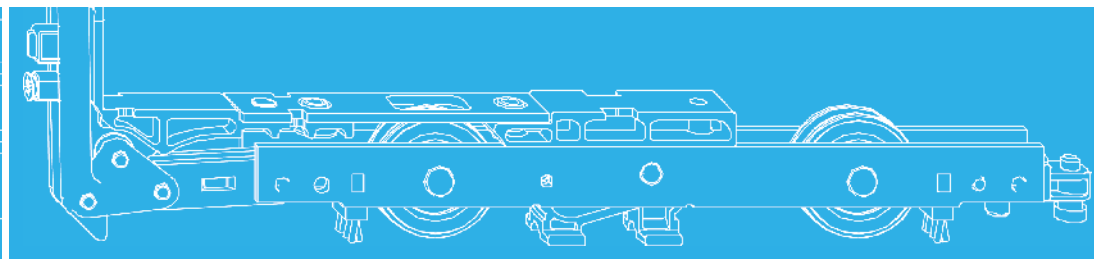
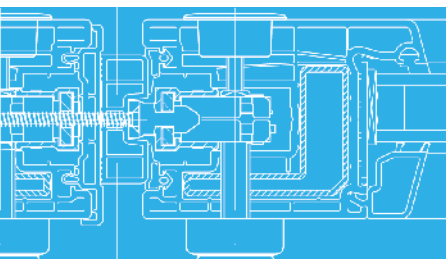


TECHNOLOGY IN MOTION



# MACO RAIL-SYSTEMS

SLIDING HARDWARE



## L&S Veka Slide assembly instructions



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## Important information

### Target group

This documentation is intended exclusively for specialist companies and certified specialists. The work described may only be carried out by specialist personnel.

### Instructions for use and safety

Assemble all hardware parts professionally as described in this manual and observe all safety instructions.

Overloading or improper operation of the lift and slide hardware may cause the sash to jump out of its guide, fall out and cause serious injury. If overloading of the lift and slide hardware is expected under special circumstances, such as in Schools, Kindergartens etc., this must be prevented using the appropriate measures,

e.g.

- Adjustment of the buffer stop to reduce the opening width, or
- Installation of a profile cylinder to prevent improper use.

Please observe the terms of our functional warranty (<https://www.maco.eu/assets/757814>) as well as the conditions of our surface warranty for MACO TRICOAT-PLUS hardware (<https://www.maco.eu/assets/757779>).

Observe the “Guidelines and Instructions on Product and Liability (GIPL)” of the Quality Association of Locks and Hardware. This policy describes all safety-related issues for end-users for window and balcony door topics. (Download available on the website of the Quality Association of Locks and Hardware).

For MACO lift and slide hardware HS, the application ranges given on page 6 must not be exceeded. In addition, VEKA's specifications for the lift and slide door hardware, in particular on possible restrictions on sash dimensions and sash weight, must be strictly adhered to.

Assemble the complete hardware only from MACO hardware parts and the required VEKA accessories.

When using Accoya (registered trademark of Titan Wood Limited) and acid-treated woods (e.g. Oak, Teak, Larch), use only the TRICOAT-PLUS fittings.

Use the specified screw sizes as specified in this guide.

Turn the screws straight (unless otherwise stated) and do not over-tighten, otherwise smooth operation of the hardware may be impaired.

Fix the screws of the supporting components (e.g. rollers, running rail and guide rail) in the reinforcement profile.

Around the rollers, ensure a positive transfer of the compressive forces onto the reinforcement profile!

With the spacer-block setting, observe the technical guideline No. 3 of the glazier trade “Blocking of glazing units”.

Do not use acid-curing sealants, as these can lead to corrosion of the hardware parts.



Keep the runner of the roller track, the threshold and all folds free of deposits and dirt, and in particular of cement or plaster residues. Avoid direct moisture on the hardware and contact of the hardware with acidic cleaning agents.

Attach the operating label in a clearly visible manner to the built-in lift and slide sash. The operating label can be found in the base carton.

Do not make any constructive changes to the hardware parts.

If you are not sure, please ask your MACO contact person for advice.

### **Certification**

The MACO hardware mentioned in the assembly instructions are tested and regularly monitored in standardised tests in accordance with EN 13126. The achieved standards Class H3 does not refer to the individual element system. Due to a wide range of influencing factors, individual element systems may experience minor deviations from standardised testing, such as:

- the influence of processing tolerances
- the effect of assembly tolerances after the installation of the element in the building
- the use of accessories (e.g. weather seals, sealing rails, handles, etc.)
- the use of additional equipment (e.g. sliding damper, swing-check damper, operating force reduction, etc.) and/or attachments (e.g. Aluminium shells, sun protection on the sash, insect protection)
- external environmental influences (e.g. humidity, sunlight, high or low temperatures, temperature fluctuations, etc.) or
- room-side influences (moisture, aggressive cleaning agents, etc.)



