

Solar systems from Schweizer

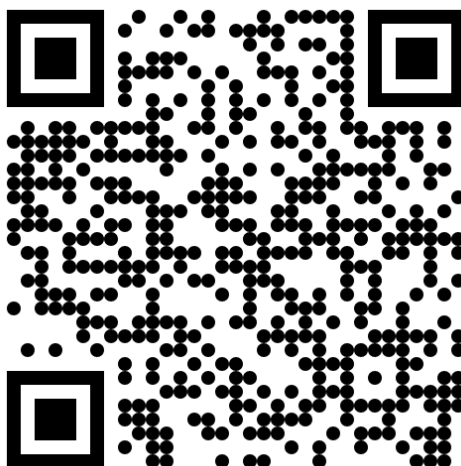


Installation instructions for PV mounting system MSP-PR

Pitched roof with roof hook MSP-PR-RHM (Roof Hook Multitool)



Read carefully before use and keep in a safe place.



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1 About these instructions

1.1 Basic notes on the installation instructions

The installation instructions contain important information on how to install the installation system safely, properly and correctly. By following the instructions, hazards are avoided and repair costs and downtimes are minimised.

These installation instructions are to be observed during the entire installation period of the PV mounting system.

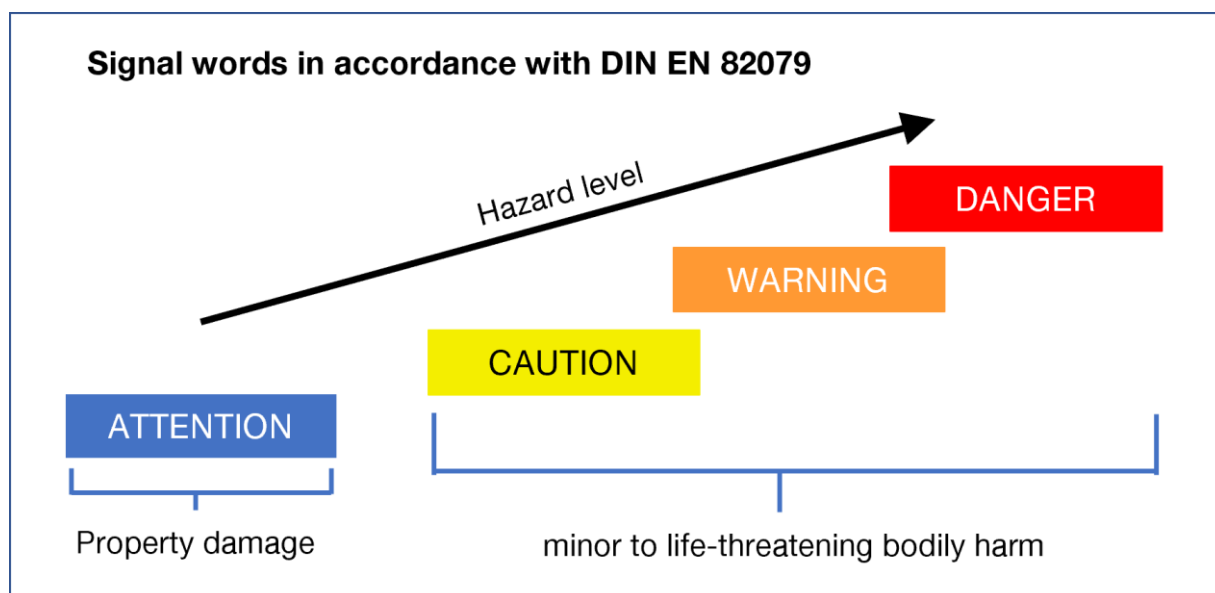
to be kept for future reference.

The applicable documents are listed in **chapter 6** Further documents.

1.2 Structure of the warnings according to hazard levels

Differentiation of hazard levels

The following signal words indicate the different hazard levels by means of different colour backgrounds:



2 Copyright

2.1 Reservation of rights

Ernst Schweizer AG reserves all rights to this document and the information contained therein. This document may not be reproduced, copied or made accessible to third parties in any form whatsoever, either in whole or in part, without the prior written consent of Schweizer. Furthermore, this document may not be used for purposes other than those for which it was provided to the recipient.

All appendices are integral parts of the installation instructions.

The PV mounting system was built in accordance with recognised safety regulations. However, improper use can endanger persons or cause damage to property.

