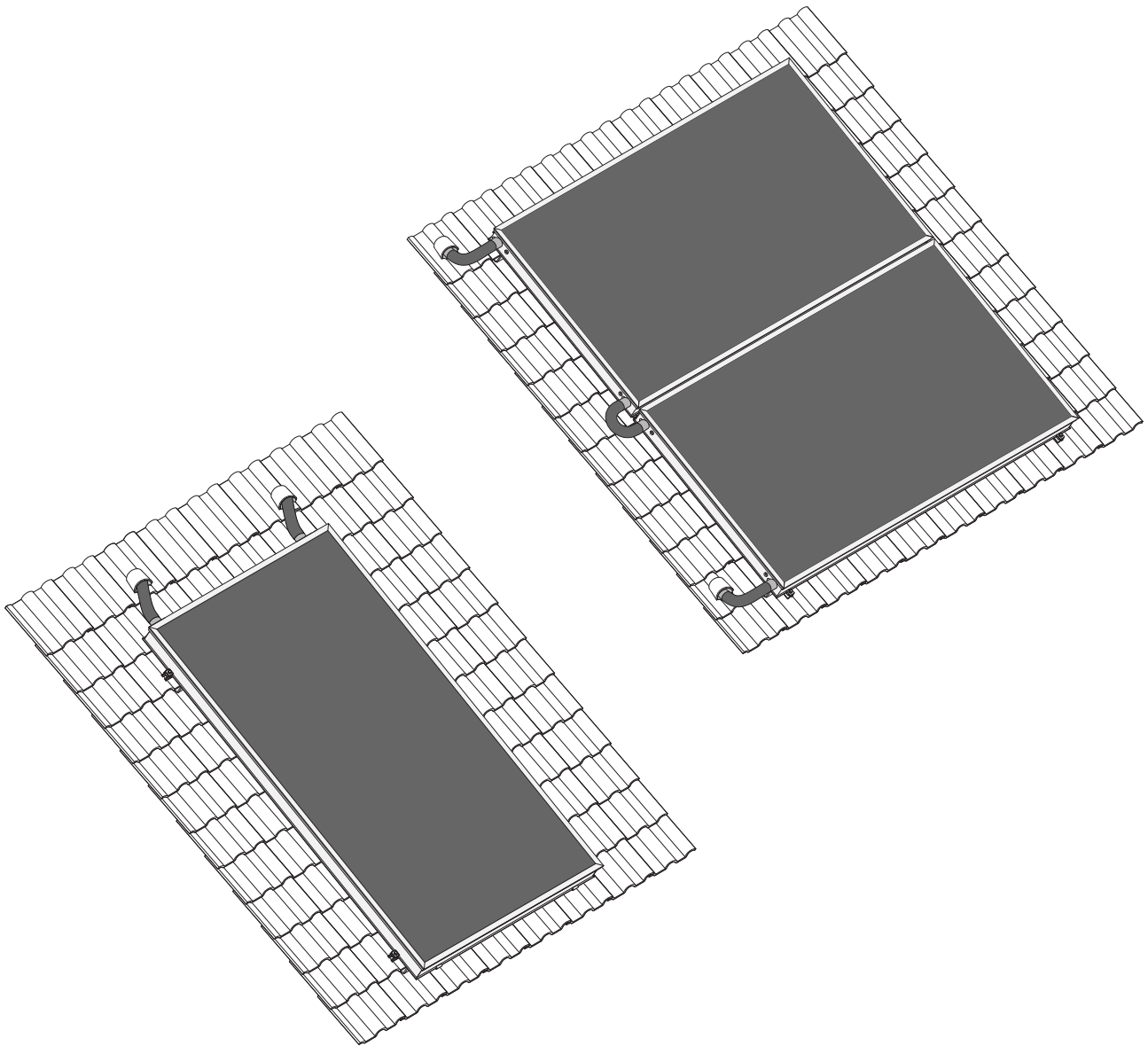


TRIC A On-Roof Installation for FOCUS AR/HTF collectors



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1 General Safety Notes

1.1 Symbol

The following symbols are used throughout these instructions and must be adhered to



DANGER of possibly serious personal injury



WARNING against material damage



NOTE as additional information

1.2 Norms and Regulations

The standards and regulations applicable at the installation location must be adhered to.

- Make sure to observe country and territory regulations related to roof works and roof sealing standards as well as professional codes for plumbing work. The installation process must reflect the on-site conditions as well as applicable rules, regulations and accident prevention procedures. Appropriate work safety measures must be observed (ropes, hooks, lines, scaffolding, protection nets).
- Safety barriers to protect pedestrians against falling parts must be set up.
- The dimensioning of the mounting system (number of roof brackets etc.) should be specifically carried out for each individual project, following the specified structural engineering standards and regulations.
- Prerequisite for the proper application always is a solid mounting base that can accommodate the occurring forces (weight, wind and snow loads).
- Especially the pipes in the lower parts of the building must be connected electrically conductive, conforming to standards. The collector installation must be professionally integrated with an existing or new lightning protection system.

1.3 Qualification of the Installer

Setup, installation and proper commissioning of the solar installation must be carried out by authorized professionals. Non-compliance renders the warranty void.

1.4 Intended Use and Application



Scope and Limitations of Application

The collector is intended for the application in solar thermal installations for hot water preparation and space heating support. As operating mediums water (attention - risk of freezing!) or an appropriate water-glycol mixture can be used in a closed circuit. Operational conditions under-running the dew point within the collector for prolonged

periods are not permitted! This can occur for example, when collectors are integrated in the brine circuit of a heat pump.

Maintenance

For maintenance notes and additional information about setup and operation of the collector field, please refer to the technical information "Solar Thermal Systems".

1.5 Notes on Proper Collector Storage

1.5.1 Proper Outdoor Storage of Collectors

- Remove protective film and lay down collectors with glass pane up. Avoid direct ground contact (e.g. underlay square timber). Avoid scratches on glass panes by using spacers between collectors (e.g. wooden battens).
- When leaning collectors against walls or similar, use a minimum inclination of 15° and apply spacers. Do not use cardboard as under liner. If incorrectly stored, humidity can enter the collectors through the air vents.
- Storing collectors in foil package may damage the glass surface (see figure 2).



1.6 Pre-Installation Notes

Ensure technically correct roof structure

For roof integrated installation the space behind the collector field has to be protected against uprising and accumulating humidity. Ensure that the roof is sufficiently ventilated in the area of the in-roof collector field (see "Installation Field" on page 6)

- Danger of open injuries when working with sharp edged metal sheets and components!
- Risk of burns at collector connections as soon as uncovered collector is exposed to the sun.
- Remove glass protection PE-LD film before commencing installation work!
- Do not subject the collector connections to mechanical loads or use as transportation handles. Specially designed collector handles are available for this purpose.
- Keep a minimum distance between collectors and roof structures such as chimneys, air vents, sky lights that may release moist air. Otherwise there is an increased risk of excess humidity entering through the air vents of the collector encasing.



Overheat Protection

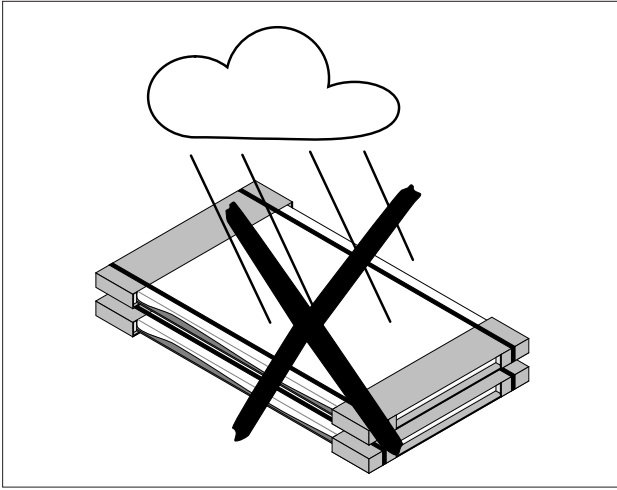
For roof heating centrals and when 4 or more EURO collectors with anti reflective glass are installed vertically, the "Technical Information Solar Thermal Systems - Setup, Commissioning and Maintenance" must be followed to avoid damage to the solar circuit.



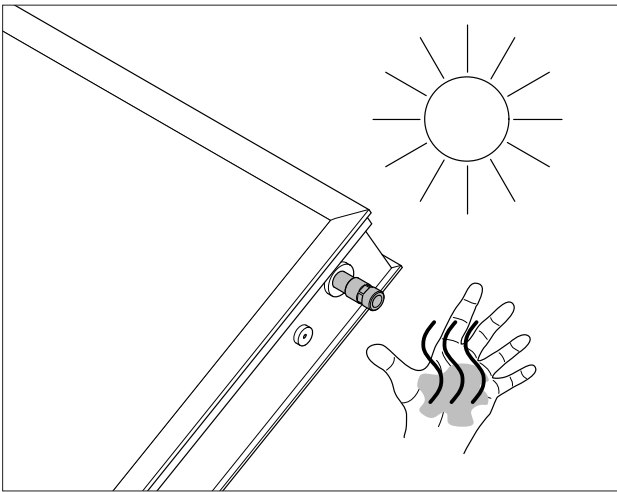
Preventing frost Damage

After pressure testing and flushing, collectors cannot be completely emptied. Make sure that no pure water remains in collector during risk of frost!

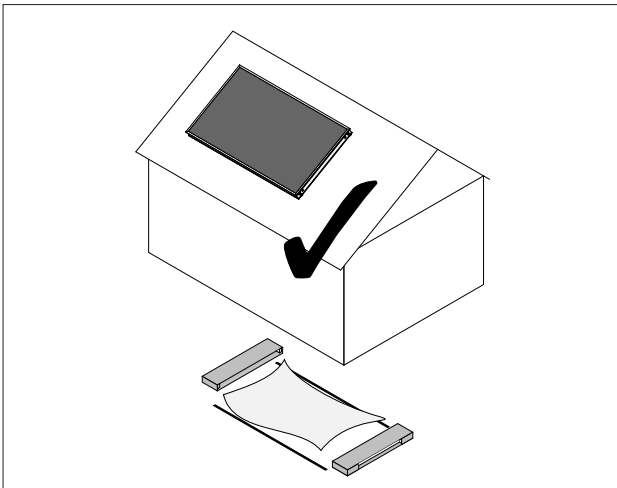




Do not expose film covered collector to rain!



