



*We carry the energy of the sun!*



## SOLAR PANEL SUPPORT SYSTEMS

[www.kiracmetal.com](http://www.kiracmetal.com)



### Adres

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Eskişehir - Türkiye

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[www.kiracmetal.com](http://www.kiracmetal.com)





Kiraç Group was established in 1981 with the vision to become a leading actor in the electrical market. The group includes separate entities titled as Kiraç Elektrik, Kiraç Metal, Kiraç Otomasyon, Kiraç Galvaniz, Emcekare, Pioneer Metal, Kiraç Group İnşaat and Kiraç Bilişim interconnected with each other creating a culture of inhouse support across eight different sectors. The Group invests in the future by prioritizing customer satisfaction through top quality products and services it offers since its establishment. The Group is conducting successful operations in Europe, Asia, Middle East and North America.

Kiraç Metal Ürünleri San. ve Tic. Ltd. Şti. was established in 2002 in order to manufacture cable trays. The Company has completed successful projects with its experienced and dynamic team. Its main manufacturing facility is located in Eskişehir Organized Industrial Zone. The facility is established on a total area of 20,250 sq.m having an indoors space of 12,150 sq.m. With a manufacturing capacity of 1,000 Tones/Month, Kiraç Metal produces Solar Panel Support and Mounting Systems, Cable Trays and Ladders, Supporting Components and Fittings plus Industrial-Type Electrical Panels. The facility is also designed to incorporate flexibility to adjust its manufacturing flow for tailored products. As one of the leading global manufacturers, Kiraç Metal is the choice of consumers for its high quality and customer oriented product and services, on time delivery policy and its pre/post-sales services. Kiraç Metal Ürünleri San. ve Tic. Ltd. Şti.'s primary export market is Europe while its products reach numerous other countries around the world.

[www.kiracgroup.com](http://www.kiracgroup.com)



After solar panels and invertors, the most crucial equipment in a solar power plant are solar panel support systems. The reliability and effectiveness of a power plant is directly correlated with how support systems are designed in terms of strength and durability. Any mistake made during design phase may cause substantial damage to the facility. Furthermore, mounting equipment utilized in installing and connecting support equipment shall be selected from corrosion resistant materials which can withstand severe ambient conditions.

Kıraç Metal offers optimal solutions for support systems design by incorporating high-tech equipment to its advanced engineering capabilities. Variable and constant loads such as ground structure, snow load, earthquake load, wind load etc. are important in selecting support systems. Kıraç Metal has developed specific solutions for all types of land and roof applications. Kıraç Metal has a pioneering role in sector's development due to its capacity to manufacture support systems essential for solar power plants according to international standards enabling the meeting of varying market demand.

[www.kiracmetal.com](http://www.kiracmetal.com)



Pioneer Metal Company W.L.L is a Qatar based, Joint Venture company between Almana Group , Qatar and Kirac Metal, Turkey. Pioneer Metal Co. having its manufacturing plant at New Industrial Area, Doha, Qatar is the leading manufacturer and supplier of : Cable Management System, Solar Mounting System, Low Voltage Enclosures for indoor and outdoor application and other customized steel products; for the Oil & Gas, Commercial, Industrial and Telecommunication sectors. Established in 2009, the company has invested continuously in its core product ranges and is now able to offer a full solution made up of various specifications and accessories that meet the needs of almost any project and contract. Our production facility has ISO 9001:2015, ISO140001:2015, ISO45001:2018, BS EN EN61537 and our production is controlled by the quality management system established in accordance with the standards. Our extensive experience together with latest technology enables us to provide superior service and unrivalled support to our customers. "Pioneer Metal", "PMC" and "Cablelane" are the brand names used by the company to promote its products and services across the GCC Countries.

[www.pioneermetal.org](http://www.pioneermetal.org)



**we carry the energy**

**of the sun!**



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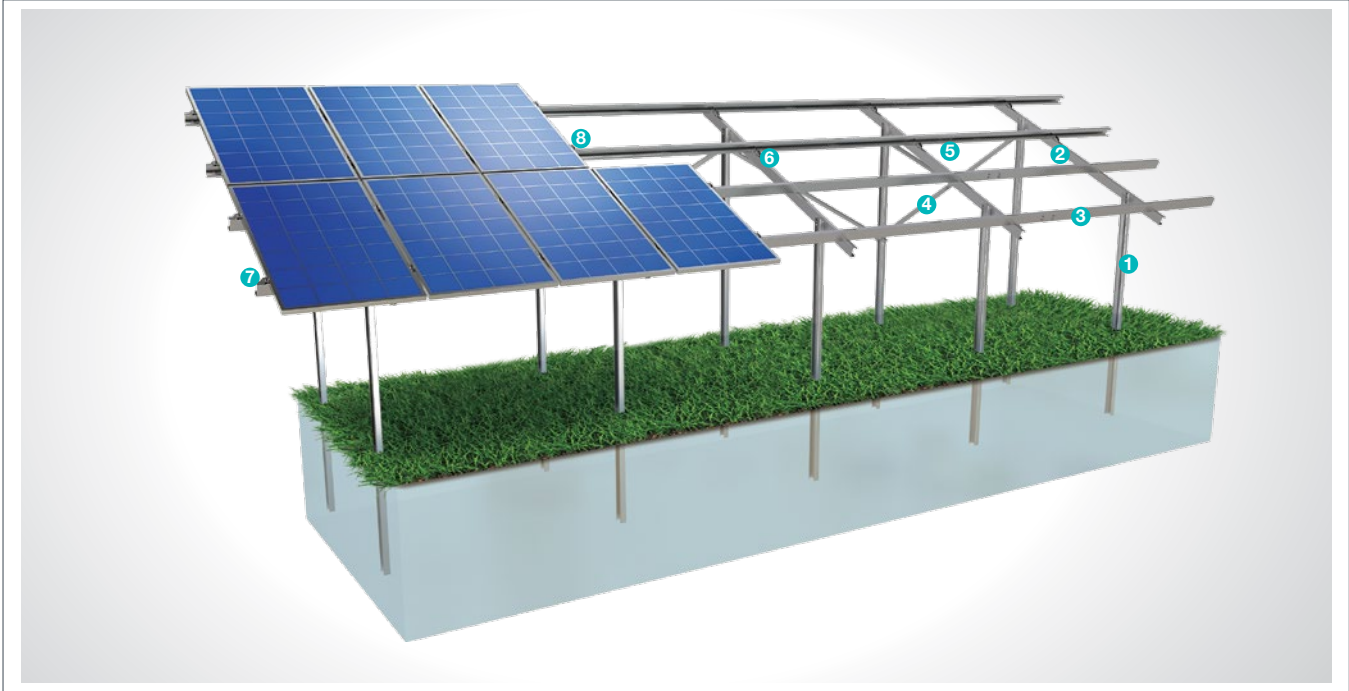
Customer oriented  
**engineering solutions**

Solutions suitable for different  
**types of terrains**

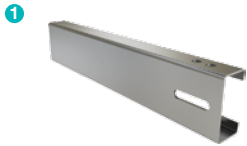
## (KPT1) Ground Driven Steel Mounting System with 2 Vertical Panels

### Overview

**KPT1**, is a ground driven steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN



- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM



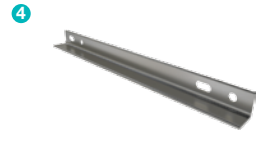
- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN



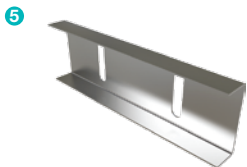
- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET



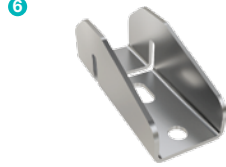
- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE



- **C90 / C100 / C110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

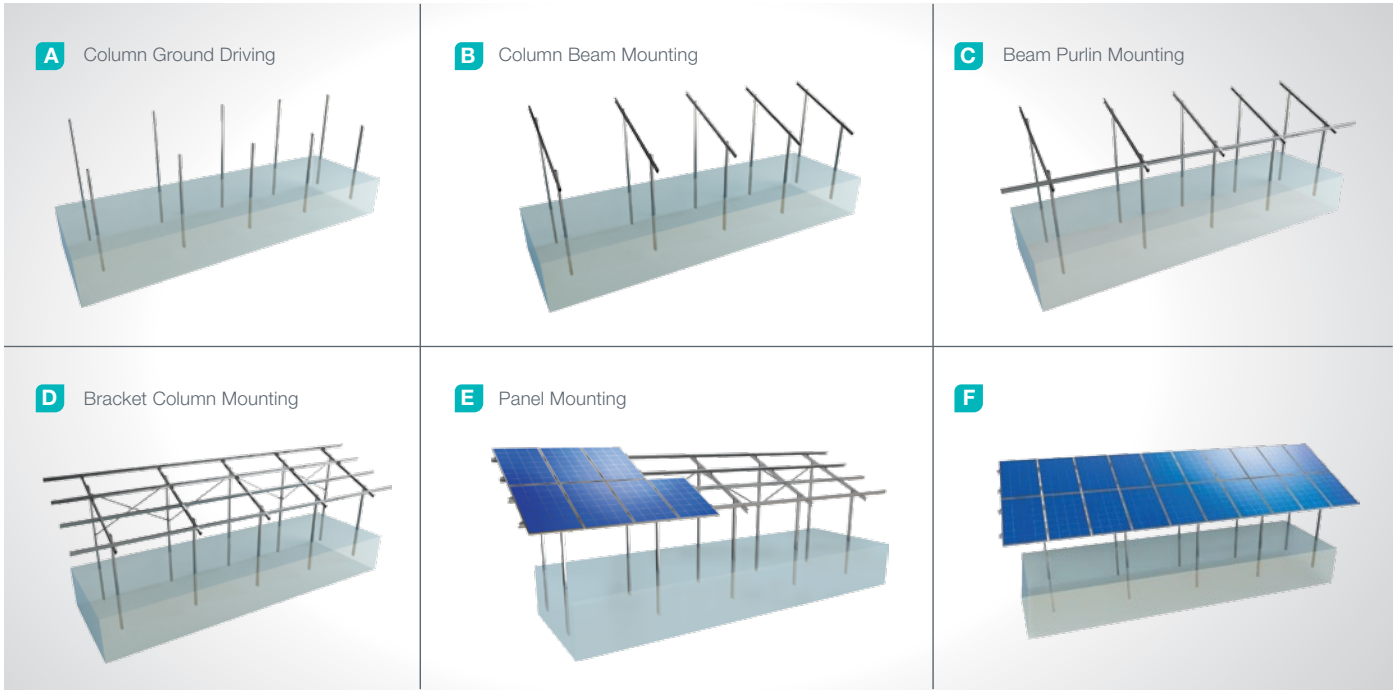
#### PANEL CENTER RETAINER



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable solutions for combiner box and inverter installation
- Tailored design solutions for customer
- Customer oriented engineering solutions

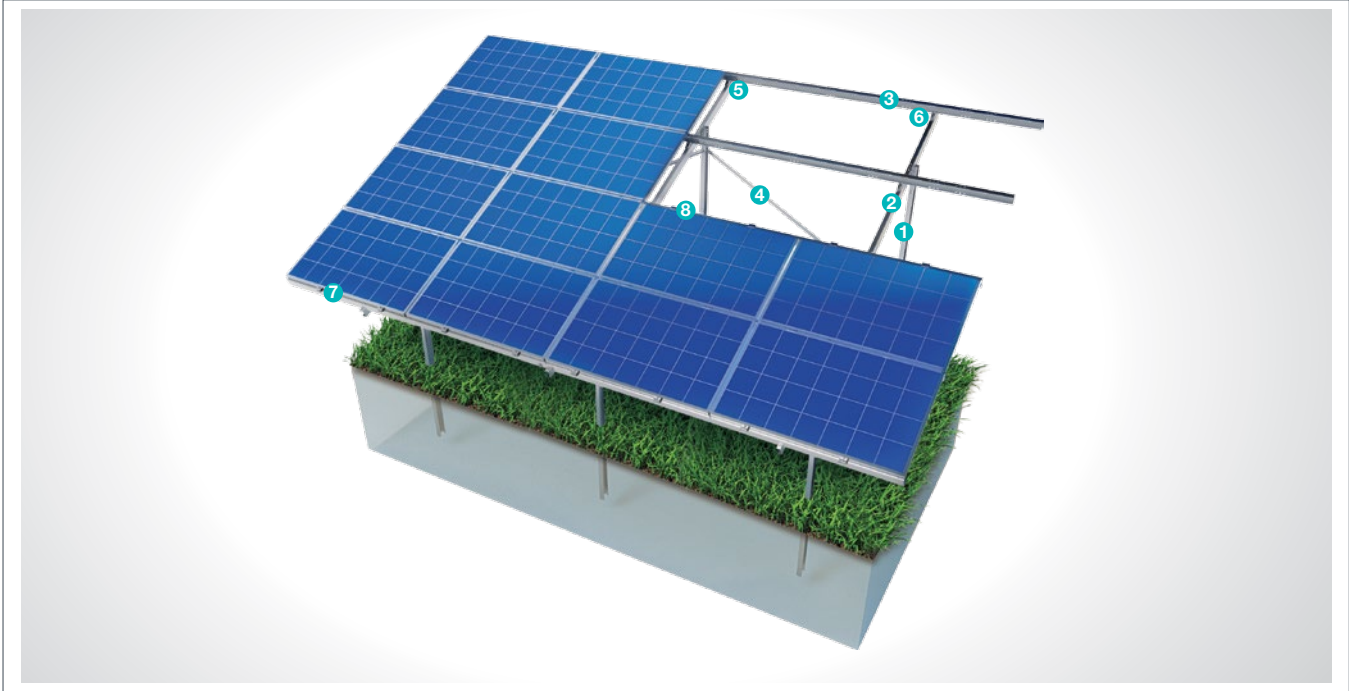
## Technical Specifications

Description:	(KPT1) ) Ground Driven with 2 Vertical Panel Driving Steel Mounting System
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

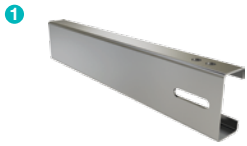
## (KPT2) ) Ground Driven Steel Mounting System with 4 Horizontal Panels

### Overview

**KPT2**, is a ground driven steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN



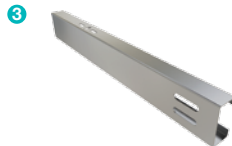
- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM



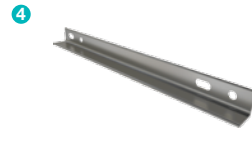
- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN



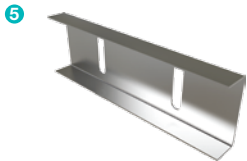
- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET



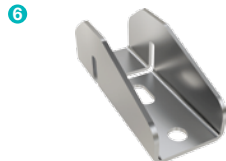
- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE



- **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

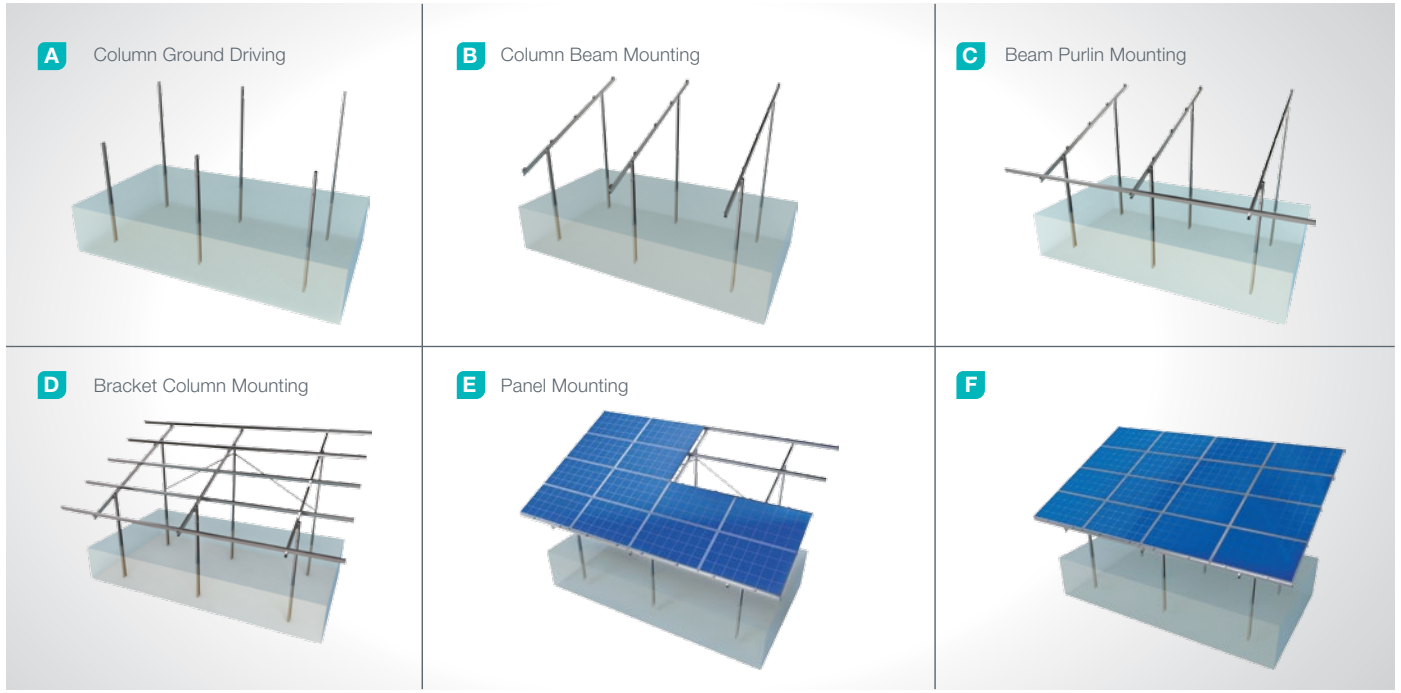
#### PANEL CENTER RETAINER



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable solutions for combiner box and inverter installation
- Tailored design solutions for customer
- Customer oriented engineering solutions

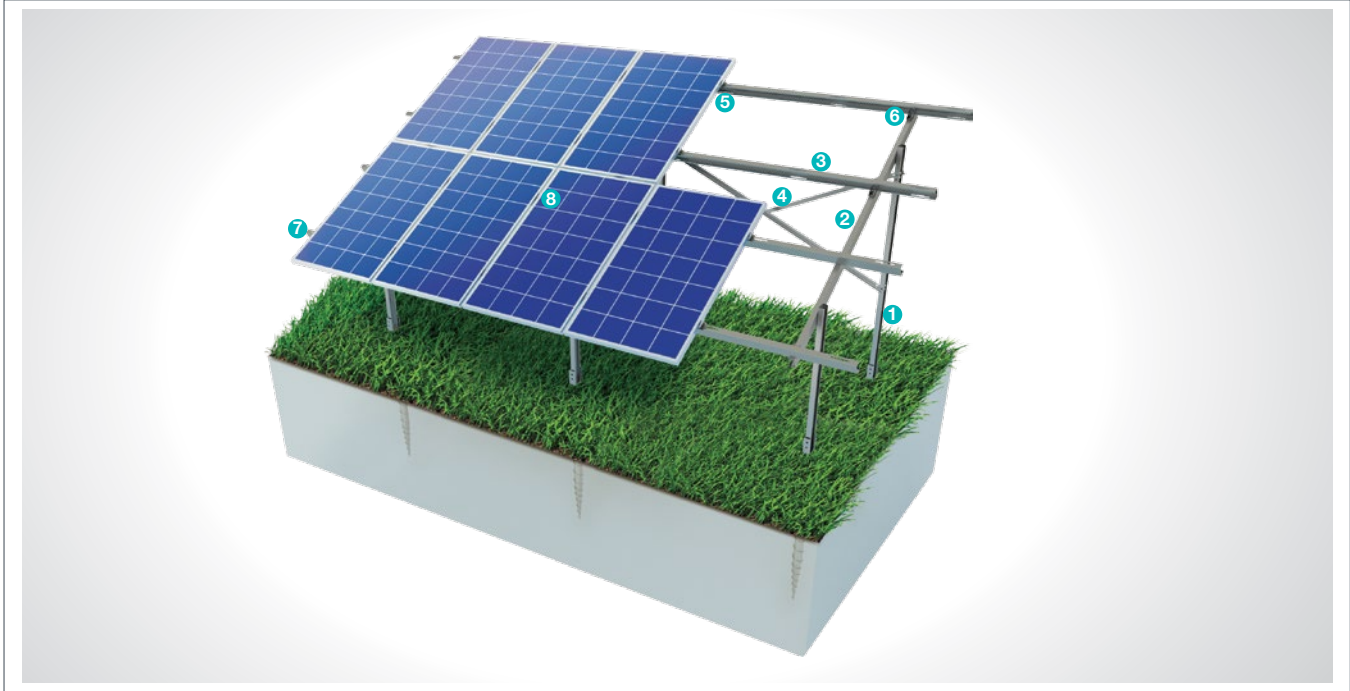
## Technical Specifications

Description:	(KPT2) Ground Driven with 4 Horizontal Panels Steel Mounting System
Mounting Method:	Ground Driving
Tilt angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT3) Ground Screwed Steel Mounting System with 2 Vertical Panels

### Overview

KPT3, is a steel support and mounting system for open terrain solar panels with 2 vertical panels installed to the ground with screw piles. The system is an optimal application solution for installations of PV projects on irregular terrains. The screw piles have high strength properties and can be used any time of the year for application purposes. They are not affected by vibrations generated by ambient conditions such as wind or storm due to their high load strength. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



##### ■ CK-90 / CK-100 / CK-120

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer  
M12X140 Knurled Bolt

#### STEEL BEAM

2



##### ■ CR-100 / CR-120

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

3

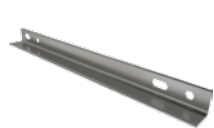


##### ■ CA-90 / CA-100 / CA-110

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4

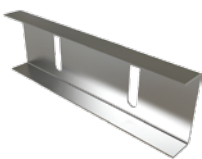


##### ■ CL-40X40 / CL-50X50

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5

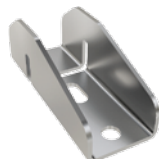


##### ■ C-90 / C-100 / C-110

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



##### ■ U40

M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



##### ■ H30-H32-H40

M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER

8

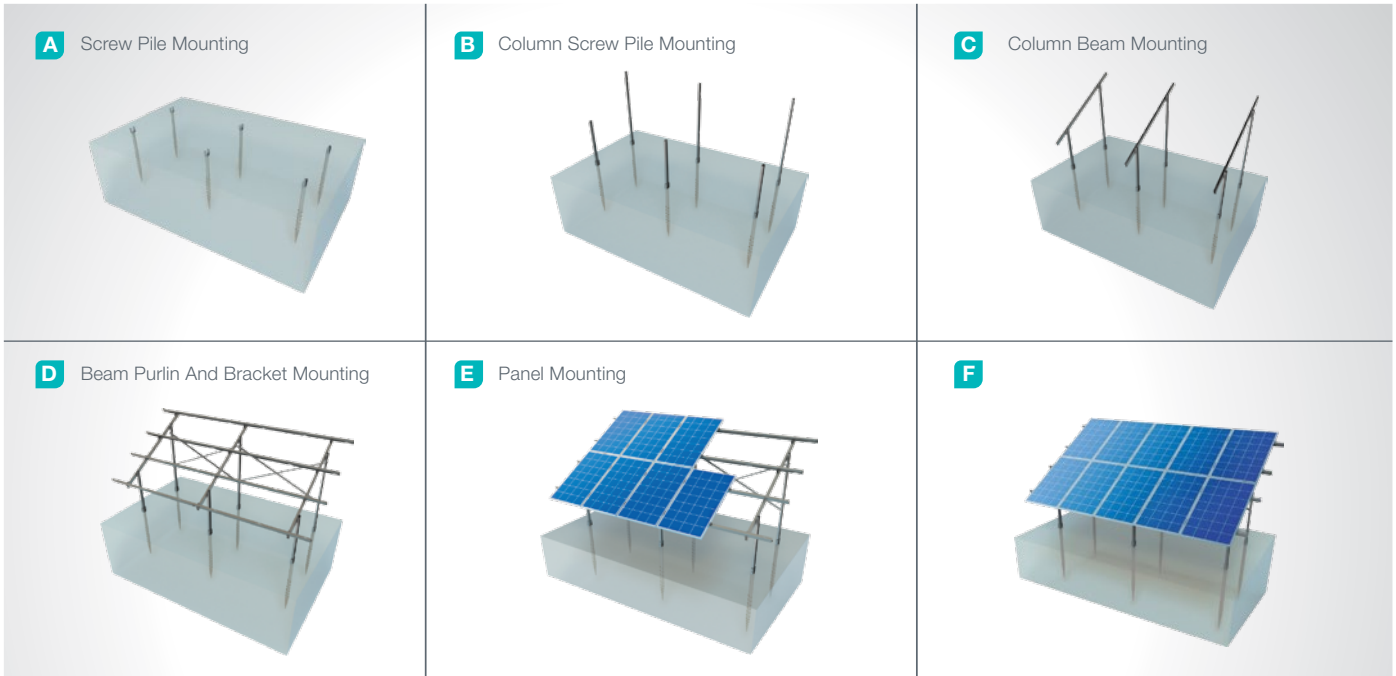


##### ■ L70

M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Screw Piles do not require preliminary drilling and concrete
- All year round mounting capability
- Assembly can be commenced immediately
- After screw pile mounting on ground
- Re-use opportunity in some cases
- Screw pile vibration damping
- Tailored design solutions for customer
- Customer oriented engineering solutions

