1) Assembly

1.1) The contact-secured car railing consists of the following components:

- 1 x swivel base for vertical railing support, including locking bolt, 2 x hexagon head bolts M12 x 80, incl. stop nut M12, safety switch with positive actuation (folded in) and position switch with angle lever (folded out)
- 1 x swivel base for vertical railing support, including locking bolt, 2 x hexagon head bolts M12 x 80, incl. 1 x stop nut M12
- 2 x vertical railing supports made of a 1115 mm C-profile
- 3 x crossbars made of a 2000 mm C-profile (handrail, knee rail and foot rail)
- 6 x serrated locking screws M10 x 20 mm, incl. Varifix sliding nut M10 (for fastening the crossbars to railing supports)
- L-angle bracket, incl. positive actuator and pan head screw M4 x 12 mm with hexagon socket and serrated locking nut M4 (for fastening to the railing support)
- 2 x cylinder head screws M4 x 10, with hexagon socket for fastening the L-bracket to the railing support

1.2) Necessary tools

- Open-end spanner with a 19 mm width across flats
- Hex key, size 2.5
- Reversible ratchet with 19 mm socket wrench

1.3) Assembly steps

Step 1:
First, the L-angle bracket, incl. the attached positive actuator, must be fastened to the vertical railing support using the two loose cylinder head screws as shown in the figure below. Care must be taken to ensure the precise bearing alignment of the L-angle bracket (see Figs. 1 to 3).

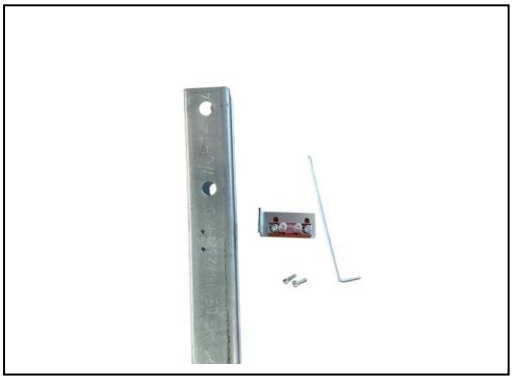

Fig. 1

Fig. 2

Fig. 3

The two slotted holes in the L-angle bracket plate can be used to align or finely adjust the positive actuator.

Step 2:
Two swivel base variants must be taken into account (see Fig. 4):

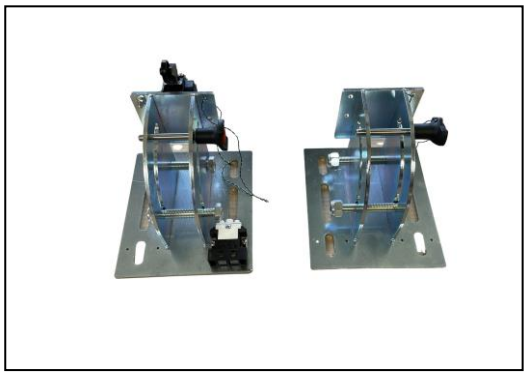

Fig. 4

Variant 1:
Swivel base with safety switch and position switch with angle lever (left).
Variant 2:
Swivel base without switches (right).

The vertical railing support must be screwed to the swivel base without switches (see Fig. 5).

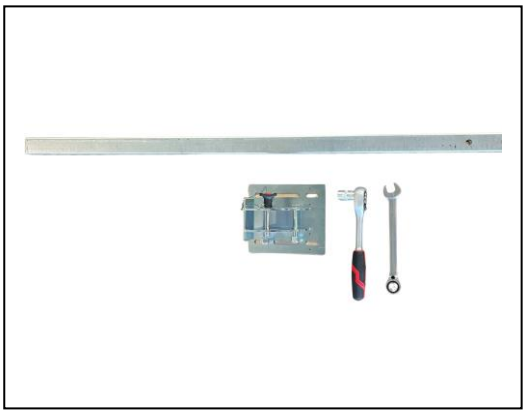

Fig. 5

First, loosen the hexagon head screws inserted into the swivel base and press the button to remove the locking bolt. Then insert the vertical railing support into the swivel base with the opening facing forwards and the two large holes facing downwards and secure it using the two hexagon head screws. Make sure that the stop nuts are not tightened too much so that the support can still swivel forwards
(see Figs. 6–7).

