Key word **Page**

Assembly manual for stair inclined lifts Konstanz

The assembly may only be performed by qualified technical personnel!

The following work may only be performed **by qualified personnel**:

Assembly work
Adjustment and setup work
Maintenance work
Malfunction search/removal

Qualified personnel are persons who

- who are familiar with the machine function
- have been trained about the functioning
- have read and understood the operating, assembly and service manuals
- are clear about the hazards of the machine (and its components)
- recognize and understand the relationship of the mechanical components
- recognize and understand the relationship of the electrical components
- possess the appropriate tools/measurement devices and can use them
- have sufficient knowledge of German or English for understanding

During any work on the machine, please observe:

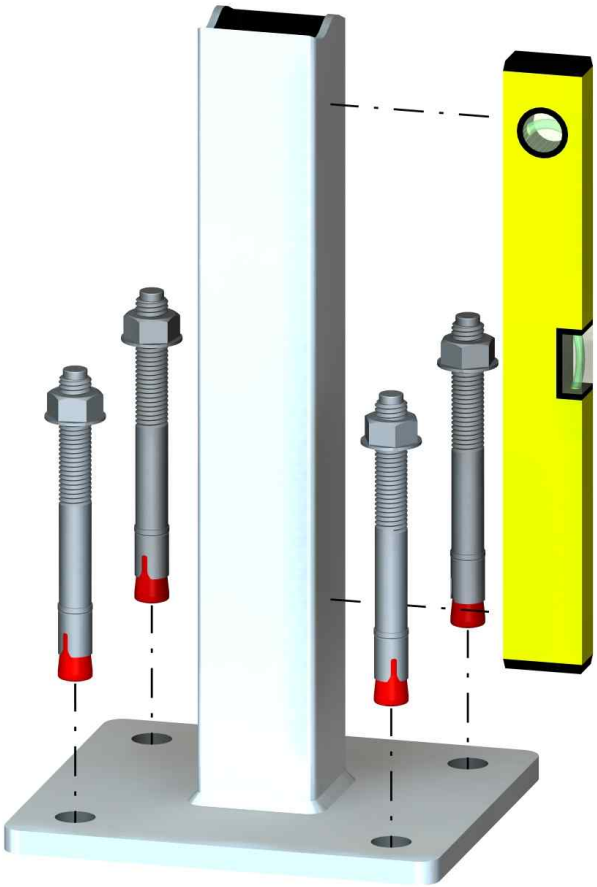
- Do not make the machine accessible to other persons with increased hazard potential (disassembled paneling parts, protective devices,…)
- Risk of tripping due to opened machine, avoid tools, power cables etc. lying around
- The hazard potential of the machine may not be increased after work on the machine.
- Parts of the machine which are not firmly connected with the construction/rail must be secured against falling over.

The safety notes in the operator manual must be observed!!

1 Check whether the on-site measures have been carried out (e.g. removal of the railing, chamfer beveling, removal of the opposite-lying handrail, current laying etc.).

2 In order to avoid damages, only the parts currently needed should always be unpacked. The unpacked parts of the installation should be temporarily stored on the foam which is delivered with them. The platform can be attached to the cabinets (as far in as possible) and thus transported.

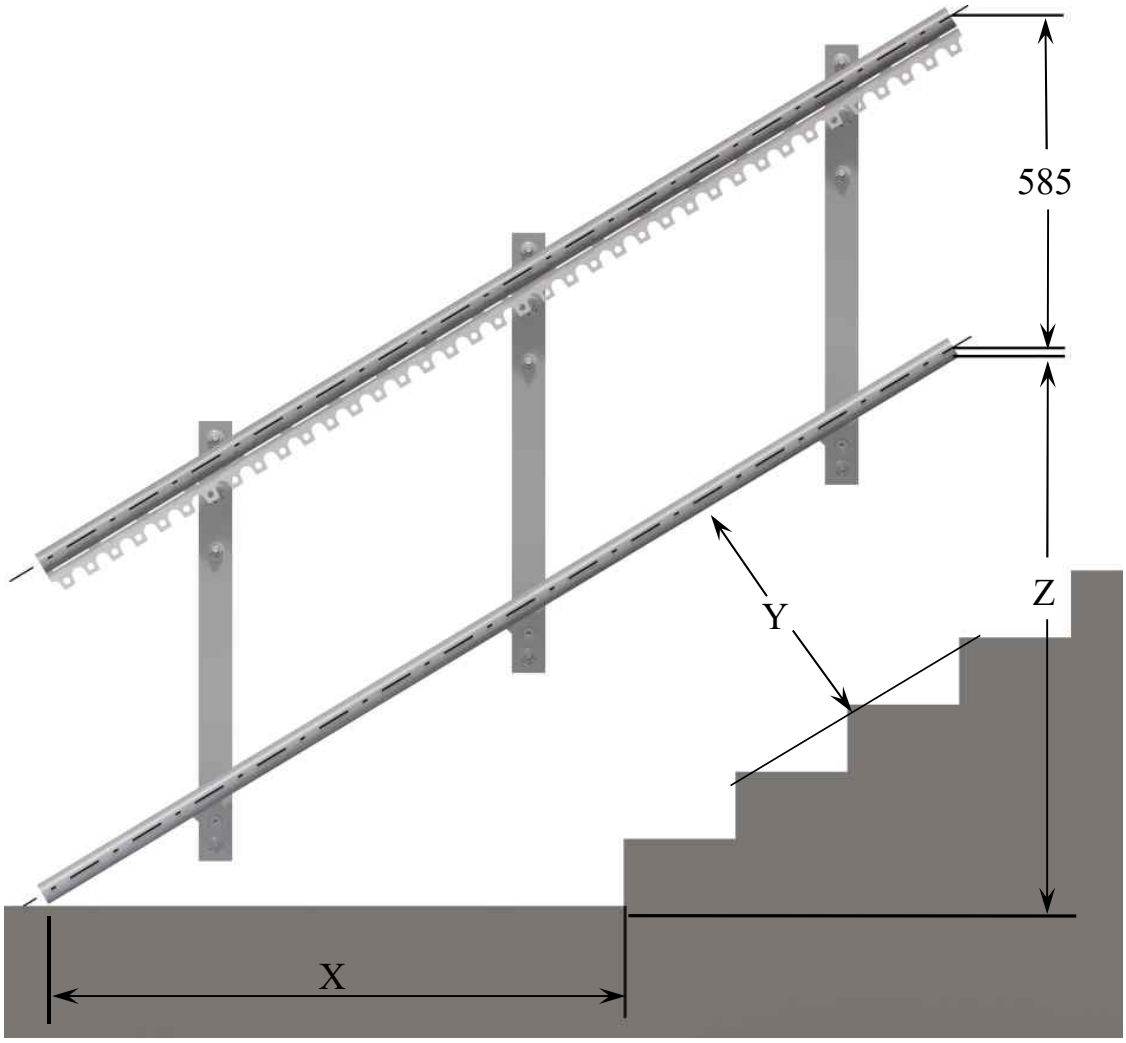
3.) Place and dowel the supports (in case of support assembly) in accordance with the installation drawing. In the process, make sure that the supports are attached **vertically** (Water level).



Important !!
Absolutely observe
appendix 1 on page 19 !

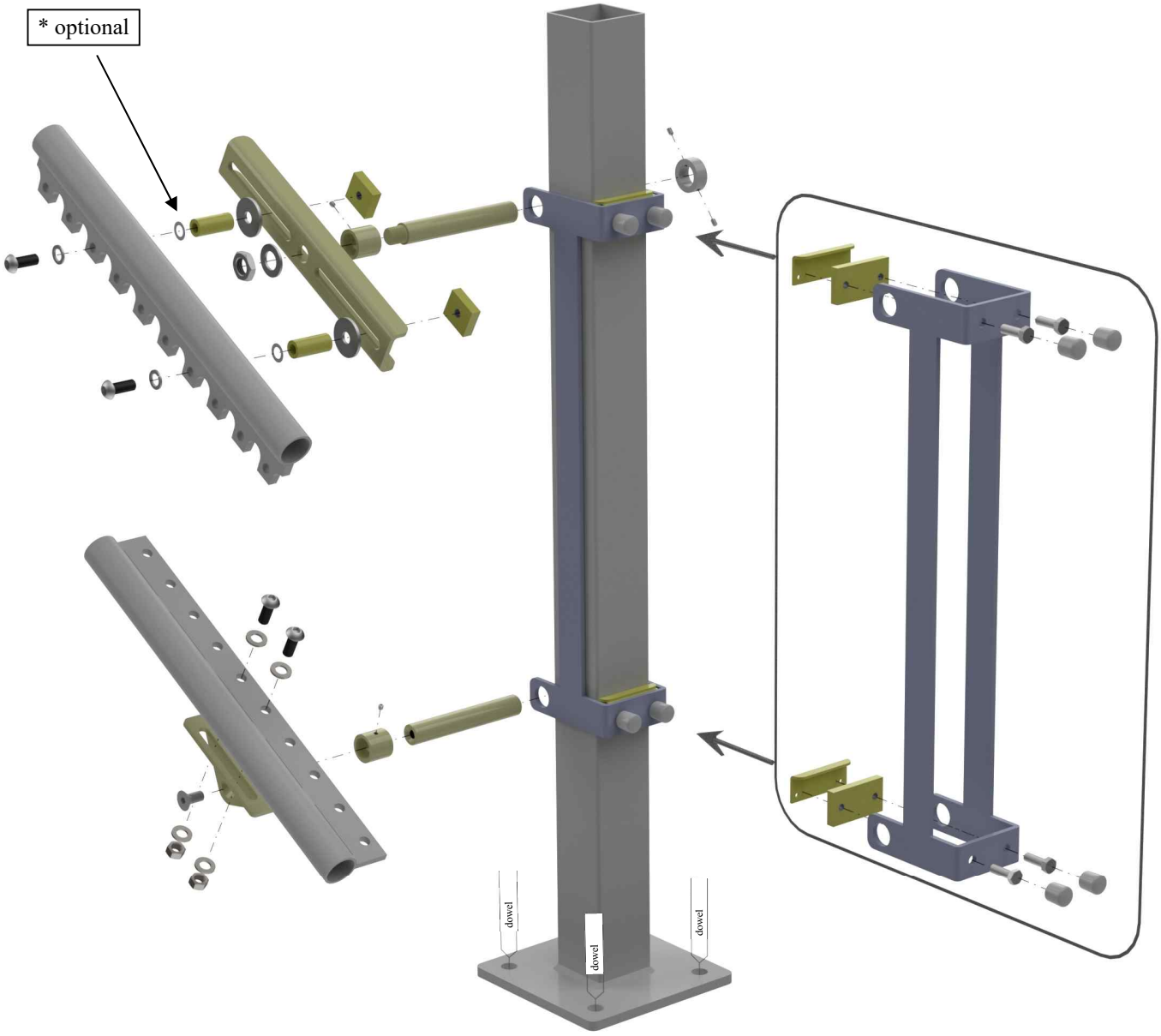
Dowel type to be used:
Appendix II

4.) Position the platform in accordance with the assembly drawing and guide the lower track pipe into the lower roller set (Observe item 6 on page 9). Arrange the lower track pipe in accordance with the displayed sketch. Dimension Y is takes precedence over dimension Z. Dimension Z gives the dimension between the lower edge of the lower track pipe (which as a rule has a length of 1900 mm) and the level of the lower stop (floor). Possibly this dimension cannot be measured directly on site because steps exist there. Then an auxiliary dimension should be computed on site (reduced dimension Z) by subtracting the respective step height from dimension Z. The auxiliary dimension then gives the vertical clearance between the end of the lower track pipe (lower edge) and the step which lies perpendicular below it.



