SIEGENIA
brings spaces to life

ASSEMBLY INSTRUCTIONS

ECO SLIDE CO

REHAU SYNEGO SLIDE

- Basic hardware

https://link.si/H39ESKFS002

Table of contents

1 About this documentation

1.1 Read the instructions

These instructions are an important document and part of the product. Only the defined procedures are safe. Persons can be injured or material damage could occur if these instructions are not observed.

Read and observe the instructions completely prior to the installation of the product.

1.2 Producer

SIEGENIA-AUBI KG
Industriestraße 1 – 3
57234 Wilnsdorf
Germany

You can find the addresses of our worldwide locations here: siegenia.com/company/locations

Entry in the Commercial Register:

- Registry court: Siegen District Court
- Register number: HRA 3741

1.3 Target group

This information is intended for producers of construction elements, fitters and retrofitters.

Producers of construction elements are considered to be all those who perform the following activities:

- fabricate SIEGENIA products in window elements or door elements

Fitters and retrofitters include all persons who carry out the following activities:

- SIEGENIA install and repair products in a building project
- install and repair window elements or door elements that are equipped with SIEGENIA products in a building project
- retrofit window elements or door elements with SIEGENIA products

1.4 Other relevant information

Refer to the following other relevant information prior to installation.

- Directive "Hardware for windows and patio doors – Specifications/notes on the product and on liability (VHBH)" of the Quality Association for Locks and Fittings (Gütegemeinschaft Schlösser und Beschläge e. V.)
  guetegemeinschaft-schloss-beschlag.de/Pruefen-Zertifizieren/Richtlinien/VHBH
- Information from the profile manufacturers
- DIN ISO 2768-1:1991-06 General tolerances
- Hardware catalogue for ECO SLIDE CO REHAU SYNEGO SLIDE
  https://link.si/td/esco_002/0923

1.5 Figures and symbols

Figures that depend on the DIN direction refer to DIN left sliding elements.

For DIN right sliding elements, the figures are a reverse image.

1.6 Abbreviations

AB	Sash part for stop
AF	Automated manufacturing
ES	Eco Slide
SW-S	Sash width sliding sash
FFB	Sash rebate width
FFH	Sash rebate height
FH	leaf height
FLG	Sash weight
HS	Lift-slide
G	Handle position
LW	Bogie wheels
MFS	Multifunctional rail
MP	Central section
MPO	Top central section
MPU	Bottom central section
RBA	Outer frame width
RHA	Frame height at the outside
SS	Soft-Stop
Pc.	Pieces
VS	Locking side

2 Safety

2.1 Designated use

PORTAL ECO SLIDE CO is a hardware system that allows the horizontal opening and closing of sliding sashes of windows and patio doors.

- The hardware products are suitable for use in vertically installed windows or doors.
- The hardware products are intended for use in windows and doors in permanent buildings.
- Only use the hardware products for windows and patio doors that are equipped with a drainage system. If there is no drainage system, only use the hardware products where they are protected from the weather.

2.2 Requirements for the target groups

2.2.1 Producers of construction elements

We assume and require that producers of construction elements possess the following knowledge and skills:

- knowledge of the regulations concerning occupational safety and accident prevention
- comprehension of technical correlations based on the latest scientific and technological knowledge
- knowledge of professional work steps
- knowledge of the applicable standards and directives
- knowledge of applicable testing regulations
- knowledge and skills relating to the processing of the respective material (timber, PVC, aluminium)
- knowledge and skills relating to the professional use of tools, machines and systems for the production of window or door elements
- knowledge and skills relating to the professional fixing of technical elements
- knowledge of the functional testing and operation of window or door elements
- knowledge of the requirements of profile system providers

SIEGENIA provides training to enable you to acquire some of the knowledge and skills needed. Contact your SIEGENIA sales consultant if this is required.

2.2.2 Fitters and retrofitters

We assume and require that fitters and retrofitters possess the following knowledge and skills:

- knowledge of the regulations concerning occupational safety and accident prevention
- comprehension of technical correlations based on the latest scientific and technological knowledge
- knowledge of professional work steps
- knowledge of the applicable standards and directives
- knowledge and skills relating to the professional use of electrical and mechanical tools
- knowledge and skills relating to the professional fixing of technical elements
- knowledge and skills relating to the retrofitting of mechanical security technology on window or door elements

SIEGENIA provides training to enable you to acquire some of the knowledge and skills needed. Contact your SIEGENIA sales consultant if this is required.

2.3 Safety information

Danger of window sash falling out due to improper operation

Additional weight on the window sash places excessive strain on the bearing components. Bearing components could break. The window sash could fall out and cause serious injuries.

- Do not put additional weight on the sash.

Danger of sliding sash falling out due to damaged guide track or running rail

If the guide track or running rail is damaged, the sliding sash could come loose from the guide. The window sash could fall out and cause life-threatening injuries.

- Secure the sliding sash during transport to prevent it falling out of the running rail.
- Ensure that the bogie wheels are guided along the entire length of the sliding track on the running rail.
- Ensure that the guiding elements engage in the guide track along the entire length of the sliding track.

Risk of injury from using unsuitable hardware components

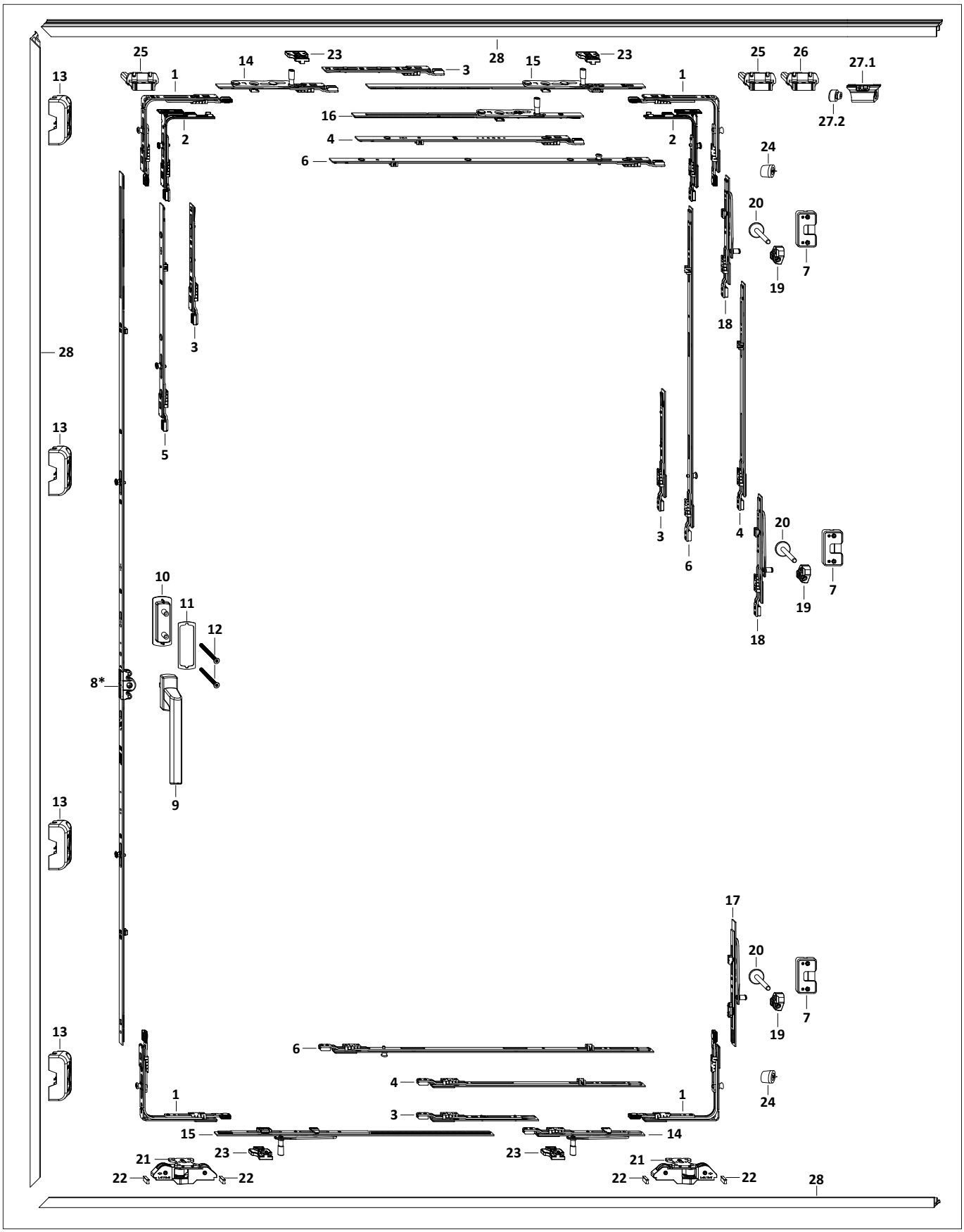
Hardware components and hardware combinations which do not comply with SIEGENIA requirements can impair the safety of the complete set of hardware and lead to accidents, e.g. as a result of window sashes falling out.

- Use SIEGENIA hardware components only.
- Only assemble the fitting parts in accordance with SIEGENIA specifications. If in doubt, seek confirmation from SIEGENIA.

3 Product specifications

3.1 Scheme A, fixed gear seat

3.1.1 Hardware overview



3.1.2 Hardware list

Item		Material description	Mat. No.	PC	FFB (mm)	FFH (mm)	G (mm)
1		AF VSO 1RS corner drive	TEUL4010-…	2	510 – 710	460 – 2442	
				3	711 – 1942	460 – 540	
				4	711 – 1942	541 – 2442	
2		Corner drive AF VSO narrow 1RS	TEUL4020-…	1	510 – 710	460 – 540	
				2	510 – 710	541 – 2442	
3		AF linkage size 1	TZZS0150-…	2	1001 – 1200		
				2	1601 – 1942		
				1		1201 – 1600	
				1		2001 – 2200	
				1		2201 – 2400	
4		AF linkage size 2 A0767	TZKS1050-…	2	1201 – 1800		
				1		1601 – 1800	
				1		2001 – 2200	
				2		2201 – 2400	
				1		2401 – 2442	
5		Linkage KK/AF size 3 1RS	TZKK1050-…	2	1801 – 1942		
				1		1801 – 2000	
				1		2401 – 2442	
6		KK/AF linkage size 2 1RS	TZKK1020-…	1		2401 – 2442	
7		Striker MP ES CO	PRSN3020-…	1		460 – 800	
				2		801 – 1200	
				3		1201 – 2000	
				4		2001 – 2442	