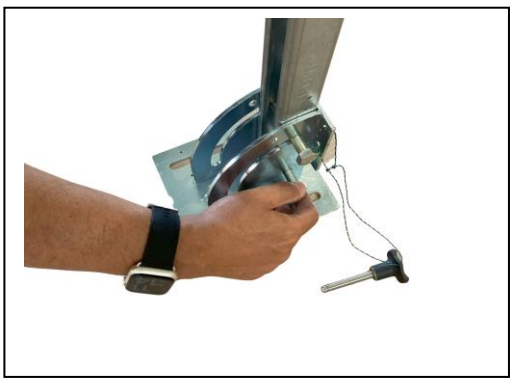

Fig. 6

Fig. 7

Then reinsert and secure the locking bolt (see Fig. 8).

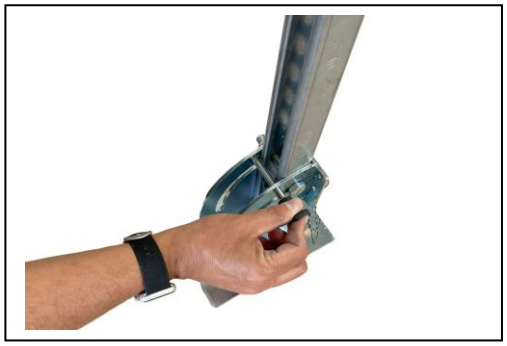

Fig. 8

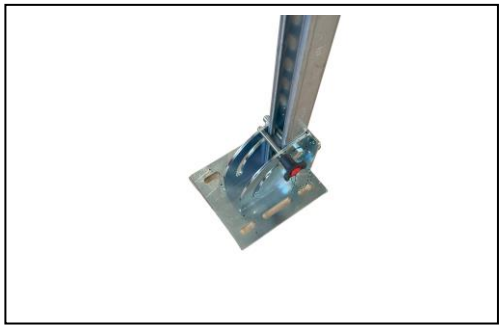

Fig. 9

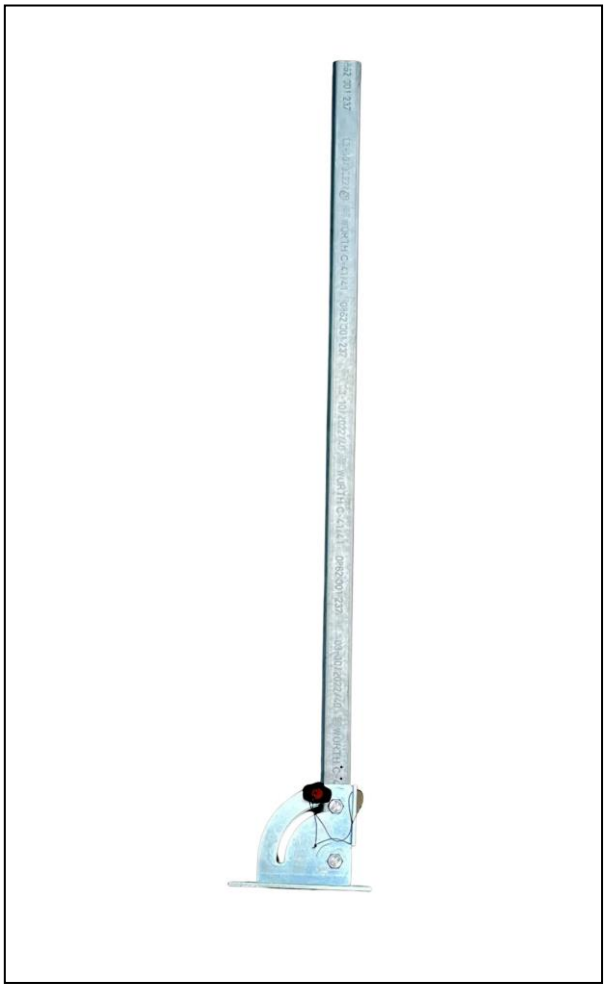

Fig. 10

Connect the vertical railing support to the swivel base, incl. safety switch, in the same way as the railing support was previously bolted and secured using the locking bolt
(Fig. 11).