2.2 Liability

Liability is governed by the General Terms and Conditions of Ernst Schweizer AG, Hedingen (CH) and Ernst Schweizer GmbH, Sattens (AT), which are listed under [General Terms and Conditions of Ernst Schweizer AG.pdf](#) are available.

3 Security

3.1 Intended use

The PV mounting system MSP-PR is suitable for mounting photovoltaic modules on pitched roofs. Any other use is considered improper. Intended use also includes compliance with the information in these installation instructions. The instructions contained in the design documents must be observed.

Ernst Schweizer AG shall not be liable for damage resulting from non-compliance with the installation instructions, in particular the safety instructions, or from misuse of the product.

3.2 Reasonably foreseeable misuse

The reasonably foreseeable misuse described here does not claim to be exhaustive. If necessary, the list must be expanded to include documented incidents.

These include:

- Persons standing under suspended loads (during assembly)
- Use of fittings and accessories such as screws or connectors when installing the supporting structure that are not originally included in the scope of delivery
- Installation of the supporting structure by unauthorised, technically qualified personnel
- Damage to the roof covering
- Installation of the supporting structure on a non-load-bearing substrate/roof
- Incorrect positioning of the PV modules
- When setting up the construction site on the roof, storing the installation material on the roof and when leaving the construction site, the construction site material (tools, packaging material, pallets, installation and system material not yet installed, etc.) and unfinished systems must always be adequately secured against the effects of the weather.
- Failure to comply with the safety equipment, safety regulations and current Accident prevention regulations
- When leaving the construction site, unfinished installations must be secured.

Faults can also occur if unauthorised components are used during repairs.

3.3 Requirements for safe operation

In order to avoid personal injury and damage to property, care must be taken during all activities in connection with the intended operation of the PV mounting system. In the event of non-compliance, Ernst Schweizer AG accepts no liability for any damage to property and/or personal injury.

The following also applies:

- The PV mounting system must only be operated in perfect, functional condition.
- All warnings and safety instructions in these installation instructions, as well as those in the suppliers must be followed at all times.
- All changes to the PV mounting system of Ernst Schweizer AG are outside the scope of its control. responsibility and must be planned and carried out by competent persons.

3.4 Responsibility of the customer or installer

The customer or the installer is responsible for compliance with the following relevant points:
It must be ensured that:

- all applicable accident prevention regulations and occupational safety regulations (or equivalent regional standards) are complied with.
 - DGUV Regulation 1 - Principles of prevention (replaces BGV A1)
 - DGUV Regulation 3 - Electrical systems and equipment (replaces BGV A3)
 - DGUV Regulation 38 - Construction work (replaces BGV C22)
- installation is only carried out by persons who have suitable basic technical and specialised knowledge.
- the persons responsible for carrying out the work are able to assess the tasks assigned to them and recognise possible risks.
- the persons responsible for carrying out the work are familiar with the system components and the installation process.
- the project report for the project to be installed has been read and fully understood by the persons responsible for carrying out the work.
- the project report is available at all times during installation. The project report is an essential component of the Schweizer PV mounting system.
- the permissible installation conditions are observed. Schweizer cannot be held liable for damage or losses resulting from non-compliance with these conditions.
- the correct assembly in accordance with the project report and the provision of any necessary tools is guaranteed.
- if necessary, a suitable lifting device is used for assembly.
- components with visible damage must not be used and replaced.
- each component and its accessories are used exclusively as intended and specified in the project report.
- only MSP-PR from Schweizer or other specified MSP components from Schweizer are used for assembly, even if parts have to be replaced. Otherwise, no warranty claims will be recognised.
- regular maintenance work is carried out, including an inspection of the mechanical connections, cabling, earthing and the condition of the roof covering.
- the roof on which the system is mounted is designed and built to withstand the PV mounting system adequately and safely. This includes, among other things, the structural strength of the roof, the condition and compatibility of the roof structure and the covering. Schweizer cannot be held responsible for damage to roofs where the construction or design of the roof is not suitable for accommodating the system installation.
- The PV mounting system MSP-PR from Schweizer can be included in the design of the electrical potential equalisation system and connected to it by properly installing a suitable earthing clamp or screw. The customer must ensure compliance with current regulations, legal requirements and guidelines.

