



## Assembly Instructions

Sleeping roof SCA 190	Art.-Nr.: 116642
Sleeping roof SCA 191	Art.-Nr.: 116643
Sleeping roof SCA 192	Art.-Nr.: 116644
Sleeping roof SCA 193	Art.-Nr.: 116645
Reinforcing frame SCA 190/191	Art.-Nr.: 111974
Reinforcing frame SCA 192/193	Art.-Nr.: 111981

These assembly instructions are intended for the complete sleeping roof construction.

C.F. Maier has released and verified only the complete construction set.

All statutory provisions must be observed.

**Important information for the acceptance by the Technical Supervisory Association:**

The vehicle is constructively modified by the roof construction resulting in the expiry of the operating licence.

When the assembly works are finished, it must be applied for a new operating licence according to motor vehicle construction and use regulation C.U.R. in effect presenting an official expertise by an inspector for motor traffic or an official expert.

## 1. Preparation of the vehicle

Cover the walking area of the vehicle with firm material (corrugated cardboard, press board etc.).



Dismantle the inside roof lining as well as the sun visors. Heat the sound absorbing panels (if there are any) with a hot-air dryer and remove them with a spatula.



Remove the lengthwise and crosswise running electric cables carefully from their fastening as to prevent the roof cover from being damaged.



Seal all vehicle openings of the car body using a varnish-compatible adhesive tape in order to prevent chips from entering! It is also possible to use the foil from the packaging.



Seal all the openings as aforementioned, particularly in the area of the side windows, as chips can fall in here easily from above and it is very difficult to remove them then.



Encase the inside of the vehicle by generously sticking foil to the area of the cut-out in order to prevent falling chips from entering the interior.

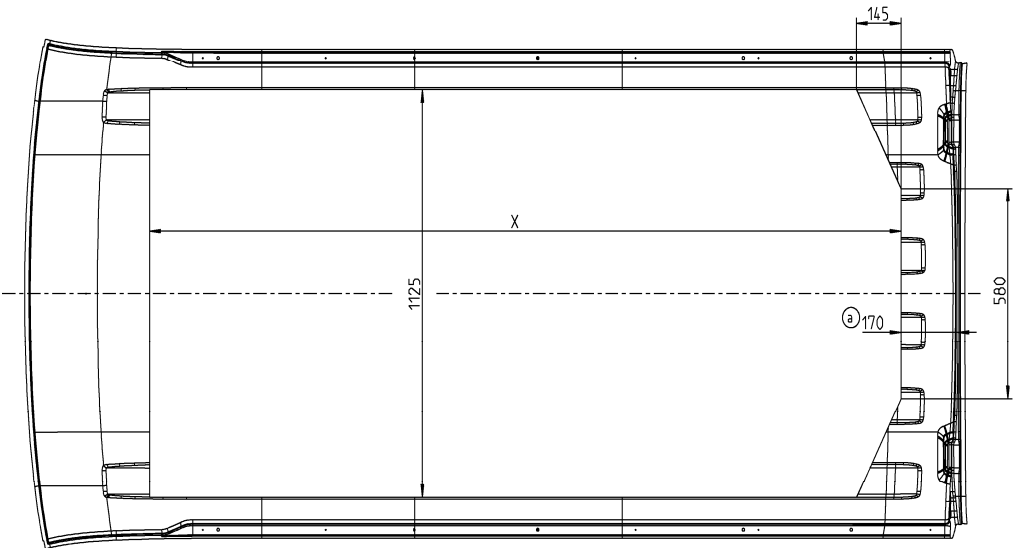
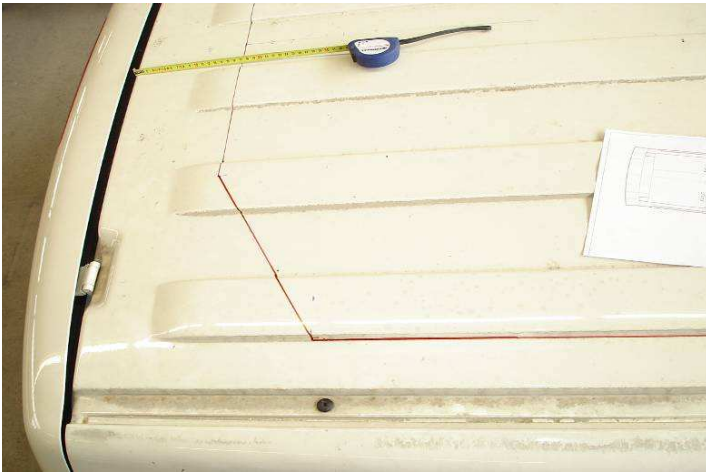
Furthermore, the roofing sheet must be well secured against falling down when it has been cut out.

