Secure-Systems
-the assembly system for PV technology

The modular design principle of SECURE-SYSTEMS allows for an especially fast and reliable assembly with all common solar types by using just a few matching components.

Since all the components of our proven technology are made of A2, A4or aluminium and thus protected against corrosion, a long and profitable service life of your investment will be ensured, if properly assembled.

Secure-Systems assembly rails

Our innovative assembly profile with an optimized loading capacity provides - with two designs - the basis for a secure and time-saving assembly of the solar modules for both the open site plants and roof installations.

Their inherent static design is tested in direct accordance with the Euro-code. This, in turn, offers the highest level of structural safety.

Aluminium profile MP5030

Aluminium profile MP6040

Secure-Systems fastening elements

Due to identical strengths the assembly rail with its exceptionally robust profile joint connectors results in a consistent resisting torque across the entire useful area of the plant. The bolting using 4 x M10 V2A T-head head bolts and lock-nuts optimizes the regidity even in case of large-scale plant.

Profile joint connector   T- head bolt   T-head bolt in use

Secure-Systems fastening elements

The fastening elements which are used, allow for a smooth and time-saving installation on the steel construction
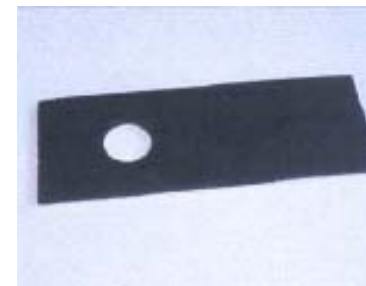

Nut with Clemm- Loc- coating

Washer

Locking flange

An EPDM plate is used for the galvanic isolation between aluminium profile and steel girder.

Secure-Systems cross bond

The SECURE-SYSTEMS substructure allows both vertical and horizontal mounting of the PV modules. The latter can be enabled by a cross bond.
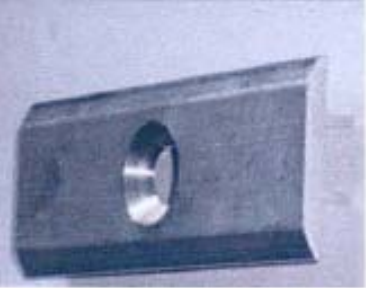

Cross connector, loose and installed

Installation of the PV modules

on the Secure-Systems assembly rails

Secure-Systems fastening elements

For every type of module a suitable clamp

Module middle clamp (flat)

Module end clamp

Middle clamp for framed modules

In conjunction with SECUR -SCREW we can protect the most valuable parts of your power plant against theft.

The use of the SECUR-SCREW prevents theft of all common substructures plant against theft and thus allows for low solar insurance rates

Secur-Screw - a brainy-headed screw

We have developed a theft-preventing screw in the aftermath of the numerous thefts of photovoltaic modules.

With the **Secur-Screw,** your PV system is protected against unauthorized dismantling.

The upper screw head part detaches at a defined tightening torque of 18 Nm ±10% - thanks to **predetermined breaking point** introduced through the CNO- processing of the form of the screw head. The lower part of the screw thus offers no sufficient working surface for common hand tools.

Secure-Systems -
the assembly system in regards to security

The fastening systems of photovoltaic modules constitute the typical area of application of our screw. This is because the theft of solar modules in this area has, recently, become a serious problem.

Theft is rendered very difficult with our special screw with its specially adapted rotating head. Once assembled, the detachment of this screw with common tools like spanners, pliers, amongst others, is virtually impossible.

The assembly technician requires no special tools in the assembly - he tightens the screw without a torque wrench until a part of the head simply breaks off - that's it. The breaking off of the head occurs almost precisely, at 18 Nm - and this guarantees a permanent, as well as safe, connection.