- the installation complies with current national regulations and guidelines, including, but not limited to, maintaining the required edge distance to the roof, installing safety barriers, restricting access during operation, or taking precautions for expected dynamic loads or special events such as earthquakes and extreme weather conditions.
- any existing lightning protection system of the building must be adapted in accordance with the current technical regulations and statutory provisions.

The following standards (or corresponding regional standards) must be observed for the design and installation of lightning protection, earthing and potential equalisation:

- DIN EN 62305 Lightning protection
- DIN VDE 0185 Part 1-4 Lightning protection
- DIN VDE 0100 Part 410 Earthing
- DIN VDE 0105 Operation of electrical installations
- DIN VDE 0298 Electrical cables

furthermore are:

- "The regulations of the Central Association of German Roofers (ZVDH)" or equivalent, regionally applicable standards for work on roofs must be observed.
- DIN 18338 Roofing work
- DIN 18451 Scaffolding work

and:

- The guidelines for loss prevention VDS 2023 - Electrical installations in buildings with predominantly combustible building materials and DIN 4102 - Fire behaviour of building materials and components (or equivalent, regionally applicable standards) must be observed.

3.5 Basic safety instructions

The following basic safety instructions and warnings are an integral part of this manual and are of fundamental importance when handling this product:

- Work clothing must be worn in accordance with national regulations.
- Occupational safety regulations must be observed.
- It must be ensured that all electrical work is carried out by qualified electricians. All relevant regulations and directives must be complied with.
- The presence of a second person who can provide assistance in the event of an accident is mandatory during the entire installation work.
- A copy of these installation instructions must be kept in the immediate vicinity of the system for use by the persons authorised to carry out the work.
- Until the PV system is fully completed and ready for operation, all incomplete sections, components and materials must be secured in accordance with the applicable regulations.

4 Residual risks

The following safety instructions must be followed to avoid danger to people and damage to the PV mounting system and the PV modules.

DANGER



Electric shock due to lightning striking the PV mounting system

The supporting structure with the installed photovoltaic systems is operated outdoors. With a Lightning strikes can lead to life-threatening injuries.

Ground the PV mounting system properly.

Do not carry out any maintenance or servicing work on the PV mounting system during a thunderstorm.

DANGER



Electrical voltage due to loosened protective conductor or earthing connections

If protective conductors or earthing connections have been disconnected, conductive parts including handles, covers and locks that appear insulated can cause an electric shock if touched. Check that all protective conductors and earthing connections are connected.

Leave the danger zone immediately in the event of an electric shock on defective components or cables.

WARNING

Danger of falling

Carelessness and tripping can result in a fall when working at height. This can result in life-threatening injuries.

- Access to the roof must be secured by the operator in such a way that no unauthorised persons can enter the roof area.
- When carrying out cleaning and maintenance work, ensure that suitable anchorage devices and a body holding device are available.

CAUTION

Risk of tripping and falling

Objects lying around or cable ducts attached to the floor can cause tripping and falling hazards, which can result in injuries.

- Avoid obstacles in the field of movement.
- Lay the cable ducts so that there are no obstacles.
- Do not store or place any objects in the danger zone.

5 Technical clarification before assembly begins

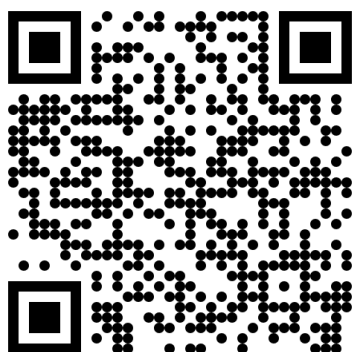
The suitability of the roof for supporting a PV system must be checked and confirmed by the customer (structural engineer / specialist planner) in accordance with the recognised rules, technology, legal requirements, standards and technical regulations.

The following points, among others, should be emphasised here:

- Sufficient load-bearing capacity for the fastenings and additional loads of the PV system
- Suitability and condition of the roof covering
- Condition of the roof (free of any damage)

6 Further documents

<https://ernstschweizer.com/en/download/MSPPR>



1. Important documents
2. Information sheets
3. Test results

7 Commissioning and maintenance

Installation and commissioning may only be carried out by authorised personnel.

Observe the safety instructions listed here as well as the instructions at the beginning of these operating instructions in **chapter 3 Security**.