WARNING! Collector connections heat up during solar irradiation.



Do not install collector covered with protection film on roof

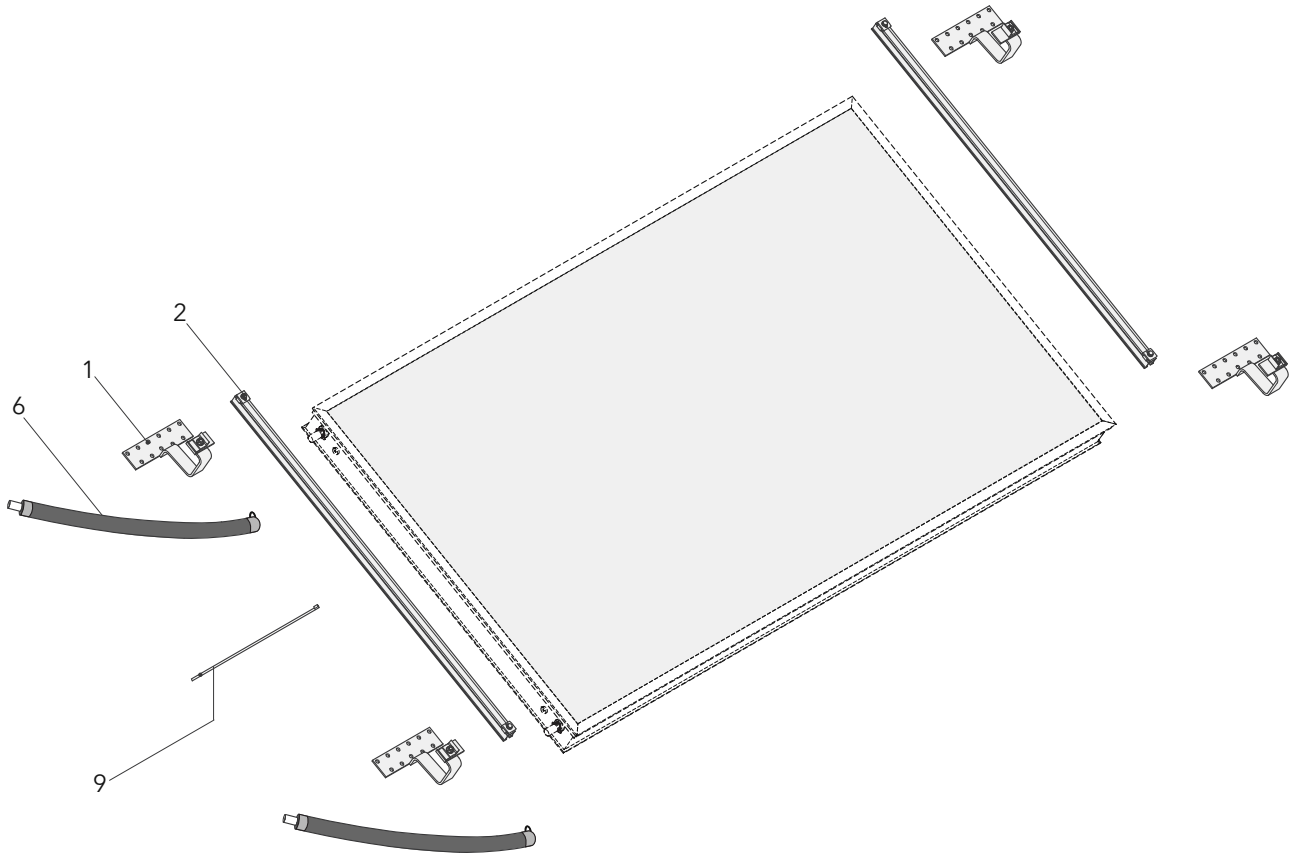
1.7 Recycling Note

At the end of the long operational lifetime, the valuable materials of the installation should be recycled in an environmentally sound manner.

2 Horizontal Installation

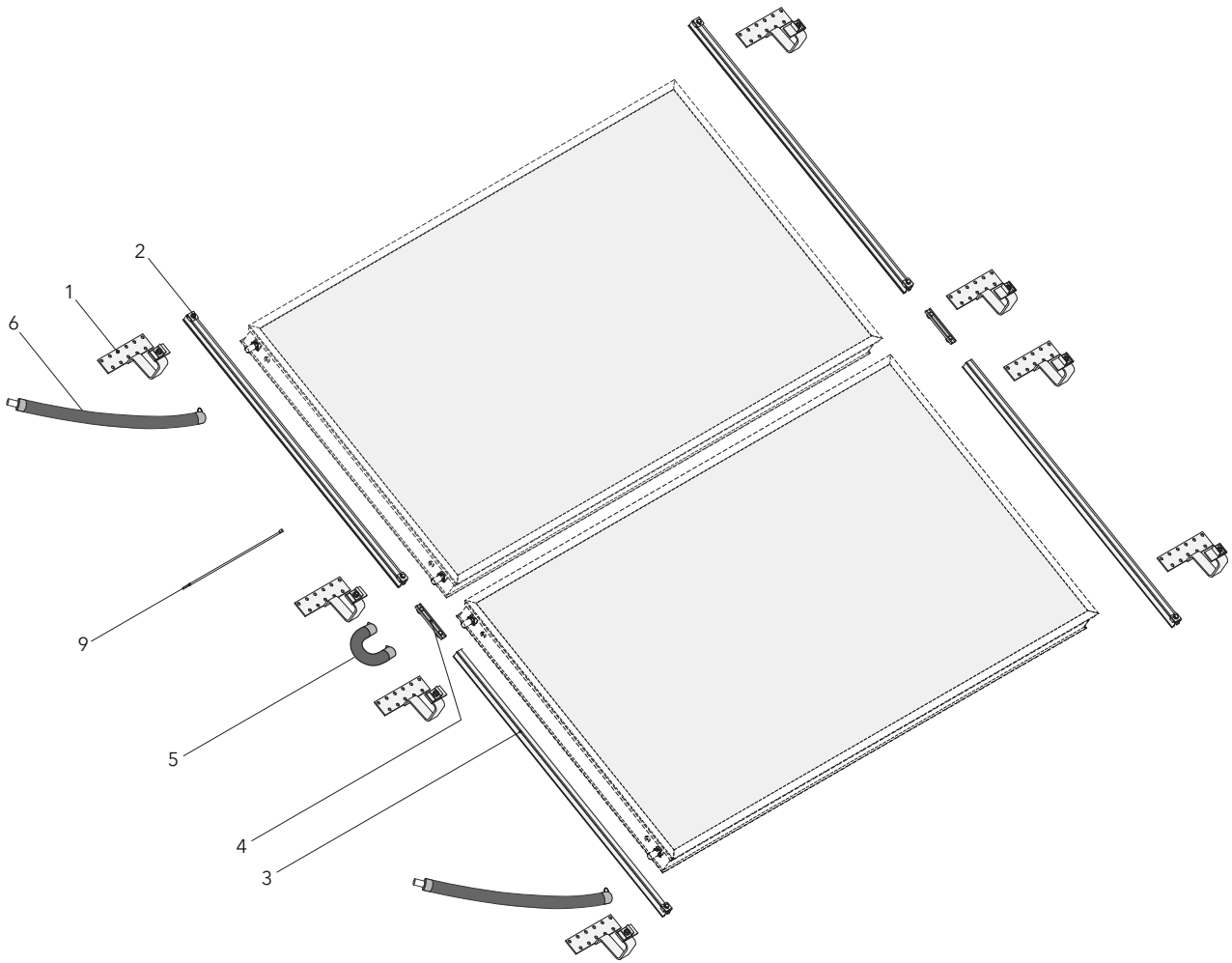
2.1 Scope of Supply

Set for single collector



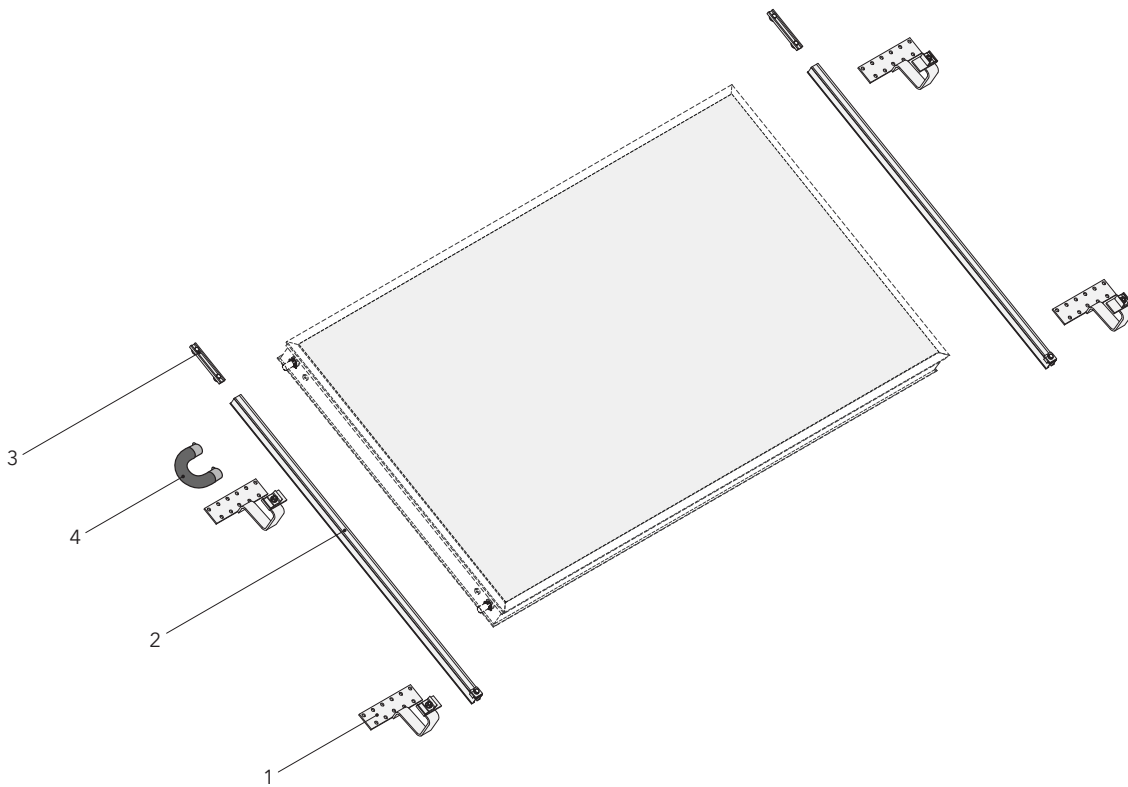
Set for Single Collector, On-Roof installation		
Pos. no	Component	Qty
1	Roof bracket(Not included in the set, order separately according to roofing type, qty to be chose according to structural calculations)	4
2	Collector supporting rail with two collector clamps, 1257 mm	2
6	Optional: Collector connection hose 900 mm with snap connection, comprised of corrugated stainless steel hose and soft foam insulation, Set of 2	1
9	Cable strap	1
	The included Collector holders in this case are not required	2