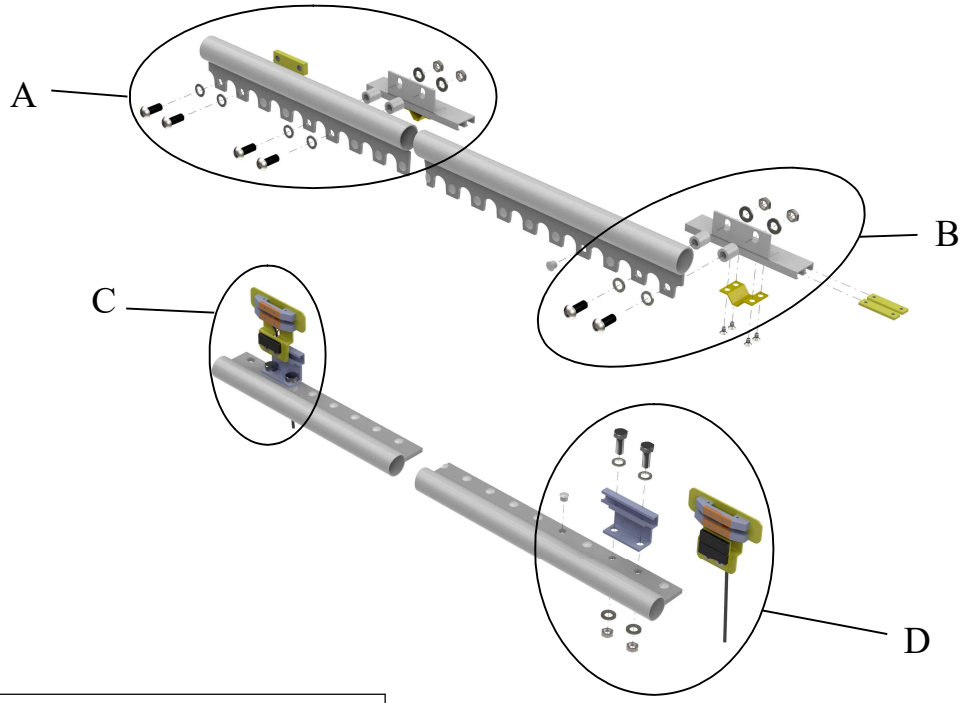
If the dimensions agree with those of the installation drawing, the lower rail should be fastened either to the wall (*see page7*) or on the supports (*see page 5*) (Make sure that the lower cap is present on the pipe). Only when the lower rail is completely installed will the upper rail be inserted and mounted. The maximum clearance between the individual fastening points is described in appendix 1 on page 19.
In the case of wall mounting on concrete/steel or by means of threaded rods, the fastening plates should be attached as displayed on the next page. Here, keep the maximum clearances of the fastening plates between each other as displayed in appendix 1(*Page19*).

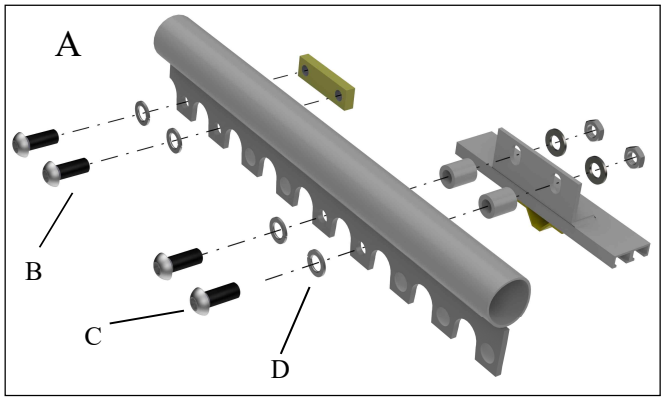
Example of a support fastening



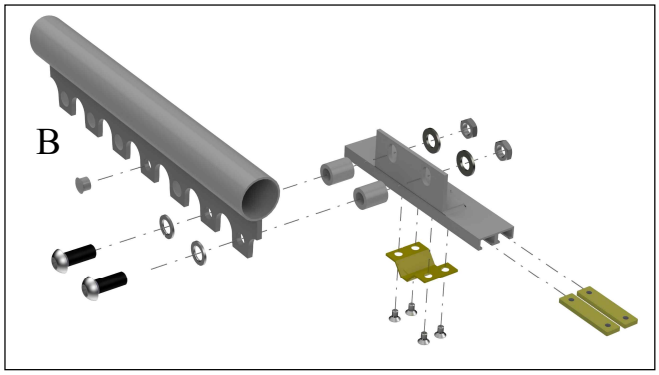
* optional:
Additional plastic ring for electropolished rail outdoor

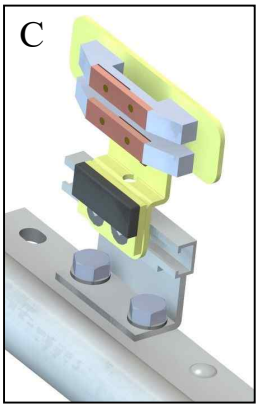
Example of an upper and lower stopping point

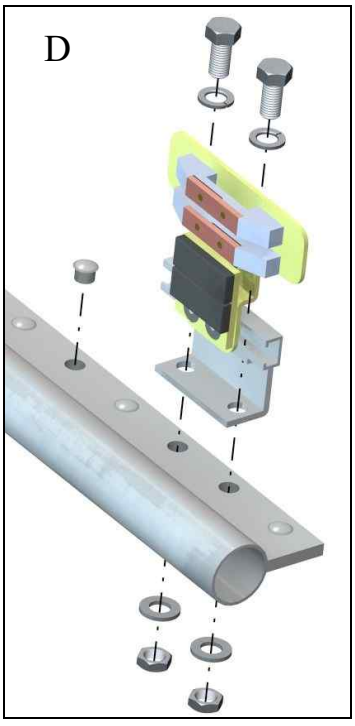




B: ISO7380-1 M12x20 8.8 (M=50Nm)
C: ISO7380-1 M12x45 8.8 (M=50Nm)
D: DIN127-B12







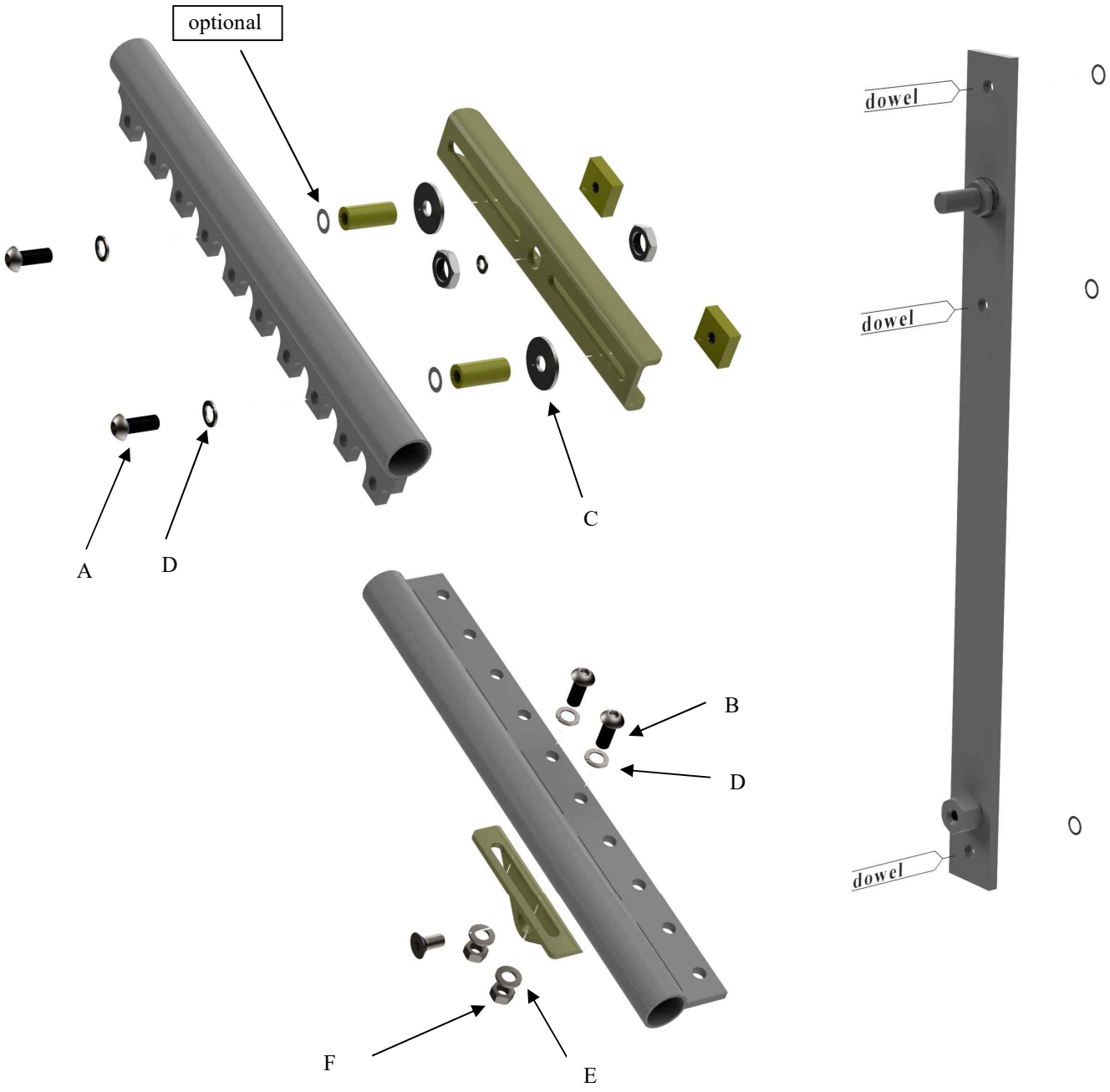
Example of a wall fastening

Building substance **Concrete (B25)**
Steel
Other (Only in connection with threaded rod M12)

Recommendation for dowel selection: category 3

...additional fastening options on the next page

A: ISO7380-1 M12x80 8.8 (M=50Nm)
B: ISO7380-1 M12x30 8.8 (M=50Nm)
C: DIN440-R12
D: DIN127-A12
E: DIN125-A12
F: DIN555-M12



Additional fastening options (to the wall)
for the following building substances:

Solid brick/Lime sand solid brick

Recommendation for dowel selection: category 1
Holes 1-11

horizontal coring brick /vertical coring brick/lime sand ventilating brick

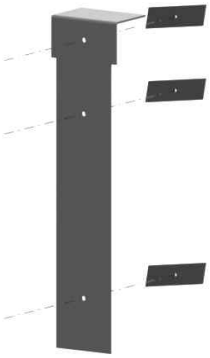
Recommendation for dowel selection: category 5
Holes 1, 3, 5, 7, 9, 11

