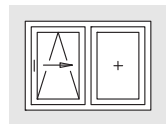


PSK PORTAL 160 PLUS LM

Parallel tilt & slide (PSK) hardware
For light metal profiles a cavity of 21 mm



Size range

Sash width	(mm)	700 to 1,650 ¹⁾
Sash height	(mm)	850 to 2,400
Exterior width of frame	(mm)	Depends on the profile system, determined by the sash width, for scheme A: max. 3,460
Rebate thickness	(mm)	7 to 12
Sash weight	(kg)	Max. 160
Total frame to sash clearance	(mm)	118

1) For sash widths < 960 mm, the sash height must not be greater than 2.5x the sash width.

The size ranges mentioned above apply for the PSK-PORTAL 160 PLUS LM fitting from SIEGENIA-AUBI.
Also effective are the specifications of the profile manufacturers or system owners, **especially** with regard to possible restrictions on sash dimensions, sash weight and lock spacing.
Observe any special manufacturing specifications or processing guidelines explicitly.

Table of contents

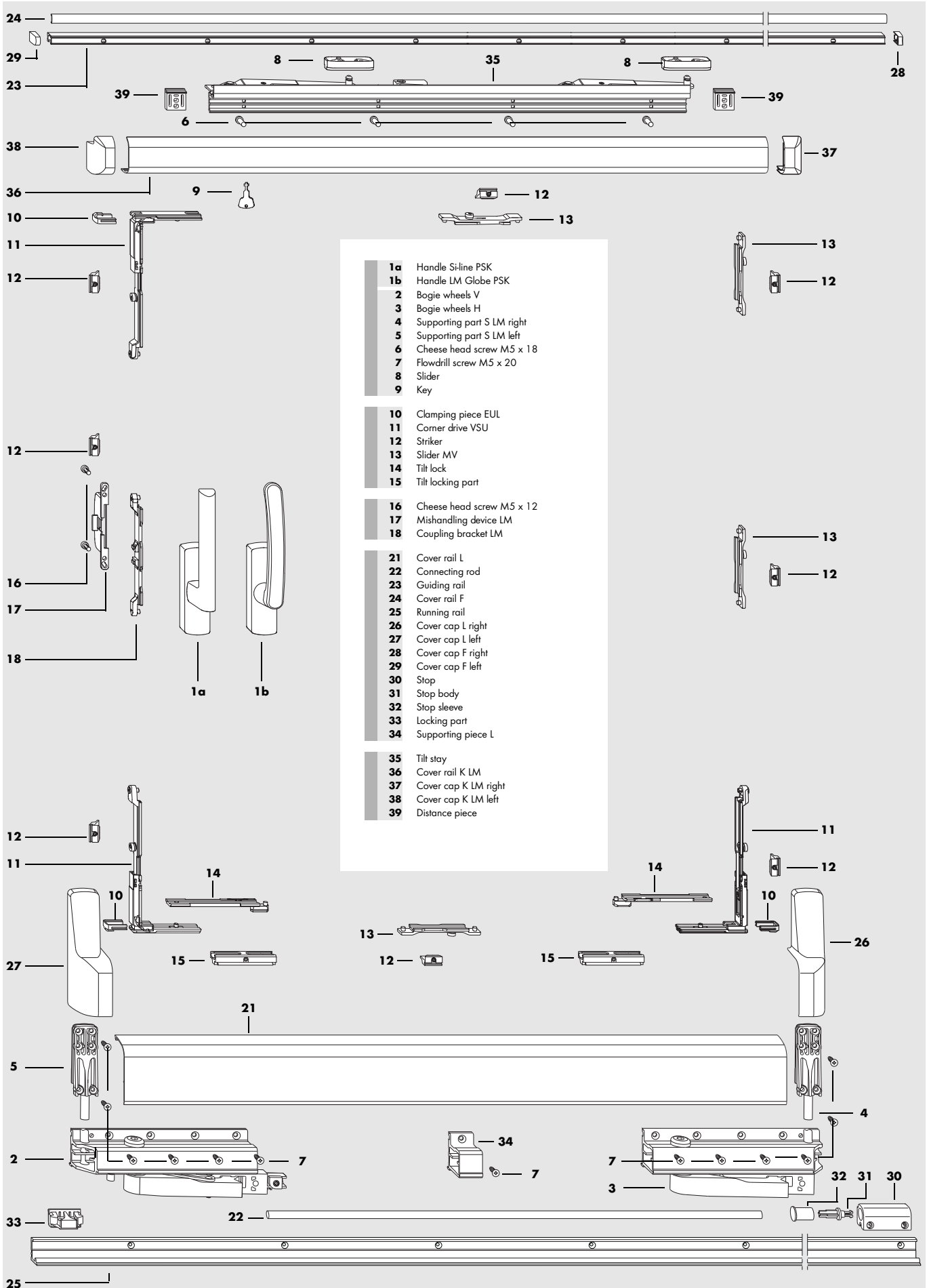
Size range.....	Page 1	Vertikalschnitt, oben.....	Page 11
Beschlagübersicht.....	Page 2	Horizontalschnitt (I).....	Page 12
Beschlagliste (I).....	Page 3	Horizontalschnitt (II).....	Page 13
Beschlagliste (II).....	Page 4	Rahmen: Rahmenteil-Maßangaben.....	Page 14
Anschlaghilfen.....	Page 5	Blendrahmen: Montage Lauf- und Führungsschiene.....	Page 15
Ausführungsvarianten.....	Page 6	Vertikalschnitt, unten.....	Page 16
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Assembly instructions
PSKgb7010

Technical specifications and colours are subject to change

PSKgb7010_2011-02/0

PSK PORTAL 160 PLUS LM *Layout of fittings*



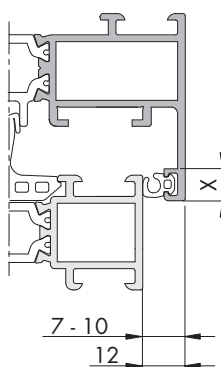
PSK PORTAL 160 PLUS LM *List of fittings*

Item	Quantity/Scheme				Description	Material no.		
	A	G	C	K		silver	white	brown
1	0...1	0...1	0...2	0...2	Handle Si-line PSK LM	MHSS2000-525010	875445	875476
	0...1	0...1	0...2	0...2	Handle LM Globe PSK	MHGS2000-525010	MHGS2000-504010	MHGS2000-533010
no illus.	0...1	0...1	0...2	0...2	Handle PSK lockable	See LMde1337 in the Aluminium planning manual		
2	1	1	1	2	Crt. bg. wh. PSK 160 LM PLUS	PMKF7031-100010 PMKF7032-100010		
	1	1	2	2	Bogie wheels V (PSK 160 Plus)	right left	front front	
3	1	1	1	1	Bogie wheels H (PSK 160 Plus)	right left	rear rear	
4	1	1	1	1	Supporting part S LM	right		
5	1	1	1	1	Supporting part S LM	left		
6	5	5	10	10	Cheese head screw M5 x 18			
7	12	12	24	24	Flowdrill screw M5 x 20			
no illus.	30	30	60	60	Flowdrill screw M4 x 20			
8	1	1	2	2	Bag accessories PSK PORTAL			
	2	2	4	4	Slider			
9	1	1	2	2	Key PORTAL			
10	1	1	2	2	ZV LM PSK VAR. SET	MMZV0040-100010		
	3	3	6	6	Clamping piece EUL			
11	3	3	6	6	Corner drive VSU			
12	8	8	16	16	Striker			
13	4	4	8	8	Slider MV			
14	2	2	4	4	Tilt lock			
15	2	2	4	4	Tilt locking part			
16	0...1	0...1	0...1	0...2	Coupling set FBS-G	9 mm	MMKL0030-100010	
	0...1	0...1	0...1	0...2	Coupling set FBS-G	10 mm	MMKL0010-100010	
	0...1	0...1	0...1	0...2	Coupling set FBS-G	ORH 12 mm	MMKL0040-100010	
17	2	2	2	2	Cheese head screw M5 x 12			
18	1	1	1	1	Mishandling device LM			
18	1	1	1	1	Coupling bracket			
19	-	-	1	-	Coupling set LM-D	MMKL0020-100010		
	-	-	2	-	Cheese head screw M5 x 12			
20	-	-	1	-	Coupling bracket			

Design variations for coupling set

FBS-G (16 - 18)

ORH	X	Material no.
7 - 10 mm	≤ 8.5 mm	MMKL0030-100010
7 - 10 mm	≤ 7.5 mm	MMKL0010-100010
12 mm	≤ 7 mm	MMKL0040-100010



