Part 3: Solar PV Mounting System / Solutions



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Oktober 20 2022 Zug / Switzerland

## Cetification



Chiko R&D team comprises of 12 people; 4 Designers, 7 Civil Engineers under a Doctor in Structural Engineering who is an expert in China. Chiko is member to various organisations that set standards in industry. Currently, Chiko Products own several certifications by third parties; UL, Gamcorp, Intertek and SGS. We continuously develop new products and technologies in Fixed Solar Mounting, Solar Tracking Systems and Energy Storage Systems.





























#### Patents











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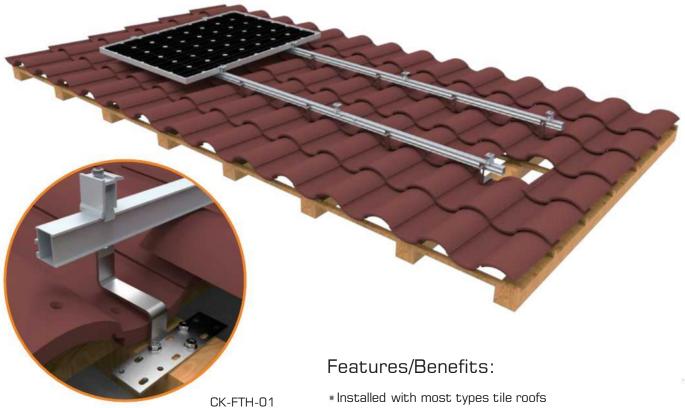


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## TILE ROOF MOUNT BRACKET

## Pantile Mount Side Fixing



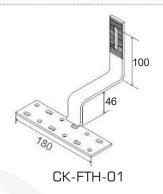




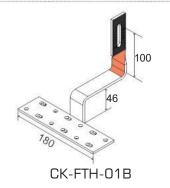


- Portrait & Landscape orientation
- Pre-assembled
- Made of SUS 304
- Height adjustable
- Easy installation

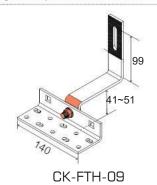
#### Portrait Oritention



Landscape Oritention



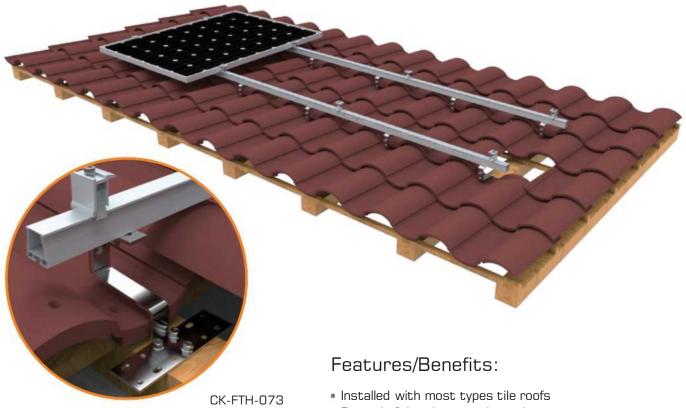
Height Adjustable







## Pantile Mount Bottom Fixing



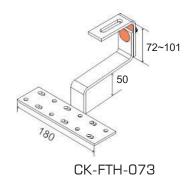




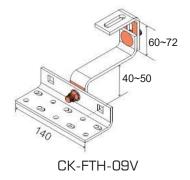


- Portrait & Landscape orientation
- Pre-assembled
- Made of SUS 304
- Height adjustable
- Easy installation
- Firmly bottom fixing