## Key



**HS** Lift&slide unit



**FH** Sash height



**FB** Sash width



**RAB** Frame outer width



**RAH** Frame outer height



**L** Total length



**GM** Handle height



**DM** Backset

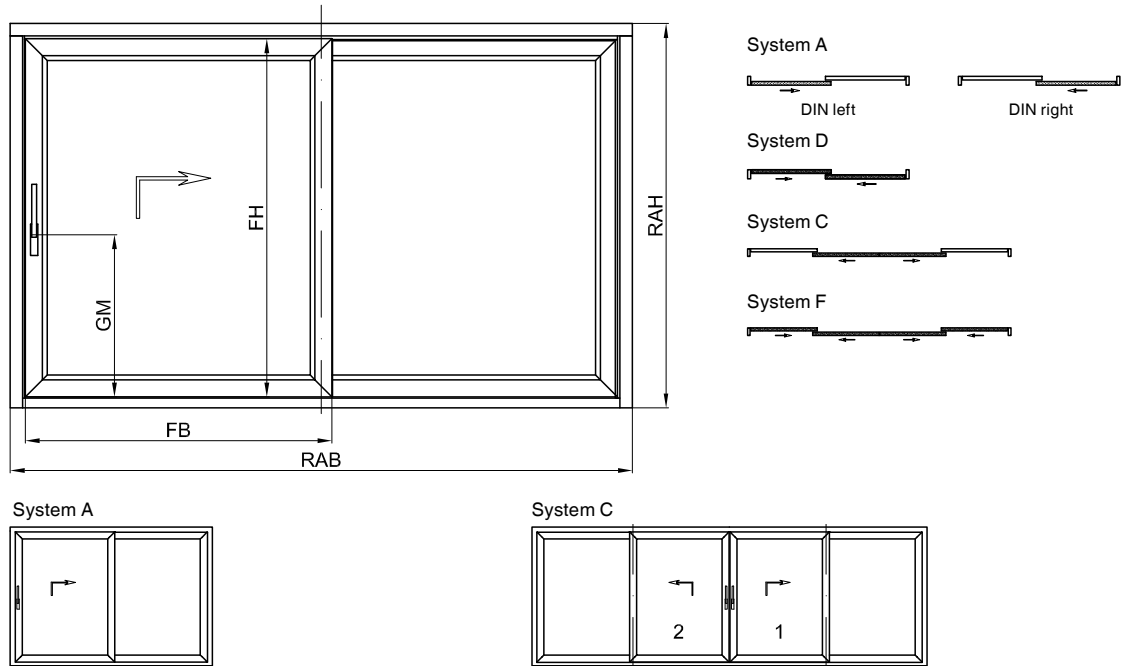


**O** Optional

Dimensions in [mm]: All dimensions without units are specified in [mm]



## Design



## Application range

The application ranges stated in the table apply for Maco L&S 300.

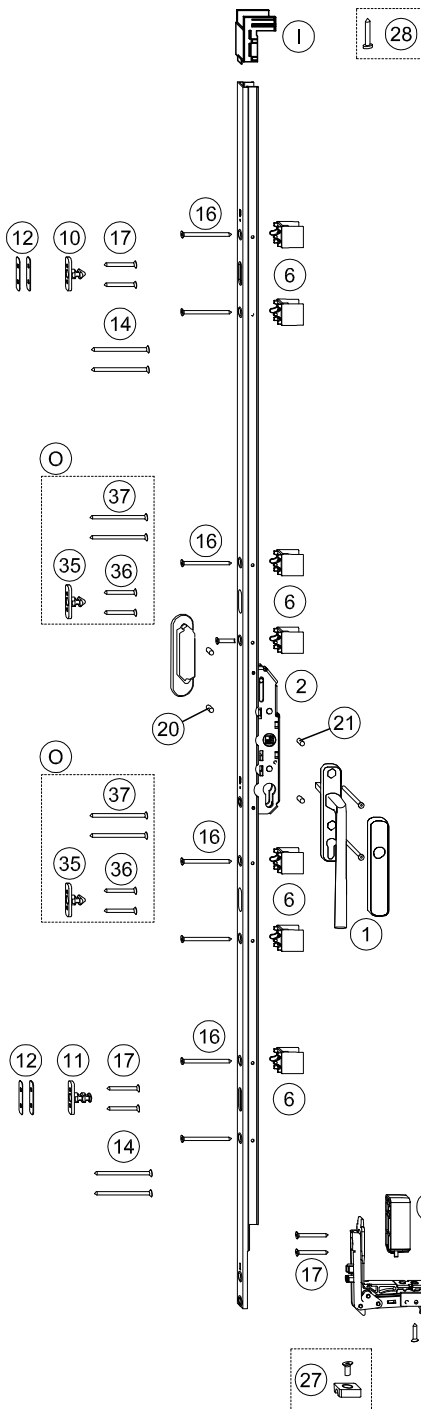
The maximum application ranges and weights specified by the profile manufacturer apply when processing the profile and must be observed.

Designation	Unit	Department
FB	(mm)	730 – 3320
FH	(mm)	770 – 2880
RAB	(mm)	acc. to profile manufacturer's specifications
RAH	(mm)	887 – 2997
Weight of sliding sash	(kg)	max. 300
DM	(mm)	27.5
GM drive gear size 1 - 2 (FH 770 - 1780)	(mm)	407
GM drive gear size 3 - 5 (FH 1690 - 2880)	(mm)	1007



## Hardware combination

① Top slider (scope of supply of profile manufacturer)



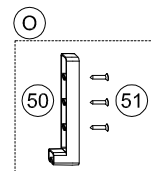
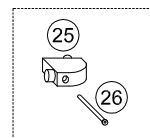
Pos.	Item designation
1	L&S handle set 08
2	Lift drive gear lock case DM 27.5 PZ
3	Perforated connecting rod L&S 16.4 x 4
4	300 kg front L&S roller with brushes, silver
5	300 kg back L&S roller with brushes, silver
6	Packers for L&S KU 25.5 mm high drive gear, silver
8	Packers for L&S KU 25.5 mm high roller silver espagnolette side
9	Rubber buffer L&S, silver
10	Top locking bolts; locking point 15.5 mm
11	Bottom locking bolts; locking point 15.5 mm
12	Packer for L&S KU lock. bolt thickness = 0.5 + 1 mm, silver
13	L&S groove support-brace for 300 kg, silver
14	Countersunk self-tapping screws B 4.8 x 80
16	Countersunk self-tapping screws B 4.8 x 60
17	Countersunk self-tapping screws B 4.8 x 45
18	Countersunk self-tapping screws B 4.8 x 25
19	Countersunk self-tapping screws B 3.9 x 45
20	Spacer sleeve for handle fastening 13.8 mm
21	Spacer sleeve for handle fastening 19.8 mm
25	Stop buffer package 28 mm gap
26	Countersunk self-tapping screws B 4.8 x 70
27	L&S locking block 300/400 kg
28	Filister head screw 6.3 x 38 (safety catch)

### OPTIONAL

35	Top locking bolts; locking point 15.5 mm
36	Countersunk self-tapping screws B 4.8 x 45
37	Countersunk self-tapping screws B 4.8 x 80
50	Sash positioner L&S PVC, silver
51	Countersunk self-tapping screws B 4.8 x 22