Building substance wood

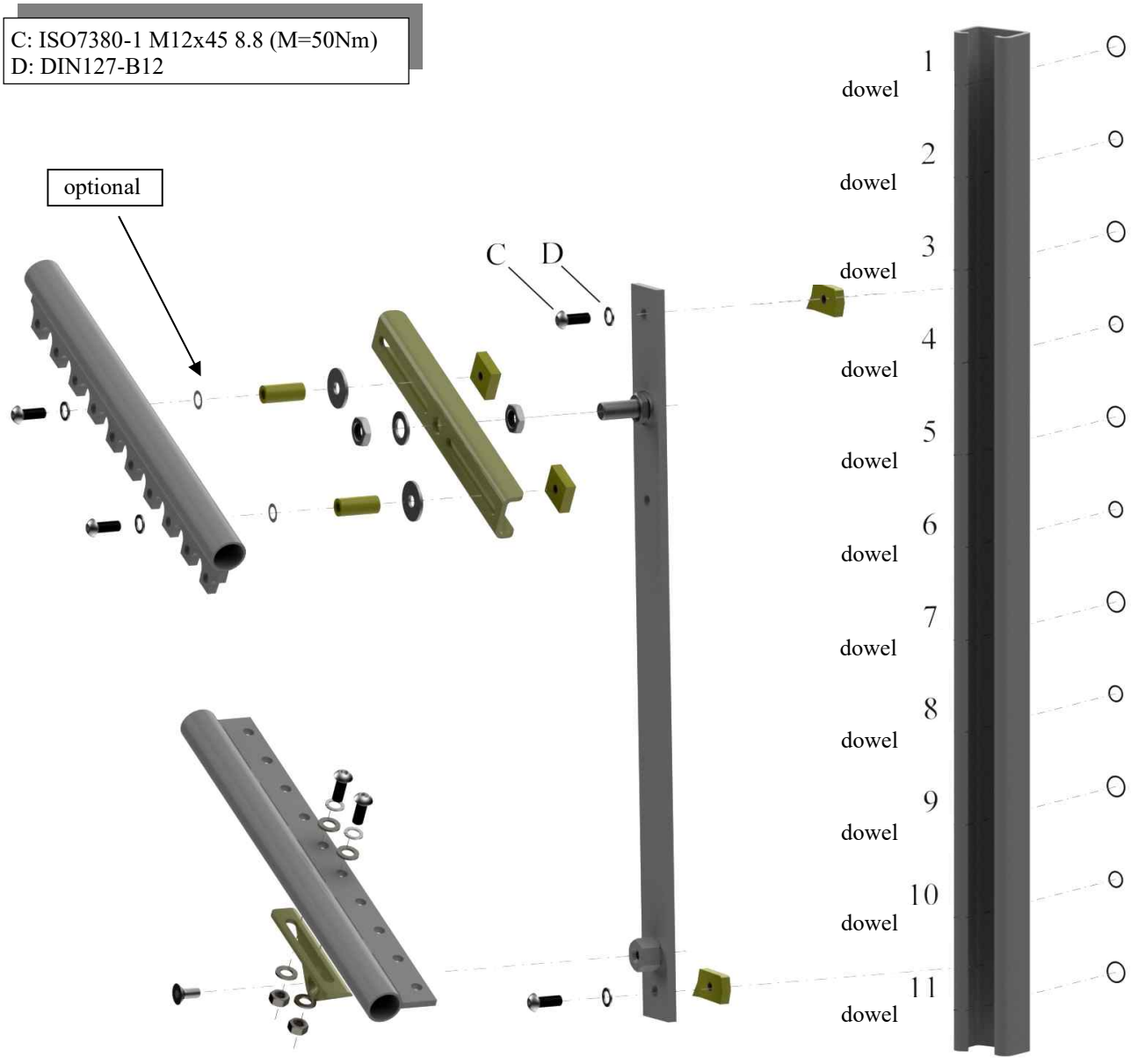
Recommendation for dowel selection: category 6
Holes 1-11

Building substance concrete

Recommendation for dowel selection: category 3
Holes 2, 4, 10

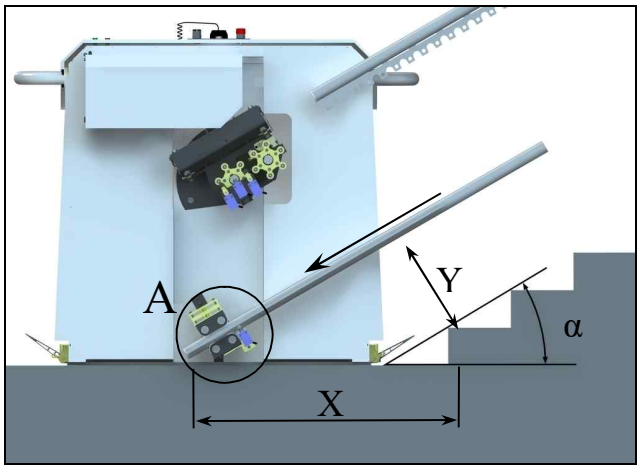


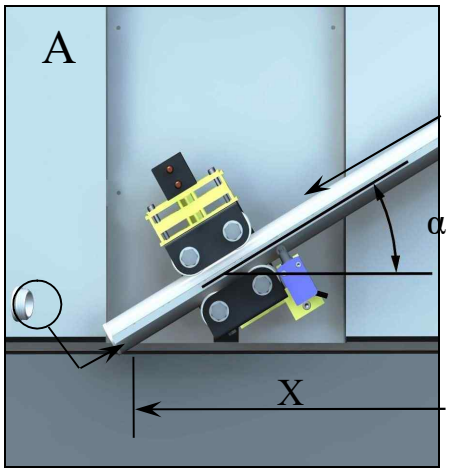
C: ISO7380-1 M12x45 8.8 (M=50Nm)
D: DIN127-B12

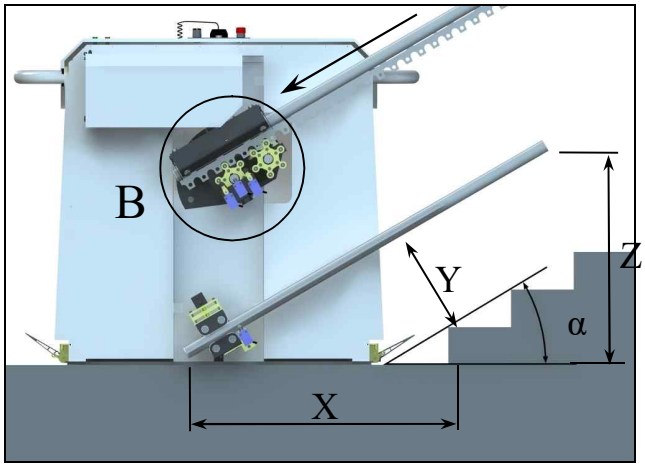


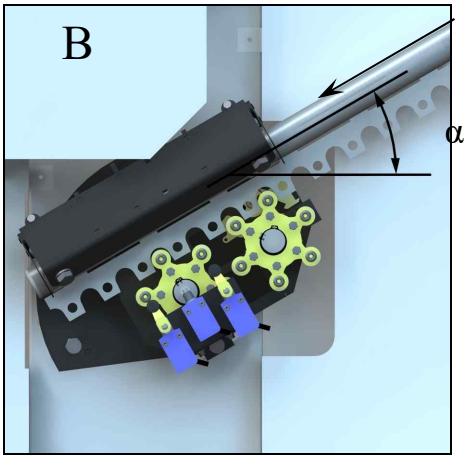
5 Loosen the front paneling of the platform.

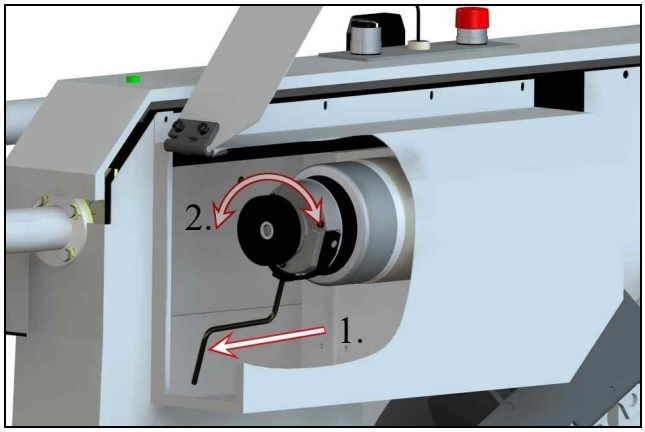
6.) Rotate the roller heads in accordance with the angle of elevation (of the flight of stairs). Position the platform so that the dimensions X, Y and Z given in the installation drawing are maintained for the track pipes which are inserted and fastened in the roller sets (e.g. on the fastening plates).
By ventilating the brake, activating the brake lever and simultaneously rotating the hand wheel, the drive sprocket can be rotated and thus the upper track pipe inserted further (illustration below). The upper sprocket is a part of the gripping device and is not powered, thus this can be easily rotated by hand.

