

Vitosol-F/-FM
Type SVK, SVKF

Flat-plate collector for pitched roofs, above roof installation for 1 collector



VITOSOL-F/-FM



Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained



Please note

This symbol warns against the risk of material losses and environmental pollution.

Note

Details identified by the word "Note" contain additional information.

Target group

These instructions are exclusively intended for authorised contractors.

- Work on electrical equipment must only be carried out by a qualified electrician.

Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for the protection of the environment
- Codes of practice of the relevant trade associations
- All relevant safety regulations as defined by DIN, EN, DVGW, VDE and locally applicable standards
 - Ⓐ ÖNORM, EN and ÖVE
 - ⒸH SEV, SUVA, SVTI, SWKI and SVGW

Working on the system

- Isolate the system from the power supply (e.g. by removing the separate fuse or by means of a mains isolator) and check that it is no longer 'live'.
- Safeguard the system against reconnection.

| | | |
|---------------------------------|--|----|
| 1. Information | Disposal of packaging | 4 |
| | Symbols | 4 |
| | Intended use | 5 |
| 2. Installation sequence | Installation with rafter hooks | 6 |
| | ■ Components | 6 |
| | ■ Fitting the rafter hooks | 6 |
| | ■ Fitting the mounting rails | 9 |
| | Installation with rafter flange | 9 |
| | ■ Components | 9 |
| | ■ Fitting the rafter flange | 10 |
| | ■ Fitting the mounting rails | 11 |
| | Installation with roof hooks | 12 |
| | ■ Components | 12 |
| | ■ Fitting the roof hooks | 13 |
| | ■ Fitting the mounting rails | 16 |
| | Installation with mounting brackets | 16 |
| | ■ Components | 16 |
| | ■ Fitting the mounting brackets | 17 |
| | ■ Fitting the mounting rails | 18 |
| | Installation with rafter anchors | 18 |
| | ■ Components | 18 |
| | ■ Fitting the rafter hooks | 19 |
| | ■ Fitting the mounting rails | 22 |
| | Installing and connecting the collectors | 22 |
| | Fitting the collector temperature sensor | 24 |
| | Covering the collector array | 25 |
| 3. Installation | | 27 |
| 4. Commissioning | | 29 |

Disposal of packaging

Disposal of packaging










Please dispose of packaging waste in line with statutory regulations.

DE: Use the disposal system organised by Viessmann.

AT: Use the ARA statutory disposal system (Altstoff Recycling Austria AG, licence number 5766).

CH: Packaging waste is disposed of by the HVAC contractor.

Symbols

| Symbol | Meaning |
|---|--|
|  | Reference to other document containing further information |
|  | Step in a diagram: The numbers correspond to the order in which the steps are carried out. |
|  | Warning of material losses and environmental pollution |
|  | Live electrical area |
|  | Pay particular attention. |
|  | <ul style="list-style-type: none"> ▪ Component must audibly click into place. or ▪ Acoustic signal |
|  | <ul style="list-style-type: none"> ▪ Fit new component. or ▪ In conjunction with a tool: Clean the surface. |
|  | Dispose of component correctly. |
|  | Dispose of component at a suitable collection point. Do not dispose of component in domestic waste. |

Intended use

The appliance is only intended to be installed and operated in sealed unvented systems that comply with EN 12828 / DIN 1988, or solar thermal systems that comply with EN 12977, with due attention paid to the associated installation, service and operating instructions. DHW cylinders are only designed to store and heat water of potable water quality. Heating water buffer cylinders are only designed to hold fill water of potable water quality. Only operate solar collectors with the heat transfer medium approved by the manufacturer.

Intended use presupposes that a fixed installation in conjunction with permissible, system-specific components has been carried out.

Commercial or industrial usage for a purpose other than heating the building or DHW shall be deemed inappropriate.

Any usage beyond this must be approved by the manufacturer for the individual case.

Incorrect usage or operation of the appliance (e.g. the appliance being opened by the system user) is prohibited and results in an exclusion of liability.

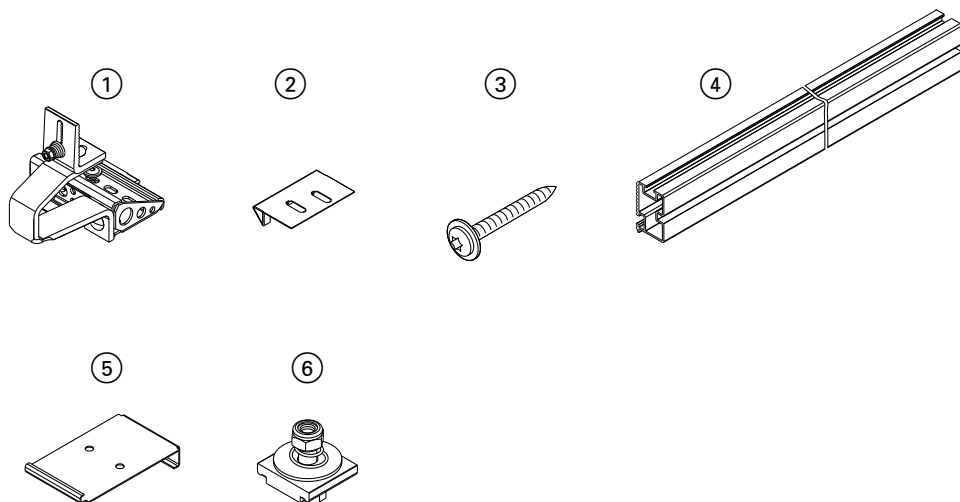
Incorrect usage also occurs if the components in the system are modified from their intended use (e.g. through direct DHW heating in the collector).

Adhere to statutory regulations, especially concerning the hygiene of potable water.

Installation with rafter hooks

For **tiled** roof cover

Components



- ① Rafter hook
- ② Support bracket
- ③ Screws

- ④ Mounting rail
- ⑤ Mounting plate
- ⑥ Clamping bracket

Fitting the rafter hooks

2 adjacent rafters are used to fit the rafter hooks.

- **Version I:**
Fitting rafter hook ① onto counter batten ③ with support bracket ②
- **Version II:**
Fitting rafter hook ① directly onto rafter ③
- Trim the roof tiles with an angle grinder, for example by removing drip tabs.

Installation with rafter hooks (cont.)

- ! Please note**
Take care to avoid breaking tiles.
The rafter hook must **not** rest on the roof tiles.
Observe the dimensions.