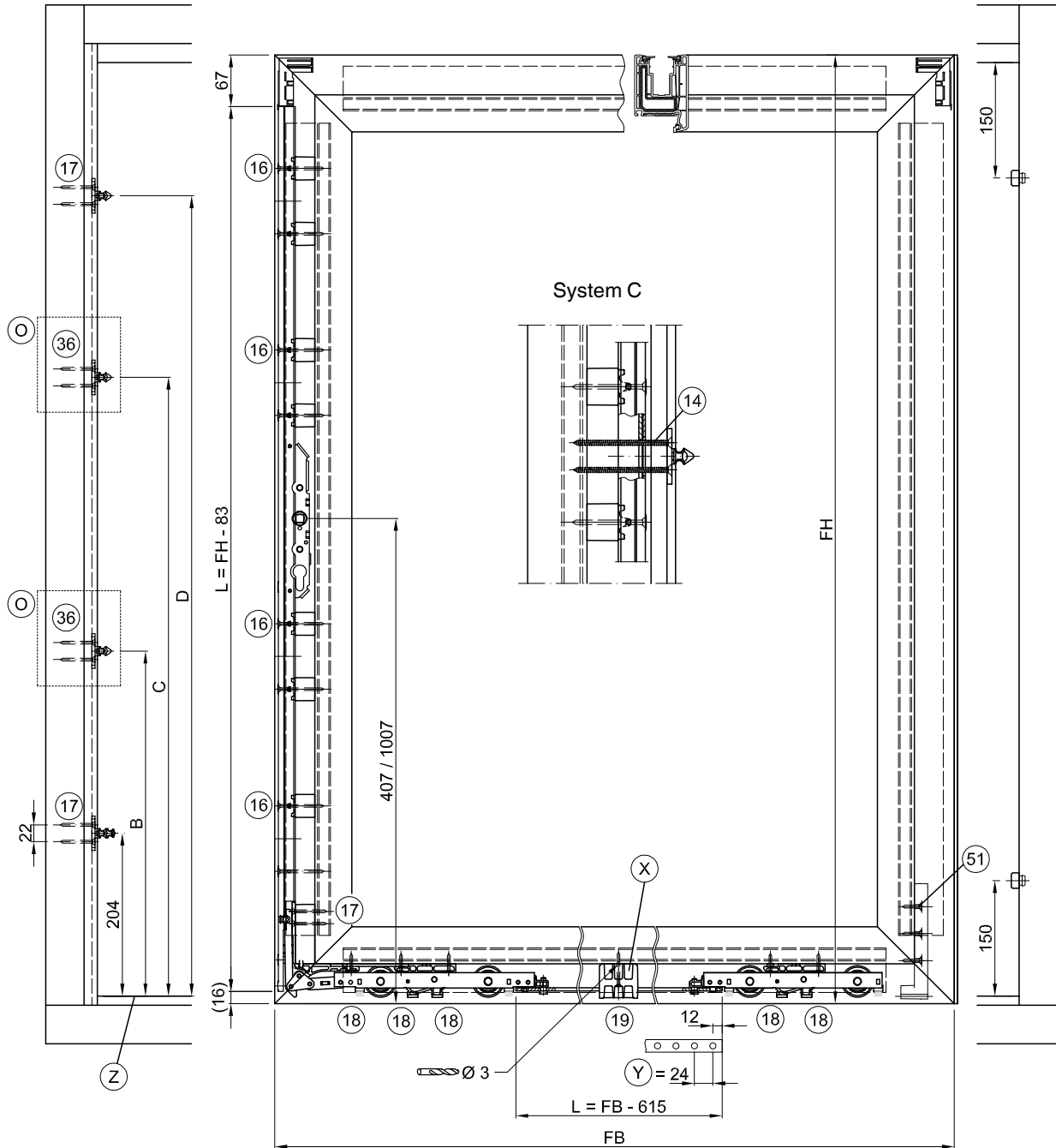
### INSTALLATION TOOLS

70	L&S drilling and milling jigs for drive gear drilling hole and Veka Slide finger pull
71	Marking punch for L&S locking bolts Base plate hole spacing 22 mm





## Preparation









Notes

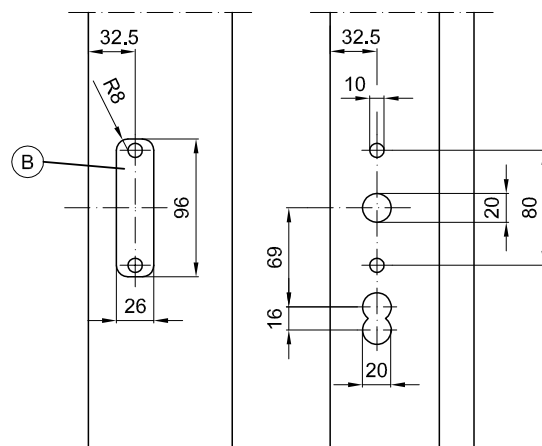
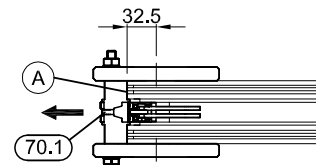
A large rectangular area filled with a fine grid pattern, intended for taking notes.