**Important information:** Please pay attention that the electric cables are not placed in the cut-out area!



**2. Cutting out the roof:**

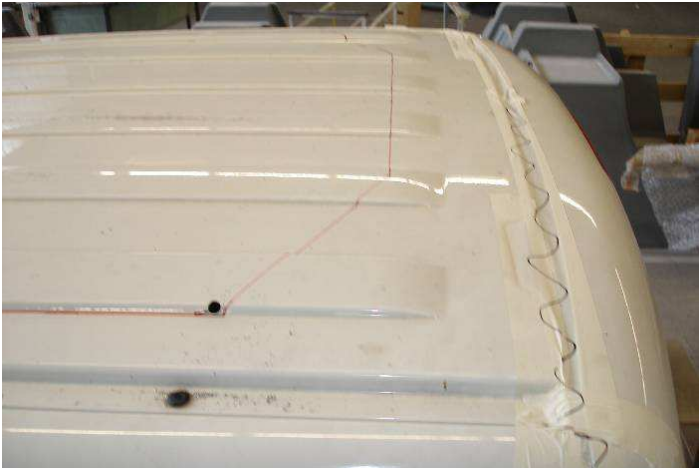
Transfer the outline of the cut-out to the vehicle's roof according to drawing 190/1.



**190/1**

Radstand	X <sup>Ⓐ</sup>
3000	2450
3400	2850

Rebore the corners with a borer of 12 mm diameter.



After that, you can saw out the roof with a jigsaw, starting from one of the corners.

**Important information:** Protect the roof from falling down!



After having removed the cut-out roof, the lateral reinforcing clips must be shortened according to the photograph opposite so that the reinforcing frame can be placed laterally.



The clips are cut with a special saw for the car body. Please pay attention to the wiring harness!



### 3. Adaptation of the reinforcing frame

As soon as all reinforcing clips have been shortened, the reinforcing frame is fitted in with screw clamps. Please see to it that the frame is situated centrally and as far back as possible.



Starting from the offset to the outline of the cut-out with 10 mm, bore holes are placed with a distance of about 200 mm through the roofing sheet and the upper wall of the reinforcing frame. Start in one corner of the cut-out and divide the bore holes over the whole length and width of the vehicle. Bore diameter is 5.2 mm.



After that, remove the reinforcing frame again. The bore holes must be deburred thoroughly as well as all cutting edges, which have developed by cutting out the roof cladding and its reinforcements. Remove the bore and saw shavings thoroughly with an industrial vacuum cleaner!

Then, please prime all newly-developed bare spots with a standard rust inhibitor.



#### 4. Gluing in the roof reinforcement

Prior to gluing in the reinforcing frame, you must clean the surfaces of the vehicle roof and the reinforcing frame where it will be fixed. Use cleaning agent Sika 205 and apply it with a cloth.



After that, please apply Sika-Primer 206 G+P to all surfaces concerned lightly, but holohedrally. Use a cloth again for applying.

The Primer should be vented for at least 15 minutes!



Apply Sika 221 to the corresponding surfaces of the frame and align the reinforcing frame within the vehicle to the roof cut-out as soon as the ventilation has been finished. You can use one or several rivets for orientation. Again, fix the reinforcing frame with screw joints. In order to avoid having to rebores the rivet openings, it would be recommendable to stick all rivets into the boreholes first. Please use a blind rivet with 4.8 x 16.9 mm aluminium/steel.



Thoroughly remove excessive Sika after riveting by using a particular Sika removing agent and seal then the cutting edges. Now, any fixtures used can be removed, too.



