

Installation instructions

for contractors

VIESSMANN

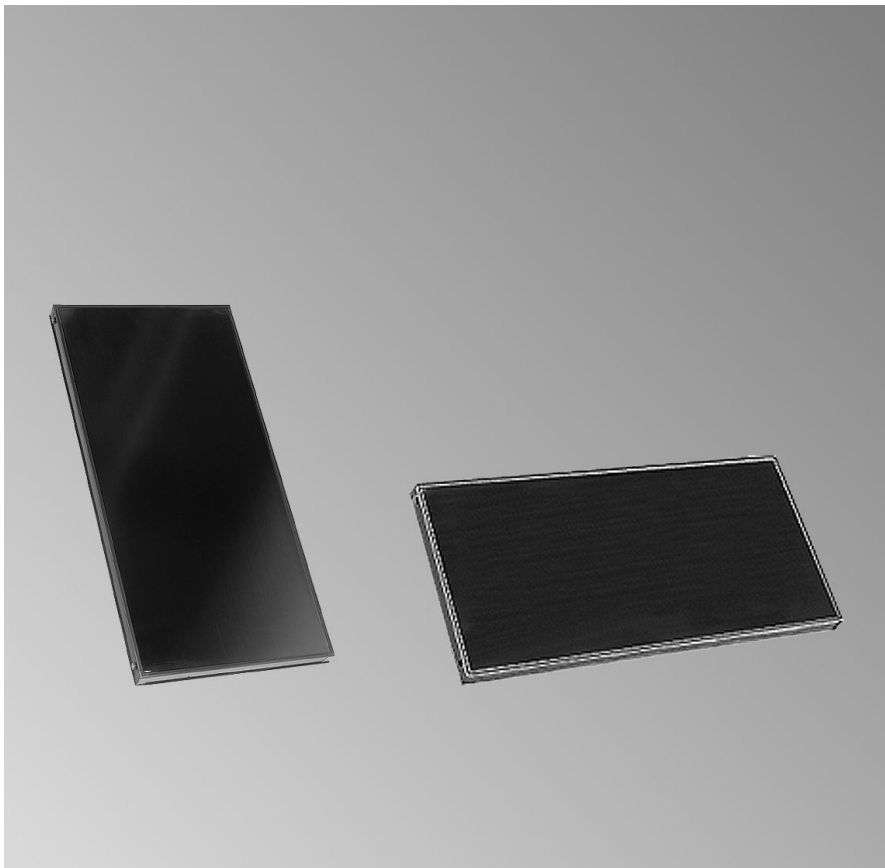
Vitosol-F

Type SV and SH

Flat-plate collector for sloping roofs; above roof installation



VITOSOL-F



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 designed for qualified personnel.

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

Regulations

Observe the following when working on this system

- All legal instructions regarding the prevention of accidents,
- All legal instructions regarding environmental protection
- The Code of Practice of relevant trade associations,
- All current safety regulations as defined by DIN, EN, DVGW, VDE and all locally applicable standards.
 - Ⓐ ÖNORM, EN and ÖVE
 - ⒸH SEV, SUVA, SVTI, SWKI and SVGW

Working on the system

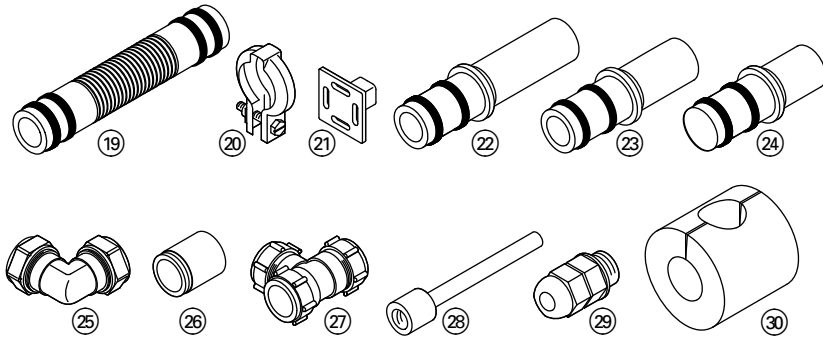
- Isolate the system from the power supply and check that it is no longer 'live', e.g. by removing the separate fuse or by means of a main isolator.
- Safeguard the system against unauthorised reconnection.

Index

Installation sequence

Component overview.....	4
Fitting roof hooks or clamping brackets.....	6
■ Overview – Installation with roof hooks.....	6
■ Overview – Installation with clamping brackets.....	7
■ Distribution of roof hooks or clamping brackets and mounting plates.....	8
■ Fitting roof hooks for roof tiles.....	15
■ Fitting roof hooks for slate roof.....	16
■ Fitting roof hooks for corrugated sheet roofs.....	16
■ Fitting roof hooks for plain tile roofs.....	17
Fitting mounting rails.....	18
Fitting collectors.....	19
Installing the connection set and collector temperature sensor.....	20
Installation.....	22
Commissioning and adjustment.....	23

Component overview (cont.)