Secure-Systems - We secure energy

Component overview

Component	Component no.	Size	Material
Assembly profile	MP-01-5030	50x30 mm	Aluminium EN AW-6060 T6
Assembly profile	MP-02-6040	60x40 mm	Aluminium EN AW-6063 T6
Profile joint connector	SV-01-4531	designed for MP-01-5030	Aluminium EN AW-6060 T6
Module end clamp	KE3500 KE4000 KE4200 KE5000	size according type of module	Aluminium EN AW-6060
Module middle clamp (flat)	KF1280	12x80 mm	Aluminium EN AW-6060
Cross connector	KV4545	45x45 mm	Aluminium EN AW-6060
Locking washer 8	ZS0813	M8x13	VS8 passivated
	ZK08x	M8.... several length	similar DIN 912/ISO4762 stainless steel A2-70, with hexagon socket SW 6

Component overview

| Component	Component no.	Size	Material	
Countersunk head screw with partly unscrewed head	SK08x	M8x.... several length	similar DIN/ISO 2010, stainless steel A2-70, with hexagon head 6 mm	
T-head nut with Clemm-Loc-coating (self-locking)	HM0800	M8	stainless steel 4401 - A4	
T-head screw	HS1025	M10x25	stainless steel 4301 - A2	
Nut with Clemm-Loc-coating (self-locking)	MC1000	M10	according to DIN 934, coating DIN 267-28, stainless steel A4	
Washer	SS1023	M10x23x2.5	VS8	
EPDM insert	EPDM	100x35x2mm, Cut-out d=14	EPDM, UV resistant	
Locking flange	MZ1000	M10	according to DIN 6923 stainless steel A2	
Thin-film clamp middle and end clamp	KL0870	Width: 70mm bore: M8	Aluminium EN AW-6060 with EPDM bed	
Roof hook, adjustable for roof tile "Frankfurter Pfanne"	DE0506	Plate 5,0 mm Bar 6,0 mm	1.4301	
Roof hook, adjustable for roof tile „Frankfurter Pfanne"	DA0507	Plate 5,0 mm Bar 7,5 mm	Cast aluminium	
Roof hook, for plain tile	DB0530	Bar 30x5 mm	1.4301	

Component overview

Component	Component no.	Size	Material	
Clamp for trapeziodal sheet metal roofs	KT0155 KT0170 KT0180	several sizes	1.4301 plate 2 mm	
Flat roof bar for upright or horizontal mounting	FB01xx FB02xx	Angels: 10° bis 30°	Aluminium 4 mm	
Hanger bolt without nut etc.	ST1020 ST1230	M10x200 M12x300	Stainless steel V2A	
Pre assambled components				
Profile joint connector Parts: 4 x T-head screw HS1025 4 x nut MC1000 4 x washer SS1023 1 x profile joint connector SV-01	SV-01-4531-K	for MP-01 5030	Aluminium EN AW-6060 T6	
Profile joint connector Parts: 4 x T-head screw HS1025 4 x nut MC1000 4 x washer SS1023 1 x profile joint connector SV-02	SV-02-5041-K	for MP-02-6040	Aluminium EN AW-6005 A T6	
Module middle clamp Parts: 1 x **Secur-Screw** ZK08xx 1 x locking washer 8 ZS0813 1 x T-head nut HM0800 1 x module middle clamp	KM2026-K	20x26x100 mm	Aluminium EN AW-6060	
Modul end clamp Parts: 1 x **Secur-Screw** ZK08xx 1 x locking washer 8 ZS0813 1 x T-head nut HM0800 1 x module end clamp	KE3500-K KE4000-K KE4200-K KE5000-K	Size according type of module	Aluminium EN AW-6060	
Module middle clamp (flat) Parts: 1 x **Secur-Screw** SK08xx 1 x T-head nut HM0800 1 x module middle clamp (flat)	KF1280-K	12x80 mm	Aluminium EN AW-6060	
Hanger bolt set Parts: 1 x hanger bolt V2A 1 x EPDM sealing 3 x locking flanges loose: 1 x mounting plate aluminium	ST1020-K ST1230-K	M10x200 M12x300	Stainless steel V2A, UV-resistant EPDM, Aluminium	