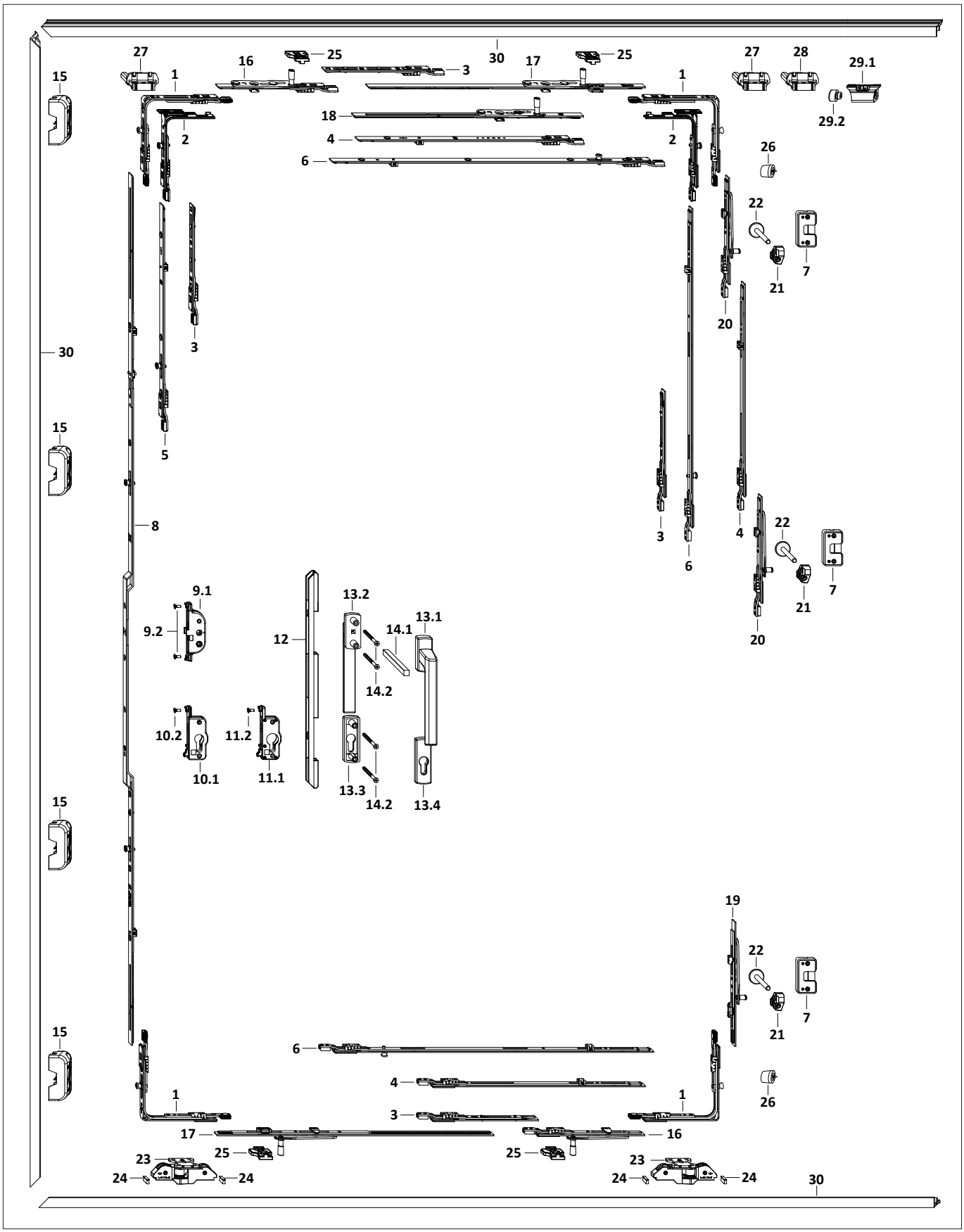
Item		Material description	Mat. No.	PC	FFB (mm)	FFH (mm)	G (mm)
8		Gear 15 AF size 20	TGMK4010-…	1		460 – 600	230
		Gear 15 AF size 60/G250	TGKK4250-…			601 – 800	250
		Gear 15 AF size 60/G300	TGKK4030-…			601 – 800	300
		Gear 15 size 80/G250 1RS	TGKK4260-…			801 – 1000	250
		Gear 15 size 80/G300 1RS	TGKK4120-…			801 – 1000	300
		Gear 15 size 80/G400 1RS	TGKK4050-…			801 – 1000	400
		Gear 15 size 100/G250 1RS	TGKK4270-…			1001 – 1200	250
		Gear 15 size 100/G300 1RS	TGKK4130-…			1001 – 1200	300
		Gear 15 size 100/G400 1RS	TGKK4140-…			1001 – 1200	400
		Gear 15 size 100/G500 1RS	TGKK4060-…			1001 – 1200	500
		Gear 15 size 120/G300 1RS	TGKK4150-…			1201 – 1400	300
		Gear 15 size 120/G400 1RS	TGKK4160-…			1201 – 1400	400
		Gear 15 size 120/G500 1RS	TGKK4170-…			1201 – 1400	500
		Gear 15 size 120/G600 1RS	TGKK4070-…			1201 – 1400	600
		Gear 15 size 140/G500 1RS	TGKK4180-…			1401 – 1600	500
		Gear 15 size 140/G600 1RS	TGKK4190-…			1401 – 1600	600
		Gear 15 size 140/G700 1RS	TGKK4080-…			1401 – 1600	700
		Gear 15 size 160/G700 2RS	TGKK4280-…			1601 – 1800	700
		Gear 15 size 180/G1000 2RS	TGKK4220-…			1801 – 2000	1000
		Gear 15 size 200/G1000 2RS	TGKK4110-…			2001 – 2200	1000
		Gear 15 size 200/G1000 2RS	TGKK4110-…			2201 – 2400	1000
		Gear 15 size 200/G1000 2RS	TGKK4110-…			2401 – 2442	1000
9		Si-line PSK 45 handle	PHIJ0040-…	1			
10		43 mm sliding grip	PSMN3000-…	1			
11		Sealing plate for sliding grip	PDIN3000-…	1			
12		Countersunk screw K/PZD ISO7046 M5X70-4.8 TS profile thickness 73-79 mm	KDNA0090-…	2			
13		Striker VS RH ES CO	PRSN3001-…	2		460 – 800	
		Striker VS LH ES CO	PRSN3002-…				
		Striker VS RH ES CO	PRSN3001-…	3		801 – 1600	
		Striker VS LH ES CO	PRSN3002-…				
		Striker VS RH ES CO	PRSN3001-…	4		1601 – 2400	
		Striker VS LH ES CO	PRSN3002-…				
		Striker VS RH ES CO	PRSN3001-…	5		2401 – 2442	
		Striker VS LH ES CO	PRSN3002-…				
14		Horizontal linkage DIN L ES CO DIN R ES CO	PZWN3011-…	1	510 – 710		
		Horizontal linkage DIN L ES CO DIN L ES CO	PZWN3012-…				
		Horizontal linkage DIN L ES CO DIN R ES CO	PZWN3011-…	2	711 – 1400		
		Horizontal linkage DIN L ES CO DIN L ES CO	PZWN3012-…				
		Horizontal linkage DIN L ES CO DIN R ES CO	PZWN3011-…	4	1401 – 1942		
		Horizontal linkage DIN L ES CO DIN L ES CO	PZWN3012-…				

Item		Material description	Mat. No.	PC	FFB (mm)	FFH (mm)	G (mm)
15		Horizontal, cut-to-length linkage. DIN R ES CO	PZWN3001-…	2	801 – 1942		
		Horizontal, cut-to-length linkage. DIN L ES CO	PZWN3002-…				
16		Horizontal, cut-to-length linkage, short DIN R ES CO	PZWN3301-…	2	510 – 800		
		Horizontal, cut-to-length linkage, short DIN L ES CO	PZWN3302-…				
17		MPU DIN R ES CO linkage	PZMN3001-…	1		460 – 2442	
		MPU DIN L ES CO linkage	PZMN3002-…				
18		MPO DIN R ES CO linkage	PZMN3011-…	1		801 – 1200	
		MPO DIN L ES CO linkage	PZMN3012-…				
		MPO DIN R ES CO linkage	PZMN3011-…	2		1201 – 2000	
		MPO DIN L ES CO linkage	PZMN3012-…				
		MPO DIN R ES CO linkage	PZMN3011-…	3		2001 – 2442	
		MPO DIN L ES CO linkage	PZMN3012-…				
19		MV MP RH ES CO adapter	PRTN3001-…	1		460 – 800	
		MV MP LH ES CO adapter	PRTN3002-…				
		MV MP RH ES CO adapter	PRTN3001-…	2		801 – 1200	
		MV MP LH ES CO adapter	PRTN3002-…				
		MV MP RH ES CO adapter	PRTN3001-…	3		1201 – 2000	
		MV MP LH ES CO adapter	PRTN3002-…				
		MV MP RH ES CO adapter	PRTN3001-…	4		2001 – 2442	
		MV MP LH ES CO adapter	PRTN3002-…				
20		MV MP ES CO locking bolt	PRTN3010-…	1		460 – 800	
				2		801 – 1200	
				3		1201 – 2000	
				4		2001 – 2442	
21		ES CO COM R VS/L MP bogie wheels	PLWN3020-…	1	510 – 1942		
		ES CO COM L VS/L MP bogie wheels	PLWN3030-…	1	510 – 1942		
22		Sealing brush 13 mm	PZUJ0030-…	4			
23		ES CO retaining plate	PZZN3000-…	4	510 – 1942		
24		HS stop	PZUB0230-…	2			
25		Sash part AB	PZZN3020-…	1	801 – 1942		
26		Sash part AB with felt	PZZN3120-…	2	510 – 800		
27		Stop ES CO	PZZN3010-…	1	510 – 1942		
	27.1	Stop					
	27.2	Stop					
Rod							
28		MFS ES CO REHAU SS SZ300	PPTN3060-…				
		MFS ES CO REHAU SS SZ600	PPTN3070-…				

Item		Material description	Mat. No.	PC	FFB (mm)	FFH (mm)	G (mm)
Gear with central/variable gear position (observe size range for linkages)							
*		Gear 15 AF size 20	TGMK4010-…	1		460 – 600	300
		Gear 15 AF size 60 TS	TGMK4020-…			601 – 1000	500
		Gear 15 size 70 1RS TS	TGMK4030-…			701 – 1100	550
		Gear 15 size 80 1RS TS	TGMK4040-…			801 – 1200	600
		Gear 15 size 120 1RS TS	TGMK4050-…			1201 – 1600	800
		Gear 15 size 120 2RS TS	TGMK4160-…			1201 – 1600	800
		Gear 15 size 160 2RS70 TS	TGMK4170-…			1601 – 2000	1000
		Gear 15 size 200 2RS TS	TGMK4080-…			2001 – 2400	1200
		Gear 15 size 200 2RS TS	TGMK4080-…			2401 – 2442	1400
Gear with 250 mm handle position, fixed gear (observe size range for linkages)							
*		Gear 15 size 100/G250 1RS	TGKK4270-…	1		1200 – 1400	250
		Gear 15 size 100/G250 1RS	TGKK4270-…			1401 – 1600	250
		Gear 15 size 100/G250 1RS	TGKK4270-…			1601 – 1800	250
		Gear 15 size 100/G250 1RS	TGKK4270-…			1801 – 2000	250

