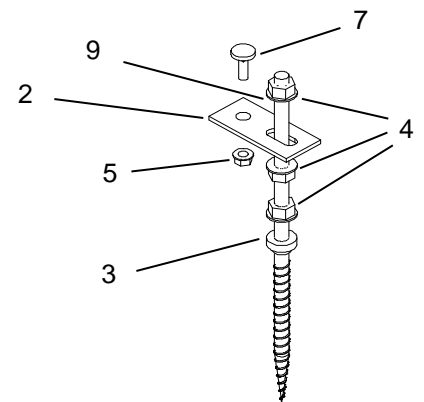
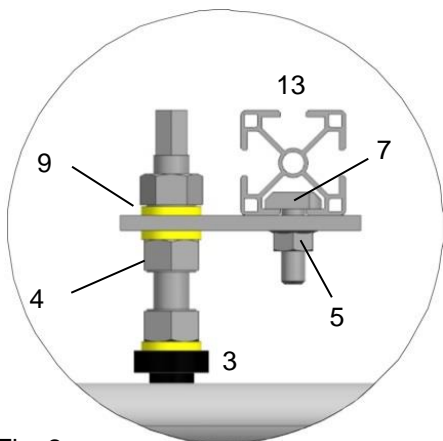
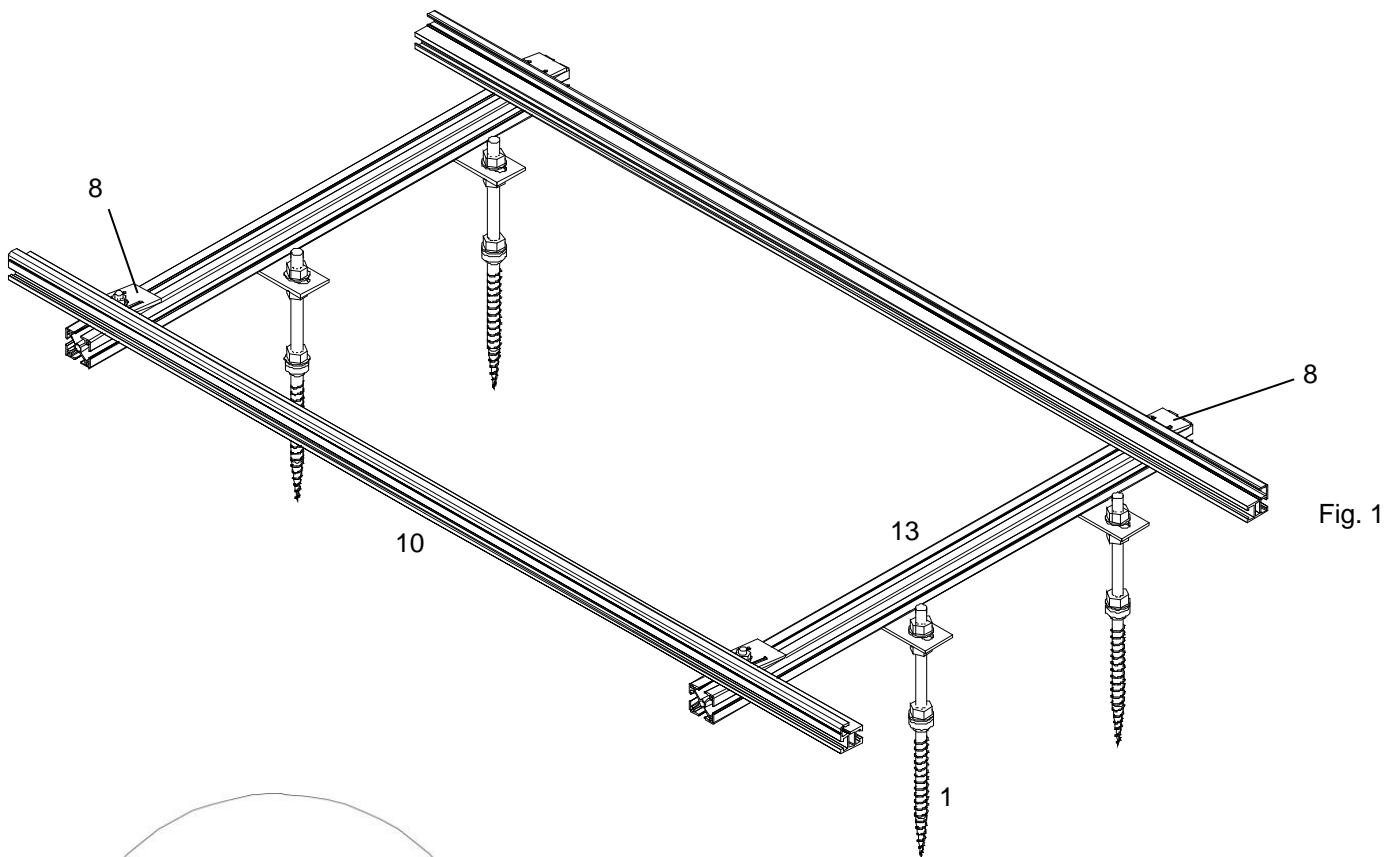