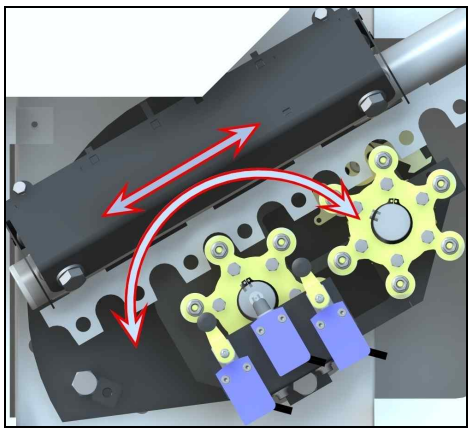






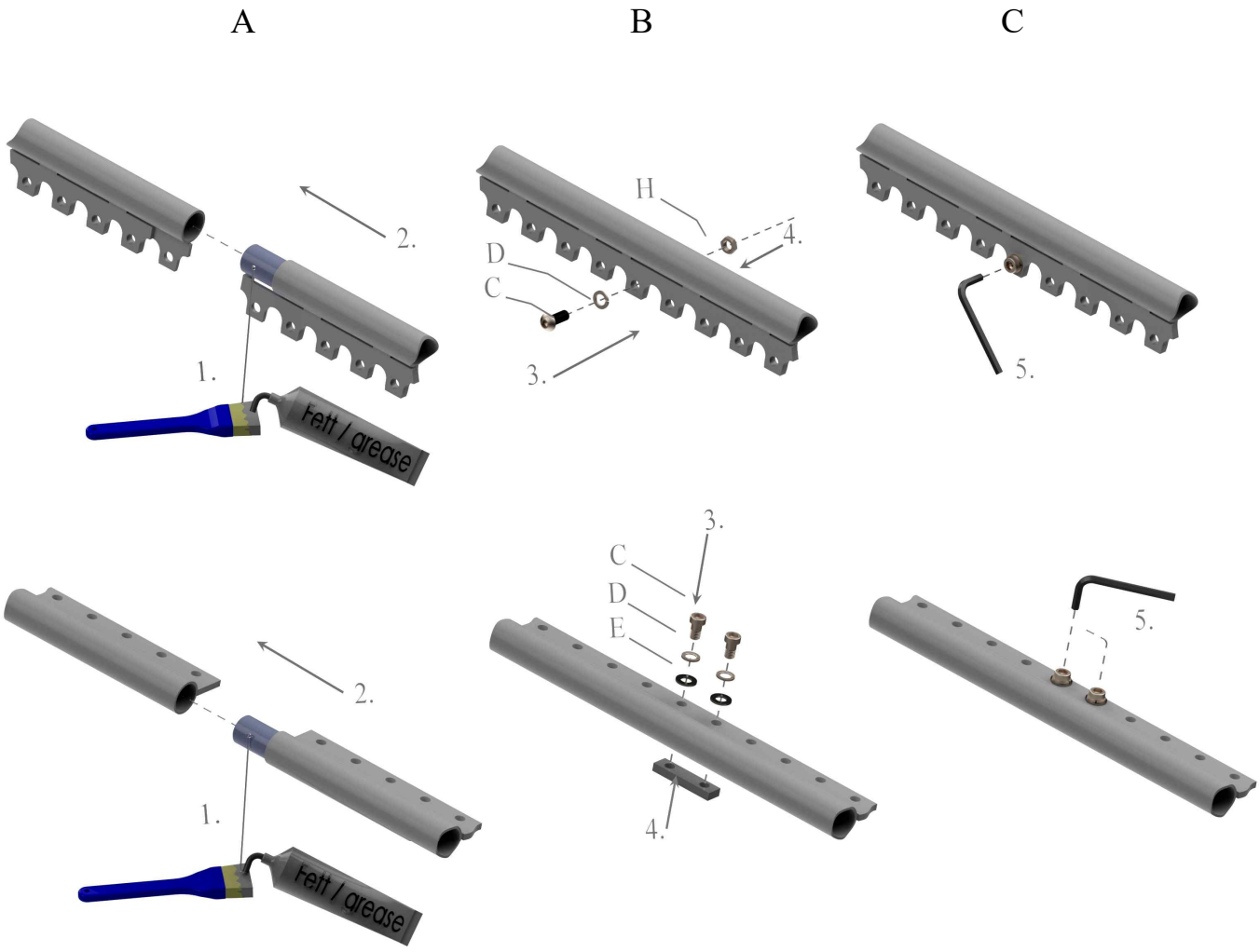




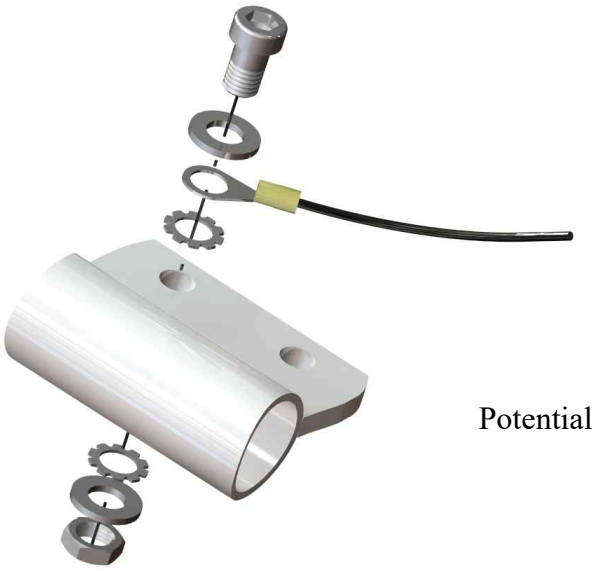


7.) In case the track consists of more than one upper or lower track part, the track pieces should be joined as displayed below and fastened to the supports or the wall. This should be repeated until the entire track is mounted. The possibly protruding rail ends should be cut off.

C: ISO7380-1 M12x20 8.8 (M=50Nm)
D: DIN127 A12
E: DIN125 A12
F: DIN6912-M12x20 8.8 (M=50Nm)
H: DIN936-M12 8.8



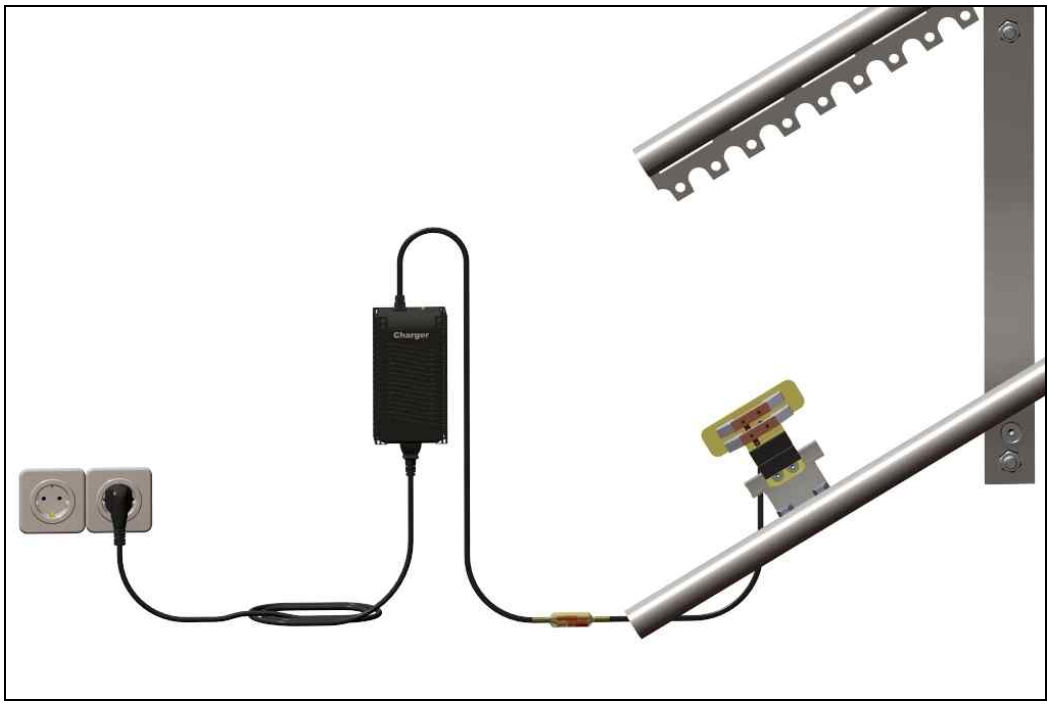
8 The rails should be connected with the potential equalization cable which is laid on site (inner construction: min. Cu 6mm², outer composition: min. Cu 10mm², or according to national directives).