Component		Component no.	Size	Material
Assembly profile		MP-01-5030	50x30 mm	Aluminium EN AW-6060 T6
Assembly profile		MP-02-6040	60x40 mm	Aluminium EN AW-6063 T6
Profile joint connector		SV-01-4531	designed for MP-01-5030	Aluminium EN AW-6060 T6
Profile joint connector		SV-02-5041	designed for MP-02-6040	Aluminium EN AW 6005 A T6
Module middle clamp		KM2026	20x26 mm	Aluminium EN AW 6060
Module end clamp		KE3500	for module size 35 mm	Aluminium EN AW 6060
Module end clamp		KE4000	for module size 40 mm	Aluminium EN AW 6060
Module end clamp		KE4200	for module size 42 mm	Aluminium EN AW 6060
Module end clamp		KE5000	for module size 50 mm	Aluminium EN AW 6060
Module middle clamp (flat)		KF1280	12x80 mm	Aluminium EN AW 6060
Cross connector		KV4545	45x45 mm	Aluminium EN AW 6060

Component		Component no.	Size	Material	
Locking washer 8		ZS0813	M8x13	VS8 passivated	
T-head nut with Clemm-Loc-coating (self-locking)		HM0800	M8	stainless steel 4401 - A4	
T-head screw		HS1025	M10x25	stainless steel 4301 - A2	
Nut with Clemm-Loc-coating (self-locking)		MC1000	M10x10	according to DIN 934, coating DIN 267-28,	
Washer		SS1023	M10x23	VS8	
EPDM insert		EPDM	100x35x2mm, cut-out d=14	EPDM, UV resistant	
Locking flange		MZ1000	M10	according to DIN 6923 stainless steel A2	
Thin-film module clamp		KL0870	Width: 70 mm, Bore: M8	Aluminium	
Roof hook, adjustable		DE0506	Plate: 5,0 mm Bar 6,0 mm	14301	
Roof hook, adjustable		DA0507	Plate: 5,0 mm Bar 7,5 mm	Cast aluminium	
Roof hook, for plain tile		DB0530	Bar 30x5 mm	14.301	
Trapezoidal plate clamps		KT0155	d= 130 - 155 mm	1.4301 sheet 2 mm	
Trapezoidal plate clamps		KT0170	d= 156 - 170 mm	1.4301 sheet 2 mm	

Component		Component no.	Size	Material
Trapezoidal plate clamps		KT0180	d= 171 - 180 mm	1.4301 sheet 2 mm
Flat roof clamp for upright mounting		FB0110 FB0115	10º oder 15º	Aluminium 4 mm
Falt roof clamp for upright mounting		FB0120 FB0130	20º oder 30º	Aluminium 4 mm
Flat roof clamp for cross-mounting		FB0210 FB0215	10º oder 15º	Aluminium 4 mm
Flat roof clamp for cross-mounting		FB0220 FB0230	20º oder 30º	Aluminium 4 mm
Stock screw		ST1020	M 10 x 200	stainless steel V2A, without nut etc.
Stock screw		ST1230	M 12 x 300	stainless steel V2A, without nut etc.

Component		Component no.	Size	Material
Pre-assembled parts				
Profile joint connector *pre-assembled*		SV-01-4531-K	designed for MP-01-5030	Aluminium EN AW-6060 T6
Profile joint connector *pre-assembled*		SV-02-5041-K	designed for MP-02-6040	Aluminium EN AW 6005 A T6
Module middle clamp *pre-assembled*		KM-2026-K	20x26 mm	Aluminium EN AW 6060
Module end clamp *pre-assembled*		KE-3500-K	for module size 35 mm	Aluminium EN AW 6060
Module end clamp *pre-assembled*		KE-4000-K	for module size 40 mm	Aluminium EN AW 6060
Module end clamp *pre-assembled*		KE-4200-K	for module size 42 mm	Aluminium EN AW 6060
Module end clamp *pre-assembled*		KE-5000-K	for module size 50 mm	Aluminium EN AW 6060
Module middle clamp (flat) *pre-assembled*		KF1280-K	12x80 mm	Aluminium EN AW 6060
Stock screw *pre-assembled*		ST1020-K	M 10 x 200	
Stock screw *pre-assembled*		ST1230-K	M 12 x 300	