PSK PORTAL 160 PLUS LM *List of fittings*

Item	Quantity/Scheme				Description	Material no.						
	A	G	C	K		silver	RAL 9003 white	RAL 8022 brown				
dependent on sash width (FB) and frame width (RAB)					Profile set PSK LM PLUS	Size	Length (in mm)	FB (in mm)	RAB (in mm)			
		1	1 ¹⁾	2 ²⁾	2 ³⁾	Sz. 87/200	700	to 900	to 2,000	PMPF7050 ⁴⁾ -525010	...-502010	...-512010
						Sz. 107/240	901	to 1,100	2,001 to 2,400	PMPF7060-525010	...-502010	...-512010
						Sz. 130/286	1,101	to 1,300	2,401 to 2,860	PMPF7070-525010	...-502010	...-512010
						Sz. 160/346	1,301	to 1,650	2,861 to 3,460	PMPF7080-525010	...-502010	...-512010
	21	1	1	2	2	Cover rail L	Sz. 87	865				
							Sz. 107	1,065				
							Sz. 130	1,295				
							Sz. 160	1,550				
	22	1	1	2	2	Connecting rod	Sz. 87	585				
						Sz. 107	785					
						Sz. 130	1,015					
						Sz. 160	1,270					
23	1	1	2	2	Guiding rail	Sz. 200	2,000					
						Sz. 240	2,400					
						Sz. 286	2,860					
						Sz. 346	3,460					
24	1	1	2	2	Cover rail F	Sz. 200	2,000					
						Sz. 240	2,400					
						Sz. 286	2,860					
						Sz. 346	3,460					
25	1	1	2	2	Running rail	Sz. 200	2,000					
						Sz. 240	2,400					
						Sz. 286	2,860					
						Sz. 346	3,460					
dependent on sash width (FB) and frame width (RAB)		1	1	2	2	Bag Cover cap set PSK LM PLUS				PMZF0010 ⁴⁾ -025010	...-002010	...-012010
	26	1	1	2	2	Cover cap L	right					
	27	1	1	2	2	Cover cap L	left					
	28	1	1	2	2	Cover cap F	right					
	29	1	1	2	2	Cover cap F	left					
		1	1	2	2	Bag accessories Running rail PSK PLUS				PMZJ0050 ⁴⁾ -100011	...-100011	...-012010
	30	1	1	2	2	Stop						
	31	1	1	2	2	Stop body						
	32	1	1	2	2	Stop sleeve						
	33	1	1	2	2	Locking part						
34	1	1	2	2	Supporting piece L							
dependent on sash width (FB) and frame width (RAB)	35	1	1 ¹⁾	2 ²⁾	2 ³⁾	Tilt stay PSK 160	Size ¹⁾	Length (in mm)	FB (in mm)			
							87	620	670 to 870		716526	
							107	820	871 to 1,070		716533	
							130	1,020	1,071 to 1,300		716540	
							160	1,220	1,301 to 1,600		716557	
		1	1 ¹⁾	2 ²⁾	2 ³⁾	Bag cover rail K LM PSK 160	Size	Length (in mm)	FB (in mm)			
							87	670	to 870	PMPF7090 ⁴⁾ -525010	...-502010	...-512010
							107	871	to 1,070	PMPF7100-525010	...-502010	...-512010
							130	1,071	to 1,300	PMPF7110-525010	...-502010	...-512010
							160	1,301	to 1,600	PMPF7120-525010	...-502010	...-512010
36	1	1	2	2	Cover rail K LM	Sz. 87	940					
						Sz. 107	1,140					
						Sz. 130	1,370					
						Sz. 160	1,670					
37	1	1	2	2	Cover rail K LM	right						
38	1	1	2	2	Cover rail K LM	left						
39	1	1	2	2	Distance piece K PSK LM							

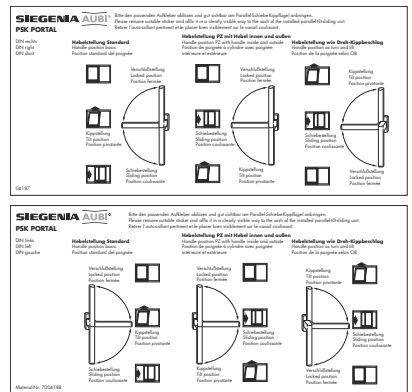
- 1) For scheme G, design profile set only for 2/3 of total frame width
- 2) Symmetrical design; point of separation must be between the sliding sashes.
- 3) Symmetrical design
- 4) Basic number colour-neutral

Important Instructions

- Please pay attention to our “Hardware for Sliding Doors and Windows” product information.
- For the PSK PORTAL 160 Plus LM fitting from SIEGENIA-AUBI, the size ranges detailed on page 1 apply. Furthermore, the specifications provided by the profile manufacturers or system owners also apply, **especially** any information regarding possible restrictions on sash dimensions, sash weight and lock spacing. Observe any special manufacturing specifications or processing guidelines explicitly. The specifications given for screw-in speeds and torques must be adhered to.
- If the parallel tilt & slide element is subjected to excessive strain, the sash can, in the worst case, jump and fall out of its guide and, in doing so, cause serious injuries. If it is expected that the parallel tilt & slide element will be subject to excessive strain from being closed with force (use in schools, nursery schools, etc.), appropriate measures must be taken to prevent this from happening. For example:
 - move the stop to reduce the opening width or
 - install a lockable handle to prevent unauthorised use.
- In case of doubt, be sure to contact your SIEGENIA-AUBI sales consultant.
- The fittings specified in these assembly instructions are electro-galvanised and finished using a special technique; they comply with DIN EN 1670. They must not be used in environments where the air contains aggressive or corrosive components, or salt.
- Select your complete set of fittings **only** from the SIEGENIA-AUBI range of fittings. Damage could otherwise occur, for which we accept no liability.
- All fittings must be properly mounted as per the description on pages 10 to 20. **Do not overtighten the screws.**
- The parallel tilt & slide elements may be surface treated only **before** the fittings are assembled. Treating these surfaces at a later stage can reduce the functional capacity of the fittings. In such cases we are not obliged to provide a guarantee.
- When inserting blocks, be sure to observe technical guideline no. 3 published by the German Glazing Trade [Glaserhandwerk], “Blocking glazing units” [Klotzung von Verglasungseinheiten].
- Never use acid cure sealants as they may cause the fittings to corrode.
- Keep the sliding bump (on the running rail) and all rebates free from deposits and dirt, especially from remnants of cement and plaster. Avoid exposing the fittings directly to water and do not let cleaning agents come into contact with the fittings.
- Attach the instruction label (sliding direction DIN left or DIN right) to the integrated parallel tilt & slide sash in a clearly visible location.

The instruction label is located in “Carton PSK 160 LM.”

Remove the applicable segment from the respective label and stick it to the window sash.



Disclaimer of liability

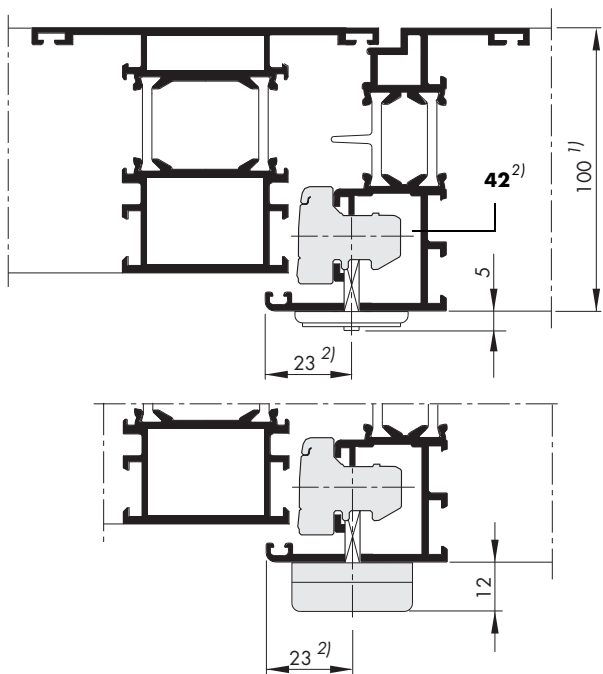
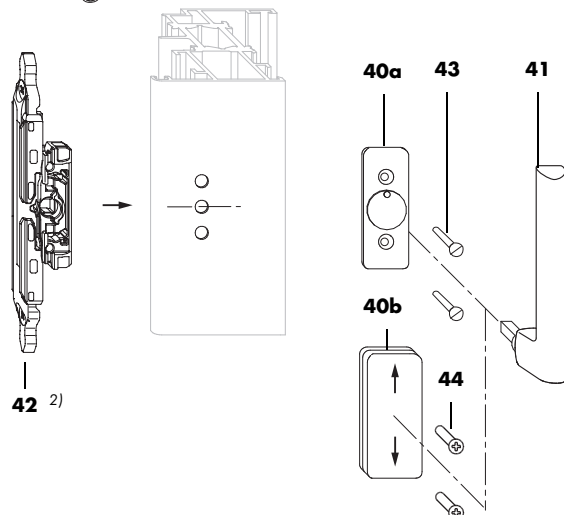
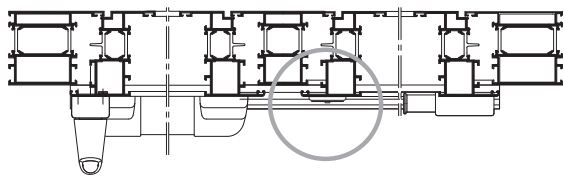
We assume no liability for loss of function of or damage to the fittings (or to the fitted parallel tilt & slide elements) resulting from insufficient tendering, failure to follow these assembly instructions or force being applied to the fittings (e.g. through improper use).