## Drilling and milling on the casement

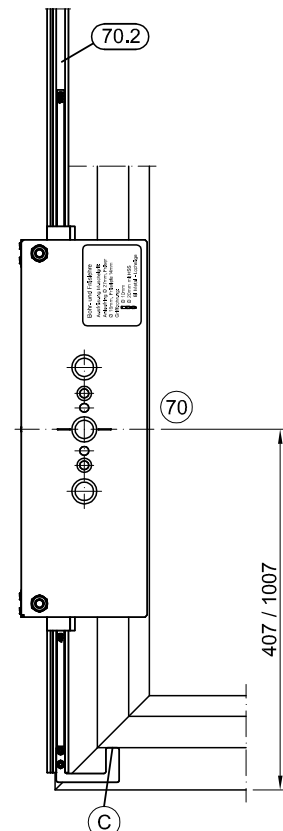
1. Set the jig stop, system A DIN left or DIN right and for second sash, system C.
  - a. Raise the latching bolt (70.1), pull the connecting rod (70.2) out of the guide.
  - b. Turn the connecting rod 180° and reinsert it until the latching bolt engages.
2. Use the latching bolt to set the handle height (handle height 407 mm or 1007 mm).
3. Place the drilling and milling jig (70) onto the casement and fasten with clamps, stop on the base of the fitting groove and front edge of the sliding sash.
4. Drill holes with Ø 20 mm at the handle position and 2 x Ø 10 mm holes for the handle fixing screw.
5. Mill the routing for the finger pull on the outside of the casement.
6. Drill Ø 20 mm holes for profile cylinder using a bi-metal hole saw. Move the drilling jig down 16 mm and fix it using a Ø 10 mm mandrel. Drill a second Ø 20 mm hole for the profile cylinder.

- (A) Stop edge jig
- (B) Routing with drilling and milling jig (70), Ø 27 mm guide ring, Ø 16 mm milling cutter, 14 mm milling depth
- (C) The stop edge for the jig is the base of the fitting groove



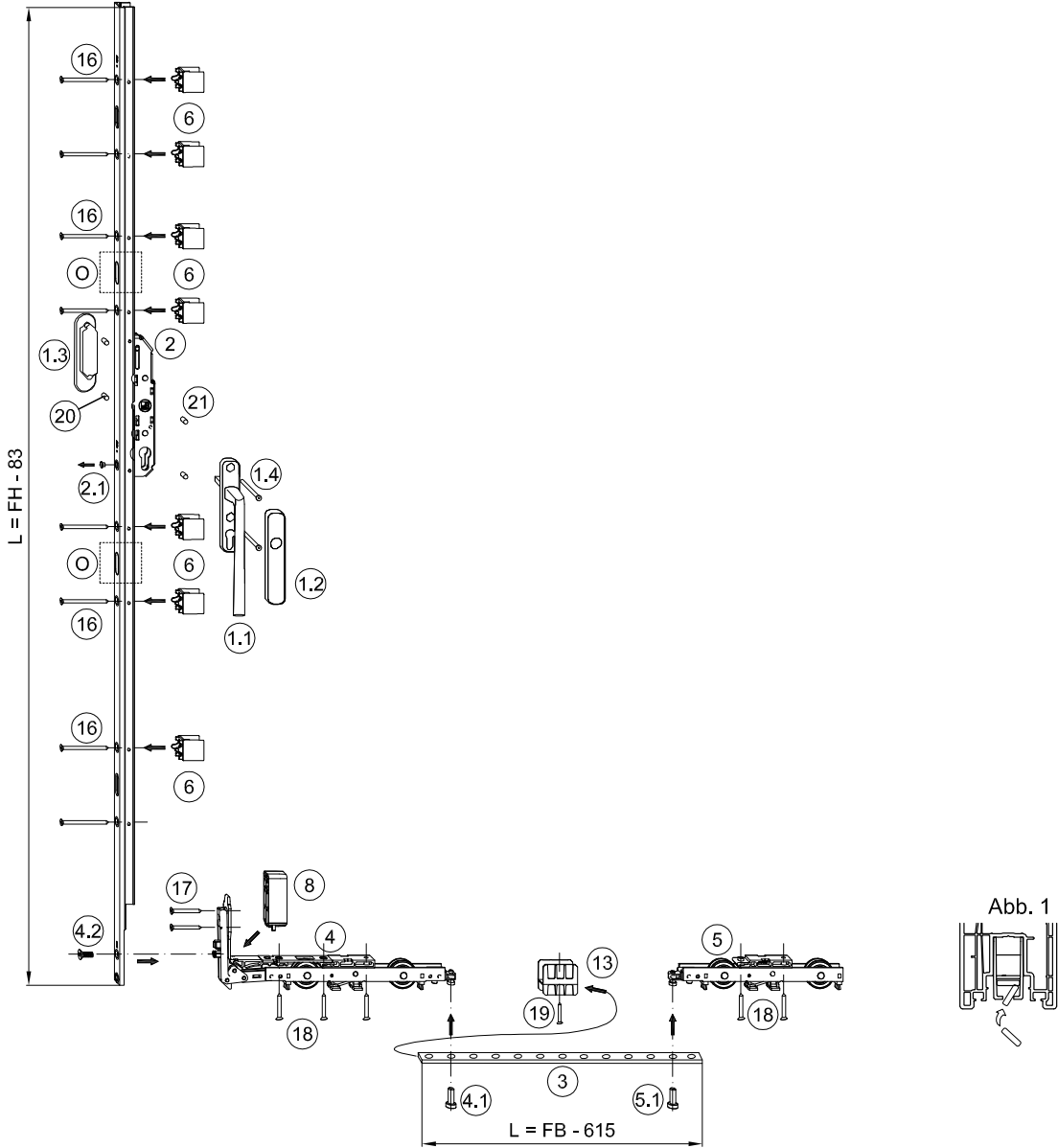
Outside of sliding sash  
Routing for finger pull  
short shown

Inside of sliding sash  
holes for L&S handle 08  
with profile cylinder shown





### Casement installation





## Casement installation

### Step 1, installing the roller

1. Snap on the packer for L&S drive gear roller (8) from the back onto the roller at the front (4). Insert the roller and fasten with B 4.8 x 45 (17) and B 4.8 x 25 (18) countersunk self-tapping screws.
2. Remove the M6 x 16 WAF 4 cylinder screw (4.1) from the handle-side roller (4).
3. From a sash width of 1.8 m, one centred groove support-brace and from 2.5 m two groove support-braces (13) divided are to be used. Pre-drill a 3-mm hole, insert the groove support-brace in the fitting groove and screw in place with B 3.9 x 45 countersunk self-tapping screws (19).
4. Cut the roller connecting rod to size (3) in 24-mm lengths.
5. Insert the connecting rod for the roller into the groove support-brace as shown in Fig. 1 and connect to the front roller using M6 x 16 screw (4.1).
6. Loosen the M6 x 16 WAF 4 cylinder screw (5.1) from the back roller (5), insert the connecting rod into the back roller and connect with M6 x 16 (5.1) cylinder screw.
7. Fasten the back roller using B4.8 x 25 countersunk self-tapping screws (18).