3.2 Scheme A, OS/PZ central/variable and fixed gear seat

3.2.1 Hardware overview



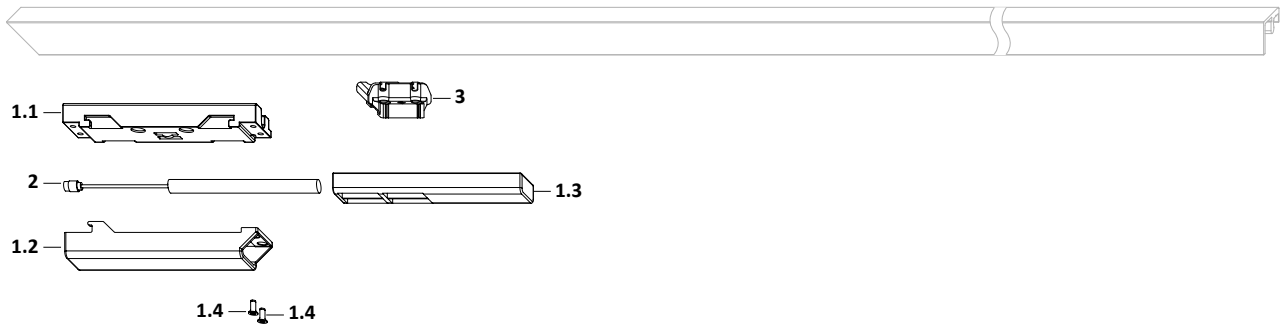
3.2.2 Hardware list

Item		Material description	Mat. No.	PC	FFB (mm)	FFH (mm)	G (mm)
1		AF VSO 1RS corner drive	TEUL4010-…	2	510 – 710	1600 – 2442	
				4	711 – 1942	1600 – 2442	
2		Corner drive AF VSO narrow 1RS	TEUL4020-…	2	510 – 710	1600 – 2442	
3		AF linkage size 1	TZZS0150-…	2	1001 – 1200		
				2	1601 – 1942		
				1		2001 – 2200	
				1		2201 – 2400	
4		AF linkage size 2 A0767	TZKS1050-…	2	1201 – 1800		
				1		1601 – 1800	
				1		2001 – 2200	
				2		2201 – 2400	
				1		2401 – 2442	
5		Linkage KK/AF size 3 1RS	TZKK1050-…	2	1801 – 1942		
				1		1801 – 2000	
				1		2401 – 2442	
6		KK/AF linkage size 2 1RS	TZKK1020-…	1		2401 – 2442	
7		Striker MP ES CO	PRSN3020-…	3		1600 – 2000	
				4		2001 – 2442	
8		Gear OS/PZ15/20 SIZE 160 2RS	TGMK0390-…	1		1600 – 2000	1000
		Gear OS/PZ15/20 SIZE 200/G1000 3RS	TGKK0330-…			2001 – 2200	1000
		Gear OS/PZ15/20 SIZE 200/G1000 3RS	TGKK0330-…			2201 – 2400	1000
		Gear OS/PZ15/20 SIZE 200/G1000 3RS	TGKK0330-…			2401 – 2442	1000
9		Gear set 25 M5	TMSL4250-…	1			
	9.1	Gear box 25 M5					
	9.2	Countersunk screw M4x11 ST H DIN 7500					
10		Gear set PZ 25	TMSL1250-…	1			
	10.1	Gear box PZ 25					
	10.2	Countersunk screw M4x11 ST H DIN 7500					
11		Gear set PZ22 25	TMSL2250-…	1			
	11.1	Gear box PZ22 25					
	11.2	Countersunk screw M4x11 ST H DIN 7500					
12		Gear cover cap 15-20 A.D.	PGZN0150-…	1			
13		Handle Si-line PSK-PZ, inside and outside	PMHJ0060-…	1			
	13.1	Handle Si-line PSK PZO square					
	13.2	Handle Si-line PSK, outside flat					
	13.3	Rose Si-line PZ outside					
	13.4	Bag cover cap PZ Si-line					

Item		Material description	Mat. No.	PC	FFB (mm)	FFH (mm)	G (mm)
		Accessories TL/PZ inside and outside profile d. 75-84 mm	ZMZP0010-…	1			
14	14.1	Square spindle					
	14.2	K/PZD countersunk screw ISO7046					
15		Striker VS RH ES CO	PRSN3001-…	4		1601 – 2400	
		Striker VS LH ES CO	PRSN3002-…				
		Striker VS RH ES CO	PRSN3001-…	5		2401 – 2442	
		Striker VS LH ES CO	PRSN3002-…				
16		Horizontal linkage DIN L ES CO DIN R ES CO	PZWN3011-…	1	510 – 710		
		Horizontal linkage DIN L ES CO DIN L ES CO	PZWN3012-…				
		Horizontal linkage DIN L ES CO DIN R ES CO	PZWN3011-…	2	711 – 1400		
		Horizontal linkage DIN L ES CO DIN L ES CO	PZWN3012-…				
		Horizontal linkage DIN L ES CO DIN R ES CO	PZWN3011-…	4	1401 – 1942		
		Horizontal linkage DIN L ES CO DIN L ES CO	PZWN3012-…				
17		Horizontal, cut-to-length linkage. DIN R ES CO	PZWN3001-…	2	801 – 1942		
		Horizontal, cut-to-length linkage. DIN L ES CO	PZWN3002-…				
18		Horizontal, cut-to-length linkage, short DIN R ES CO	PZWN3301-…	2	510 – 800		
		Horizontal, cut-to-length linkage, short DIN LES CO	PZWN3302-…				
19		MPU DIN R ES CO linkage	PZMN3001-…	1		1600 – 2442	
		MPU DIN L ES CO linkage	PZMN3002-…				
20		MPO DIN R ES CO linkage	PZMN3011-…	2		1600 – 2000	
		MPO DIN L ES CO linkage	PZMN3012-…				
		MPO DIN R ES CO linkage	PZMN3011-…	3		2001 – 2442	
		MPO DIN L ES CO linkage	PZMN3012-…				
21		MV MP RH ES CO adapter	PRTN3001-…	3		1600 – 2000	
		MV MP LH ES CO adapter	PRTN3002-…				
		MV MP RH ES CO adapter	PRTN3001-…	4		2001 – 2442	
		MV MP LH ES CO adapter	PRTN3002-…				
22		MV MP ES CO locking bolt	PRTN3010-…	3		1600 – 2000	
				4		2001 – 2442	
23		ES CO COM R VS/L MP bogie wheels	PLWN3020-…	1	510 – 1942		
		ES CO COM L VS/L MP bogie wheels	PLWN3030-…	1	510 – 1942		
24		Sealing brush 13 mm	PZUJ0030-…	4			
25		ES CO retaining plate	PZZN3000-…	4	510 – 1942		
26		HS stop	PZUB0230-…	2			
27		Sash part AB	PZZN3020-…	1	801 – 1942		
28		Sash part AB with felt	PZZN3120-…	2	510 – 800		
29		Stop ES CO	PZZN3010-…	1	510 – 1942		
	29.1	Stop					
	29.2	Stop					
Rod							
30		MFS ES CO REHAU SS SZ300	PPTN3060-…				
		MFS ES CO REHAU SS SZ600	PPTN3070-…				

3.3 Soft-Stop

3.3.1 Hardware overview

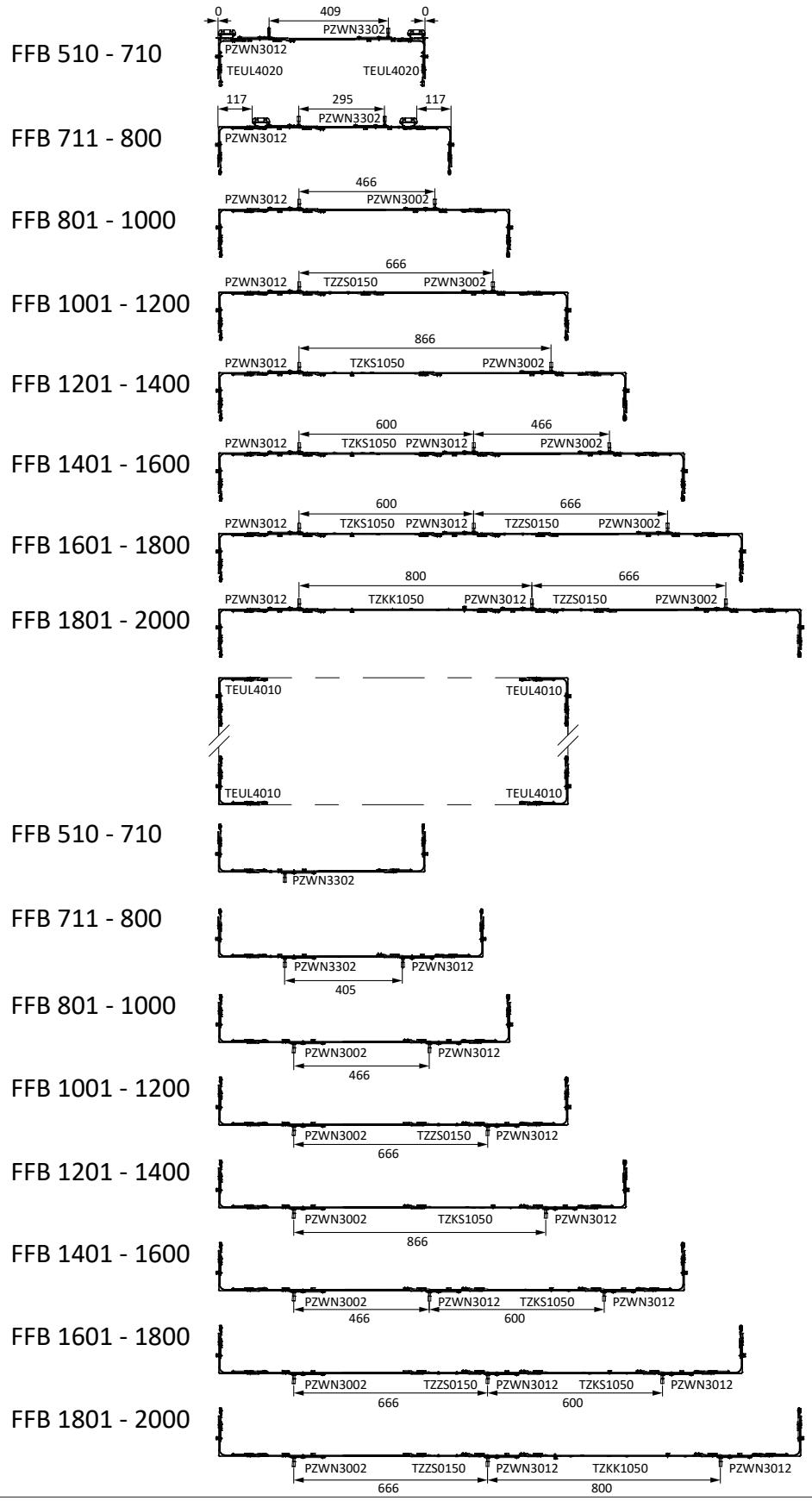


3.3.2 Hardware list

Item		Material description	Mat. no.	Pc.	FFB (mm)	FFH (mm)	FLG (kg)
1		Soft-Stop ES CO	PSCN3010-…	1			
	1.1	Base plate ES CO Soft-Stop					
	1.2	Casing ES CO Soft-Stop					
	1.3	Slide ES CO Soft-Stop					
	1.4	Countersunk screw W1413 3x8 Z A2					
2		Fluid damper Soft-Stop ES CO 75 N	PSCN3050-…	1			40 – 150
				2			151 – 200
3		Sash part AB	PZZN3020-…	1			