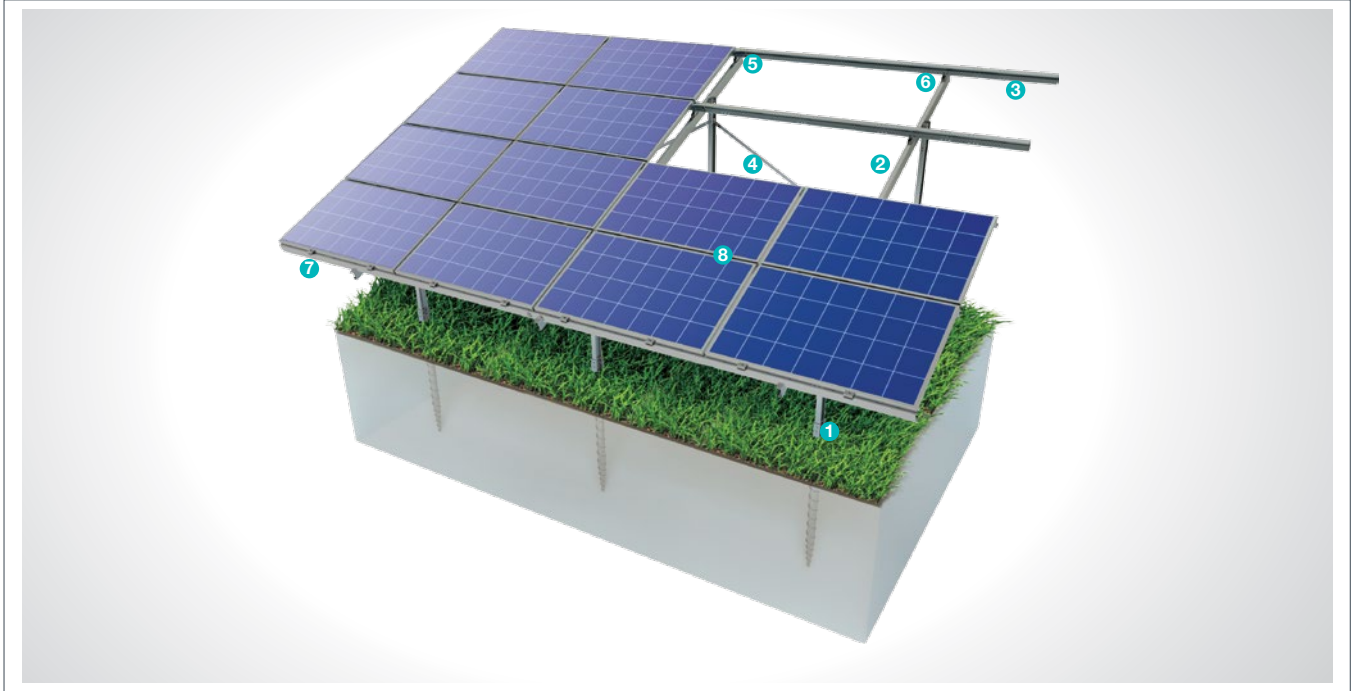
## Technical Specifications

Description:	(KPT3) Ground Screwed Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Screwing
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT4) Ground Screwed Steel Mounting System with 4 Horizontal Panels

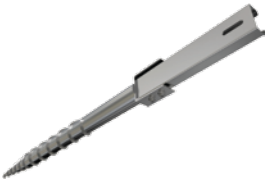
### Overview

KPT4, s a ground driven steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on irregular terrains . The screw piles have high strength properties and can be used any time of the year for application purposes. They are not affected by vibrations generated by ambient conditions such as wind or storm due to their high load strength. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



■ **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer  
M12X140 Knurled Bolt

#### STEEL BEAM

2



■ **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

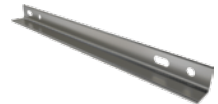
3



■ **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



■ **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

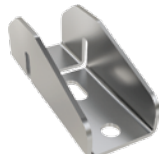
5



■ **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



■ **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER

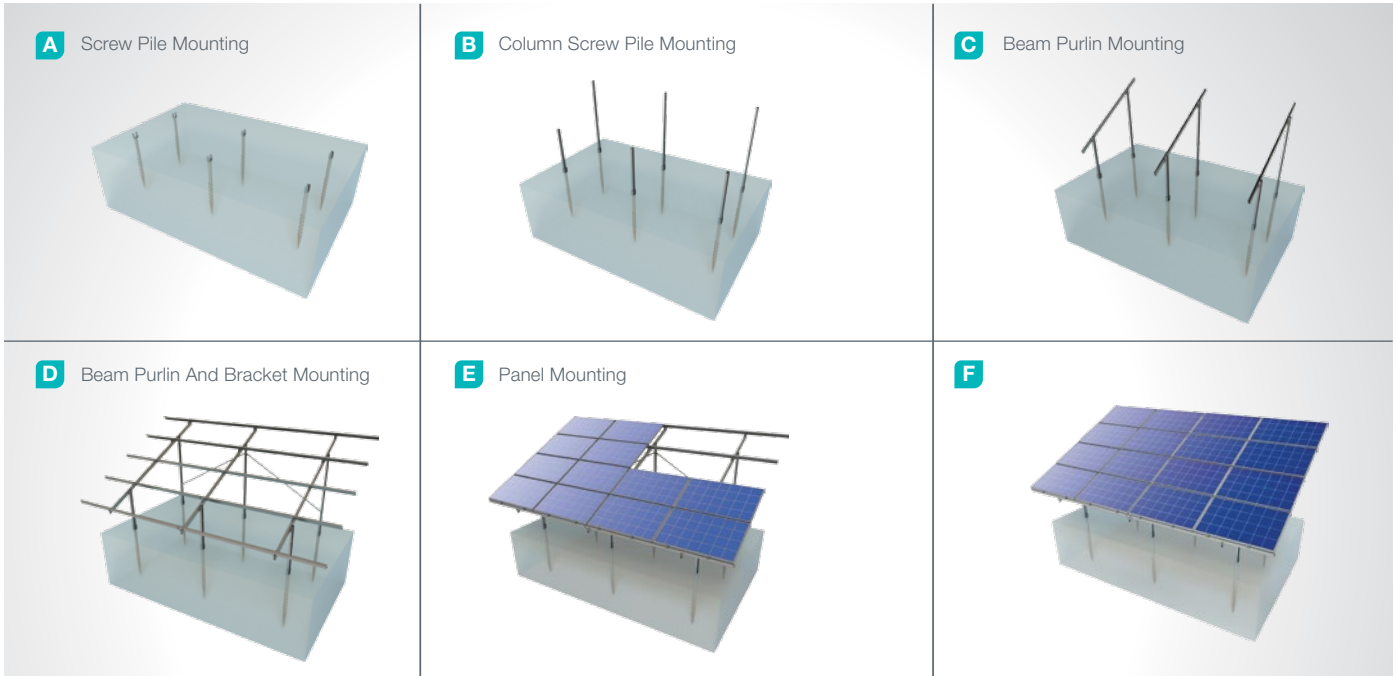
8



■ **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Screw Piles do not require preliminary drilling and concrete
- All year round mounting capability
- Assembly can be commenced immediately
- After screw pile mounting on ground
- Re-use opportunity in some cases
- Screw pile vibration damping
- Tailored design solutions for customer
- Customer oriented engineering solutions

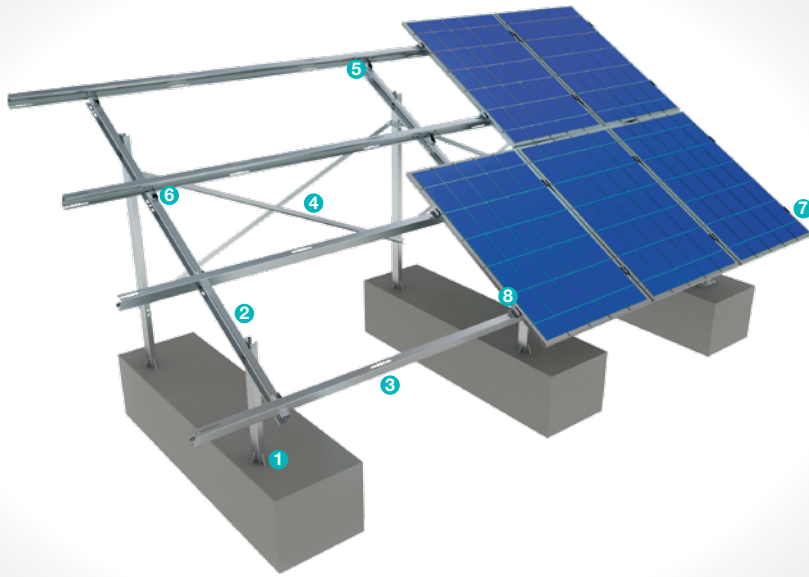
## Technical Specifications

Description:	KPT4) Ground Screwed Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Ground Screwing
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT5) Concrete Base Anchored Steel Mounting System with 2 Vertical Panels

### Overview

KPT5, is a concrete base anchored steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on sloped medium and large sized terrains. It provides the necessary strength and stability for application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



■ **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

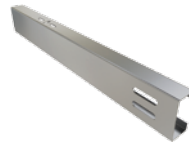
2



■ **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

3



■ **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



■ **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

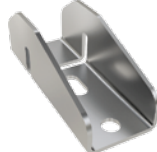
5



■ **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



■ **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

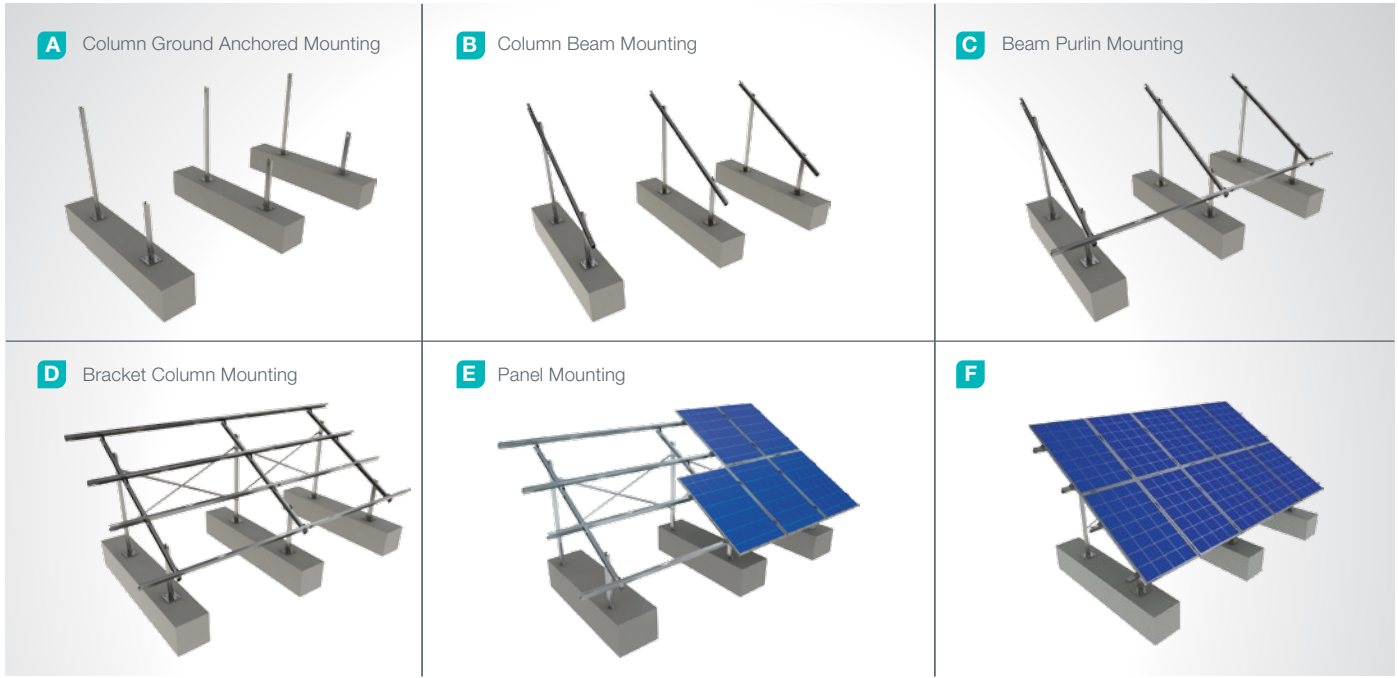
#### PANEL CENTER RETAINER

8



■ **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable for loose ground
- Suitable for slopped terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

## Technical Specifications

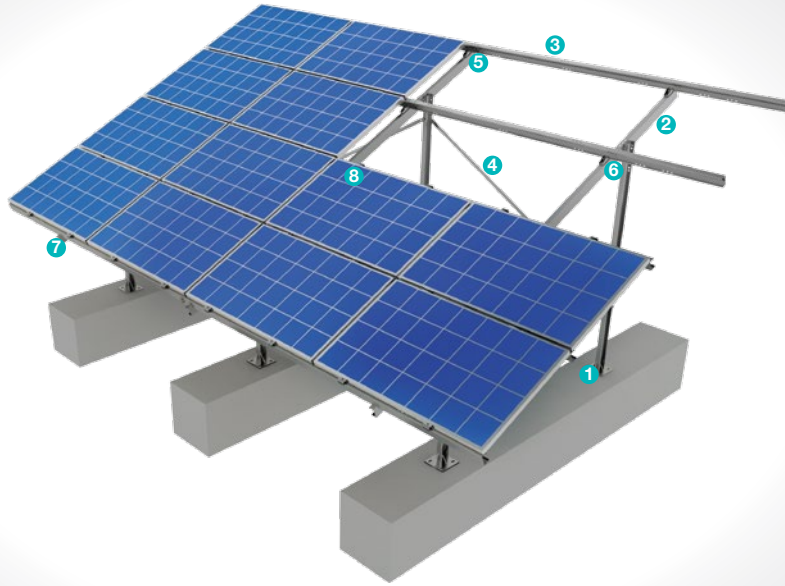
Description:	(KPT5) Concrete Base Anchored Steel Mounting System with 2 Vertical Panels
Mounting Method:	Anchor on Concrete Base
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979



## (KPT6) Concrete Base Anchored Steel Mounting System with 4 Horizontal Panels

### Overview

**KPT6**, is a concrete base anchored steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on sloped medium and large sized terrains. It provides the necessary strength and stability for application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

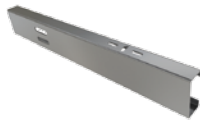
1



■ **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2



■ **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

3



■ **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

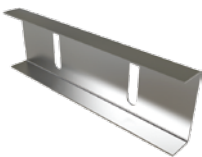
4



■ **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

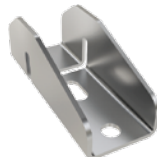
5



■ **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



■ **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

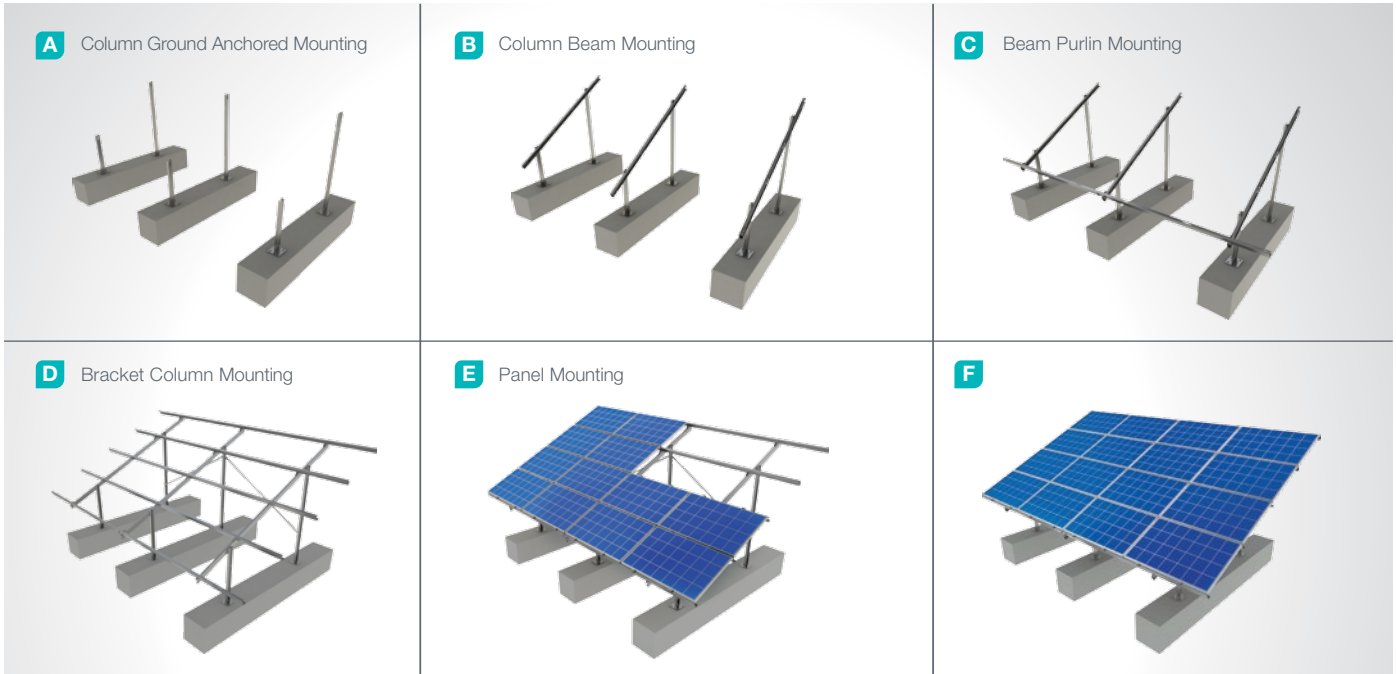
#### PANEL CENTER RETAINER

8



■ **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Suitable for loose ground
- Suitable for slopped terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

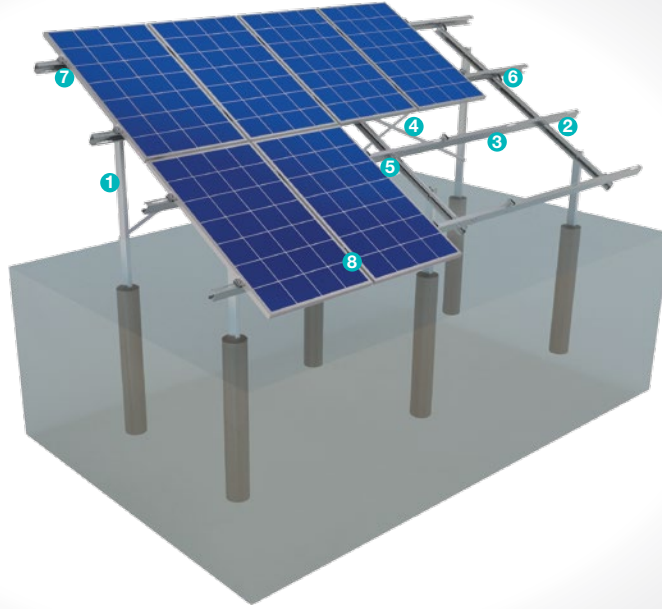
## Technical Specifications

Description:	(KPT6) Concrete Base Anchored Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Anchor on Concrete Base
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT7) Concrete Embedded Steel Mounting System with 2 Vertical Panels

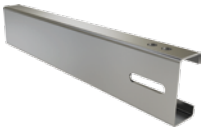
### Overview

KPT7, is a concrete embedded steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on medium and large sized terrains with loose ground. Necessary strength is achieved by application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



■ **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2



■ **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

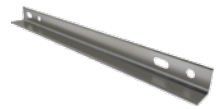
3



■ **CA-90 / CA-100 / CA -110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



■ **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



■ **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



■ **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER

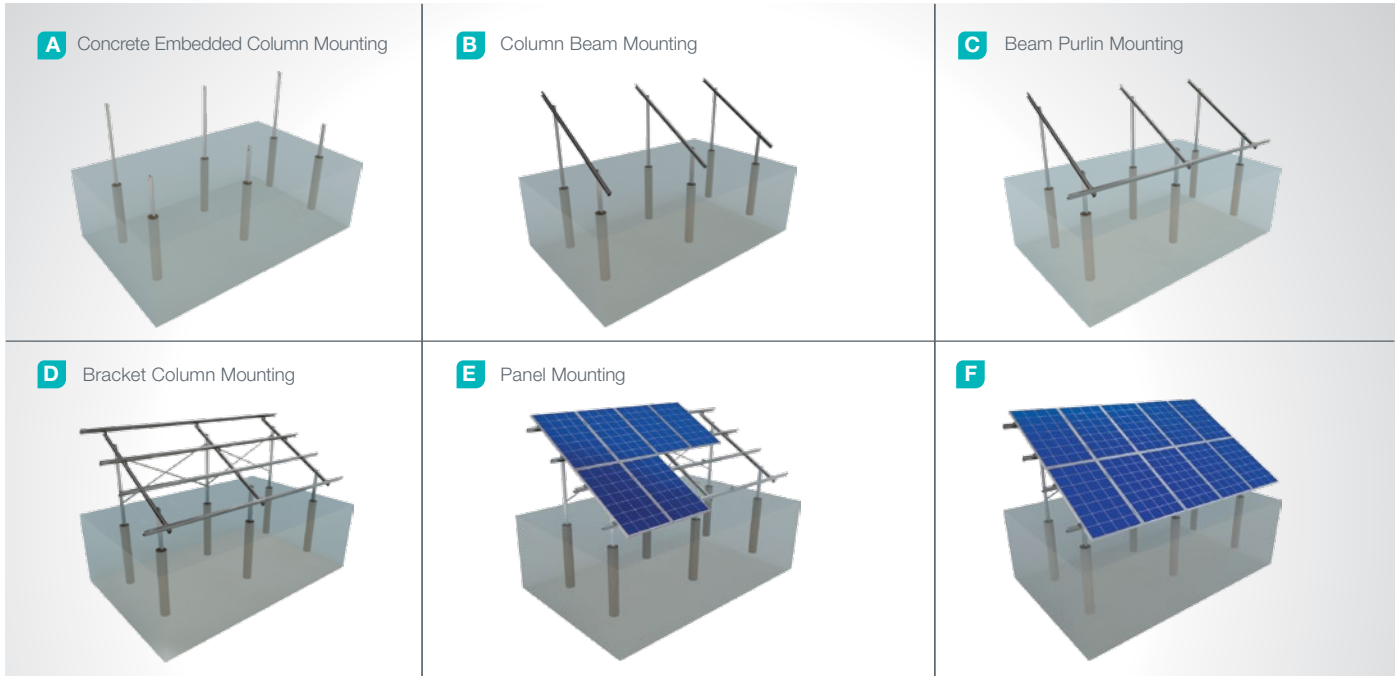
8



■ **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Suitable for loose ground
- Tailored design solutions for customer
- Customer oriented engineering solutions

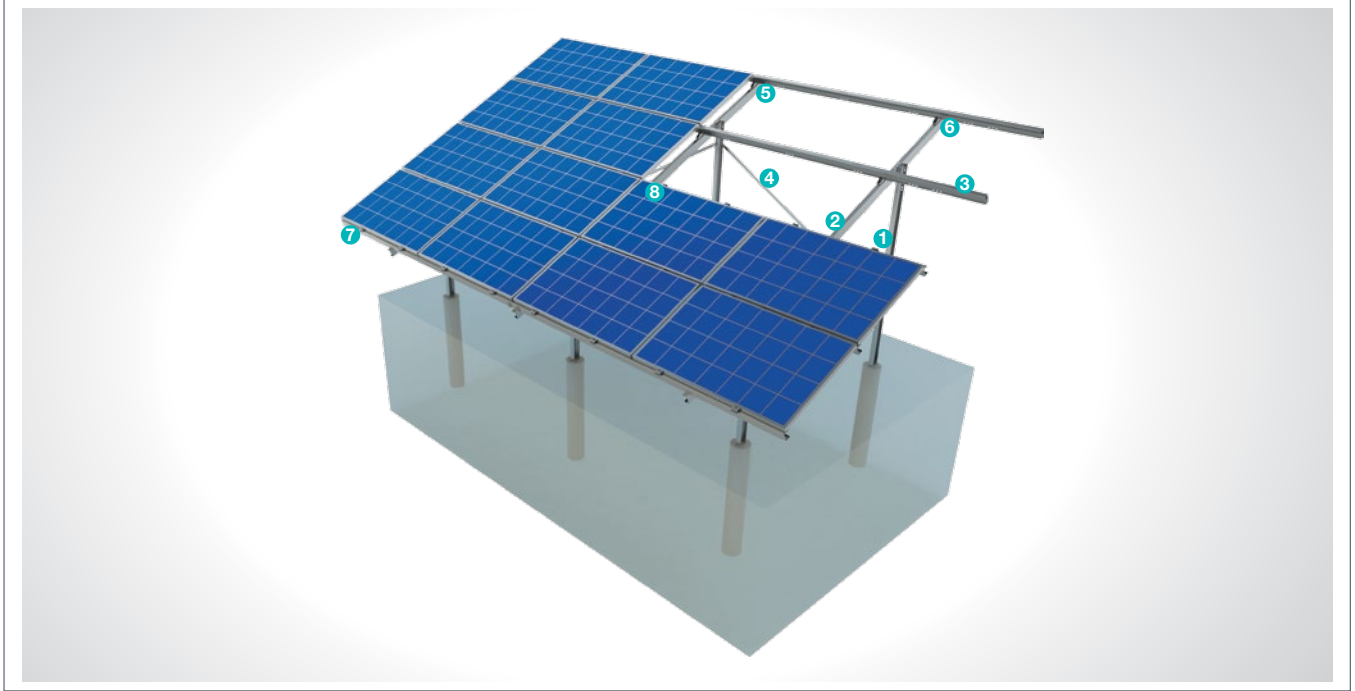
## Technical Specifications

Description:	(KPT7) Concrete Embedded Steel Mounting System with 2 Vertical Panels
Mounting Method:	Concrete Embedded Column
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT8) Concrete Embedded Steel Mounting System with 4 Horizontal Panels