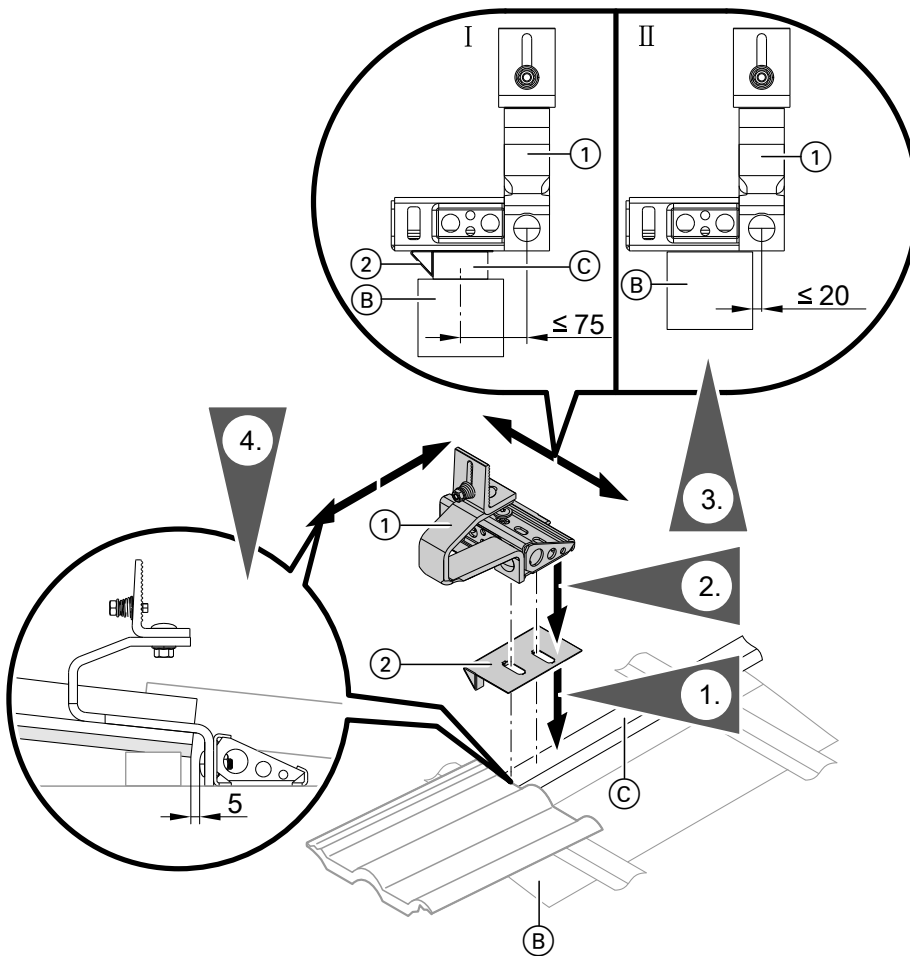


Fig. 2

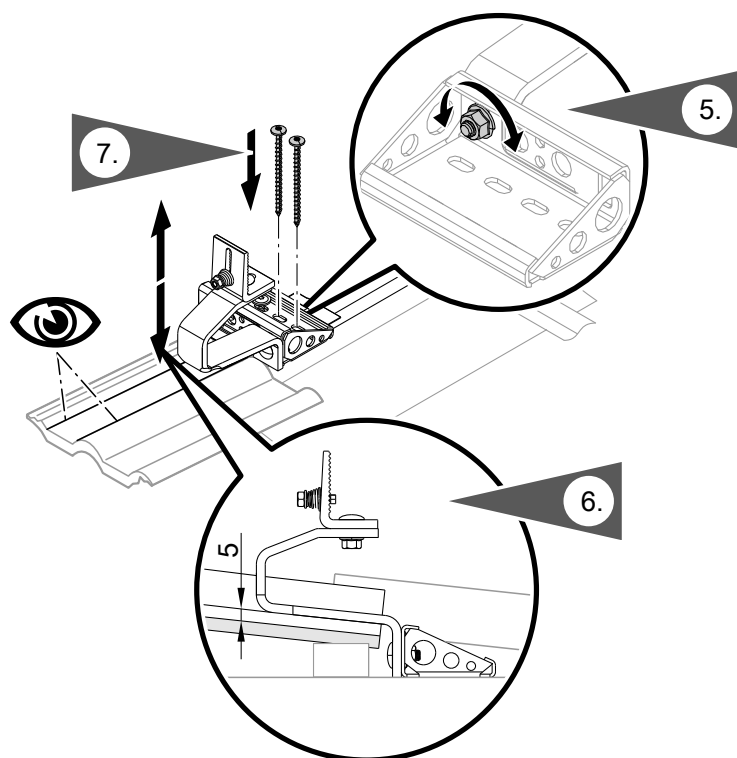


Fig. 3

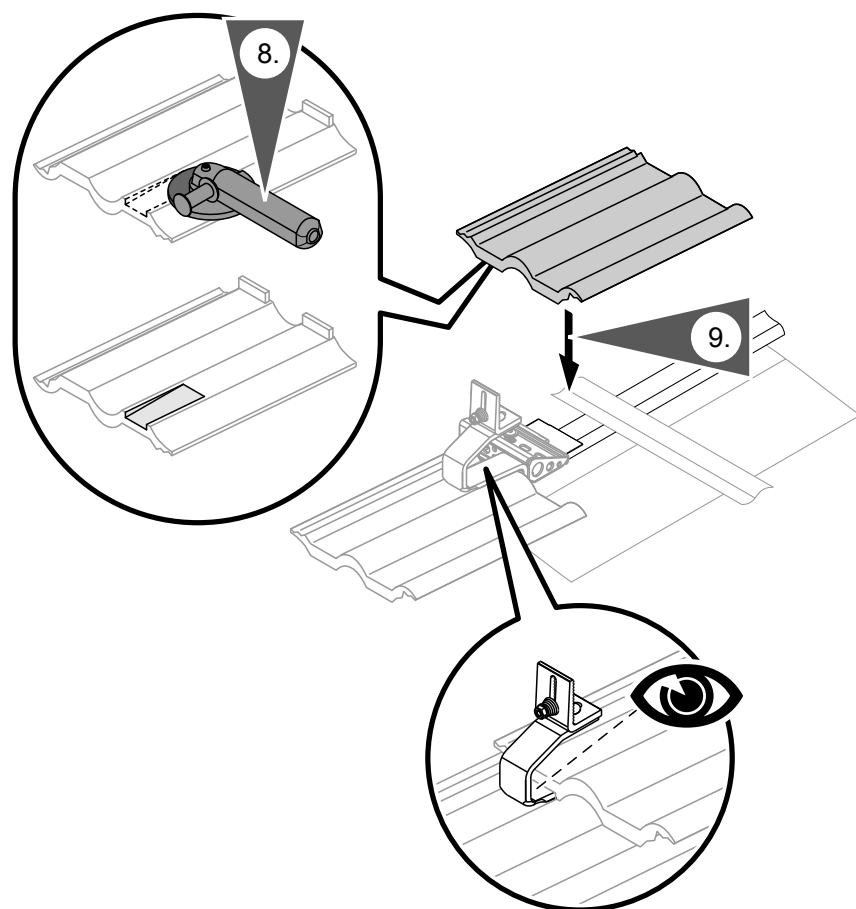


Fig. 4

Installation with rafter hooks (cont.)

Fitting the mounting rails

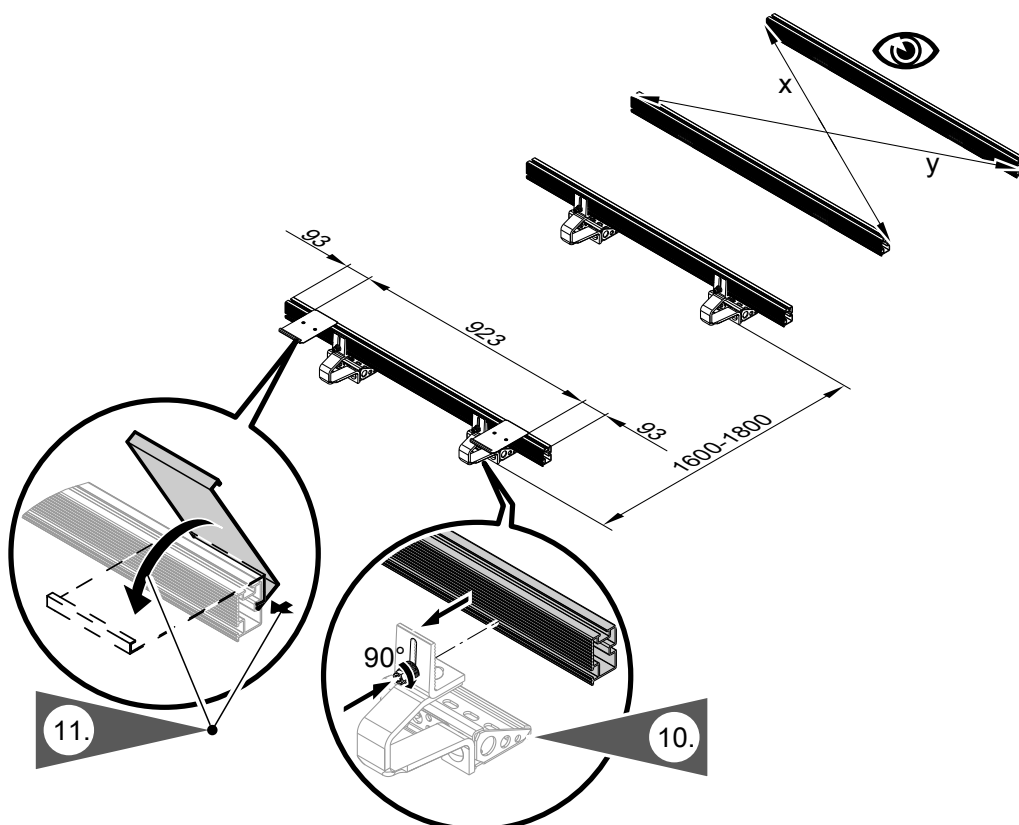


Fig. 5 Maximum deviation from dimensions x and y 10 mm

Continue with chapter "Installing and connecting the collectors" on page 22.

Installation with rafter flange

For **plain tiled** and **slate** roofs

Components

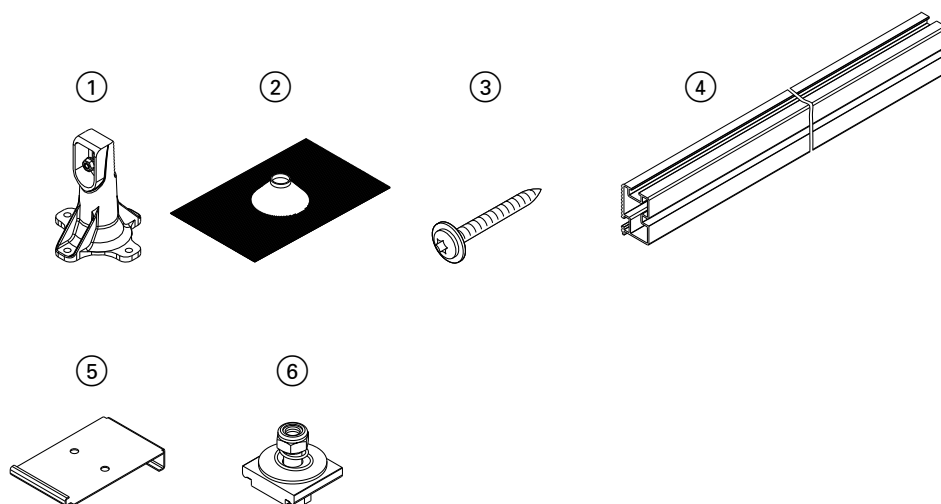


Fig. 6

Installation with rafter flange (cont.)

- | | |
|-----------------|--------------------|
| ① Rafter flange | ④ Mounting rail |
| ② Seal | ⑤ Mounting plate |
| ③ Screws | ⑥ Clamping bracket |

Fitting the rafter flange

2 adjacent rafters are used to fit the rafter flanges.