Rivet the fixing plates (article no. 111978) laterally below the cut reinforcing clips (see page 5 / image in the middle). The plates for which boreholes have already been prepared must only be aligned centrally to the reinforcing clip and the drilling template must be transferred to the car body and the reinforcing frame, bore diameter 5 mm, rivets with 4.8 x 16.9 mm aluminium/steel. The vehicles with a short wheel base (SCA 190/191) have four fixing plates on the left side, three plates on the right side due to the sliding door. Vehicles with a long wheel base (SCA 192/193) have a plate more on each side correspondingly.



## **5. Sleeping Roof Assembly**

Place the mounted sleeping roof (as delivered) on assembly stands and open the roof. The roof shell must be supported at the front and the pre-clamped pneumatic springs must be hooked into the ball-shaped heads and secured with the safety springs which come with it. As soon as both pneumatic springs are hooked in, the support can be removed.



After that, the sleeping roof is placed onto the vehicle and aligned with the outlines of the windscreen and the drip moulding on the side. The aligned sleeping roof must be secured from the inside with screw clamps against shifting (fasten the screw clamps in such a way that it will not collide with the roof shell when closing it). Then you can check the functions of the roof.

Important information: Of course, it is also possible to install the roof directly on the vehicle instead of on the assembly stands! The procedure is the same.



## 190/2

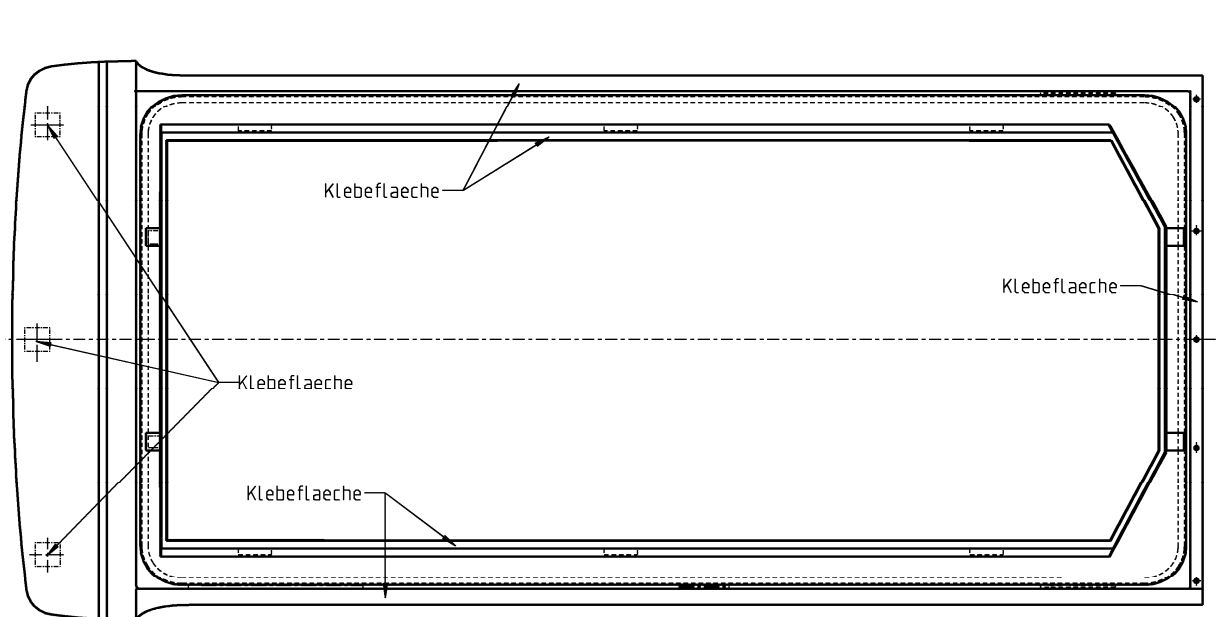
Drill five boreholes with a diameter of 5.2 mm crosswise at the back side according to drawing 190/2. Then drill three boreholes with a diameter of 3.5 mm from the inside in the front area of the spoiler where the bonding spots are. Drill the bottom drilling row of the hinged shears into the car body.