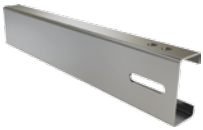
### Overview

**KPT8**, is a concrete embedded column steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an ideal application solution for PV projects installations on medium and large sized terrains with loose ground. Necessary strength is achieved by application in loose ground. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

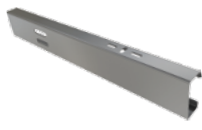
1



- **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

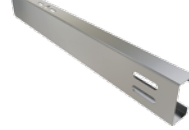
2



- **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

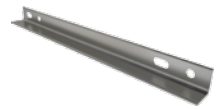
3



- **CA-90 / CA-100 / CA-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



- **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



- **C-90 / C-100 / C-110**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR PIECE

6



- **U40**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

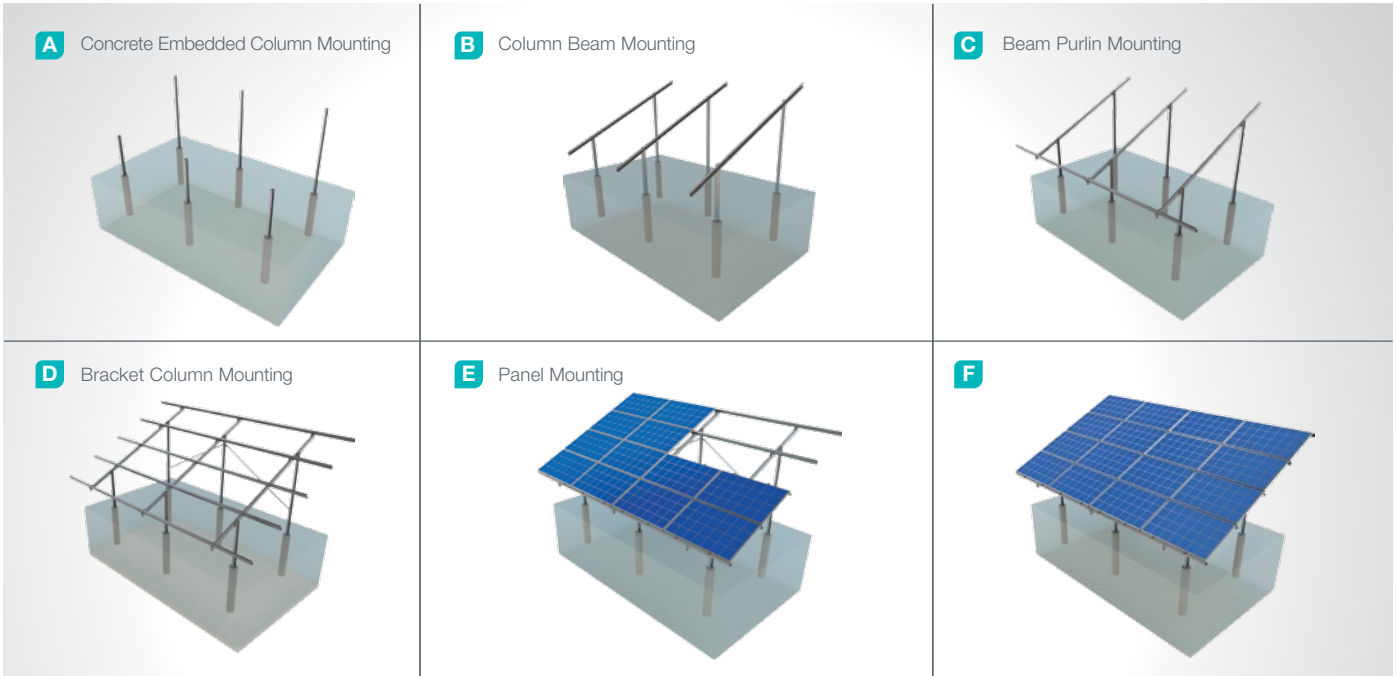
#### PANEL CENTER RETAINER

8



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Suitable for loose ground
- Tailored design solutions for customer
- Customer oriented engineering solutions

## Technical Specifications

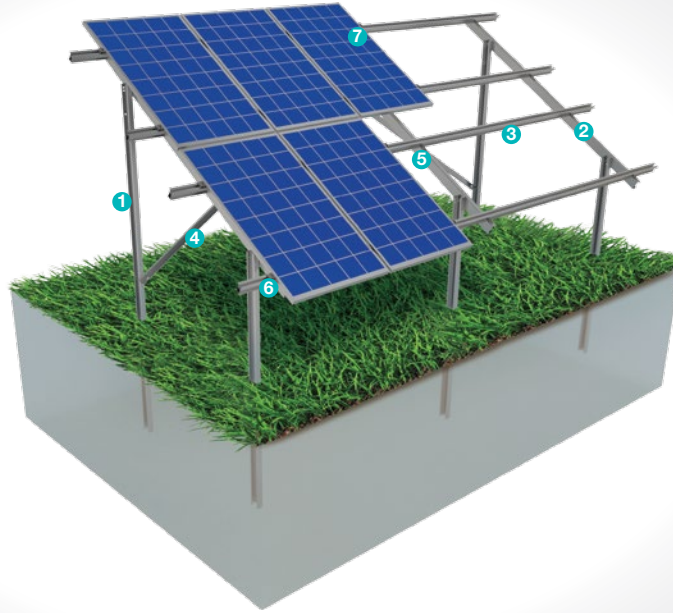
Description:	(KPT8) Concrete Embedded Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Concrete Embedded Column
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979



## (KPT9) Steel Mounting System with Ground Driven Aluminum Purlin & 2 Vertical Panels

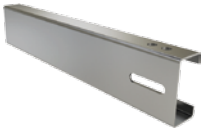
### Overview

KPT9, is a ground driven steel support and mounting system with aluminum purlin and 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



■ **CK-90 / CK-100 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

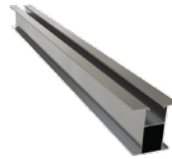
2



■ **CR-100 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### ALUMINUM PURLIN

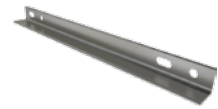
3



■ **AA-70x70**  
M8X30 Hex Bolt  
M8 Rectangle Nut

#### STEEL L BRACKET

4



■ **CL-40X40 / CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



■ **L35**  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL SIDE RETAINER

6



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangle Nut

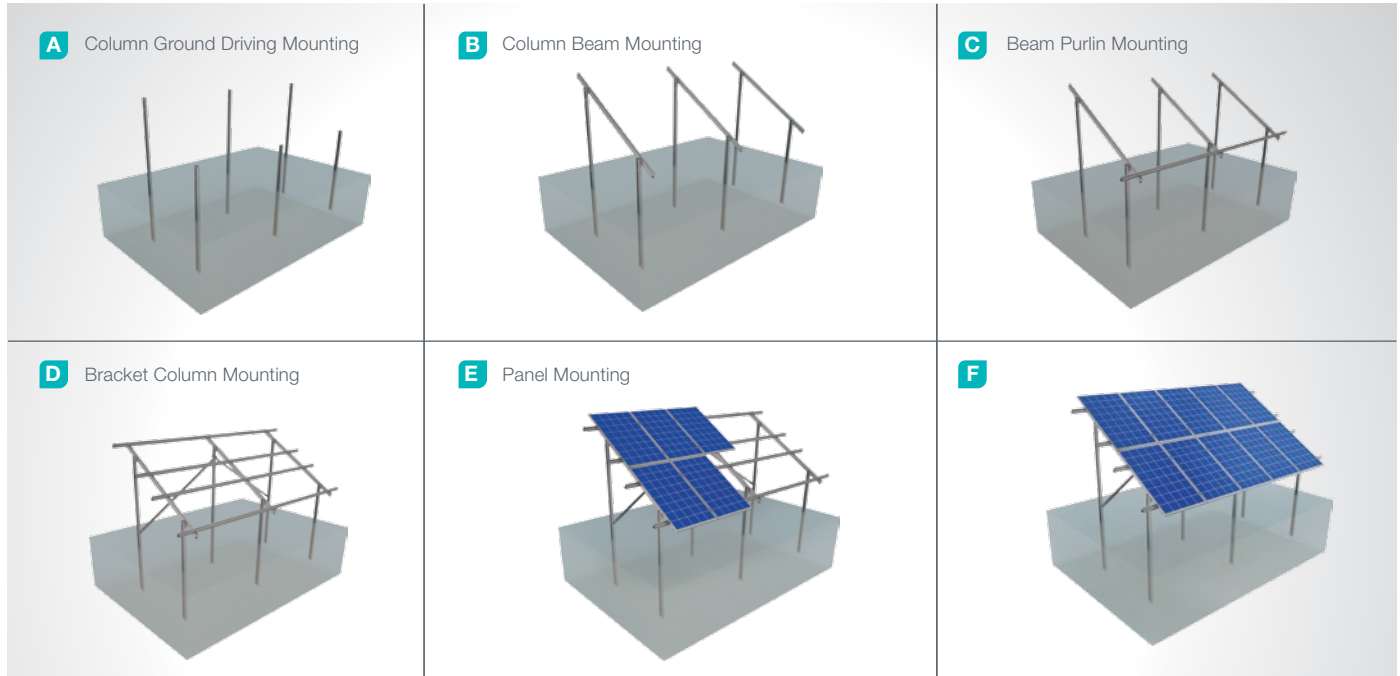
#### PANEL CENTER RETAINER

7



■ **L70**  
M8X30 Hex Bolt  
M8 Rectangle Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

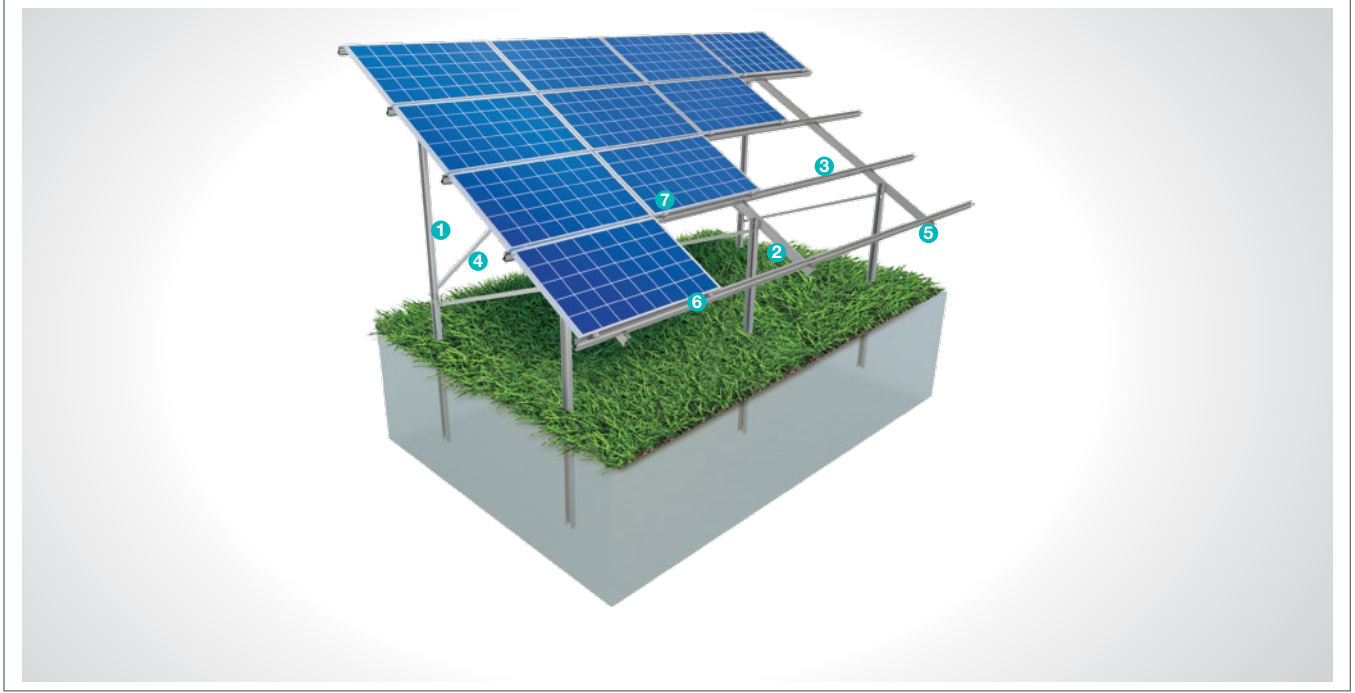
## Technical Specifications

Description:	(KPT9) Steel Mounting System with Ground Driven Aluminum Purlin & 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT10) Steel Mounting System with Ground Driven Aluminum Purlin & 4 Horizontal Panels

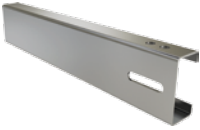
### Overview

**KPT10**, is a ground driven steel support and mounting system with aluminum purlin and 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1

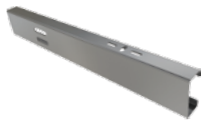


#### ■ CK-90 / CK-100 / CK-120

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2

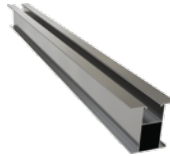


#### ■ CR-100 / CR-120

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### ALUMINUM PURLIN

3



#### ■ AA-70x70

M8X30 Hex Bolt  
M8 Rectangle Nut

#### STEEL L BRACKET

4



#### ■ CL-40X40 / CL-50X50

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### ALUMINUM PURLIN TIGHTENING PIECE

5



#### ■ L35

M8X30 Hex Bolt  
M8 Rectangle Nut

#### PANEL SIDE RETAINER

6

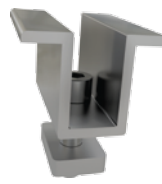


#### ■ H30-H32-H40

M8X30 Hex Bolt  
M8 Rectangle Nut

#### PANEL CENTER RETAINER

7

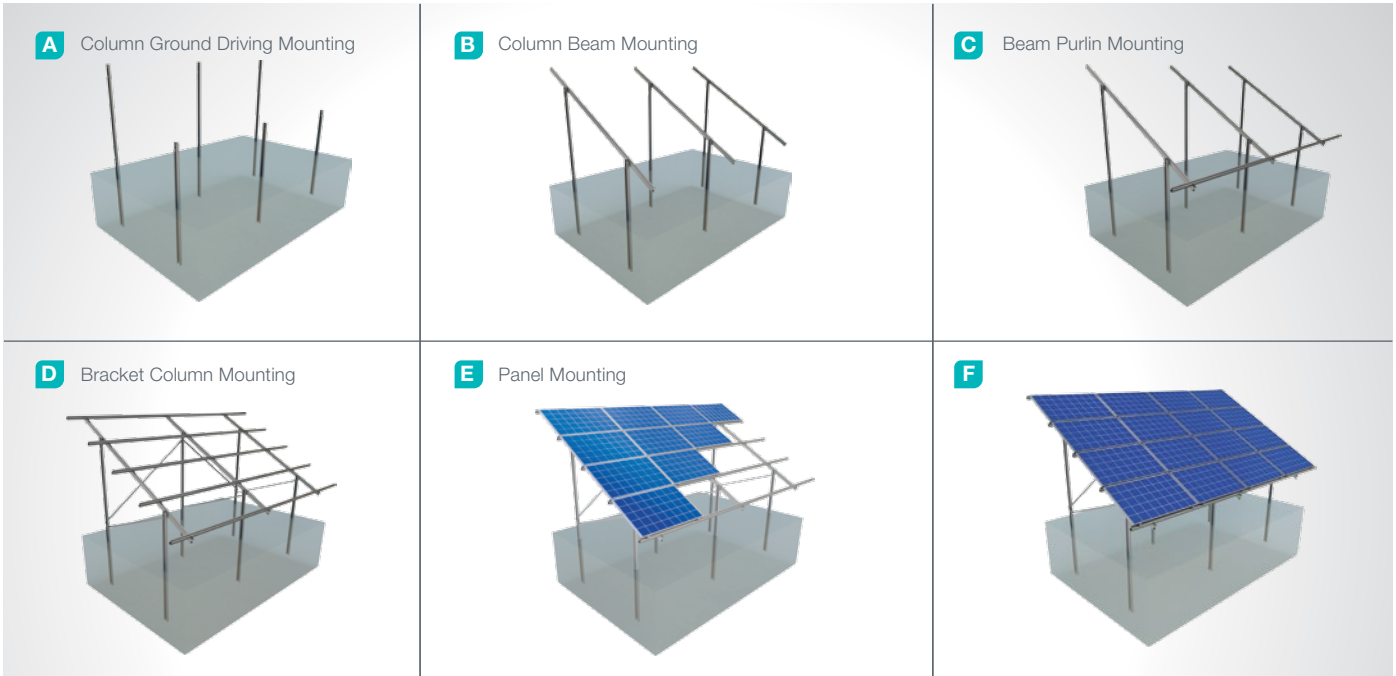


#### ■ L70

M8X30 Hex Bolt  
M8 Rectangle Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

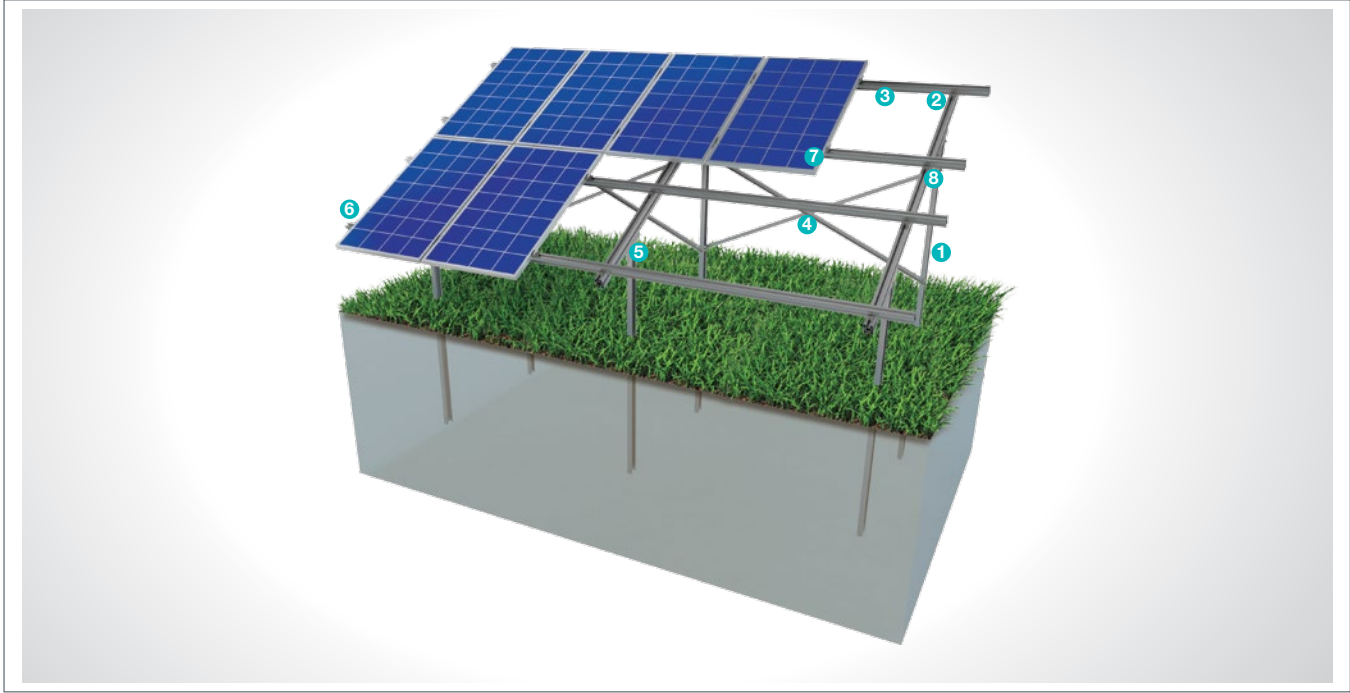
## Technical Specifications

Description:	(KPT10) Steel Mounting System with Ground Driven Aluminum Purlin & 4 Horizontal Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Purlin Material:	EN AW 6063
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT11) Aluminum Mounting System with Ground Driven Steel Column & 2 Vertical Panels

### Overview

KPT11, is an aluminum support and mounting system mounted with ground driven steel column and 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . System components are manufactured with high-tech machinery and equipment. The system, incorporating a high-level engineering design, provides assembly and cost advantages..



