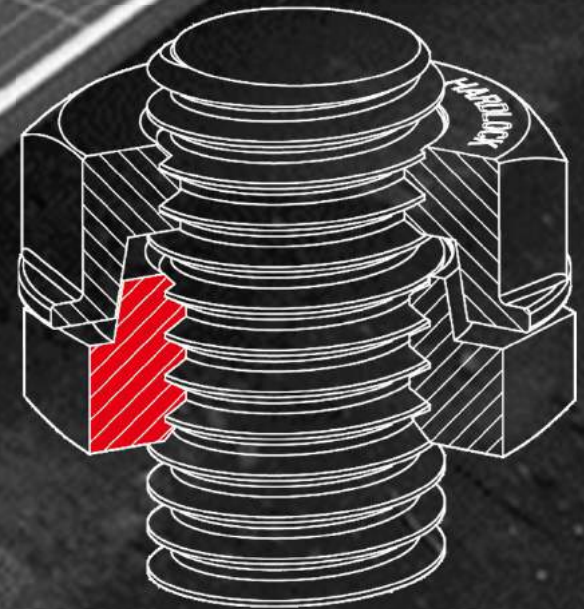


HARDLOCK[®]

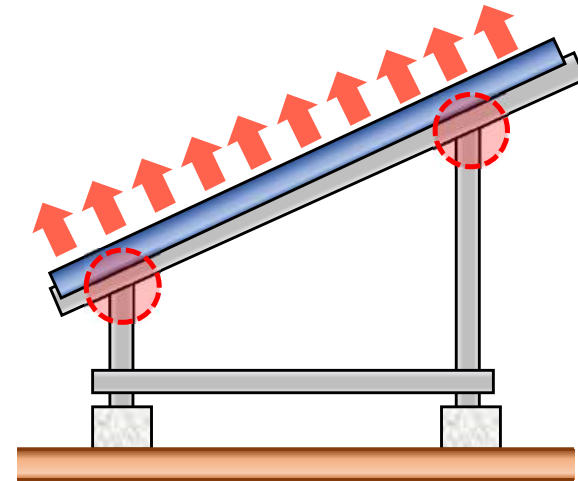
Solar Panel Mounting Structure Application

MDX PTE LTD
Select The Right Elements
www.mdx.com.sg

Nov 2022



- (1) Mounted on Rooftops or open ground are exposed to all direction strong wind which exerts forces on panel.
- (2) Drag and lift forces could result extreme shear stress by panel's large surface.
- (3) Result in **Fastened Connecting Parts** of solar panels and mounting structures to be loosen.
- (4) **HARDLOCK** Anti-Loosening solution can be best implement.



Numerous bolted joints are used to construct solar mounting system and it is difficult to carry out complete check on every joint on the upper side of panel arrays. HARDLOCK Nut is extremely effective at increasing the reliability of these joints by preventing all loosening.



Success Case 1 : Roof top installation

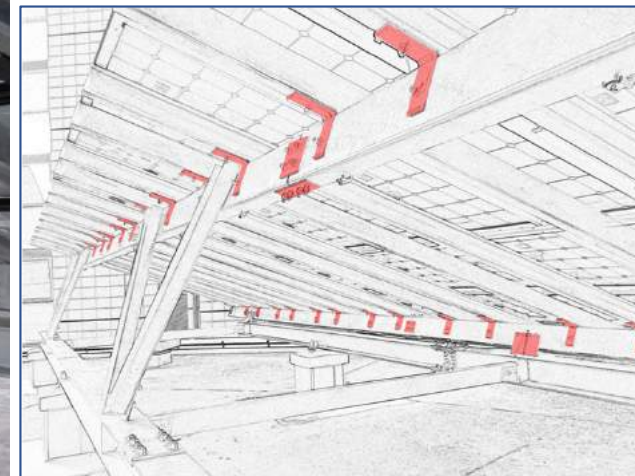
NTT Docomo Yoyogi Building

Location: Yoyogi, Tokyo
Capacity: 10kW
Operation date: Sep 2000

HARDLOCK Nut:

HLN-R M12x1.75 & M16x2.0 SS400
Hot Dip Galvanized plating

HARDLOCK Nuts are used for connecting parts of solar panels and mounting structures to ensure the prevention of panels coming off.