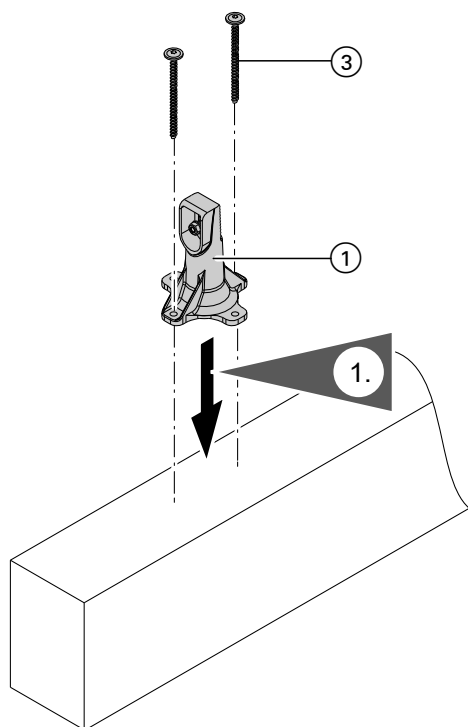


Fig. 7

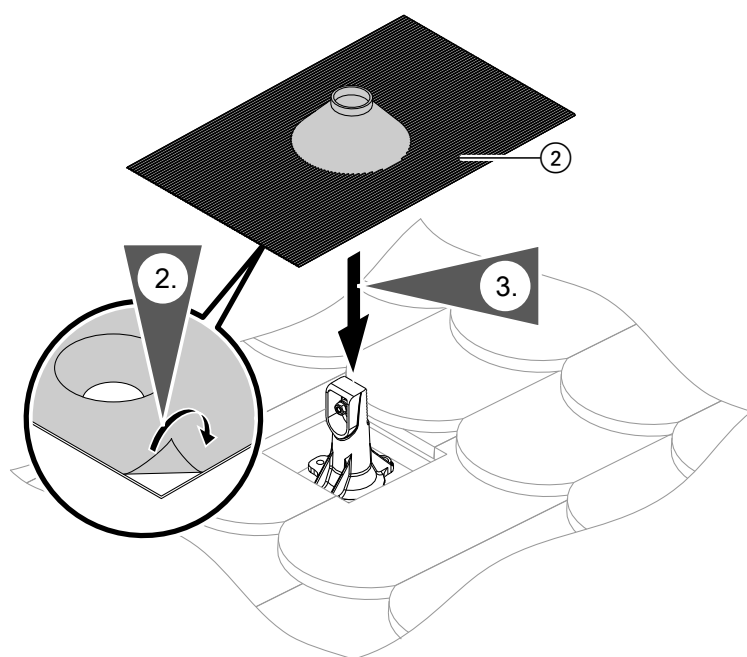


Fig. 8

Fitting the mounting rails

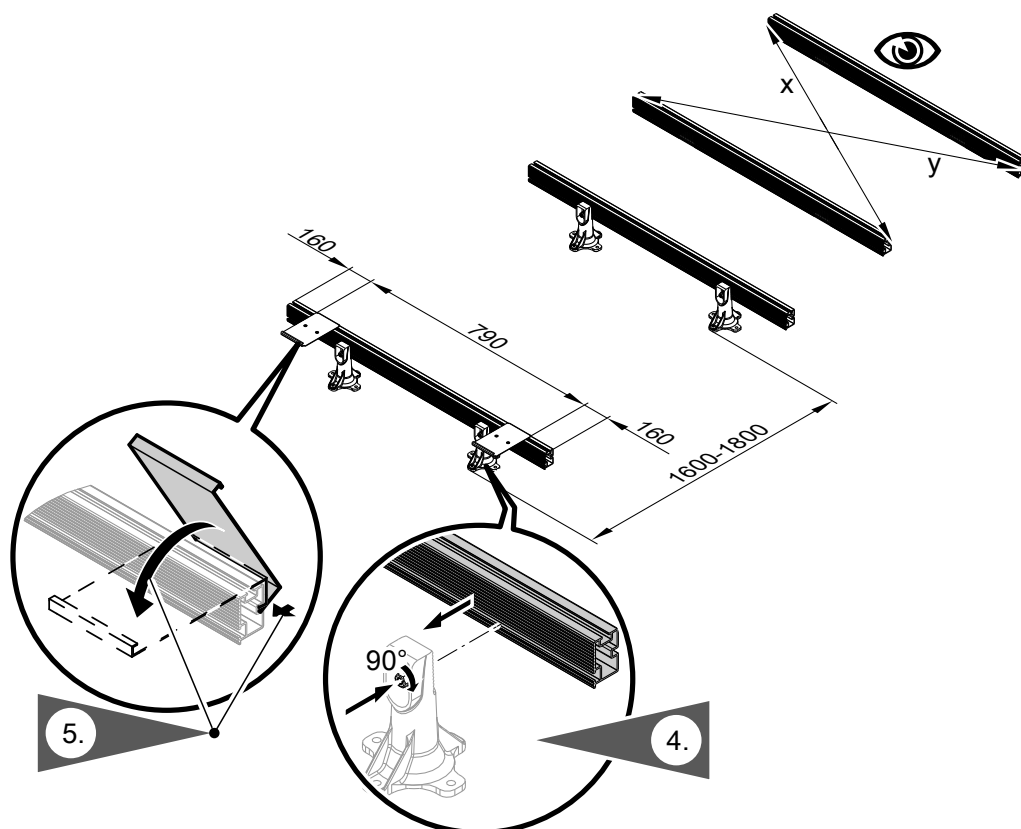


Fig. 9 Maximum deviation from dimensions x and y 10 mm

Continue with chapter "Installing and connecting the collectors" on page 22.

Installation with roof hooks

For tiled, plain tiled, slate and corrugated sheet roof covers

Components

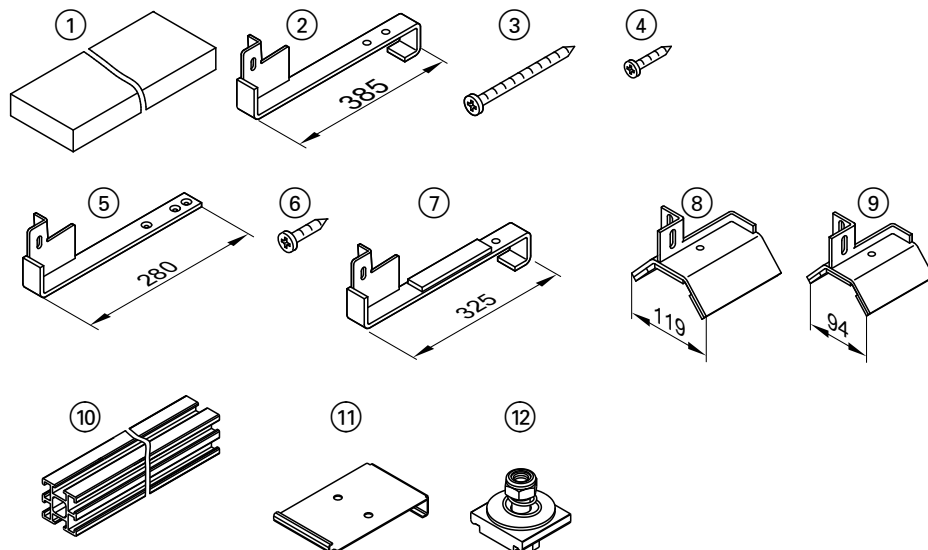


Fig. 10

- | | |
|--|--|
| ① Timber | ⑥ Zinc-plated countersunk chipboard screw (Spax-S) |
| ■ 38 x 58 x 2430/1570 mm | 6 x 30 mm |
| ■ 30 x 100 x 2430/1570 mm | ⑦ Roof hook for plain tile roofs |
| ② Roof hook for tiled roof cover | ⑧ Roof hook for corrugated sheet profiles 5 and 6 |
| ③ Zinc-plated countersunk chipboard screw (Spax-S) | ⑨ Roof hook for corrugated sheet profile 8 |
| 6 x 80 mm | ⑩ Mounting rail |
| ④ Zinc-plated countersunk chipboard screw (Spax-S) | ⑪ Mounting plate |
| 5 x 30 mm | ⑫ Clamping bracket |
| ⑤ Roof hook for slate roofs | |

Fitting the roof hooks

Tiled roof cover

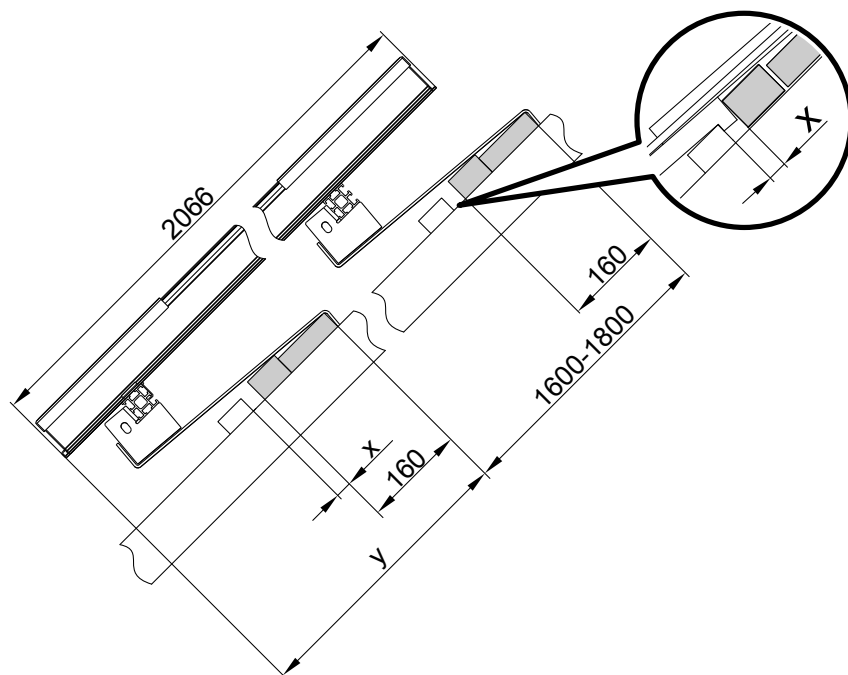


Fig. 11 *x* according to the width of the tile head. *y* = 440 mm

Dimensions for horizontal fitting of roof hooks, see page 16.