#### STEEL COLUMN

1



- CK-90 / CK-100 / CK-120
- M12X30 Knurled Bolt
- M12 Flanged Nut
- M12 Washer

#### ALUMINUM BEAM

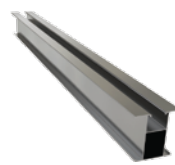
2



- AR-120 x 80
- M12X25 Knurled Bolt
- M12 Rectangular Nut
- M12 Washer
- M12X90 Knurled Bolt

#### ALUMINUM PURLIN

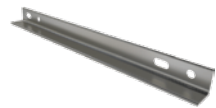
3



- AA-70x70
- M8X30 Hex Bolt
- M8 Rectangular Nut

#### STEEL L BRACKET

4



- CL-40X40 / CL-50X50
- M12X30 Knurled Bolt
- M12 Flanged Nut
- M12 Washer

#### BEAM COLUMN BRACKET CONNECTOR

5



- EK-A
- M8X30 Hex Bolt
- M8 Flanged Nut

#### PANEL SIDE RETAINER

6



- H30-H32-H40
- M8X30 Hex Bolt
- M8 Rectangular Nut

#### PANEL CENTER RETAINER

7



- L70
- M8X30 Hex Bolt
- M8 Rectangular Nut

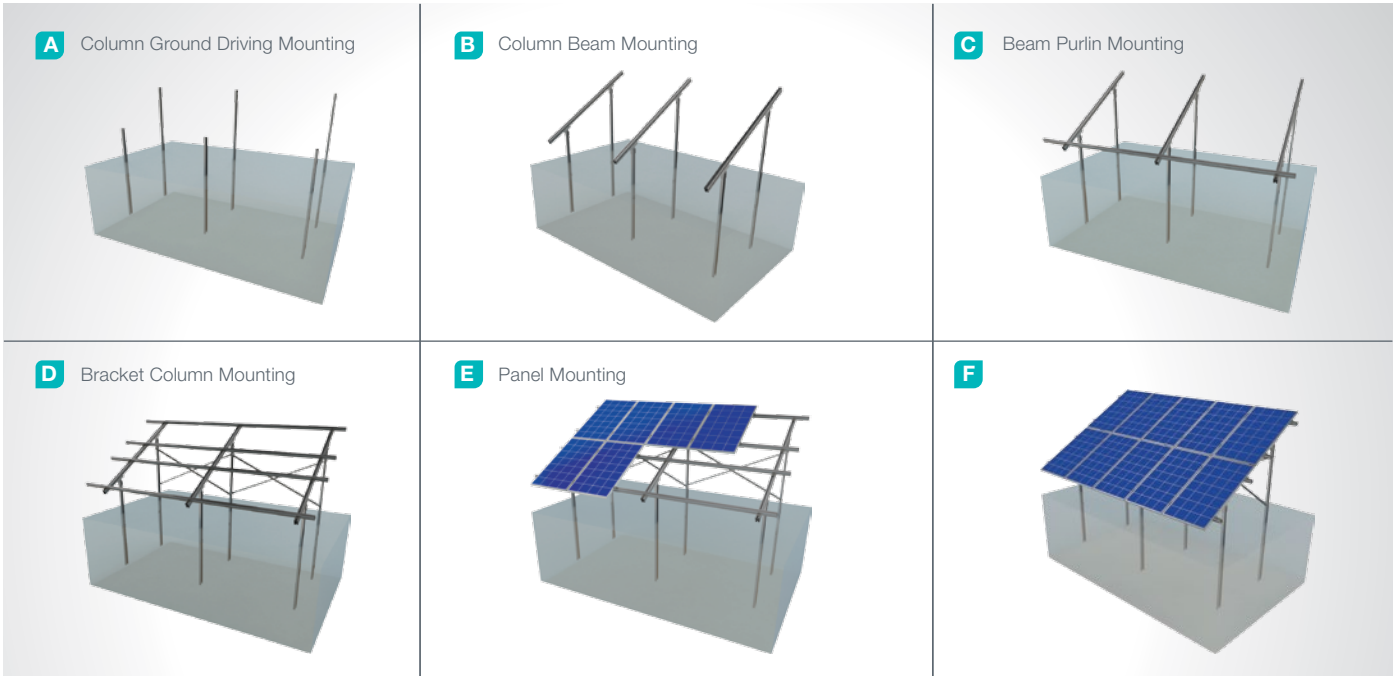
#### ALUMINUM PURLIN CLAMPING PIECE

8



- L35
- M8X30 Hex Bolt
- M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

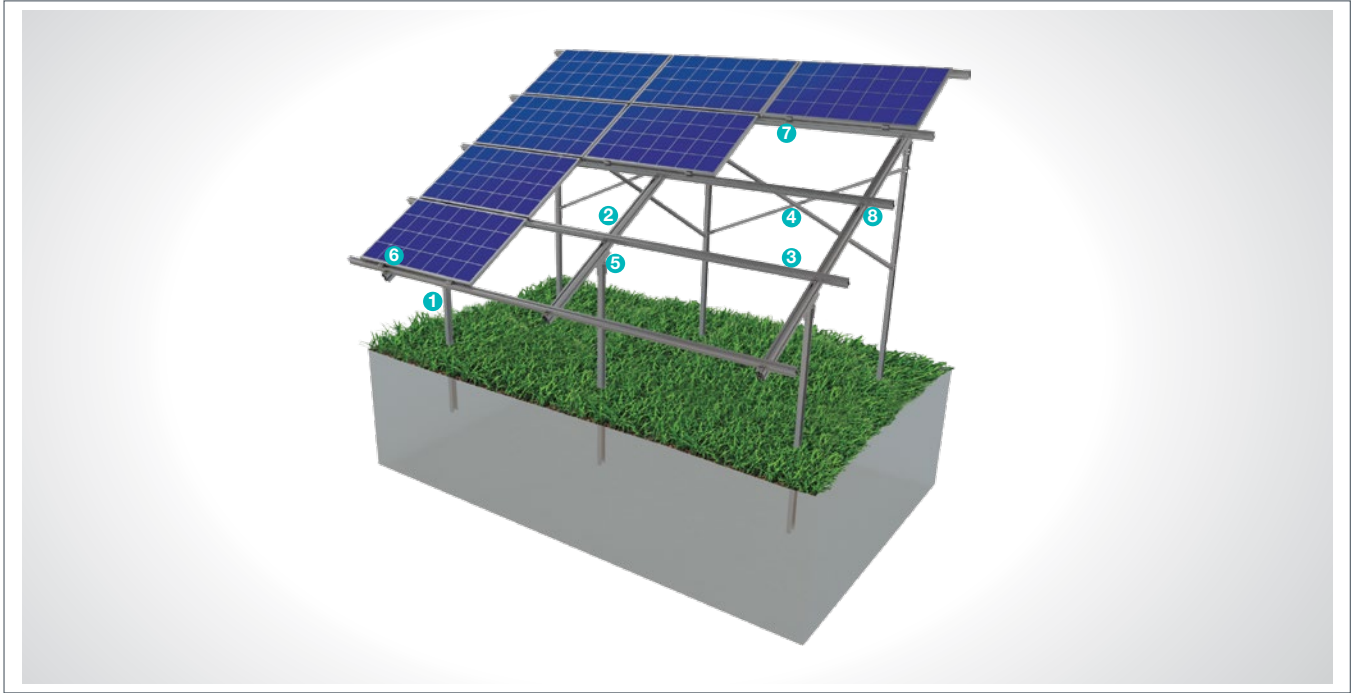
## Technical Specifications

Description:	(KPT11) Aluminum Mounting System with Ground Driven Steel Column & 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Purlin Material:	EN AW 6063
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT12) Aluminum Mounting System with Ground Driven Steel Column & 4 Horizontal Panels

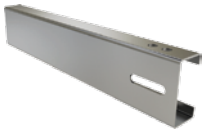
### Overview

KPT12, is an aluminum support and mounting system mounted with ground driven steel column and 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



#### ■ CK-90 / CK-100 / CK-120

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### ALUMINUM BEAM

2

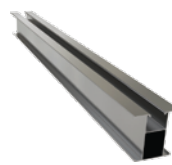


#### ■ AR-120 x 80

M12X25 Knurled Bolt  
M12 Rectangular Nut  
M12 Washer  
M12X90 Knurled Bolt

#### ALUMINUM PURLIN

3

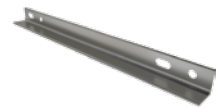


#### ■ AA-70x70

M8X30 Hex Bolt  
M8 Rectangular Nut

#### STEEL L BRACKET

4



#### ■ CL-40X40 / CL-50X50

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### BEAM COLUMN BRACKET CONNECTOR

5



#### ■ EK-A

M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL SIDE RETAINER

6



#### ■ H30-H32-H40

M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL CENTER RETAINER

7



#### ■ L70

M8X30 Hex Bolt  
M8 Rectangular Nut

#### ALUMINUM PURLIN CLAMPING PIECE

8

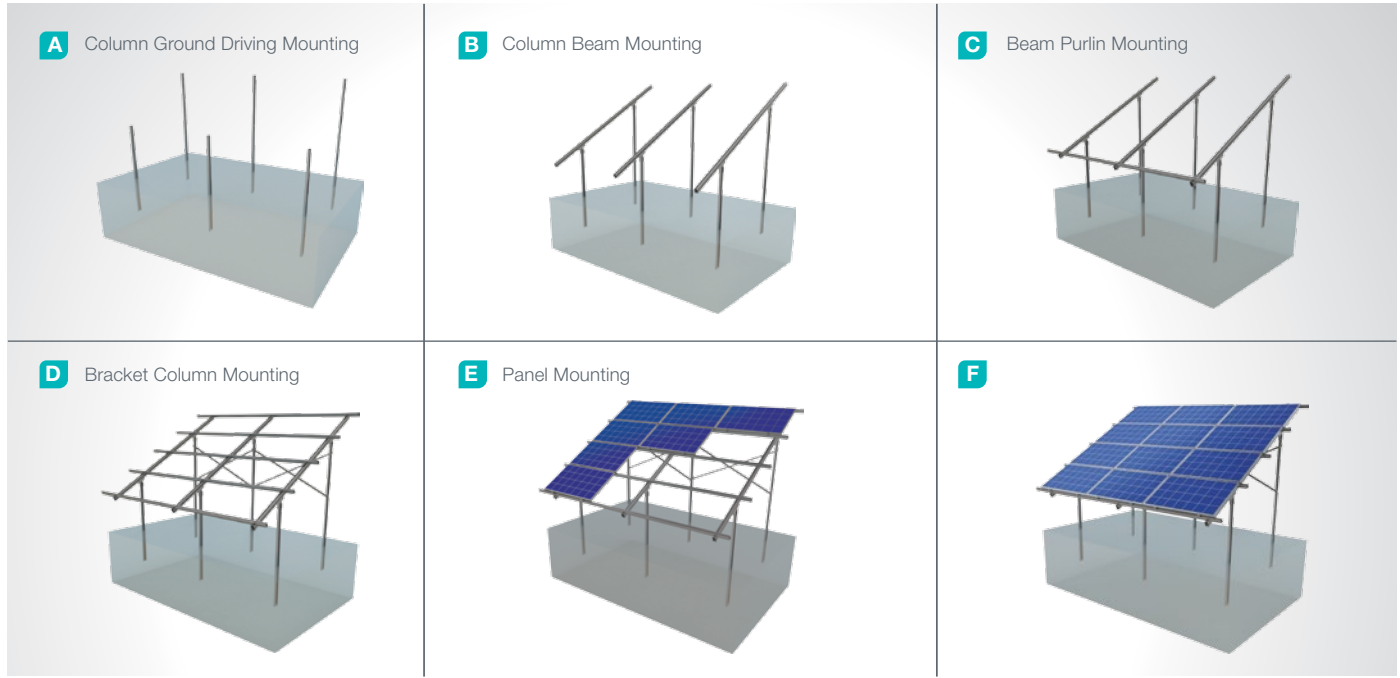


#### ■ L35

M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Tailored design solutions for customer
- Customer oriented engineering solutions

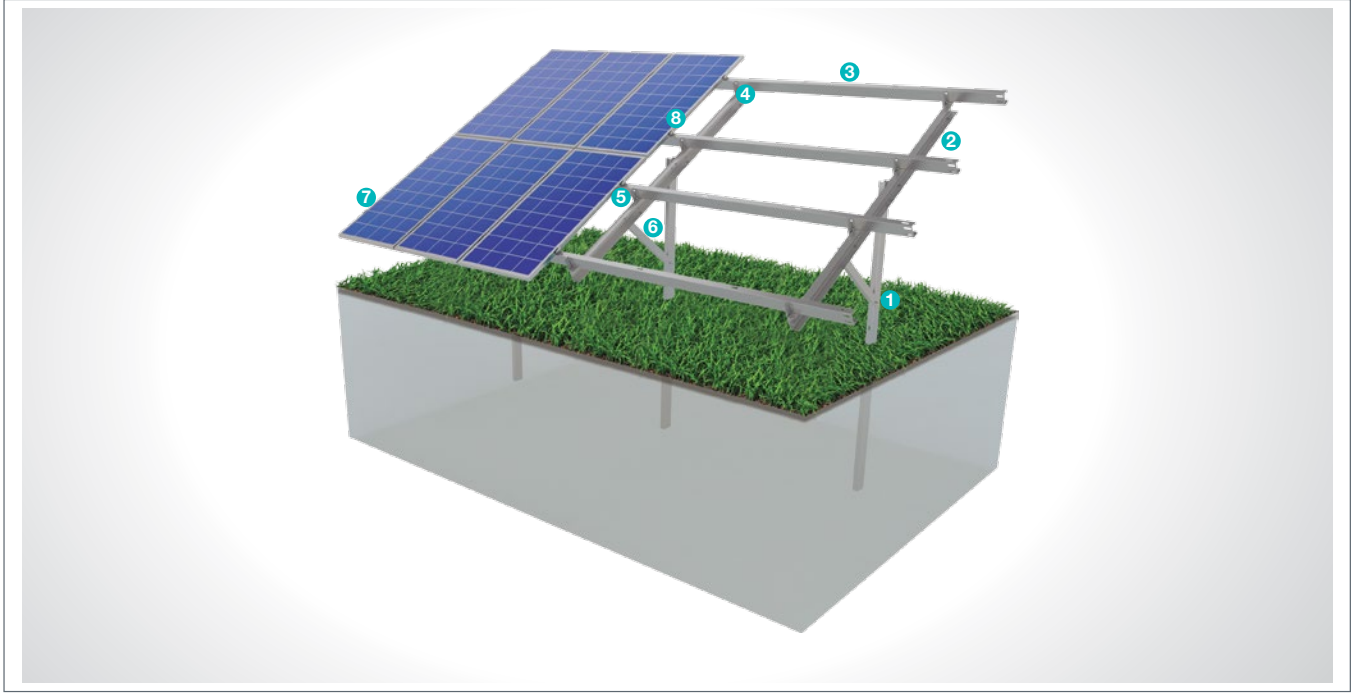
## Technical Specifications

Description:	(KPT12) Aluminum Mounting System with Ground Driven Steel Column & 4 Horizontal Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Purlin Material:	EN AW 6063
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT13) Ground Driven Single Column Steel Mounting System With 2 Vertical Panels

### Overview

KPT13, is a ground driven single column steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . It is used extensively on hard ground in order to decrease the number of legs and cost. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



- **CK-150 / CK-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

2



- **CR-100 / CR-110 / CR-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PURLIN

3



- **CA-110 / CA-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL L BRACKET

4



- **CL-50X50**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### ALUMINUM PURLIN CONNECTOR

5



- **C-110 / C-120**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL DIAGONAL

6



- **C-80**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

7



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

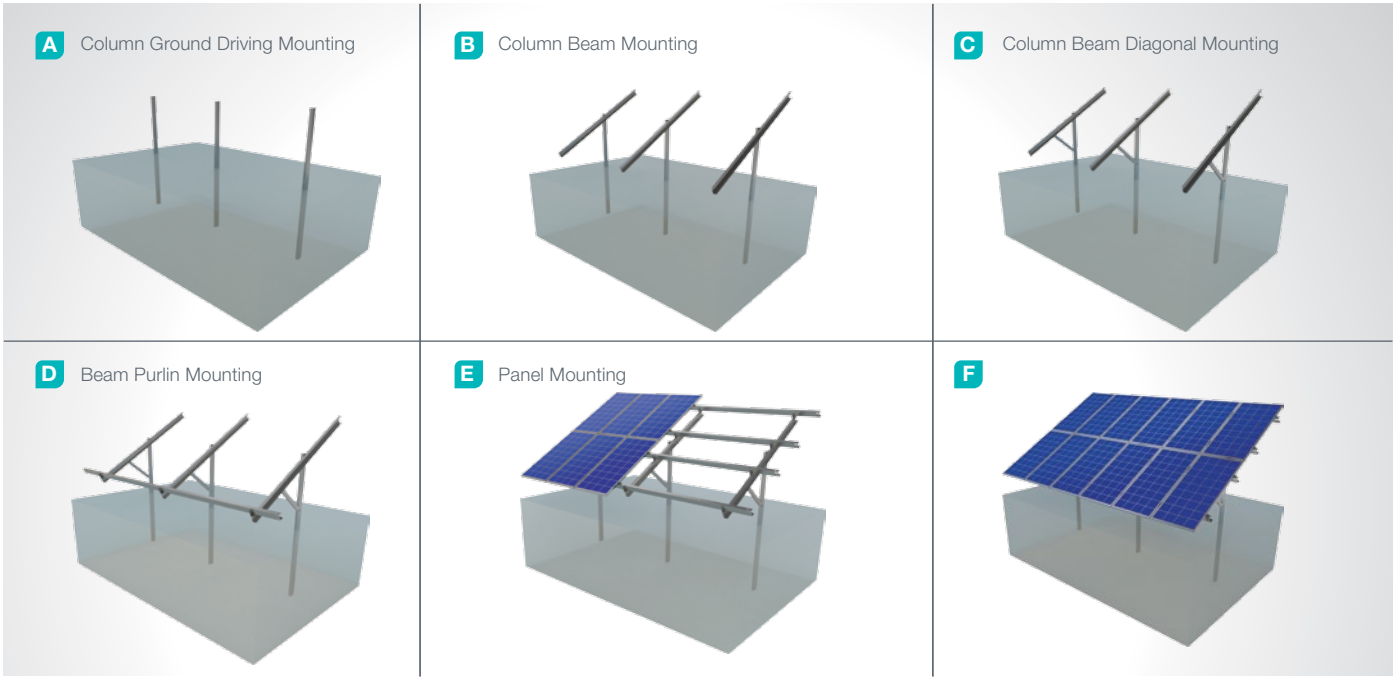
#### PANEL CENTER RETAINER

8



- **L70**  
M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- High safety level
- High durability flexible use
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Suitable for loose ground
- Tailored design solutions for customer
- Customer oriented engineering solutions

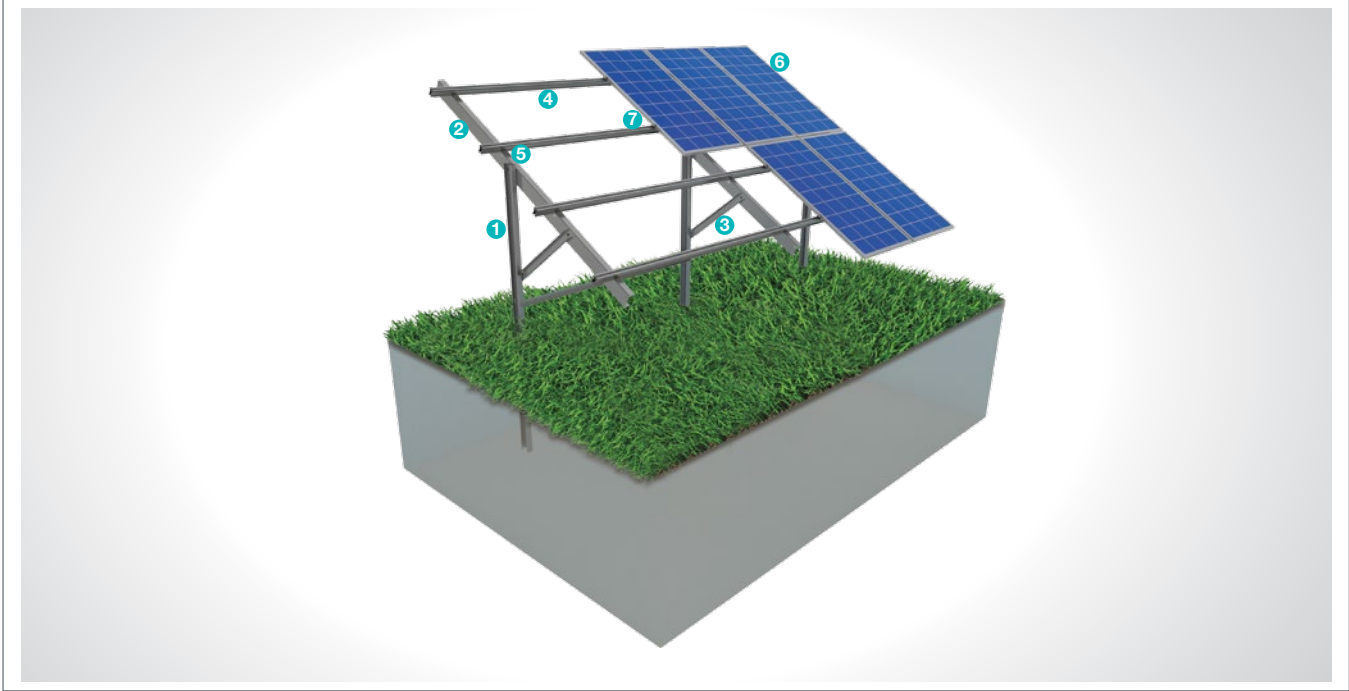
## Technical Specifications

Description:	(KPT13) Ground Driven Single Column Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT14)Ground Driven Single Column Aluminum Purlin Steel Mounting System with 2 Vertical Panels

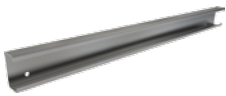
### Overview

KPT14, is a ground driven single column steel support and mounting system with aluminum purlin & 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . It is used extensively on hard ground in order to decrease the number of legs and cost. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



- CK-150 / CK-120  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8/M12 Washer

#### STEEL BEAM

2



- CR-100 / CR-110 / CR-120  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL DIAGONAL

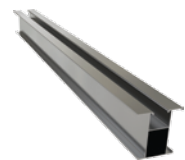
3



- C-80  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### ALUMINUM PURLIN

4



- AA-70x70  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### ALUMINUM PURLIN CONNECTOR

5



- L35  
M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL SIDE RETAINER

6



- H30-H32-H40  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL CENTER RETAINER

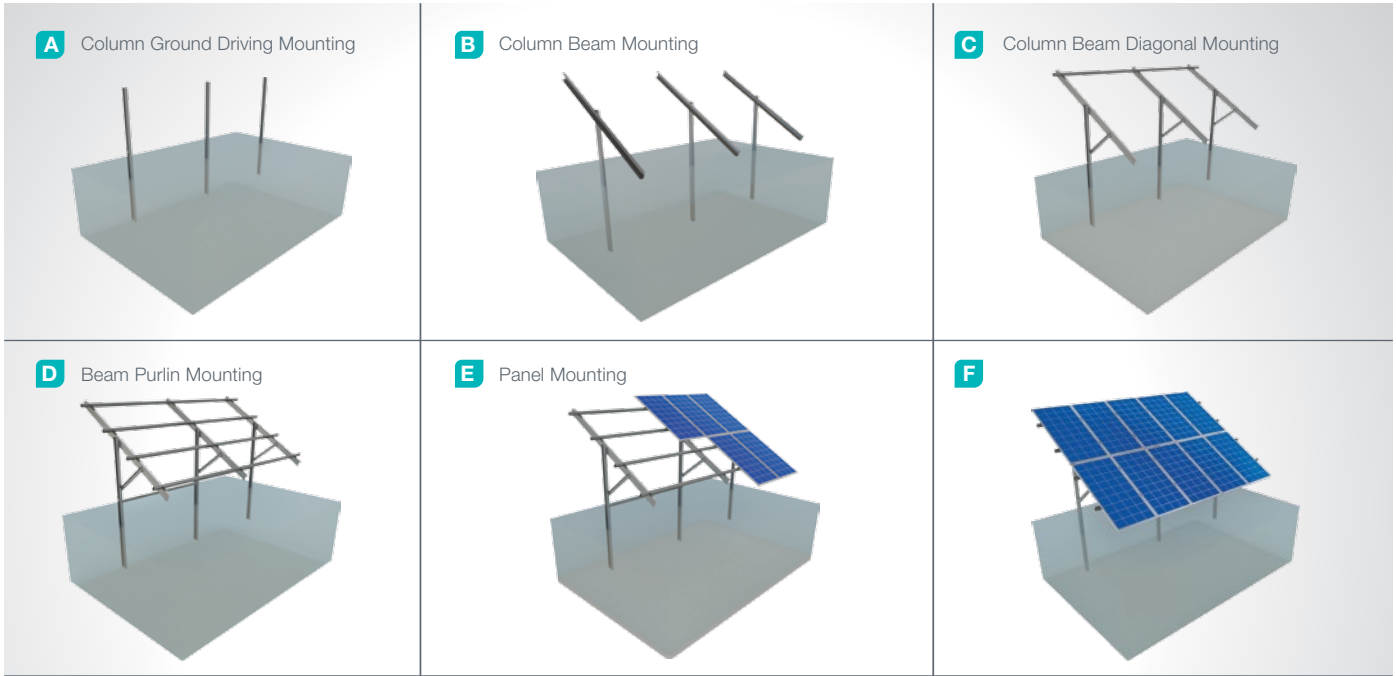
7



- L70  
M8X30 Hex Bolt  
M8 Rectangular Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- High safety level
- High durability flexible use
- Suitable solutions for combiner box and inverter installation
- Suitable solutions for different terrains
- Suitable for loose ground
- Tailored design solutions for customer
- Customer oriented engineering solutions

## Technical Specifications

Description:	(KPT14) Ground Driven Single Column Aluminum Purlin Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Purlin Material:	EN AW 6063
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT15) Concrete Base Anchored Steel Car Park Mounting System with 2 Vertical Panels

### Overview

**KPT15**, is a concrete base anchored steel support and mounting system with 2 vertical panels for car park solar panels. The system is an optimal application solution for installations of PV projects in car parks. It provides strength and stability in car parks. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL ANCHORAGE PIECE

1



##### ■ CAP

M16X150 Knurled Bolt  
M16/M12 Flanged Nut  
M16/M12 Washer  
M12X30 Knurled Bolt

#### STEEL NPI COLUMN

2



##### ■ NPI-200 x 90 x 7,5

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL BEAM

3



##### ■ CR-150

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

4



##### ■ CA-100 / CA-110

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN CONNECTION PIECE

5



##### ■ C-90 / C-100 / C-110

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR

6



##### ■ U40

M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



##### ■ H30-H32-H40

M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER

8



##### ■ L70

M8X30 Hex Bolt  
M8 Flanged Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable for all kinds of car parks
- Protection against sun, rain and snow
- Flexible look
- Suitable for continuous expansion
- Tailored design solutions for customer
- Customer oriented engineering solutions

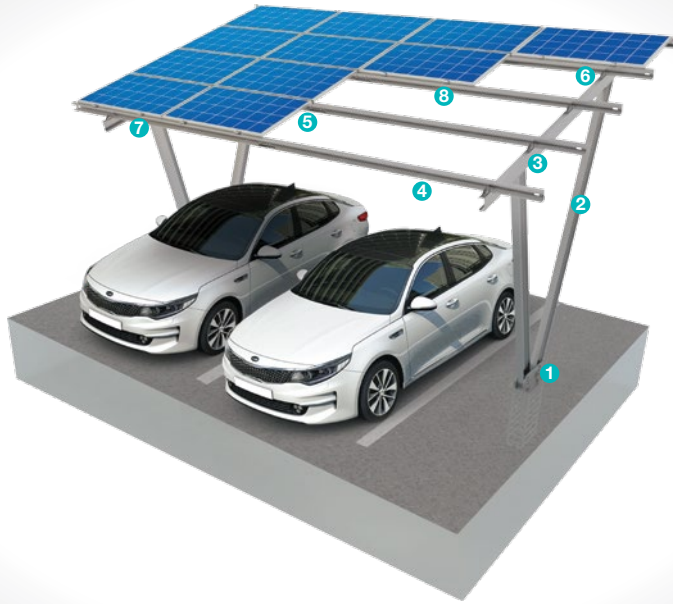
## Technical Specifications

Explanation:	(KPT15) Concrete Base Anchored Steel Car Park Mounting System with 2 Vertical Panels
Assembly Method:	Anchor on Concrete Base
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT16) Concrete Base Anchored Steel Car Park Mounting System with 4 Horizontal Panels