#### Height adjustable over tile

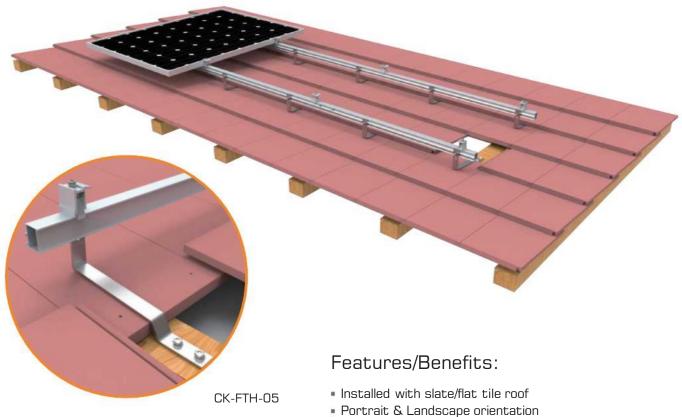


#### Height adjustable at batten





## Flat Tile Mount



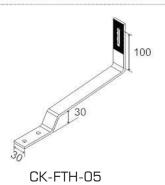




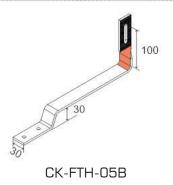


- Pre-assembled
- Made of SUS 304
- Height adjustable
- Easy installation

#### Portrait oritention

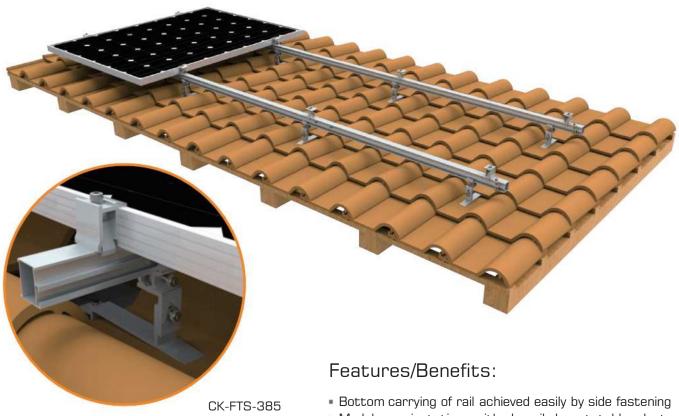


#### Landscape oritention





## Crown Mount



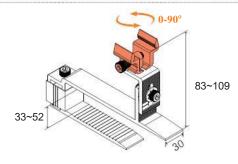






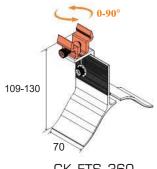
- Module oerrientation swithed easily by rotatable adapter
- Made of AL 6005-T5
- High-class surface anodizing
- Pre-assembled
- Height adjustable

#### Tulip Mount



CK-FTS-385

#### Arc Mount

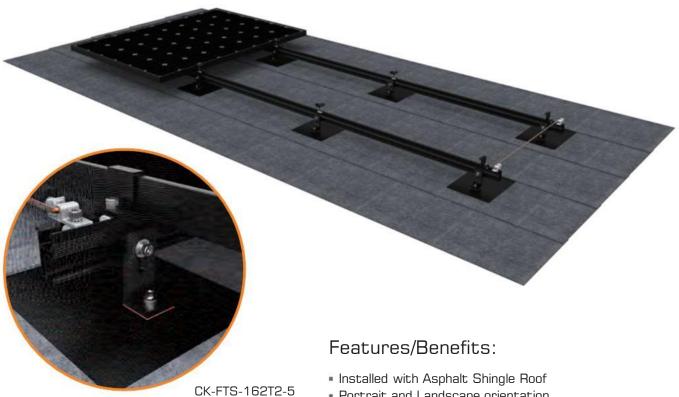


CK-FTS-360





## Asphalt Shingle Mount



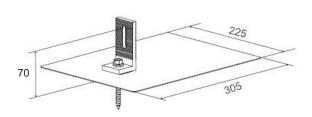




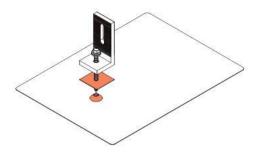


- Portrait and Landscape orientation
- Made of AL 6005-T5
- High-class surface anodizing
- Pre-assembled
- Waterproof silicon rubber and flashing integrated
- Easy installation

#### Specifications

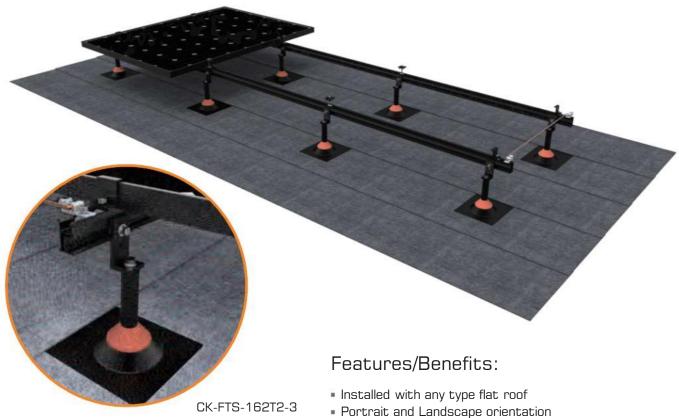


#### Waterproofing





## Standoff Mount





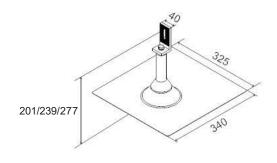


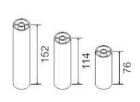


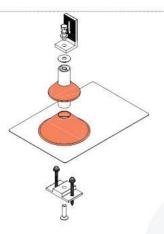
- Made of AL 6005-T5
- High-class surface anodizing
- Pre-assembled
- Waterproof silicon rubber and flashing integrated
- Different Height available
- Easy installation

#### Height Options

#### Waterproofing









## Stainless Steel Hook

Type No.	Image	Technical	Dimensiions	Tile Roof Type
CK-FTH-01		H	H1=46 H2=100 W=180	
CK-FTH-78		H	H1=66∼98 H2=101 W=180	
CK-FTH-09		H1	H1=41~51 H2=99 W=140	
CK-FTH-79		H2	H1=41~51 H2=99 W=140	
CK-FTH-01B		HZ	H1=46 H2=100 W=180	
CK-FTH-09B		H2	H1=41~51 H2=99 W=140	
CK-FTH-73	2	H	H1=50 H2=72~101 W=180	
CK-FTH-09V		12	H1=40∼50 H2=60∼72 W=140	