Accessories for one collector array

①⑨ Connection pipe

Connection set:

①⑩ Profile clip

①⑪ Cap

①⑫ Connecting pipe (long)

①⑬ Connecting pipe (short)

①⑭ Plug

①⑮ Locking ring fitting (elbow 90°),
∅ 22 mm

①⑯ Support sleeve

Accessories for one solar thermal system

①⑰ Support sleeve

①⑱ Locking ring fitting
(tee), ∅ 22 mm

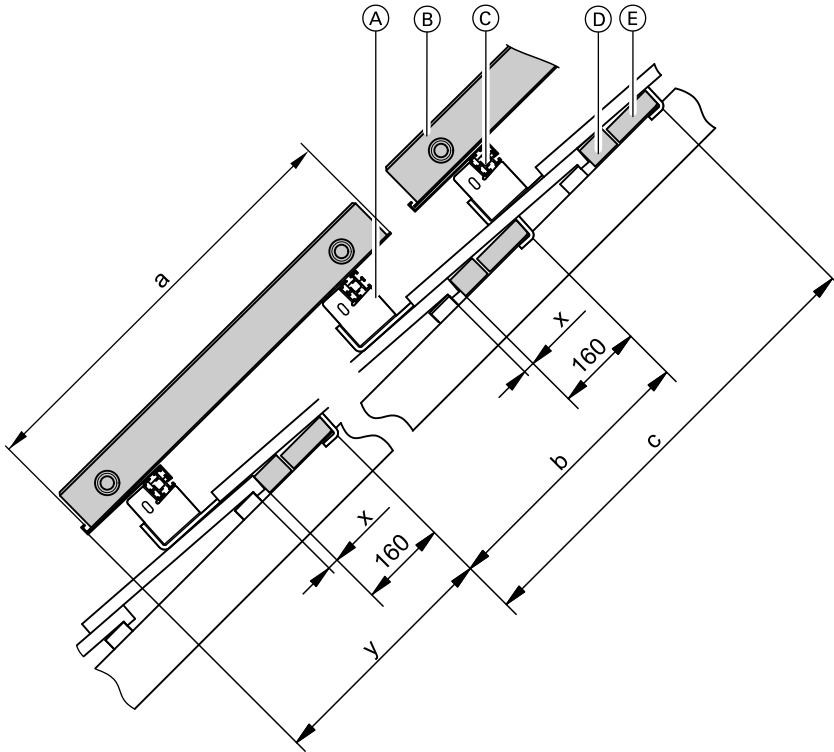
①⑳ Sensor well

①㉑ Strain relief fitting

①㉒ Thermal insulation

Fitting roof hooks or clamping brackets

Overview – Installation with roof hooks



Note

Dimension *x* according to the width of the tile head.

- (A) Roof hook
- (B) Collector
- (C) Mounting rail
- (D) Timber, 38 x 58 mm
(only for roof tiles)
- (E) Timber, 30 x 100 mm
(only for roof tiles)

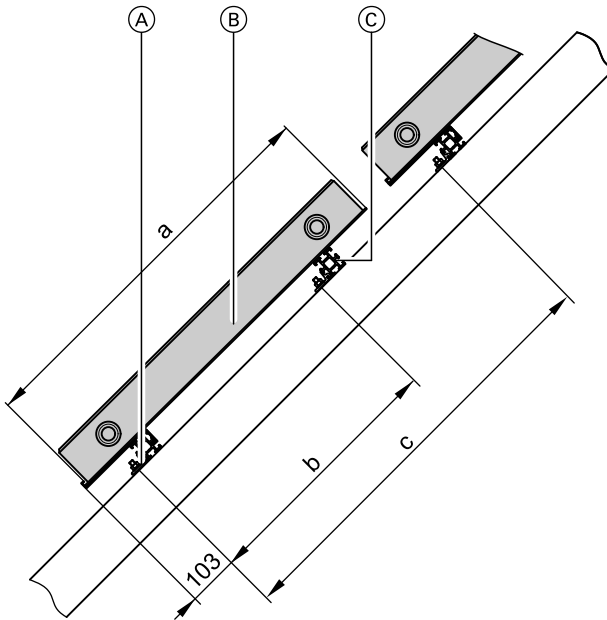
Type	a	mm	b	mm	c	mm
SV		2380		1900–2100		≥2400
SH		1056		450–850		≥1077

Fitting roof hooks or clamping brackets (cont.)

Roof cover	y	mm
Roof tiles		440
Slate		348
Plain tiles		380
Corrugated sheets		207

Overview – Installation with clamping brackets

(e.g. on sheet steel roofs)

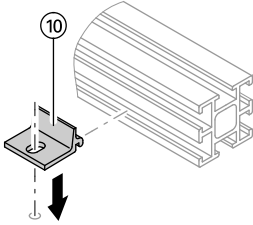


- (A) Clamping bracket
- (B) Collector

- (C) Mounting rail

Type	a	mm	b	mm	c	mm
SV		2380		1900–2100		≥2400
SH		1056		450–850		≥1077

Fitting roof hooks or clamping brackets (cont.)