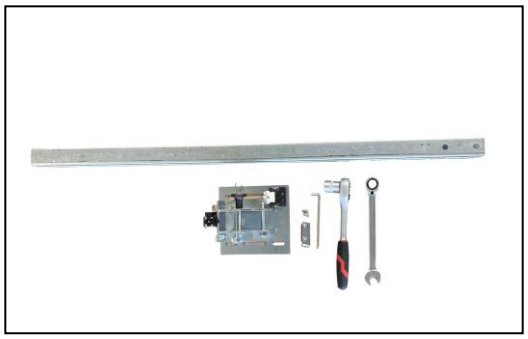

Fig. 11

Again, first loosen the hexagon head screws inserted into the swivel base and press the button to remove the locking bolt.

Then insert the vertical railing support into the swivel base with the opening facing forwards and the two large holes facing downwards and secure it using the two hexagon head screws. Again, make sure that the stop nuts are not tightened too much so that the support can still swivel forwards (see Fig. 12)

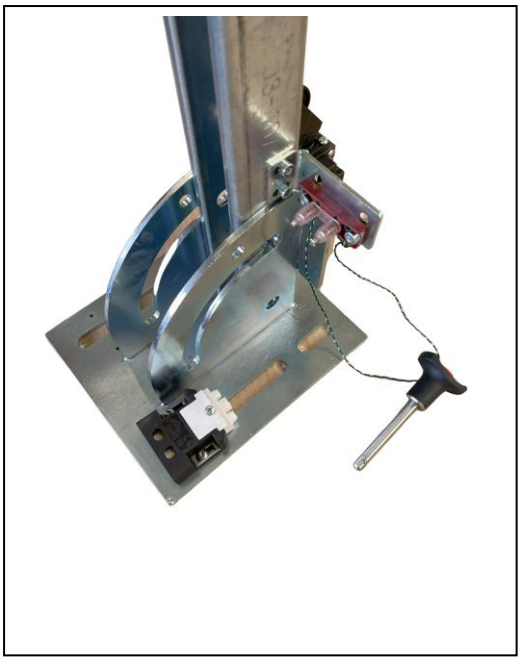

Fig. 12

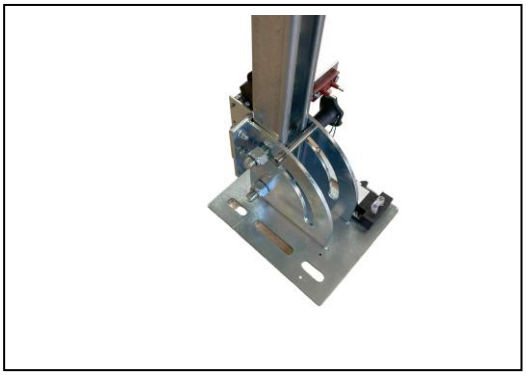

Fig. 13

Then reinsert and secure the locking bolt (see Figs. 13–14).

