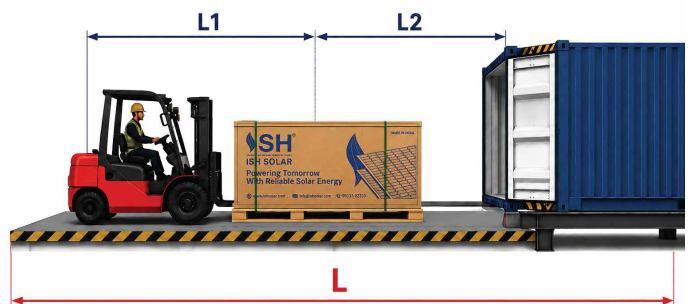
- Only authorized personnel are allowed to operate forklifts.
- Loading and unloading require the selection of a suitable forklift based on the pallet dimensions and weight. (As a rule of thumb, the forklift capacity should be double the pallet weight).
- The fork spacing should be adjusted based on the pallet dimensions and weight to ensure that the load is evenly distributed between the forks.
- Forks that are less than $\frac{3}{4}$ the length of the pallet should be equipped with substantial sleeves before carrying out the activity.
- To ensure minimal vibration and smooth unloading of the modules, utilize bigger capacity and longer length forks.
- Avoid contacting the module box or pallet with sharp objects such as forklift fork corners to prevent damage to the internal PV modules.
- During loading and unloading, at least one professional must be present to direct the forklift driver with proper guidance.
- Smoothly insert and move the PV module pallets within the container to prevent vibrations and turbulence during transportation.

$$L \geq L1 + L2$$

L: Length extending horizontally from the unloading platform to the bottom of the container

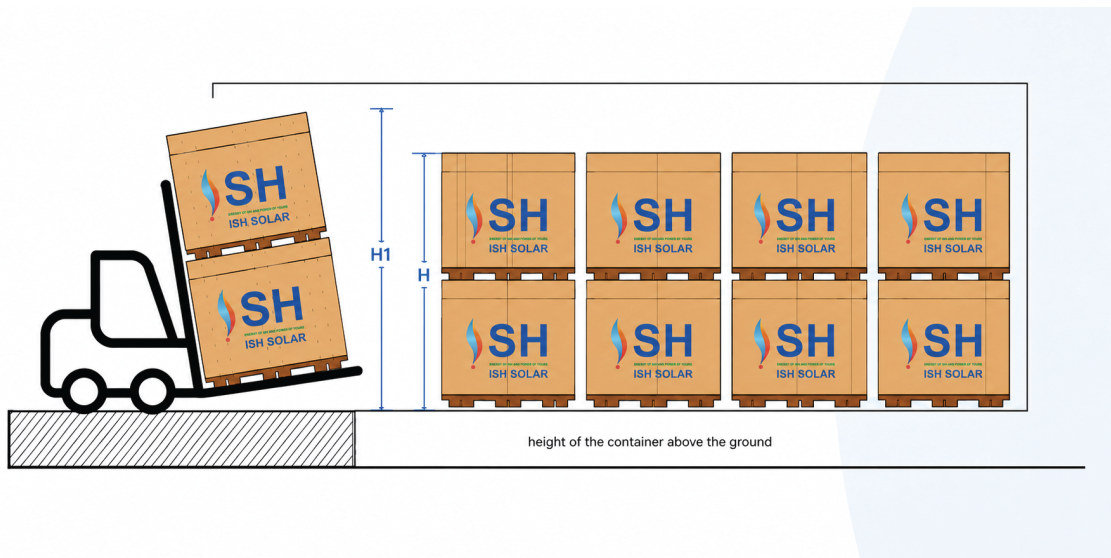
L1: Length of unloading forklift

L2: Length of the module packing box



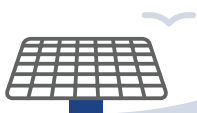
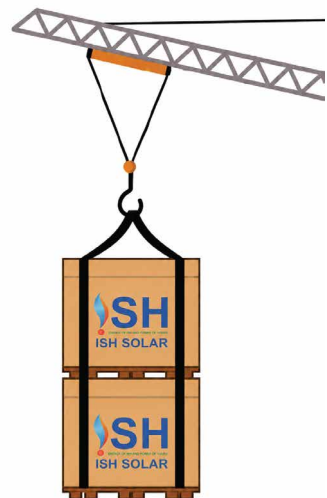
B. UNLOADING OF PV MODULES WITH A FORKLIFT

- ISH uses industry best practices to pack PV modules in shipping containers for transportation.
- Do not allow the use of defective or broken equipment for unloading PV modules.
- Maintain a safe distance when operating the forklift for everyone's safety in the vicinity.
- When unloading modules, use a forklift with the appropriate capacity for the weight of the modules. When unloading, make sure the prongs are inserted at least 75% of the pallet length.
- The 3D illustrations for the vertical landscape and vertical portrait packages are presented below. ISH uses vertical landscape packaging for both domestic and export packaging.
- Under no circumstances should PV module pallets be stacked higher than two levels.
- When the packing box blocks the view, it is recommended that you operate the forklift in reverse for safety. Proper monitoring and clear instructions are essential to prevent accidents and damage to modules or workers.
- The PV module pallets should be stored on a dry, flat and robust surface in the warehouse and at the installation site.



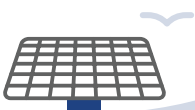
C. UNLOADING ACTIVITY USING HOIST CRANE

- Appropriate hoist crane equipment must be used, and the equipment must be inspected by a qualified professional before operation.
- The sling material should match the weight and capacity of the PV module pallet.
- To prevent the packing box from falling to one side during lifting, distribute weight evenly across both sides of the slings.
- To avoid module tilting, ensure that the box is balanced before lifting.
- To avoid sling marks and damage to the box and PV modules, ensure that all necessary fittings are in place while lifting the modules with slings.



D. INSTRUCTIONS FOR HANDLING PV MODULES

- Professional installers must carefully review and adhere to these rules. Failure to follow these directions can lead to death, injury, or property damage.
- Installation and handling of PV modules require professional expertise and should only be undertaken by certified experts. Installers must advise end-users (consumers) of the above information.
- PV modules must be loaded on a flat surface; slanted or uneven ground may compromise module safety.
- The unloading platform and ramp construction should be kept at a nominal level with the bottom of the container/open-trailer. The suggested height tolerance is $\pm 10\text{mm}$.
- To ensure smooth downward movement, the unloading ramp length should be equal to the width of the forklift and the length of the goods from the container/open-trailer.
- When unloading PV modules on the platform or ground, proper equipment should be used to move the items out of the container smoothly, avoiding bumps created by the space between the container/open trailer and the platform.
- To prevent forklift collisions with the container's top, keep the inclination angle between the fixture and pad under 5° .
- To ensure appropriate weight distribution, forklift arms should be evenly spaced in the horizontal direction of the pallet. Modules should be pulled out slowly and smoothly.
- During the PV module fork-out operation, maintain a space of 2-3 cm between the module and the box walls before slowly pushing back to avoid the box from being damaged by the modules or neighboring pallets.
- When the products leave the container, please lower the fork height and slow down; ensure that the bottom and top heights of the container are equal to avoid collision; and transfer the entire pallet slowly out of the container.
- Allow enough space between two pallets to ensure safety and prevent scratching during movement.



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