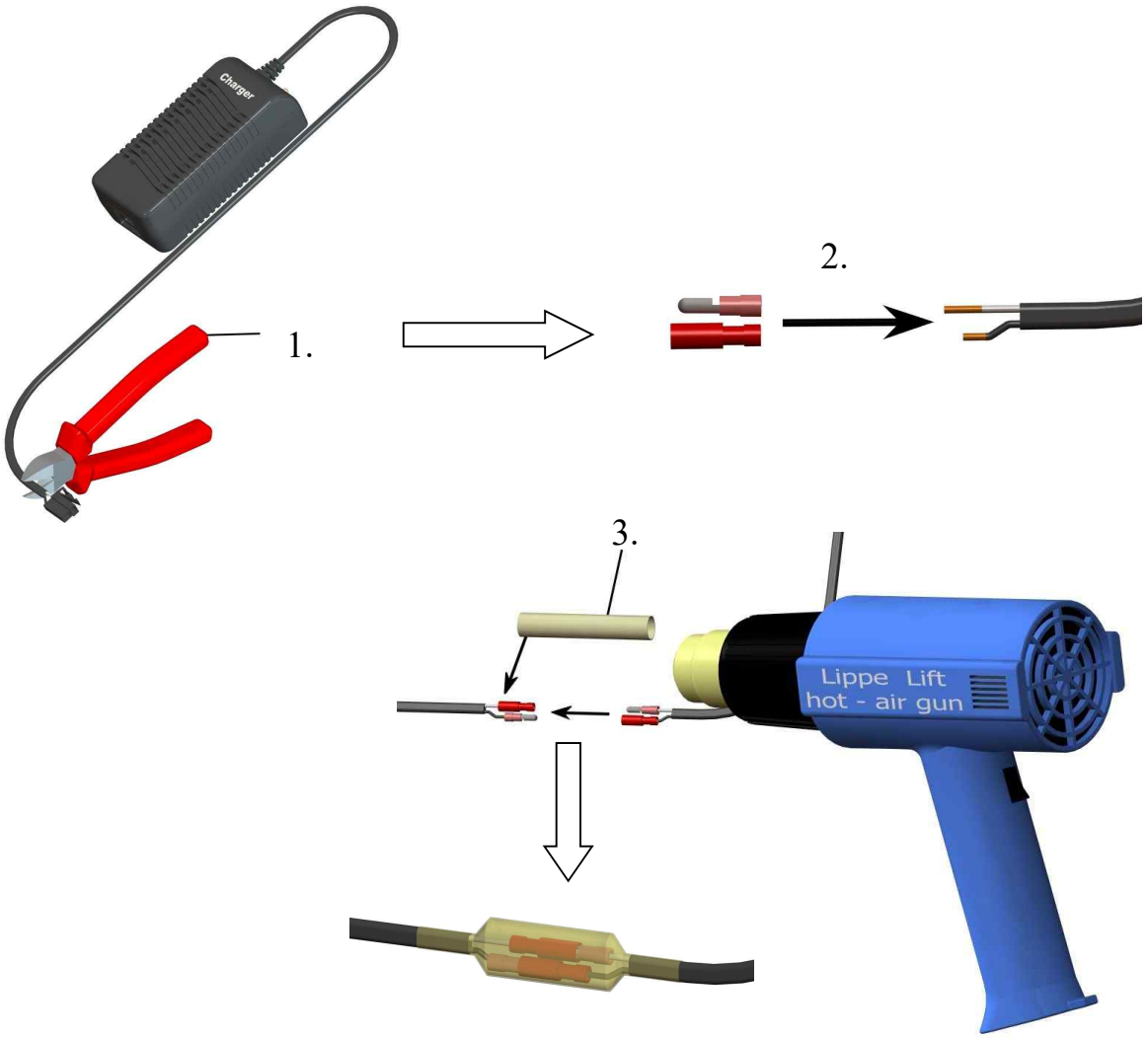


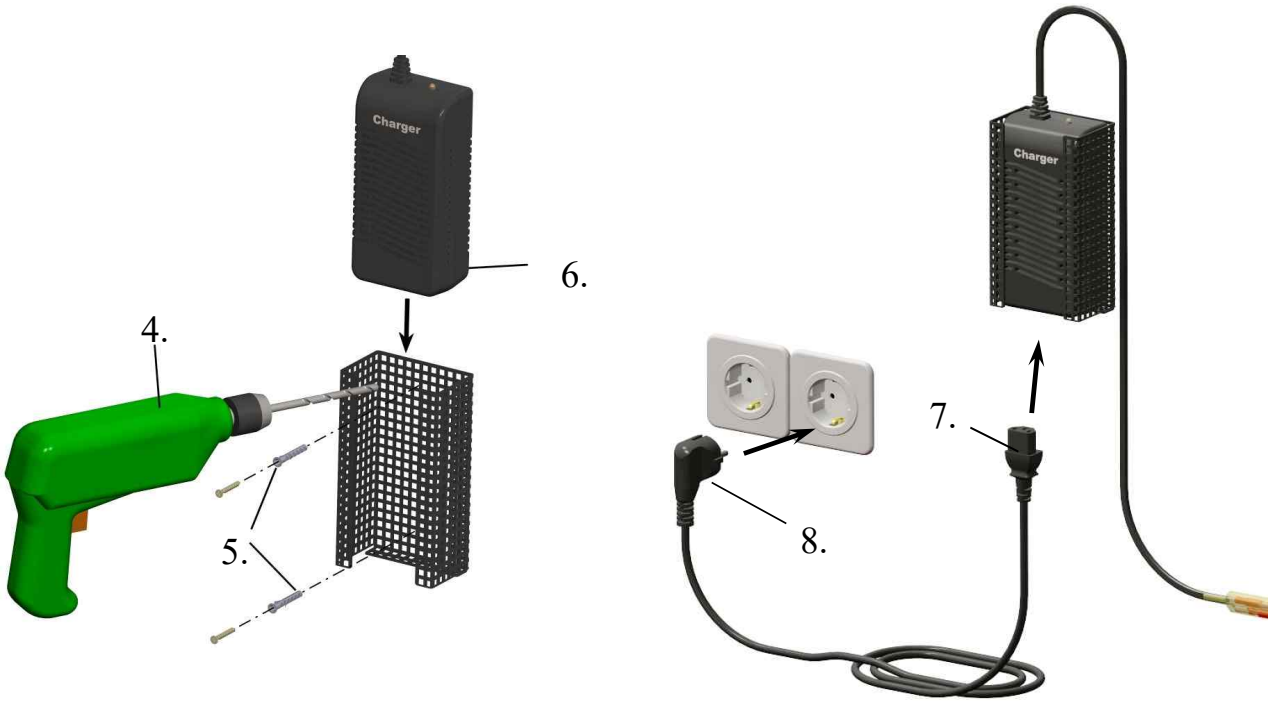
Potential

9.) The arrangement of the external control device must correspond to the requirements of the intended user, whether he sits, stands or is in a wheelchair. The height of the external control device should be **800mm to 1100mm** away from the floor. The external control device should be mounted so that if possible the entire track can be viewed from the respective control center.
In the case of external control devices which are connected among themselves, the cable should be placed in a cable channel of empty pipe.

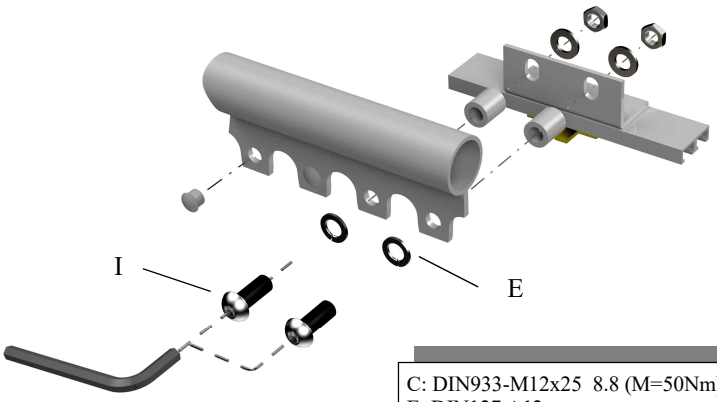
10.) Connect plus and minus lines of the loading devices with the loading stations (use crush hoods, then shrink the heat shrink tube by means of a hot air blower). Connect loading device to the house network. Subsequently check the function (function check is <u>only</u> possible if the load carrying equipment is standing with its loading contacts in the loading station). The loading device should be attached so that the user can see it easily.



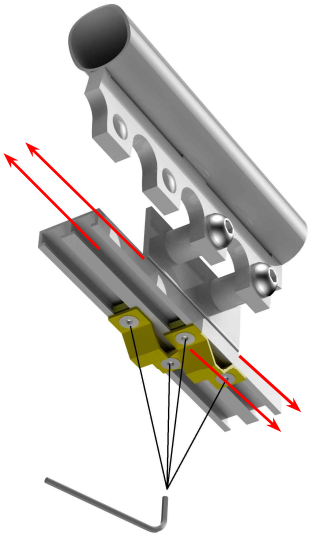

Charger
1.
2.
3.
Lippe Lift
hot - air gun

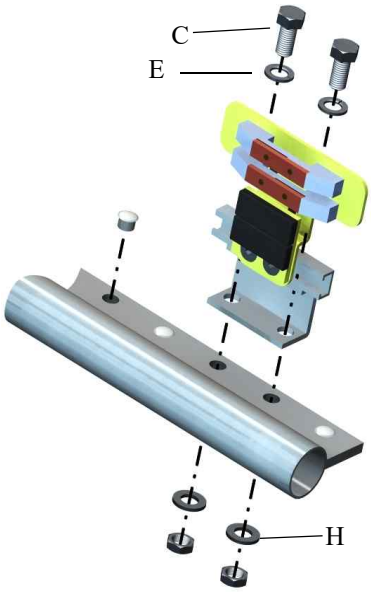

Charger
6.
4.
5.
Charger
7.
8.

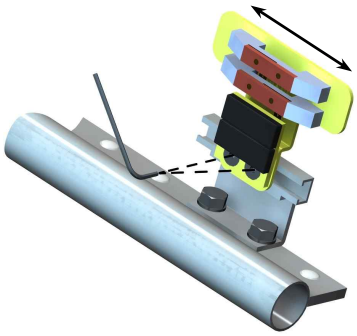
11.) The stopping points should be set up as displayed below and on the next page. For this purpose, bring the platform into the desired position and mark the corresponding positions of the operator end switch on the top roller set, and the unlocking lobe on the lower roller set. The presetting occurs by attaching the corresponding angle bracket to the rails. The fine setting is achieved using the adjustable curves on the angle brackets. Important: The setting of the emergency end switch should occur as curtly as possible (Set dimension X (display on the next page) as small as possible).

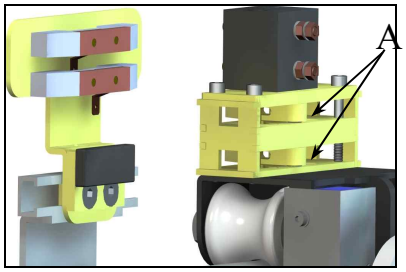


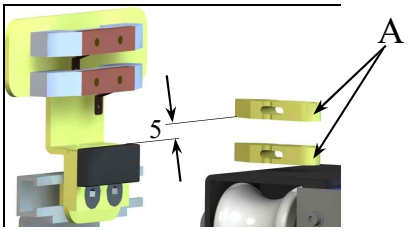
C: DIN933-M12x25 8.8 (M=50Nm)
E: DIN127 A12
H :DIN936-M12 8.8
I: ISO7380-1 M12x40 8.8 (M=50Nm)

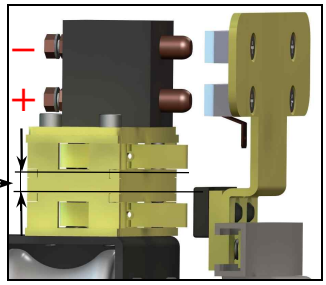




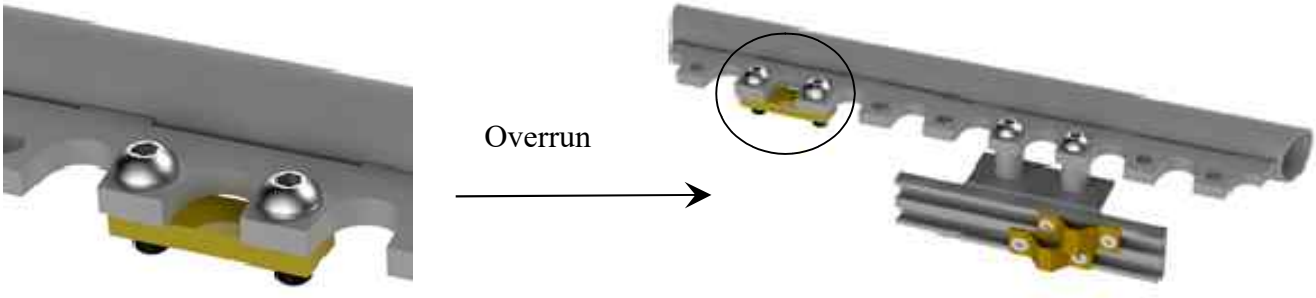


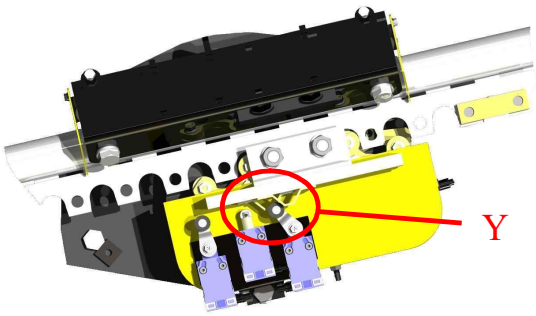


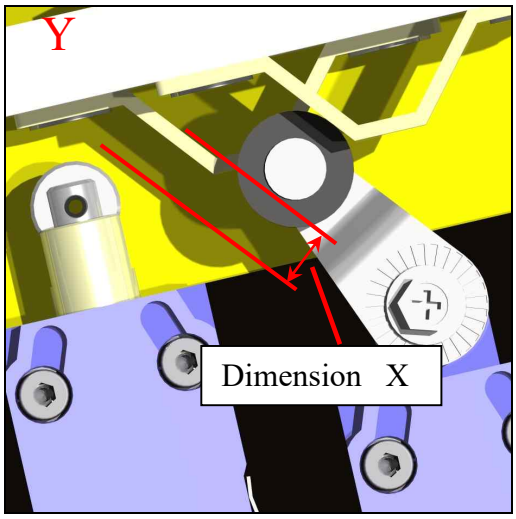




Clearance min. 5mm



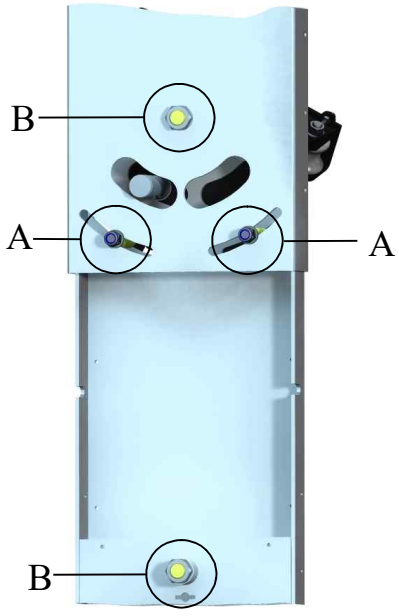


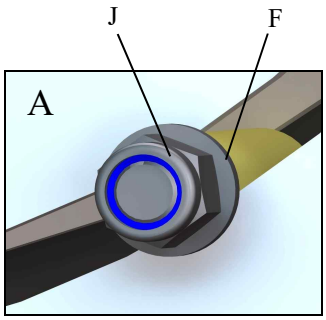


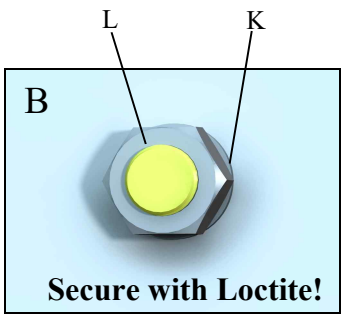
12.) In the shortest possible distance from the upper sprocket, an auxiliary overrun fuse must be **mandatorily** attached behind the upper end position, as displayed above. The overrun fuse must be attached without distances to the drive rod.