8 Assembly conditions

The PV mounting system MSP-PR from Schweizer is designed for the following conditions:

- The installation of the system must be correctly adapted to the project and its local conditions. This includes the calculation of additional loads.
- The module sizes correspond to the specifications in the MSP-PR data sheet.
- Suitability for ambient conditions within the range of normal corrosive environments (e.g. at least 1 km from seashores) and in more corrosive environments (e.g. C4) if regular maintenance is ensured.
- For roofs that can sufficiently withstand the additional load from the PV mounting system (as assessed by the customer and under his responsibility).
- Roofs checked for damage. Any damage and its repair must be clarified prior to installation.
- After checking that the plans (including the assumption of the loads) correspond to the conditions on site. If there are deviations from the defined operating conditions, the planning must be revised before installation begins.

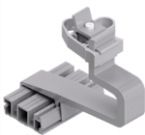







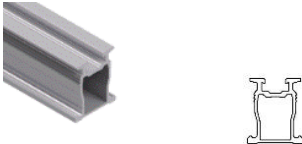


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9 Components





1	2	3	4
			
Roof hook MSP-PR-RHM incl. base plate 39mm/45mm	Spacer plate MSP-PR-SP	Wood screw MSP-PR-HS 8x120 ETA-11/0024, ETA-11/0106	S.P.T Project report
5	6	7	8
			
End clamp MSP-PR-EC MSP-PR-ECB 28-45mm abZ-14.4-92	Middle clamp MSP-PR-MC MSP-PR-MCG MSP-PR-MCB MSP-PR-MCBG 28-45mm abZ-14.4-92	Cross connector MSP-PR-CC abZ-14.4-92	Sleeve MSP-PR-SL
9	10	11	
			
Support profile MSP-PR-CH 38	Support profile MSP-PR-CH 50	Support profile MSP-PR-CH 70	

10 Assembly






All dimensions in mm


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10.1 Caption

	Attention		Check for potential Sources of error
	See project report		Audible click
	Correct execution		Direction of movement
	Faulty execution		Tool size / tightening torque
Option	Optional step		Earthing / earthing installation
	Recurring steps		

10.2 Tools required

	Cordless screwdriver
	If the cordless screwdriver is equipped with an impact drilling function, this has to be switched off.
	Torx attachment TX30 / TX40
T 30	
	Torque spanner (10 Nm) with Torx attachment
	Gloves

 **Assembly instructions for stainless steel screw connections:**
The installation must be carried out professionally.

To avoid cold welding between the bolt and nut, adhere to the following:

- use a cordless screwdriver without impact drilling function,
- set an appropriate speed that is not too high,
- no increased pressure on the screw.

10.3 Roof preparation

The installer must ensure that the installation conditions required for the MSP-PR are met and that the persons responsible for the installation work are professionally trained and fully familiar with the PV mounting system.

NOTE



The material must be distributed on the roof in such a way that no excessive point loads occur.

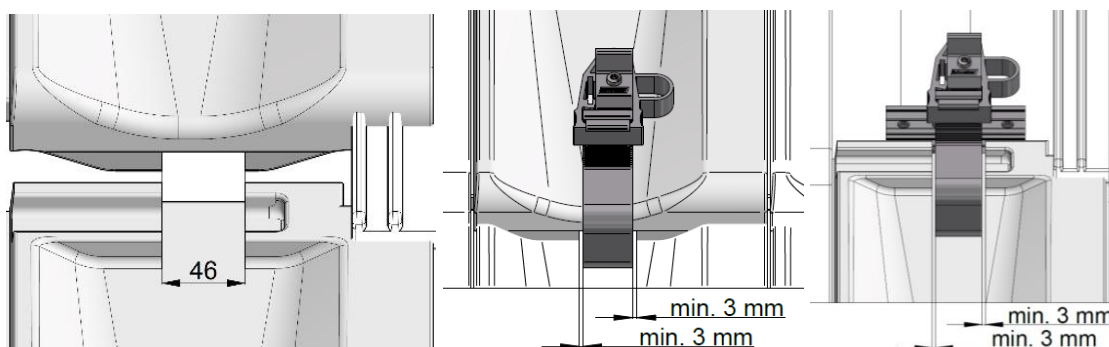
10.4 Assembly preparation

Before assembly must:

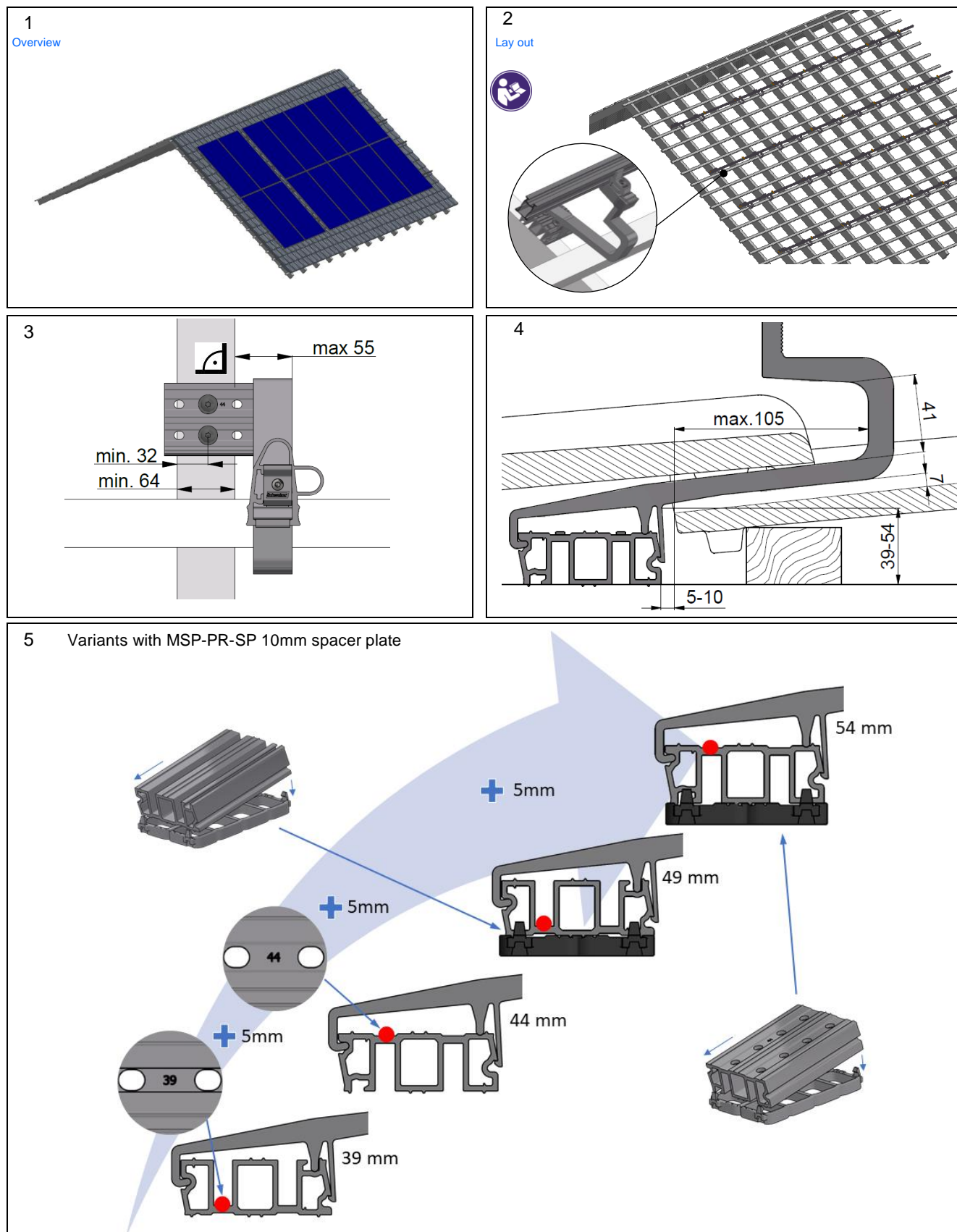
- the S.P.T. project report must be available.
- the material must be complete.
- If necessary, change the roof hooks to vertical rails, see chapter 10.7 Vertically orientated support profile.