Example: plain tiled roof

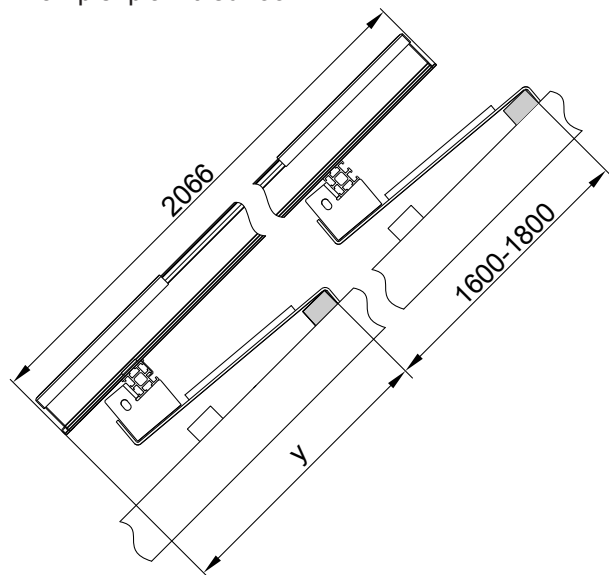


Fig. 12

Dimensions for horizontal fitting of roof hooks, see page 16.

| Roof cover | y in mm |
|-------------------|---------|
| Slate | 348 |
| Plain tile | 380 |
| Corrugated sheets | 207 |

Tiled roof cover

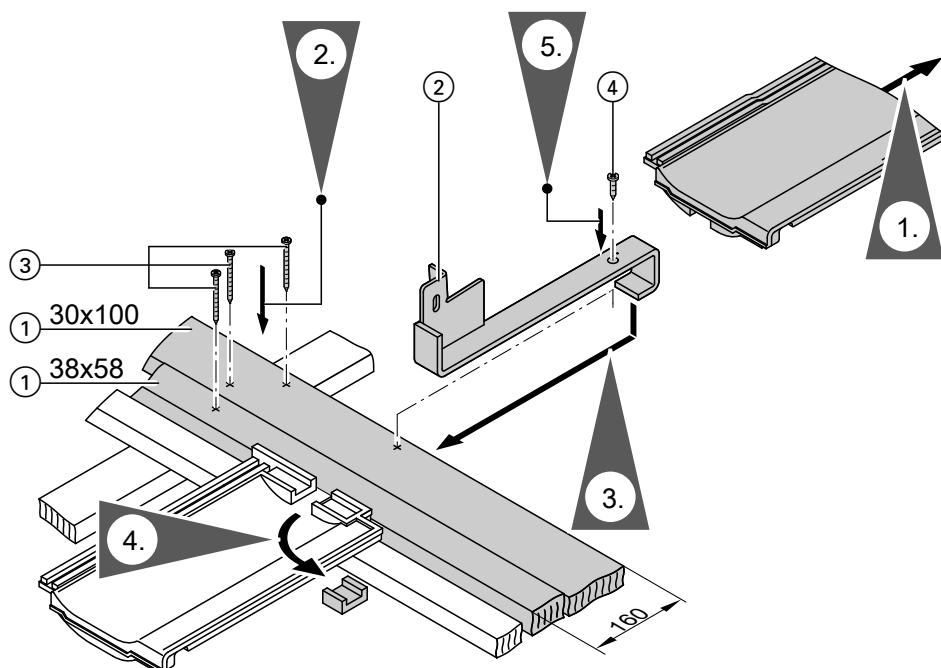


Fig. 13

Continue with "Fitting the mounting rails" on page 16.

Slate roof cover

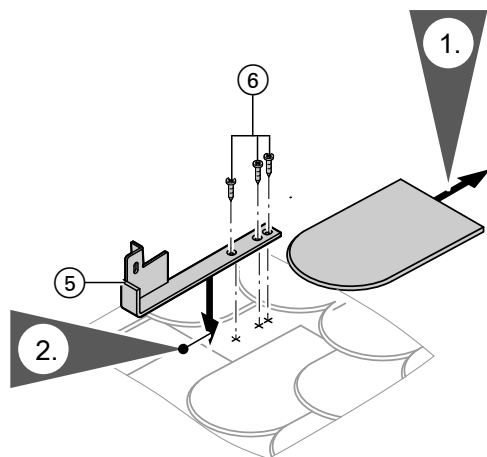


Fig. 14

Note

Fit commercially available lead flashing to protect against the ingress of moisture.

Continue with "Fitting the mounting rails" on page 16.

Plain tiled roof cover

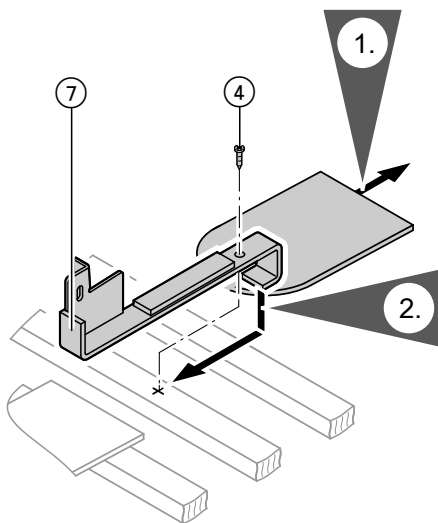


Fig. 15

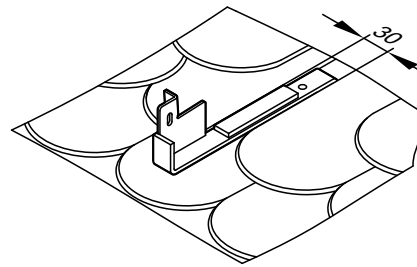


Fig. 16

Note

Trim tiles; cut off approx. 30 mm with an angle grinder.

Continue with chapter "Fitting the mounting rails" on page 16.

Corrugated sheet roof

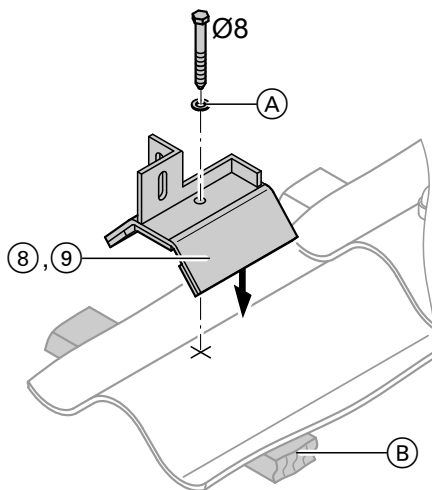


Fig. 17

(A) Sealing washer (on site)

(B) Existing roof batten

Fitting the mounting rails

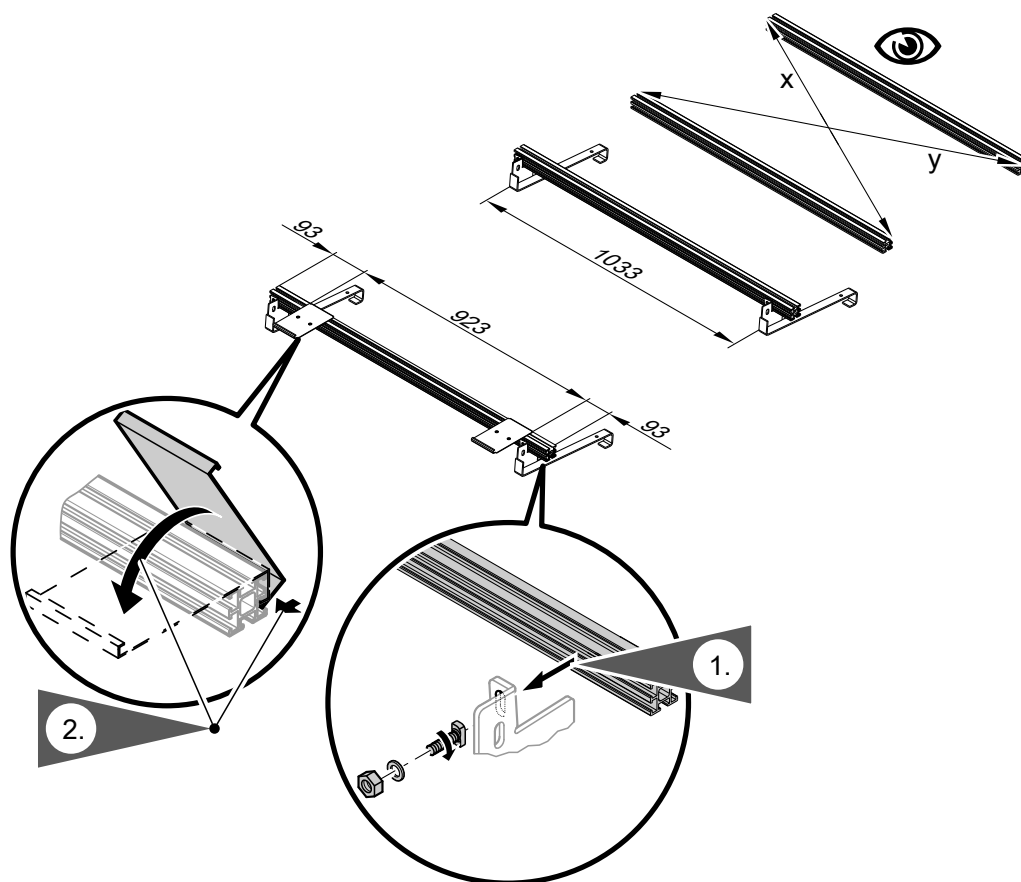


Fig. 18 Maximum deviation from dimensions x and y 10 mm

Continue with chapter "Installing the collectors" on page 22.