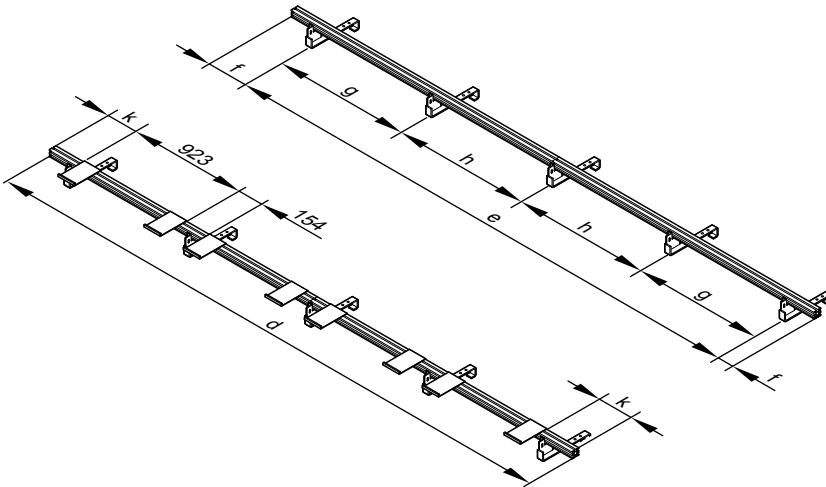
Secure the clamping brackets to the sub-structure in accordance with the dimensions given in the illustrations on page 7 and 8.

Distribution of roof hooks or clamping brackets and mounting plates

Type SV

■ Standard snow loads

For installations without roof hooks, clamping brackets are used in place of roof hooks.

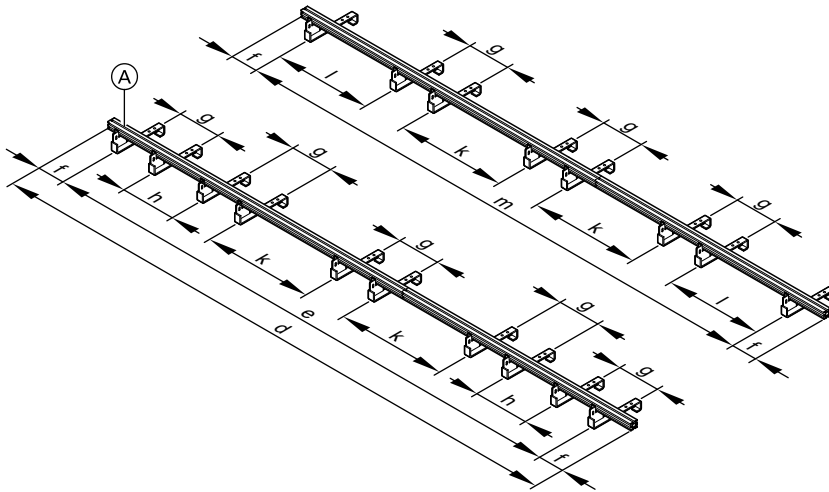


Fitting roof hooks or clamping brackets (cont.)

No.	1	2	3	4	5	6	8	10
d mm	1098	2175	3273	4350	5448	6525	8700	10875
e mm	1019	2038 g+g	3115 g+h+g	4192 g+2·h +g	5269 g+3·h +g	6346 g+4·h +g	8500 g+6·h +g	10654 g+8·h +g
f mm	39.5	68.5	79	79	89.5	89.5	100	110.5
g mm	1019	1019	1019	1019	1019	1019	1019	1019
h mm	—	—	1077	1077	1077	1077	1077	1077
k mm	87.5	87.5	98	98	108.5	108.5	119	129.5

■ Higher snow loads

Installation only with roof hooks

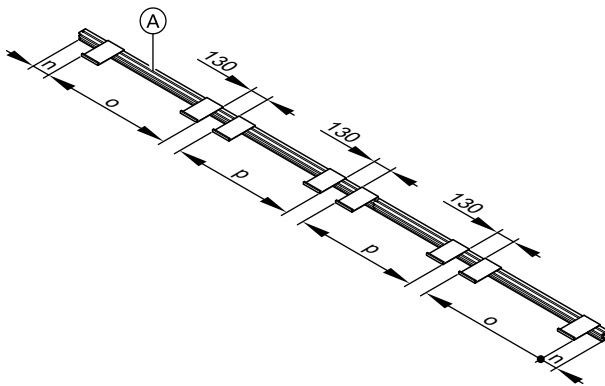


Ⓐ Lower mounting rail

Fitting roof hooks or clamping brackets (cont.)

No.		1	2	3	4	5	6	8	10
d	mm	1098	2175	3273	4350	5448	6525	8700	10875
e	mm	895	1972	3103	4180	5257	6334	8488	10642
		g+g	g+h+g +h+g	g+h+g +k+g +h+g	g+h+g +k+g +k+g +h+g	g+h+g +k+g +k+g +h+g	g+h+g +k+g +k+g +k+g +h+g	g+h+g +k+g +k+g +k+g +k+g +h+g	g+h+g +k+g+k +g+k+g +k+g+k +g+k+g +k+g+k +g+h+g
f	mm	101.5	101.5	85	85	95.5	95.5	106	116.5
g	mm	447.5	300	300	300	300	300	300	300
h	mm	—	536	563	563	563	563	563	563
k	mm	—	—	777	777	777	777	777	777
l	mm	895	836	863	863	863	863	863	863
m	mm	895	1972	3103	4180	5257	6334	8488	10642
			l+g+l	l+g+k +g+l	l+g+k +g+k +g+l	l+g+k +g+k +g+k +g+l	l+g+k +g+k +g+k +g+l	l+g+k +g+k +g+k +g+k +g+l	l+g+k +g+k +g+k +g+k +g+k +g+l