### Overview

KPT16, is a concrete base anchored steel support and mounting system with 4 horizontal panels for car park solar panels. The system is an optimal application solution for installations of PV projects in car parks. It provides strength and stability in car parks. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL ANCHORAGE PIECE

1



##### ■ CAP

M16X150 Knurled Bolt  
M16/M12 Flanged Nut  
M16/M12 Washer  
M12X30 Knurled Bolt

#### STEEL NPI COLUMN

2



##### ■ NPI-200 x 90 x 7,5

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL BEAM

3



##### ■ CR-150

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN

4



##### ■ CA-100 / CA-110

M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### STEEL PURLIN CONNECTOR

5

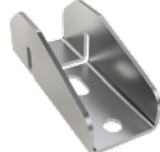


##### ■ C-90 / C-100 / C-110

M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR

6



##### ■ U40

M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### PANEL SIDE RETAINER

7



##### ■ H30-H32-H40

M8X30 Hex Bolt  
M8 Flanged Nut

#### PANEL CENTER RETAINER

8



##### ■ L70

M8X30 Hex Bolt  
M8 Flanged Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable for all kinds of car parks
- Vehicle protection against sun, rain and snow
- Flexible look
- Suitable for continuous expansion
- Tailored design solutions for customer
- Customer oriented engineering solutions

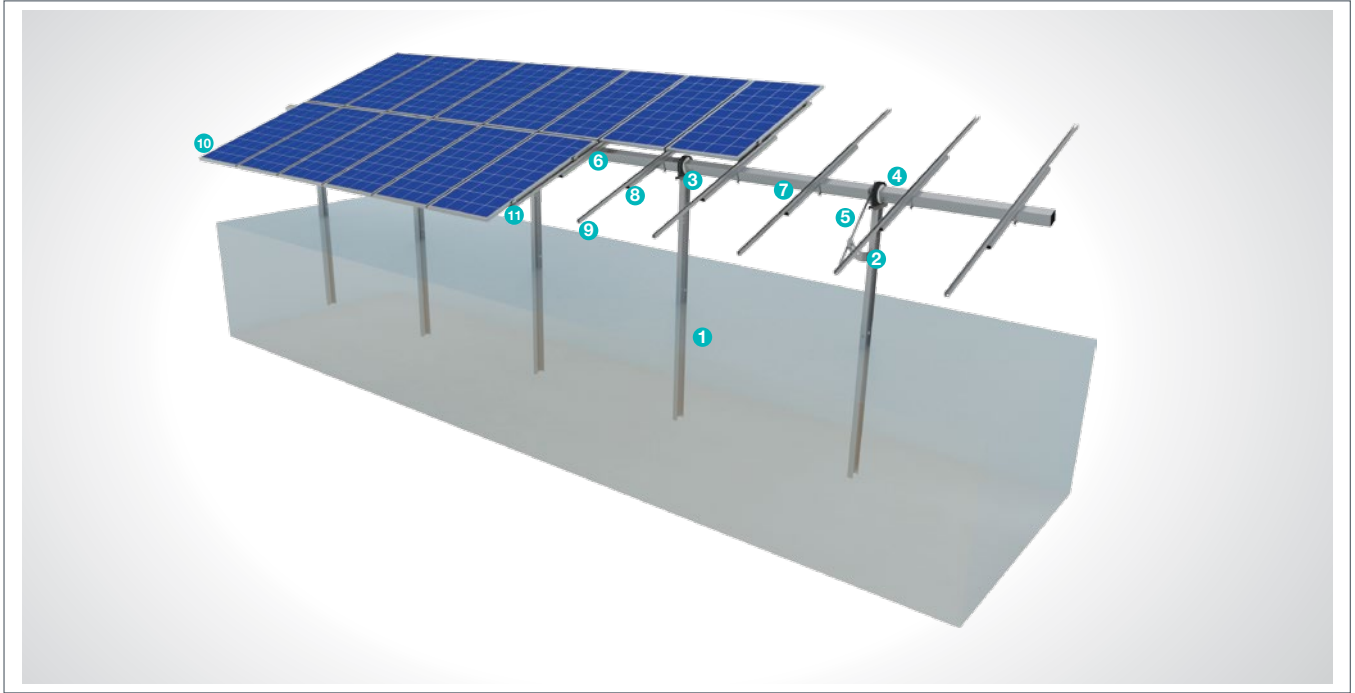
## Technical Specifications






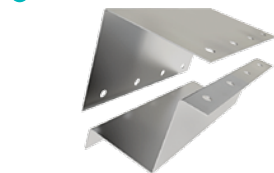
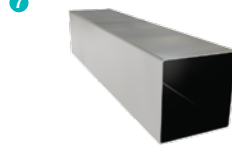

Explanation:	(KPT16) Concrete Base Anchored Steel Car Park Mounting System with 4 Horizontal Panels
Assembly Method:	Anchor on Concrete Base
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT17) Ground Driven Manual Moving Single Axis Steel Mounting System with 2 Vertical Panels

### Overview

KPT17, is a manual moving ground driven steel support and mounting system with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages. It provides a more efficient use of solar panels. The system is moved manually according to season.



<b>STEEL COLUMN</b>  <b>CK-150</b> M12X30 Knurled Bolt M12 Flanged Nut M12 Washer	<b>STEEL ARM</b>  <b>CKL</b> M12X30 Knurled Bolt M12 Flanged Nut M12 Washer	<b>STEEL T / TP</b>  <b>CT</b> M12X30 Knurled Bolt M12 Flanged Nut M16X180 Knurled Bolt M16 Flanged Nut M16/M12 Washer	<b>TP</b>  <b>TP-100 / TP-110</b> M16X180 Knurled Bolt M16 Flanged Nut M16 Washer
<b>STEEL ANGLE ADJUSTMENT LEVER</b>  <b>CADK</b> M12X30 Knurled Bolt M12 Flanged Nut M12 Washer	<b>PURLIN CONNECTOR JOINING PIECE</b>  <b>KPE</b> M12X30 Knurled Bolt M12 Flanged Nut M12 Washer	<b>STEEL SQUARE PURLIN</b>  <b>KPA</b> M12X30 Knurled Bolt M12 Flanged Nut M12 Washer	<b>STEEL RECTANGULAR RAFTER</b>  <b>DPM-80x40</b> M12X110 Square Bolt M12 Flanged Nut M12 Square Bolt Washer

#### STEEL PROFILE

9



- **CP41x41**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### PANEL CENTER RETAINER

10



- **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL SIDE RETAINER

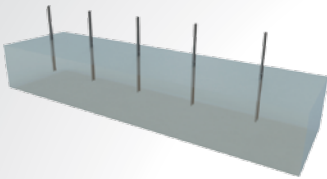
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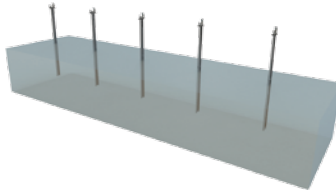
- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Flanged Nut

### Installation Phase

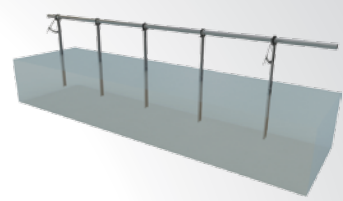
#### A Column Ground Driving



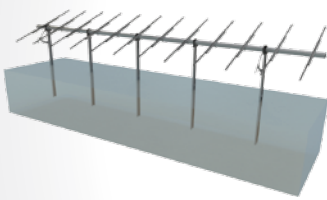
#### B Column TP Mounting



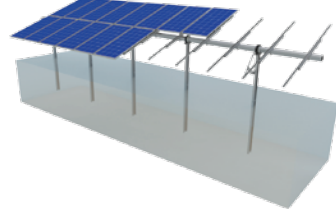
#### C TP Purlin Mounting



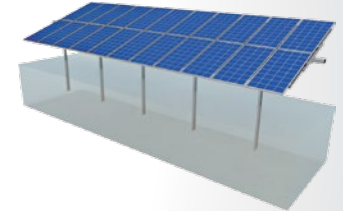
#### D Steel Profile Purlin Mounting



#### E Panel Mounting



#### F



### Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Up to 10% efficiency advantage
- Low maintenance cost
- Independent rack movements
- Tailored design solutions for customer
- Customer oriented engineering solutions

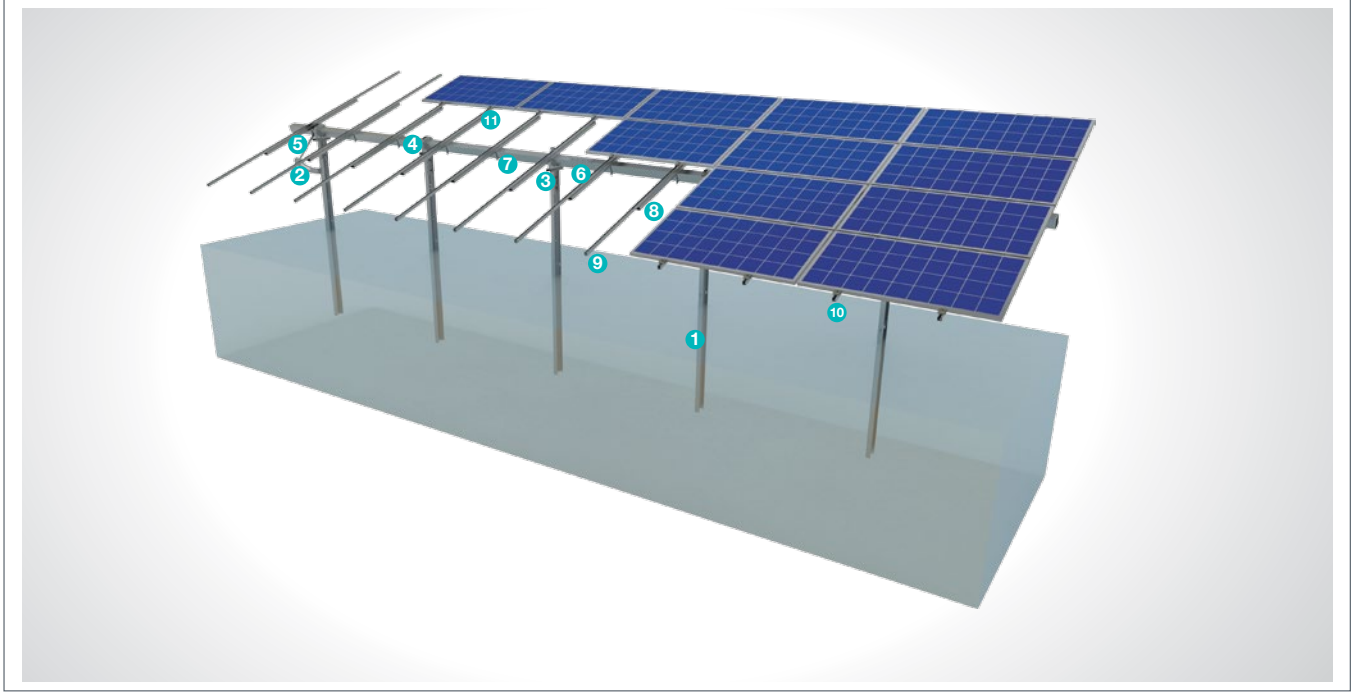
### Technical Specifications

Description:	(KPT17) Ground Driven Manual Moving Single Axis Steel Mounting System with 2 Vertical Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height from Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT18) Ground Driven Manual Moving Single Axis Steel Mounting System with 4 Horizontal Panels

### Overview

**KPT18**, is a manual moving ground driven steel support and mounting system with 4 horizontal panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages. It provides a more efficient use of solar panels. The system is moved manually according to season.

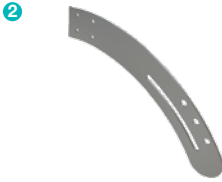


#### STEEL COLUMN



- **CK-150**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL ARM



- **CKL**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL T/TP



- **CT**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16/M12 Washer

#### TP



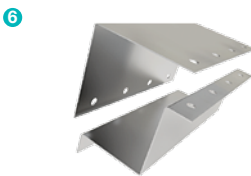
- **TP-100 / TP-110**  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16 Washer

#### STEEL ANGLE ADJUSTMENT LEVER



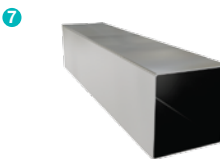
- **CADK**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE



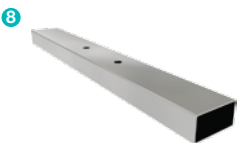
- **KPE**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL SQUARE PURLIN



- **KPA**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL RECTANGLE RAFTER



- **DPM-80x40**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer



#### STEEL PROFILE

9



- **CP41x41**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### PANEL CENTER RETAINER

10



- **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL SIDE RETAINER

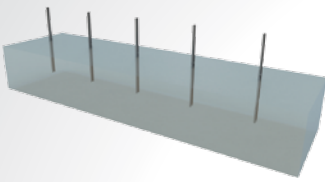
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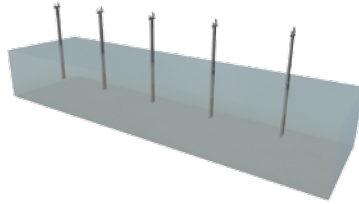
- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

### Installation Phase

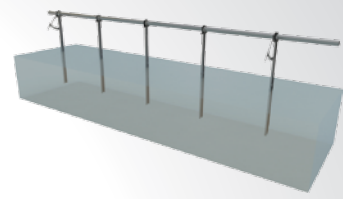
#### A Column Ground Driving



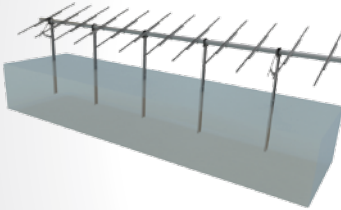
#### B Column TP Mounting



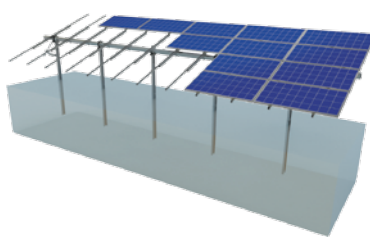
#### C TP Purlin Mounting



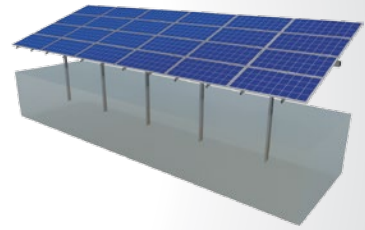
#### D Steel Profile Purlin Mounting



#### E Panel Mounting



#### F



### Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Up to 10% efficiency advantage
- Low maintenance cost
- Independent rack movements
- Tailored design solutions for customer
- Customer oriented engineering solutions

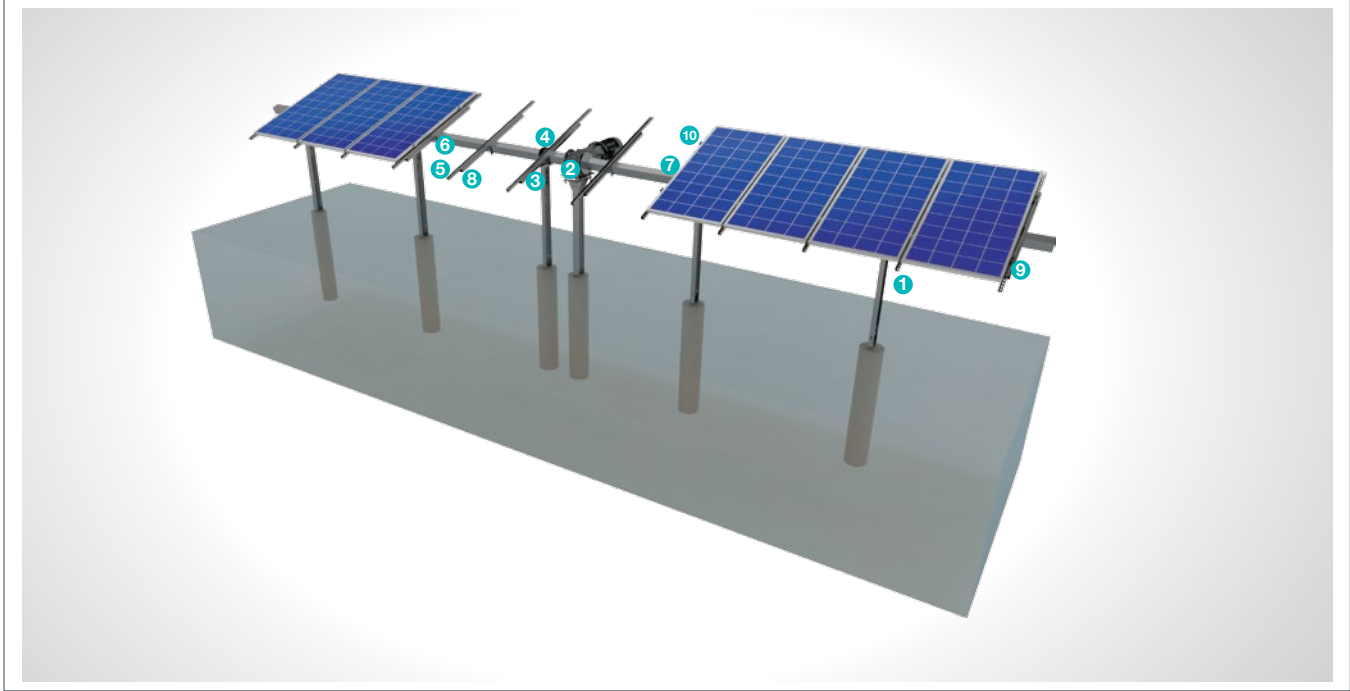
### Technical Specifications

Description:	(KPT18) Ground Driven Manual Moving Single Axis Steel Mounting System with 4 Horizontal Panels
Mounting Method:	Ground Driving
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT19) Concrete Embedded Steel Single Axis Solar Tracking System with 1 Vertical Panel

### Overview

**KPT19**, is a concrete embedded steel support and mounting system which tracks the sun with 1 vertical panel for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages. It provides a more efficient use of solar panels.



#### STEEL COLUMN



- **CK-150**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL ENGINE SUPPORT



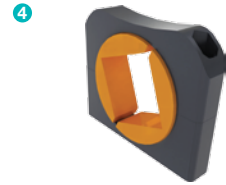
- **NPI 160x82x7,4**  
M12X150 Tj  
M12 Flanged Nut  
M12 Washer  
M12x30 Knurled Bolt

#### STEEL T/TP



- **CT**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16/M12 Washer

#### TP



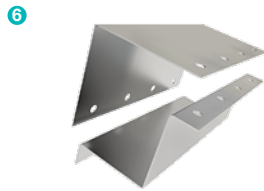
- **TP-100 / TP-110**  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16 Washer

#### STEEL PROFILE



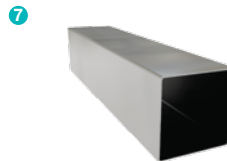
- **CP41x41**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### PURLIN CONNECTOR JOINING PIECE



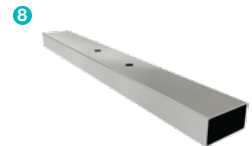
- **KPE**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL SQUARE PURLIN



- **KPA**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL RECTANGLE RAFTER



- **DPM-80x40**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### PANEL CENTER RETAINER

9



■ **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL SIDE RETAINER

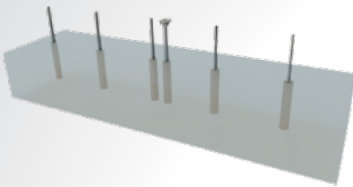
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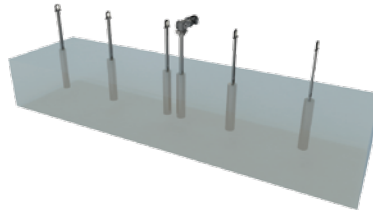
■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

### Installation Phase

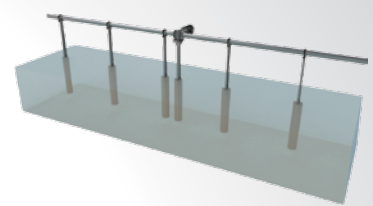
#### A Column Ground Mounting



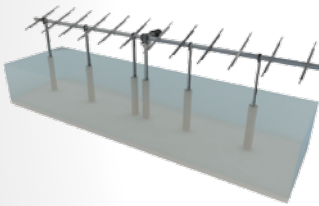
#### B TP Beam / Motor Carrier Mounting



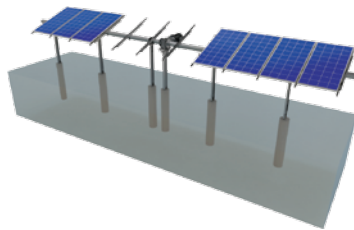
#### C TP Purlin / Motor Carrier Mounting



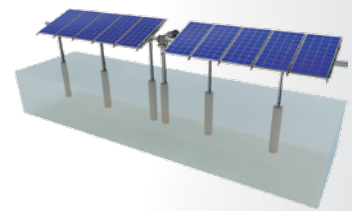
#### D Steel Profile Purlin Mounting



#### E Panel Mounting



#### F



### Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Up to 25% efficiency advantage
- Low maintenance cost
- Independent rack movements
- Aluminum based solutions
- Smart control system
- Real time tracking
- Tailored design solutions for customer
- Customer oriented engineering solutions

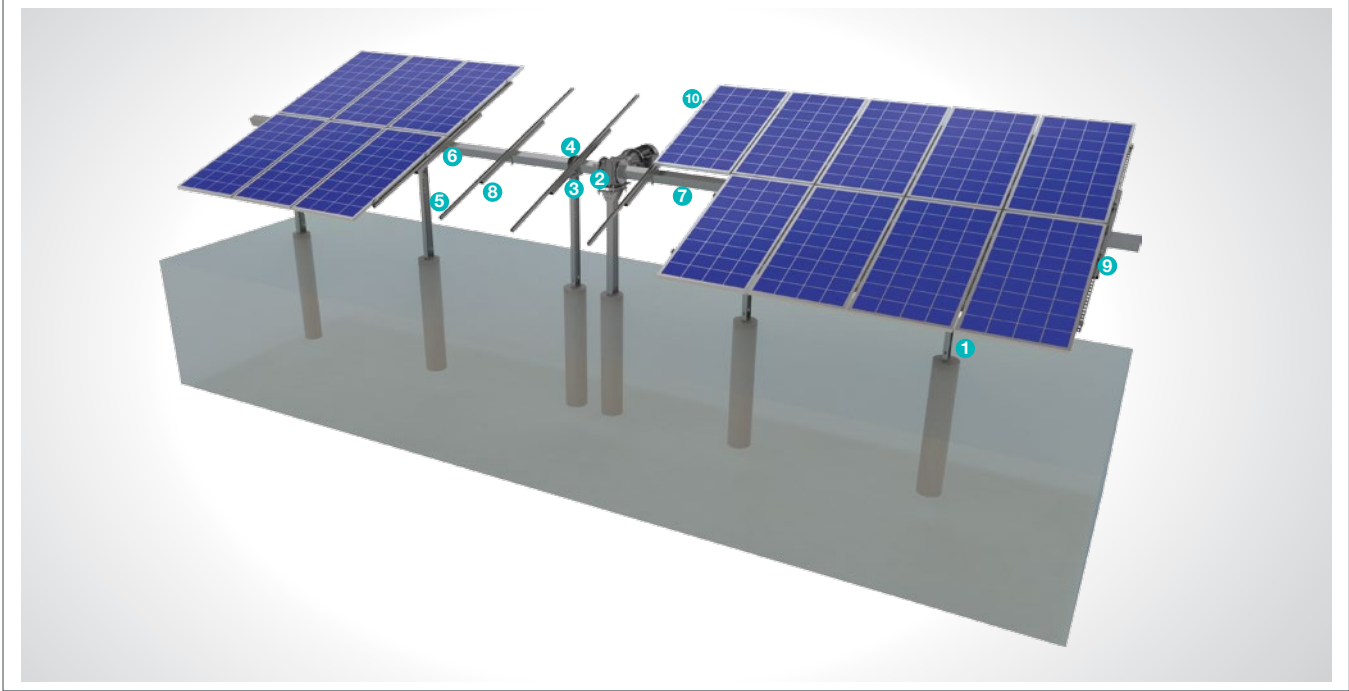
### Technical Specifications

Description:	(KPT19) Concrete Embedded Steel Single Axis Solar Tracking System with 1 Vertical Panel
Mounting Method:	Concrete Embedded
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height From Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT20) Concrete Embedded Steel Single Axis Solar Tracking System with 2 Vertical Panels

### Overview

KPT20, is a concrete embedded steel support and mounting system which tracks the sun with 2 vertical panels for open terrain solar panels. The system is an optimal application solution for installations of PV projects on large and medium-sized terrains . After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages. It provides a more efficient use of solar panels.