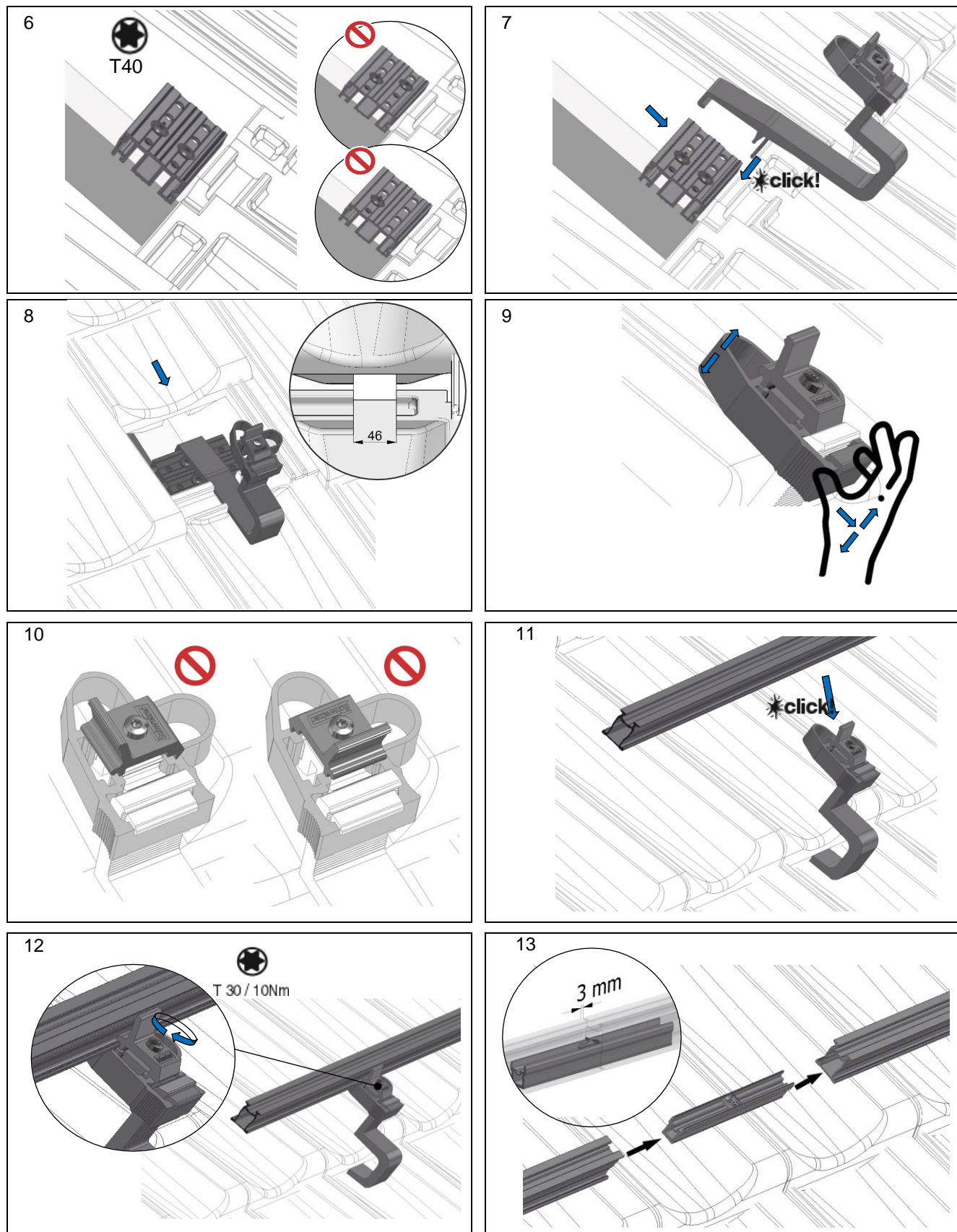
10.5 Brick recess

The tiles must be checked for defects before and after processing!