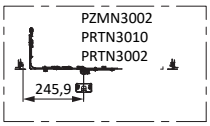
3.4 Hardware solution

3.4.1 Horizontal hardware

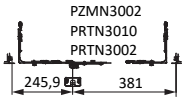


3.4.2 Vertical MP hardware

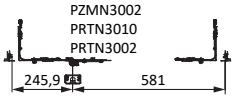
FFH 460 - 540



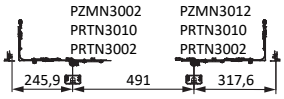
FFH 541 - 600



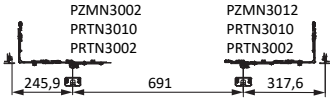
FFH 601 - 800



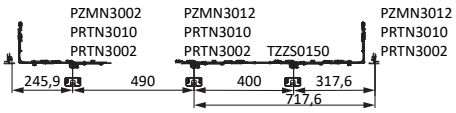
FFH 801 - 1000



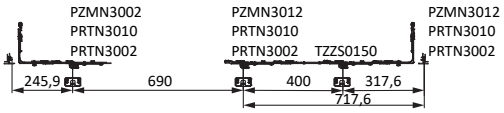
FFH 1001 - 1200



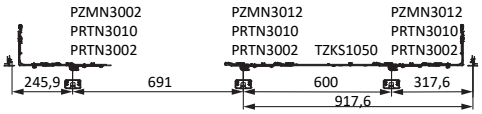
FFH 1201 - 1400



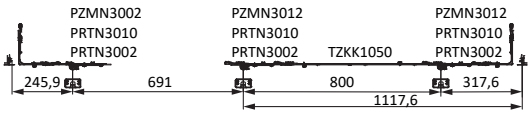
FFH 1401 - 1600



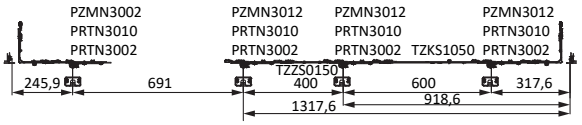
FFH 1601 - 1800



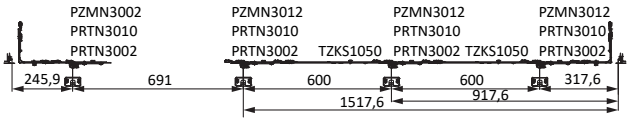
FFH 1801 - 2000



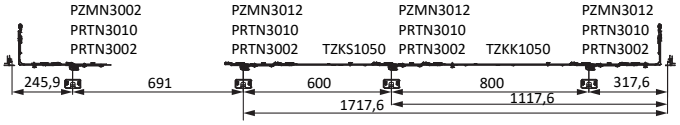
FFH 2001 - 2200



FFH 2201 - 2400

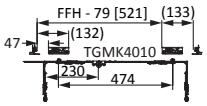


FFH 2401 - 2600

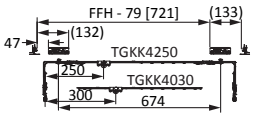


3.4.3 Vertical VS hardware, fixed gear seat

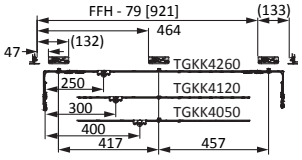
FFH 460 - 600



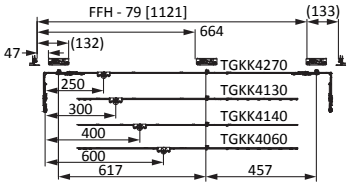
FFH 601 - 800



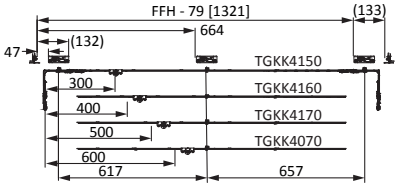
FFH 801 - 1000



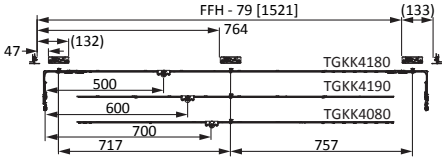
FFH 1001 - 1200



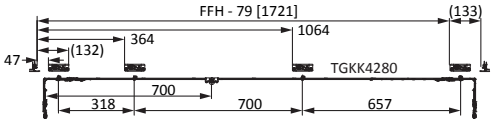
FFH 1201 - 1400



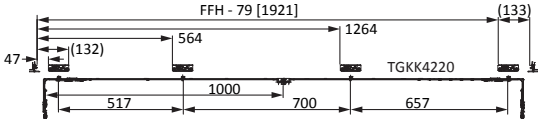
FFH 1401 - 1600



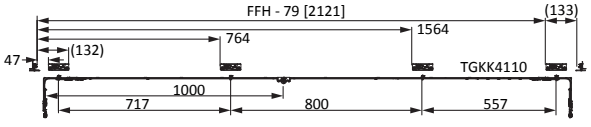
FFH 1601 - 1800



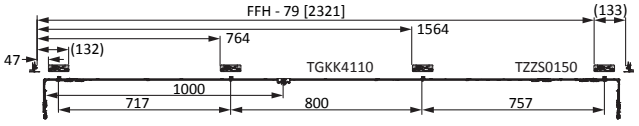
FFH 1801 - 2000



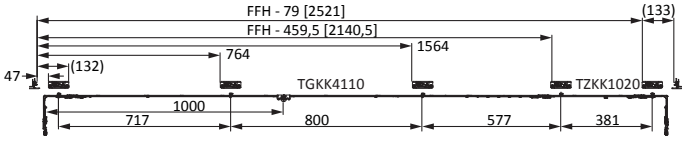
FFH 2001 - 2200



FFH 2201 - 2400

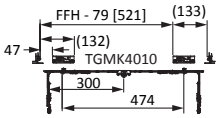


FFH 2401 - 2600

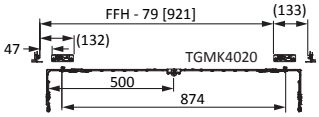


3.4.4 Vertical VS hardware, central/variable gear seat

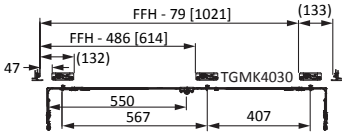
FFH 460 - 600



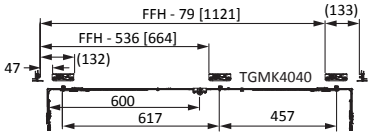
FFH 601 - 1000



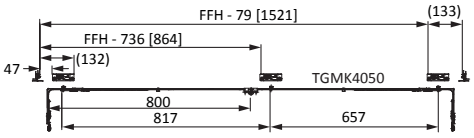
FFH 701 - 1100



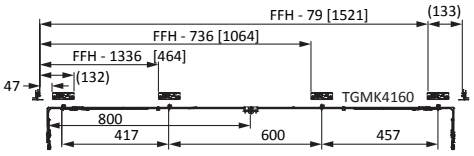
FFH 801 - 1200



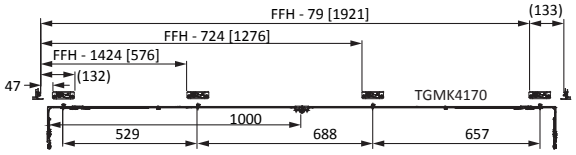
FFH 1201 - 1600



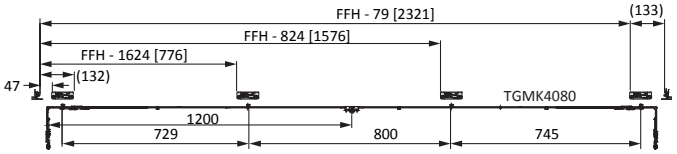
FFH 1201 - 1600



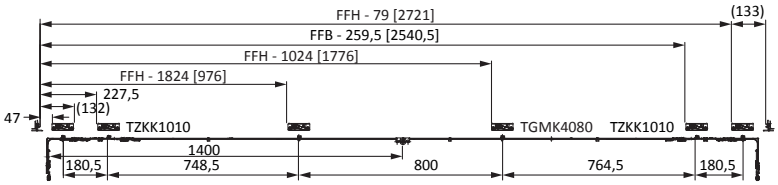
FFH 1601 - 2000



FFH 2001 - 2400

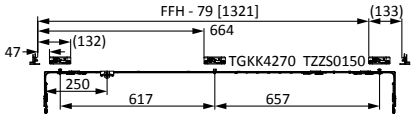


FFH 2401 - 2600

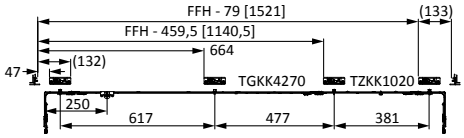


3.4.5 Vertical VS hardware, handle position 250 mm, fixed gear

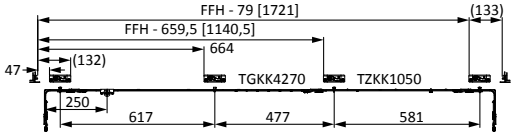
FFH 1200 - 1400



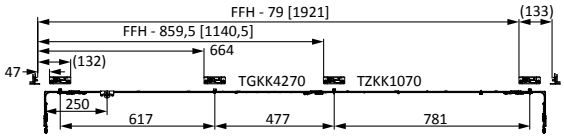
FFH 1401 - 1600



FFH 1601 - 1800

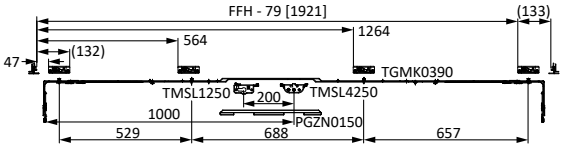


FFH 1801 - 2000

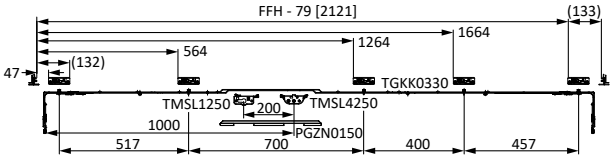


3.4.6 Vertical VS hardware, 1 000 mm handle position, lockable fixed gear

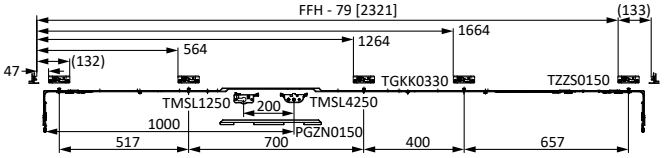
FFH 1600 - 2000



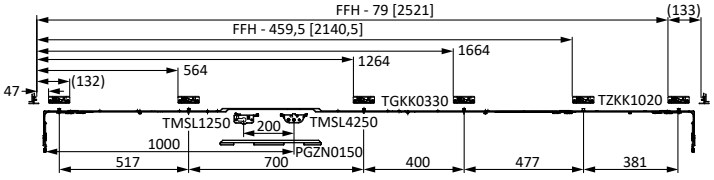
FFH 2001 - 2200



FFH 2201 - 2400

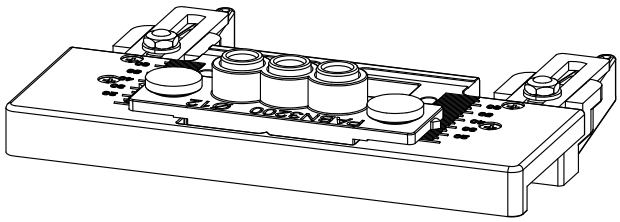
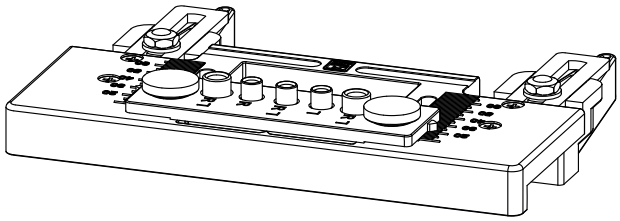
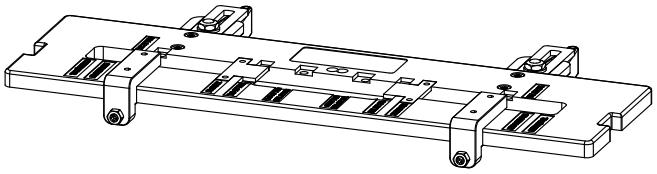
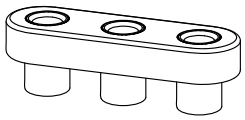
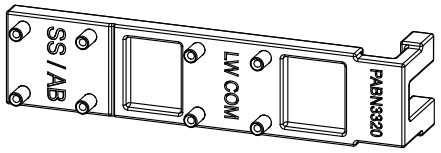
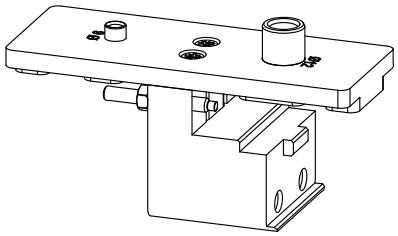


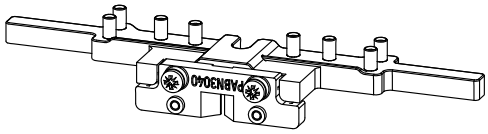
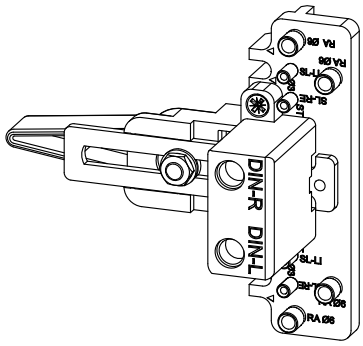
FFH 2401 - 2600

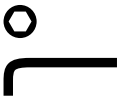
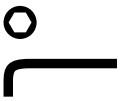
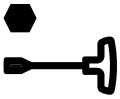