Type No.	Image	Technical	Dimensiions	Tile Roof Type
CK-FTH-05		H2	H1=30 H2=100 W=30	
CK-FTH-81		HZ	H1=30 H2=100 W=30	
CK-FTH-05B		H2	H1=30 H2=100 W=30	
CK-FTH-07		H	H=101 W=30	
CK-FTH-07B			H=101 W=30	
CK-FTH-61	7	H	H=75 W=30	

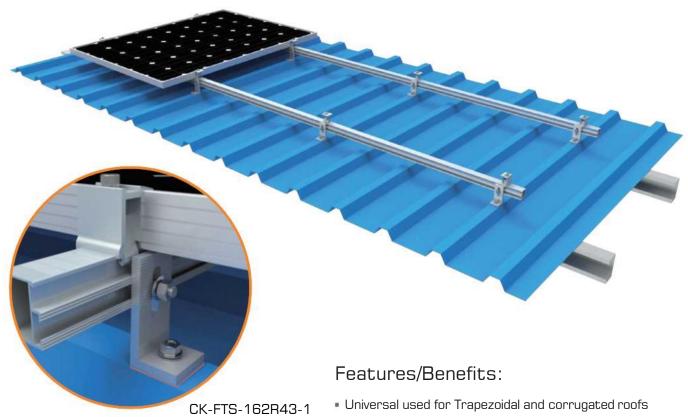
Pantile	Roman tile	Flat tile	Asphalt Shingle





## METAL ROOF MOUNT BRACKET

### L Feet Mount









- Portrait or Landscape orientation
- Pre-assembled
- Made of high class material AL6005-T5
- Pre-Applied EPDM pad

Length Options

Apply with Hanger Bolt

Work with roof clamps







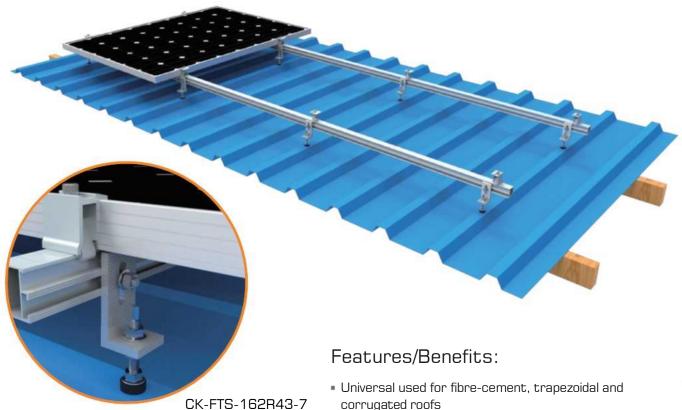








## Hanger Bolt Mount



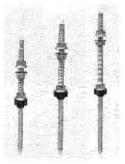






- corrugated roofs
- Portrait or Landscape orientation
- Pre-assembled
- Made of high class material AL6005-T5
- Height adjustable and help to increase power generation

For Wooden Rafter



CK-HS-003-B1200/250/300

For Steel Purlin



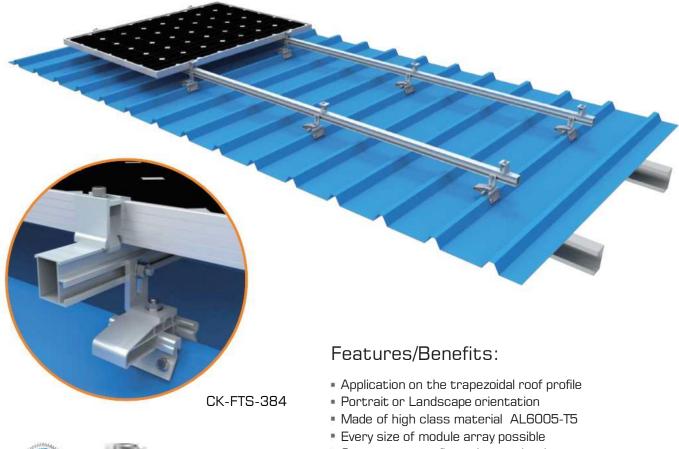
CK-HS-001-C120/160/200

Combined with Alu Plate





## Trapezoidal Clamp Mount









- Components configured compeletely, no need extra parts purchasing
- Share the roof loading

Side Drilling

Top Drilling



CK-FTS-320

CK-FTS-352



CK-FTS-381



CK-FTS-395



## Rail-Free Mount



#### Different height for option

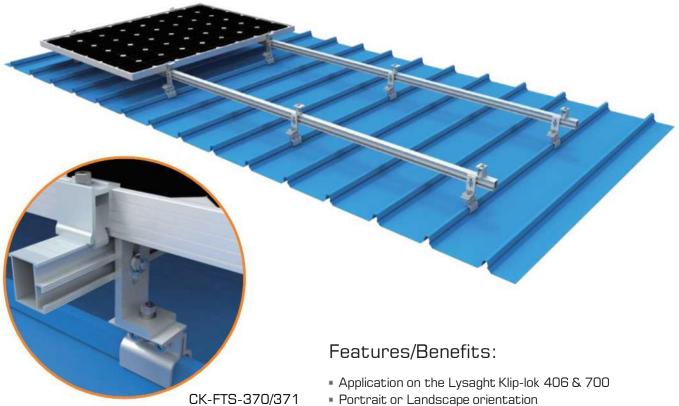
#### Portrait&Landscape Orientation







## Lysaght Klip-lok Mount









- Made of high class material AL6005-T5
- Every size of module array possible
- Share the roof loading
- Non-penetration installation