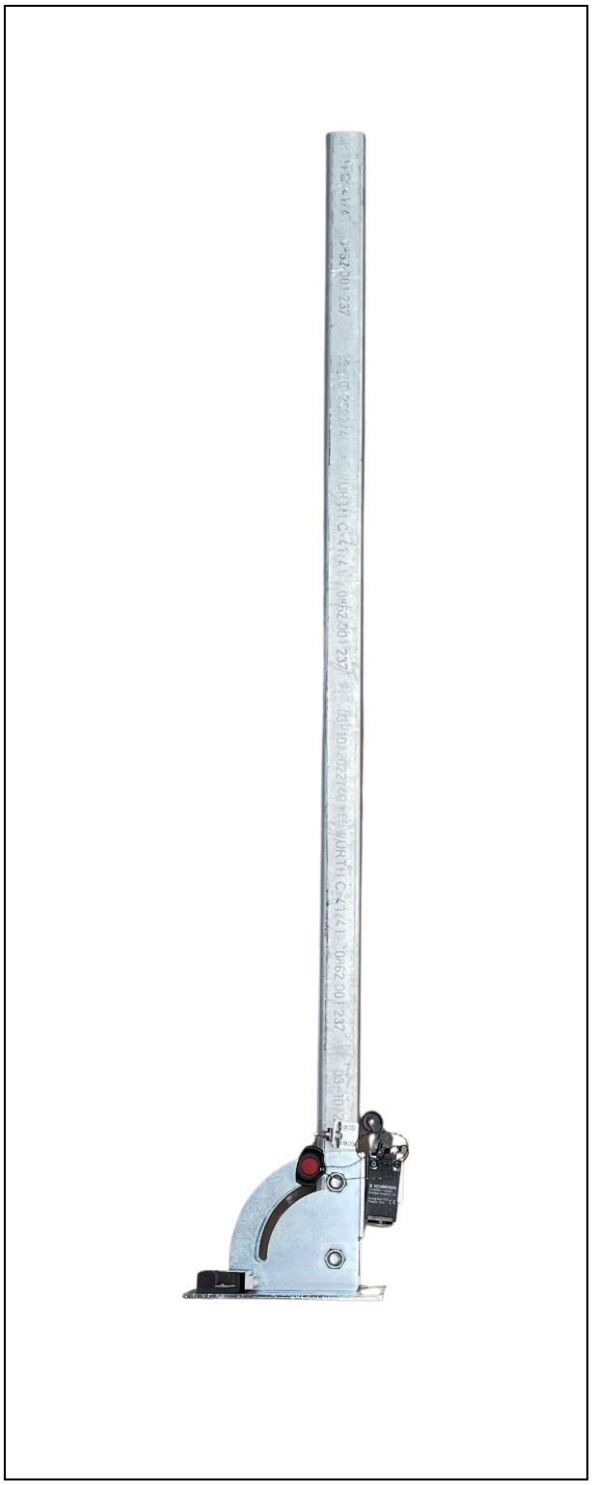

Fig. 14

Step 3:
Use screw connections to connect the left and right vertical railing supports via the crossbars, forming a handrail, knee rail and foot rail. Ensure that the crossbars are positioned correctly.

In figures 15 and 16 below, the vertical profile rail is the vertical railing support and the horizontal rail is the crossbar (handrail, knee rail or foot rail).

Fig. 15

Fig. 16

When installing the crossbars, ensure that the handrail is attached to the outermost upper end of the vertical railing supports (minimum height of top edge = 1000 mm) and that the clearance (gap) between the crossbars of the handrail and the knee rail as well as those of the knee rail and the foot rail does not exceed 470 mm (see Fig. 18).

Fig. 17

Fig. 18

During assembly, make sure that there is a way to distribute the forces affecting the component that is under load.

Step 4:
Now fix the remaining unmounted railing support to the lift car roof. Make sure that nothing protrudes into the path of the car railing during assembly.

Step 5:
Connect the contacts to the safety circuit of the lift. The bottom safety switch must be connected in such a way that the lift can be operated normally once the railing is folded in, the lift car roof has been vacated and the doors are closed (see Fig. 4).

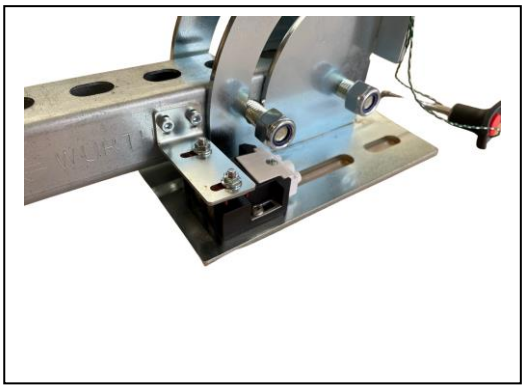

Fig. 19

Step 6:
Lastly, connect the position switch with angle lever. This must be connected to the safety circuit of the lift system in such a way that the technician can only perform an inspection run when they are on the lift car roof and the railing is folded out (see Fig. 20).