13.) The emergency end switch curve should be positioned so that in the case of an adjacent drive roller on the overrun fuse, the emergency end switch is activated (opened).

14.) The nuts of the roller set should be tightened and secured as displayed below!!!

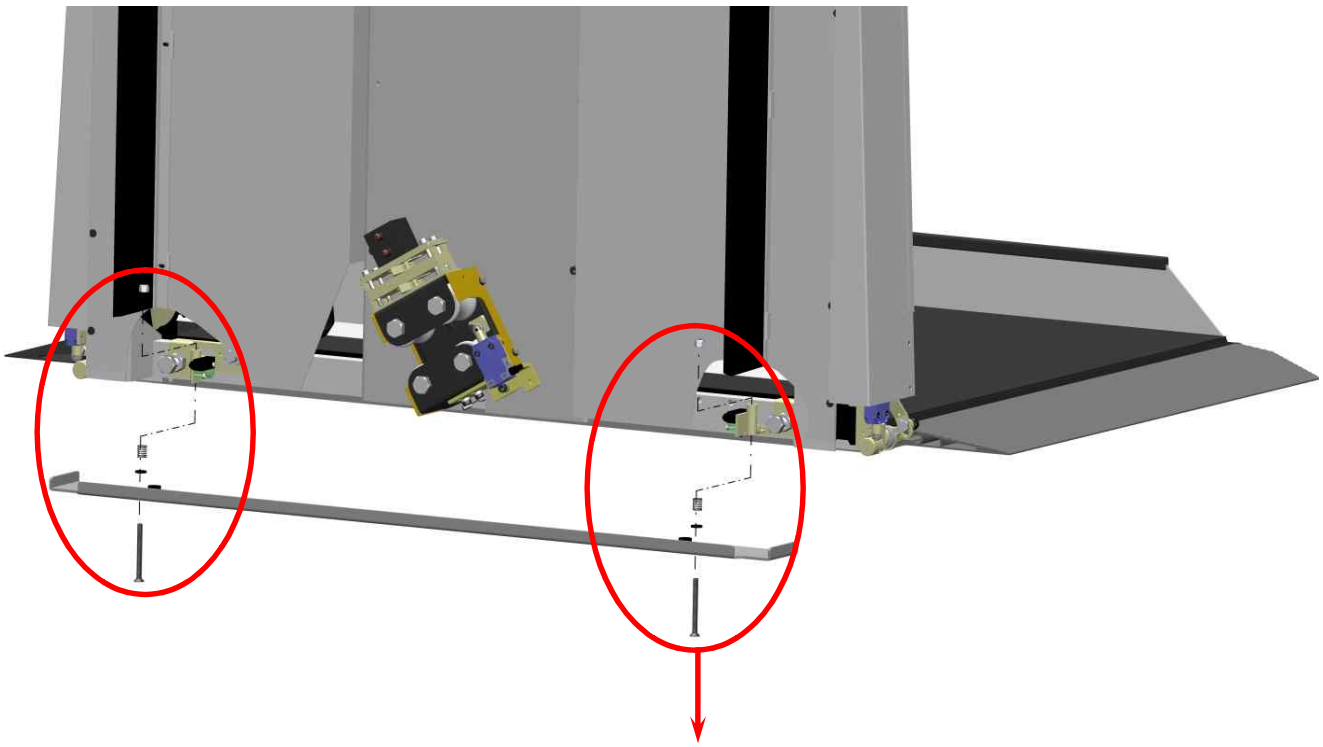


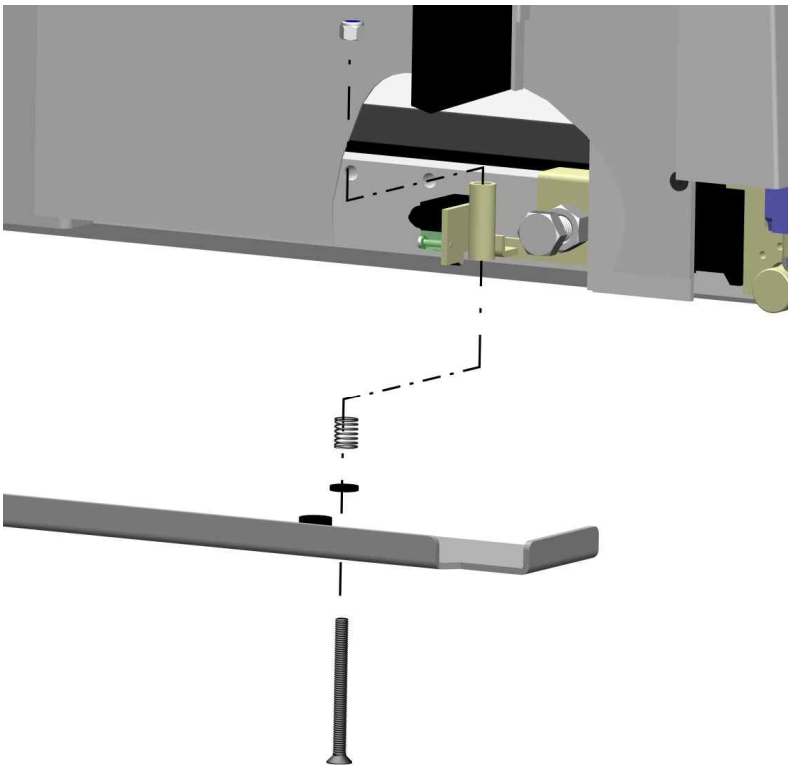




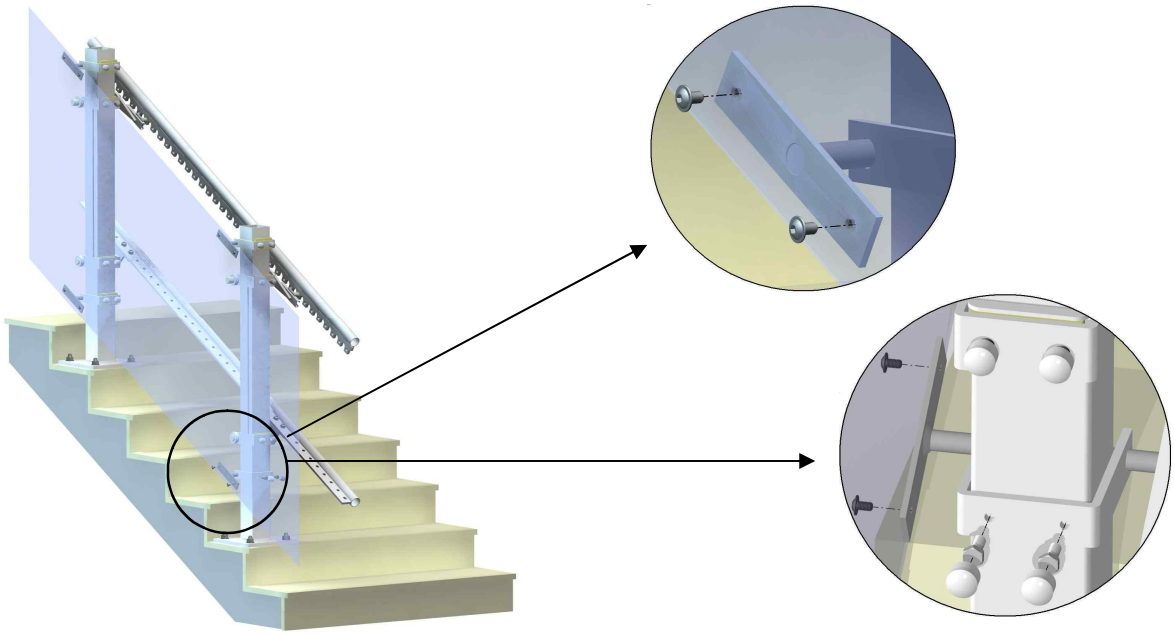
F:DIN125-13-St.
J:DIN985-M12 (M=50Nm)
K:DIN6797-I21
L:DIN936-M20x1,5 8.8 (M=50Nm)

14a) If the platform on the rail can be driven a bit upwards, then attach the contact strip to the underside of the frame. This cannot yet be attached at the factory, since it would otherwise be damaged during transport. As soon as the platform is accessible from beneath, attach the contact strip as displayed below. The required small parts are glued to the contact strip in a transparent bag.

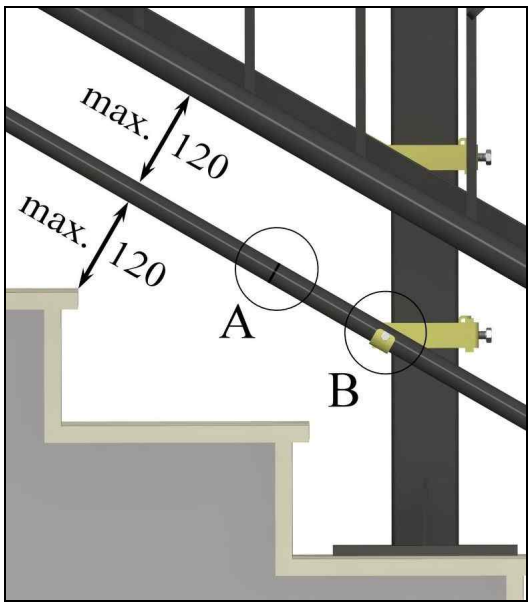


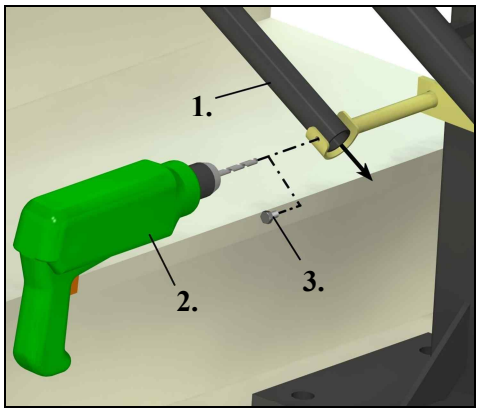


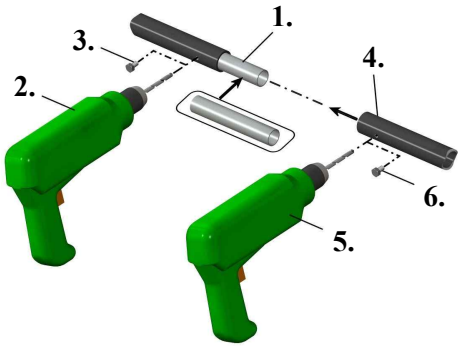
15.) In case a track paneling is planned, or must be attached, this should be attached as displayed below. In the case of the track paneling the upper edge of the plexi-glass paneling should lie approx. 150 mm (direct dimension) above the upper edge of the rail. The corresponding holes for the screw M6 must be drilled on site. In case the fastening bolts on the side of the rail protrude too far, then they should be shortened accordingly. Beware of collision hazard with the platform!



