

Mounting systems for solar technology



ASSEMBLY INSTRUCTIONS
D-LEVEL SYSTEM

GB

TABLE OF CONTENTS

TABLE OF CONTENTS	2
THE COMPANY	3
SAFETY REGULATIONS	4
MATERIALS REQUIRED	5
TOOLS REQUIRED	7
ASSEMBLY	8
TERMS AND CONDITIONS	14
NOTES	15

PARTNER WITH A SYSTEM

With sophisticated, fully developed product ideas and obvious customer-orientation, K2 Systems is your friendly partner in the field of mounting systems for solar technology. International customers appreciate the tried and tested designs for use on roofs or facades and in outdoor and individual solutions.

Mounting systems from K2 Systems impress with their attractive design and many well thought-out details. High grade materials and quality workmanship guarantee outstanding functionality and durability.

Our products consist of few yet perfectly matching components - this reduces the amount of material used, simplifies assembly while saving time and money.

As a young company, and in keeping with the times, we benefit from cooperation as partners in order to ensure the dynamic development of our company. The experiences from the personal dialogue with our customers forms the basis for permanent optimisation of our range of products. The team of K2 Systems looks forward to a successful cooperation with you.

TESTED QUALITY – FOUR CERTIFICATIONS

K2 Systems stands for secure connection, highest quality and precision. Our customers and business partners have already known that for a long time. And three independent institutes have tested, confirmed and certified our capabilities and components.



GENERAL SAFETY INSTRUCTIONS

Please be aware that our General Assembly Regulations must be adhered to.

They can be viewed under www.k2-systems.de/english/downloads/customer-area.html.

If you don't already have them, you can obtain access data for our customer area on request.

In general, the following applies:

- ↪ Systems may only be installed and put into use by people who can ensure the proper carrying-out of the work due to their technical suitability (e.g. training or occupation) and/or experience.
- ↪ Before assembly, it must be checked that the product meets the local static requirements. For roof systems, the load-bearing capacity of the roof is also to be checked.
- ↪ National and local building regulations, standards and environmental regulations are always to be adhered to.
- ↪ Work safety and accident prevention regulations and corresponding standards and regulations of occupational associations are to be adhered to! In particular, it is to be ensured that:
 - Safety clothing is worn (especially safety helmets, work shoes and gloves).
 - For work on roofs, the regulations for working on roofs are to be adhered to (e.g. use of anti-fall guards, scaffolding with arrestor equipment from an eaves height of 3m etc.)
 - Presence of two people is vital for the entire course of the assembly, so that swift help can be ensured in the case of an accident.
- ↪ K2 mounting systems are constantly being developed further. Because of this, assembly procedures can change. Therefore, before assembly, always check that the assembly instructions are up-to-date under www.k2-systems.de/english/downloads/customer-area.html. We can also send you the latest version on request.
- ↪ The assembly instructions of the module manufacturer are to be adhered to.
- ↪ Earthing must be ensured, use lightning arrestor clamp if necessary.
- ↪ During the entire assembly time it is to be ensured that at least one copy of the assembly instructions is available on site.
- ↪ In the event of non-adherence to our General Safety Instructions and if competitor's parts are built in or attached, K2 Systems GmbH reserves the right to refuse liability.
- ↪ If all safety instructions are adhered to and the system is correctly installed, there is a guarantee entitlement of 12 years! Please read out Terms and Conditions of Warranty which can be viewed under www.k2-systems.de/deutsch/downloads. We can also send them to you on request.
- ↪ The dismantling of the system takes place according to the assembly steps, in reverse order.

ESSENTIAL: THE MATERIALS REQUIRED

All system components listed in the following are essential for assembling the K2 Systems D-Level system. The piece quantities are calculated on the basis of the respective requirements. The listed item numbers facilitate the comparison of items.