10.6 Assembly of the basic configuration (portrait)

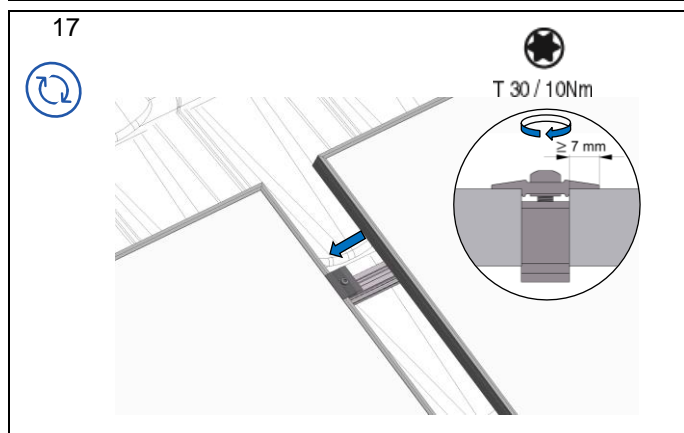
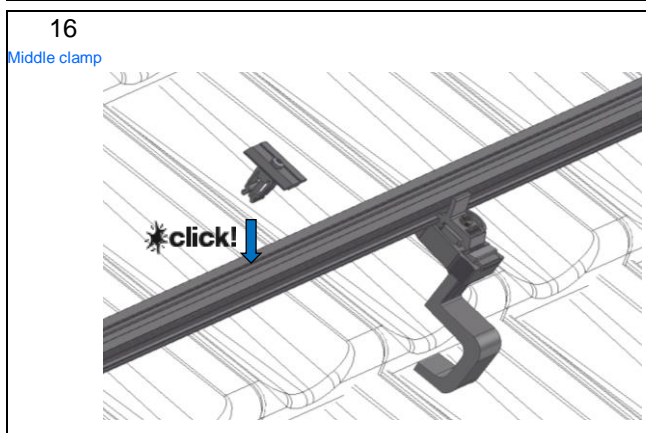
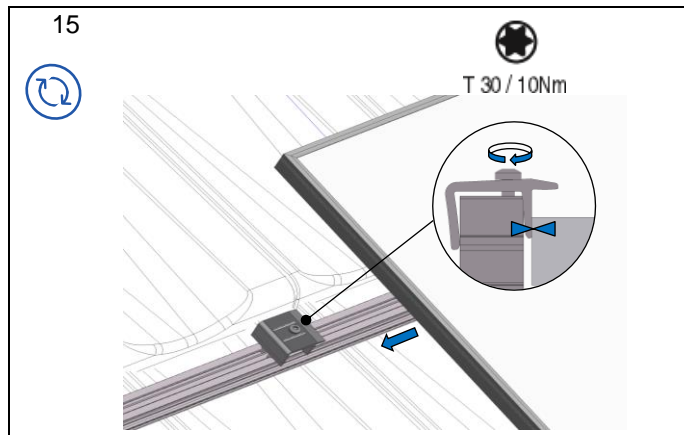
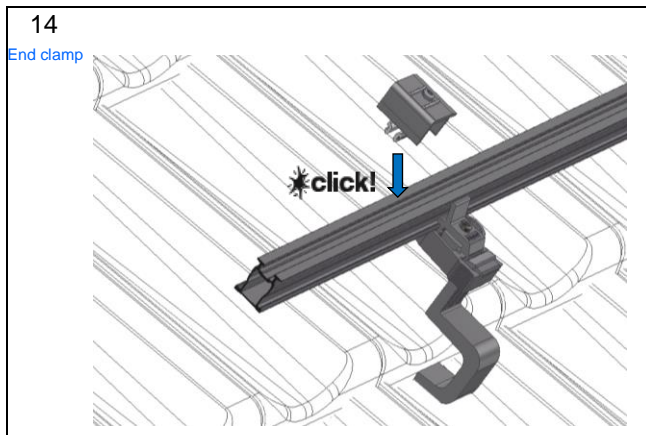