### Step 2, Installing the drive gear and L&S handle 08

1. Cut the lift drive gear lock case (2) to length ( $L = FH - 83 \text{ mm}$ ) and bring to the locked position (handle up).
2. Insert the packer for L&S drive gear (6) from the rear in the area of the fixing holes on the drive gear faceplate.
3. Remove the M5 x 10 countersunk head screw (4.2) from the front roller (4).
4. Insert the drive gear into the sash fitting groove and couple to the corner element of the front roller, and fasten below with M5 x 10 countersunk head screw (4.2).
5. Insert the outside (20) and inside spacer sleeves (21) in the pre-drilled holes.
6. Connect the L&S finger pull short (1.3) and handle back plate (1.1) using a M5 x 70 countersunk screw (1.4).
7. Clip the cover plate (1.2) onto the handle back plate.
8. Fasten the drive gear in the area of the locking bolts using B4.8 x 60 countersunk self-tapping screws (16).
9. If a profile cylinder is used, remove the locking cap (2.1) from the drive gear faceplate.

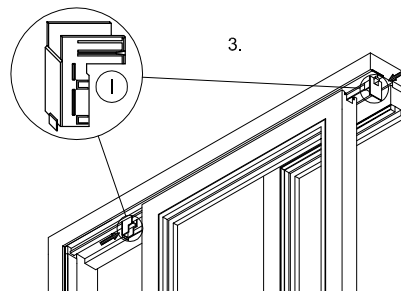
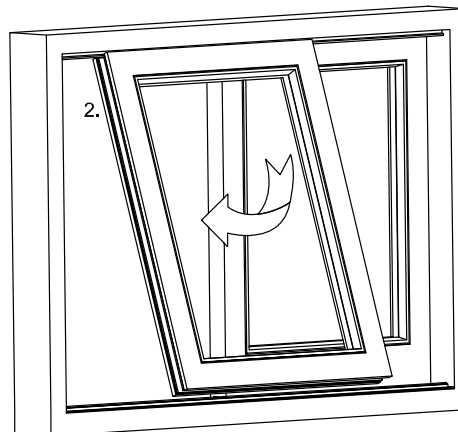


## Frame installation

### Installing the sliding sash

1. Prepare the frame according to the profile manufacturer's specifications.
2. Insert the sliding sash from below into the top guide track and place it onto the roller track.
3. Press the top slider (①) into the top fitting groove until the slide engages.

① Top slider (scope of supply of profile manufacturer)

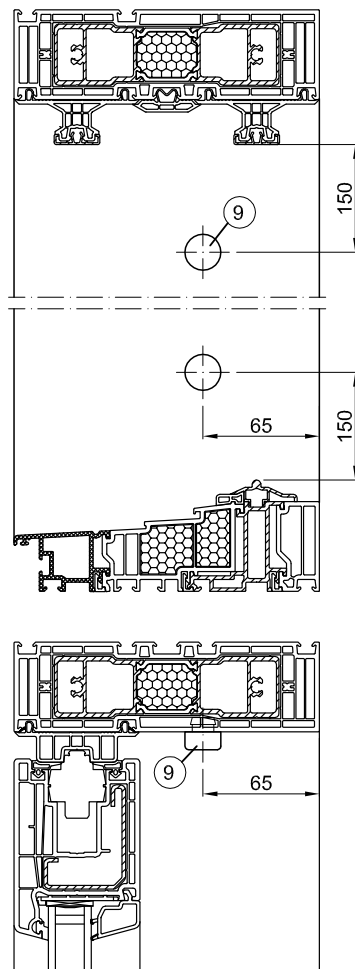




## Frame installation

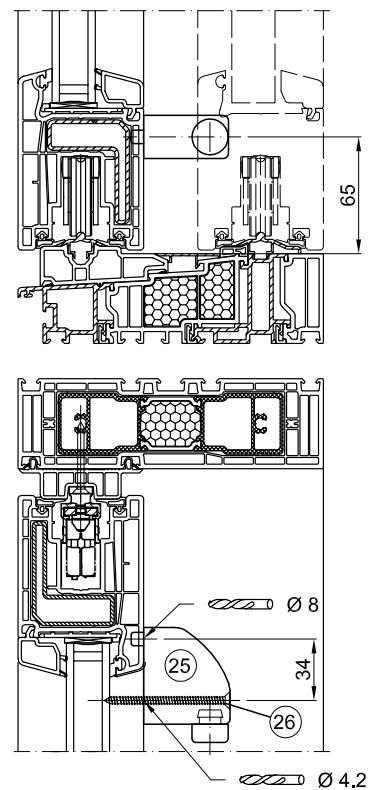
### Installing the L&S rubber buffer (systems A and C)

1. Mark the holes for the L&S rubber buffer (9) on the frame, pre-drill with  $\varnothing$  5 mm and rebores with  $\varnothing$  12 mm.
2. Press the L&S rubber buffer into the hole.



### Installing the 28 mm stop buffer

1. Mark the holes for the 28 mm stop buffer (25) on the sash and drill with  $\varnothing$  4.2 mm or  $\varnothing$  8 mm.
2. Place the stop buffer onto the sash and screw in place with B 4.8 x 70 countersunk self-tapping screws (26).