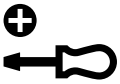


4 Installation

4.1 Tools and work equipment

Special tool		Intended use	Material number
	ES CO jig for handle position	Handle position	PABN3200-0E5010
	ES CO jig for lockable gear handle position	Lockable gear handle position	PABN3210-0E5010
	Milling jig sliding grip 43 mm	Sliding grip	PAFN3000-000010
	Attachment for jig for handle position	Handle position (attachment for PABN3200-0E5010 jig for pre-drilling the holes)	PABN3220-0E5010
	ES CO LW COM / AB and SS jig	Bogie wheels and sash part for stop	PABN3320-097010
	MV MP ES CO sash jig	Locking bolt The top section of the jig can be adjusted to align with the holes in the hardware.	PABN3000-097010

Special tool		Intended use	Material number
	Jig S-MP	MP striker and locking bolt	PABN3040-000010
	ST-VS ES CO jig	VS striker and frame anchor screw	PABN3010-500010

Tooling		Intended use	Material number
	Hexagon-socket Allen key, metric, 4 x 10 x 140 mm	Adjusting the locking bolts	Supplier: Wera Item number: 950 PKLS
	Hexagon-socket Allen key 4 mm	Fixing the ES CO stop	–
	Box-spanner screwdriver, 11 x 125 mm	–	Supplier: Wera Item number: 395
	Phillips screwdriver	–	–
	Saw	Cropping the horizontal cut-to-length linkage	–
	Folding rule	–	–
	Screw clamp	Clamping the multifunctional rail on the frame	–
	Ø3 mm drill	Bogie wheels, MP strikers and VS strikers	–
	Ø6 mm drill	Lockable gear handle position	–
	Ø8 mm drill	Handle position for standard gear, handle position for lockable gear	–

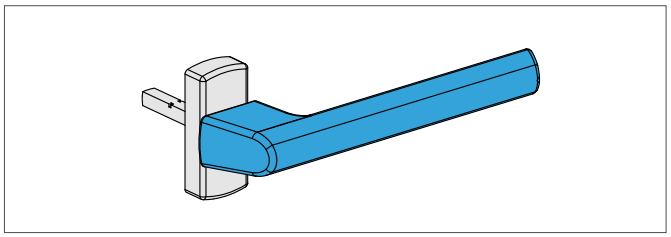
Tooling		Intended use	Material number
	Ø12 mm drill	Handle position for standard gear, handle position for lockable gear, locking bolt	–
	Ø20 mm hole saw	Lockable gear handle position	–
	Cutter Ø12 mm	Recess gear	–
	Cutter Ø12 mm with spacer disc 27 mm	Recess sliding grip	–

Work materials		Intended use	Material number
	3.9 x 25 countersunk head screw	Sash part stop, retaining plate, bogie wheels, multifunctional rail, Soft-Stop	–
	3.9 x 32 countersunk head screw	VS striker	–
	3.9 x 38 countersunk head screw	MP striker	–
	3.9 x 50 countersunk head screw	VS striker if the screw position of the striker is over the screw of the multifunctional rail	–
	Countersunk head screw 4.1x25	Corner drive, linkages, gear, retaining plate, bogie wheels, if only able to be fixed with 2 screws	–
	Sealant	Multifunctional rail	Supplier: OTTO Chemie Product: OTTOSEAL® S 72

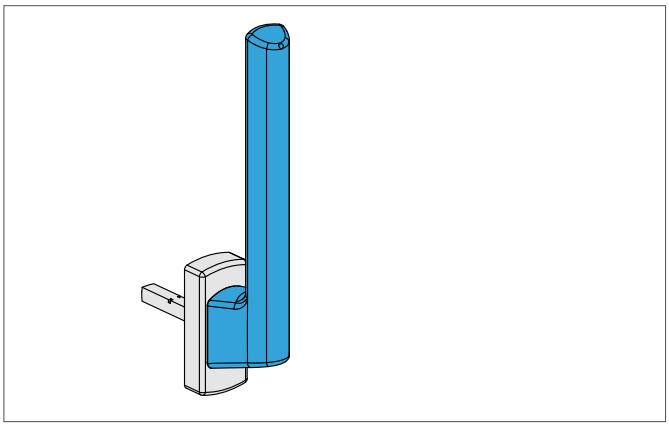
4.2 Measures during the assembly

4.2.1 Check gear position

◊ Check before the assembly of the sash parts that the sash parts are mounted in the centre-fixed position. The jigs for the sash parts are adapted to the assembly in the centre-fixed position.

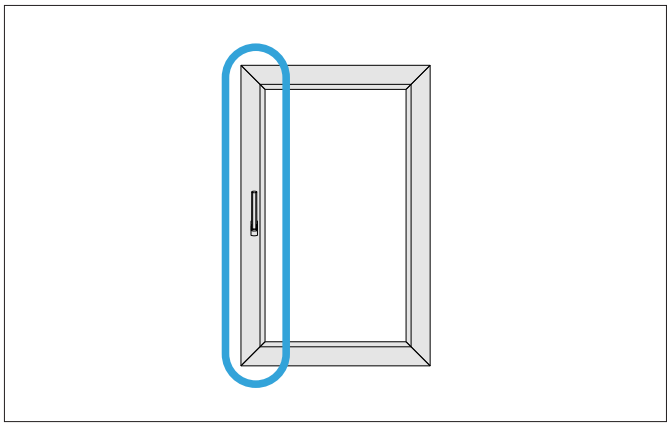


◊ Check before the assembly of the frame parts that the frame parts are mounted in the opened position. The jigs for the frame parts are adapted to the assembly in opened position.

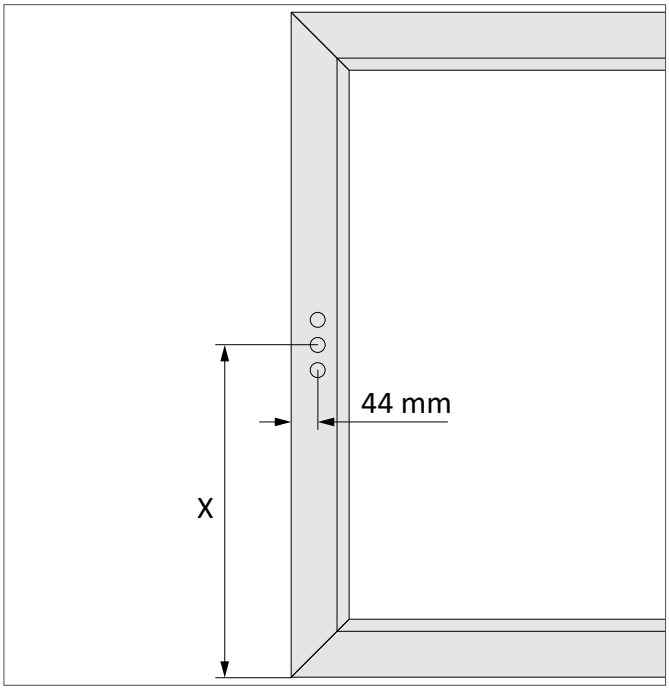


4.3 Installing sash parts

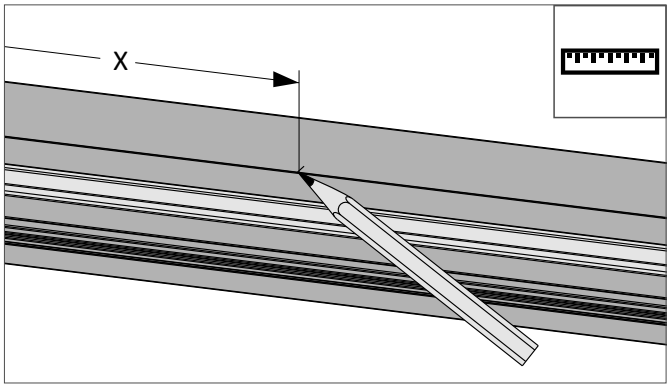
4.3.1 Make holes for handle position



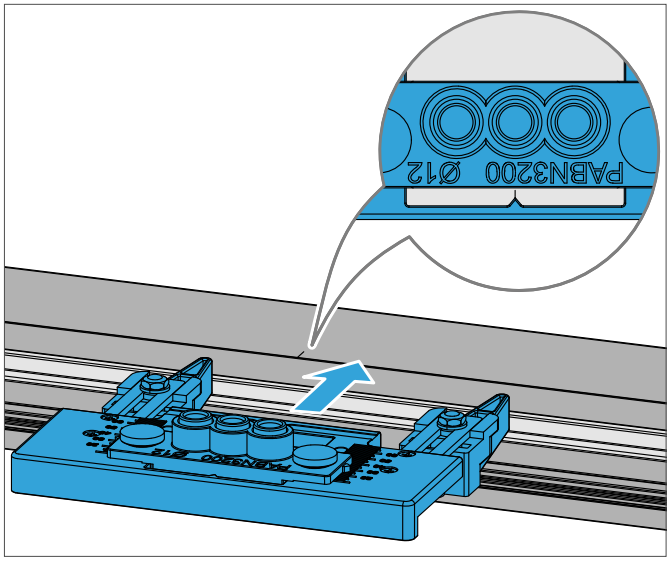
1. Determine the position of the handle position. X = G + 29 mm.