	LevelRail Material: aluminium	P1003402
	LevelRail Connector Material: aluminium	P1003845
	T-Bolt M8 x 20 Material: stainless steel, head shape: 20/12	P1002387
	Self-Locking Nut M8 Material: stainless steel	P1000043
	D-Level Flatroof Set (Flat support, L-profile as support, Screws M8 DIN 912, T-Bolts M8 x 20, Self-Locking Nuts M8)	First Solar P1003807 982 - 1001 mm P1003742 798 - 819 mm P1003806
	T-Bolt M10 x 30 Material: stainless steel, head shape: 28/15	P1000041
	Self-Locking Nut M10 Material: stainless steel	P1000042
	LightRail Material: aluminium	2,65 m P1003241 3,43 m P1000006 4,35 m P1000009 5,40 m P1000012 6,10 m P1000014
	Rail Connector Material: aluminium	P1000078



M K2 slot nut with clip

| P1001643

Material: stainless steel, plastic



Add-on 22 mm

| P1002792

Material: glas fibre reinforced polyamid



Module End Clamp Standard

| item number
system-specific

Material: Aluminium

Alternative: Middle and End Clamp Laminate



Allen Bolt DIN 912 M8

| item number
system-specific

Matière: Acier inoxydable



Module Middle Clamp Standard

| P1000076

Material: Aluminium



Shim

| P1000789

Material: Aluminium



Washer DIN 9240 M12, 5 x 30

| P1000473

Material: stainless steel

AT A GLANCE: OVERVIEW OF THE TOOLS

K2 Systems mounting systems are designed to ensure effortless assembly. Only the tools that are required are not included in the scope of supply. Here we have listed them together for ease of reference.



Torque wrench

With attachment for SW 13, SW 15, HW 6



Chalk line



Measuring tape

D-LEVEL SYSTEM ASSEMBLY: STEP BY STEP

Please carefully read through all the steps first to ensure safe and correct assembly of the system. The required material is listed for each step. Should you have any problems during assembly or questions relating to the system please contact us on our

SERVICE HOTLINE: +49 (0) 7152-3560-0

IMPORTANT:

- If necessary, paving stones can be placed in the LevelRails to provide ballast.
- The General Installation Instructions must be observed.
You will find these instructions under: www.k2-systems.de/deutsch/downloads/kundenbereich.html
If you don't already have them, you can obtain access data for our customer area on request.
- A minimum coherent module area of 10 square metres must be mounted in order to be able to use this system.
- Please refer to Points 7 - 9 in these mounting instructions for the special requirements and adaptations for the set.
- Minimum distance from parapet wall 500 mm.
- Only standard clamps are to be used for mounting with add-ons, i.e. no XS types and no clamp sets.
- The add-on is used for a frame height from 35 to 50 mm. Instead of the add-on, a shim should be placed under each clamp for lower frame heights and for thin-layer modules.
- The flat roof kit is suitable for all standard flat roofs with load-resistant base and a pitch of up to 5 degrees.



1
of 9

LAYING LEVELRAILS

These assembly instructions apply to a flat roof structure with a mounting angle of 10°. In order to protect the roof cladding, it is recommended to apply a separating layer between the roof cladding and the LevelRail before laying the LevelRails. The LevelRail is placed directly onto the separating layer without penetrating the roof.

Required materials: LevelRail 5 m, separating layer

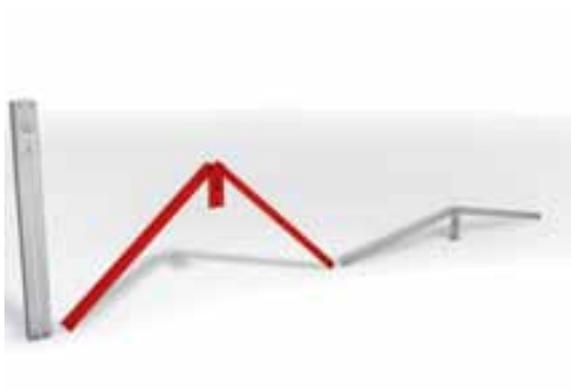


2
of 9

FITTING RAIL CONNECTOR

Two LevelRails are connected at the joint by means of a LevelRail connector. The connector fixes the position of the LevelRails in longitudinal direction. Fit T-bolts in the side groove and lock by turning 90° in clockwise direction. Tighten the self-locking nuts to a torque of 16 Nm on the T-bolts. Maximum obstructable length of the LevelRail is 25 m.