#### STEEL COLUMN



- **CK-150**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PROFILE



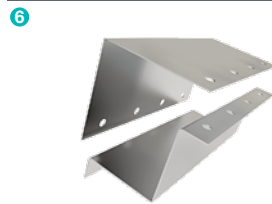
- **CP41x41**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### STEEL ENGINE SUPPORT



- **NPI 160x82x7,4**  
M12X150 Rod  
M12 Flanged Nut  
M12 Washer  
M12x30 Knurled Bolt

#### PURLIN CONNECTOR JOINING PIECE



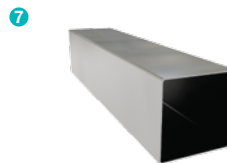
- **KPE**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL T/TP



- **CT**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16/M12 Washer

#### STEEL SQUARE PURLIN



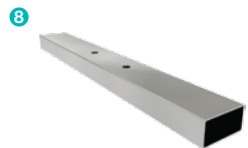
- **KPA**  
M12X30 Knurled Head Bolt  
M12 Flanged Nut  
M12 Washer

#### TP



- **TP-100 / TP-110**  
M16X180 Knurled Bolt  
M16 Flanged Nut  
M16 Washer

#### STEEL RECTANGLE RAFTER



- **DPM-80x40**  
M12X110 Square Bolt  
M12 Flanged Nut  
M12 Square Bolt Washer

#### PANEL CENTER RETAINER

9



■ **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL SIDE RETAINER

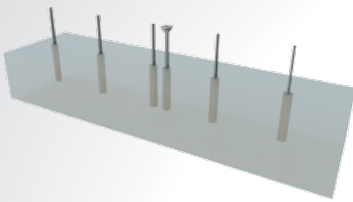
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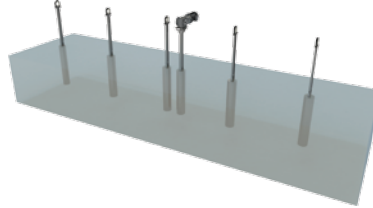
■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

### Installation Phase

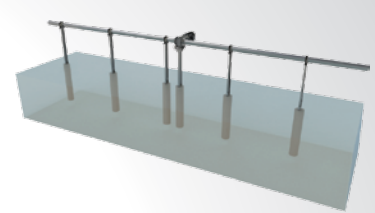
#### A Column Ground Mounting



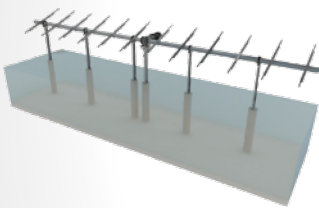
#### B TP Column / Engine Support Mounting



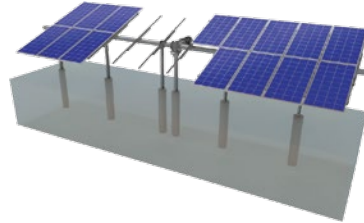
#### C TP Purlin / Engine Mounting



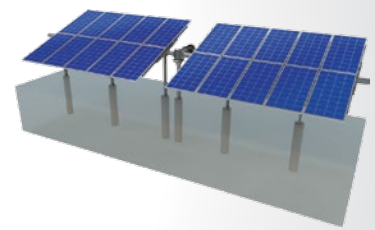
#### D Steel Profile Purlin Mounting



#### E Panel Mounting



#### F



### Advantages

- Time saving for installation
- Cost saving for installation
- Flexible solutions for different types of terrains
- Up to 25% efficiency advantage
- Low maintenance cost
- Independent rack movements
- Aluminum based solutions
- Smart control system
- Real time tracking
- Tailored design solutions for customer
- Customer oriented engineering solutions

### Technical Specifications

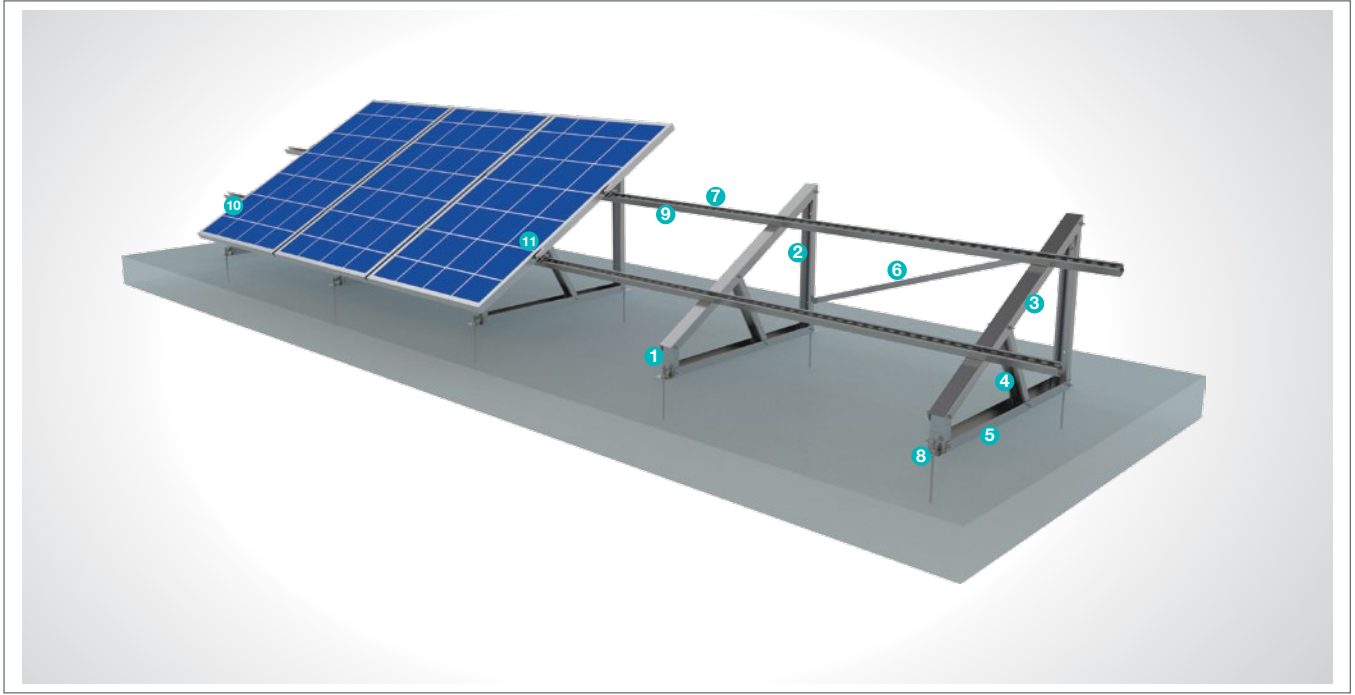
Description:	(KPT20) Concrete Embedded Steel Single Axis Solar Tracking System with 2 Vertical Panels
Mounting Method:	Concrete Embedded
Tilt Angle:	0-60 degrees
Module Application:	Framed and Unframed
Panel Height from Ground:	60 cm
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979



## (KPT21) Flat Roof Steel Mounting System with 1 Vertical Panel

### Overview

**KPT21**, is a flat roof steel mounting system with 1 vertical panel. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN

1



- **CK-70**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL COLUMN

2



- **CK-70**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL BEAM

3



- **CU-75**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL DIAGONAL

4



- **C-70**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL COLUMN CONNECTOR

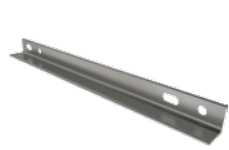
5



- **CU70**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL L BRACKET

6



- **CL-40X40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PROFILE

7



- **CP41x41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL ANCHOR CONNECTOR

8



- **L50x70**  
M8X30 Hex Bolt  
M8 Flanged Nut  
M8 Washer  
Chemical Anchor

#### PURLIN CONNECTOR JOINING PIECE

9



- **C41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

10



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL CENTER RETAINER

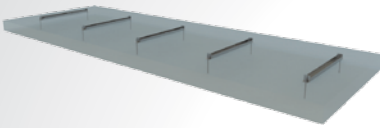
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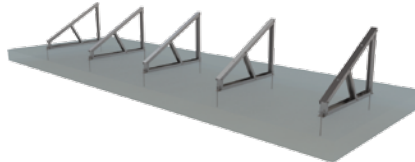
- **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

## Installation Phase

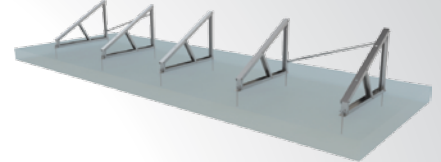
#### A Anchorage Mounted To Concrete



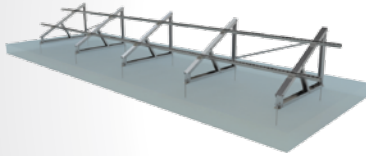
#### B Column Beam Diagonal Mounting



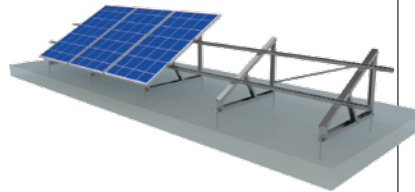
#### C L Bracket Mounting



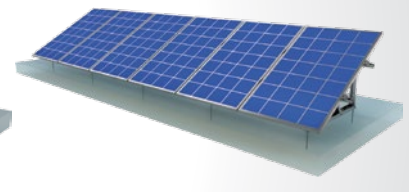
#### D Purlin Beam Mounting



#### E Panel Mounting



#### F



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for different roof types
- 3 different types of angular adjustment
- Ballasted Mounting
- Tailored design solutions for customer
- Customer oriented engineering solutions

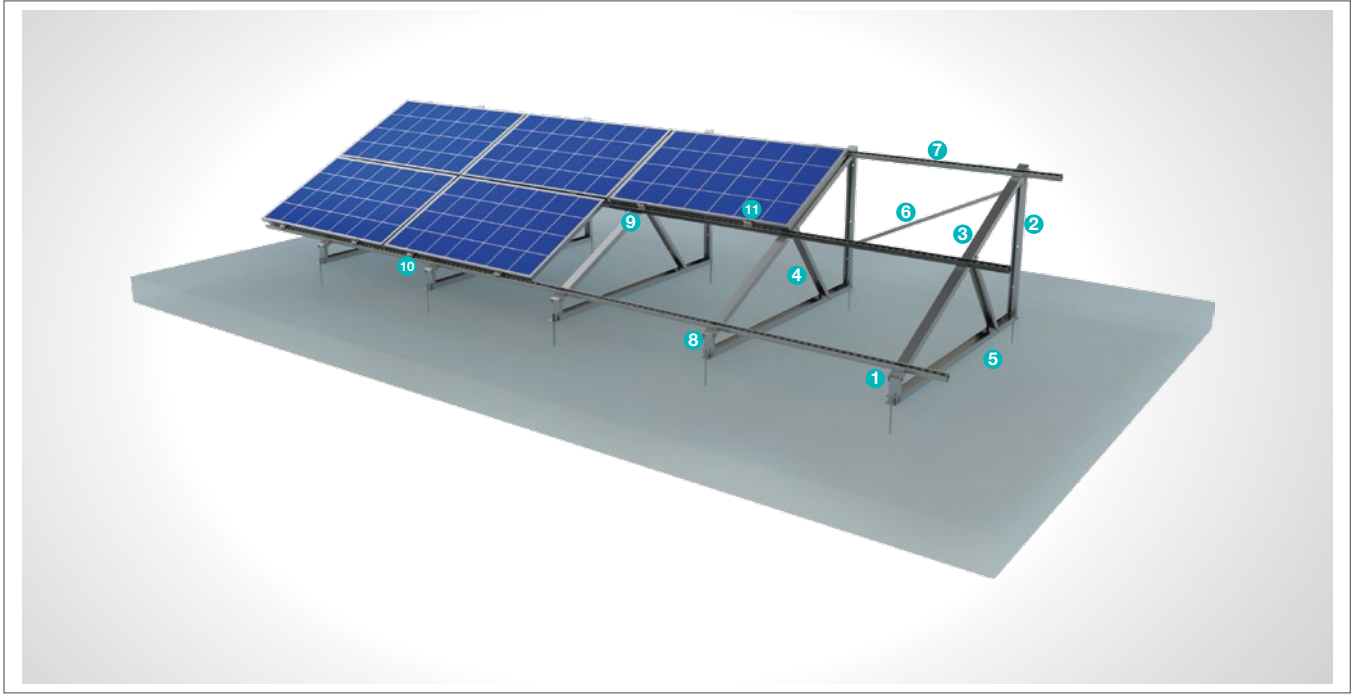
## Technical Specifications

Description:	(KPT21) Flat Roof Steel Mounting System with 1 Vertical Panel
Mounting Method:	Roof Floor Mounting
Module Application:	Framed and Unframed
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT22) Flat Roof Steel Mounting System with 2 Horizontal Panels

### Overview

**KPT22**, is a flat roof steel mounting system with 2 vertical panels. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL COLUMN



- **CK-70**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL COLUMN



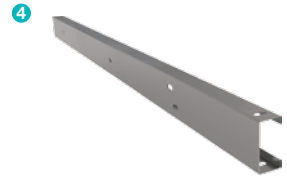
- **CK-70**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL BEAM



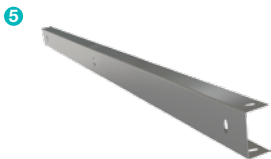
- **CU-75**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL DIAGONAL



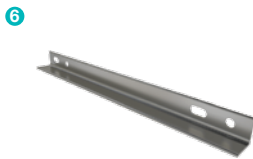
- **C-70**  
M8X30 Knurled Bolt  
M8 Flanged Nut  
M8 Washer

#### STEEL COLUMN CONNECTION PIECE



- **CU70**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL L BRACKET



- **CL-40X40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PROFILE



- **CP41x41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL ANCHOR CONNECTOR



- **L50x70**  
M8X30 Hex Bolt  
M8 Flanged Nut  
M8 Washer  
Chemical Anchor

#### PURLIN CONNECTOR JOINING PIECE

9



- **C41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

10



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL CENTER RETAINER

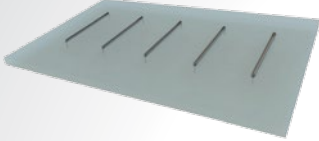
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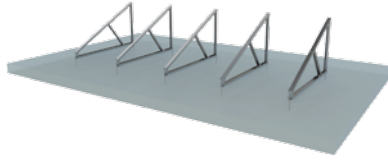
- **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

### Installation Phase

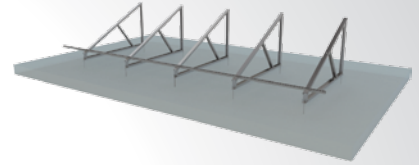
#### A Anchorage Mounted In Concrete



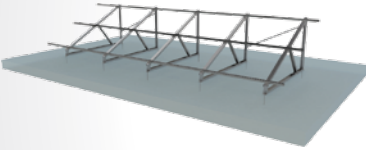
#### B Column Beam Diagonal Mounting



#### C Purlin Beam Mounting



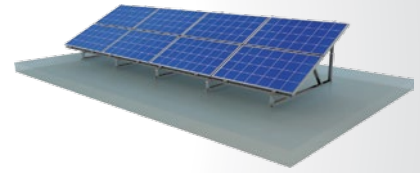
#### D Bracket Column Mounting



#### E Panel Mounting



#### F



### Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for different roof types
- 3 different types of angular adjustment
- Ballasted Mounting
- Tailored design solutions for customer
- Customer oriented engineering solutions

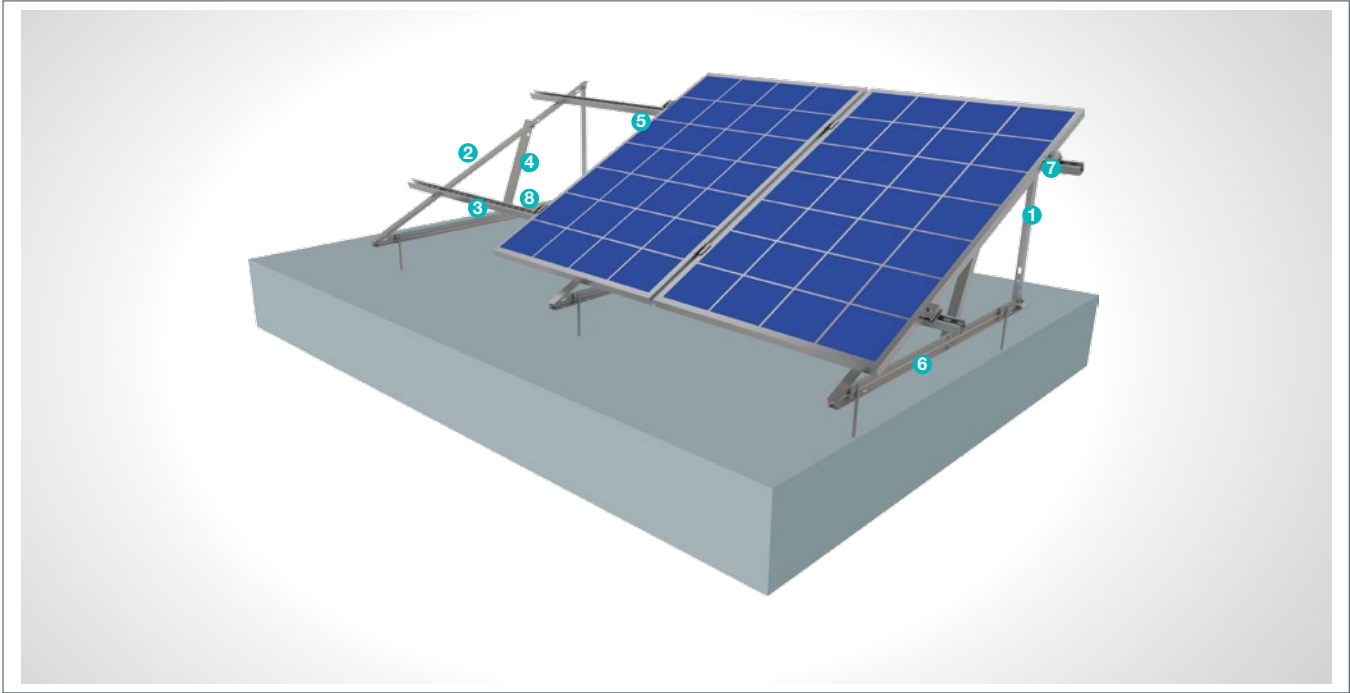
### Technical Specifications

Description:	(KPT22) Flat Roof Steel Mounting System with 2 Horizontal Panels
Mounting Method:	Roof Floor Mounting
Module Application:	Framed and Unframed
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT23) Eco Series Flat Roof Steel Mounting System with 1 Vertical Panel

### Overview

KPT23, is a flat roof steel mounting system with 1 vertical panel. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### L BRACKET COLUMN

1



■ **LK-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8/M12 Washer

#### L BRACKET COLUMN

2



■ **LR-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PROFILE

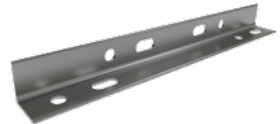
3



■ **CP-41x41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Hex Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### L BRACKET DIAGONAL

4



■ **LD-40X40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



■ **C41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### L BRACKET ANCHOR

6



■ **LA 40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

7



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL CENTER RETAINER

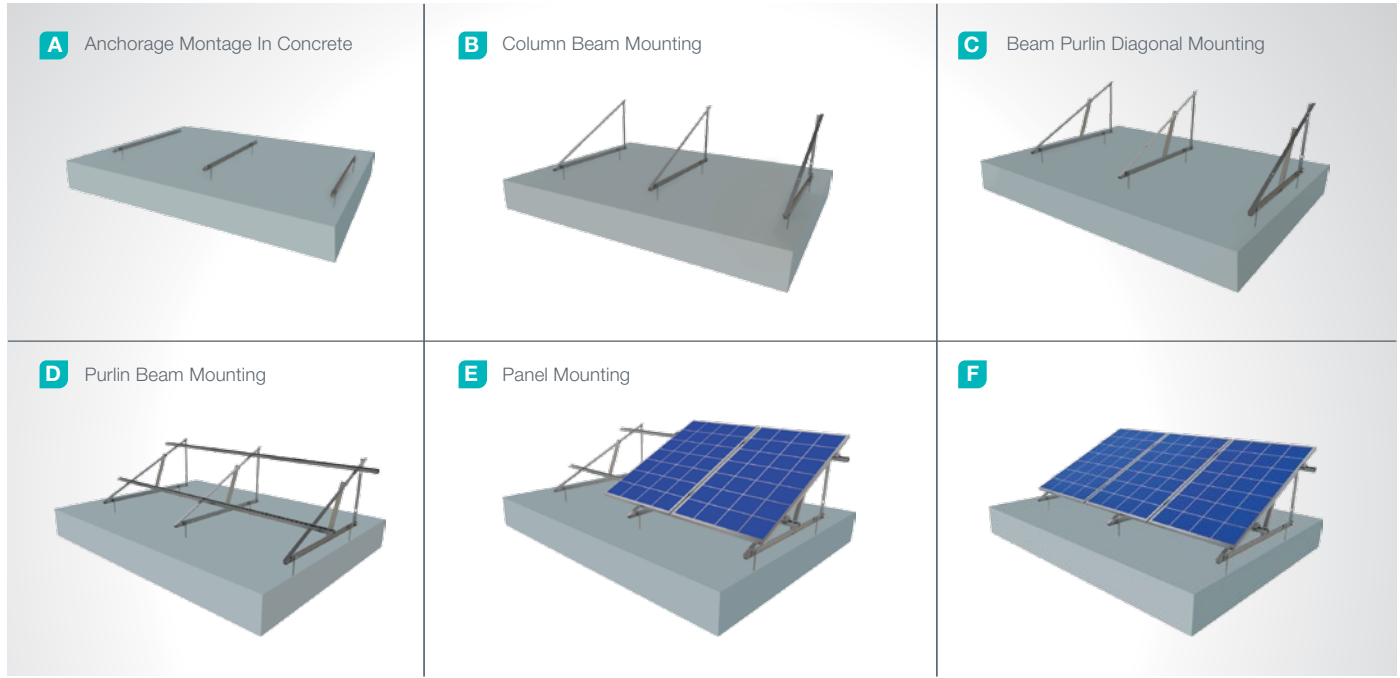
8



■ **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for different roof types
- 3 different types of angular adjustment
- Affordable solution
- Ballasted Mounting
- Tailored design solutions for customer
- Customer oriented engineering solutions

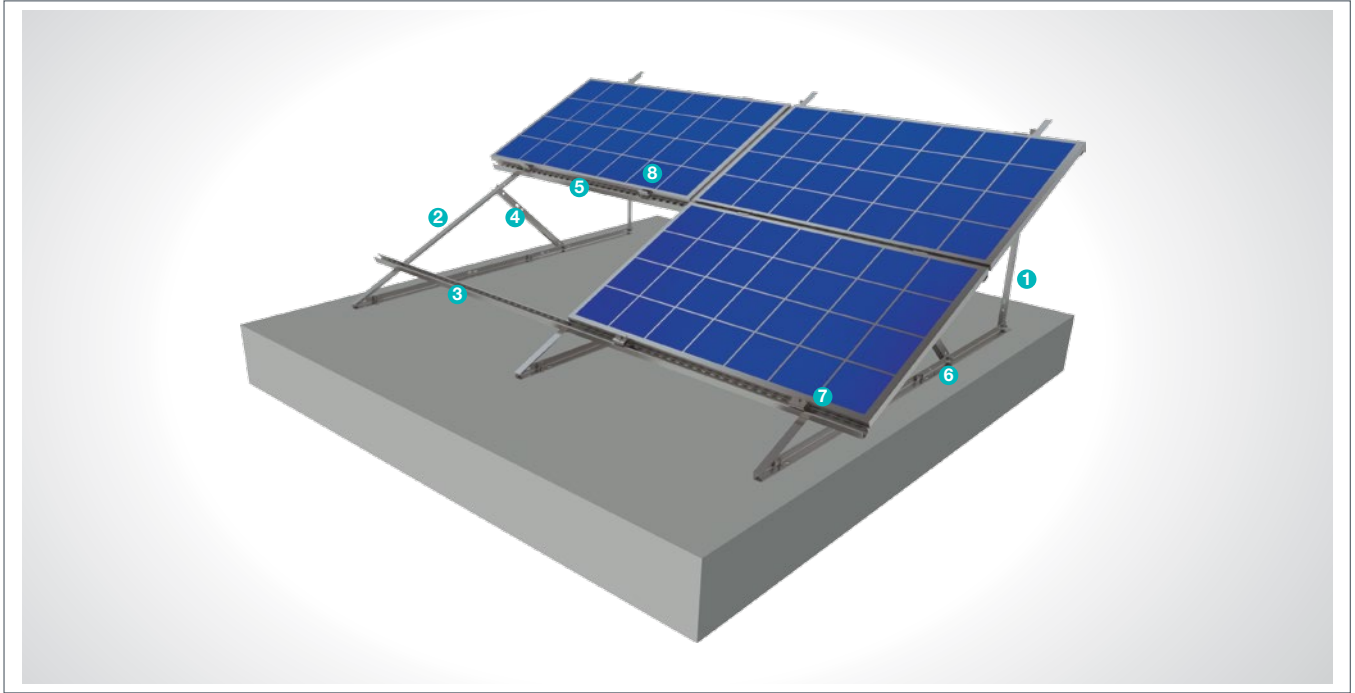
## Technical Specifications

Description:	(KPT23) Eco Series Flat Roof Steel Mounting System with 1 Vertical Panel
Mounting Method:	Roof Floor Mounting
Module Application:	Framed and Unframed
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT24) Eco Series Flat Roof Steel Mounting System with 2 Horizontal Panels