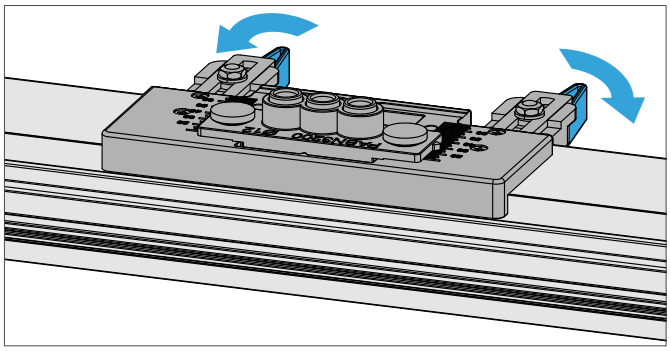
2. Measure and mark the position of the handle position.



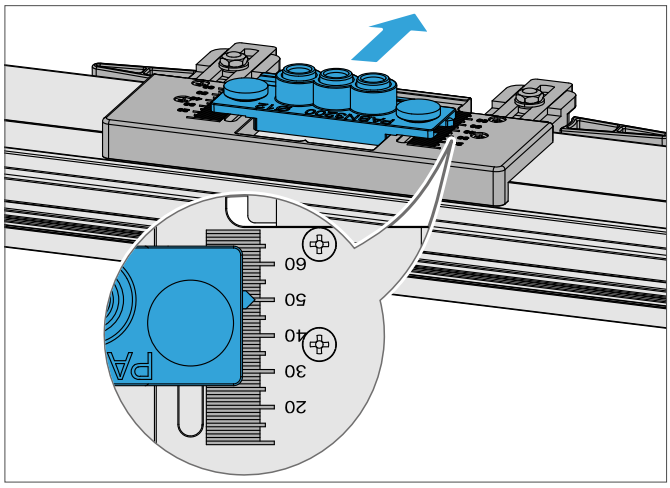
3. Position the PABN3200 jig on the mark on the sliding sash.



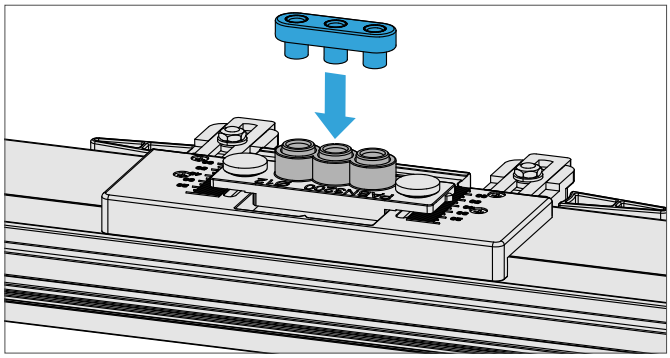
4. Fix the jig to the sliding sash.



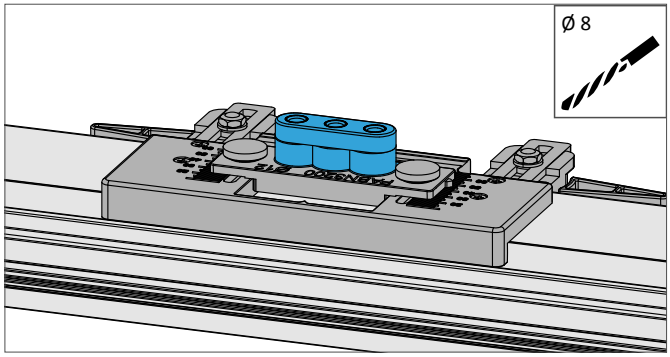
5. Adjust the backset on the jig.



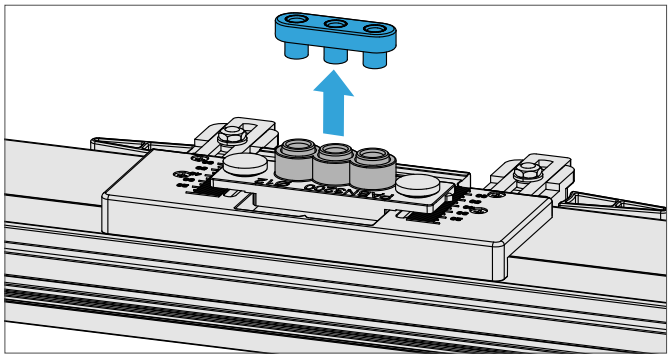
6. Attach the drilling attachment.



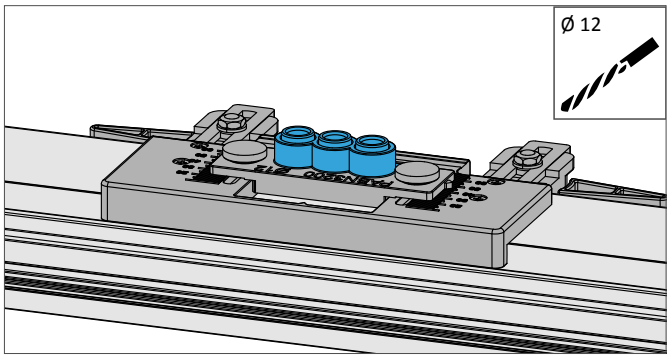
7. Pre-drill the holes.



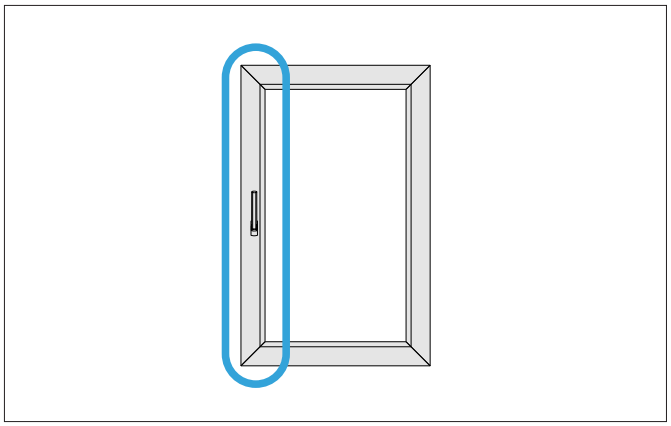
8. Remove the drilling attachment.



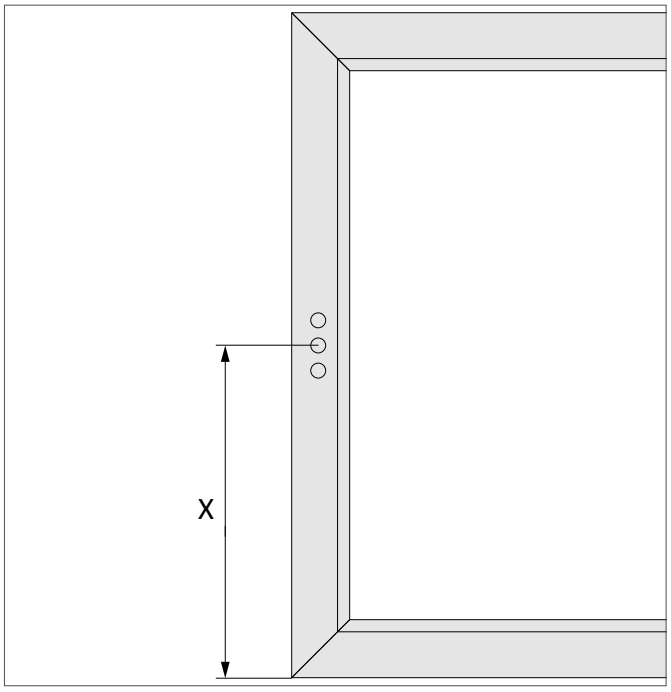
9. Drill out the holes.



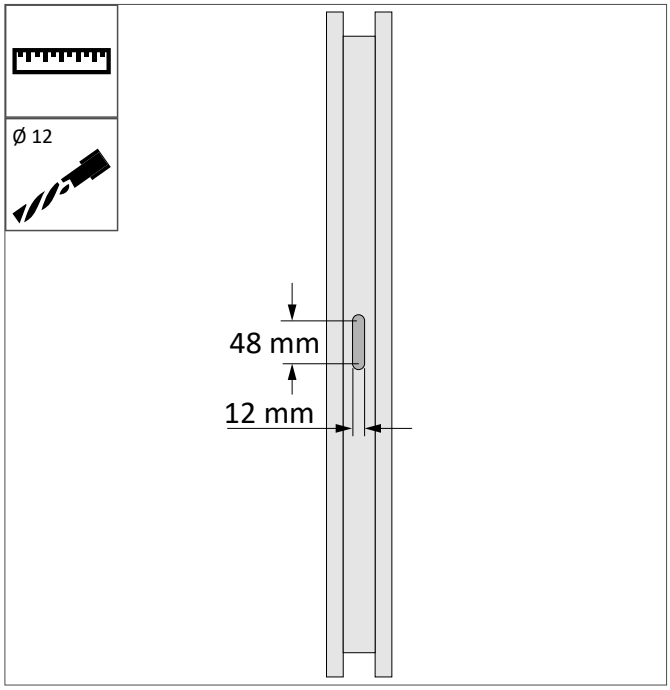
4.3.2 Make recess for gear



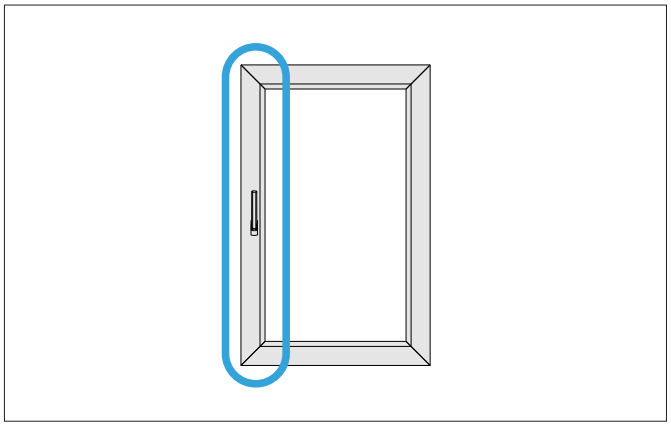
1. Determine the position of the recess. X = G + 29 mm.