#### Klip-lok Series



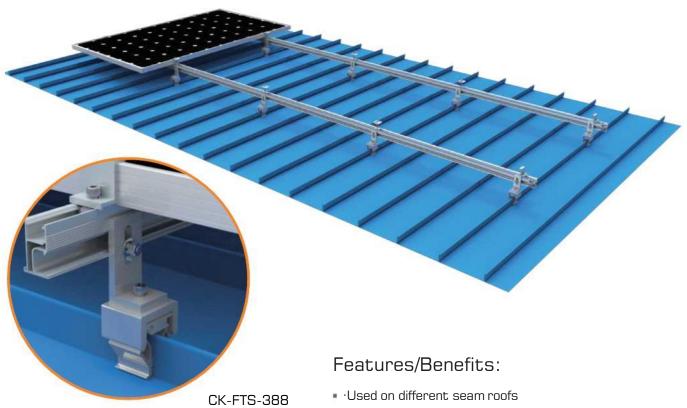




CK-FTS-370 CK-FTS-336 CK-FTS-351



## E-LOCK Mount









- Portrait and Landscape orientation
- ·Made of high class material AL6005-T5
- One bolts fixing ,saving installation time and process
- Unique design with non-penetrating solutions

#### Customized Shapes For Roofing Profiles







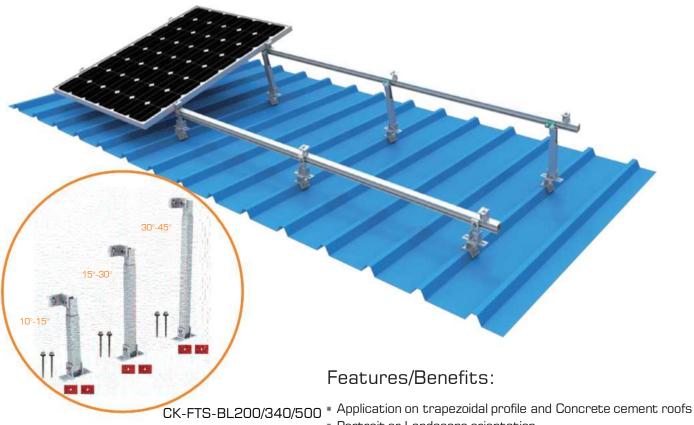
CK-FTS-376

CK-FTS-388





## Tilt Mount









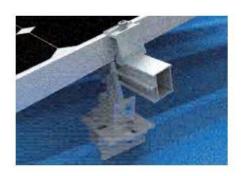
- Portrait or Landscape orientation
- Made of high class material AL6005-T5
- Different tilt options
- Optimizing the tilt to increase power generations

L footing

Combined with roof clamp

Free direction possible











## Standing Seam Clamps

Type No.	Image	Profile reference	Material
CK-FTS-371	200	22-28 18-22 70 00 00	AL 6005-T5
CK-FTS-370		-26-35 -21-26	AL 6005-T5
CK-FTS-351	201	34-38	AL 6005-T5
CK-FTS-336	201	30-35 17-21 26-30	AL 6005-T5
CK-FTS-365		92.17° P -14.4- N -23.8	AL 6005-T5
CK-FTS-331		52-60 0 7 8 8 8 1	AL 6005-T5
CK-FTS-349	00 33	8-12	AL 6005-T5
CK-FTS-355	201	20.01	AL 6005-T5





## FLAT ROOF MOUNT BRACKET

#### Ballast I-2 Mount



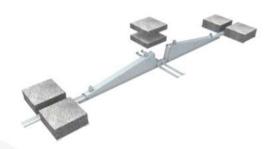


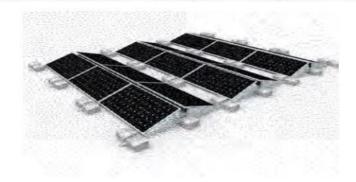




- Various modules configurations are possible
- Made of AL 6005-T5
- Highly class anodizing on surface treatment
- Pre-assembly and foldable
- Non-penetration to roof and light weight roof loading

#### East to West Configurations:







### Ballast I-3 Mount



#### Customized Configurations







## Ballast III Mount







CK-BL-3

- 1 panel Landscape orientation
- 10°,15°,20°,25°,30°tilted angle available
- Various modules configurations are possible
- Made of Aluminum
- 1 step installation
- Non-penetration to roof and light weight roof loading