EN

**Special screw - fastening set for on-roof collectors
gevoSol / sunnySol**

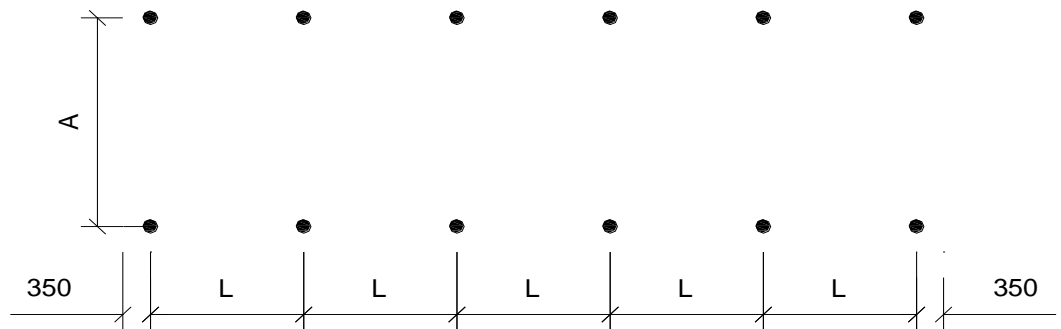
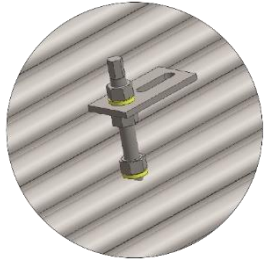
Special screw - fastening set for on-roof collectors gevoSol / sunnySol



Pos.	Description	Fixing rows		
		2	3	
1	Special screw M12 x 350 mm	4	6	
2	support angle for special screws	4	6	
3	Sealing	4	6	
4	Nyloc nut M12 with flange_V2A	12	18	
5	Nyloc nut M8_V2A	4	6	
7	Hammerhead bolt M8 x 20 mm_V2A	4	6	
8	Mounting clamp	4	6	
9	Fan disk M12	4	6	
		Number of collectors		
Required accessories:		1	2	3
10	Support profile (horizontal)	2	2	2
11	Self-tapping screw 4,8 x 16 mm	2	4	6
12	Connection piece for support profile	2	2	2
13	rail (vertical), Alu 35 x35 mm	depends on panel type / mounting system		

Special screw - fastening set for on-roof collectors gevoSol / sunnySol

- For finding the perfect position of the collectors you have to measure the distance (A) between the highest and the lowest special screw (1) on the roof. The holes should be settled in the middle of the tiles in order to just one tile has to be drilled (see sketch below).