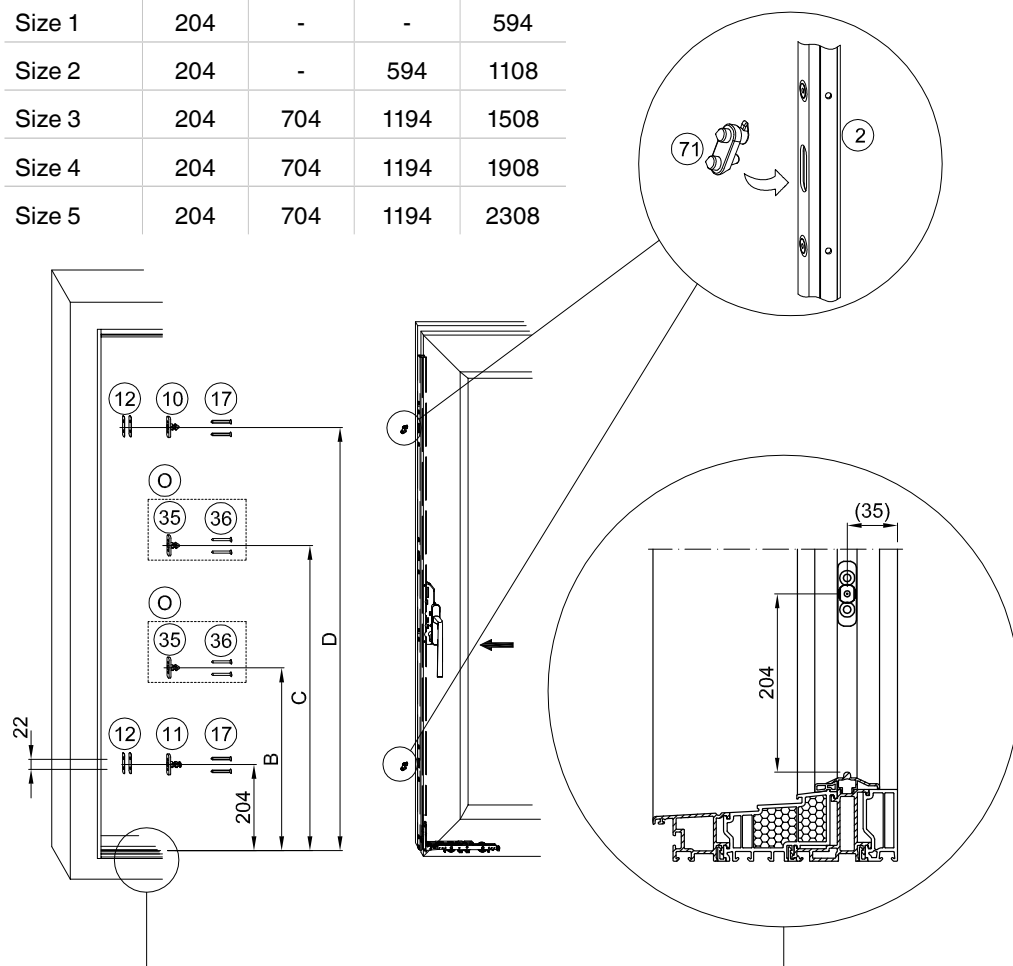


## Frame installation

### Installing the locking bolts, systems A and D

1. Bring the sash into the sliding position (handle down).
2. Insert the marking punch (71) into the latch points of the drive gear (2).  
Optional: For more than two locking points, remove the pre-stamped cover sheet from the drive gear faceplate.
3. Slide the sliding sash against the frame and press against the punch of the fixing screw position.
4. Drill the holes at the punch mark using a  $\varnothing$  4.2 mm drill.
5. Fasten the locking bolts (10) and (11) with B4.8 x 45 countersunk self-tapping screws (17).  
The gasket compression of the seal can be adapted using packers for locking bolts (12).

Locking bolts - position				
Drive gear	A	B	C	D
Size 1	204	-	-	594
Size 2	204	-	594	1108
Size 3	204	704	1194	1508
Size 4	204	704	1194	1908
Size 5	204	704	1194	2308