Mask the vehicle along the cutting edge of the platform with adhesive tape in order to avoid contamination of the car body when applying the primer. After that the roof can be removed again.

Attention: Please pay attention not to damage the internal electric cables!



The boreholes must be deburred, a ground-coat applied and drilling chips removed! The surfaces of the car body which will be bonded must be pretreated neatly according to drawing 190/3 with Sika-cleaning agent 205. Do not forget bonding surfaces on the spoiler fastening and the rectangular pipe reinforcing frame. Abrade the bonding surfaces at the platform with sandpaper.



**190/3**

Then, apply Sika-Primer 206 G+P lightly but covering the complete surface (platform and car body!). Apply the primer with a brush or a cloth!

The flash off time is at least 15 minutes.

Apply Sikaflex 252 sufficiently onto the bonding surfaces after exhausting the air from around the product. Additionally add Sikaflex on the side of the area around the three boreholes for the hinged shears.



Then, the roof can be replaced and re-aligned again. For orientation purposes you can stick rivets on the back (blind rivet 4.8 x 16.9 aluminium/steel). In the area of the spoiler, the platform is pulled onto the roof sheet using a strap. Then, the spoiler is tightened from the inside with sheet metal screws (3.0 x 35.0 mm). Attention: Do not tighten the screws too firm. Use blind rivets with 5.0 x 30.0 mm steel/steel in the area of the hinged shears.:

Important information: Pay attention when placing the roof on top that the bellows has no contact with the adhesive (contamination!).



As soon as all rivets are stuck, riveting is executed with a rivet gun.



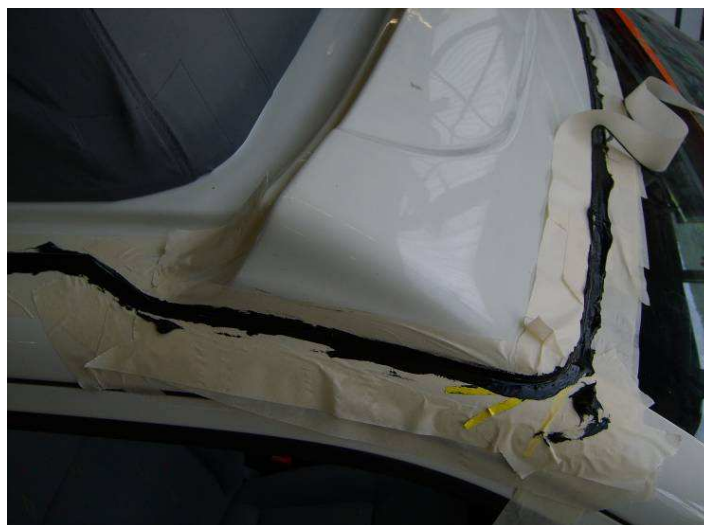
After that, the platform is clamped inside onto the reinforcing frame with screw clamps and left under tension for 48 hours until it is sure that the adhesive has completely dried.



The external cutting edges on the platform must be neatly masked (the car body has already been masked after replacement and alignment).



Fill the sealing joint neatly and completely with Sikaflex. Remove excessive Sikaflex evenly with a rubber spatula or simply with your finger.



After removal of the adhesive tape the joint must be polished once more with a sleeking agent in order to obtain an optimal result.



## **6. Installation of the support board of the couchette**

Insert the support board in the platform and center it laterally. The limit stop for the support board is at the back end.



Drill the boreholes for the rivets according to the drilling image of the hinge. Drilling diameter: 5 mm. Pay attention that the drillings are in a straight line (angle drill).



Then rivet the hinges with blind rivets of 4.8 x 16.9 mm.



Now, lift the support board and assemble the pneumatic springs with the piston rod pointing to the bottom. Then the support board can be pulled down back and the foamed plastic mattress be brought in position. Close the sleeping roof according to the instructions in our "Manual Customer".



## 7. Tools used:



## Mounting parts included:

90 rivets diameter 4.8 x 16.9 mm  
6 rivets diameter 5 x 30 mm



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