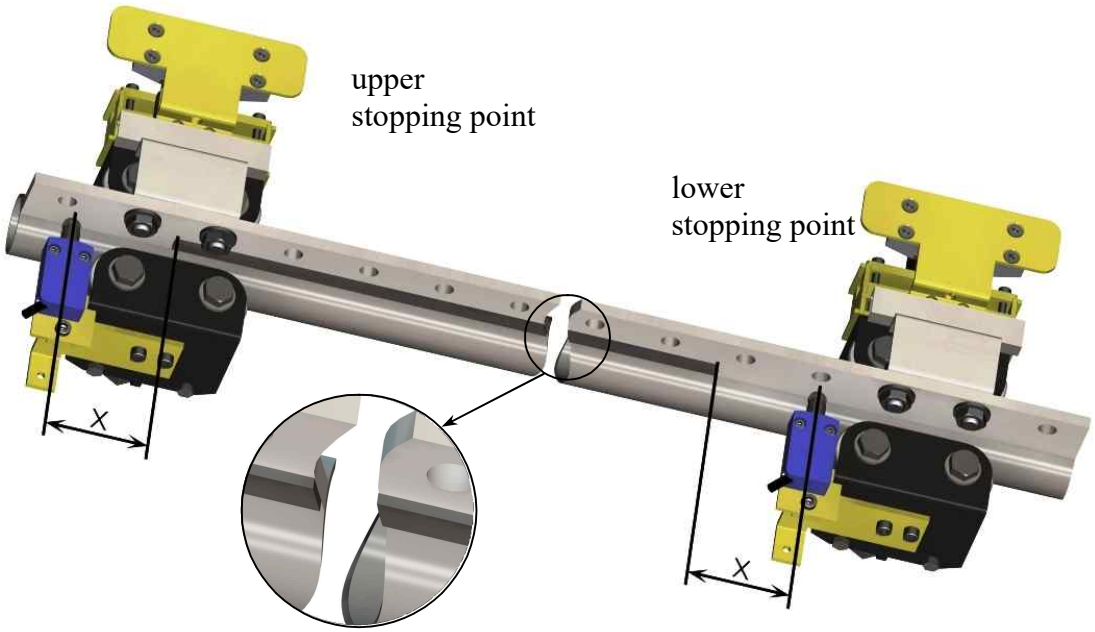
15a) Attachment of the lower pipes (fall protection), if required or planned.







16.) The dimension X (dimension between the position of the bypass switch in the respective stopping point and the start of the plastic strip) must not exceed 10cm; we recommend 6 to 8 cm. The bypass switch strip is as standard fastened to the entire length of the lower rail part. The cutouts (dimension X) should be added on location.



17.) Reattach the front paneling to the elevator.

18.) Attach all screw caps, support caps, support screens and track pipe caps.

18a Attach all required hazard and information signs. If applicable, stickers should be covered over with stickers in the respective country's language!

19.) Multiple test drives under full load and inspection of **all** safety and operating functions (incl. function test/engaging of the safety catch).

- Test of the effectiveness of the safety gear switch by inserting the latch by hand (possibly by means of a tool (e.g. inch rule)).
- Check of the effectiveness of the safety gear by rotating downwards with ventilated brakes to the blocking position of the safety gear.

20 Instruct the operator extensively (let him drive himself).

21 Possibly repair occurring paint damages (paint containers are delivered), and point out to the customer that he should not run the system until the paint is dry and the operation is permitted by the national regulations.

22.) Fill out the assembly report in detail and send it back to the customer service of the manufacturer.

The disassembly of a stairwell inclined elevator Konstanz

1.) Drive the load carrying equipment into the lowest position.

2.) Disassemble the electrical components (external control device, loading devices).

3.) Remove front paneling (establish access to the main switch, brake and hand wheel)

4.) Set the main switch to OFF.

5.) Disassemble the track parts starting with the uppermost stopping point and continuing downwards (including the last track piece before the load carrying equipment).
Caution: There are absolutely occurring hazard sources such as e.g. risk of falling (missing railing) or risk of cutting (sharp edges) which must be removed or secured in a suitable manner!

6.) Remove the load carrying equipment from the rail in a suitable manner:
- The load carrying equipment is standing on the floor:
Loosen the last track piece. Lift up the venting lever of the brake and simultaneously rotate the hand wheel in the direction AB. The last track piece can then be carefully pulled out of the roller heads.
- The load carrying equipment is not standing on the floor:
Lift up the venting lever of the brake and at the same time turn the hand wheel in the OFF direction and pull the load carrying equipment upwards from the last track piece.

7.) Disassemble the supports (possibly separate supports which are welded together).
Observe the safety notes for working with heat for the prevention of fire risk.

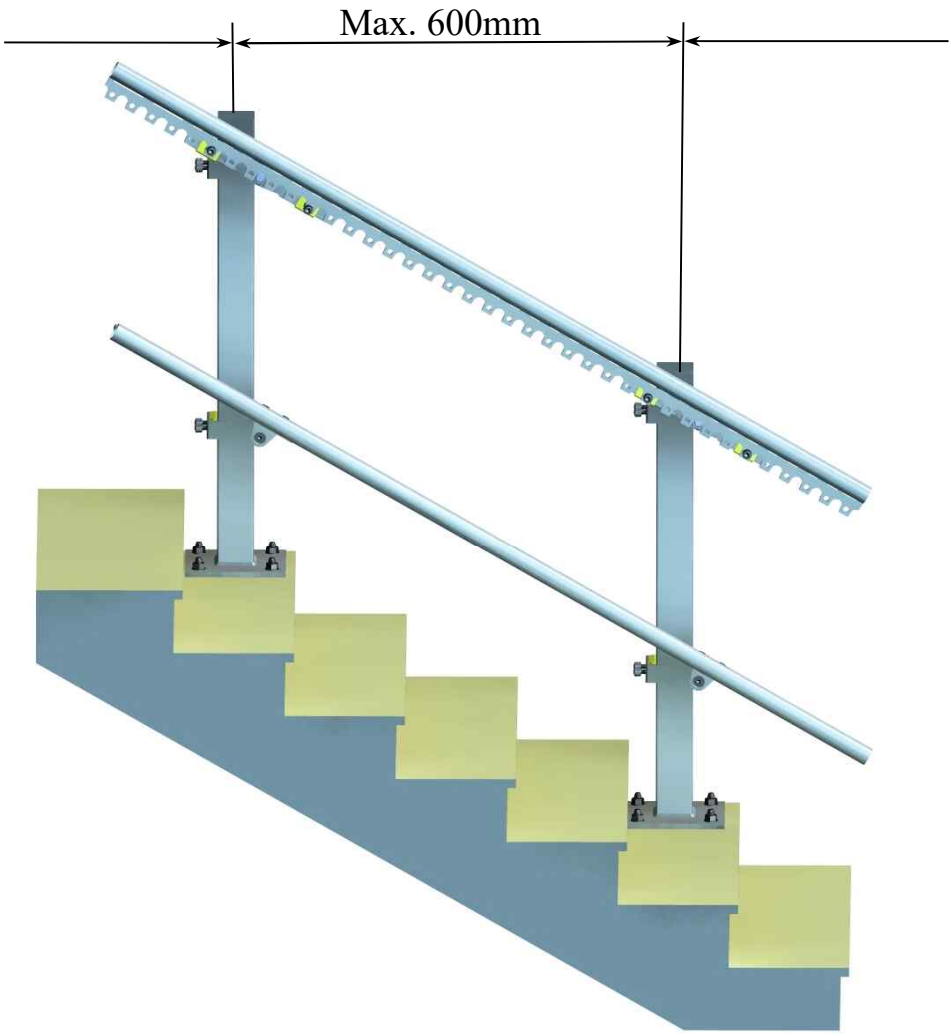
Notes about disposal

1.) Steel scrap: steel parts of the track, supports and steel parts of the load carrying equipment

2.) Special waste: plastic parts, motors, cables, conductor plate, batteries

Note: Our powder coating is free of lead and cadmium

Appendix 1



Appendix II

On the foundation

Reccomendation for pin selection:
Category 4

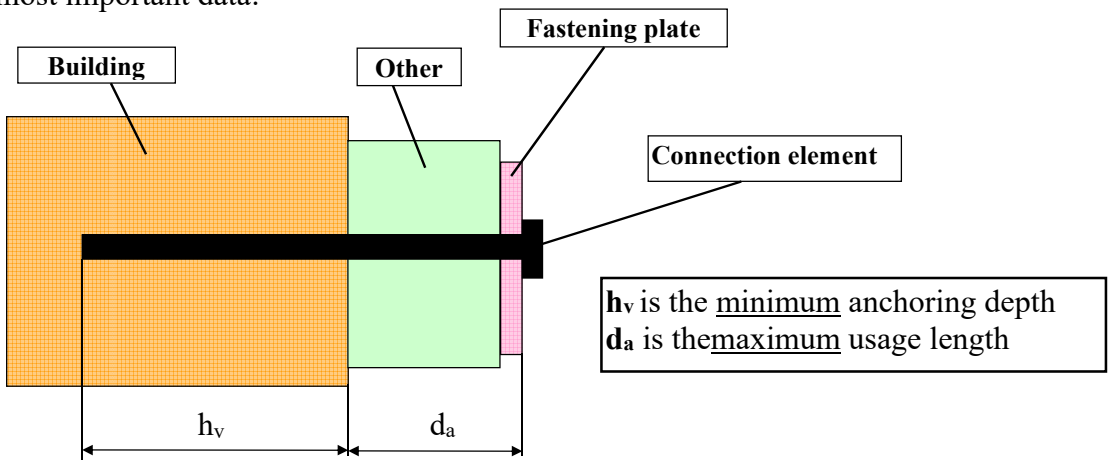
On steps

Reccomendation for pin selecton:
Category 3
(This support type must be intercepted on top)

Reccomendations for pin selecton KONSTANZ

By reason of the constructive conditions (e.g. Plaster, tile, pavement on the actual building substance) it is partially necessary to use differing usage lengths of the respective pins. Other pin types and/or pin classes may be used here without doing anything else.

The most important data:



h_v is the minimum anchoring depth
d_a is themaximum usage length

,Now certain selection options of connection elements follow (Depending on the building substance and the maximum usage length)

Pin category 1

Connection element: FIS (V, VW or VS) + FIS A M10 x XX (internal area)

Designation	Art.-No. (Company Fischer)	h_v [mm]	d_a [mm]	M_d [Nm]
FIS A M10 x 110	090278	75	25	10
FIS A M10 x 130	090279	75	45	10
FIS A M10 x 150	090281	75	65	10
FIS A M10 x 170	044969	75	85	10
FIS A M10 x 200	090282	75	115	10

Approximately 10 ml FIS are required for each anchor rod

Connection element: FIS (V, VW or VS) + FIS A M10 x XX A4 (external area)

Designation	Art.-No. (Company Fischer)	hv [mm]	da [mm]	Md [Nm]
FIS A M10 x 110 A4	090444	75	25	10
FIS A M10 x 130 A4	090447	75	45	10
FIS A M10 x 150 A4	090448	75	65	10
FIS A M10 x 170 A4	044973	75	85	10
FIS A M10 x 200 A4	090449	75	115	10

Approximately 10 ml FIS are required for each anchor rod

General: The assembly directives of the pin manufacturer must absolutely be followed!