Installation with mounting brackets

For sheet metal roofs

Components

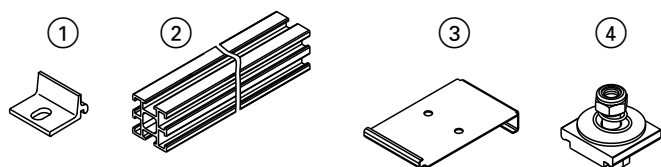


Fig. 19

- ① Mounting bracket
- ② Mounting rail

- ③ Mounting plate
- ④ Clamping bracket

Fitting the mounting brackets

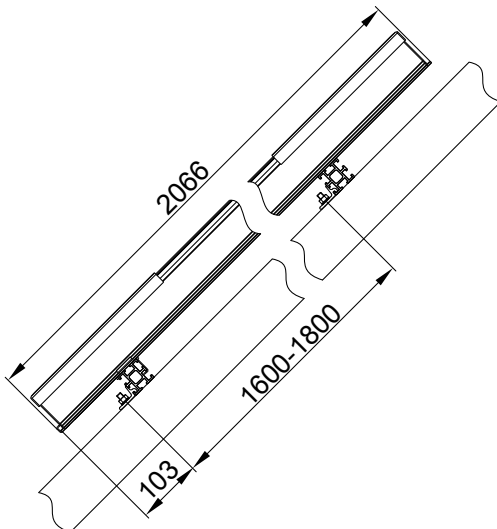


Fig. 20

Dimensions for horizontal fitting of mounting brackets, see page 18.

Use **on-site** fixings (A) to secure the mounting brackets.

The installation of the mounting brackets is shown using standing seam profiles as an example.

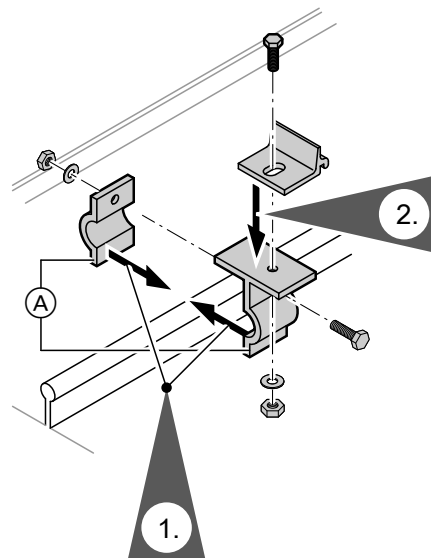


Fig. 21 Screws supplied on site.

Installation with mounting brackets (cont.)

Fitting the mounting rails

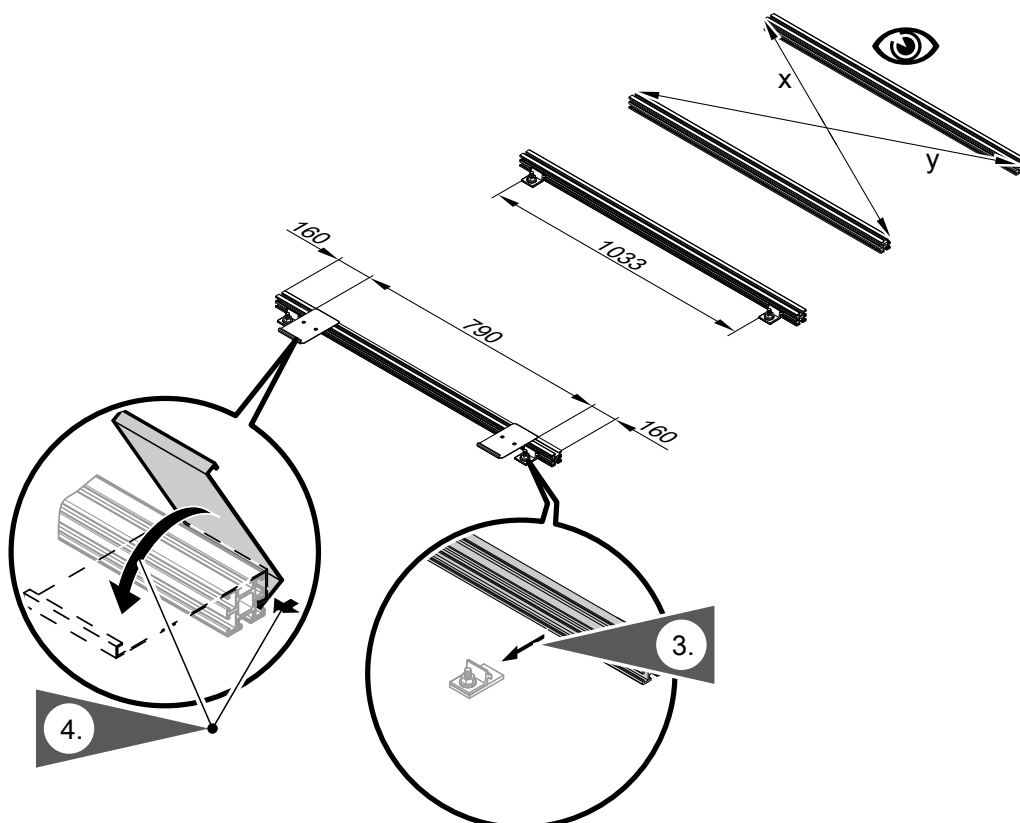


Fig. 22 Maximum deviation from dimensions x and y 10 mm

Installation with rafter anchors

For tiled roof cover

Components

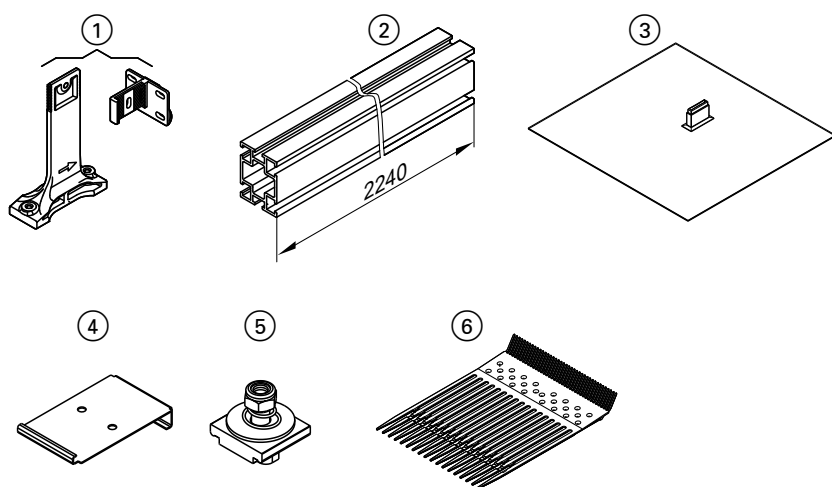


Fig. 23

- ① Rafter anchor
- ② Mounting rail
- ③ Seal

- ④ Mounting plate

Installation with rafter anchors (cont.)

- ⑤ Clamping bracket
 - ⑥ Plastic replacement tile, if the existing tiles are not to be cut.
- Use only on roofs with a pitch of at least 12°.

Fitting the rafter hooks

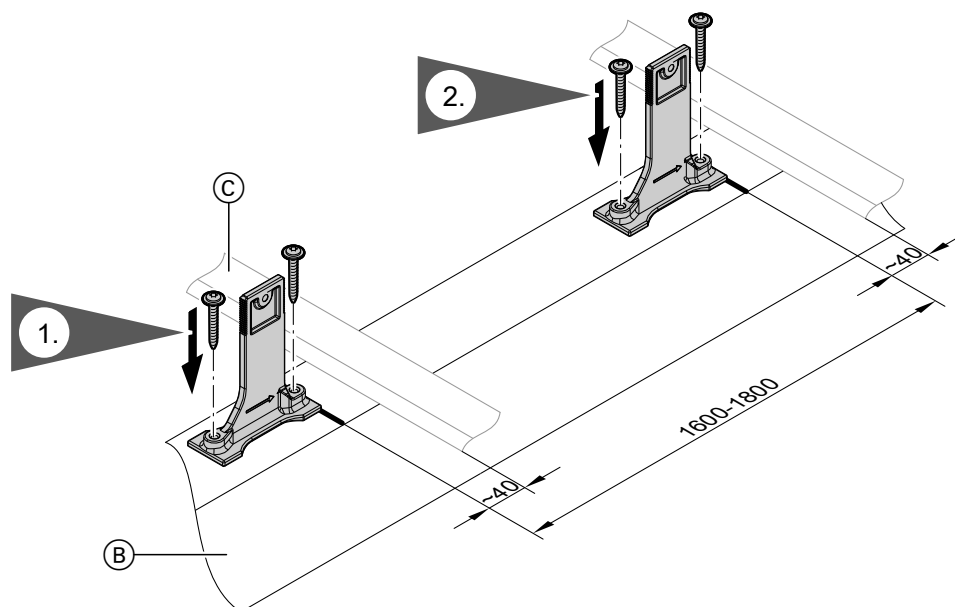


Fig. 24

- ⑥ Rafter
- ⑦ Batten

2 adjacent rafters are used to fit the rafter anchors.