#### Simple Installations





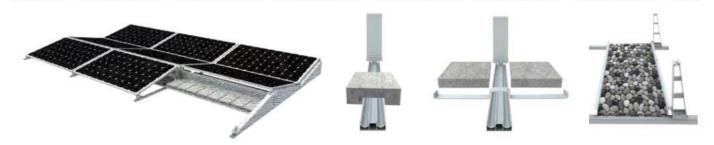




## Ballast VI Mount



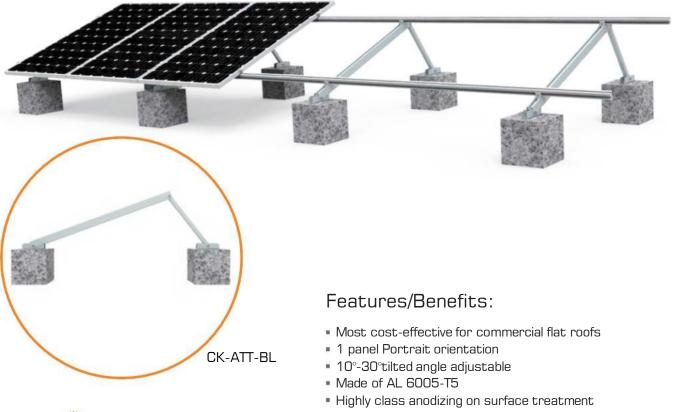
#### Ballast Placement Options







## Adjustable Aluminum Triangular Mount

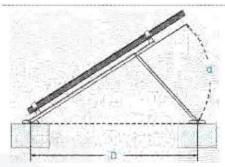






- Pre-assembly and foldable
- Non-penetration to roof and light weight roof loading

#### Angel Adjustable by moving the concrete distance



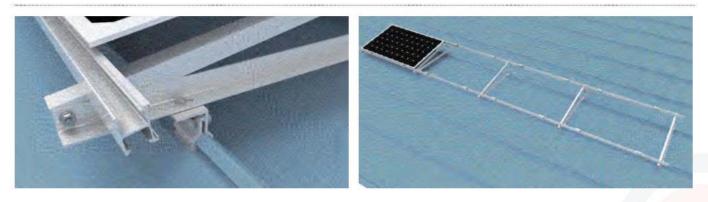
Degree	Concrete Distance(D/mm)
15°	1216
20°	1547
25°	1716
30°	1832