Required materials: Rail connector, M8 T-bolt, M8 self-locking nuts



3
of 9

UNFOLDING D-LEVEL SETS

The D-Level set is supplied preassembled and can therefore be mounted immediately after simply unfolding. The required angle of 10 degrees is set automatically by securing the aluminium flat support and subsequently bolting the L-section rail to the LevelRail.

Required materials: D-Level set

**4**

of 9

INSTALLING FLAT SUPPORT AND L-RAIL

Secure the flat support of the D-Level set to the LevelRail using the preassembled M8 T-bolt in the side groove of the LevelRail. The K2 logo must always face towards the groove in the LevelRail. The recommended minimum spacing between the holes in the L-section rail is 110 mm. This spacing can be used for carrying out maintenance jobs. After securing the flat support, the L-rails of the set are firmly bolted to the LevelRail. The tightening torque is 16 Nm.

Required materials: D-Level set, M8 self-locking nut

**5**

of 9

LIGHTRAIL AS MODULE SUPPORT

Secure the LightRail with M10 T-bolt and M10 self-locking nuts in the upper hole of the L-rail. For this purpose, place the T-bolts in the lower chamber of the LightRail and lock by turning 90° in clockwise direction. The lower slot in the L-rail makes it possible to adapt the spacing of the LightRails to the size of the module. For thin-layer modules (Set P1003807) three LightRails are bolted in the pre-drilled holes. The topmost rail is always mounted first. A rail connector is required to join the Light-rails. For this purpose, the T-bolts are placed in the lower rail chamber and locked by turning 90° in clockwise direction. Maximum obstructable length of the LightRail is 24,4 m. The connection is locked by a self-locking nut. The tightening torque is 32 Nm.

Required materials: LightRail, rail connector, M10 T-bolt, M10 self-locking nut

**6**

of 9

FITTING M K2 SLOT NUT

The M K2 slot nut is inserted in the K2 LightRail and turned by 90° in clockwise direction.

Required materials: M K2 slot nut



7a
of 9

FITTING ADD-ON

The add-on is fitted on to the slot nut in the LightRail, thus fixing the slot nut in position. The add-on is fitted in the upper row of rails such that the K2 logo is legible upside down on the top left. When fitting the add-on in the lower row of rails, make sure that the K2 logo is legible on the bottom right of the add-on.

Important: The add-on is used only for a module frame height from 35 to 50 mm.

Required materials: Add-on



8a
of 9

INSTALLING MODULES AND SECURING END CLAMPS

The modules must be secured with end clamps at the defined points in accordance with the manufacturer's instructions. The add-on can be moved together with the slot nut to any position on the rail. If add-ons are used, 5 mm for the material thickness of the add-on must be added to the calculation of the required screw length.

Important: The add-on must only be used together with the K2 Standard module clamps. The recommended tightening torque is 14 Nm.