Distribution of mounting plates



Ⓐ Lower mounting rail

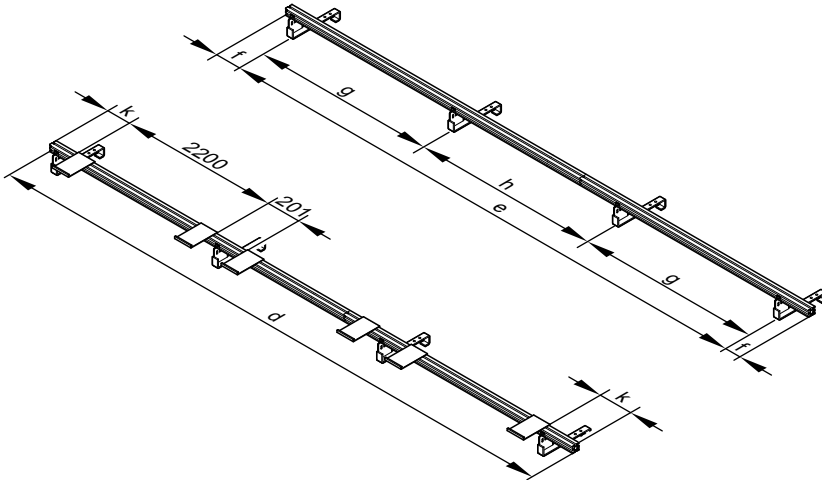
Fitting roof hooks or clamping brackets (cont.)

No.		1	2	3	4	5	6	8	10
n	mm	178.5	198.5	199	199	209.5	209.5	220	230.5
o	mm	741	824	834	834	834	834	834	834
p	mm	—	—	947	947	947	947	947	947

Type SH

■ Standard snow loads

For installations without roof hooks, clamping brackets are used in place of roof hooks.

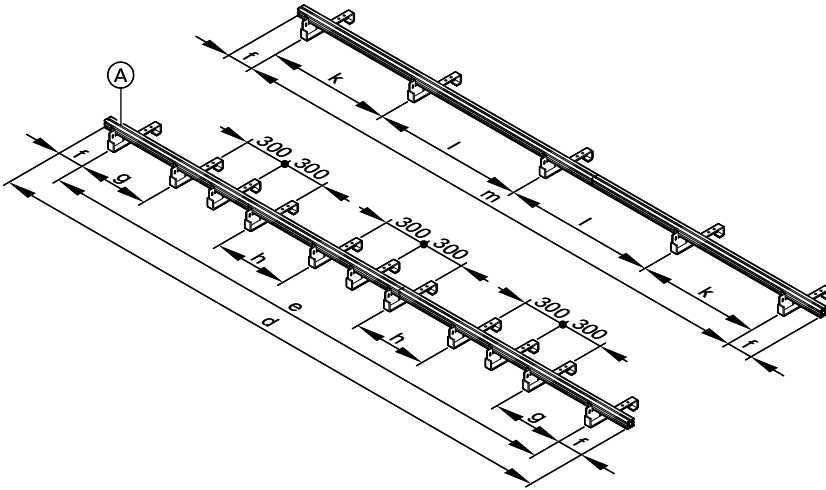


No.		1	2	3	4	5	6	8	10
d	mm	2422	4844	7266	9688	12110	14532	19376	24220
e	mm	2250	g+g	g+h+g	g+2·h +g	g+3·h +g	g+4·h +g	g+6·h +g	g+8·h +g
f	mm	86	172	182.5	193	203	214	235	256
g	mm	2250	2250	2250	2250	2250	2250	2250	2250
h	mm	—	—	2401	2401	2401	2401	2401	2401
k	mm	111	121.5	132	142.5	153	163.5	184.5	205.5

Fitting roof hooks or clamping brackets (cont.)

■ Higher snow loads

Installation only with roof hooks



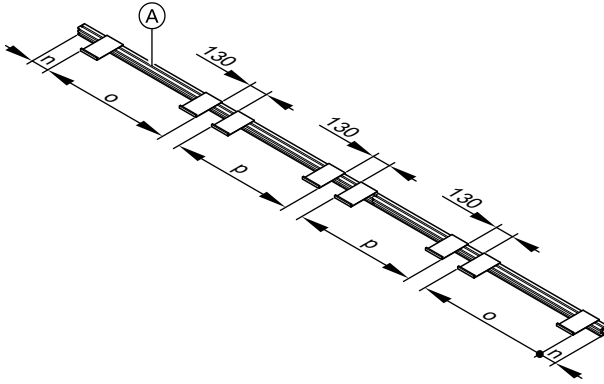
Ⓐ Lower mounting rail

Fitting roof hooks or clamping brackets (cont.)