Basic set



Basic Set, On-Roof Installation		
Pos. no	Component	Qty
1	Roof bracket(Not included in the set, order separately according to roofing type, qty to be chose according to structural calculations)	8
2	Collector supporting rail with two collector clamps, 1257 mm	2
3	Collector supporting rail with one collector clamp,1223 mm	2
4	Rail connectors	2
5	Collector connection hose 320 mm with snap connection, comprised of corrugated stainless steel hose and soft foam insulation	1
6	Optional: Collector connection hose 900 mm with snap connection, comprised of corrugated stainless steel hose, soft foam insulation, Set of 2	1
9	Cable strap	1
	Included collector holders are not required here	4

Extension set



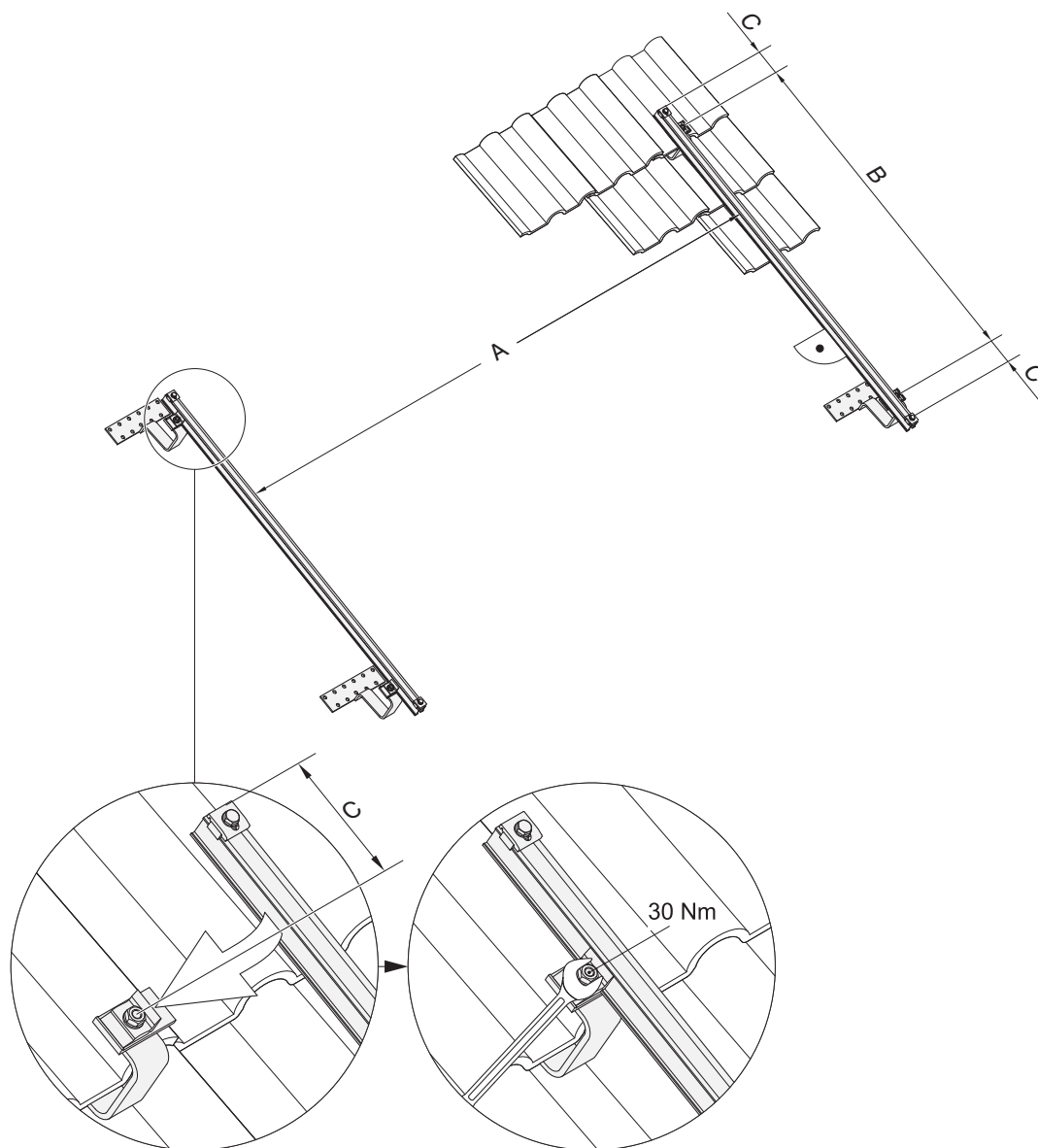
Extension Set, On-Roof Installation		
Pos. no	Component	Qty
1	Roof bracket (Not included in the set, order separately according to roofing type, qty to be chose according to structural calculations)	4
2	Collector supporting rail with one collector clamp, 1223 mm	2
3	Rail connectors	2
4	Collector connection hose 320 mm with snap connection, comprised of corrugated stainless steel hose and soft foam insulation	1
	Included collector holders are not required here	2

2.2 Roof Bracket Fixing

i The actual roof bracket type varies and depends on the roofing. For more information refer to the installation instructions included with the roof brackets.