Abbreviations

The following abbreviations are used in these assembly instructions:

F	Guiding rail	M	Middle	S-ES	Steel-enhanced security
FB	Sash width	MV	Centre lock	SW	Key dimension
FFB	Sash rebate width	OKFF	Finished floor level	ORH	Over rebate height
FFH	Sash rebate height	PZ	Profile cylinder	V	Front
FH	Sash height	RAB	Exterior width of frame	VS	Locking side
G	Handle height	RAH	Exterior height of frame	VSU	Locking side, bottom
H	Rear	RFB	Frame rebate width	ZV	Central locking part
L	Bogie wheels	S	Heavy version		

PSK PORTAL 160 PLUS LM Design variations



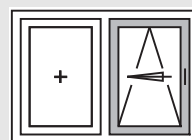
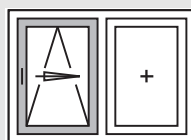
- 1) For max. sash profile - installation depth **up to 100 mm** , use rose Si-line FAVORIT (40b).
over 100 mm , use rose PSK EUROLINE (40a).
- 2) For installation dimensions and ordering information, see assembly instructions LMde1361/LMde1364 in the Aluminium planning manual.

Scheme A

DIN left

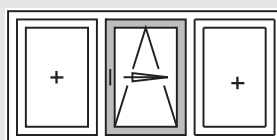
or

DIN right



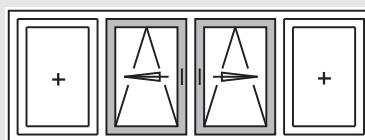
1 sliding sash/1 stationary sash*

Scheme G



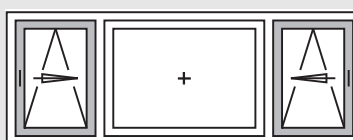
1 sliding sash/2 stationary sashes*

Scheme C



2 sliding sashes/2 stationary sashes*

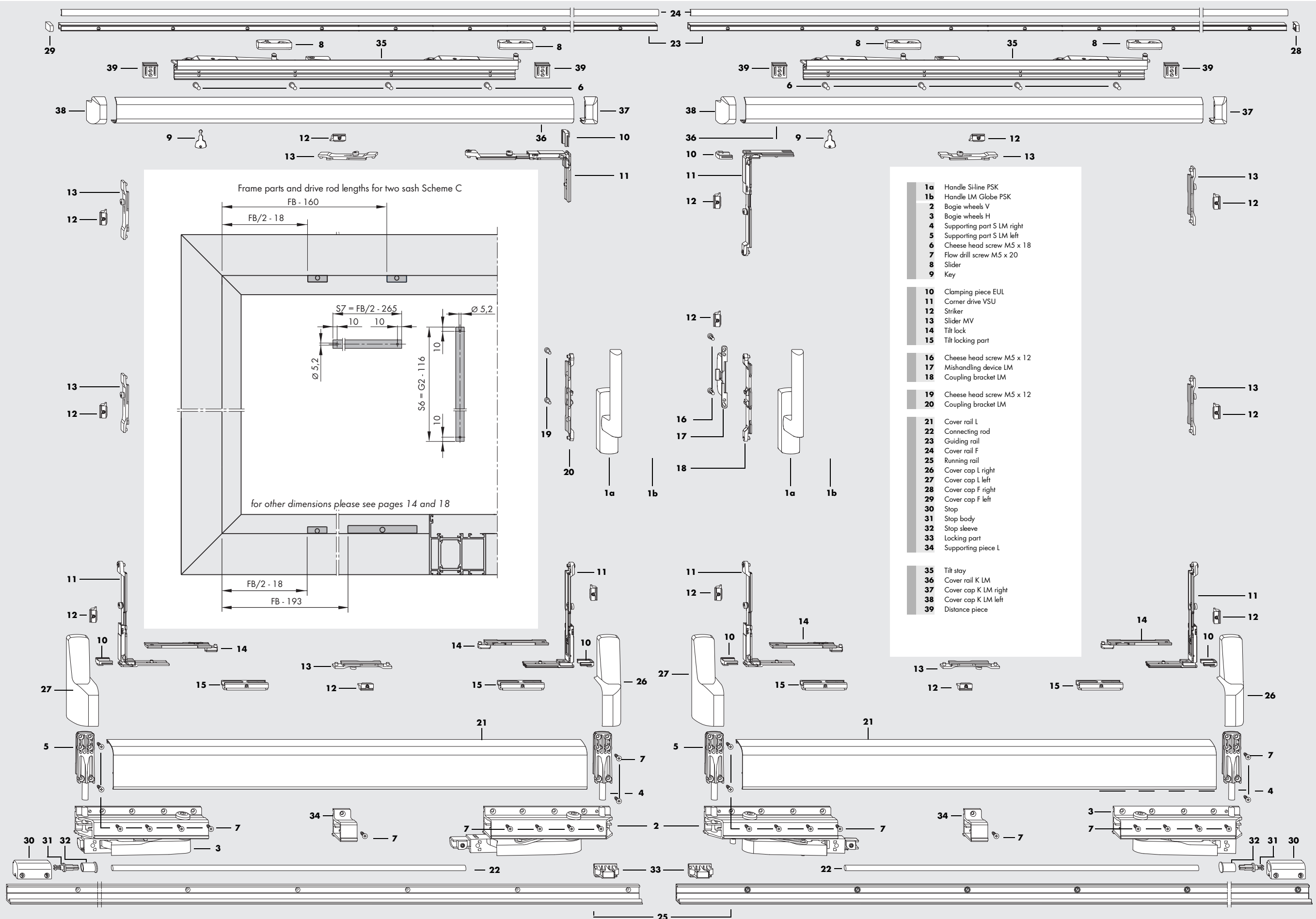
Scheme K



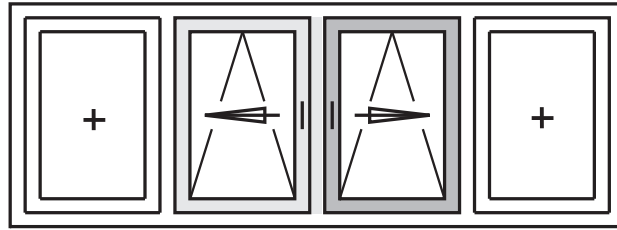
2 sliding sashes/1 stationary sash

*) Instead of stationary sashes, turning sashes are also possible. Turning sashes are available only with rose PSK PORTAL EUROLINE (40a) or rose Si-line FAVORIT (40b) and **removable** handle (41).

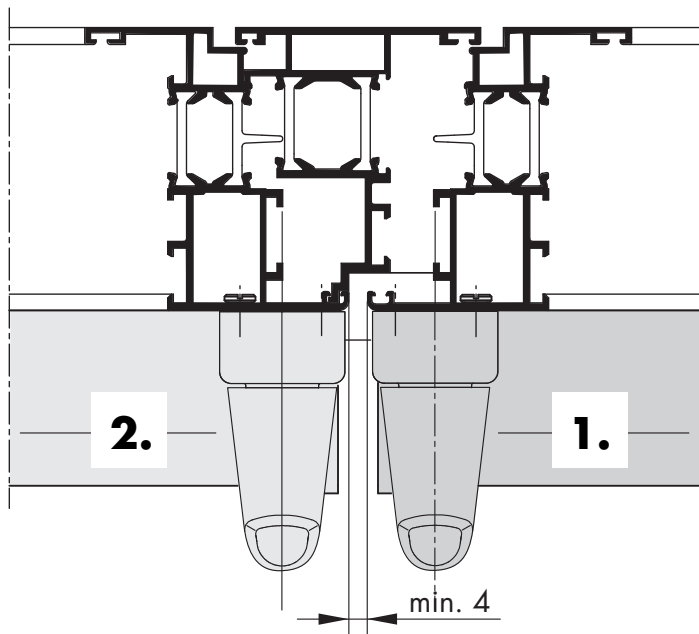
Item	Quantity	Description	Material no.
40a	1	Rose PSK EUROLINE silver for profile installation depth over 73 mm	PHZE0010-524010
	1	Rose PSK EUROLINE brown (RAL 8022) for profile installation depth over 73 mm	PHZE0010-512010
	1	Rose PSK EUROLINE white (RAL 9003) for profile installation depth over 73 mm	PHZE0010-502010
40b	1	Rose Si-line FAVORIT silver for profile installation depth up to 73 mm	869826
	1	Rose Si-line FAVORIT dark bronze for profile installation depth up to 73 mm	869833
	1	Rose Si-line FAVORIT white for profile installation depth up to 73 mm	862605
41	1	Removable handle Si-line white for profile installation depth up to 73 mm	ZHAN0010-502010
42	1	Gear set M6	MMGI0090-100030
43	2	Oval head countersunk screw M5 x 40 shortened by customer	800829
44	2	Countersunk screw M5 x 35 included in pack unit gear M6	-