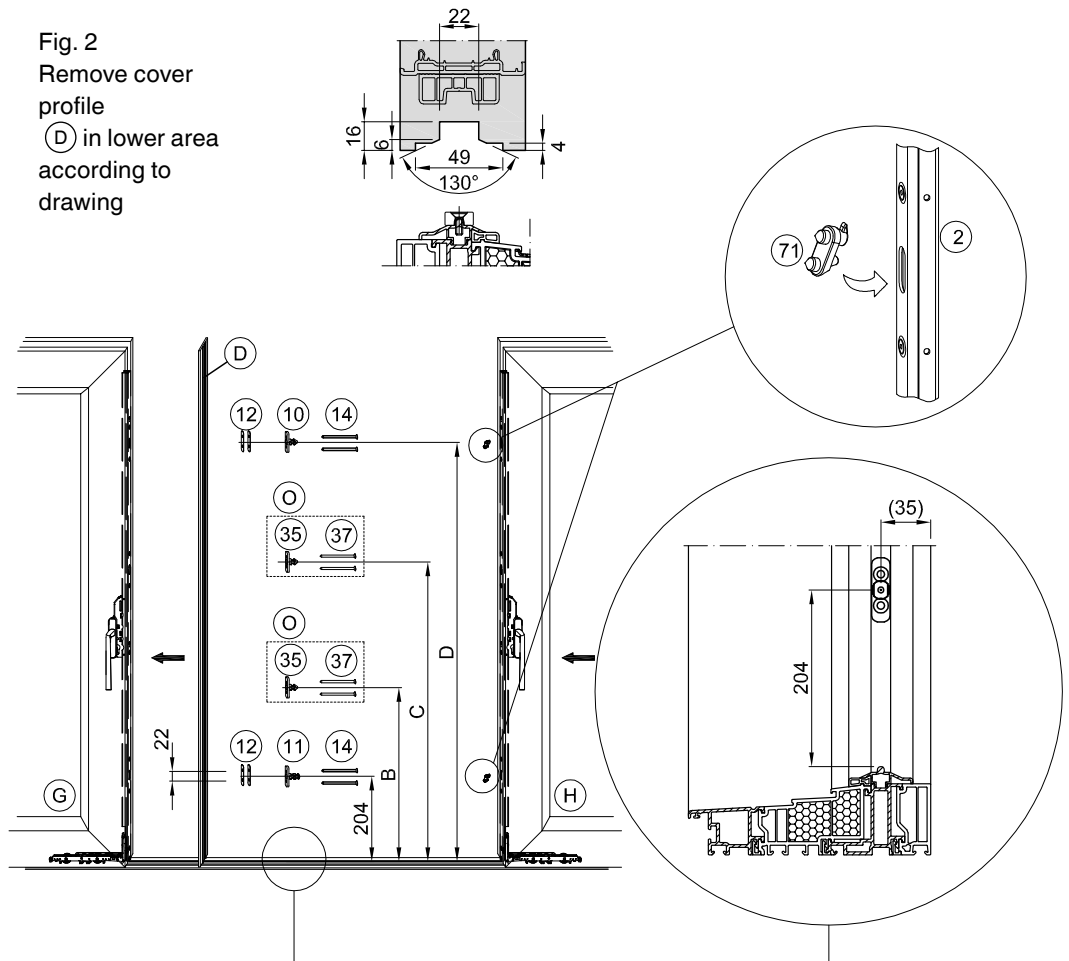


## Frame installation

### Installing the locking bolts for sash 2, systems C and F

1. Bring the sash (G) into the sliding position (handle down).
2. Cut the profile strip (D) (scope of supply of the profile manufacturer) to length according to the profile manufacturer's specifications, detach as shown in Fig. 2 and attach to the sash (G).
3. Bring the sash (H) into the sliding position (handle down). Insert the marking punch (71) into the latch points of the drive gear (2).  
Optional: For more than two locking points, remove the pre-stamped cover sheet from the drive gear faceplate.
4. Slide the sliding sash (H) against the sash (G) and press against the punch of the catch bolt hole.
5. Drill the holes at the punch mark using a  $\varnothing 4.2$  mm drill through the profile strip and the sash reinforcement (G).
6. Screw the locking bolts (10) and (11) with B4.8 x 80 countersunk head screws (14) through the profile strip and drive gear into the reinforcement. The gasket compression of the seal can be adapted using packers for locking bolts (12).

Fig. 2  
Remove cover  
profile  
(D) in lower area  
according to  
drawing





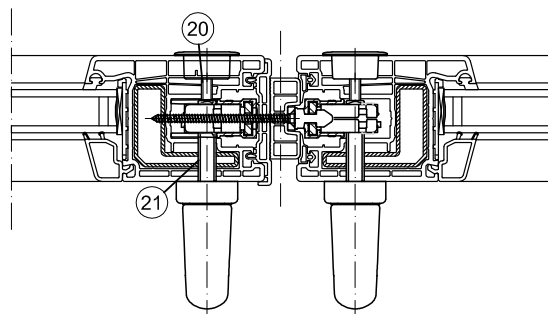
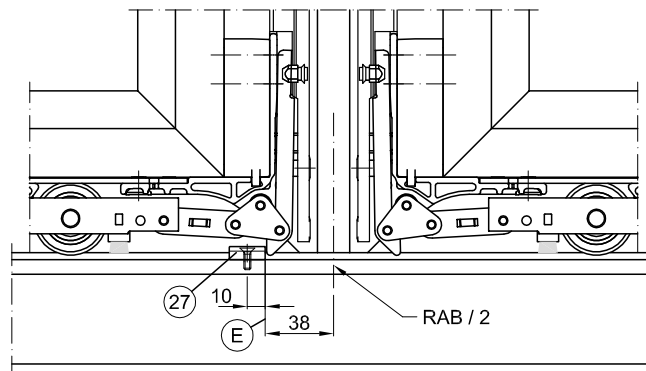
## Frame installation

7. Install the locking block.
  - a. Mark the frame centre (RAB/2).
  - b. Place the locking block (27) onto the roller track (38 mm), and drill with  $\varnothing 3$  mm.
  - c. Fasten the locking block to the roller track using an M4 x 12 countersunk head screw.
8. The first and second sash must be marked to prevent mishandling.

Open:           the first sash first  
                     followed by the second sash  
 Close:           in the reverse order