Required materials: End clamp, M8 module screw

ALTERNATIVE THIN-LAYER MODULES

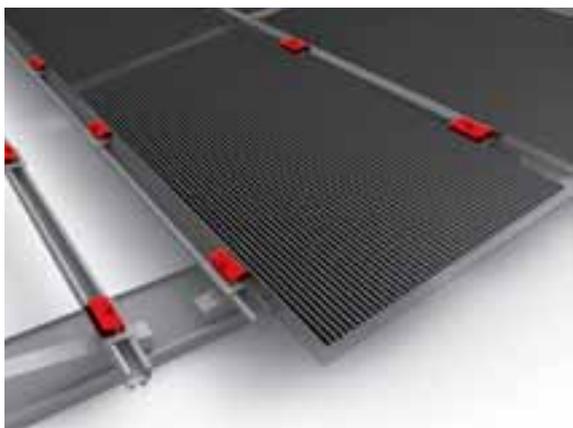


7b
of 9

SECURING WITH SHIM

Instead of the add-on, a shim is used for mounting thin-layer modules or modules with a frame height of less than 35 mm. Secure modules on the Light-rail following the manufacturer's instructions.

Required materials: Shim



8b
of 9

SECURING MODULES WITH END AND MIDDLE CLAMP

To secure a module, fit the M8 module screw through the end or middle clamp and the shim, and then secure to the slot nut. Tighten the screw to a torque of 14 Nm.

Required materials: End clamp, middle clamp, M8 module screw

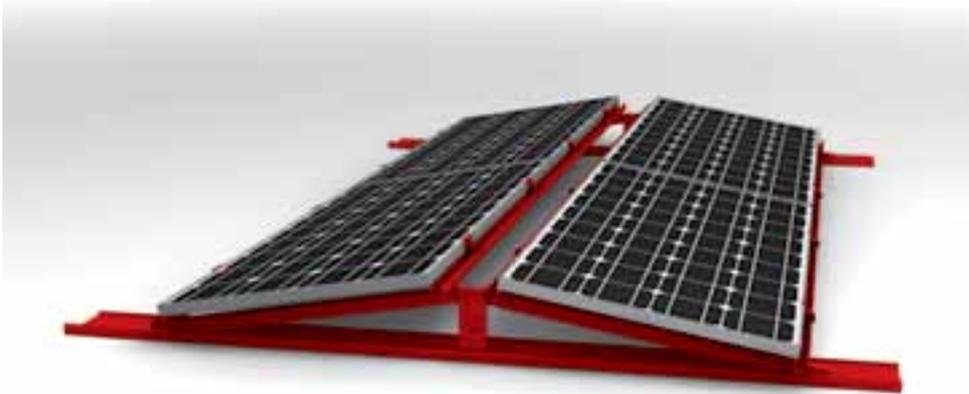


9
of 9

CORRECT PLACEMENT OF BALLAST

If necessary, apply ballast only as defined in the K2 quotation or the K2 order confirmation. The ballast is based on the static calculation compiled individually for the specific project.

Required materials: According to quotation or order confirmation



Ready!

THANK YOU FOR CHOOSING A K2 MOUNTING SYSTEM.

Systems from K2 Systems are fast and simple to install. We hope these instructions have helped you in this. Please contact us if you have any questions or suggestions for improvements. We are looking forward to receive your call on our

Service-Hotline +49 (0) 7152-3560-0

TERMS AND CONDITIONS

§ 1 Ambit, contractual item

1. Our General Business Terms and Conditions apply to the delivery of moveable merchandise in accordance with the contract concluded between us and the customer. These therefore also apply for all future business relations, even where they have not been expressly agreed upon once again.
2. Our General Business Terms and Conditions apply exclusively. We do not recognise customer conditions contradictory to or deviating from our General Business Terms and Conditions, unless we have expressly approved their validity in writing. Our General Business Terms and Conditions also apply if, in circumstances where we are aware of customer conditions contradictory to or deviating from our General Business Terms and Conditions, we realise the delivery without any reservation.

§ 2 Offer, documentation at conclusion of contract

1. The customer's order represents a binding offer which we can accept within four weeks by forwarding an order confirmation or through delivery of the merchandise. Offers submitted by us in advance are non-binding.
2. We reserve rights of ownership and copyright to all illustrations, drawings, calculations and other documents. This also applies to those written documents designated as "confidential". The customer requires our express written permission prior to their transfer to third parties.
3. Drawings, illustrations, dimensions, weights or other performance data are only binding when this is expressly agreed in writing.

