Solar systems of Schweizer: Installation Manual - PV mounting system for pitched roofs MSP-PR Inlay.



Legend to the installation manual



0

Please note additional information

Attention: pay attention to the detail



Shows correct execution Shows faulty execution

#click!



Audible clicking



T 30 / 10Nm

Direction of movement of the part when correctly assembled Tool / required torque



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Standards and technical guidelines

The PV mounting system for pitched roofs MSP-PR Inlay by Schweizer complies with the following standards, among others:

- EN 1090-1 Requirements for conformity assessment for structural components
- EN 1090-3 Technical requirements for the execution of aluminium structures
- EN 1990 Eurocode fundamentals of structural engineering
- SIA 261 Actions on structures

Correct use according to the intended purpose

The PV mounting system MSP-PR Inlay is suitable for mounting photovoltaic modules on pitched roofs. It is an inlay system and is based on the PV pitched roof MSP-PR mounting system. The main difference consists in the mounting and fastening of the PV modules.

Any other use is not considered as in keeping with the intended purpose.

Proper use also includes compliance with the information in these installation instructions.

The notes contained in the configuration documentation must be observed.

Schweizer admits no liability for damage resulting from non-observance of the installation manual, in particular the safety instructions, or from misuse of the product.

Responsibility of the customer and the installer

The operator of the system has the following safety-related obligations:

- Ensure that all relevant accident prevention and occupational safety regulations are complied with.
- Ensure that the installation of the mounting system is only carried out by qualified persons.
- Ensure that the persons instructed to carry out the work are able to assess the work assigned to them and recognise possible dangers.
- Ensure that the workers are familiar with the system parts.
- Make sure that the assembly instructions are available during installation. The installation instructions are an integral part of the product.
- Ensure that the installation instructions, and in particular the safety instructions, have been read and understood by the personnel commissioned to do the work before installation.
- Ensure that the local operating conditions are observed. Schweizer admits no liability for damages resulting from any breach of these conditions.
- Ensure that the installation is carried out in accordance with the assembly instructions and that the necessary tool is available.
- Ensure that the durability of the mounted connections and the correct fixing of the mounting system are guaranteed.
- Ensure that suitable lifting gear is used for the installation.
- Ensure that visibly damaged components are not used.
- Ensure that in the event of replacement only Schweizer components or original spare parts of a suitable quality. Otherwise any warranty claim will be void.
- Ensure that there is no impairment of the function of the roof or roof covering (e.g. mechanical load capacity, static properties or insulation against precipitation).
- Ensure that all local regulations, including those concerning grounding and equipotential bonding, are checked and observed.



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Basic safety instructions

The following basic safety instructions and warnings are an integral part of these installation instructions and are of fundamental importance for handling the product:

- Wear work clothing in accordance with national regulations.
- Observe the applicable health and safety regulations.
- Ensure that all electrical work is only carried out by a qualified electrician. Observe all relevant regulations.
- The presence of a second person who can provide assistance in the event of an accident is mandatory for the entire mounting process.
- Keep a copy of this installation manual within easy reach in the immediate vicinity of the system and make it available to the fitters.
- 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.

Operating conditions

The conditions of use are defined in the technical opinion.

The PV mounting system MSP-PR Inlay by Schweizer is designed to withstand normal wind and snow loads. It is intended for the following applications:

- Framed photovoltaic modules
- Roof covering: standard interlocking tiles or roofing tiles
- Roof structure: the possible roof pitch and rafter spacing depend on the load (snow, wind and module weight)
- Load combination: the possible load (snow and wind) depends on the roof structure (roof pitch and rafter distance)

Preparations for mounting

- Before the planned installation, check the suitability of the roof for the installation of MSP-PR Inlay. The roof structure at the planned location must be suitable for fastening the solar mounting system. In particular, the roof construction must be able to absorb the forces occurring at the fastening points. The suitability of the roof structure must be checked by the customer on site in relation to each project. The limiting conditions and static assumptions must be checked on site by the customer.
- 2. Check the roof for damage. Clarify possible damages and their repair before installation.
- 3. Check that the plans (including assumptions relating to loads) correspond to the conditions on site. If there is any deviation from the defined conditions of use, please contact Schweizer's service department before using the MSP-PR Inlay mounting system.
- 4. Cut the support profiles and inlay profiles to size according to the cutting list.
- 5. Observe the information in relation to the mounting system layout and ensure that there are sufficient fastening points.
- 6. Determine the concrete position of the roof hooks in the direction of the rafters and battens, so that the number of roof hooks per module does not fall below the required number according to the specifications in the technical opinion (create an installation plan if necessary).