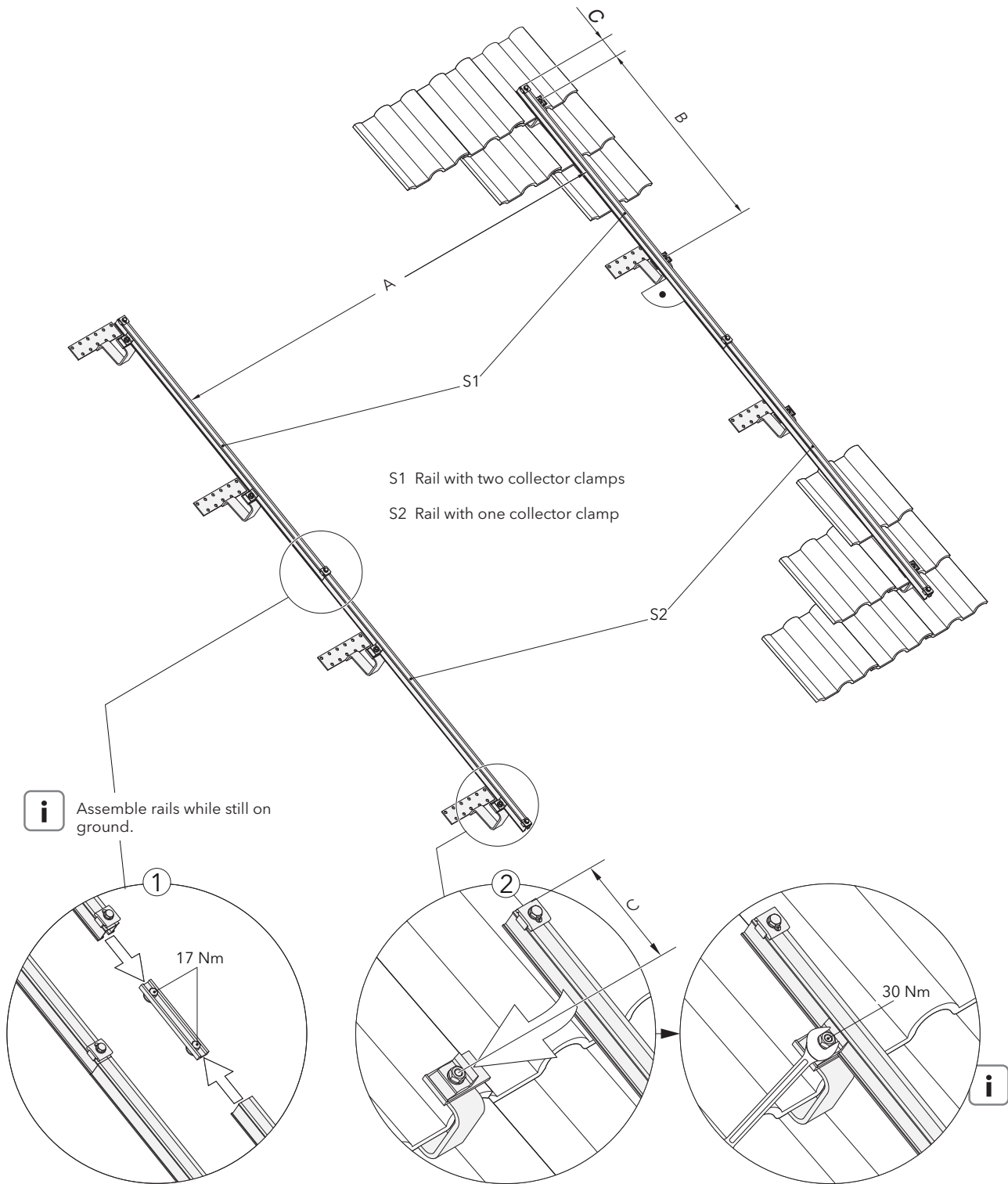
2.3 Installation of the Rails

Installing the rails of the single collector set



Spacings	
A	1600 mm - 1900 mm
B	Max. 1200 mm
C	Max. 200 mm

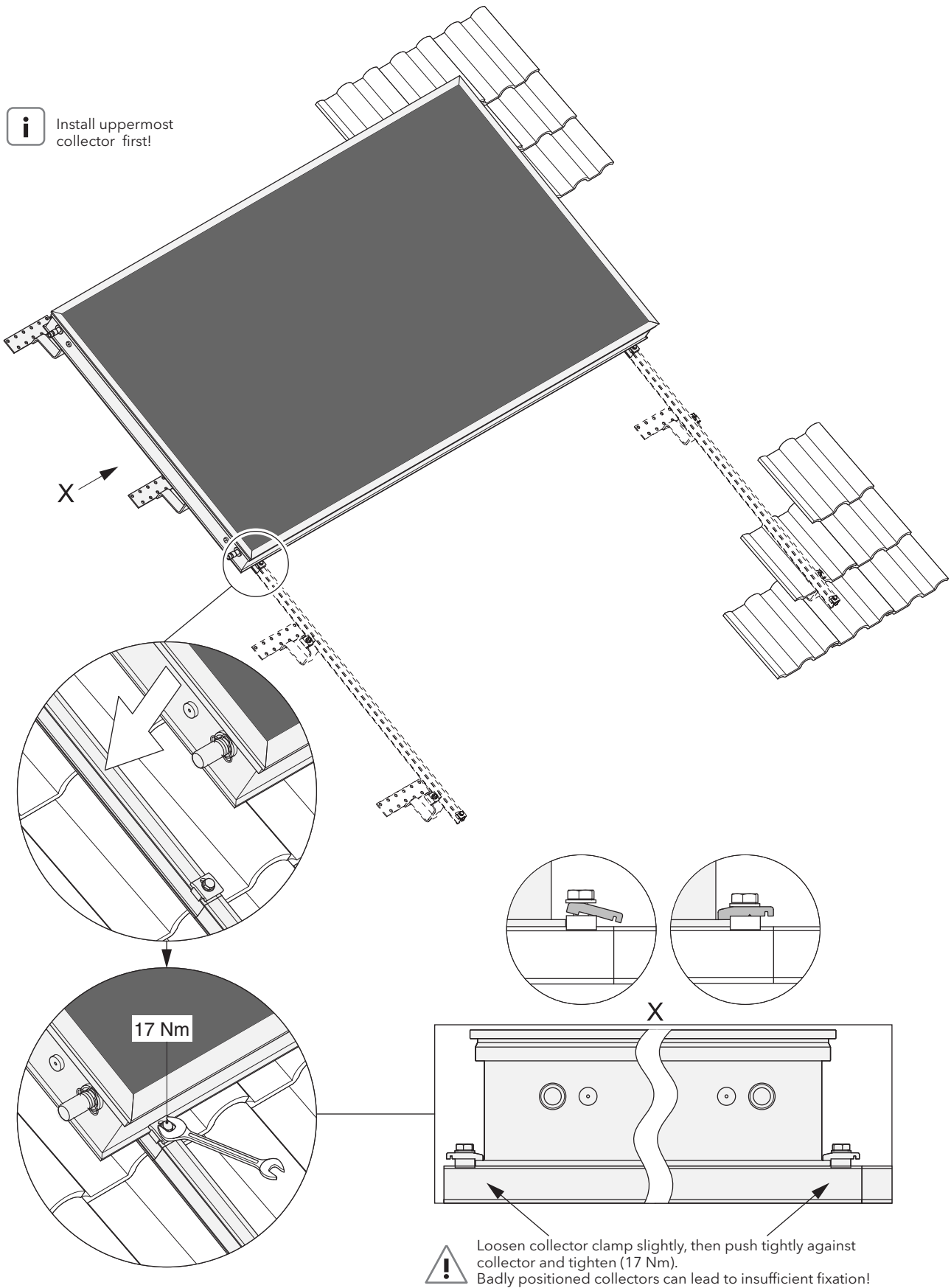
Installing the rails of the basic set

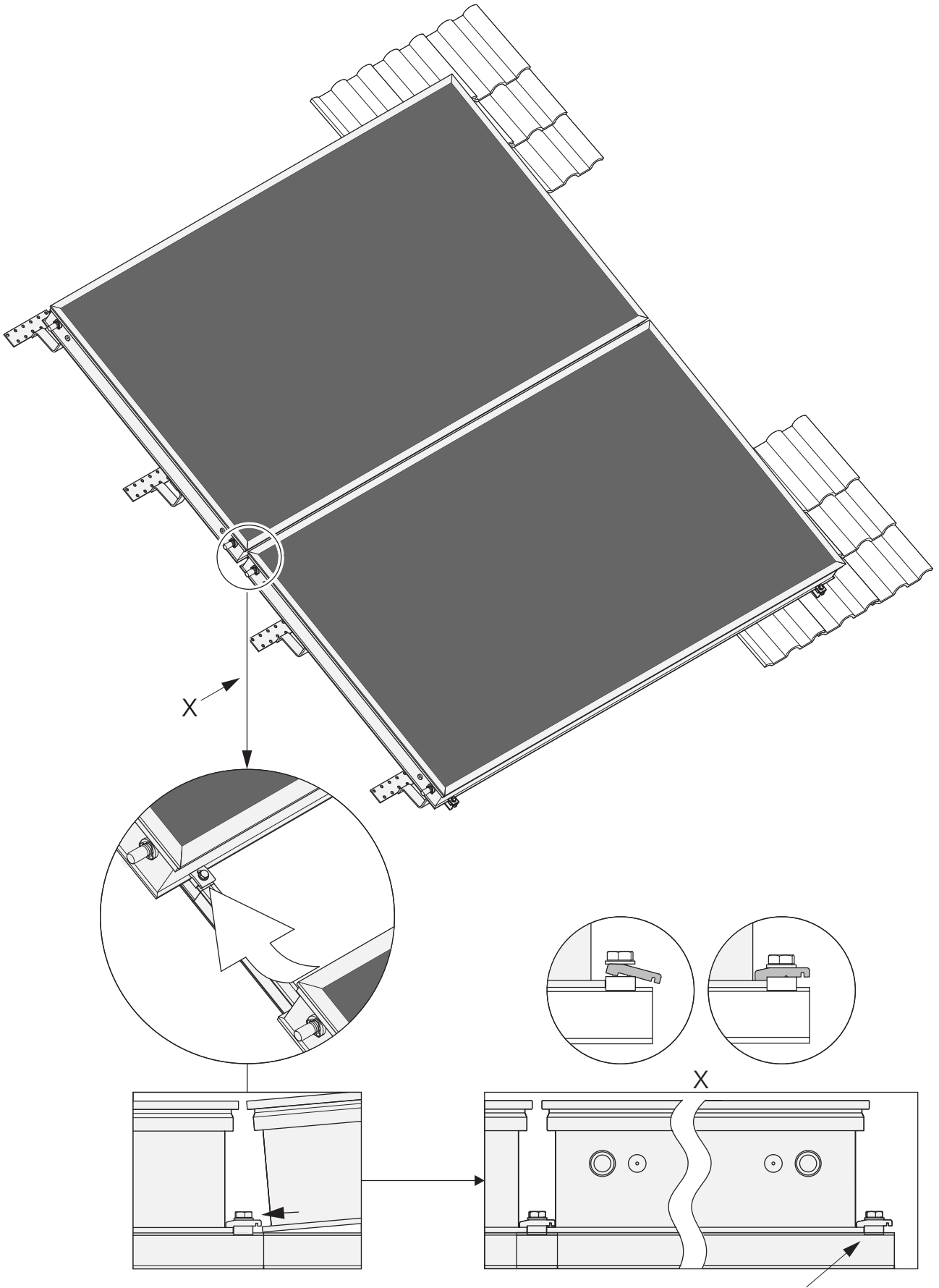


Spacings	
A	1600 mm - 1900 mm
B	Max. 1200 mm
C	Max. 200 mm

2.4 Installing the Collectors

i Install uppermost collector first!