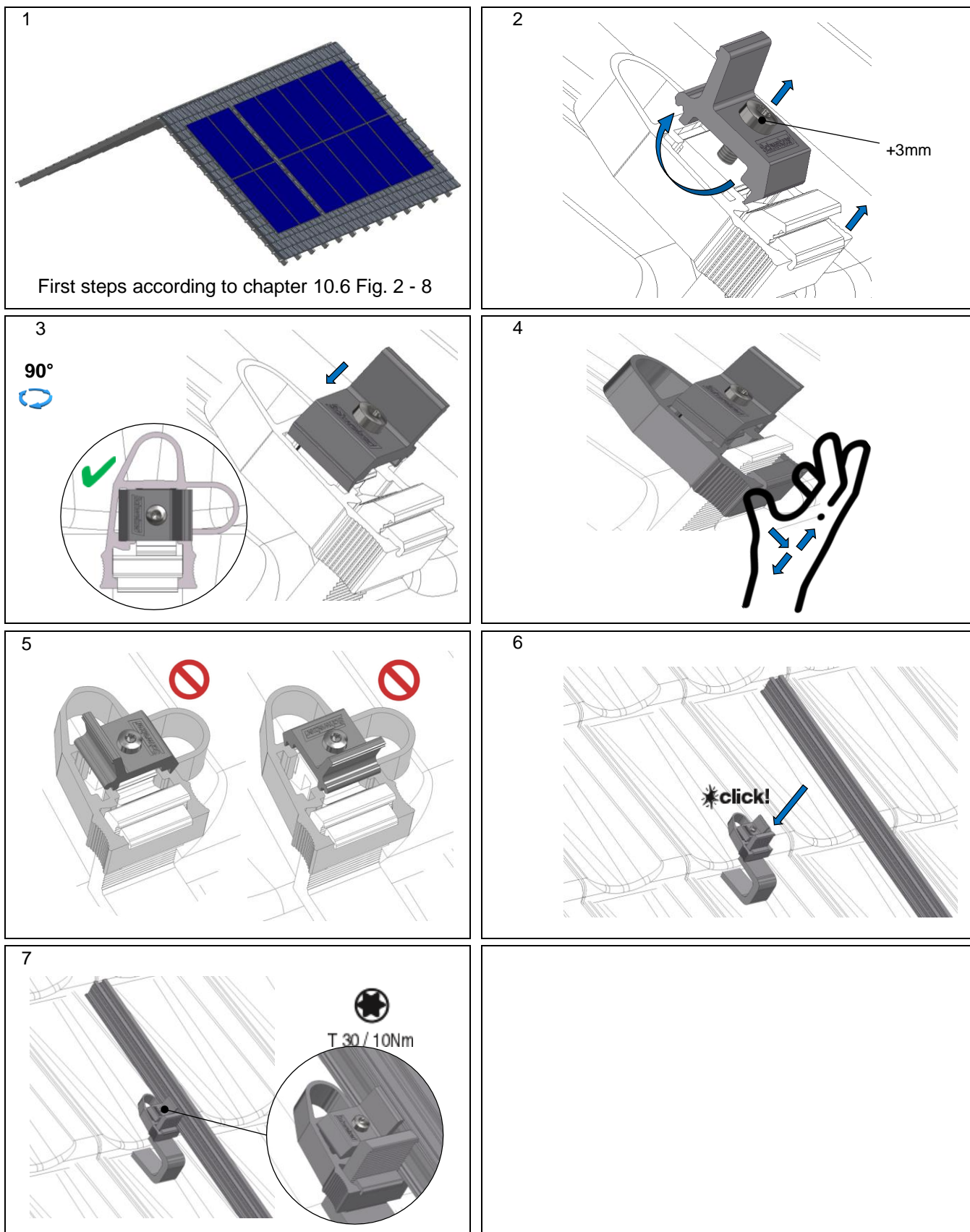
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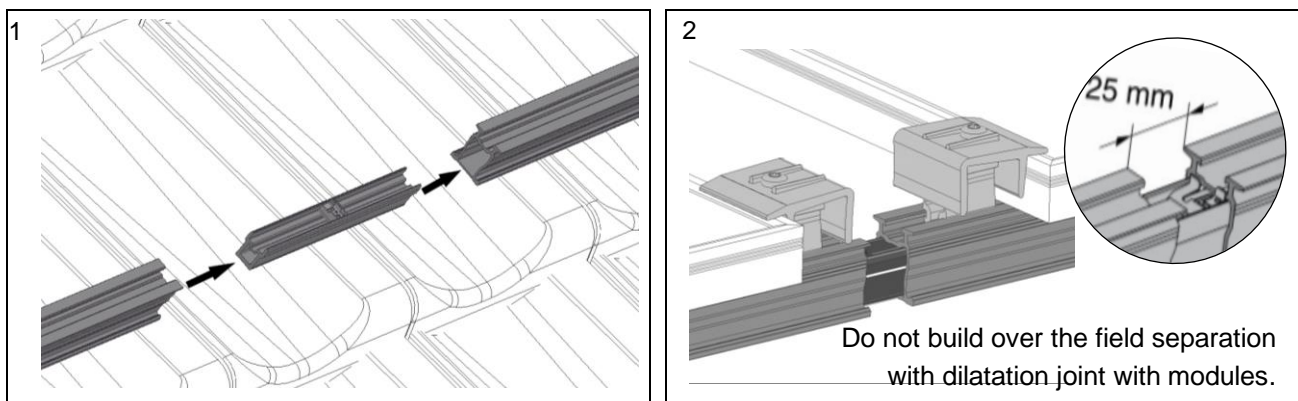
Pitched roof with roof hook MSP-PR-RHM (Roof Hook Multitool)



10.7 Vertically orientated support profile



10.8 Dilatation joint



10.9 Cross-connection option with MSP-PR-CC (visualisation with MSP-PR-RHA)