## Fixed Aluminum Triangular Mount



#### Tilt Mount On Metal Sheet





#### Classic Rail #7

#### Rail & Splice Kit



#### Mid Clamp & End Clamp







#### Infit Rail

#### Rail & Splice Kit



#### Mid Clamp & End Clamp





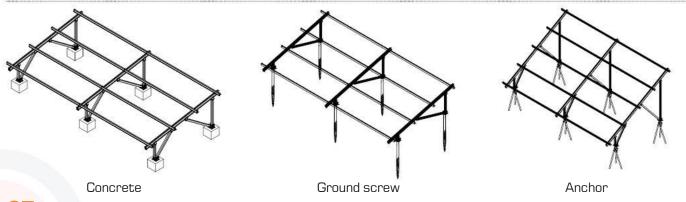


## **GROUND MOUNT**

## Aluminum T2VC Mount



#### Foundation Application

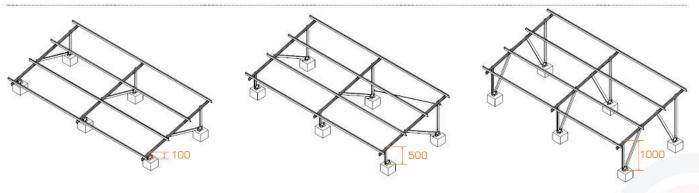




## Steel U2V Mount



### Height Customization



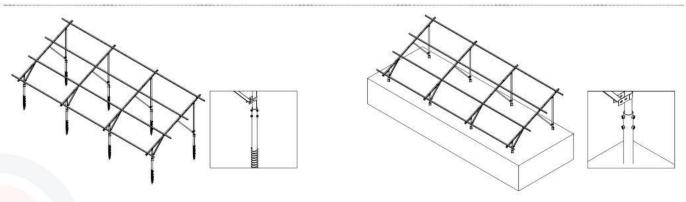




## Steel Pipe Mount



#### Foundation Application

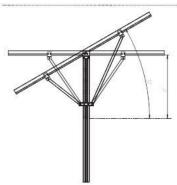




## Pile-Driven Mount



#### Angle Adjustable



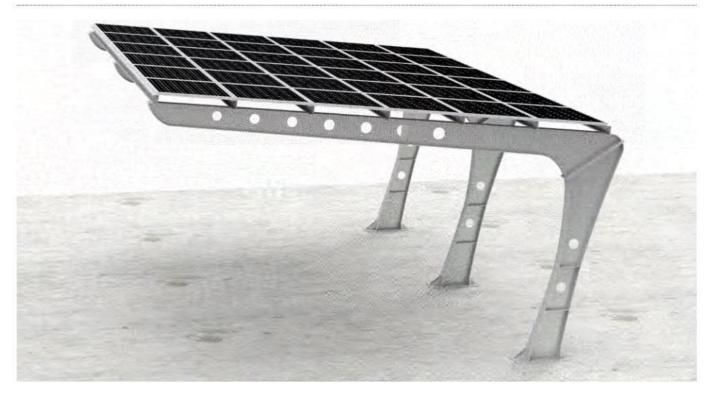
#### Larger Arrays





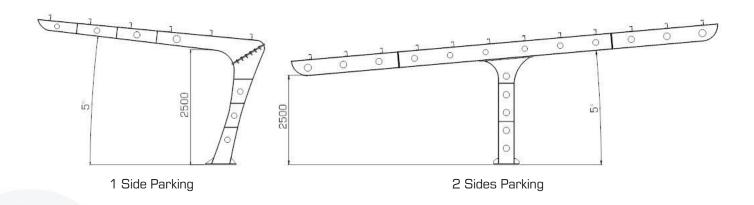


## Single Pole Carport



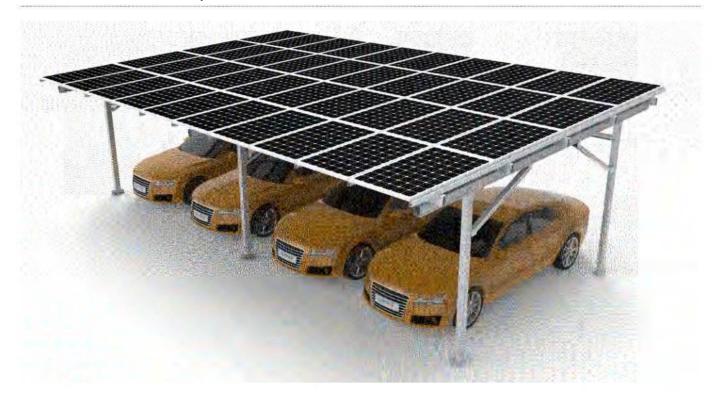
#### Features/Benefits:

- Mostly used for commercial parking lots
- Single pole, No obstacles between cars
- Portrait or Landscape orientation
- Made of Q355B, Hot Dip galvanizing or painting
- Double sides parking is available
- Water-proof option is provided
- Customized arrays and height are possible
- Strong caclualtion supported





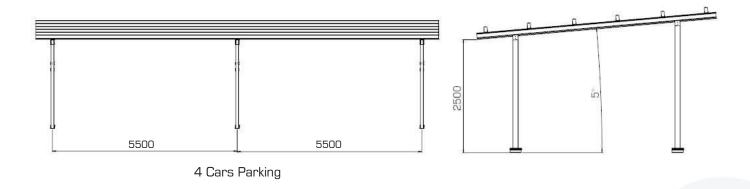
## Four Poles Carport



#### Features/Benefits:

- Mostly used for home parking lots
- Four Poles, 2 cars parking
- Portrait or Landscape orientation
- Both aluminum and steel are available

- Effective and convenient on installation
- Water-proof option is provided
- Customized arrays and height are possible
- Strong caclualtion supported



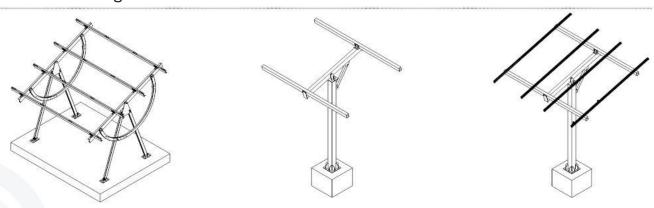




## Adjustable Steel Ground Mount



#### Customize Design



## **ROOFTOP EARTHING**





This product is designed to bond solar PV modules to mounting structures and create an electrical path to ground.

#### Earthing Clip





CK-GTC-R3A CHIKO Grounding Clip (Open 8.5mm)







CK-GTC-R3B CHIKO Grounding Clip (Closed 8.5mm)





CK-GTC-R3C CHIKO Grounding Clip (Open 12mm)





CK-GTC-R3D CHIKO Grounding Clip (Circle closed 8.5mm)





CK-GTC-R3E CHIKO Grounding Clip for Adjustable Mid Clamp (Open 8.5mm)





CK-GTC-R3F CHIKO Grounding Clip Closed 8.5mm for Ground Mount Mid Clamps





CK-GTC-R3G CHIKO Grounding Clip For T Mid Clamps





CK-GTC-R1 CHIKO Bonding Jumper



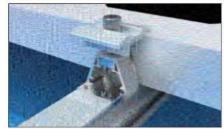


CK-592-1 CHIKO Grounding Lug





CK-FSC-ECP01-205 CHIKO Bonding Jumper between Panels









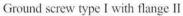


## GROUND SCREW & ANCHOR

Ground screw type I with flange I

- ·Material steel Q235B
- ·High class hot galvanized 80µ

Item No.	Diameter (mm)	Length(mm)	Thickness(mm)
CK-GS-F1-1200-3.0T	76	1200	3.0
CK-GS-F1-1600-3.0T	76	1600	3.0
CK-GS-F1-2000-3.0T	76	2000	3.0
CK-GS-F1-2500-3.0T	76	2500	3.0
CK-GS-F1-1200-3.5T	76	1200	3.5
CK-GS-F1-1600-3.5T	76	1600	3.5
CK-GS-F1-2000-3.5T	76	2000	3.5
CK-GS-F1-2500-3.5T	76	2500	3.5



- ·Material steel Q235B
- ·High class hot galvanized 80 µ

Item No.	Diameter (mm)	Length(mm)	Thickness(mm)
CK-GS-F2-1200-3.0T	76	1200	3.0
CK-GS-F2-1600-3.0T	76	1600	3.0
CK-GS-F2-2000-3.0T	76	2000	3.0
CK-GS-F2-2500-3.0T	76	2500	3.0
CK-GS-F2-1200-3.5T	76	1200	3,5
CK-GS-F2-1600-3.5T	76	1600	3,5
CK-GS-F2-2000-3.0T	76	2000	3.5
CK-GS-F2-2500-3.0T	76	2500	3.5