Inner area						Outer area				
Designation	Art.-No. (Company Fischer)	h_v [mm]	d_a [mm]	Md [Nm]		Designation	Art.-No. (Company Fischer)	h_v [mm]	d_a [mm]	Md [Nm]
Pin category 2										
FAZ II 10/ 10	094981	60	10	45		FAZ II 10/ 10A4	501403	60	10	45
FAZ II 50/ 10	094984	60	50	45		FAZ II 10/ 50A4	501409	60	50	45
Pin category: 3										
FAZ II 12/ 10	095419	70	10	60		FAZ II 12/ 10A4	501413	70	10	60
FAZ II 12/ 30	095421	70	30	60		FAZ II 12/ 30A4	501416	70	30	60
FAZ II 12/ 50	095446	70	50	60		FAZ II 12/ 50A4	501419	70	50	60
FAZ II 12/ 80	095454	70	80	60		---				
FAZ II 12/ 100	095470	70	100	60		FAZ II 12/ 100A4	501421	70	100	60
Pin category: 4										
FAZ II 16/ 25	095836	85	25	110		FAZ II 16/ 25A4	501423	85	25	110
FAZ II 16/ 50	095864	85	50	110		FAZ II 16/ 50A4	501424	85	50	110
FAZ II 16/ 100	095865	85	100	110		FAZ II 16/ 100A4	501425	85	100	110
FAZ II 16/ 160	503254	85	160	110		---				

Please take the most current catalog from Fischer for other usage lengths.

For the inner area (pin category 3) we can continue to recommend the following pin from the Hilti company:

Inner area				
Designation	Art.-No. (Company	h_v [mm]	d_a [mm]	Md [Nm]
Pin category: 3				
HSL-SK-TZ M12/25	71380/0	105	25	80

This pin is equipped with a flat head, so that it can be installed flush with adjacent areas. One should however ensure that the drilling diameter in the component to be connected is 20 mm and a special counterbore must be present.

General: The assembly directives of the pin manufacturer must absolutely be followed!

Pin category: 5

Connection element (for the <u>inner area</u>)

FIS (V, VW or VS) *(approx.. 20ml per anchor rod,)*
+ FIS H 18x130/200 K
+ FIS A M12 x XX

Designation	Art.-No. (Company Fischer)	h_v [mm]	d_a [mm]	M_d [Nm]
FIS A M12 x 160	090284	130	20	4
FIS A M12 x 180	090285	130	40	4
FIS A M12 x 210	090286	130	70	4
FIS A M12 x 350**	047443	130	71-200	4

FIS A M12 x 350** only available as a set (anchor rod including bushing)

Connection element (for the <u>outer area</u>)

FIS (V, VW or VS) *(approx.. 20ml per anchor rod,)*
+ FIS H 18x130/200 K
+ FIS A M12 x XX A4

Designation	Art.-No. (Company Fischer)	h_v [mm]	d_a [mm]	M_d [Nm]
FIS A M12 x 160 A4	090451	130	20	4
FIS A M12 x 180 A4	090452	130	40	4
FIS A M12 x 210 A4	090453	130	70	4
FIS A M12 x 350 A4**	047452	130	71-200	4

FIS A M12 x 350 A4** only available as a set (anchor rod including bushing)

General: The assembly directives of the pin manufacturer must absolutely be followed!

Pin category: 6

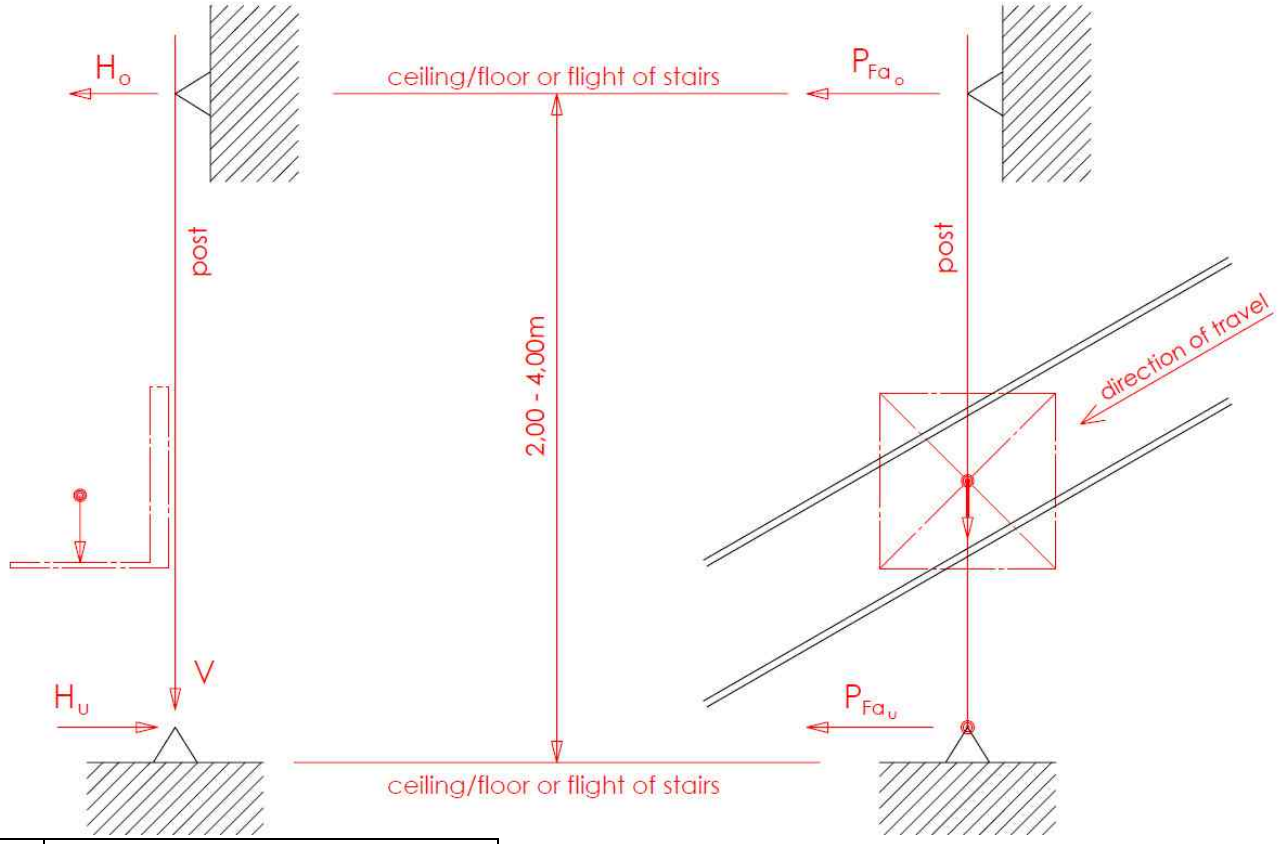
Connection element: hexagonal wood screw DIN571
(for the <u>inner and outer area)</u>

Designation	Art.-No.	h_v [mm]	d_a [mm]	M_d [Nm]
DIN571-6x60	---------	50	10	15

<u>For the outer area</u>: Stainless steel screws must be used !

Loading forces for Konstanz

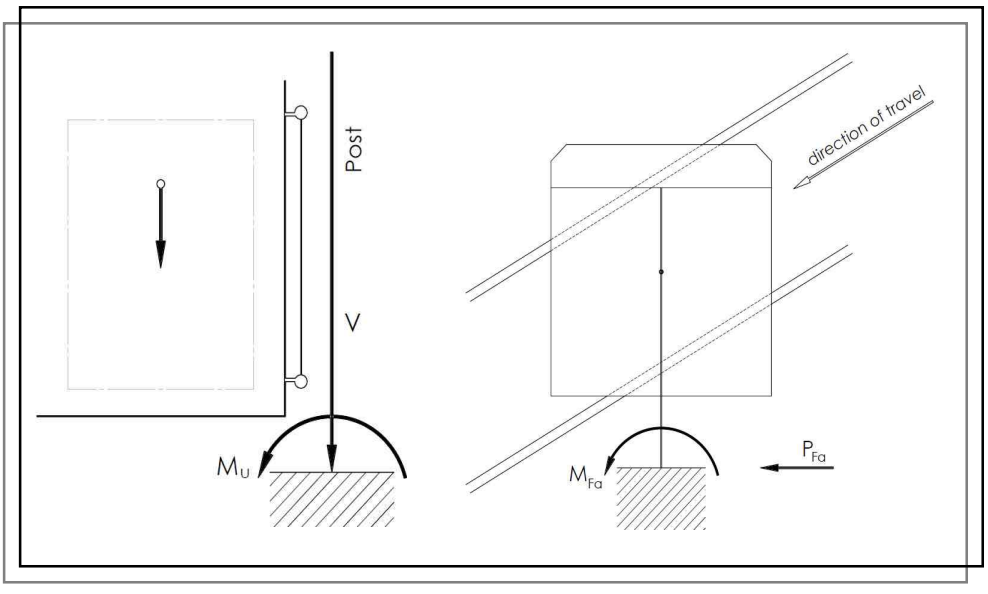
Support with two clampings



	Catch case [KN]	
	Hmin 2000mm	Hmax 4000mm
V	6.4	6.4
H_o	2.0	1.0
H_u	2.0	1.0
P_{Fao}	1.2	1.2
P_{Fau}	1.6	1.6

Loading forces for Konstanz

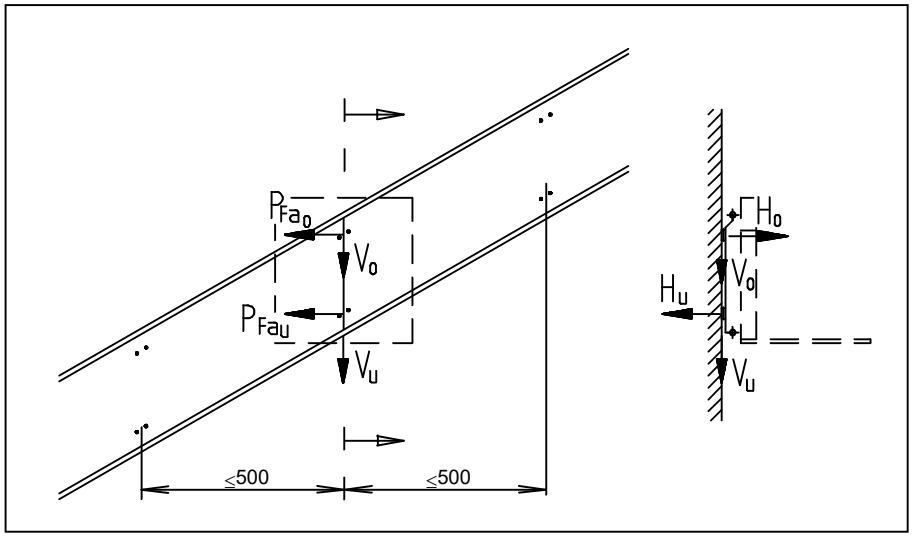
Support with a clamping



	Catch case [KN]; [KNm]
V	6.4
M_u	4.2
P_{Fa}	2.4
M_{Fa}	0.4

Loading forces for Konstanz

Wall fastening



	Catch case [KN]
$V_o + V_u$	6.5
H_o	6.2
H_u	6.2
P_{Fao}	1.2
P_{Fau}	1.5