No.	1	2	3	4	5	6	8	10
d mm	2422	4844	7266	9688	12110	14532	19376	24220
e mm	2273	4674	7075	9476	11877	14278	19080	23882
	g+g	g +2·300 +g	g +2·300 +h +2·300 +g	g +2·300 +h +2·300 +h +2·300 +g	g +2·300 +h +2·300 +h +2·300 +g +2·300 +g	g +2·300 +h +2·300 +h +2·300 +h +2·300 +g +2·300 +g	g +2·300 +h +2·300 +h +2·300 +h +2·300 +h +2·300 +g	g +2·300 +h +2·300 +h +2·300 +h +2·300 +h +2·300 +g
f mm	75	85	95.5	106	116.5	127	148	169
g mm	1137	2037	2037	2037	2250	2250	2250	2250
h mm	—	—	1801	1801	1801	1801	1801	1801
k mm	2273	2337	2337	2337	2337	2337	2337	2337
l mm	—	—	2401	2401	2401	2401	2401	2401
m mm	2273	4674	7075	9476	11877	14278	19080	23882
	—	k+k	k+l+k	k+2·l+k	k+3·l+k	k+4·l+k	k+6·l+k	k+8·l+k

Fitting roof hooks or clamping brackets (cont.)

Distribution of mounting plates

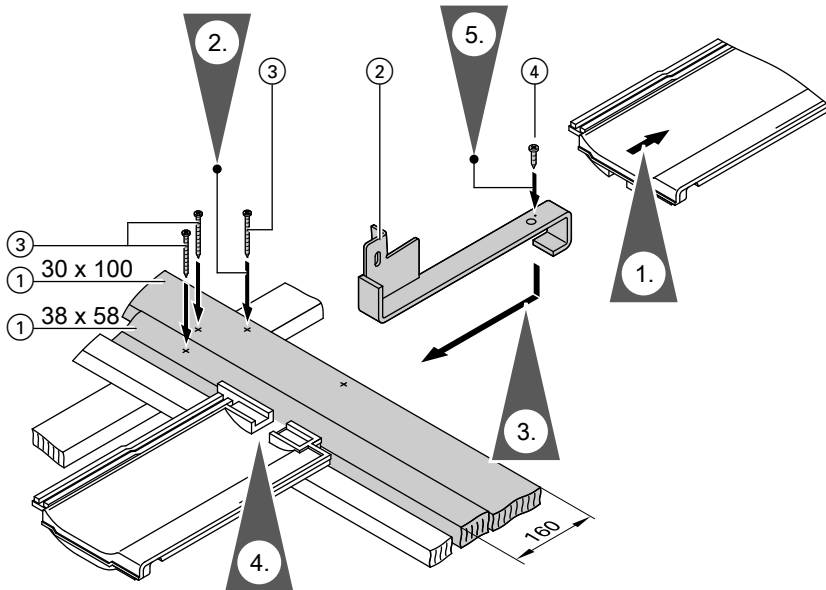


Ⓐ Lower mounting rail

No.		1	2	3	4	5	6	8	10
n	mm	78.5	89	99.5	110	120.5	131	152	173
o	mm	2265	2268	2268	2268	2268	2268	2268	2268
p	mm	—	—	2271	2271	2271	2271	2271	2271

Fitting roof hooks or clamping brackets (cont.)

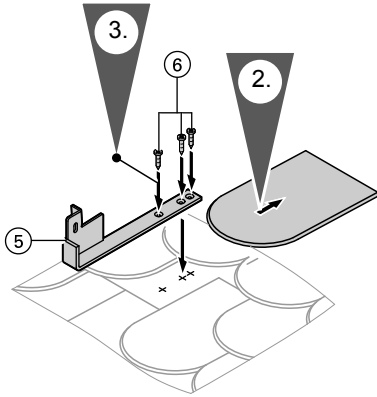
Fitting roof hooks for roof tiles



1. Push up the roof tiles in accordance with the dimensions shown in the illustration on page 6.
2. Secure the timber to the joists at the head of the exposed rows of tiles in accordance with the dimensions shown in the illustration on page 6.
3. Hook the roof hooks into the timber in accordance with the following dimensions:
 - for normal snow loads, see the diagram on page 8 or 11
 - for higher snow loads, see the dimensions on page 9 or 12.
4. Remove the drip tabs and protrusions from the roof tiles where the roof hooks are to be fitted.
5. Secure the roof hooks and position the roof tiles. Continue with "Mounting rail installation" on page 18.

Fitting roof hooks or clamping brackets (cont.)

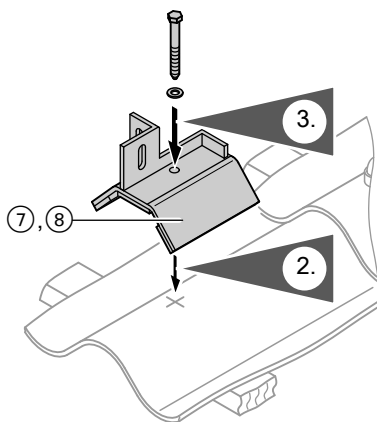
Fitting roof hooks for slate roof



1. Mark the roof hook position in accordance with the following dimensions:
 - for normal snow loads, see the diagram on page 6 and 8 or 11
 - for higher snow loads, see the dimensions on page 6 and 9 or 12.

2. Remove slates from the roof at the hook contact points.
3. Secure the roof hooks to the roof surface. Fit commercially available lead flashing to protect against the ingress of moisture.
4. Cover the roof.
Continue with "Mounting rail installation" on page 18.