Scheme C



2 sliding sashes/2 stationary sashes



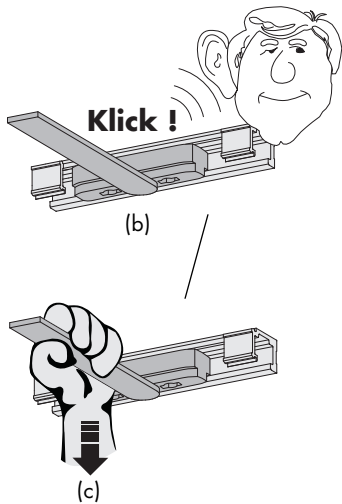
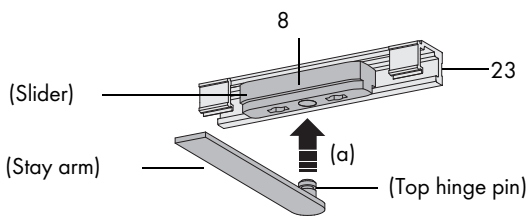
Important: Main and secondary sashes must be labelled accordingly to prevent faulty operation.

The sliding sashes may be operated **only** in the order specified below.

To open: main sash first [1.],
 then secondary sash [2.]

To close: secondary sash first [2.],
 then main sash [1.]

Snap in stay arm of tilt stay (35) into slider (8).



Sequence for securing (hinging the stay arm)

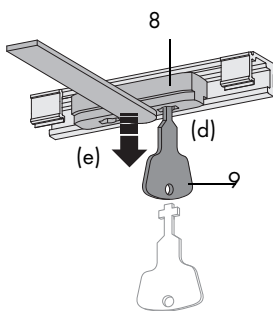
⚠ WARNING

If top hinge bolt is not locked in place, there is a risk of injury from a falling window sash.

▲ Snap in top hinge pin on stay arm in slider (8).

1. Insert stay arm (a) into slider (8) as shown in illustration opposite.
2. Make sure you hear the top hinge pin (b) click into place in slider (8).
3. Pull gently on stay arm (c) to make sure that the top hinge pin is securely in place in slider.

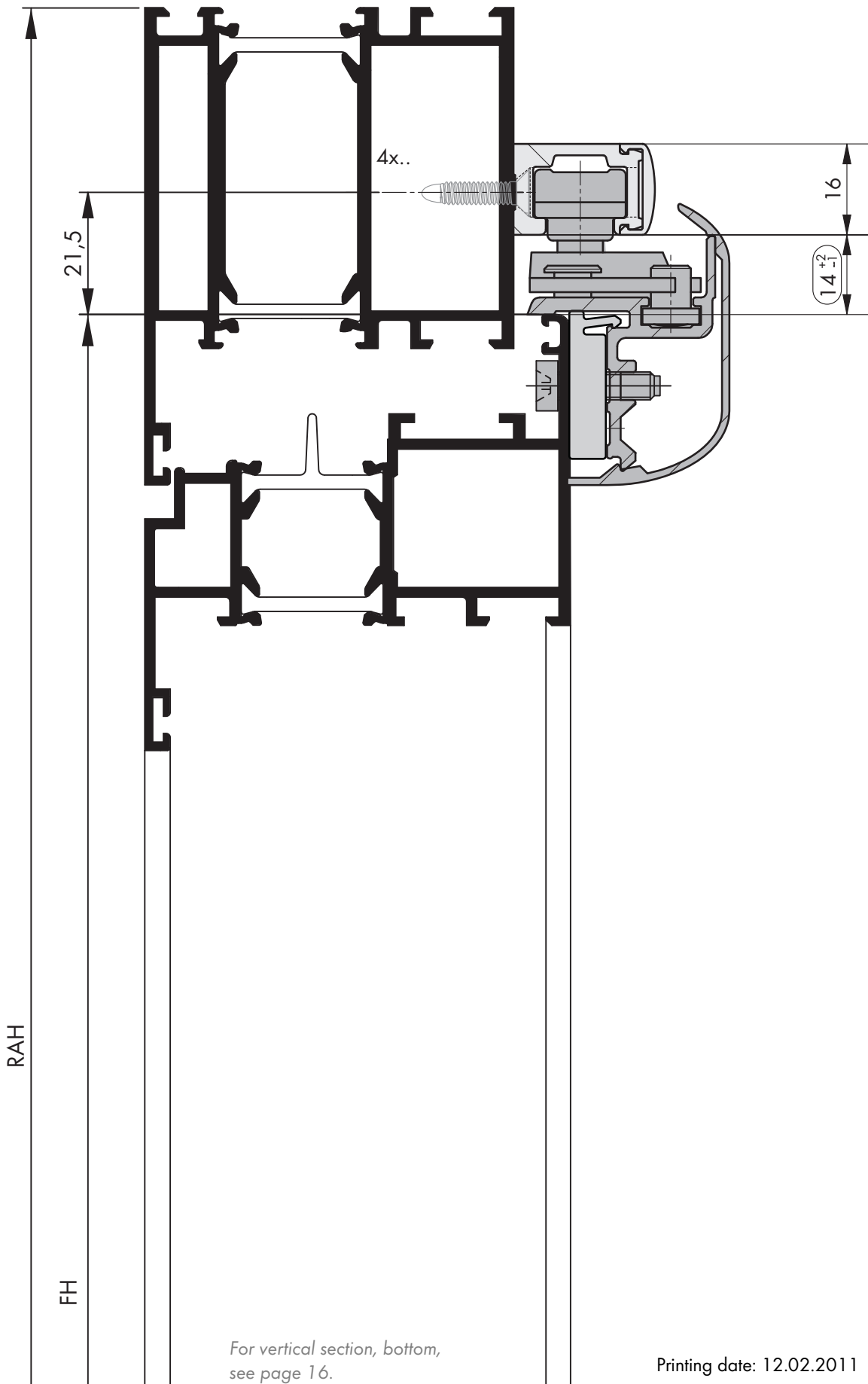
Unhinging the stay arms



Disassembling the stay arm

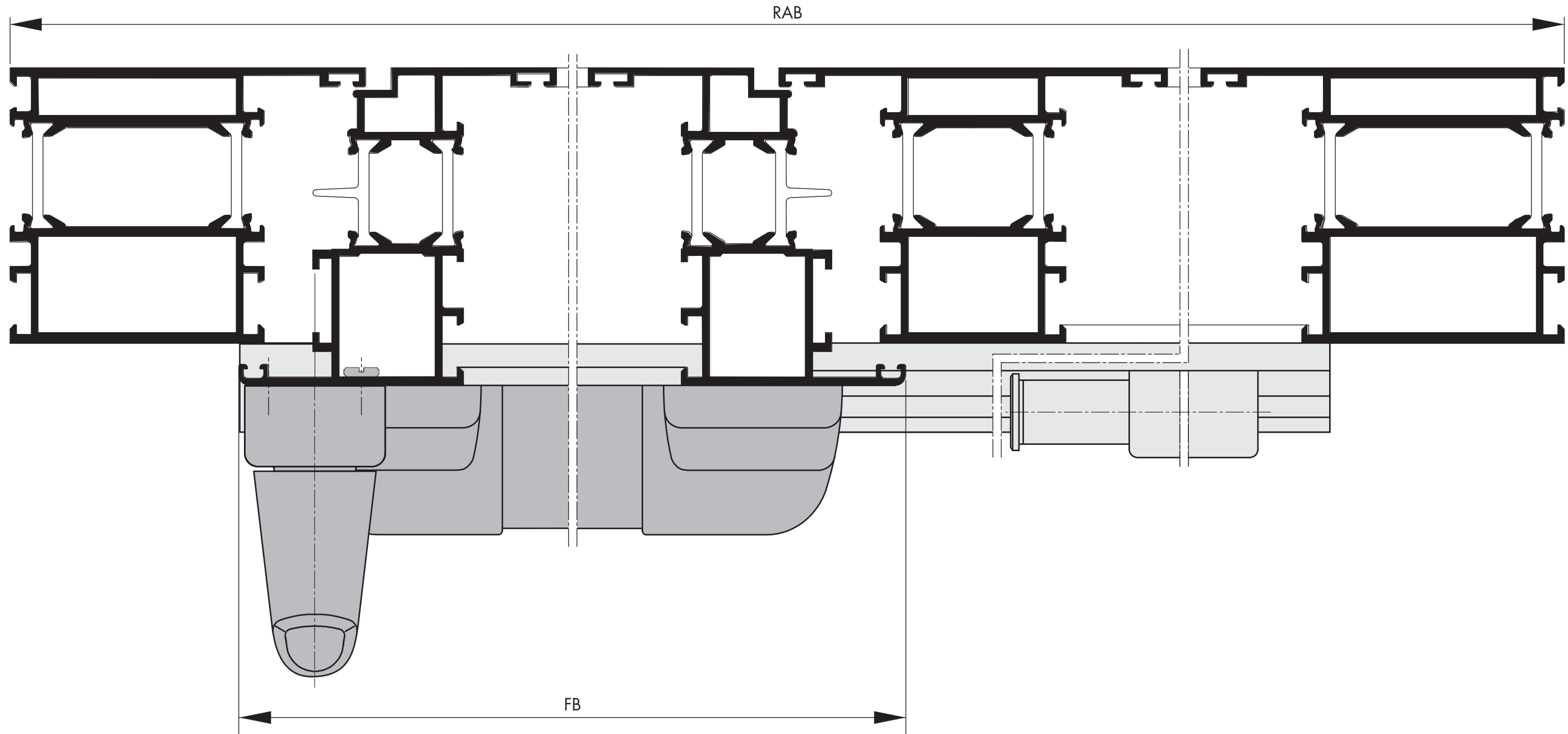
1. Insert key (9) into designated opening on slider (8) (d) and turn 90 degrees.
 2. Pull stay arm down in direction of arrow (e).
- Note:** The stay arm safety device in the slider (8) may be opened only by using the SIEGENIA-AUBI key (9).