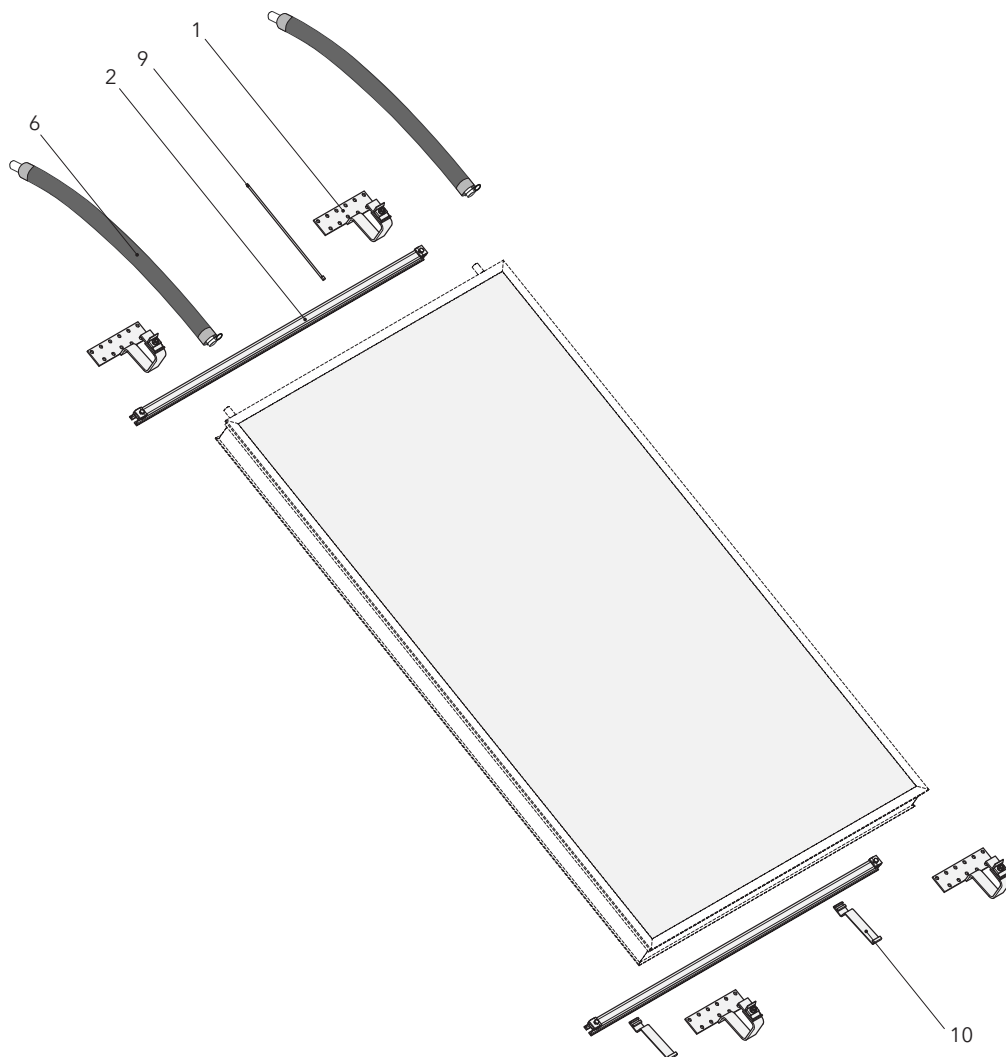


Loosen collector clamp slightly, then push tightly against collector and tighten (17 Nm).
 Badly positioned collectors can lead to insufficient fixation!

3 Vertical Installation

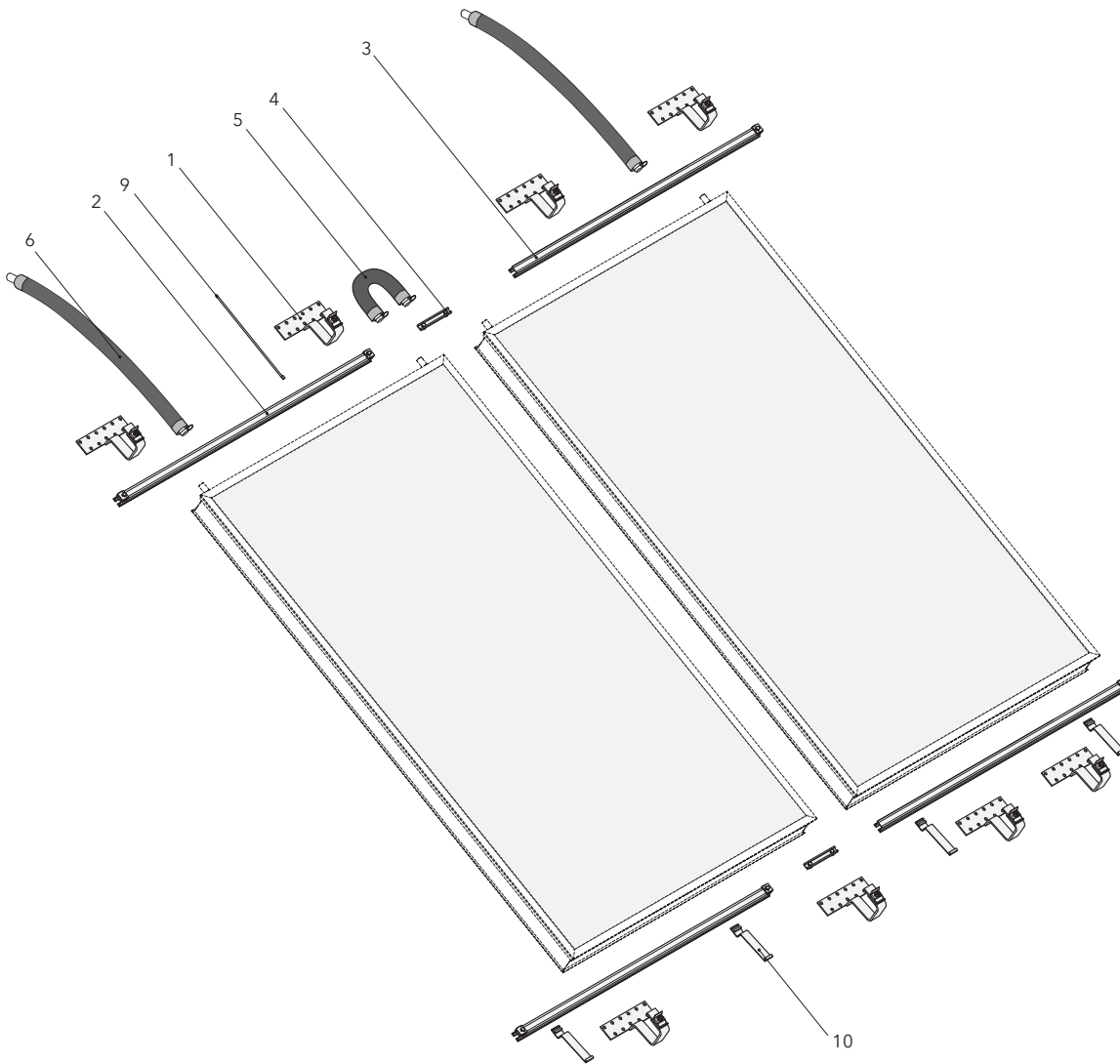
3.1 Scope of supply

Single collector set



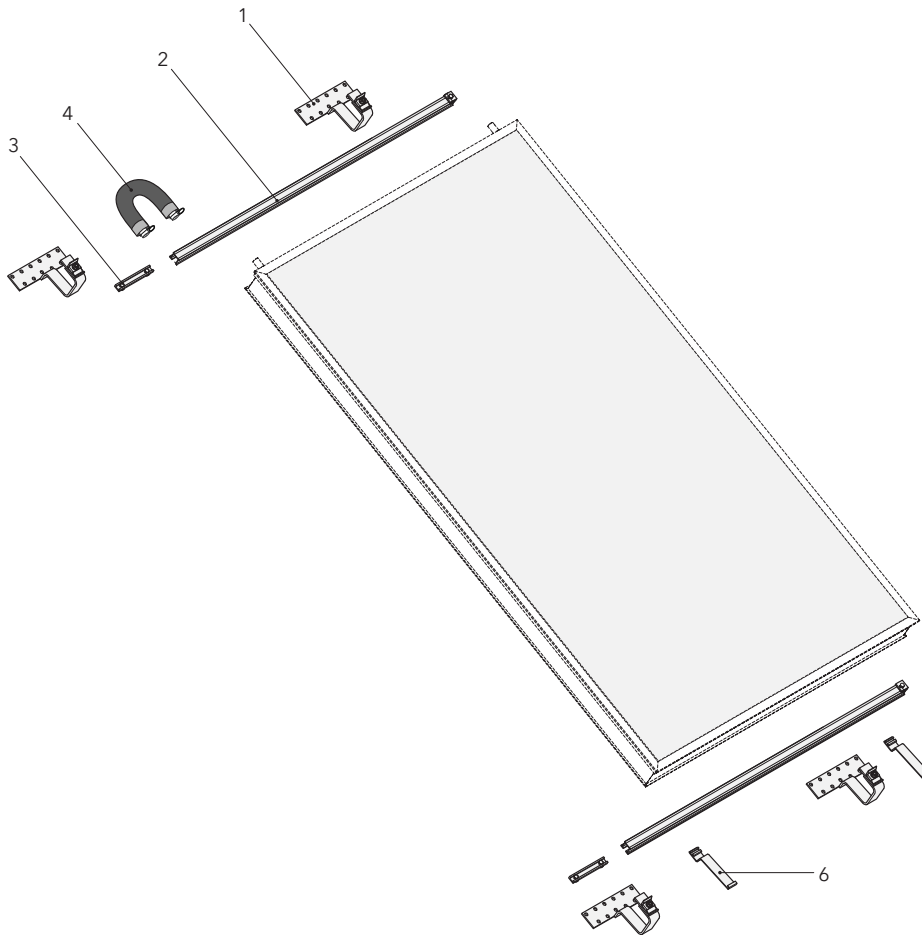
On-Roof Installation Set, Single Collector		
Pos. no	Component	Qty
1	Roof bracket (Not included in the set, order separately according to roofing type, qty to be chose according to structural calculations)	4
2	Collector supporting rail with two collector clamps, 1 257 mm	2
6	Optional: Collector connection hose 900 mm with snap connection, comprised of corrugated stainless steel hose and soft foam insulation, Set of 2	1
9	Cable strap	1
10	Collector holder	2

Basic set



Basic Set, On-Roof Installation		
Pos. no	Component	Qty
1	Roof bracket (Not included in the set, order separately according to roofing type, qty to be chose according to structural calculations)	8
2	Collector supporting rail with two collector clamps, 1257 mm	2
3	Collector supporting rail with one collector clamp, 1223 mm	2
4	Rail connector	2
5	Collector connection hose 320 mm with snap connection, comprised of corrugated stainless steel hose and soft foam insulation	1
6	Optional: Collector connection hose 900 mm with snap connection, comprised of corrugated stainless steel hose and soft foam insulation, Set of 2	1
9	Cable strap	1
10	Collector holder	4