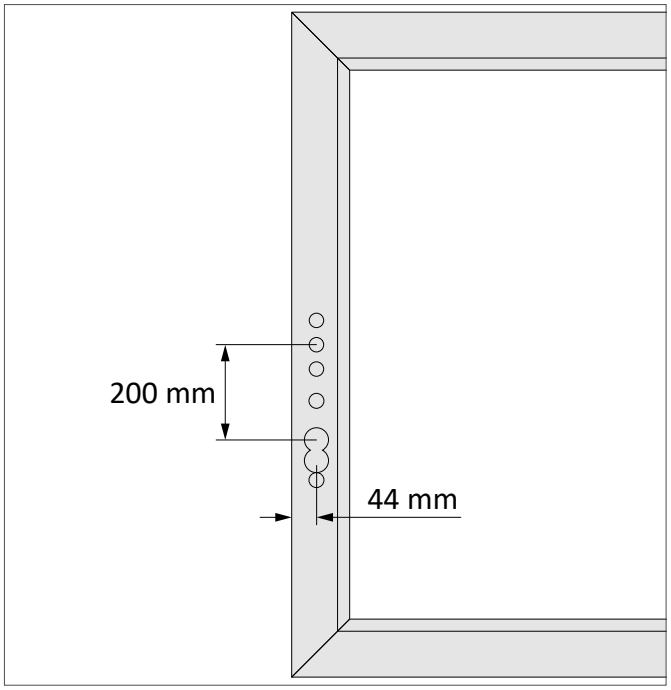
2. Measure the position of the recess and cut recess.



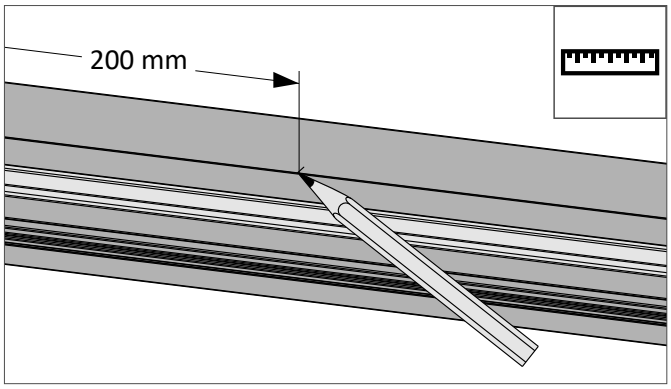
4.3.3 Make holes for profile cylinder for gear OS/PZ



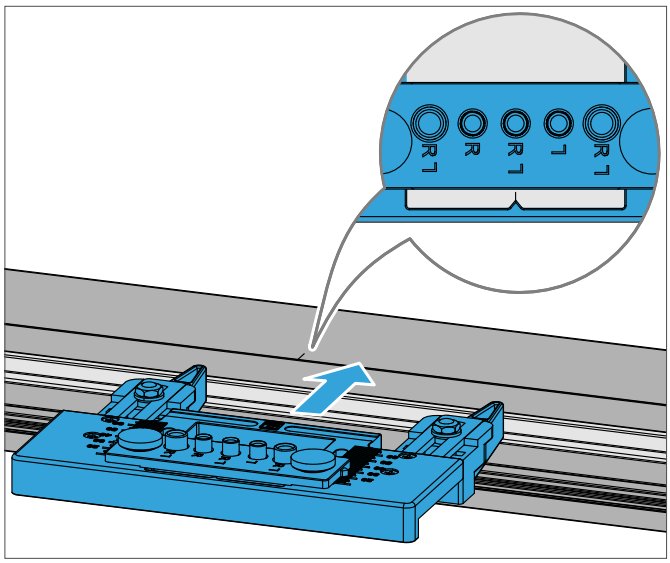
1. Determine the position of the profile cylinder.



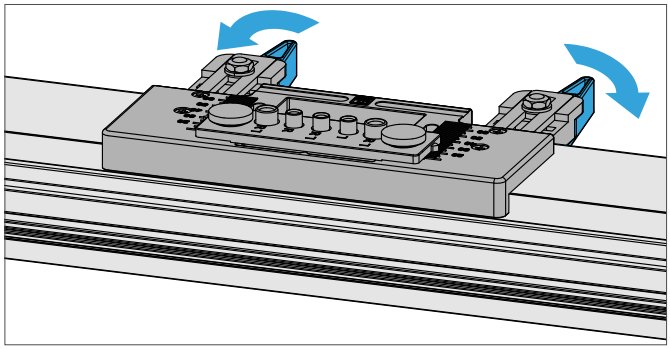
2. Measure and mark the position of the profile cylinder.



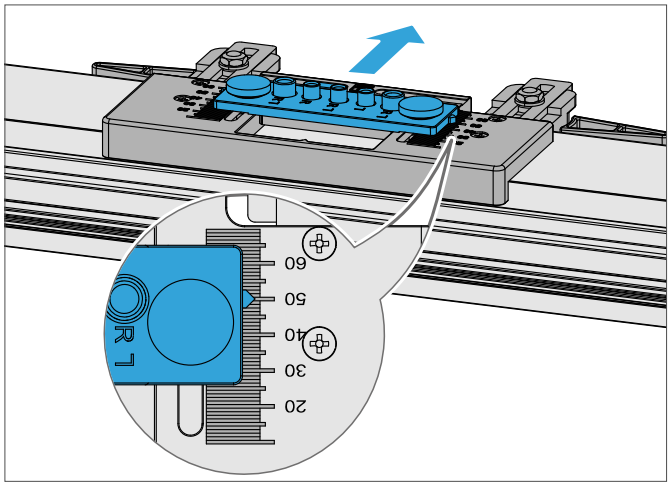
3. Position the PABN3210 jig on the mark on the sliding sash.



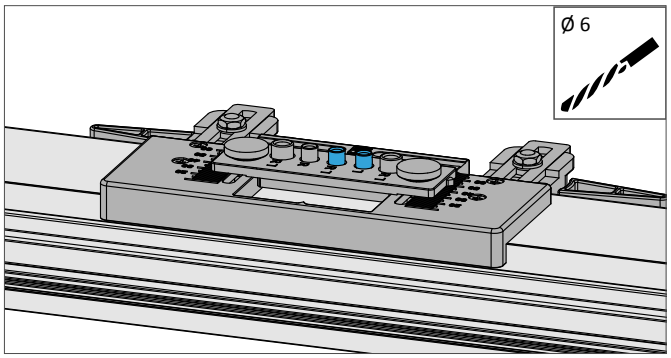
4. Fix the jig to the sliding sash.



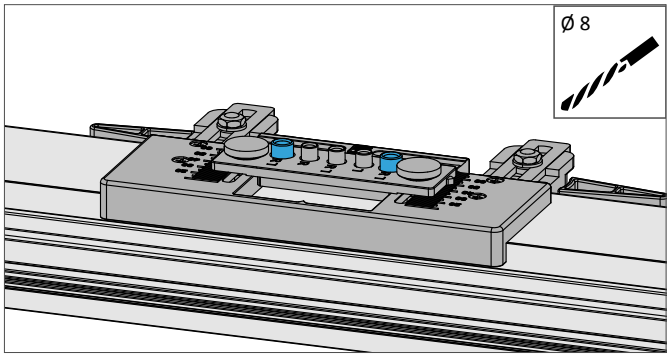
5. Adjust the backset on the jig.



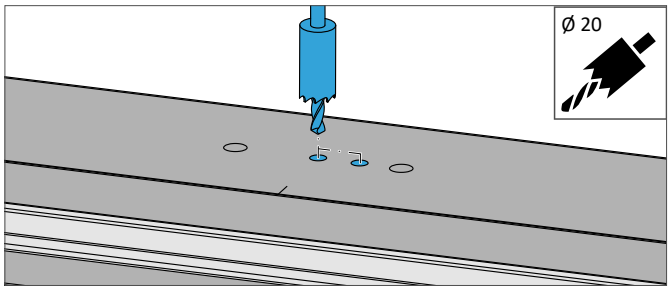
6. Pre-drill the internal holes.



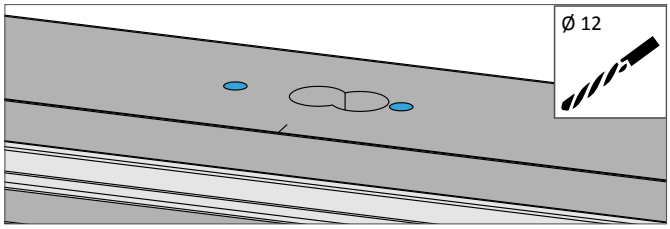
7. Pre-drill the external holes.



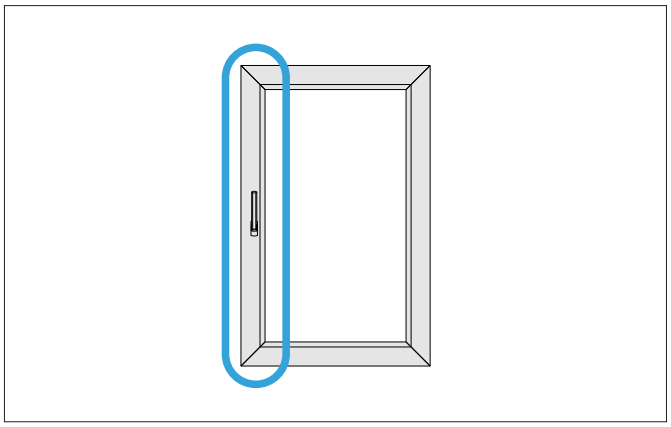
8. Drill out the internal holes with the hole saw.



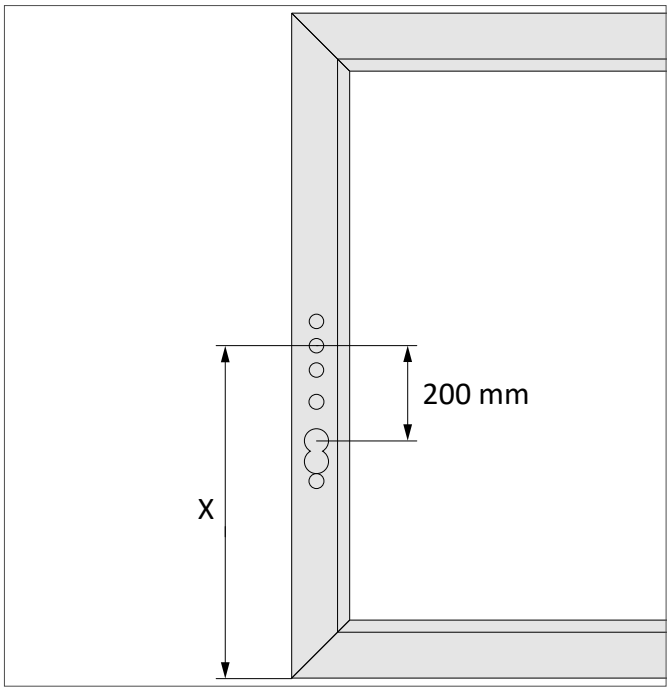
9. Drill out the external holes.