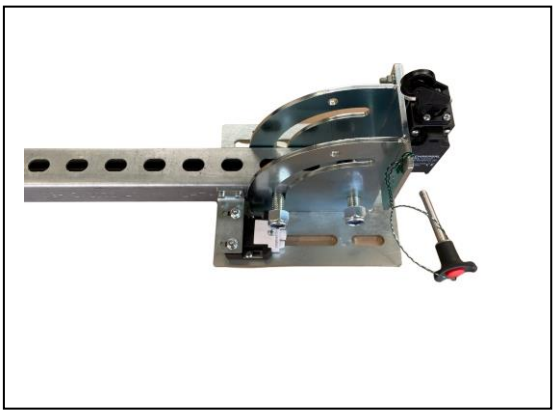

Fig. 20

The hinged car railing is now installed and ready for use.

2) Use

Step 1:
When the lift car roof is accessed, the car railing is folded in (see Fig. 21).

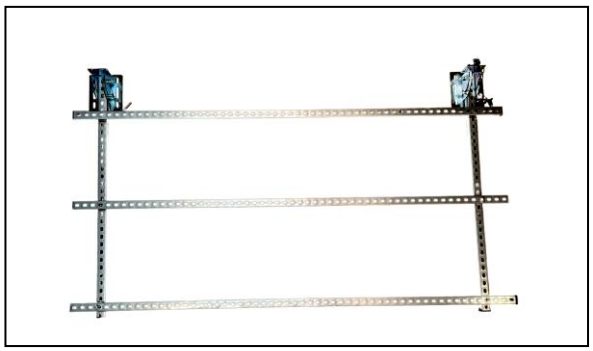

Fig. 21

Step 2:
Hold the handrail profile in the middle in a horizontal position and fold it outwards parallel to the lift car roof (see Fig. 22).
The two locking pins prevent the car railing from folding down. Inspection mode is now possible.

Fig. 22

Pulling up the handrail causes the bottom contact to leave its starting position (see Fig. 24) and, once connected by a technician, should signal to the lift control system that normal operation is no longer possible.

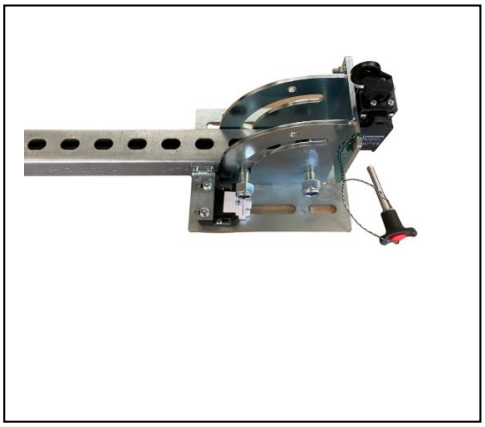

Fig. 23

Step 3:
When fully folded out, the railing support presses the position switch with angle lever (see Fig. 24). The position switch must be integrated into the lift control system by a technician so that the lift can only be operated in inspection mode. This will make it possible to do any work you need to do on the lift car roof.

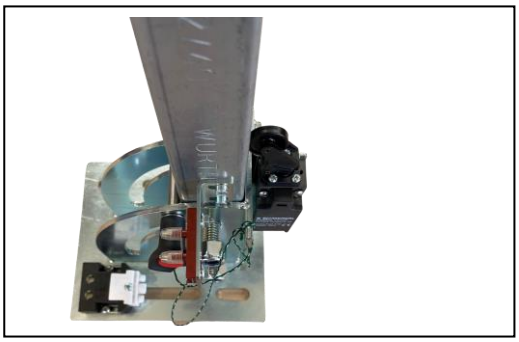

Fig. 24

Step 4:
Before leaving the lift car roof, normal operation mode must be restored. First, unlock and pull out the locking bolt again. Then fold down the railing using the handrail until the bottom safety switch fully returns to its starting position.

Step 5:
You should only leave the cabin roof after completing step 4 to guarantee that the lift will function properly.