Installation with trimmed tiles

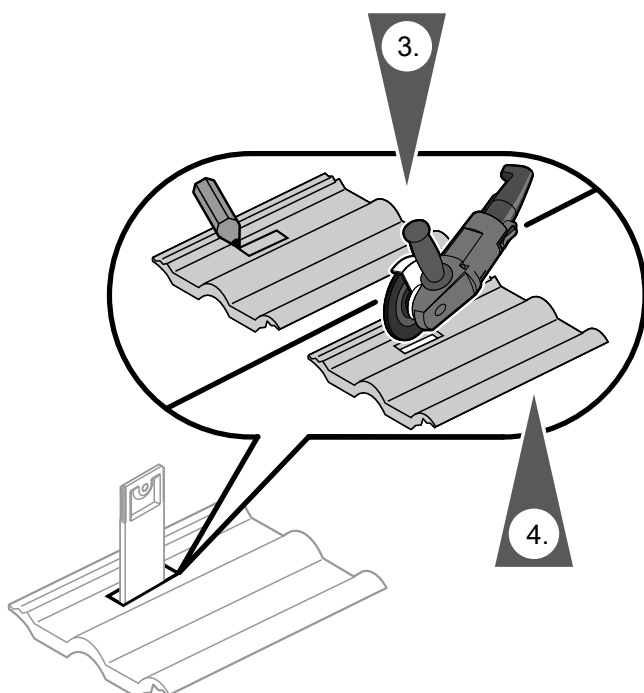


Fig. 25

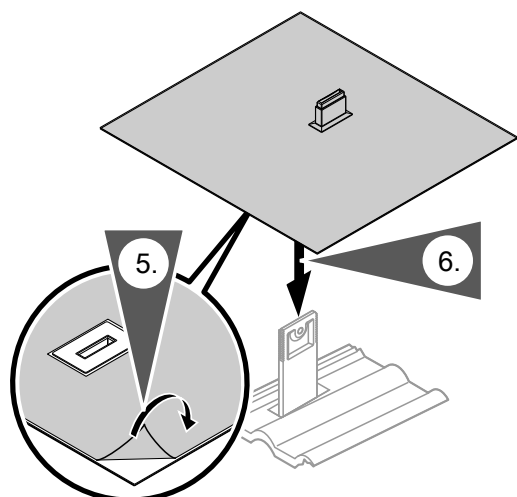


Fig. 26

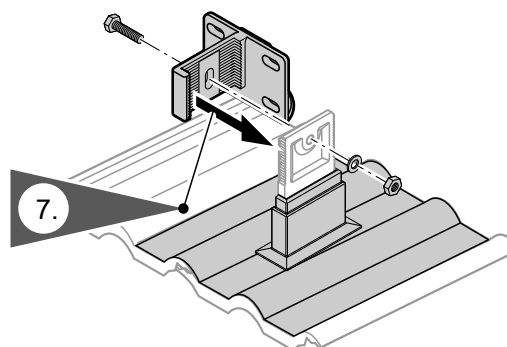


Fig. 27

Continue with step 9 (see page 22)