Extension set



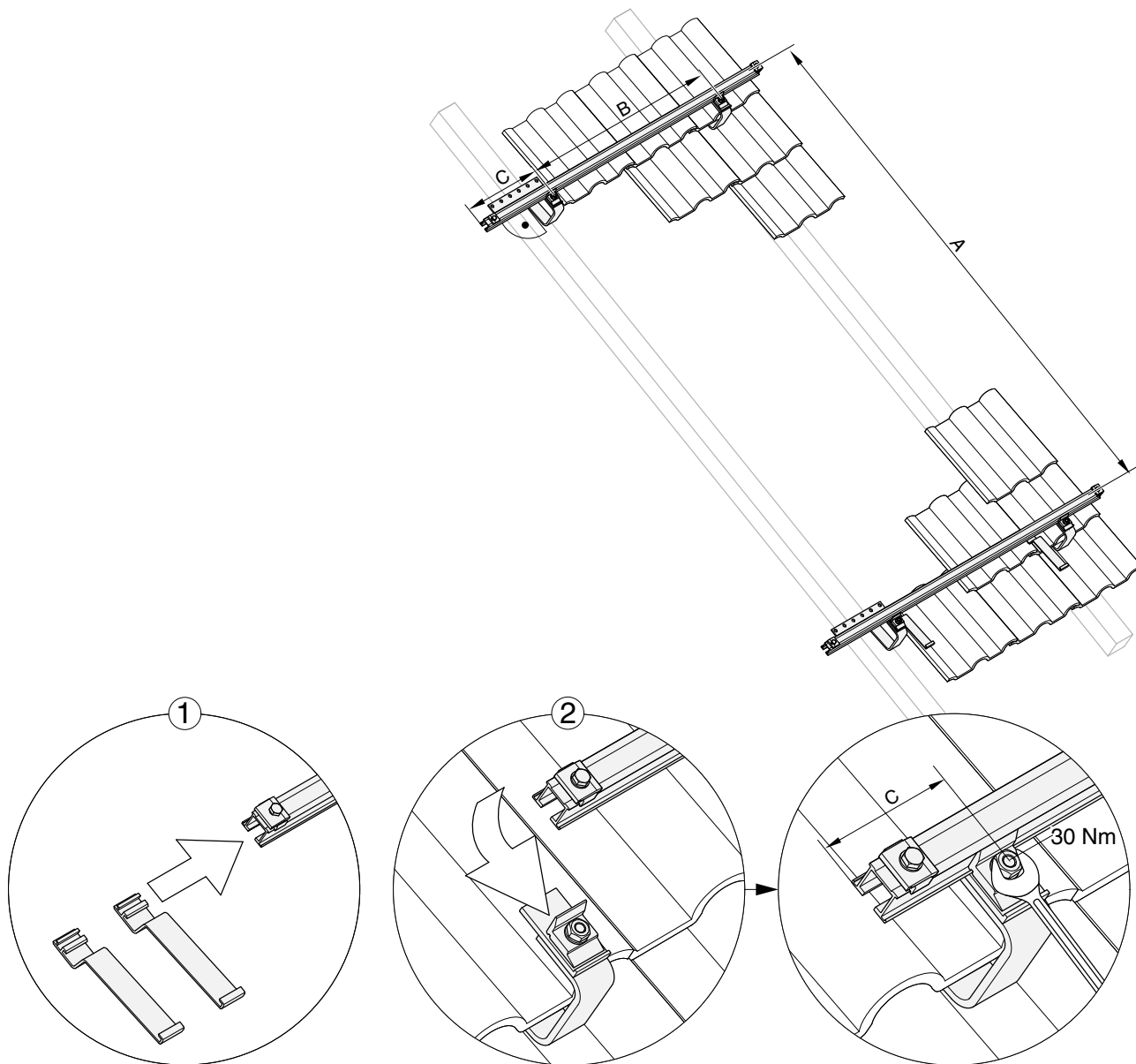
Extension Set, On-Roof Installation		
Pos. no	Component	Qty
1	Roof bracket (Not included in the set, order separately according to roofing type, qty to be chose according to structural calculations)	4
2	Collector supporting rail with one collector clamp, 1223 mm	2
3	Rail connectors	2
4	Collector connection hose 330 mm with snap connection, comprised of corrugated stainless steel hose and soft foam insulation	1
6	Collector holder	2

3.2 Installing the Roof Brackets

i The actual roof bracket type varies and depends on the roofing. For more information refer to the installation instructions included with the roof brackets.

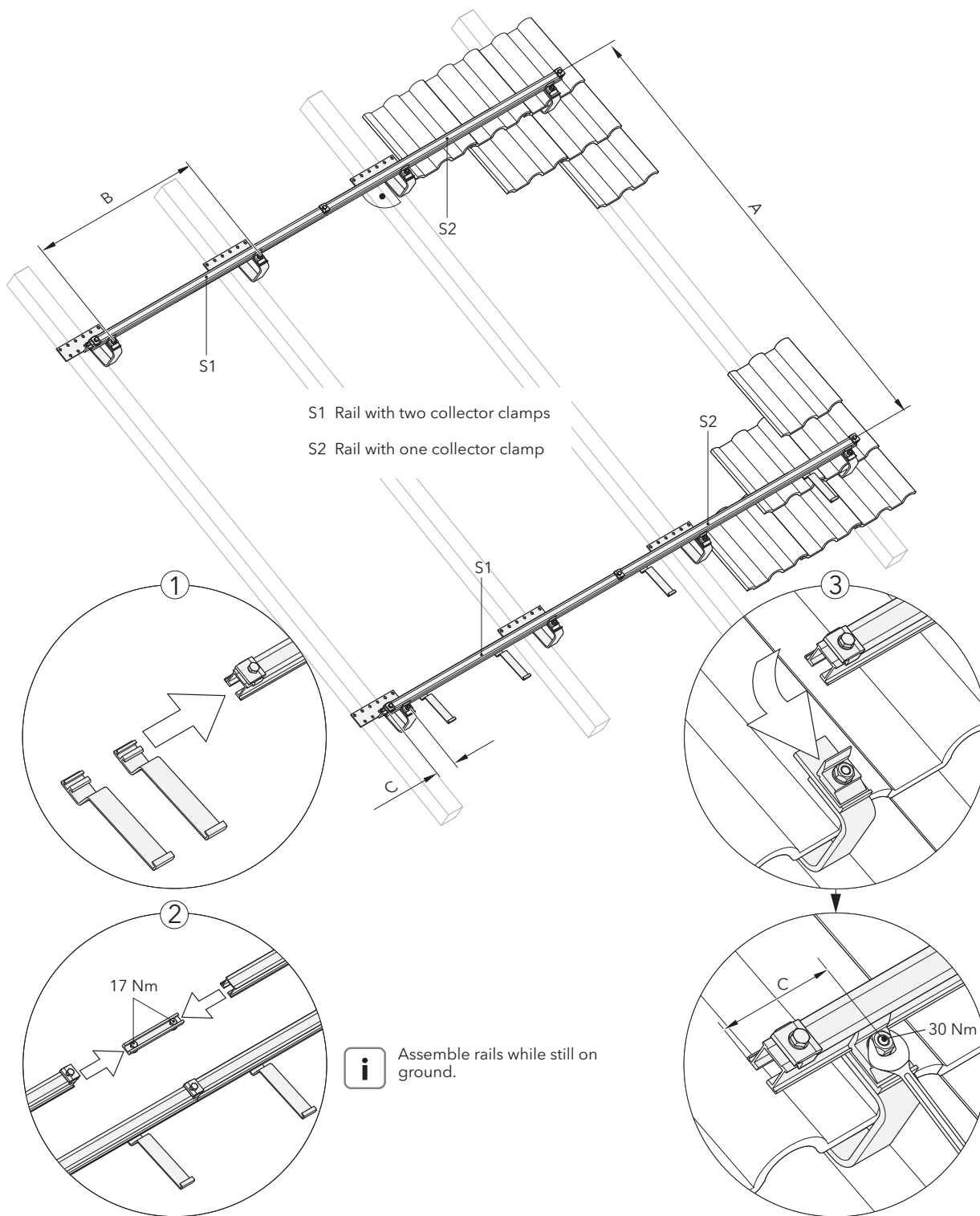
3.3 Installing the Rails

Installing the rails of the single collector set



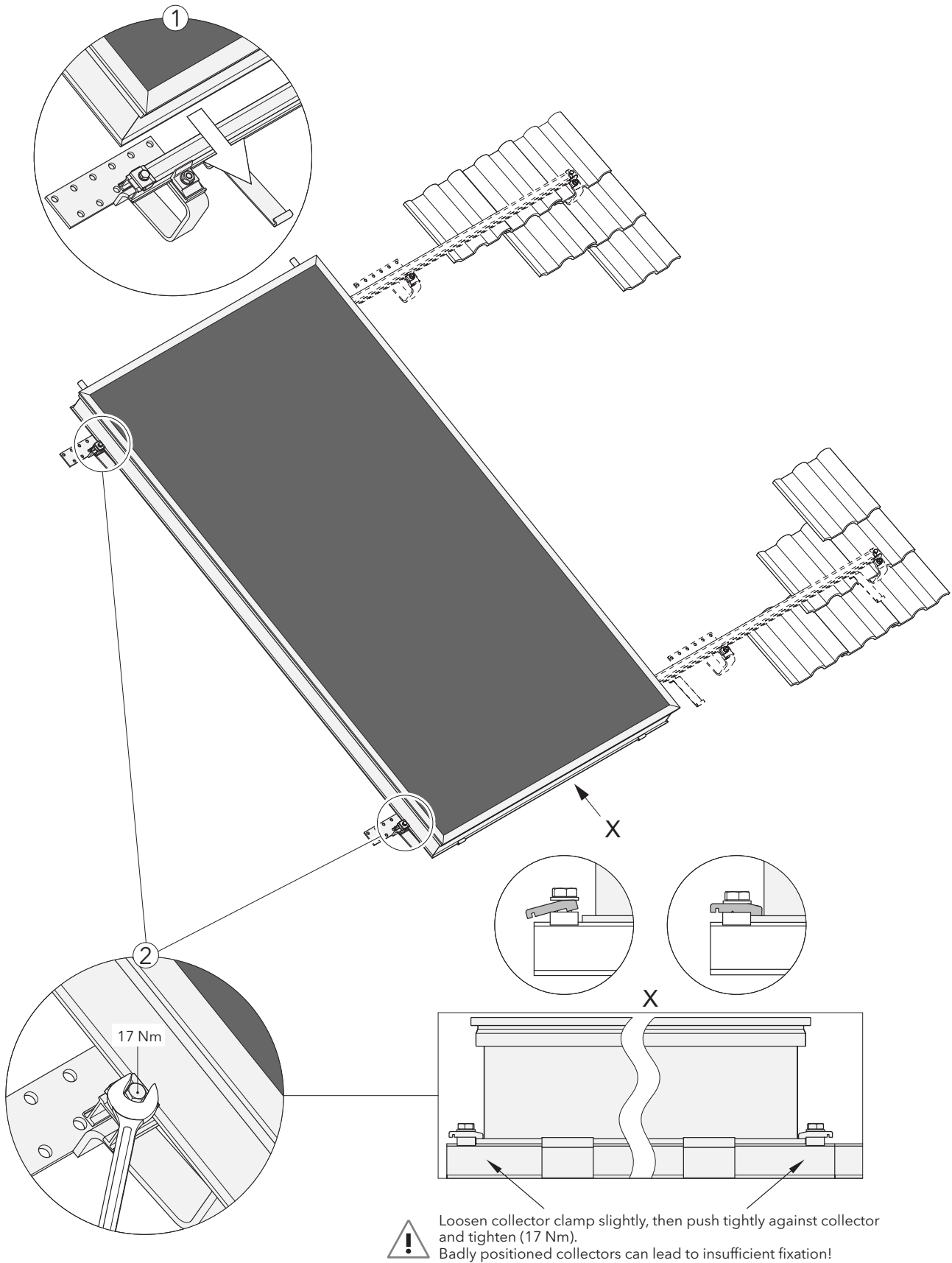
Overview rail assembly, for spacings see table