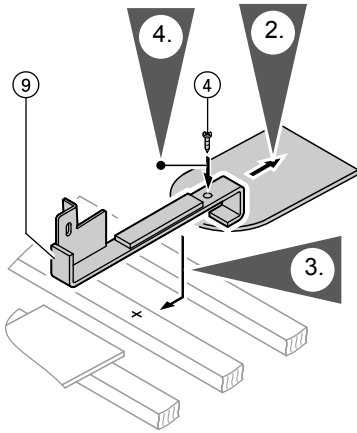
Fitting roof hooks for corrugated sheet roofs



1. Mark the position of the roof hooks in accordance with the dimensions shown in the diagrams on pages 6, 8 and 11.
2. Position each roof hook at the level of a batten onto the ridge of the roofing sheet and, through the hole in the roof hook, drill a further hole into the apex of the corrugation.
3. Secure each roof hook with a screw \varnothing 8 mm and a sealing washer (on-site provision) to the battens.
Continue with "Mounting rail installation" on page 18.

Fitting roof hooks or clamping brackets (cont.)

Fitting roof hooks for plain tile roofs



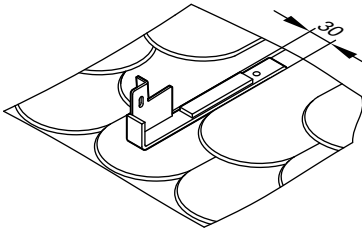
1. Mark the roof hook position in accordance with the following dimensions:
 - for normal snow loads, see the diagram on page 6 and 8 or 11
 - for higher snow loads, see the dimensions on page 6 and 9 or 12.

2. Remove tiles from the roof at the hook contact points.

3. Hook the roof hooks onto the battens and position and align on top of the tile below.

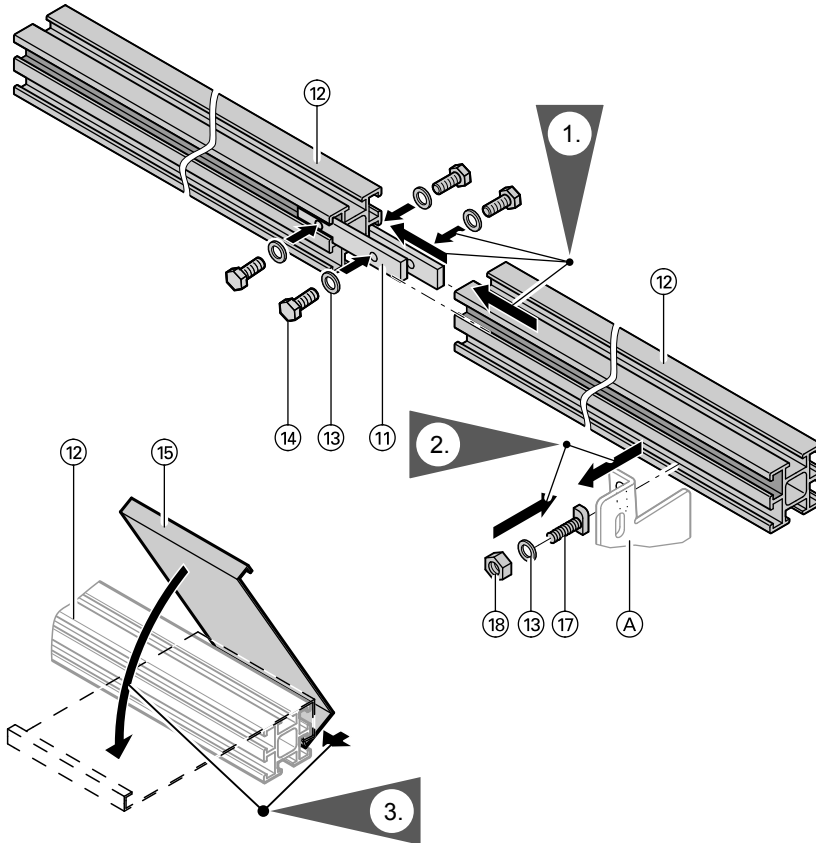
4. Secure the roof hooks to the battens.

5. Cover the roof; trim tiles to suit with an angle grinder; trim approx. 30 mm off the tiles.



Fitting mounting rails

Turn the tee bolts **90°** for all installation steps.