### Overview

**KPT24**, is a flat roof steel mounting system with 2 vertical panels. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### L BRACKET COLUMN

1



- **LK-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8/M12 Washer

#### L BRACKET BEAM

2



- **LR-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL BEAM

3



- **CP-41x41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8X30 Hex Bolt  
M8 Flanged Nut  
M8/M12 Washer

#### L BRACKET DIAGONAL

4



- **LD-40X40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PURLIN CONNECTOR JOINING PIECE

5



- **C41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### L BRACKET ANCHOR

6



- **LA 40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

7



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

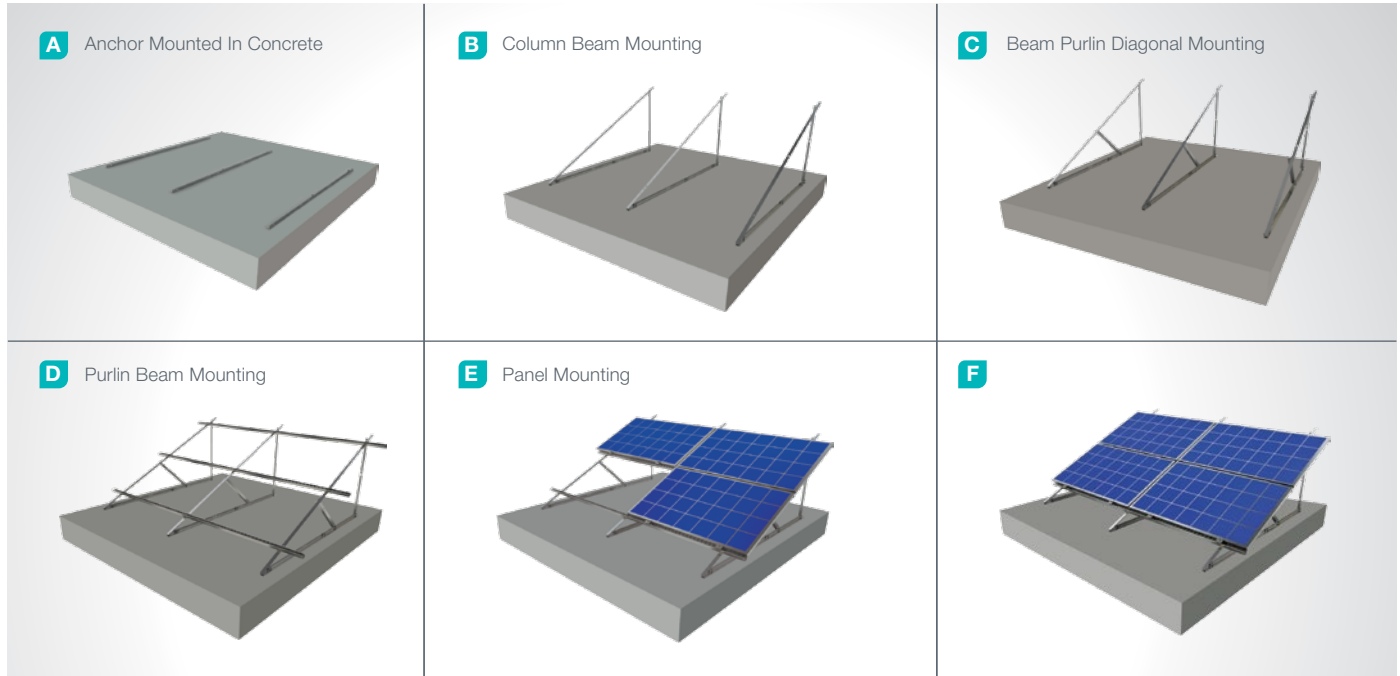
#### PANEL CENTER RETAINER

8



- **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for different roof types
- 3 different types of angular adjustment
- Affordable solution
- Ballasted Mounting
- Tailored design solutions for customer
- Customer oriented engineering solutions

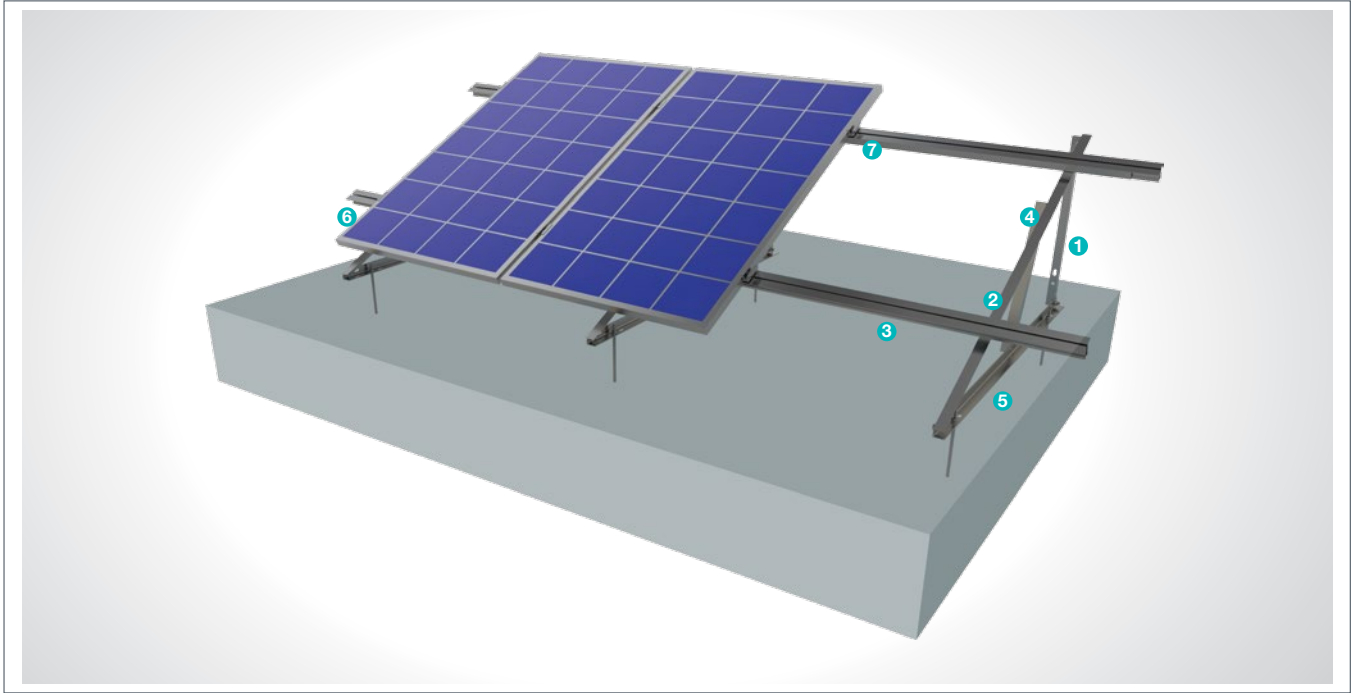
## Technical Specifications

Description:	(KPT24) Eco Series Flat Roof Steel Mounting System with 2 Horizontal Panels
Mounting Method:	Roof Floor Mounting
Module Application:	Framed and Unframed
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

## (KPT25) Flat Roof Steel Mounting System With Aluminum Purlin & 1 Vertical Panel

### Overview

**KPT25**, is a flat roof steel mounting system with aluminum purlin and 1 vertical panel. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### L BRACKET COLUMN

1



- **LK-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8/M12 Washer

#### L BRACKET BEAM

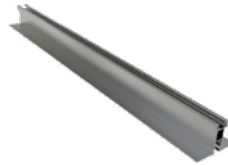
2



- **LR-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### ALUMINUM PURLIN

3



- **AA-100x70**  
M12X30 T Bolt  
M12 Flanged Nut  
M8X30 Hex Bolt  
M8 Square Nut  
M8/M12 Washer

#### L BRACKET DIAGONAL

4



- **LD-40X40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### L BRACKET ANCHOR

5



- **LA 40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

6



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Square Nut

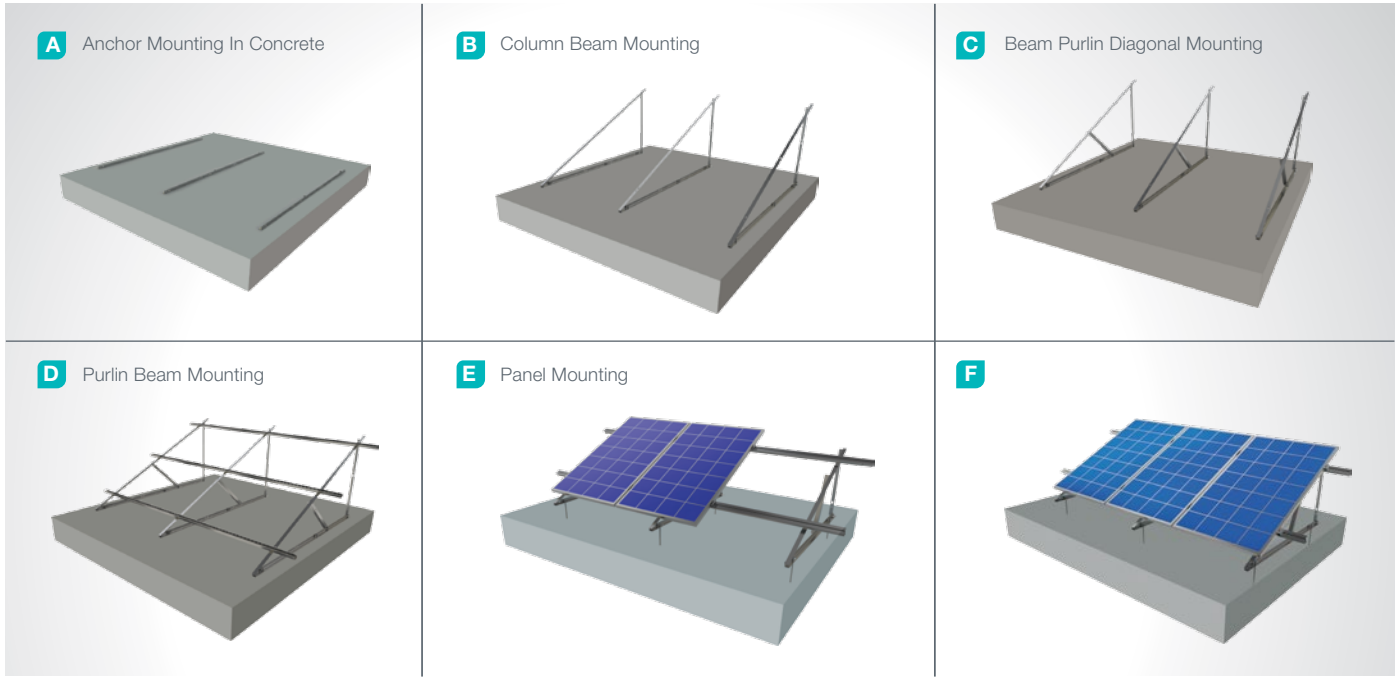
#### PANEL CENTER RETAINER

7



- **L70**  
M8X30 Hex Bolt  
M8 Square Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for different roof types
- 3 different types of angular adjustment
- Ballasted Mounting
- Tailored design solutions for customer
- Customer oriented engineering solutions

## Technical Specifications

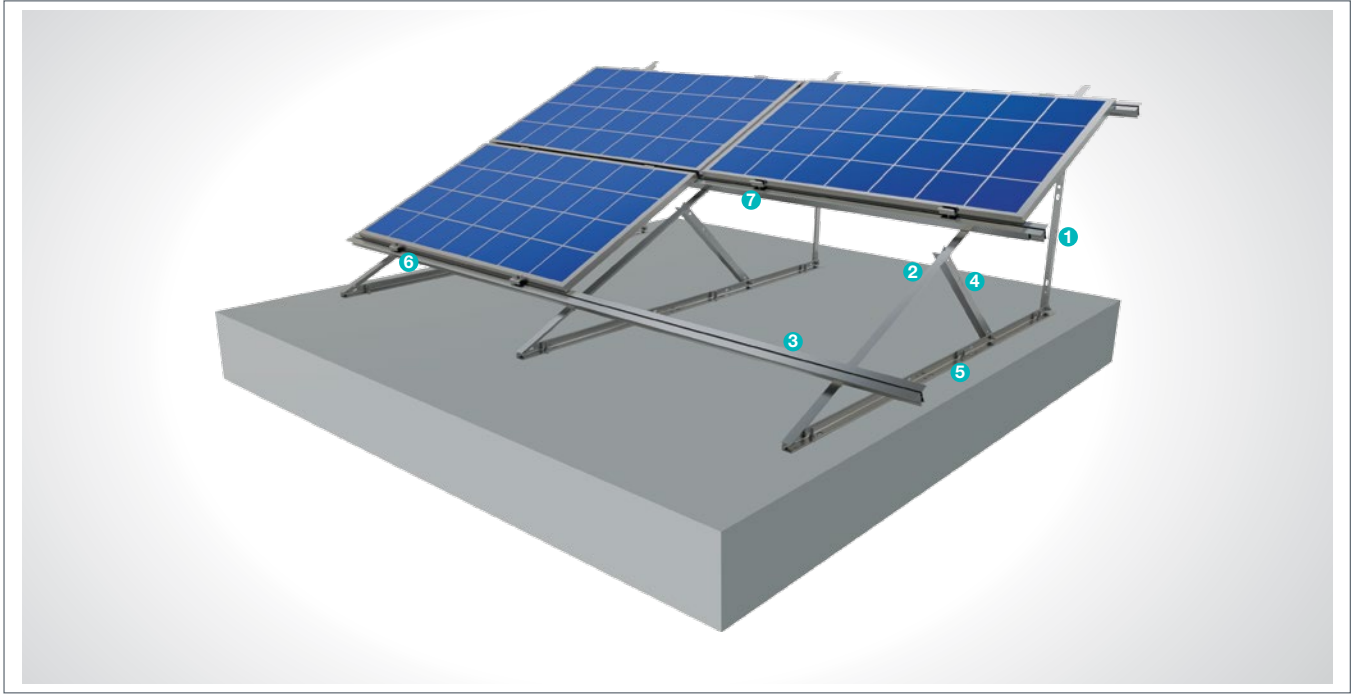
Description:	(KPT25) Flat Roof Steel Mounting System With Aluminum Purlin & 1 Vertical Panel
Mounting Method:	Roof Floor Mounting
Module Application:	Framed and Unframed
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Purlin Material:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979



## (KPT26) Flat Roof Steel Mounting System With Aluminum Purlin & 2 Horizontal Panels

### Overview

**KPT26**, is a flat roof steel mounting system with aluminum purlin and 2 horizontal panels. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. After manufacturing the system components with high-technology machines and equipment, an excellent corrosion resistance is then achieved through hot-dip galvanized coating. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### L BRACKET COLUMN

1



- **LK-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M8/M12 Washer

#### L BRACKET BEAM

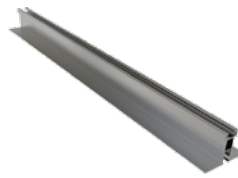
2



- **LR-40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### ALUMINUM PURLIN

3



- **AA-100x70**  
M12X30 T Bolt  
M12 Flanged Nut  
M8X30 Hex Bolt  
M8 Square Nut  
M8/M12 Washer

#### L BRACKET DIAGONAL

4



- **LD-40X40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### L BRACKET ANCHORAGE

5



- **LA 40x40**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### PANEL SIDE RETAINER

6



- **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Square Nut

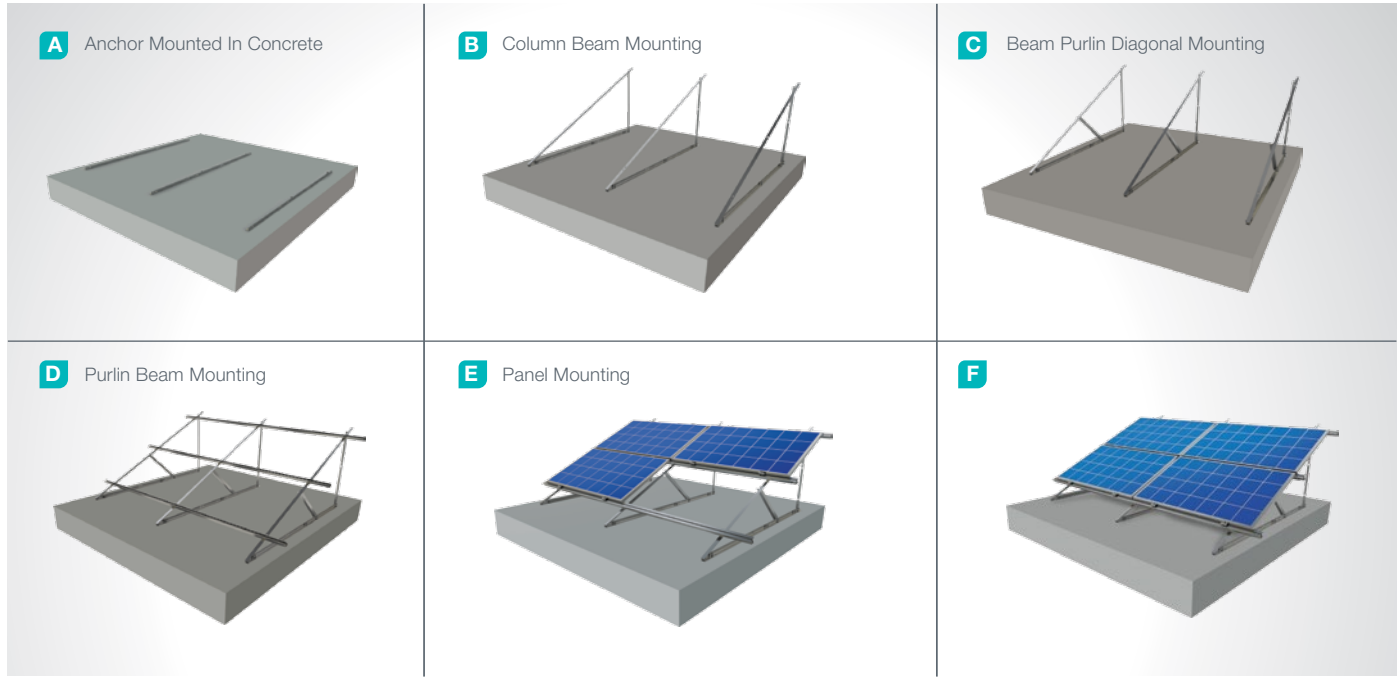
#### PANEL CENTER RETAINER

7



- **L70**  
M8X30 Hex Bolt  
M8 Square Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Suitable solutions for different roof types
- 3 different types of angular adjustment
- Ballasted mounting
- Tailored design solutions for customer
- Customer oriented engineering solutions

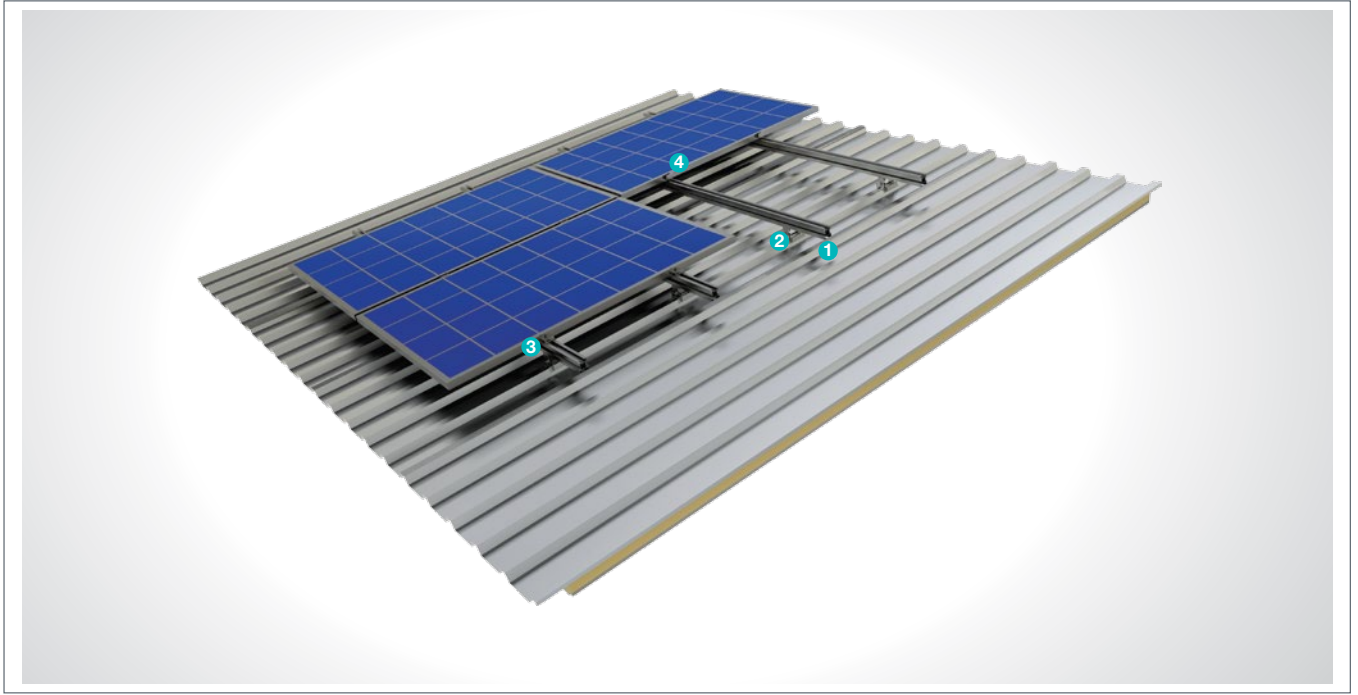
## Technical Specifications

Description:	(KPT26) Flat Roof Steel Mounting System With Aluminum Purlin & 2 Horizontal Panels
Mounting Method:	Roof Floor Mounting
Module Application:	Framed and Unframed
Column and Beam Coating:	EN ISO 1461
Column and Beam Material:	EN 10025 / EN 10029
Optional Beam Material:	EN 10346
Panel Retainer:	EN AW 6063
Purlin Material:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

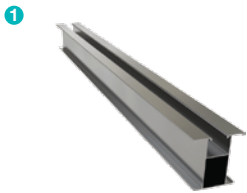
## (KPT27) Pitched Roof Aluminum and Stainless Steel Mounting System

### Overview

KPT27, is a pitched roof aluminum and stainless steel mounting system. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. System components are manufactured with high-tech machinery and equipment. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### ALUMINUM PURLIN



■ AA-90x45  
M10/T25 Head Bolt  
M10 Flanged Nut

#### ALUMINUM PURLIN CONNECTION PIECE



■ PT-Stainless  
M8X30 Round Head Bolt  
M8 Flanged Nut  
Pitched Roof Screw

#### PANEL SIDE HOLDER



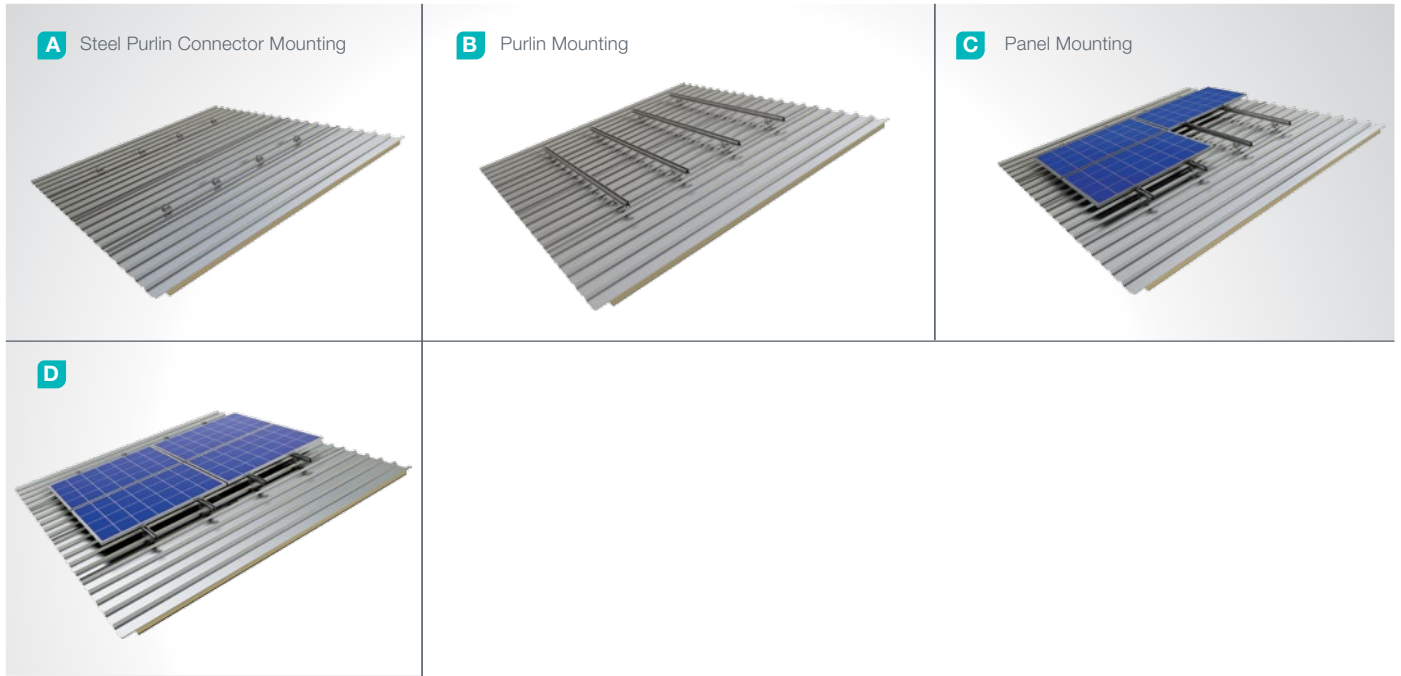
■ H30-H32-H40  
M8X30 Hex Bolt  
M8 Rectangular Nut