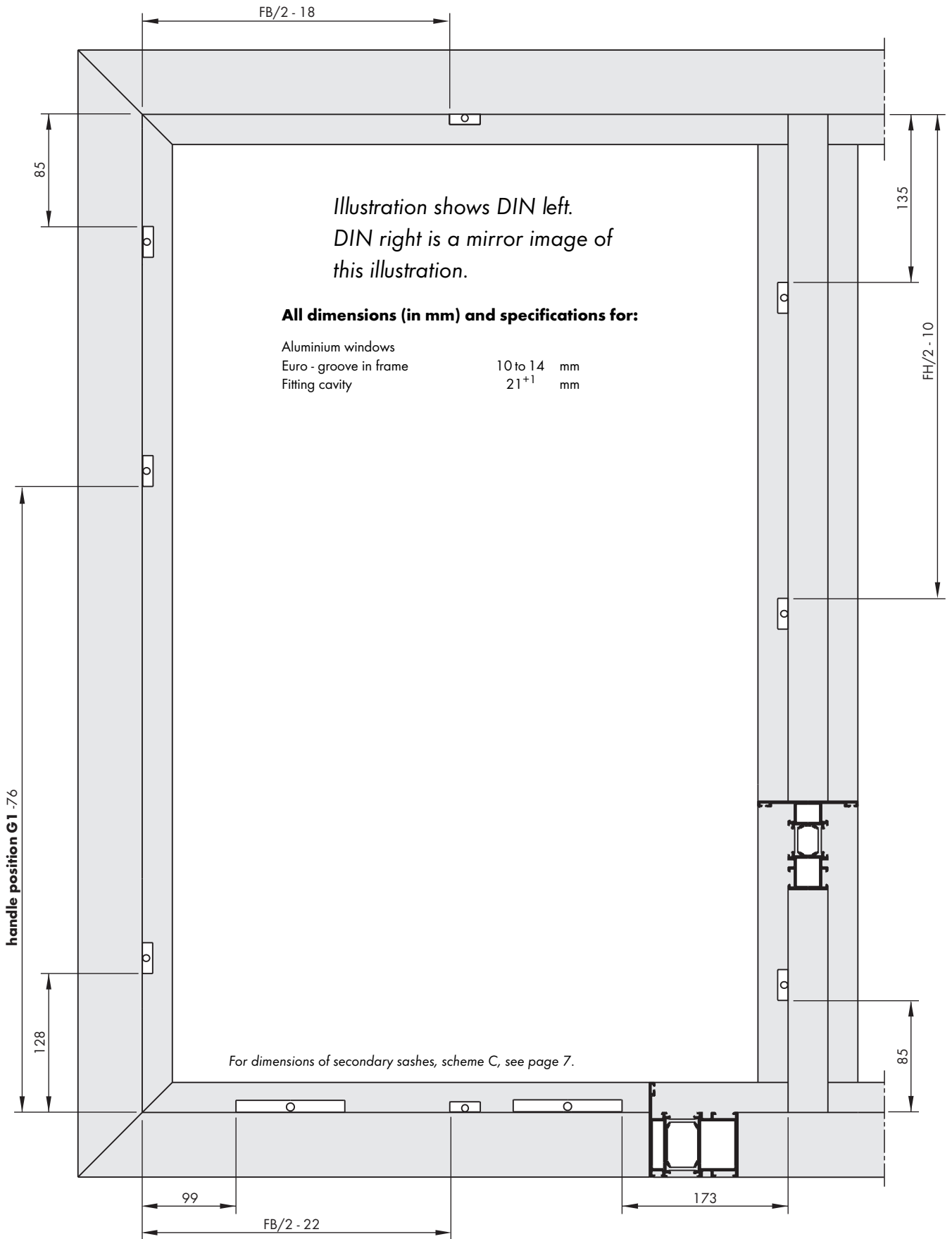
PSK PORTAL 160 PLUS LM Vertical section, top

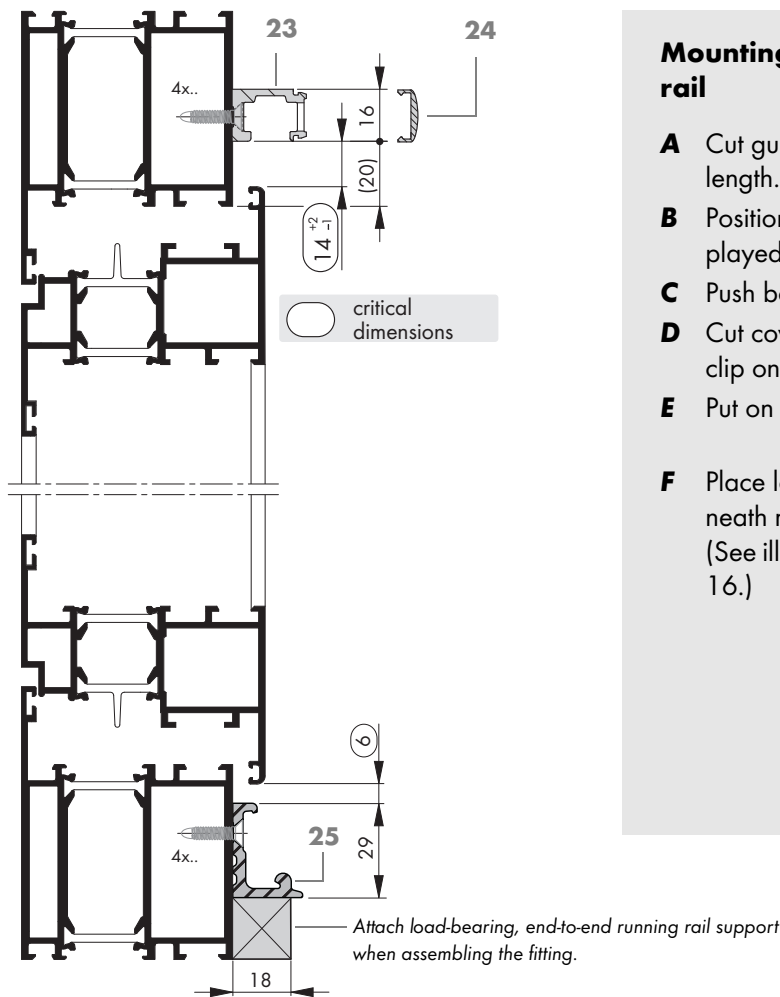


Scheme A

Illustration shows DIN left.
DIN right is a mirror image of this
illustration.







Mounting the running rail and guiding rail

- A** Cut guiding rail (23) and running rail (25) to length.
- B** Position and secure both parts as per the displayed dimensions.
- C** Push both sliders (8) into guiding rail (23).
- D** Cut cover rail F (24) to length and clip on.
- E** Put on lateral cover caps F (28 and 29).
- F** Place load-bearing, end-to-end support underneath running rail (25).
(See illustration opposite or illustration on page 16.)

- G** Position locking part (33) and tighten using SW 4 hexagon socket head wrench (torque 4 - 4.5 Nm).