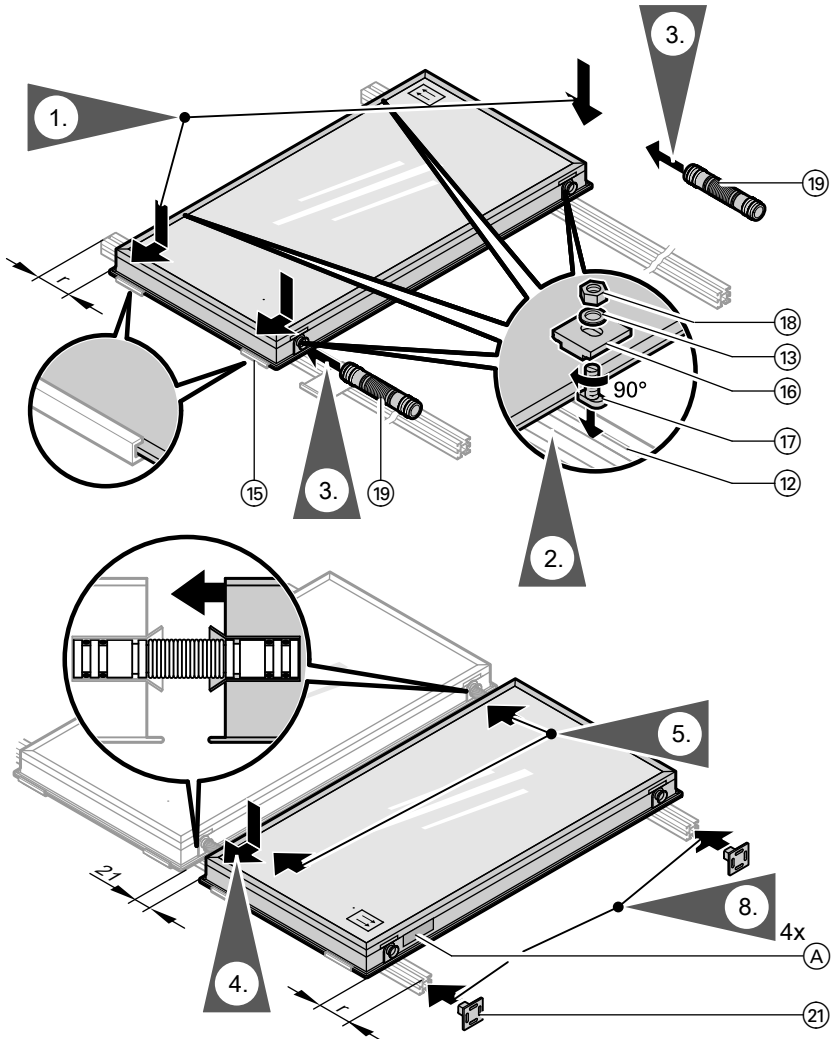


(A) Roof hooks or clamping bracket

1. Secure the connecting parts to the mounting rails.
2. Align the mounting rails and secure to the roof hooks.
3. Hook the mounting plates into the lower mounting rails in accordance with the following dimensions:
 - for standard snow loads, see the dimensions on page 8 and 11
 - for higher snow loads, see the illustration on page 10 and 14.

Fitting collectors

Turn the tee bolts **90°** for all installation steps.



(A) Type plate

Fitting collectors (cont.)

Type	r mm							
	Quantity							
	1	2	3	4	5	6	8	10
SV	21	21	31.5	31.5	42	42	52.5	63
SH	21	31.5	42	52.5	63	73.5	94.5	115.5

Connection pipes should not show any signs of damage.

Lubricate all plug-in connectors (O-rings) found on the collectors **only** with the special grease supplied with the connection set.

The side with the type plate **must** be on the **outside** of the first and last collector.

Secure the pipework on only one collector **opposite** the side with the type plate.

1. Hook the collector into the mounting plates and position the collector on the mounting rails.
2. Secure the collector with four clamping brackets to the mounting rails.

3. Insert the connecting pipes into the flow and return connections.

4. Hook in the next collector.

5. Carefully push the new collector against the first one and insert the connecting pipes.
Distance to the bottom edge of the fitted collector **21 mm**.

6. Install further collectors as described.

7. Tighten all clamping brackets.

8. Fit the caps (part of the connection set).

Installing the connection set and collector temperature sensor

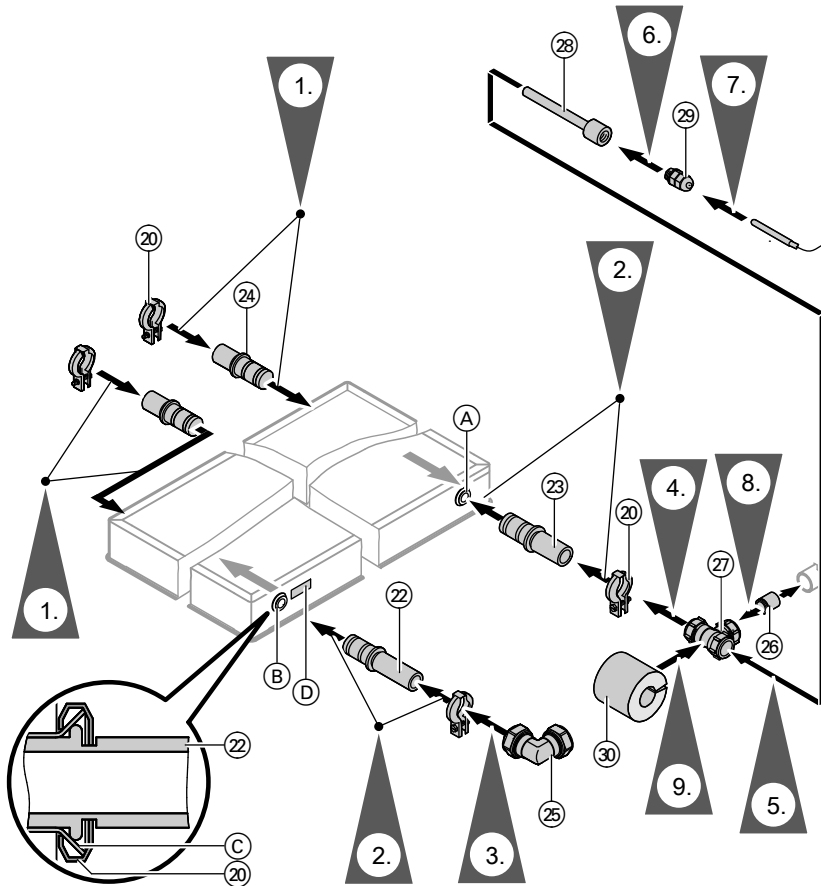
Observe the following when installing the locking ring fitting:

- All pipes must be cut at a right angle and deburred.
- Push the union nut and the locking ring onto the pipe and lightly lubricate the threads with oil.