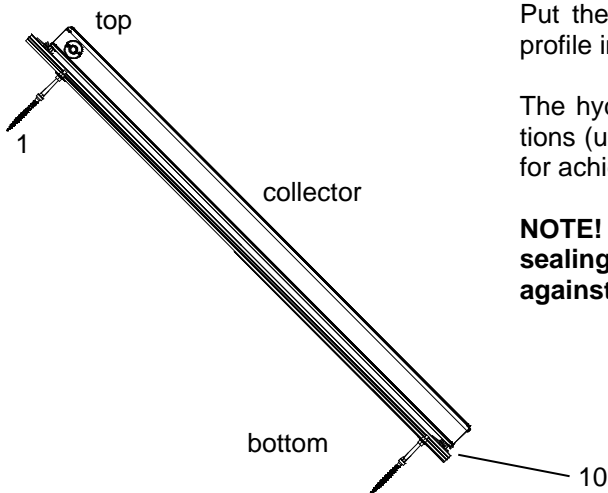
Number of fixing points and distances										
Number of collectors vertical, Type 23	1	2	3	4	5	6	7	8	9	10
Fixing rows	2	3	4	5	7	8	9	11	12	14
A (mm)	2180	2180	2180	2180	2180	2180	2180	2180	2180	2180
L (mm)	750	750	877	940	815	860	894	828	855	811
Number of collectors horizontal	1	2	3	4	5	6	7	8	9	10
Fixing rows	2	4	6	8	10	12	14	16	18	20
A (mm) Type 23	1153	1153	1153	1153	1153	1153	1153	1153	1153	1153
A (mm) Type 26	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313
L (mm)	1400	1187	1144	1126	1116	1109	1105	1101	1099	1097
Number of collectors vertical, Type 26	1	2	3	4	5	6	7	8	9	10
Fixing rows	2	3	5	6	8	10	11	13	15	16
A (mm)	2180	2180	2180	2180	2180	2180	2180	2180	2180	2180
L (mm)	900	910	778	880	813	776	827	797	775	809
ATTENTION!										
These above tables serve as guidelines. The actual required number of rows depends on fixing the structural requirements on site, and depending on the application with the applicable standards and regulatory documents, in particular, the standards EN1991-1 and DIN1055.										

- Mark the lowest row with impact cord and a spirit level and determine the right position of the lowest screws (1). The distance (L) between the screws depends on the rafter distance of the roof. Please note to fix the special screws on the wave mountain on a firm underground (e.g. rafter) as illustrated in Fig.1.
- Drill a hole with \varnothing 14 mm for the special screw (1) and sealing (3) into the tile (do always drill in the wave mountain, Fig. 1), then drill a hole of \varnothing 7 mm (at firm undergrounds like e.g. concrete, drills and pegs with \varnothing 14 mm are needed). To achieve the necessary firmness, the hole should have at least 120 mm, that the screw can be screwed in with the whole shank (min 110 mm).

Special screw - fastening set for on-roof collectors gevoSol / sunnySol

4. Screw the special screws (1) into the hole by screwing a nut (4) against the special screw. Use these nuts (4) as a flat. Subsequently take apart the nuts. Pull the seal into the hole with \varnothing 14 mm and fix it with a nut (**But do not thighten it too much, otherwise the tile could break**). Then install the next nut (4) which serves as surface for the support angle (2) (see Fig. 3). The distance between the two nuts (4) depends on the type of tile (recommondation about 30 mm).
5. Place the support angle (2) at the special screws (1) on the backside of the collector and fasten it with the nut (4) and the fan disk (9). With the slotted hole eventual disalignments of the screws can be adjusted (Fig. 3).
6. Install the bottom support profile (10) with the hammerhead bolt (7) and self fixing nut (5) on the assembly angle (Fig. 3).
7. Practise the items 5 to 6 for the upper profile (10), but don't screw the nut (5) too firm.

8. Installation of the collectors:



Put the collectors on the bottom support profile (10). Pull the top support profile into the planned nut of the collector.

The hydraulic connection between the collectors is done by screw connections (union fittings). First of all tighten them (with spanners) at the collectors for achieving the correct distance between the collectors.

NOTE! Before screwing of the compounds have the treads and the sealing surface are greased (e.g. silicone milk). It's necessary to pull against while screwing otherwise the collecting pipe could be rotated!

9. After this, fix each collector **twice** by using a self-tapping screw (11) on the support profile (10). The hole in the profile has already been drilled.
10. In the event of that several support profiles (10) have to be connected a connection piece (12) has to be pushed into the corresponding guide of the profile for each separation point. A central notch prevents from slipping through the profile (Fig. 4).
11. Now screw the upper nuts (5) with the top support profiles (10) as shown in Fig. 2 and Fig. 3.

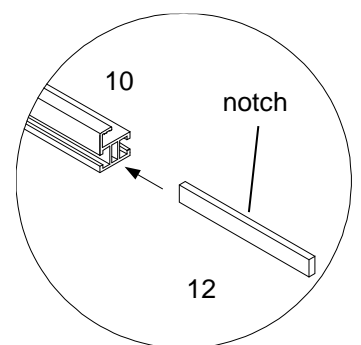


Fig. 4

ATTENTION!

All bolts and nuts for weight-bearing connections have to be tightened with a calibrated torque handle. The torque table can be found in the „Safety and installation manual for flat plate collectors“.