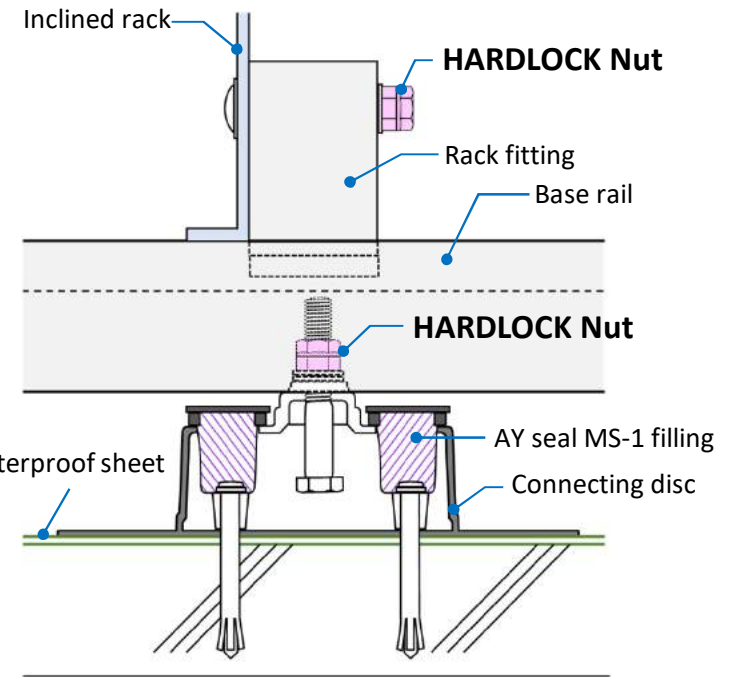
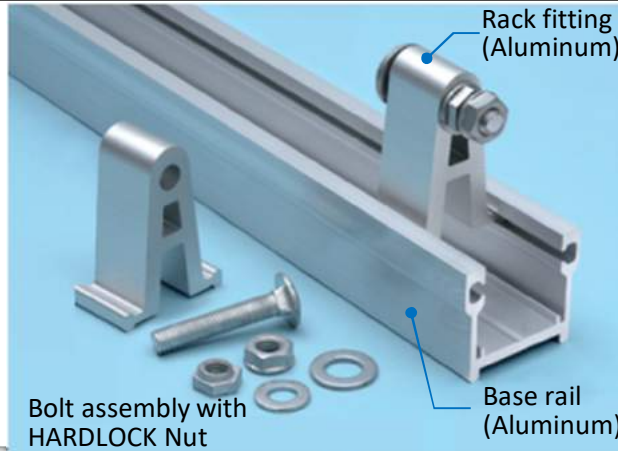
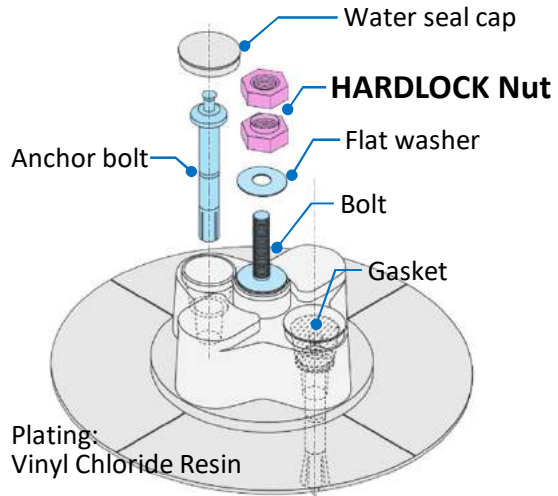


Solar Panel Mounting System combined with Roof Waterproofing

HARDLOCK Nut: M10x1.5 SUS304

The most important thing for solar panels on the roof is to prevent them from being torn from the mounting and falling.

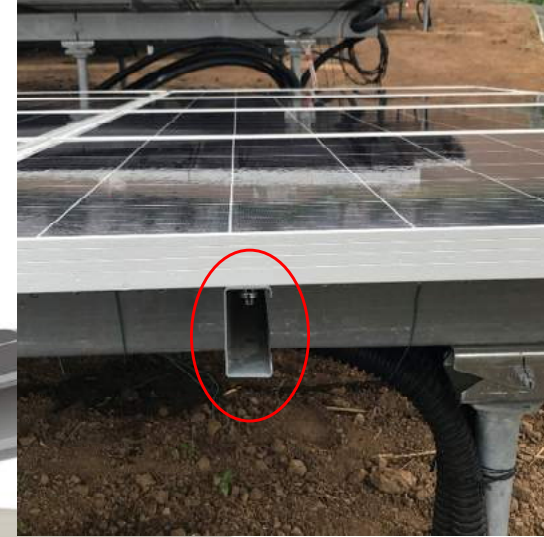
Aluminum Die Casting Connecting Disc



Success Case 2 : Mega Solar Power Plant

JRE Inashiki Isatsu Solar Power Plant

Location: Inashiki city, Ibaraki
Capacity: 6,052kW (18,340 panels)
Annual power: 7mil.kWh
generation
Operation date: 1 Apr 2019



HARDLOCK Nut: 175,000pcs installed

HLN-R M8x1.25 SS400 Zirconium coating + GEOMET

The connecting parts between solar panels and mounting structure are most affected by wind and tend to loosen.

Nominal wind speed of the area: 30m/s JIS C8955

The combination of double nut and Idaring (Pal nut) was originally used for fixing solar panels on mounting structure, which was thoroughly changed to HARDLOCK Nuts just after installation of 10,000 sets.

It was time consuming and troublesome work for inexpert workers along with necessity of switching tools from electric wrench to spanner and tight work space.



Connecting part where HARDLOCK Nut is installed

Providing easy installation and a true loosening prevention measure



Ida-ring & Double nut