Ground screw type II with flange I

- ·Material steel Q235B
- ·High class hot galvanized 80 µ

Item No.	Diameter(mm)	Length(mm)	Thickness(mm)
CK-GSY-76F1-24-1200-3.0T	76	1200	3.0
CK-GSY-76F1-24-1600-3.0T	76	1600	3.0
CK-GSY-76F1-24-2000-3.0T	76	2000	3.0
CK-GSY-76F1-24-2500-3.0T	76	2500	3.0
CK-GSY-76F1-24-1200-3.5T	76	1200	3.5
CK-GSY-76F1-24-1600-3.5T	76	1600	3.5
CK-GSY-76F1-24-2000-3.5T	76	2000	3.5
CK-GSY-76F1-24-2500-3.5T	76	2500	3.5

Ground screw type II with flange II

- ·Material steel Q235B
- ·High class hot galvanized 80 μ

Item No.	Diameter(mm)	Length(mm)	Thickness(mm)
CK-GSY-76F2-24-1200-3.0T	76	1200	3.0
CK-GSY-76F2-24-1600-3.0T	76	1600	3.0
CK-GSY-76F2-24-2000-3.0T	76	2000	3.0
CK-GSY-76F2-24-2500-3.0T	76	2500	3.0
CK-GSY-76F2-24-1200-3.5T	76	1200	3.5
CK-GSY-76F2-24-1600-3.5T	76	1600	3.5
CK-GSY-76F2-24-2000-3.5T	76	2000	3.5
CK-GSY-76F2-24-2500-3.5T	76	2500	3.5

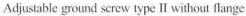




#### Adjustable ground screw type I without flange

- ·Material steel Q235B
- ·High class hot galvanized 80µ

Item No.	Diameter(mm)	Length(mm)	Thickness(mm)
CK-GST-76N-1200-3.0T	76	1200	3.0
CK-GST-76N-1600-3.0T	76	1600	3.0
CK-GST-76N-2000-3.0T	76	2000	3.0
CK-GST-76N-2500-3.0T	76	2500	3.0
CK-GST-76N-1200-3.5T	76	1200	3.5
CK-GST-76N-1600-3.5T	76	1600	3.5
CK-GST-76N-2000-3.5T	76	2000	3.5
CK-GST-76N-2500-3.5T	76	2500	3.5



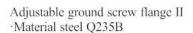
- ·Material steel Q235B
- ·High class hot galvanized 80  $\mu$

Item No.	Diameter(mm)	Length(mm)	Thickness(mm)
CK-GST-N16-1200-3.0T2	76	1200	3.0
CK-GST-N16-1600-3.0T2	76	1600	3.0
CK-GST-N16-2000-3.0T2	76	2000	3.0
CK-GST-N16-2500-3.0T2	76	2500	3.0
CK-GST-N16-1200-3.5T2	76	1200	3.5
CK-GST-N16-1600-3.5T2	76	1600	3.5
CK-GST-N16-2000-3.5T2	76	2000	3.5
CK-GST-N16-2500-3.5T2	76	2500	3.5



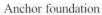
- ·Material steel Q235B
- ·High class hot galvanized 80 µ

Item No.	Diameter(mm)	Length(mm)	Thickness(mm)		
CK-AFP-76F1-500-3.0T	200	500	3.0		
CK-AFP-76F1-800-3.5T	200	800	3.5		



·High class hot galvanized 80 µ

03/44/06/4/4/02/01	ut prefettige terfetigen til still der kall der storetigen.	251	Decorate and second constitution of the second c
Item No.	Diameter(mm)	Length(mm)	Thickness(mm)
CK-AFP-76F2-500-3.0T	200	500	3.0
CK-AFP-76F2-800-3.5T	200	800	3.5



- ·Material steel Q235B
- ·High class hot galvanized 80 µ

Item No.	Description
CK-NK-03 Anchor foundation with	3 pipes
CK-NK-06Anchor foundation with	9 pipes
CK-NK-12Anchor foundation with	12 pipes











## **CABLE ACCESSORY**

#### Cable Clip



CK-FSC-CP1/2/3

CK-FCS-CP1 Solar cable clips 2.5 Hold one or two 2.5mm² solar cable CK-FCS-CP2 Solar cable clips 4.0 Hold one or two 4.0mm² solar cable CK-FCS-CP3 Solar cable clips 6.0 Hold one or two 6.0mm² solar cable

- Package 8000 PCS/CTN
- Weight 17.6 kg
- Made from stainless steel SUS304



CK-FSC-CP4/5

CK-FCS-CP4 Solar cable clips 90°/180° 4.0 Hold one or two 4.0mm² solar cable CK-FCS-CP5 Solar cable clips 90°/180° 6.0 Hold one or two 6.0mm² solar cable