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Vertical sectional views





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Horizontal sectional views





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Parts assortment



MSP-PR-BP 39 mm MSP-PR-BP 45 mm



MSP-PR-SP 10mm



MSP-PR-HS 8x100 A2 MSP-PR-HS 8x120 A2



MSP-PR-RHC



MSP-PR-CH 3.3 m MSP-PR-CH 6.3 m



MSP-PR-SL







MSP-PR-IC 35 3.3m MSP-PR-IC 40 3.3 m



MSP-PR-ICB 35 3.3m MSP-PR-ICB 40 3.3m MSP-PR-ICB 40 6.3 m



MSP-PR-IS







MSP-PR-ESB



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Mounting steps for MSP-PR Inlay

MSP configuration documentation

For documentation purposes, a technical opinion, parts list, profile cutting list and notes on the assembly system structure are provided. It must be ensured that these documents, as well as the installation instructions for the pitched roof MSP-PR PV mounting system, are available on the construction site and that those who are commissioned to carry out the work are completely familiar with the assembly arrangement.

Fig. 1 to 5B: For mounting the roof hooks see the MSP-PR installation manual



Fig. 6A and 6B:

Position the support profiles (MSP-PR-CH) on the roof hooks, snap into the clamps of the roof hook and align them at right angles to the ridge or parallel to each other. Adjust the uniform projections of the beam ends at the top and bottom of the top and bottom roof hooks respectively, in such a way that the maximum vertical projections of the module array are not exceeded (see vertical sectional views). Screw the roof hook clamps with 10 Nm torque.

Note: The support profile (MSP-PR-CH) comes in two lengths.

Fig. 7A and 7B:

To extend the profile, push the rail connector (MSP-PR-SL) into the support profile (MSP-PR-CH) until the spring engages. Then push the next support profile onto the rail connector. For further information, refer to the MSP-PR-SL package insert (MSP-PR Pitched Roof Mounting System).

Fig. 8A and 8B:

Click the cross connectors (MSP-PR-CC) onto the support profiles (MSP-PR-CH) at the positions where the insert profiles (MSP-PR-IC) are to be attached in the following step.



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Fig. 9A and 9B:

Lay the insert profiles (MSP-PR-IC) of the lowest profile row on the lower end of the support profiles (MSP-PR-CH), click into the corresponding cross connectors (MSP-PR-CC) and align them at right angles to the support profiles. Ensure that the profile webs are correctly aligned (see Fig. 9A) and that the maximum horizontal projection (see horizontal sectional views) of the module array or insert profile has been observed. Screw the cross connectors with 10 Nm torque.

Note: Generally speaking the cross connectors can be mounted both above and below the insert profile. For aesthetic reasons, the lowest row of cross connectors should be above the insert profile.

Fig. 9C and 9D:

Place the insert profiles (MSP-PR-IC) of the second profile row on the support profiles (MSP-PR-CH), snap into the correct cross-connectors (MSP-PR-CC) and adjust the horizontal projections in the same way as for the bottom profile row. Ensure that the profile webs are correctly aligned (see Fig. 9C) and then align them exactly at the distance shown (inside dimensions) in relation to the profile below (Fig. 9D)! The use of a mounting aid is recommended. Screw the cross connectors with 10 Nm torque.

Install the insert profiles of all other profile rows in the same way.

Note: See notes to Fig. 9A and 9B

Fig. 10A and 10B:

The extension of the insert profiles (MSP-PR-IC) is basically the same as that of the support profiles (MSP-PR-CH). Follow the installation steps in Figs. 7A and 7B and Figs. 1 to 3 of the MSP-PR-SL package insert (MSP-PR Mounting System for Pitched Roofs).



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Fig. 11A and 11B:

Step 1: First of all slide the module upwards into the insert profile at its upper edge. Step 2: Then lower the bottom edge of the module onto the insert profile below. Now push the module down into the insert profile as far as it will go. Check whether the module is correctly positioned between the insert profiles. Push the first inserted module of a module row flush to the edge of the insert profile (Fig. 11B).

Fig. 12A to 12B:

When using sunk keys (MSP-PR-IS), insert them at the upper edge of the module between all adjacent modules.

Fig. 13:

Insert the next module of each row and push it up to the previously inserted module. Leave an air gap of 6 mm between the modules if you are using sunk keys (MSP-PR-IS) or 2 mm if you are installing without sunk keys.

The last inserted module in a row should be flush with the end of an insert profile row.

Fig. 14:

Fasten the end terminations (MSP-PR-ES) at the ends of all insert profile rows using the screws (MSP-FR-S M6x16) with 5Nm torque.



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