The operation sticker is included in the L&S 300 kg package

(E) Front edge of night vent component

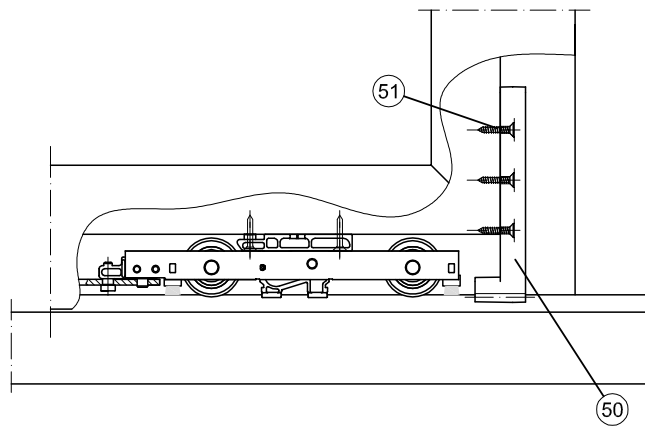




## Installing the sash positioners (enhanced sealing)

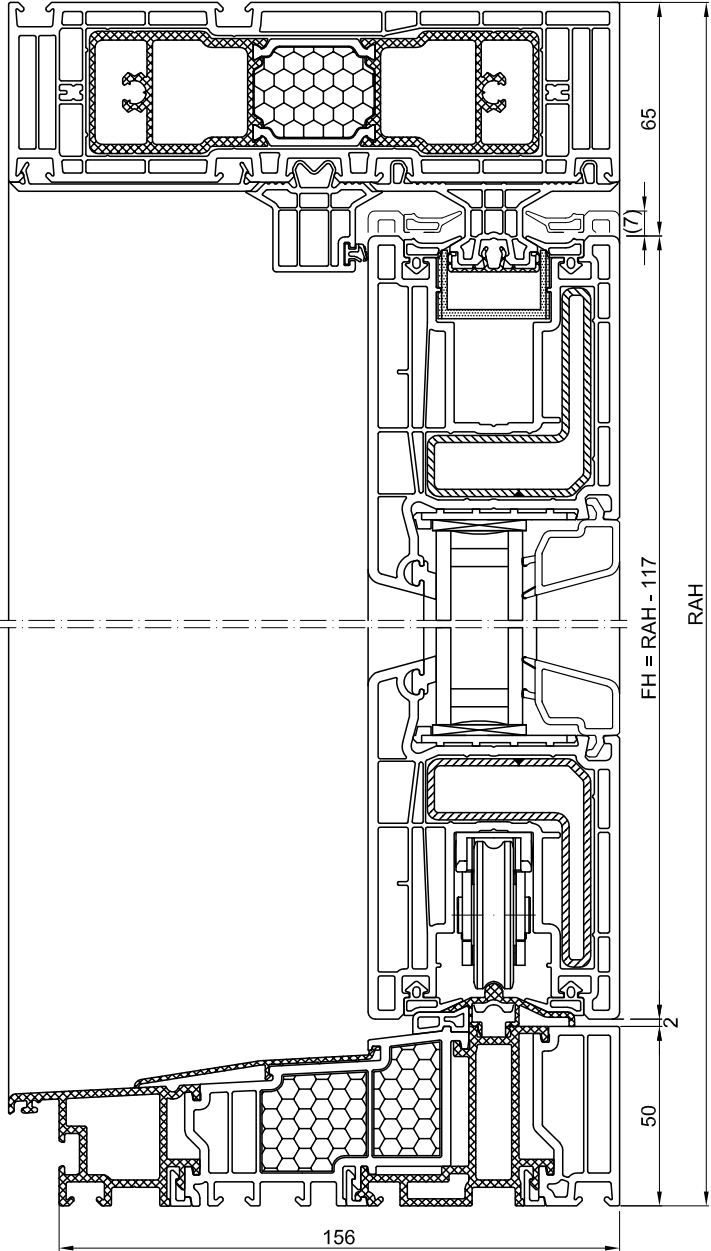
A vertical sash positioner can be optionally used on the hinge side for each sliding sash.

1. Close the sliding sash and bring into the locked position (handle up).
2. Place the sash positioner (50) onto the roller track and screw in place with B 4.8 x 22 countersunk self-tapping screws (51).





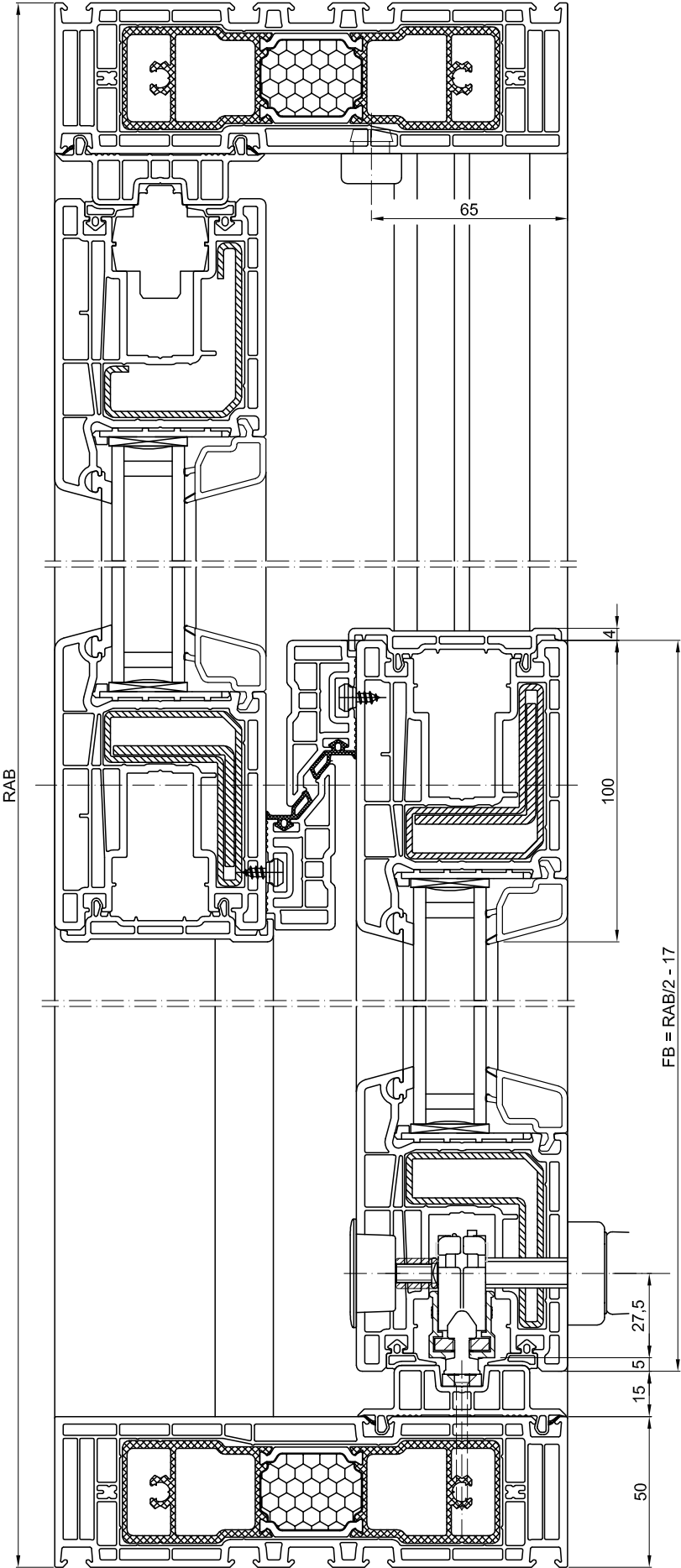
Vertical section



MACO  
RAIL-SYSTEMS



Horizontal section





Notes

A large rectangular area filled with a fine grid pattern, intended for taking notes.



Notes

A large rectangular area filled with a fine grid pattern, intended for taking notes.

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RAIL-SYSTEMS**



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