Installing the rails of the basic set

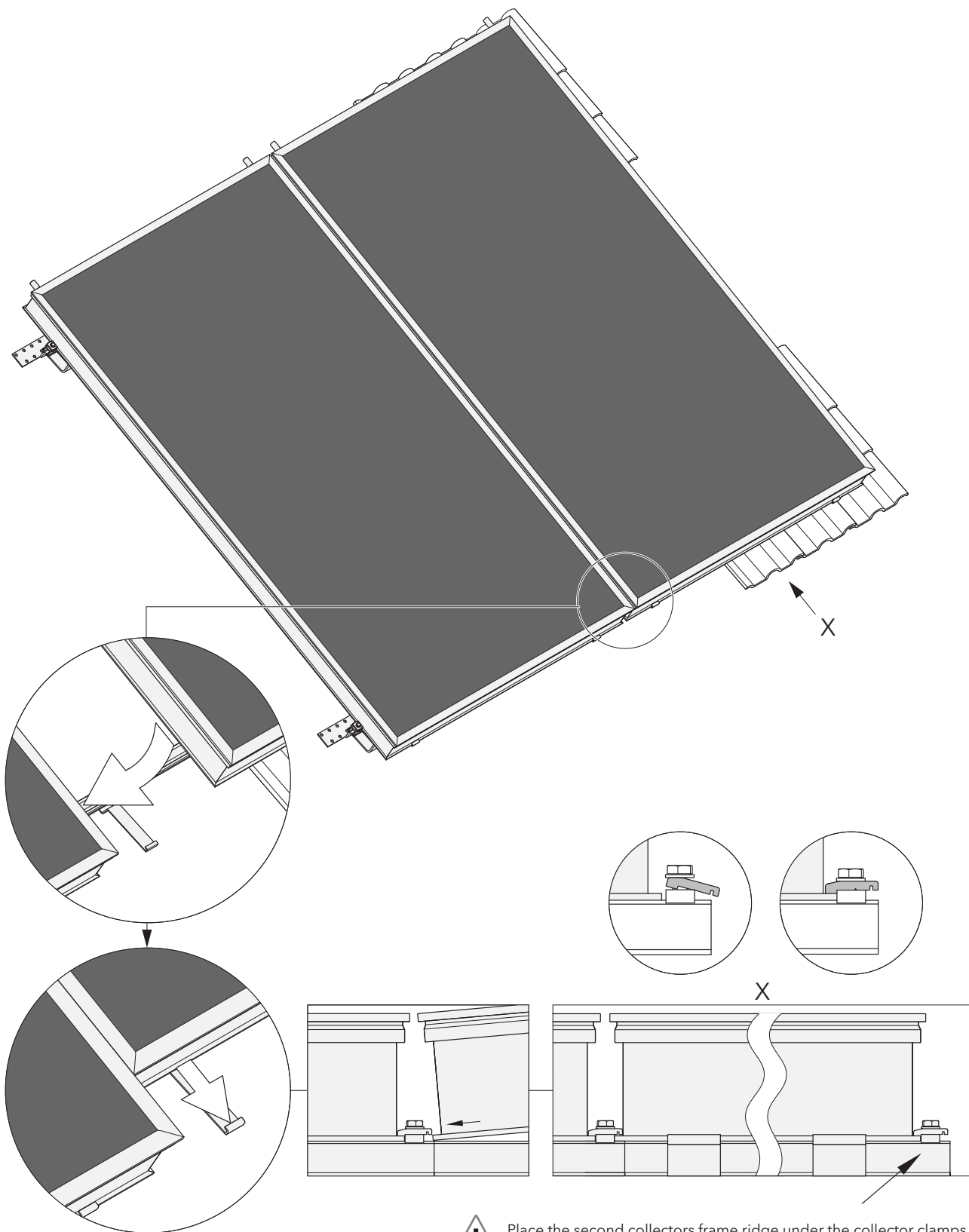


Spacings	
A	1600 mm - 1 900 mm
B	Max. 1200 mm
C	Max. 200 mm

3.4 Installing the Collectors

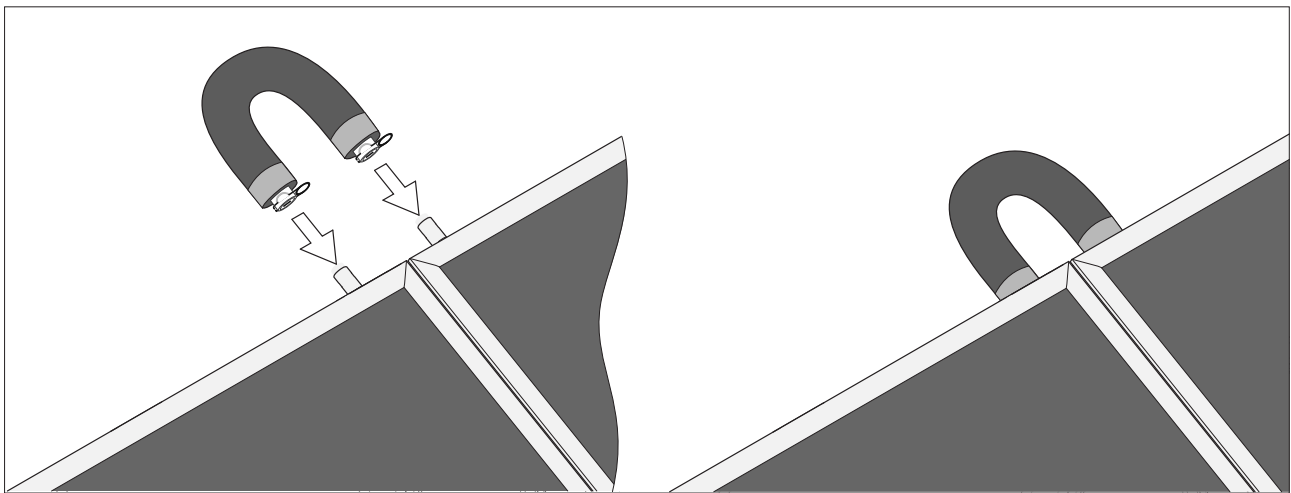
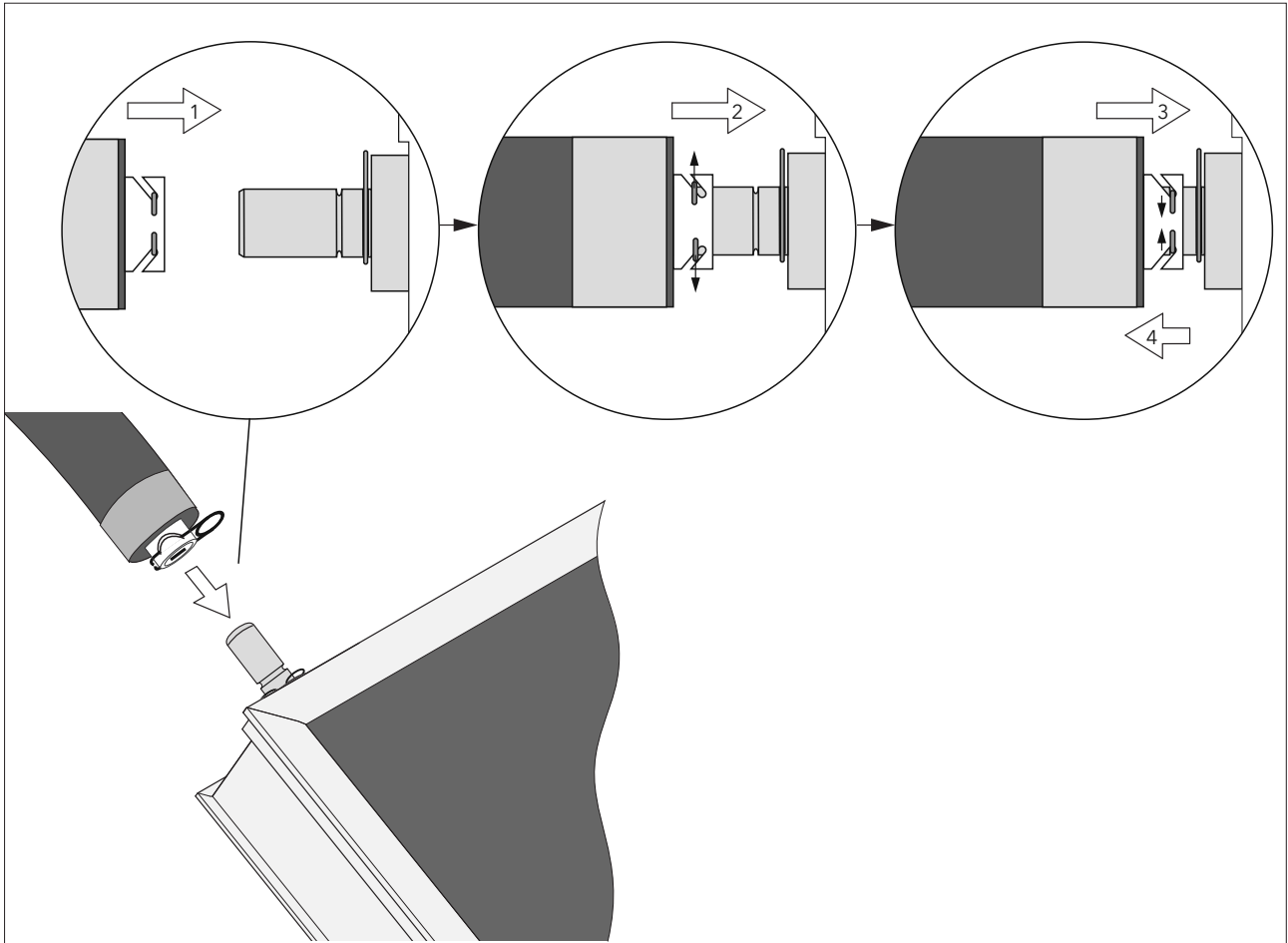