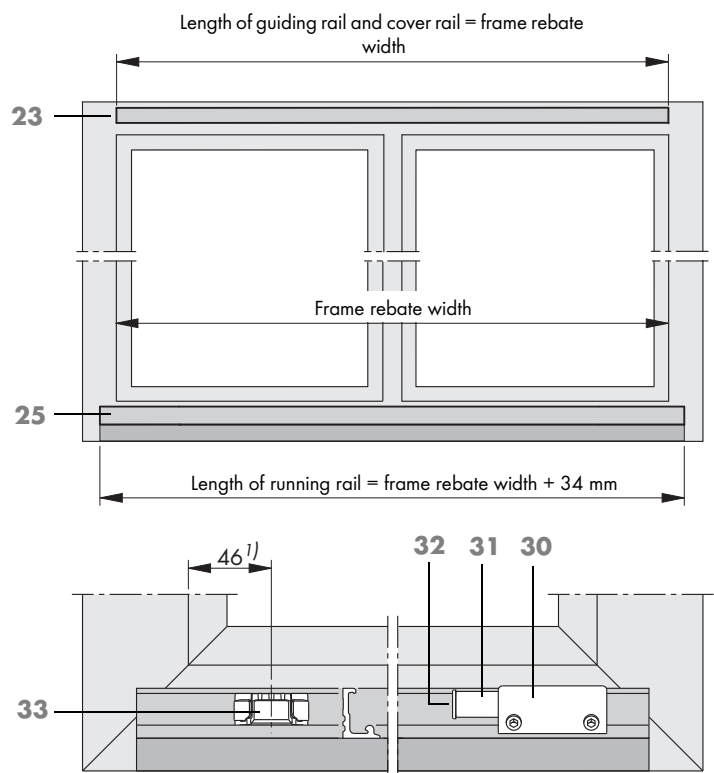
1) **Note:** If dimension 16 mm (on page 19) is increased or decreased, dimension 46 increases or decreases accordingly.

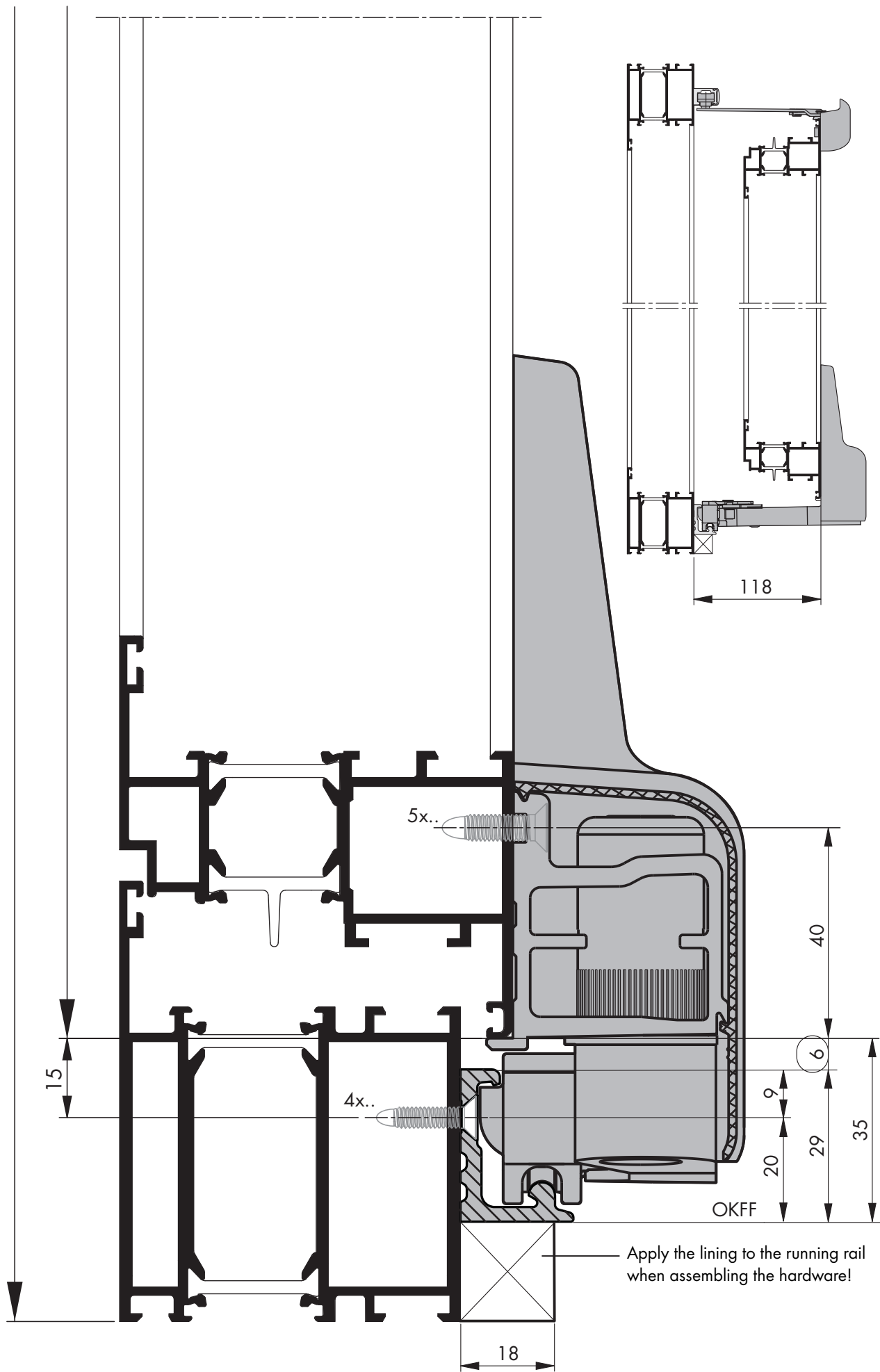
- H** Insert stop body (31) and stop sleeve (32) into stop (30) according to sliding direction DIN left or DIN right.

- I** Insert stop (30) into running rail (25) and tighten slightly.

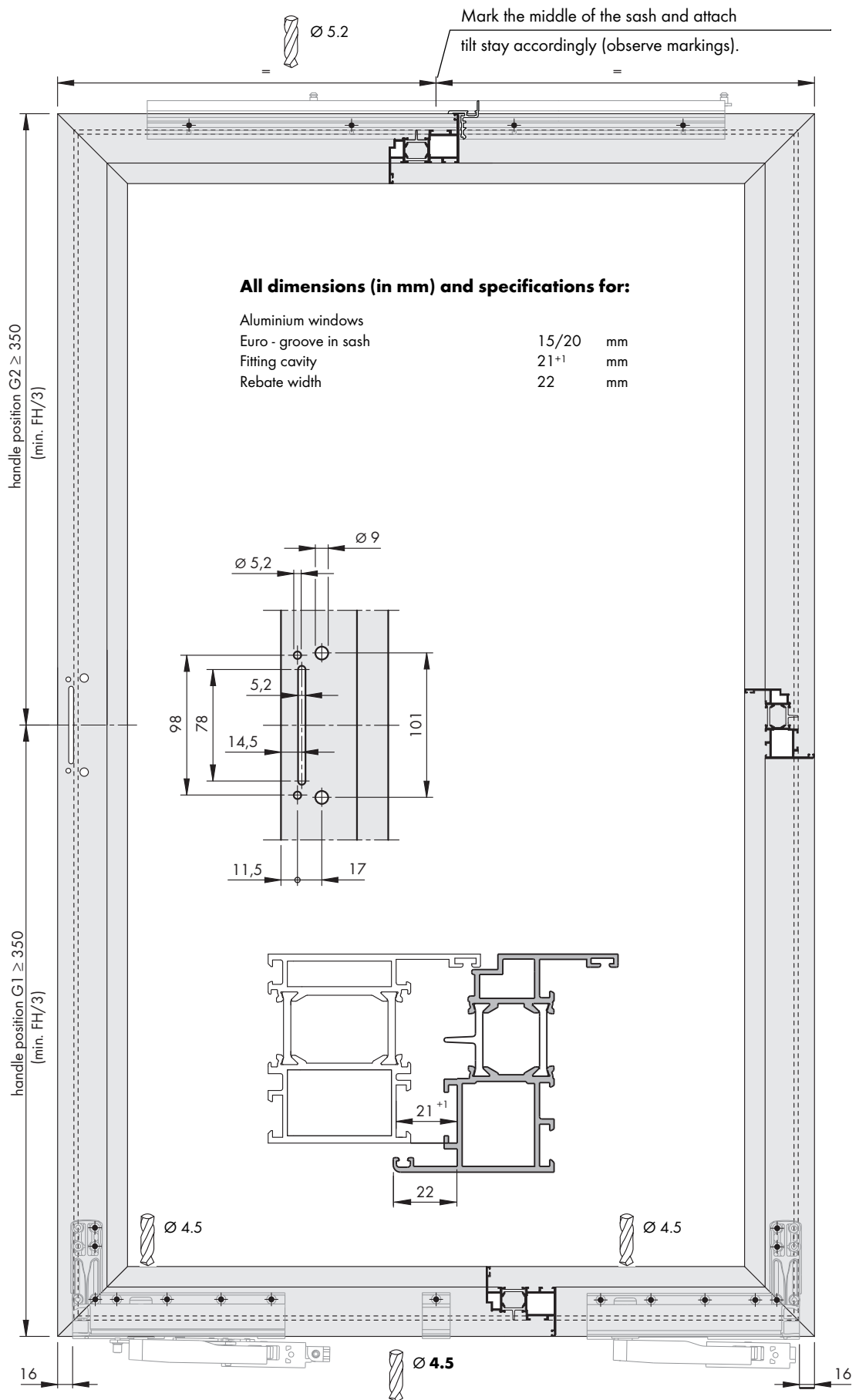
Note: Do not securely tighten stop (30) until sliding sash is inserted (see page 20).