Installation with plastic replacement tiles

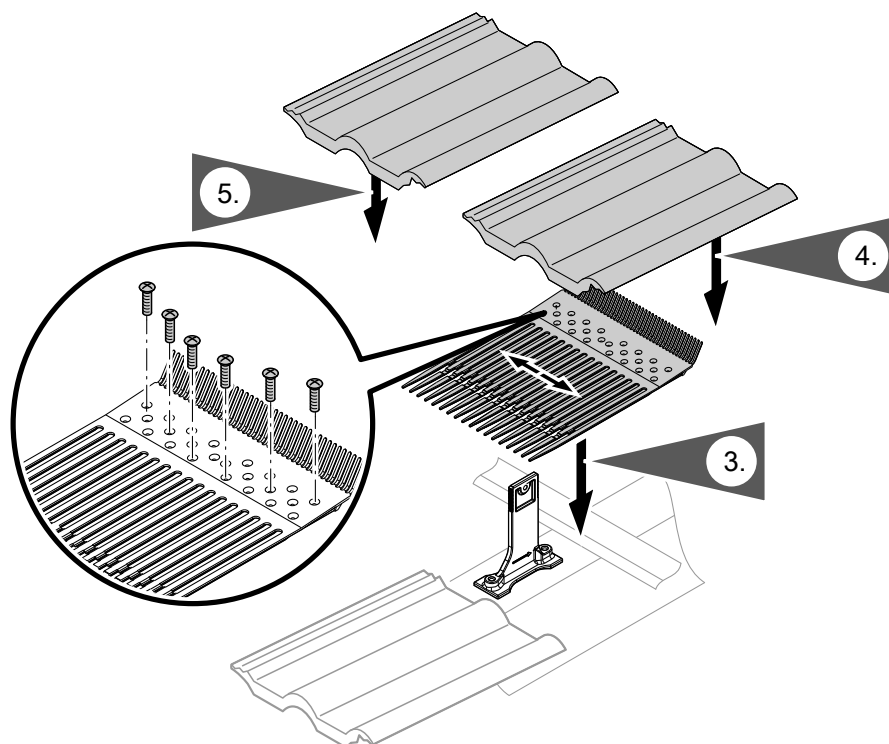


Fig. 28

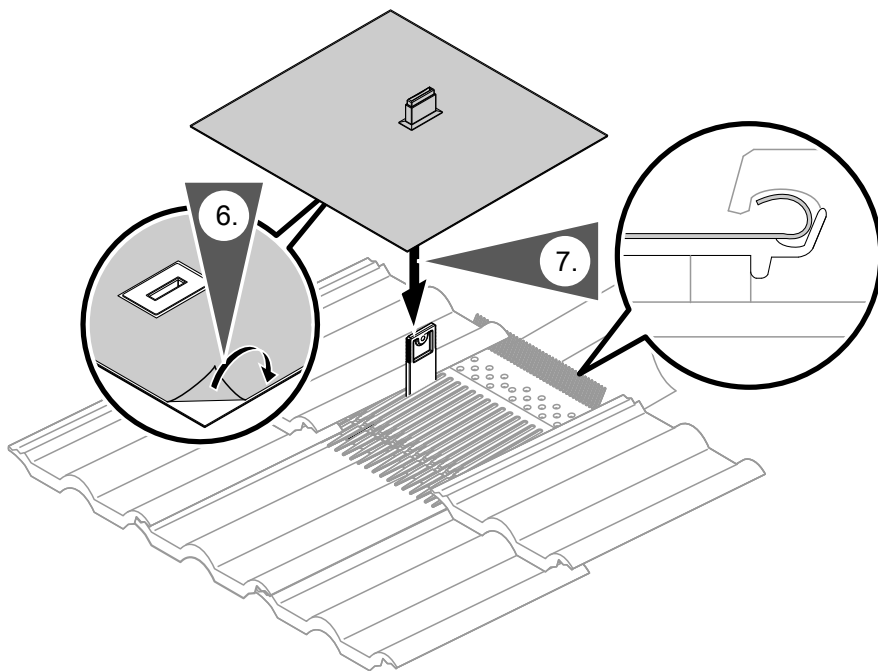


Fig. 29

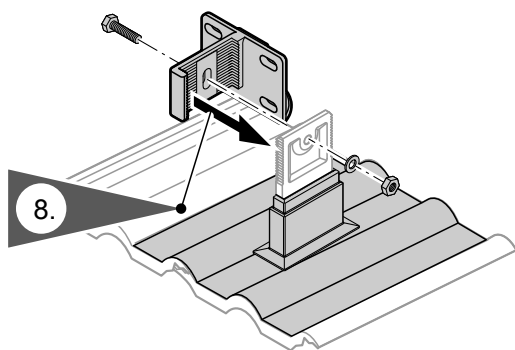


Fig. 30

Fitting the mounting rails

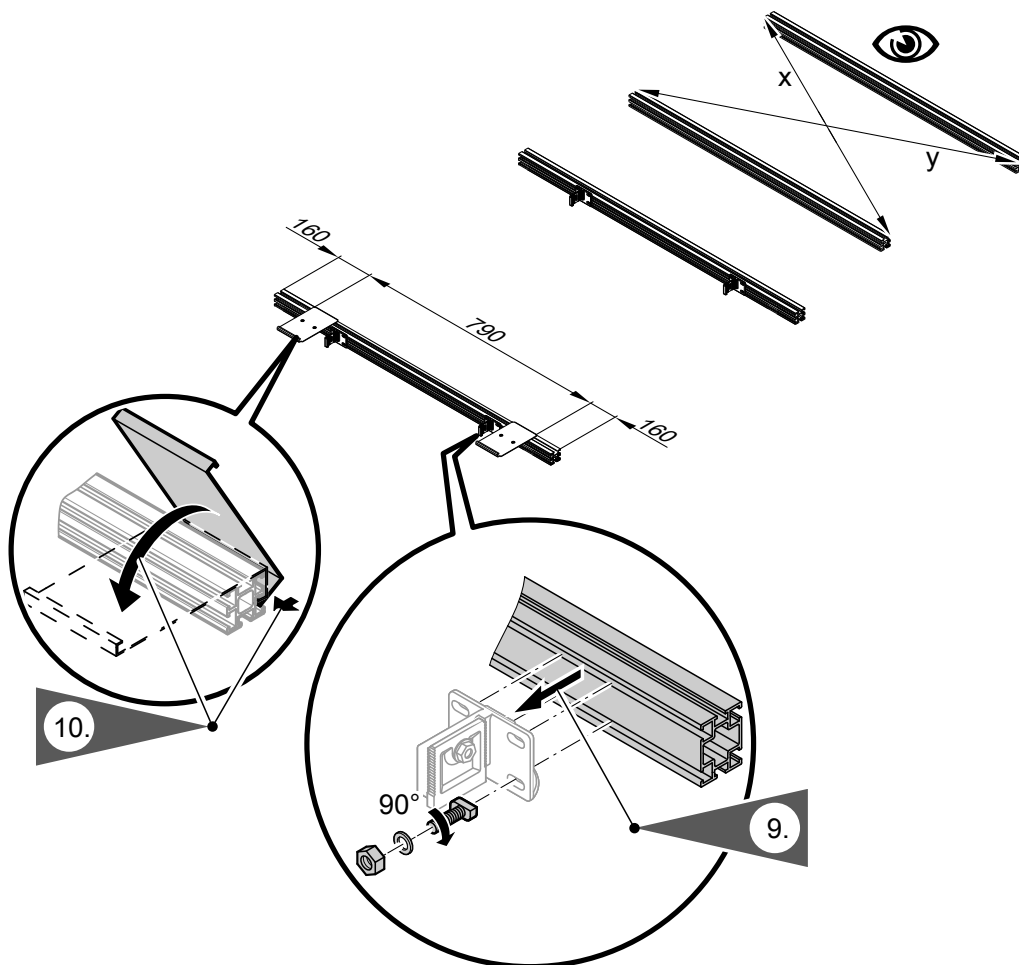


Fig. 31 Maximum deviation from dimensions x and y
10 mm

Installing and connecting the collectors

- ! **Please note**
The connection pipes must not show any signs of damage.
Lubricate O-rings **only** with the special valve grease provided.

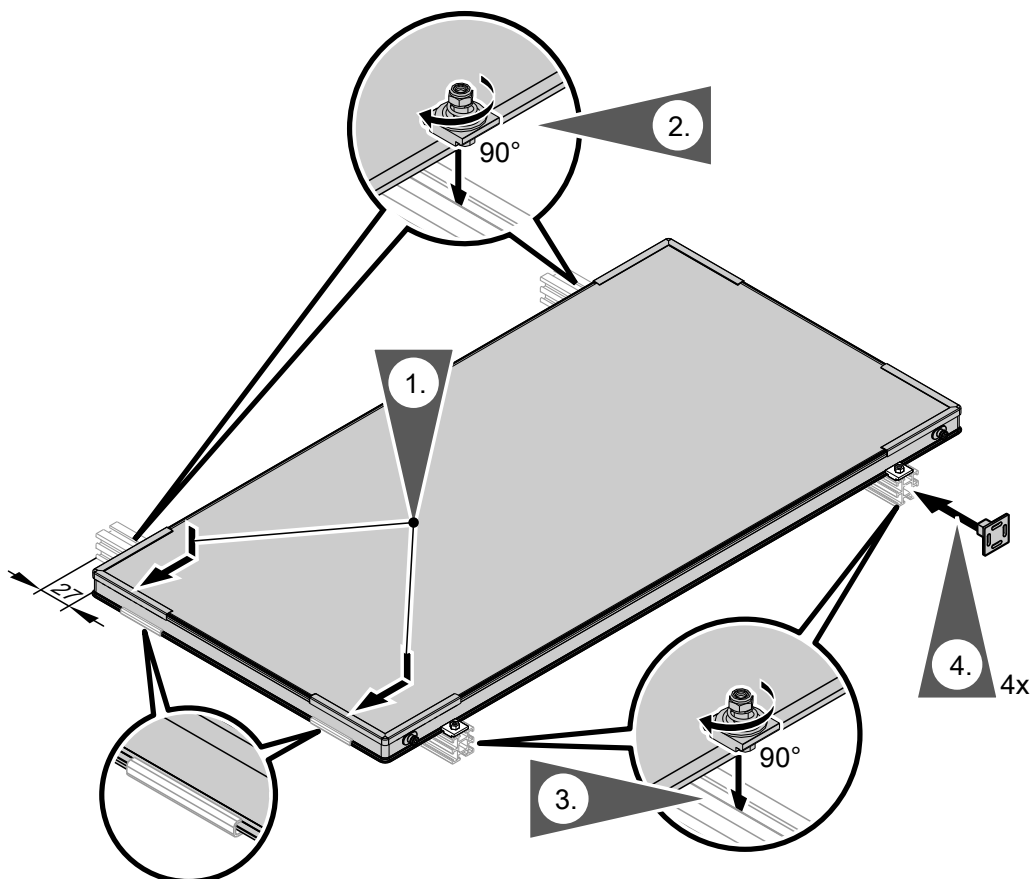


Fig. 32

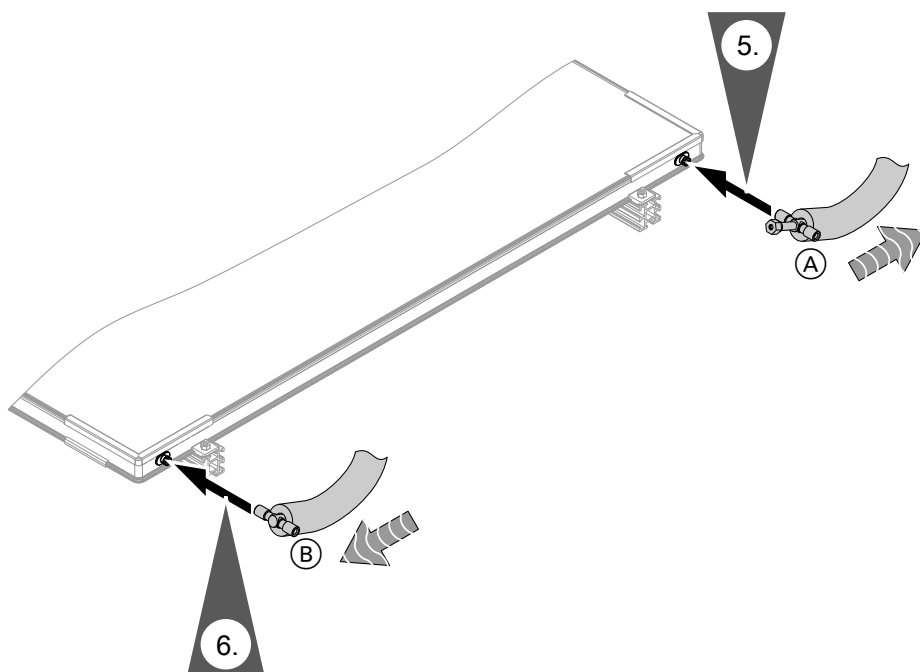


Fig. 33

- (A) Flow connection with sensor well for collector temperature sensor
- (B) Return connection

Installing and connecting the collectors (cont.)

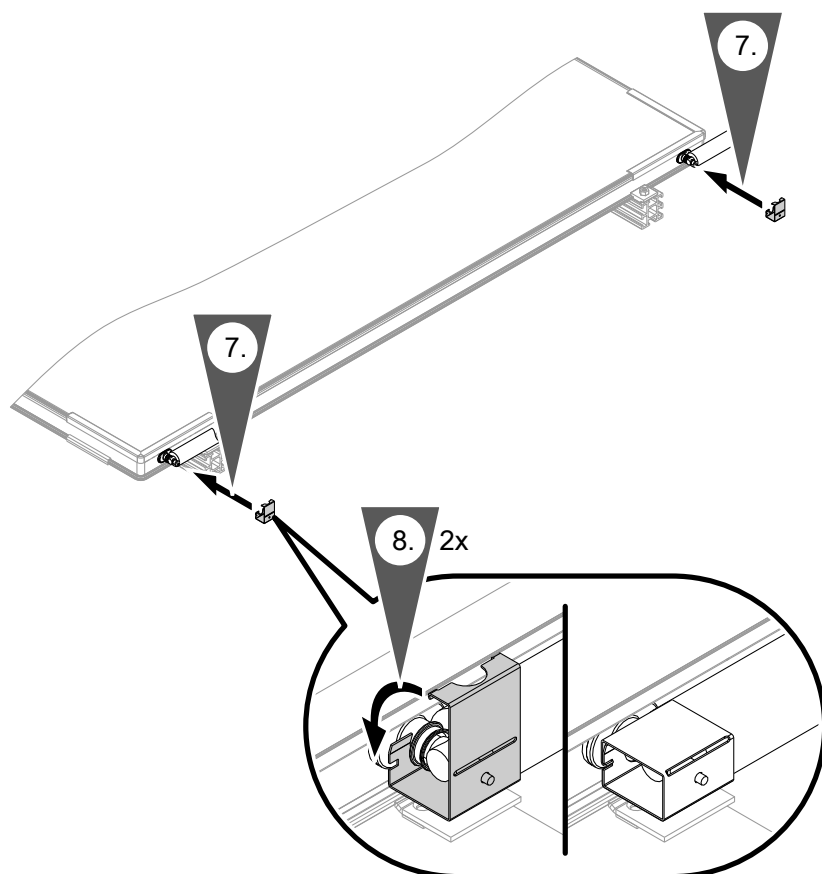


Fig. 34

Fitting the collector temperature sensor

The collector temperature sensor is part of the standard delivery of the collector connection set.