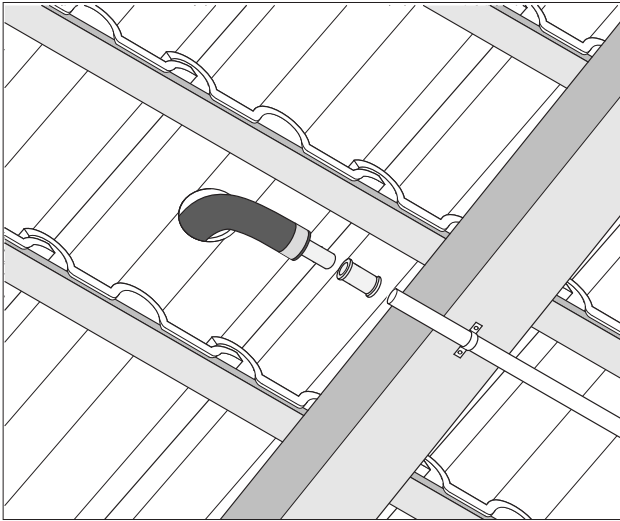
Loosen collector clamp slightly, then push tightly against collector and tighten (17 Nm).
Badly positioned collectors can lead to insufficient fixation!



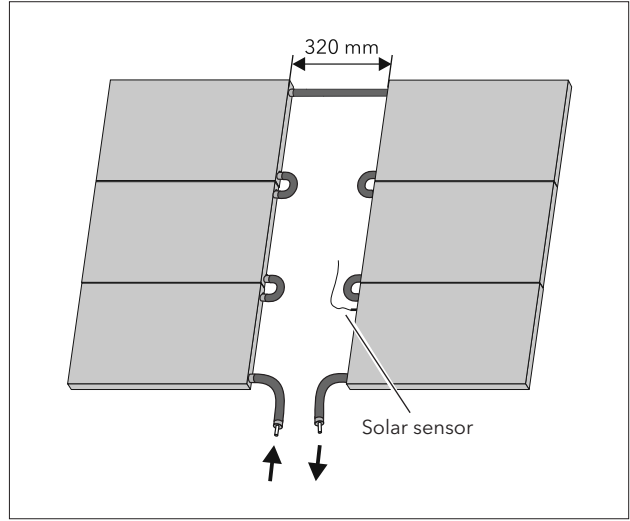
Place the second collectors frame ridge under the collector clamps on the side of the first collector. Slightly loosen on other side, push towards collector and fasten the collector clamps (17 Nm). Wrong or badly positioned collectors can lead to an insufficient fixation!

4 Collector Connections





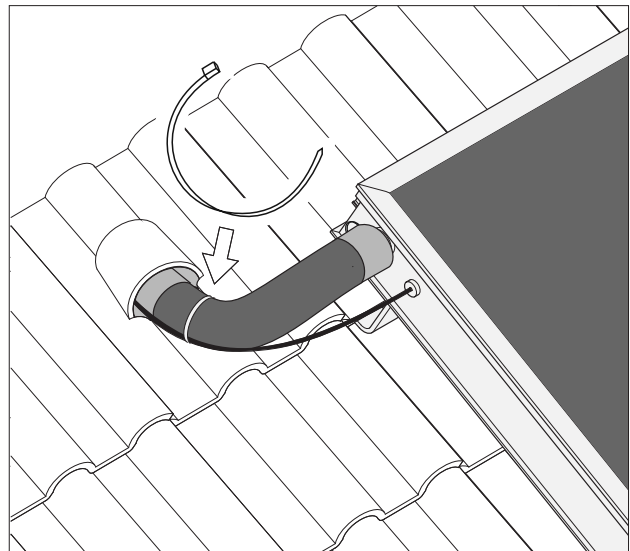
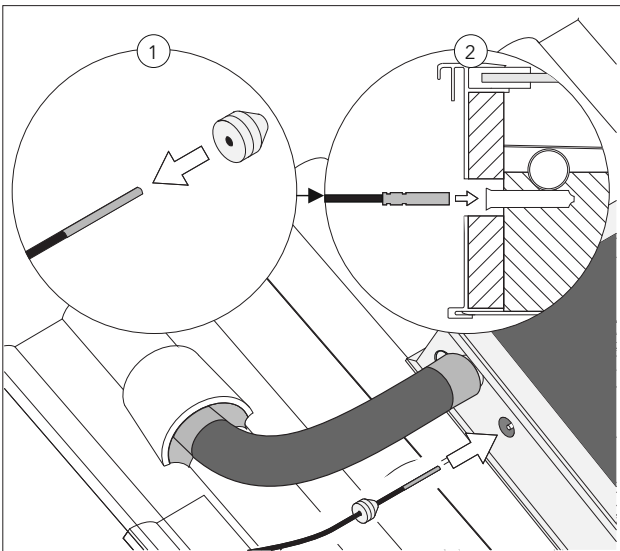
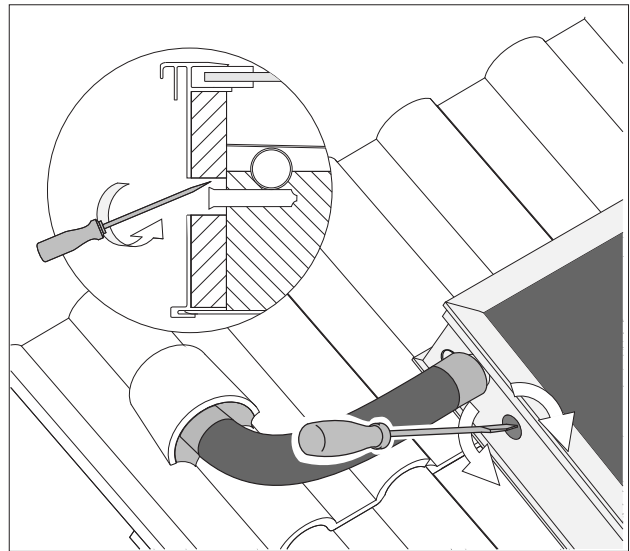
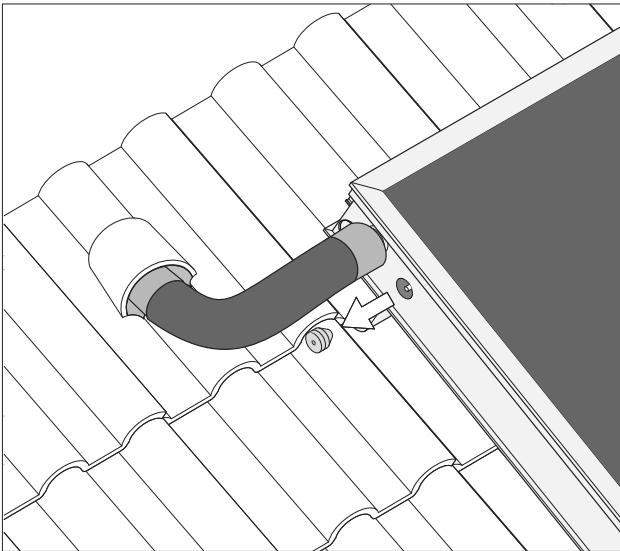
Inside the roof connect the collector connection hose (stainless steel, 18 mm) to the solar circuit, for example via double socket, compression ring coupling or solder connection. For soft solder connection to copper, make sure to use appropriate solder



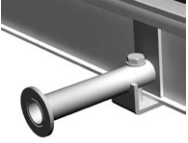

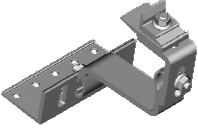




Serial connection up to max. 6 collectors.
Use sufficiently strong filling pump for filling.



5 Collector Sensor Installation



6 Accessories

Accessory	Description
	<p>2 collector handles for easier transport and handling</p>
	<p>Sensor cable protection set against animal bites and pecking</p>
	<p>Height adjustable heavy duty aluminum roof brackets P Alu Hv Top for flat clay tiles for evening out irregular roofs (set of 4).</p>
	<p>Roof bracket BSB, tin tile Top for plain tile (with rounded end) roofs (set of 4)</p>
	<p>Universal roof duct tile for pitched roofs</p>
	<p>Set of 2 with snap-on connection for toolless installation, 90 mm external, 900 mm length, for all common connection types</p>
	<p>Compression ring coupling for the direct connection of the collector to 18 mm copper pipe.</p>