§ 3 Prices and payment conditions

1. The agreed remuneration must be paid. In cases where the price has increased at the time of performance of service as a result of a change in the market price or an increase in remuneration paid to third parties involved in performance of service, the higher price applies. The customer is entitled to withdraw from the contract if the higher price is twenty percent or more greater than the agreed price. This right must be exercised immediately on communication of the increased price.
2. Prices should be understood with the addition of the mandatory turnover tax (VAT) valid on the day of invoicing.
3. The complete remuneration should be paid within 14 days after receipt of the merchandise and without any discount, provided no other agreement has been reached. Statutory regulations governing the consequences relating to arrears of payments apply.
4. The customer is only entitled to offset payment if his counterclaims have been determined to be valid, indisputable or are recognised by us. The customer is only entitled to exercise a right of retention if his counterclaim relates to the same contractual relationship.

§ 4 Time of performance, transfer of risk

1. Delivery deadlines or delivery times which can be agreed upon as binding or non-binding require the written form.
2. Even where agreed and binding periods and deadlines are involved, we are not obliged to answer for delays in delivery and performance due to force majeure and due to events which render delivery by us considerably difficult for a period that is not only temporary, or render delivery impossible, these including in particular strikes, lockouts, official ordinances, etc. We are also not obliged to answer for these if our suppliers or their contractors are affected by the same. They entitle us to delay the delivery or service for the duration of the obstruction and an appropriate start-up period, or to withdraw completely or partially from the contract because of the unfulfilled part of the same.
3. Where the obstruction lasts for longer than three months, the purchaser is, after an appropriate additional period of time, entitled to withdraw from the contract with regard to the unfulfilled part of same. In the event of the delivery duration being extended or where we are freed of our obligations, the purchaser is not entitled to claim any compensation on the basis of these circumstances. We can only invoke the circumstances mentioned if we inform the purchaser immediately.
4. Insofar as we must answer for the failure to honour agreed periods and deadlines, or where we find ourselves in arrears, the purchaser is entitled to claim compensation for the delay to the value of a half a percent of the invoice value for each complete week of default, but only to a maximum of up to five percent of the invoice value of the deliveries and services affected by the delay. Claims above and beyond this are excluded, unless the delay can be at least traced back to gross negligence.
5. We are entitled to make partial deliveries and perform partial services at any time, unless the purchaser is not interested in the partial delivery or performance of the partial service.
6. Observance of delivery and performance obligations depends on the timely and correct fulfilment of the purchaser's obligations.
7. In the event of a delay in acceptance on the part of the purchaser, we are entitled to demand compensation for the damages accrued. The risk of accidental deterioration and accidental loss is transferred to the purchaser as soon as a delay in acceptance occurs.
8. Delivery ex works is agreed, provided no other arrangements are stipulated in the order confirmation.

§ 5 Packaging

1. Packaging is invoiced separately.
2. The packaging arrangement stipulates that transportation and all other packaging will not be taken back. The purchaser is obliged to bear the costs for disposal of packaging himself.

§ 6 Rights of purchaser in case of deficiency or defects

1. Products are delivered free of manufacturing and material defects or deficiencies. The duration for asserting warranty claims is one year after delivery of the products.
2. Claims relating to product deficiencies are excluded if operating or maintenance instructions supplied by the seller are not followed, modifications to the products are realised, parts are changed or consumable materials utilised that do not conform to the original specification and the purchaser cannot refute an appropriately-substantiated allegation that only one of the above circumstances has caused the deficiencies in question.
3. We reserve the right to choose the manner of subsequent fulfilment in the event of a deficiency occurring.
4. Any liability for normal wear is excluded.
5. Claims relating to deficiencies made against the seller can only be made by the immediate purchaser and cannot be transferred.