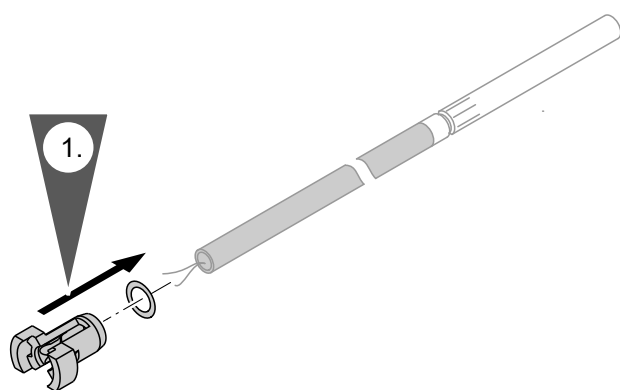


Fig. 35

Fitting the collector temperature sensor (cont.)

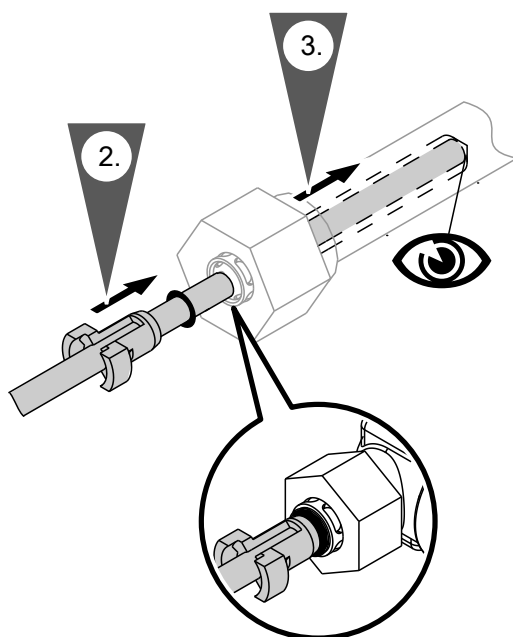


Fig. 36

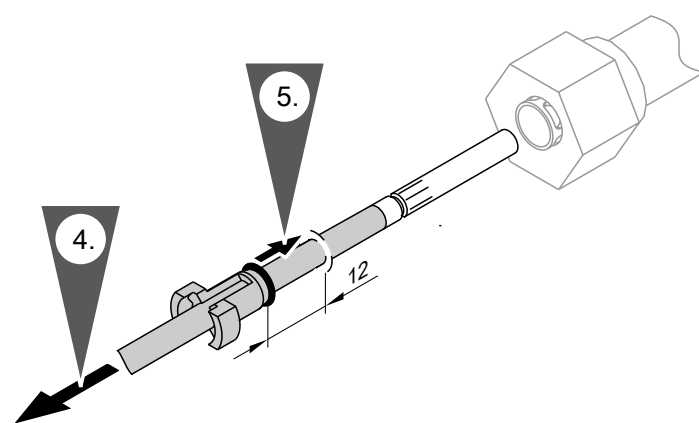


Fig. 37

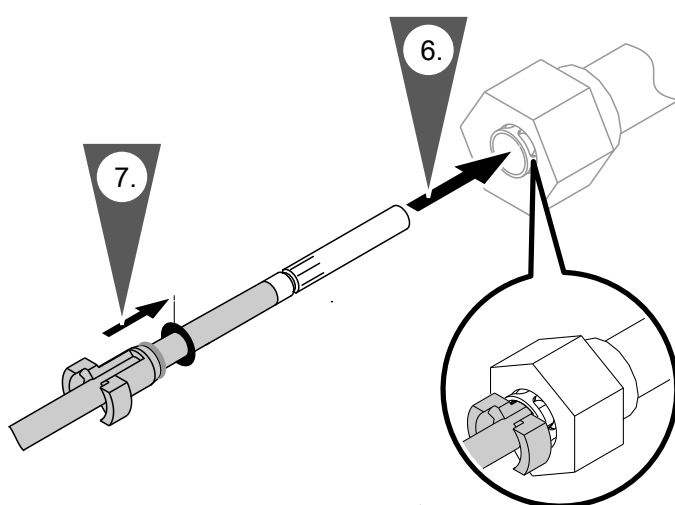


Fig. 38

Covering the collector array

Commission the solar thermal system as quickly as possible once the collectors have been installed.

To reliably prevent steam hammer, the collectors must be cold when filled. Cover the collector arrays.

Covering the collector array (cont.)

In the delivered condition, the collectors are covered with a protective film for this purpose. **Remove this protective film no later than 4 weeks following collector installation.**

Note

If commissioning takes place at a later date, cover the collector arrays.

Do not use the protective foil provided to cover the collectors!

Installation

- ! Please note**
- Incorrect installation can lead to collector damage.
Use only gunmetal or brass fittings and copper pipes for the installation.
Never step on the collectors.
Never solder on or near the collectors.

- Route pipes so that complete ventilation is ensured. Install an air separator in the solar flow upstream of the DHW cylinder.

Note

An air separator is integrated into the flow line of the Solar-Divicon (see diagram).

- Braze or press fit the copper pipes in the solar circuit.
Soft solder could be weakened, particularly near the collectors, due to the high temperatures that occur there. Metal seal connections, locking ring fittings or Viessmann plug-in connections with double O-rings are the most suitable.
If other seals such as flat gaskets are used, adequate glycol, pressure and temperature stability must be guaranteed by the manufacturer.
- Design all connections to be resistant to pressure and temperature (observe the maximum stagnation temperature of the collector).
Never use:
 - Teflon (inadequate glycol resistance)
 - Hemp connections (insufficiently gas-tight)

- Equip the system to EN 12975 or EN ISO 9806 with an expansion vessel, safety valve and circulation pump.

- The expansion vessel must be approved to DIN 4807.

The diaphragms and seals of the expansion vessel and safety valve must be suitable for the heat transfer medium.



To calculate the pre-charge pressure, see the "Vitosol" service instructions.

- For operation without a Solar-Divicon, use only safety valves that meet the following conditions:
 - Designed for 120 °C and up to 6 bar (0.6 MPa)
 - Letter ID "S" (solar) in the component identification

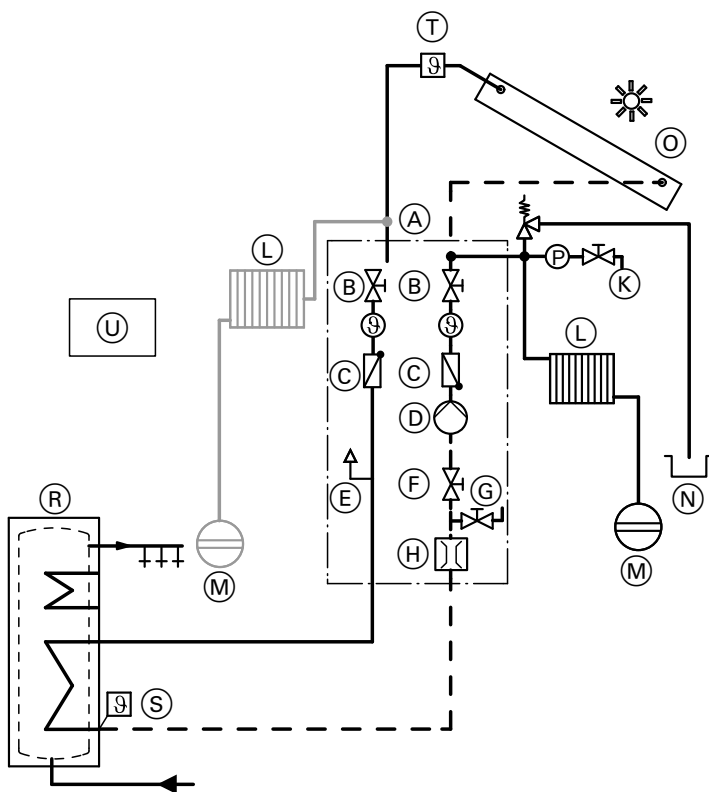


Fig. 39

(A) Solar-Divicon

- | | |
|---|--------------------------------|
| Ⓑ Shut-off valves | Ⓚ Fill valve |
| Ⓒ Non-return valves | Ⓛ Stagnation heat sink |
| Ⓓ Solar circuit pump | Ⓜ Expansion vessel |
| Ⓔ Air separator | Ⓝ Drip pan |
| Ⓕ Shut-off valve (adjusting screw above flow indicator Ⓜ) | Ⓞ Collector |
| Ⓖ Drain valve | Ⓡ DHW cylinder |
| Ⓜ Flow indicator | Ⓢ Cylinder temperature sensor |
| | Ⓣ Collector temperature sensor |
| | Ⓤ Solar control unit |

Commissioning



"Vitosol-F/-FM, type SVK, SVKA, SVKF and SVKG" service instructions





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