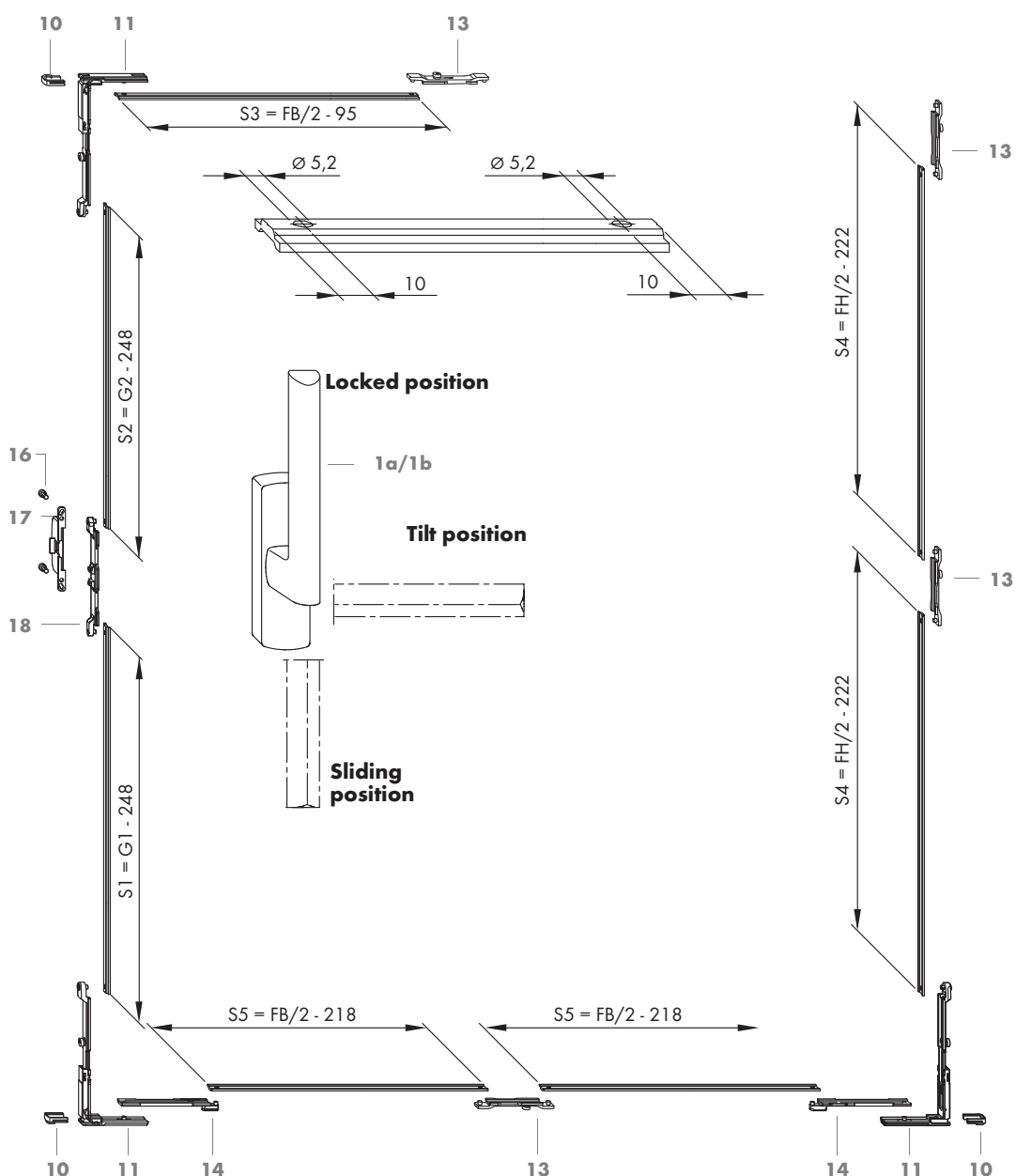
Dimensions for 6-mm sash overlap on frame equates to being "flush with sash outer edge."





PSK PORTAL 160 PLUS LM *Preparing the sash frame*





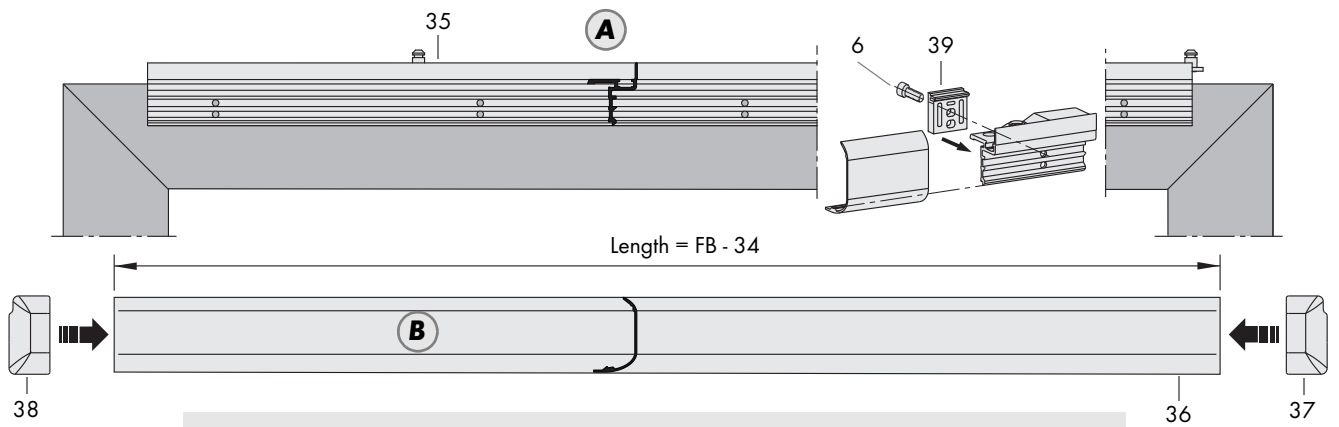
For dimensions of secondary sashes, scheme C, see page 7.

Mounting the central locking part on the sash

Torque 2.5 ± 0.25 Nm for grub screws, coupling screws and cheese head screws.

- A** Rework operating rods S1 - S5 according to specifications and open operating rod guiding groove.
- B** Slide in operating rod S3 with Schieber MV (13) horizontally from the top.
- C** Slide in Kippriegel (14) operating rod S5 with Schieber MV (13), operating rod S5 and Kippriegel (14) horizontally from below.
- D** Slide in operating rod S1, Kupplungslasche (18), operating rod S2 and Eckumlenkung VSU (11) vertically from the top. Couple Eckumlenkung VSU (11) with operating rod S3 and secure using clamping piece EUL (10).
- E** Loosen coupling screw on Eckumlenkung VSU (11). Slide in Eckumlenkung VSU (11) vertically from below.
- F** Couple Eckumlenkung VSU (11) with Kippriegel (14) and secure using clamping piece EUL (10).
- G** Connect Eckumlenkung VSU (11) and operating rod S1 to coupling screw.
- H** Slide in Schieber MV (13), operating rod S4, Schieber MV (13), operating rod S4 and Eckumlenkung VSU (11) from below.
- I** Couple Eckumlenkung VSU (11) with Kippriegel (14) and secure using clamping piece EUL (10).
- J** Screw mishandling device LM (17) on rebate using cheese head screws M5 x 12 (16) for the handle (1a/1b). Pay attention to inclusion of handle catch in Kupplungslasche (18).