§ 7 Liability for damages

1. Our liability for breaches of contractual obligation and breaches arising from an offence is limited to intent and gross negligence. This does not apply to injury to the life, limb and health of the customer, claims relating to breach of contractual obligations and compensation for damages relating to delay (§ 286 BGB – Civil Code). We will bear liability for every degree of responsibility in this respect.
2. Also excluded is any liability in the case of claims for the loss of earnings relating to the PV system.
3. The afore-mentioned exclusion of liability also applies to minor negligent breaches of obligation by our vicarious agents.
4. Insofar as liability for damages for minor negligence not relating to injury to the life, limb or health of the customer is not excluded, such claims lapse within a year, commencing with the assertion of the claim or, in the case of compensation claims relating to a deficiency, from the time of transfer of the merchandise.
5. Insofar as liability for compensation is excluded and limited on our part, this also applies with regard to personal liability for compensation on the part of our employees, workers, personnel, representatives and vicarious agents.

§ 8 Retention of title

1. Until fulfilment of all demands (including all demands relating to the current account balance) which the seller is entitled for any legal reason to exercise now or in future against the purchaser, the seller is granted the following securities which will be released by him on demand and freely selected at his discretion, provided their value exceeds the demands on a sustained level by more than 20 %.
2. The merchandise remains the property of the seller. Processing or transformation is realised in all cases for the seller as manufacturer, but without any obligation on the part of the seller. Where the (co-) ownership of the seller expires through adjunction, an agreement will be concluded now that the (co-) ownership of the purchaser of the uniform object will be transferred proportionally according to value (invoice value) to the seller. The purchaser will take safe custody of the (common) property of the seller free of charge. Merchandise to which the seller is entitled to (co-) ownership will be referred to as reserved merchandise in the provisions below.
3. The purchaser is entitled to process and dispose of the reserved merchandise through orderly business channels, provided he is not in default. Assignments or transfers of ownership by way of security are not permitted. The purchaser will transfer all demands in full relating to the reserved merchandise arising from resale or other legal reasons (insurance, impermissible actions), including all demands relating to the current account balance, to the seller with immediate effect. The seller empowers him precariously to collect the transferred demands for his invoice in his own name. This authorisation to collect can only be rescinded if the purchaser fails to honour his payment obligations in an orderly fashion.
4. In the event of seizure of the reserved merchandise by third parties, particularly under warrants of execution (fieri facias), the purchaser will indicate the property of the seller and inform him immediately so that the seller can exercise his rights of ownership. Insofar as the third party is incapable of recompensing the seller for any legal or extra-judicial costs accrued in this context, the purchaser will bear liability for these.
5. The seller is entitled to withdraw from the contract and reclaim the reserved merchandise in the event of breach of contract on the part of the purchaser, particularly default of payment.

§ 9 Statute of limitation on own demands

Our demands for payment lapse in deviation to § 195 BGB (Civil Code) in five years. § 199 BGB (Civil Code) applies with regard to commencement of the period of limitation.

§ 10 Form of declarations

Legally-relevant declarations and notifications made by the customer to us or a third party require the written form.

§ 11 Place of fulfilment, choice of prevailing law, place of litigation

1. The place of fulfilment and payment is our seat of business, provided no other provisions are made in the contract.
2. The law of the Federal Republic of Germany applies to this contract. The validity of the United Nations Convention on Contracts for the International Sale of Goods (CISG) is excluded.
3. Insofar as the purchaser is a merchant, legal person as defined in public law or special fund as defined in public law, Leonberg is the exclusive place of litigation for all disputes arising directly or indirectly from the contractual relationship.
4. In the event of a provision in these business conditions or a provision in the context of other agreements proving to be or becoming ineffective, the effectiveness of all other provision or agreements remains unaffected.

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Product illustrations are exemplary illustrations and may differ from the original.