#### PANEL CENTER HOLDER



■ L70  
M8X30 Hex Bolt  
M8 Rectangular Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Horizontal and Vertical positioning
- Suitable solutions for different roof types
- Tailored design solutions for customer
- Customer oriented engineering solutions

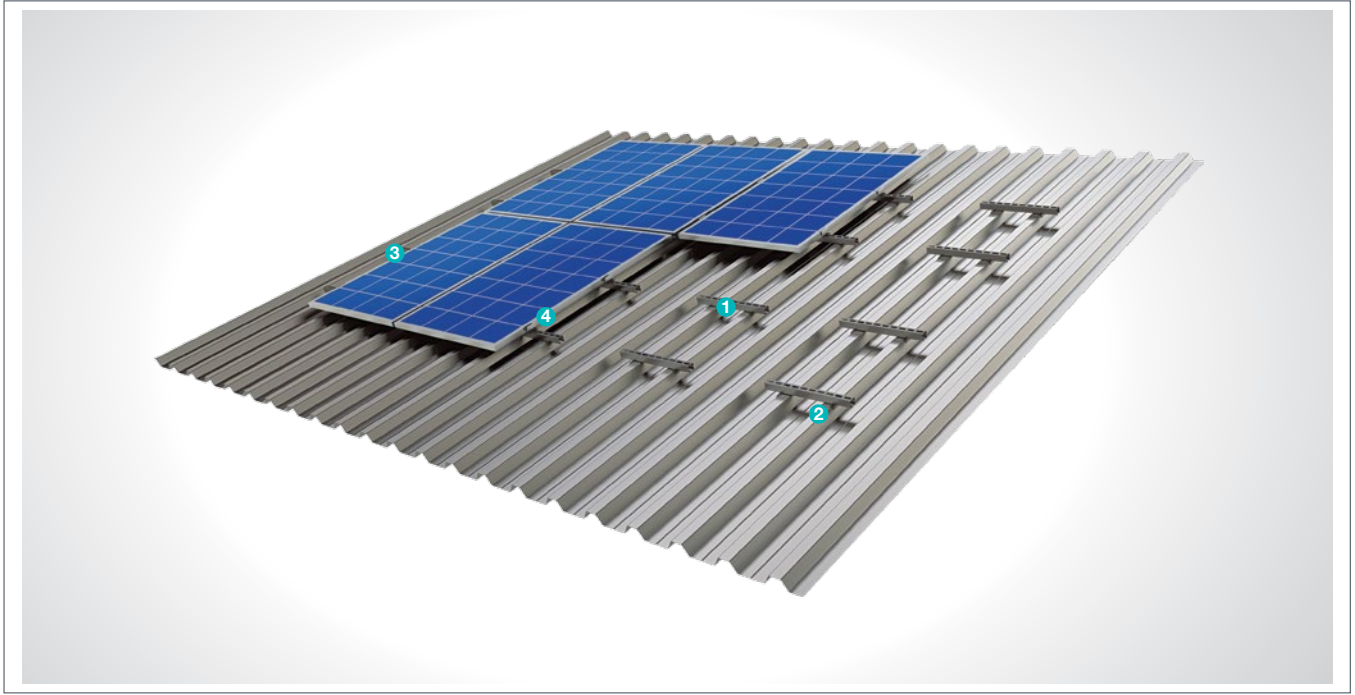
## Technical Specifications

Description:	(KPT27) Pitched Roof Aluminum and Stainless Steel Mounting System
Mounting Method:	Pitched Roof Mounting
Module Application:	Framed and Unframed
Beam Material:	EN AW 6063
Panel Retainer:	ASTM A 304 / A 316
Purlin Material:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70
Optional Connector Equipment:	Special Type Adhesive

## (KPT28) Eco Series Pitched Roof Aluminum and Stainless Steel Mounting System

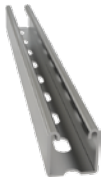
### Overview

KPT28, is a more affordable type pitched roof aluminum and stainless steel mounting system. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. System components are manufactured with high-tech machinery and equipment. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### STEEL PROFILE

1



■ **CP41x41**  
M12X30 Knurled Bolt  
M12 Flanged Nut  
M12 Washer

#### STEEL PURLIN CONNECTOR

2



■ **PTK**  
Pitched Roof Screw

#### PANEL SIDE RETAINER

3



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Cage Nut

#### PANEL CENTER RETAINER

4



■ **L70**  
M8X30 Hex Bolt  
M8 Cage Nut



## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Horizontal and Vertical positioning
- Suitable solutions for different roof types
- Tailored design solutions for customer
- Customer oriented engineering solutions

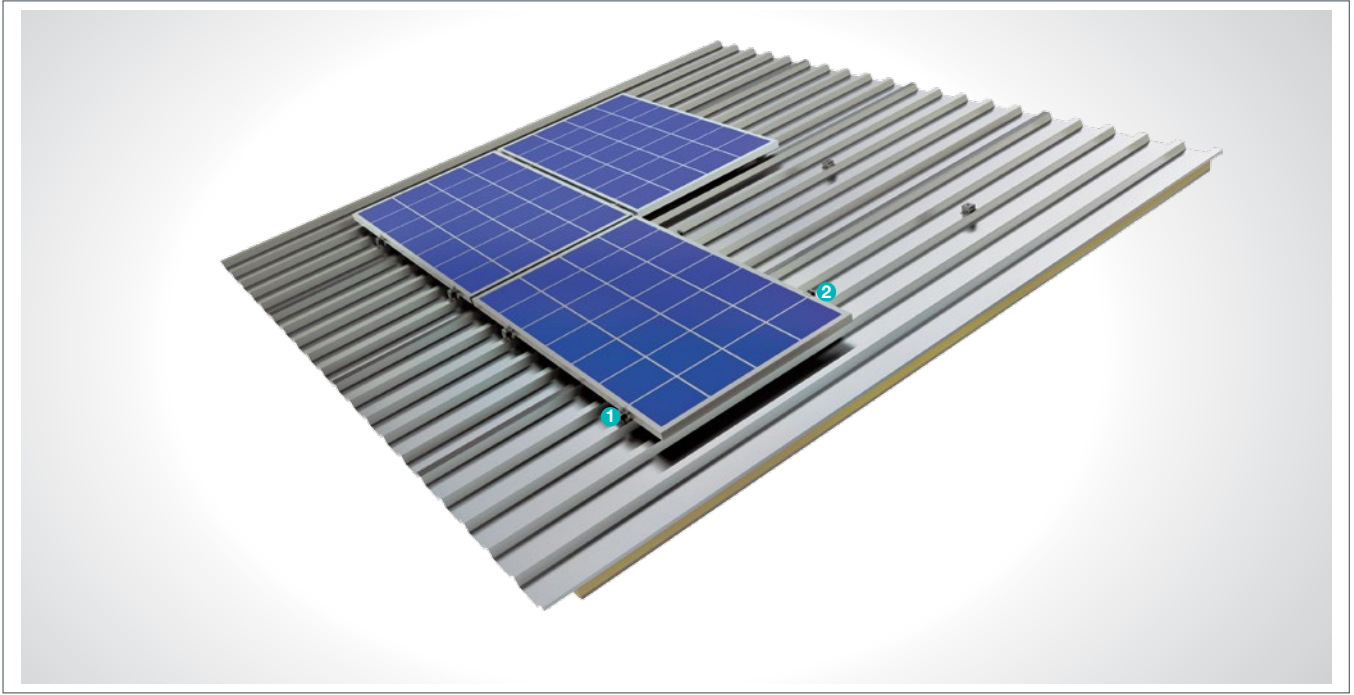
## Technical Specifications

Description:	(KPT28) Eco Series Pitched Roof Aluminum and Stainless Steel Mounting System
Mounting Method:	Pitched Roof Mounting
Module Application:	Framed and Unframed
Beam Material:	EN AW 6063
Panel Retainer:	ASTM A 304 / A 316
Purlin Material:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70

## (KPT29) Pitched Roof Aluminum Mounting System

### Overview

KPT29, is an aluminum mounting system for pitched roof. The system is an optimal application solution for installations of PV projects on large and small-sized roofs. System components are manufactured with high-tech machinery and equipment. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### PANEL SIDE RETAINER

1



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Nut  
Pitched Roof Screw

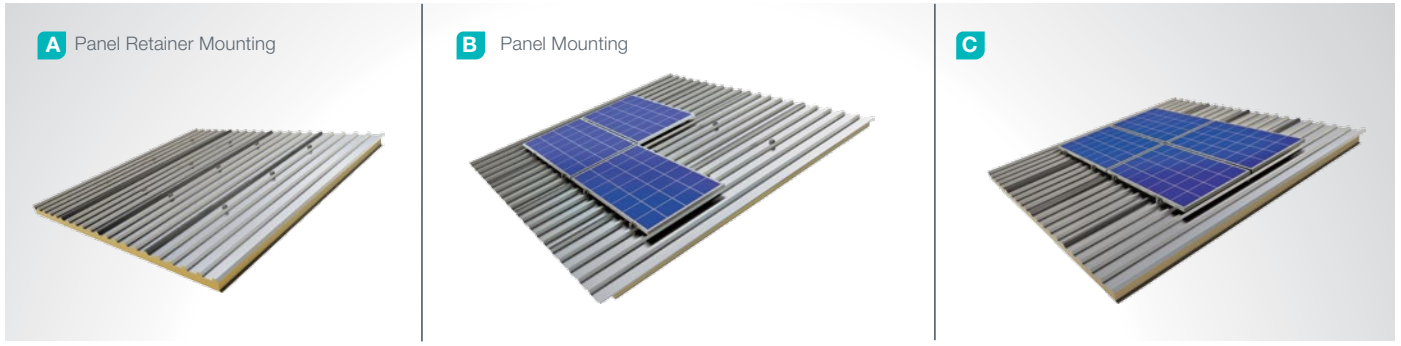
#### PANEL SIDE RETAINER

2



■ **L70**  
M8X30 Hex Bolt  
M8 Nut  
Pitched Roof Screw

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Horizontal and Vertical positioning
- Suitable solutions for different roof types
- Tailored design solutions for customer
- Customer oriented engineering solutions

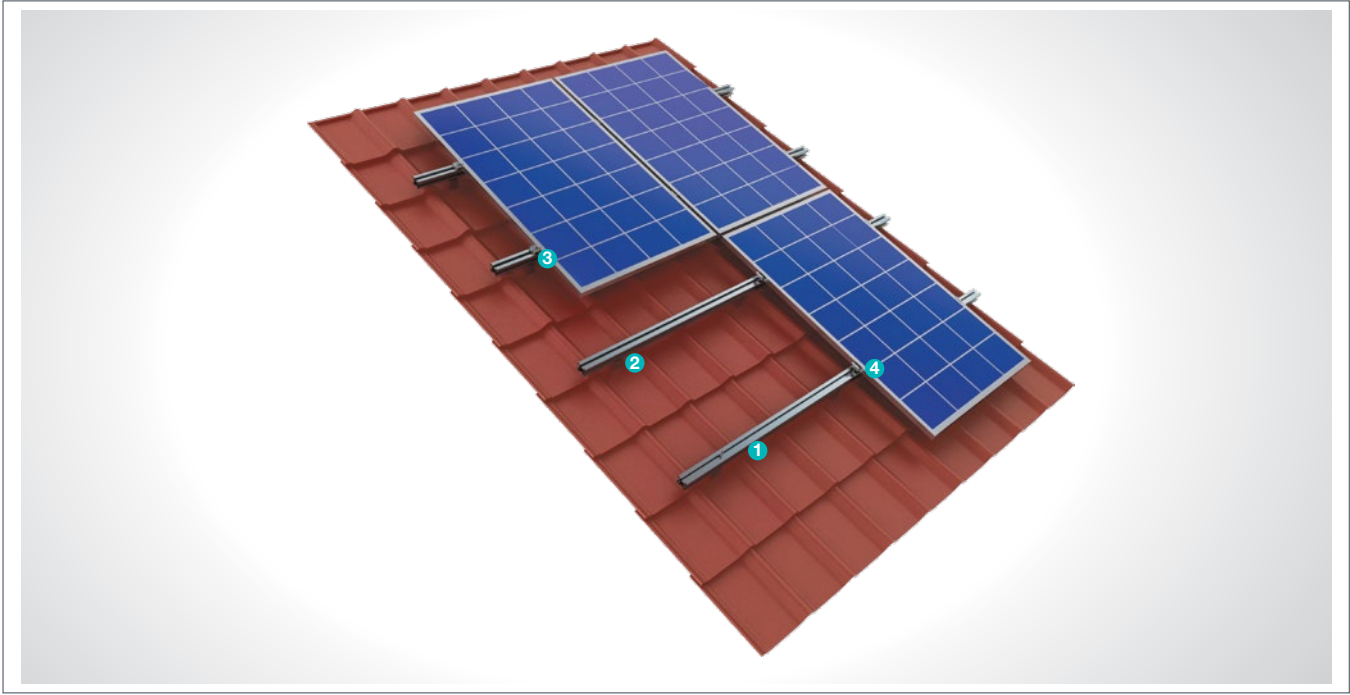
## Technical Specifications

Description:	(KPT29) Pitched Roof Aluminum Mounting System
Mounting Method:	Pitched Roof Mounting
Module Application:	Framed and Unframed
Beam Material:	EN AW 6063
Panel Retainer:	ASTM A 304 / A 316
Purlin Material:	EN AW 6063
Connector Equipment:	DIN 934 / DIN933 / DIN 912, A2-70

## (KPT30) Tile Roof Steel And Aluminum Mounting System

### Overview

KPT30, is a steel and Aluminum structured mounting system and for tile type roofs. The system, incorporating a high-level engineering design, provides assembly and cost advantages.



#### ALUMINUM PURLIN

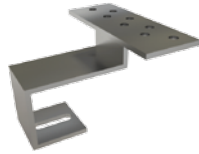
1



■ **CA-60x50**  
M10/T25 Head Bolt  
M10 Flanged Nut

#### TILE PURLIN CONNECTION PIECE

2



■ **KAP**  
M10/T25 Head Bolt  
M10 Flanged Nut  
Self-drilling Screw

#### PANEL SIDE RETAINER

3



■ **H30-H32-H40**  
M8X30 Hex Bolt  
M8 Rectangular Nut

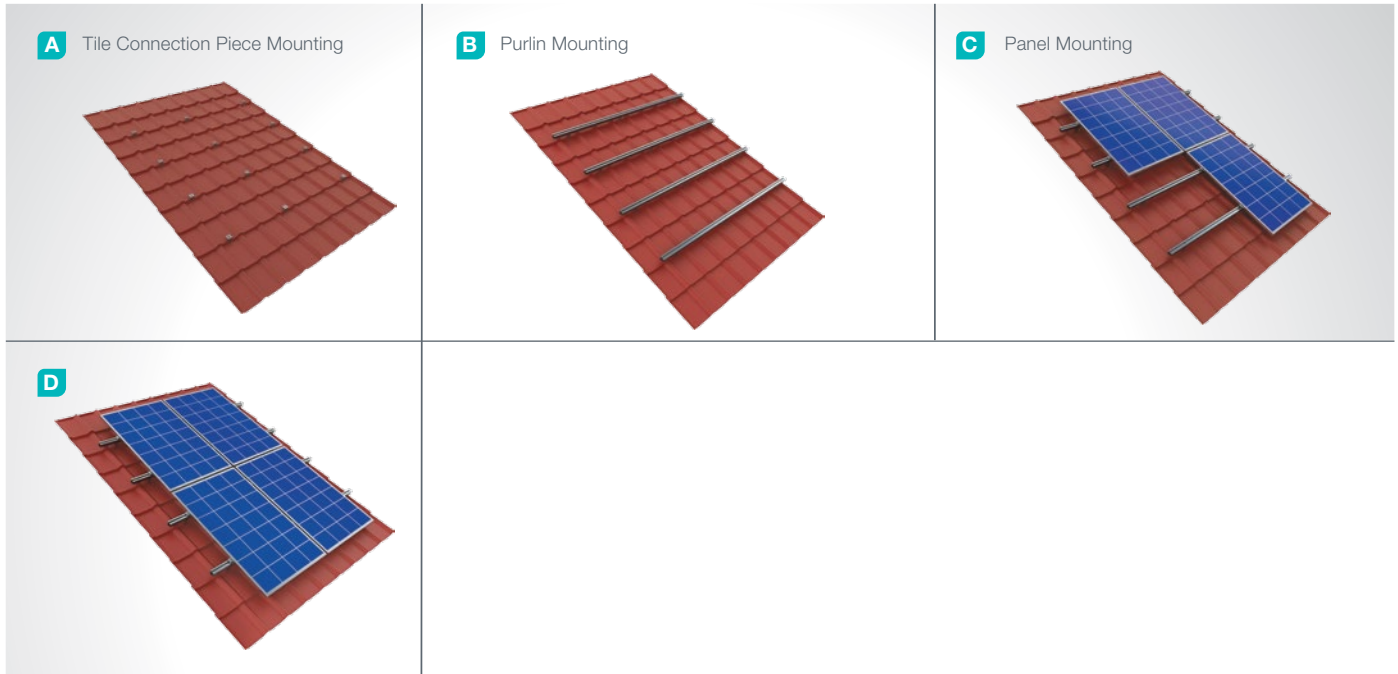
#### PANEL CENTER RETAINER

4



■ **L70**  
M8X30 Hex Bolt  
M8 Rectangular Nut

## Installation Phase



## Advantages

- Time saving for installation
- Cost saving for installation
- Horizontal and vertical positioning
- Suitable positioning according to roof tilt
- Suitable solutions for different roof types
- Tailored design solutions for customers
- Customer oriented engineering solutions

## Technical Specifications

Description:	(KPT30) Tile Roof Steel And Aluminum Mounting System
Mounting Method:	Assembly to Tile Roof
Module Application:	Framed and Unframed
Beam Retainer:	EN AW 6063
Beam Retainer Coating:	EN ISO 1461
Beam Retainer Material:	EN 10025 / EN 10029
Panel Retainer:	EN AW 6063
Fitting Equipment:	DIN 934 / DIN933 / DIN 912, A2-70 DIN 50979

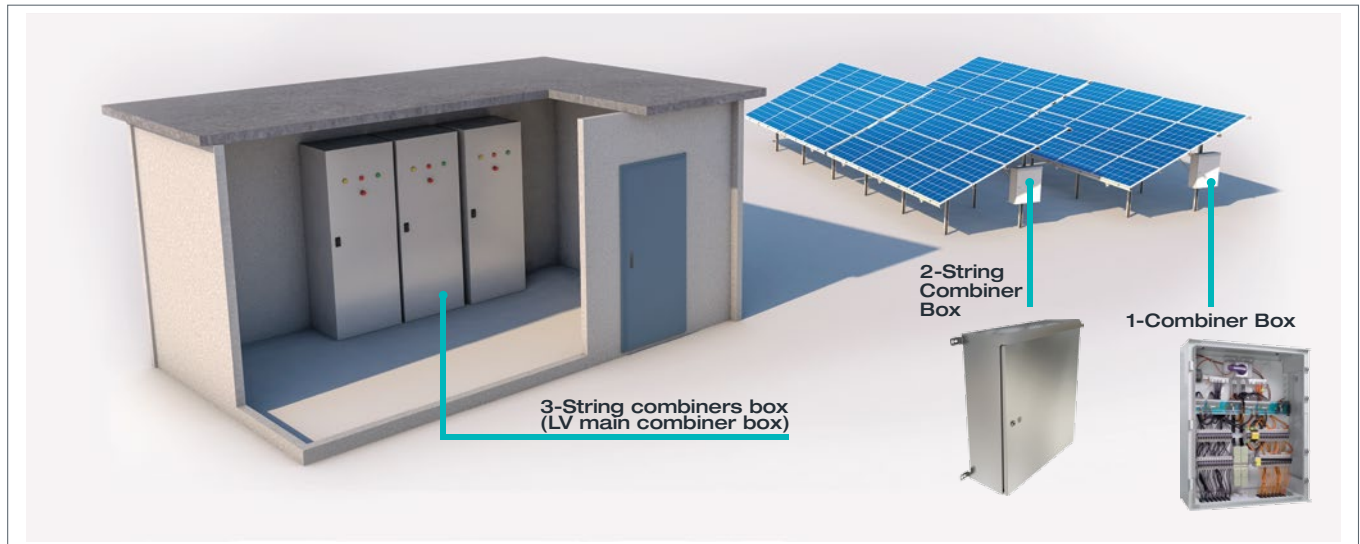


## 1-Combiner box (DC Combiner)

### Overview

In systems using a central inverter, it bundles cables and energy coming from panel groups in one combiner box. Stringing out solar cables, consisting of positive and negative lines, to the battery or inverter causes power loss and an increase in cable amount and costs. Therefore, a particular panel group shall be combined on a single positive/negative line.

SCADA monitoring equipment can be installed in Combiner Boxes at the same time which facilitates service, maintenance and remote maintenance operations on line enabling deenergizing when a problem occurs. Another important feature of Combiner Box is the option to add surge protective devices (SPDs) for protection against lightning and power surges and this feature is crucial for solar power plants.



### Advantages

- Protection for electrical equipment used as waterproof and dustproof
- Easy installation
- Simplified system cabling
- Decrease in the amount of cabling and cable costs advantage
- Easy service, maintenance and remote maintenance operations on line
- Protection against lightning and power surges
- Tailored design solutions for customers

### Technical Specifications

Protection:	IP54 IK10
Product Structure:	The product has a modular design, installation modules are available for all equipment.
Materials Used :	The product is manufactured with cold-rolled steel (EN 10130) in a totally rigid structure.
Coating / Paint :	Electrostatic Powder Polyester paint / Hot-dip galvanized coating (EN 10130)
Handling:	Lifting lugs for lifting and handling.

## 2- String Combiners box: (AC -- Field Combiner Box)

### Overview

In systems using series inverter, these type of combiner boxes bundle AC line cables and making connections thereof. The energy collected in these boxes are transferred to the Main Combiner Box via one line. It does not contain interconnection additional security and switching mechanisms. In string systems, AC power is collected with interconnection equipment before reaching the Main AC Combiner Box.

### Advantages

- Protection for electrical equipment used as waterproof and dustproof
- Easy installation
- Simplified system cabling Suitable cabling
- Decrease in the amount of cabling and cable costs advantage
- Tailored production according to customer demand

### Technical Specifications

Protection:	IP65 IK10
Material used:	Cold rolled steel
Coating / Paint :	Electrostatic Powder Polyester paint / Hot-dip galvanized coating (EN 10130).

## 3- AG Main Combiner Box

### Overview

Power collected from String Combiner Boxes or at the output of central inverter is transferred to Main Combiner Box with power cables for security and control. Main Combiner is equipped with equipment necessary for power quality measurement, system security and in-house demand. The power collected at the Main Combiner Box is directed to the AG switch and transformer operable at heavy current limits in order to increase voltage value.

### Advantages

- Modular form and easy installation
- Installation modules suitable for all electrical equipment.
- Protection for electrical equipment used as waterproof and dustproof
- Tailored design solutions for customers

### Technical Specifications

Protection:	IP54 IK10
Product Structure:	The product has a modular design, installation modules are available for all equipment.
Materials Used :	The product is manufactured with cold-rolled steel (EN 10130) in a totally rigid structure.
Coating / Paint :	Electrostatic Powder Polyester paint
Handling:	Lifting lugs for lifting and handling.

## References

RENAISSANCE®  
HOTELS

EMERSON



ENTON

ENDÜSTRİYEL ENERJİ

RENAULT

ALSTOM

rentec

OYAK

SANKO

ZTE中兴

termal f seramik

ERL SOLAR MONTAJ  
SİSTEMLERİ

HUAWEI

RIXOS  
HOTELS

AYMAR  
ENERJİ

Alcatel-Lucent

CHNT

BOLU  
CİMENTO

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arçelik

ABB

günallar elektrik

AVŞAR

HE HALK ENERJİ

EPIK International Inc

## Reference List

### 100 MW

■ Turkey

■ USA

■ Ukraine

■ Slovakia