PSK PORTAL 160 PLUS KF Sash frame: mounting the PSK components



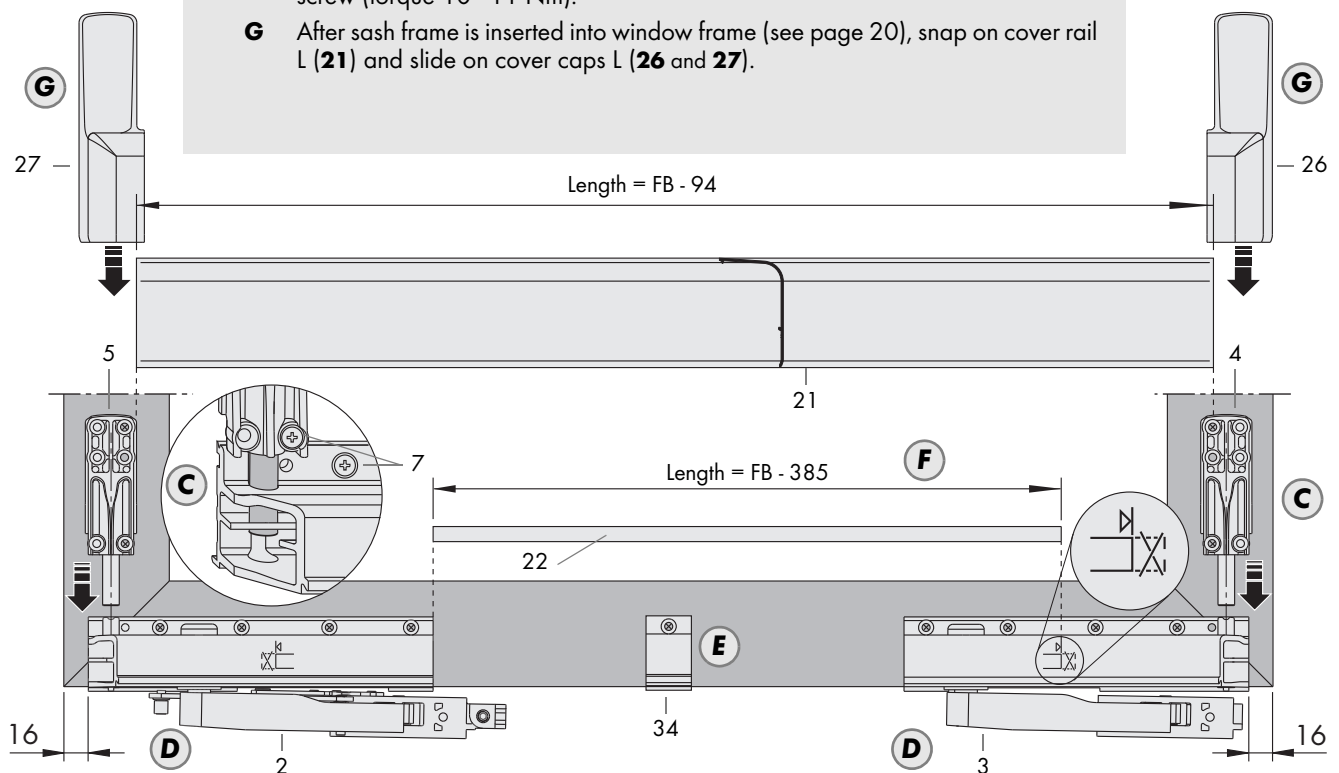
Mounting the tilt stay

Torque 2.5 ± 0.25 Nm for cheese head screws and flow drill screws
 Fix distance pieces (39) in the correct screw positions by clipping them onto tilt stay (35). Screw tilt stay (35) onto sash frame above the provided drilling mounting holes using cheese head screws M5 x 18 (6).

- B** Cut cover rail K (36) to length, place onto tilt stay (35) from above and snap on. Slide on cover caps K (37 and 38) onto the side.

Mounting the bogie wheels

- C** Slide on supporting parts (4 and 5), according to their application DIN left or DIN right, into bogie wheels V (2) and bogie wheels H (3).
- D** Screw tight bogie wheels V (2) and bogie wheels H (3) using flow drill screws M5 x 20 (7).
- E** Centre supporting piece L (34) for cover rail L (21) and screw on.
- F** Attach connecting rod (22) on bogie wheels V (2), mark off on marking from bogie wheels H (3) and cut to length. Insert connecting rod (22) into bogie wheels H (3) and secure using hexagon socket screw (torque 10 - 11 Nm). For this use a SW 4 hexagon wrench. Insert connecting rod (22) into bogie wheels V (2). Fix (secure) bogie wheels H (3) into locking position. Ensure the parallel position of bogie wheels. Secure connecting rod (22) into bogie wheels V (2) also using hexagon socket screw (torque 10 - 11 Nm).
- G** After sash frame is inserted into window frame (see page 20), snap on cover rail L (21) and slide on cover caps L (26 and 27).



PSK PORTAL 160 PLUS LM Inserting the sliding sashes and adjustment possibilities

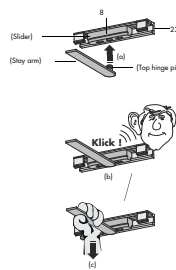
Inserting the sliding sashes

- A** Place stay arms of tilt stay (35) into tilt position. Place sash frame onto running rail (25) at an incline and snap coupling bolt of the stay arms into slider (8). Confirm that the snapped-in coupling bolt is secure by pulling briefly on the stay arm.
- B** Secure stop (30). To do this, slide sash into the desired final position and screw tight stop (30) using SW 4 hexagon socket head wrench (torque of 4 - 4.5 Nm).
- C** Check that all fittings work. Use the adjustments if necessary.

Note: For hinging and unhinging the stay arms, see page 10.

PSK PORTAL 160 Plus LM Hinging and unhinging the stay arms

Snap in stay arm of tilt stay (35) into slider (8).

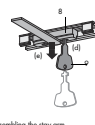


WARNING If top hinge bolt is not locked in place, there is a risk of injury from a falling window sash.
▲ Snap in top hinge pin on stay arm in slider (8).

1. Insert stay arm (a) into slider (8) as shown in illustration opposite.
2. Make sure you hear the top hinge pin (b) click into place in slider (8).
3. Pull gently on stay arm (c) to make sure that the top hinge pin is securely in place in slider.

Sequence for securing (hinging the stay arm)

Unhinging the stay arms



1. Insert key (9) into designated opening on slider (8) (a) and turn 90 degrees.
2. Pull stay arm down in direction of arrow (c).

Note: The stay arm safety device in the slider (8) may be opened only by using the SIEGENIA-AUBI key (9).

Disassembling the stay arm

For inserting the sliding sashes, see page 20.

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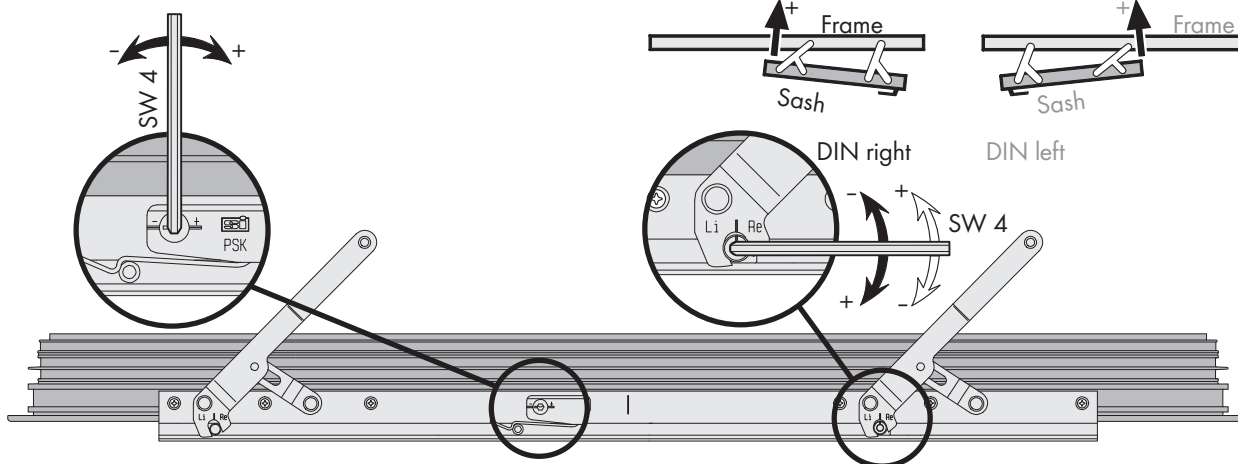
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Page 10

Adjustment possibilities

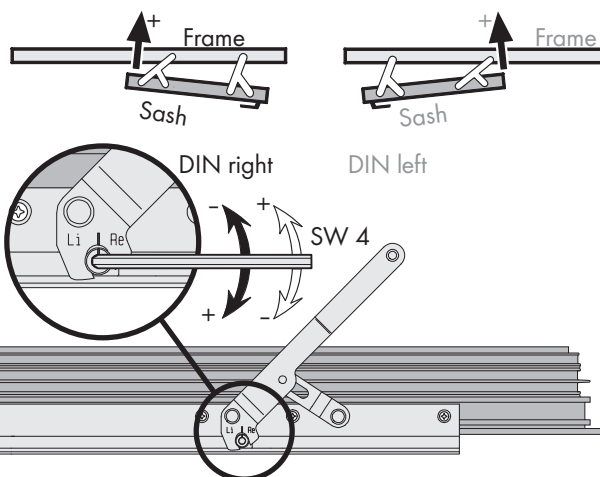
If necessary, the function of the tilt stay (35) and height of the parallel tilt & slide sash can be adjusted **after the glass pane is installed**. The locking effect and pressing pressure of the tilt stay can be set using the SW 4 hexagon socket head wrench. The height can be adjusted at the front (2) and rear (3) of bogie wheels using the SW 8 hexagon socket head wrench. The bogie wheel height adjustment (+4/-2 mm) is self-locking.

Note: Locking part (33) can be moved for a central sash run-in.

Setting the locking effect of the tilt stay



Setting the pressing pressure of the tilt stay



Adjusting the height on the bogie wheels