- Push the pipe into the locking ring fitting as far as it will go.
- Initially turn the union nut by hand, then tighten with an open ended spanner by a further $\frac{3}{4}$ turn.

Never fit annealed copper pipes onto the locking ring fittings.

Installing the connection set and collector... (cont.)



- (A) Flow connection
- (B) Return connection

- (C) Swaged connection
- (D) Type plate

1. Insert the plug as far as possible, then secure it with hose clips.
2. Insert the connecting pipes as far as possible, then secure them with profile clips.
3. Fit the elbow to the return connector.
4. Fit the tee onto the flow connector.
5. Insert the sensor well into the tee, counterholding the tee.

Installing the connection set and collector... (cont.)

6. Insert the strain relief fitting into the sensor well.
7. Insert the collector temperature sensor as far as possible into the sensor well and secure with strain relief fitting.
8. Insert the support sleeves into the connecting pipes of the solar circuit. Make the connection between the collector array and pipework of the solar heating circuit.
9. Fit the thermal insulation and join its cut faces with adhesive.

Installation



Please note

Incorrect installation can lead to collector damage.

Use only gunmetal or brass fittings and copper pipes for the installation.

Use hemp only in conjunction with pressure and temperature-resistant sealants (e.g. Viscotex Solarpaste from Locher, CH-9450 Altstätten, Switzerland).

Never step on the collectors.

Never solder near or on the collector.

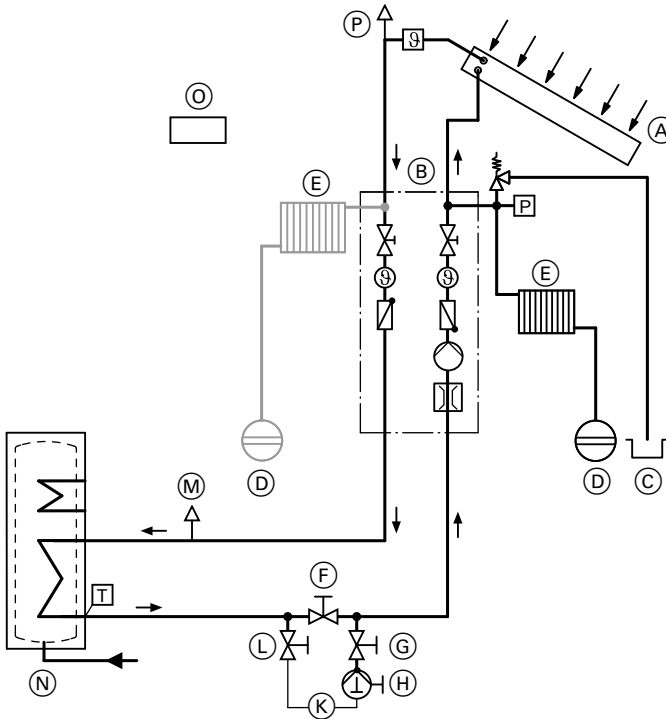
1. Position pipes so that complete ventilation is guaranteed. Install an air separator at an accessible point in the pipework (see the following diagram).
2. Equip systems to EN 12975 with an expansion vessel, safety valve and circulation pump.
3. The expansion vessel must be approved to DIN 4807 [or local regulations] and must be installed with a thermal insulating loop. 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.

4. When operating without a Solar-Divicon, only use safety valves designed for 120 °C, a maximum pressure of 6 bar, and which carry the "S" (Solar) designation.
5. Make all connections pressure and temperature-resistant (observe the maximum idle temperature of the collector).

Installation (cont.)



- | | |
|--------------------------|--------------------------------|
| (A) Collector | (H) Manual solar fill pump |
| (B) Solar-Divicon | (K) Fill valve ((F), (G), (L)) |
| (C) Drip container | (L) Drain |
| (D) Expansion vessel | (M) Air separator |
| (E) Stagnation heat sink | (N) DHW cylinder |
| (F) Shut-off valve | (O) Solar control unit |
| (G) Filling facility | (P) Air vent valve |

Commissioning and adjustment



Service instructions "Vitosol-F".

Viessmann Werke GmbH&Co KG
D-35107 Allendorf
Telephone: +49 6452 70-0
Fax: +49 6452 70-2780
www.viessmann.com

Viessmann Limited
Hortonwood 30, Telford
Shropshire, TF1 7YP, GB
Telephone: +44 1952 675000
Fax: +44 1952 675040
E-mail: info-uk@viessmann.com

5592 860 GB Subject to technical modifications.



Printed on environmentally friendly,
chlorine-free bleached paper