- Package 8000 PCS/CTN
- Weight 17.6 kg
- Made from stainless steel SUS304



CK-FSC-CP6

CK-FCS-CP6 Solar cable clips to hold 3-4 cables,3cables/6mm²;4cables/4mm²

- Package 8000 PCS/CTN
- Weight 17.6 kg
- Made from stainless steel SUS304



CK-FSC-CP7/8

CK-FCS-CP7 Solar cable clips 4.0 Hold four 4.0mm<sup>2</sup> solar cable for thin-film module CK-FCS-CP8 Solar cable clips 6.0 Hold four 6.0mm<sup>2</sup> solar cable for thin-film module

- Package 2400 PCS/CTN
- Weight 5.3 kg
- Made from stainless aluminum 6005-T5



CK-FSC-CP1/2/3/4/5



CK-FSC-CP6



CK-FSC-CP7

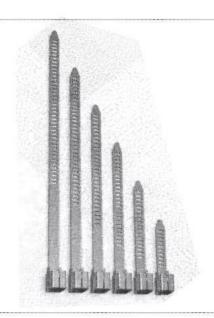


#### Stainless steel cable tie

- Various length available
- Stainless Steel SUS304
- Unique buckle locking mechanism
- Fast & easy installation

Material in high quality SUS304			
Item	Width (mm)	Length (mm)	Package (pcs/pkg)
CK-FSC-TA-150	4.6	150	100
CK-FSC-TA-200	4.6	200	100
CK-FSC-TA-250	4.6	250	100
CK-FSC-TA-300	4.6	300	100
CK-FSC-TA-350	4.6	350	100

<sup>•</sup> Package 5000 PCS/CTN



#### PV Connector

CK-0807-A/B CK-0807-3A/3B CK-0808-A/B CK-0808-3A/3B PV Junction Box adopts crowned spring and has automatic locking mechanism on plugs to ensure solid connection between contact and connector. Connector plug (negative) is equipped with buttons that are symmetric at the bottom to ensure the convenience of removal. Such removal does not need any extra instruments, therefore, can make sure that the plug is intact.

This advanced product, with easy usage, is more convenient to use than similar products. In addition, the product also confirms to DIN V VDE V 0126-3.





#### PV CONNECTOR



CK-0807-A/B-02 MC4 Single Connector 500 SETS/PKG



CK-0807-2A/2B-02 MC4 2-Branch Connector 100 SETS/PKG



CK-0807-3A/3B-02 MC4 3-Branch Connector 100 SETS/PKG





#### PV Cable

#### CHIKO Photovoltaic Cable

· Conductor: Tinned annealed copper

· Insulation: 120°CXLPE, black • Jacket : 120°CXLPE, black

voltage 600/1000V temperature120°C

- Specifically designed for connecting photovoltaic system components inside and outside of building and equipment with high mechanical requirements and extreme weather conditions. For permanent installations.
- · Cable made of electron-beam cross-linked insulation and coating; high resistance against heat, cold, oil, abrasion, ozone, UV and weather; with improved reaction in case of fire; low smoke, halogen free, flame free, flame retardant; flexible, easy to strip, very low space requirement, extremely mechanically robust, very long lifetime.



Ambient temperature: -40°C - 90°C Maximum conductor temperature: + 120°C

ental Com

Hydrolysis resistant Acids and oil resistant

Insulation flame retardant with particularly

Color: Black Red

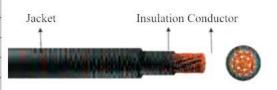
> 25 years

#### Construction

	Conductor		Insulation	Insulation	Jacket	Outer	Conductor	Max.
Туре	Construction	ConductorDia.	Standard Thickness	Standard Dia.	Standard Thickness	Dia.	resistance (20°C)	Current Carrying Capacity
mm²	N/mm	(about)mm	mm	mm	mm	mm	Ω/ΚΜ	Apm
1.5	30/0.25 + 0.006	1.58	0.90	$3.38 \pm 0.1$	1.10	$5.5 \pm 0.2$	13.7	30
2.5	$50/0.25 \pm 0.006$	2.04	0.85	$3.74 \pm 0.1$	0.90	$5.5 \pm 0.2$	8.21	41
4.0	$56/0.30\pm0.006$	2.59	0.85	$4.29 \pm 0.1$	0.90	6.10±0.2	5.09	55
6.0	84/0.30±0.006	3.17	0.85	$4.87 \pm 0.1$	1.05	$7.0 \pm 0.2$	3.39	70

#### Electrical Properties

Item	Units	Specification
Conductor resistance ( 20°C )	Ω/km	_
Insulation resistance (90°C)	$\Omega$ / cm	≤10 <sup>11</sup>
Withstand voltage	V / 5min	AC6500
Lifetime	Year	≤25years
Min.Bending Radius		5D



#### CHIKO Photovoltaic Cable

Item	Description	Package(Meter/Roll)
CK-0809-1.5	Solar cable 1.5mm <sup>2</sup>	250
CK-0809-2.5	Solar cable 2.5mm <sup>2</sup>	250
CK-0809-4.0	Solar cable 4.0mm <sup>2</sup>	100
CK-0809-6.0	Solar cable 6.0mm <sup>2</sup>	200
CK-0809-10.0	Solar cable 10.0mm <sup>2</sup>	100



## PROJECTS REFERENCE



































