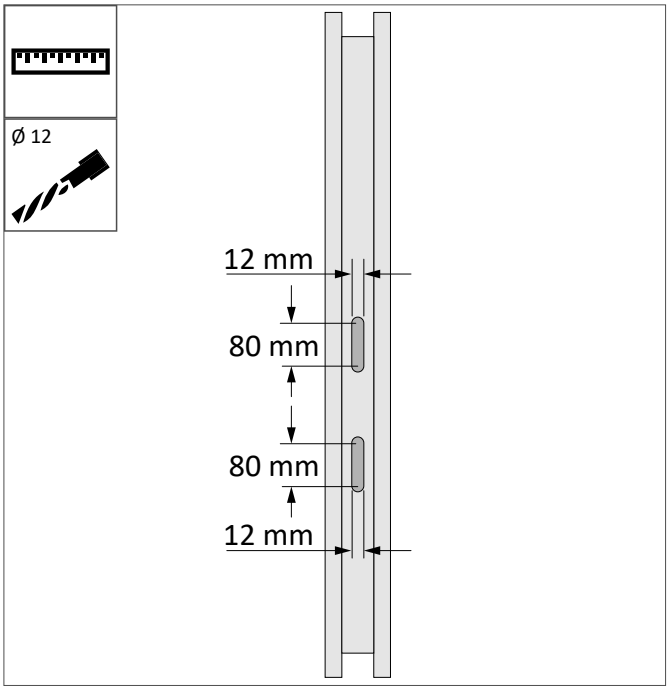
4.3.4 Make recesses for gear OS/PZ



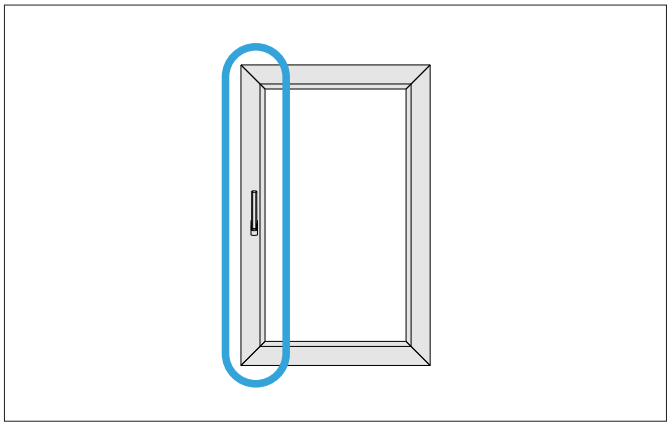
1. Determine the position of the recesses for the gear and profile cylinder. X = G + 29 mm. Take dimension G from the hardware list.



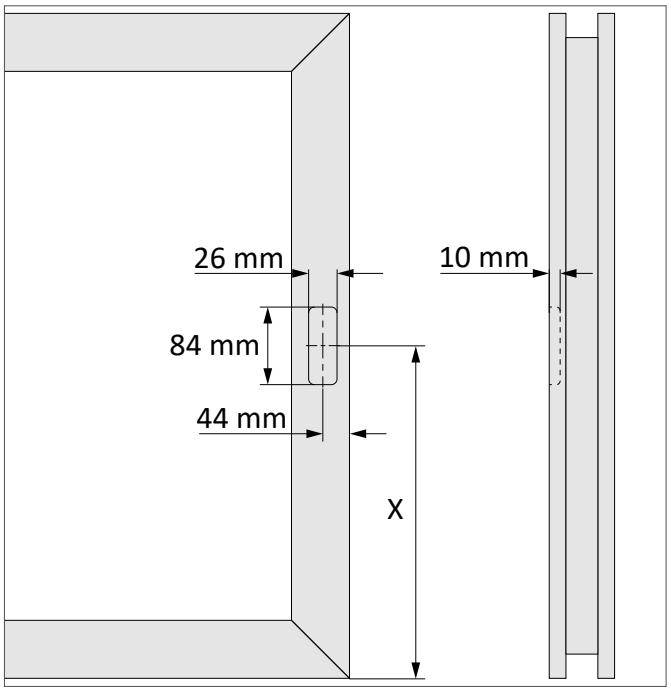
2. Measure the position of the recesses and cut recesses.



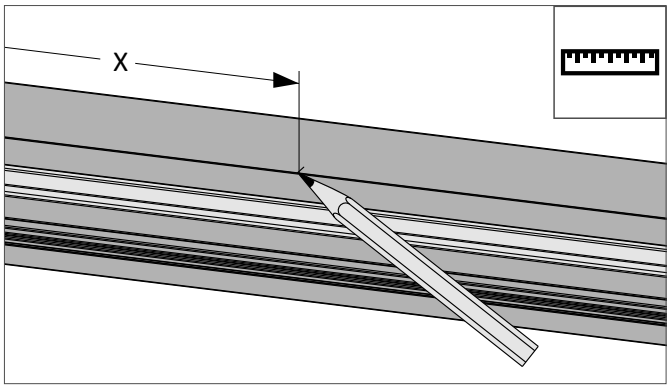
4.3.5 Make recess for sliding grip



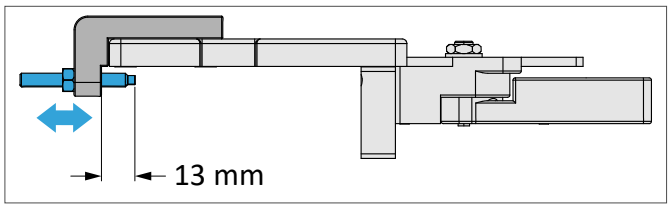
1. Determine the position of the recess. X = G + 29 mm.



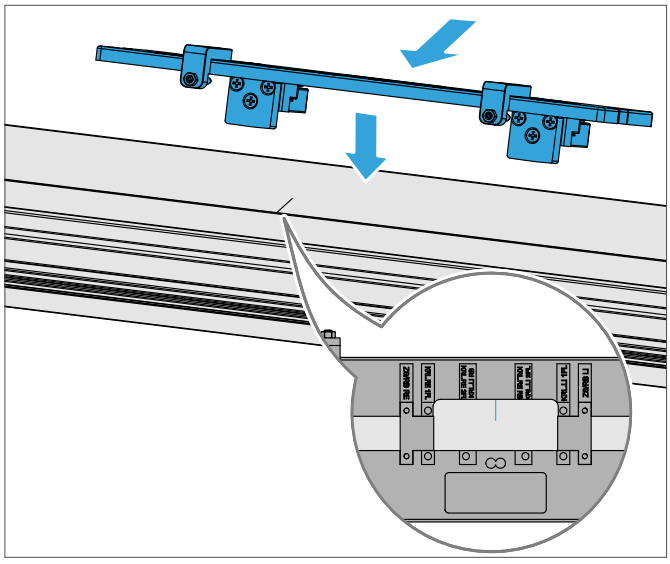
2. Measure and mark dimension X.



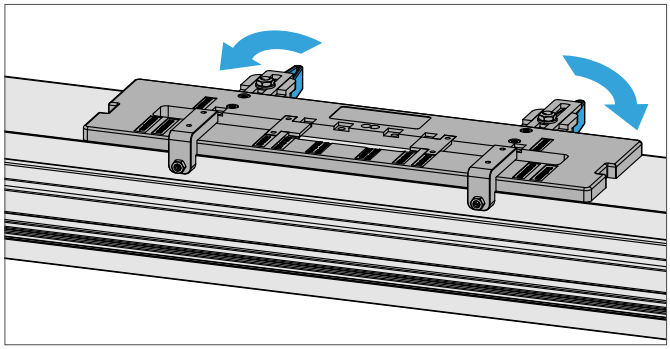
3. Adjust the stop mass of the adjustment screw of milling jig PAFN3000.



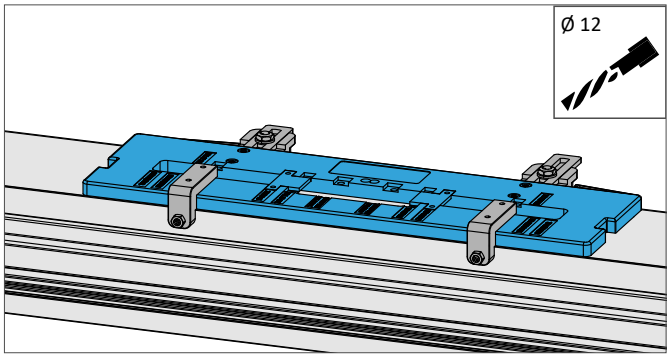
4. Position the milling jig on the mark on the sliding sash.



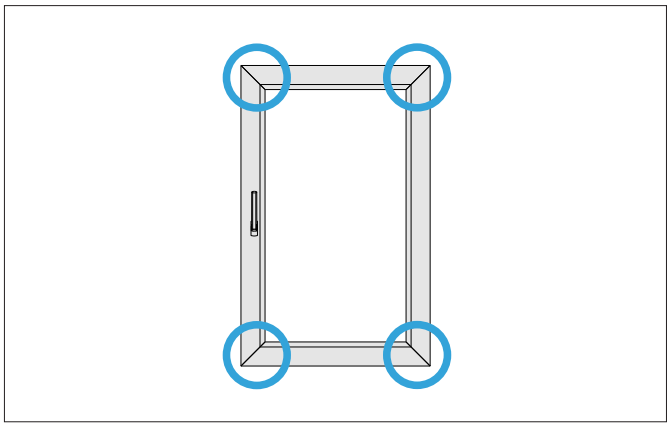
5. Fix the milling jig to the sliding sash.



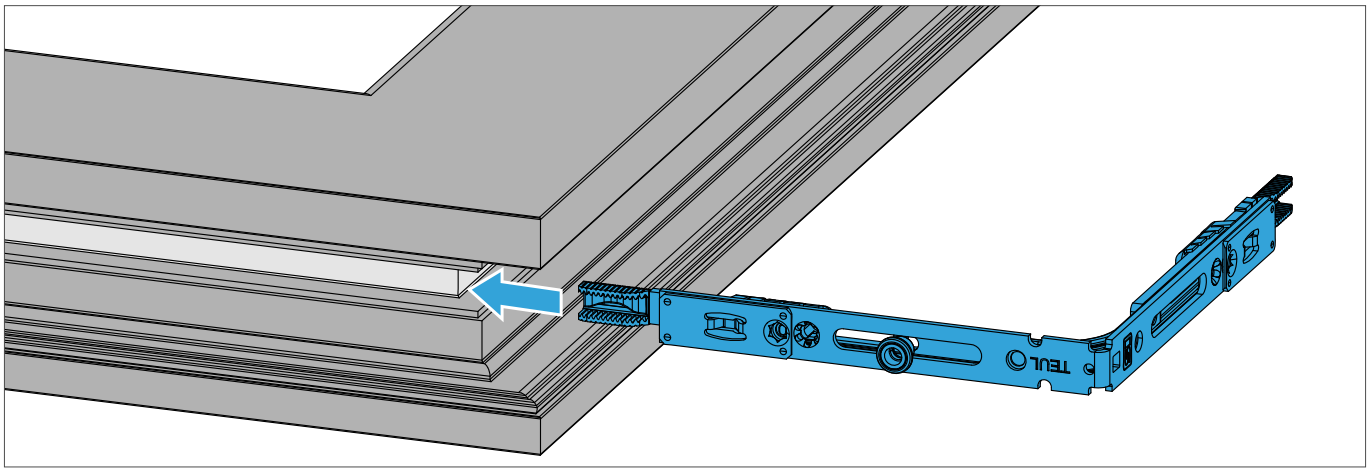
6. Cut the recess with a cutter with spacer disc 27 mm.



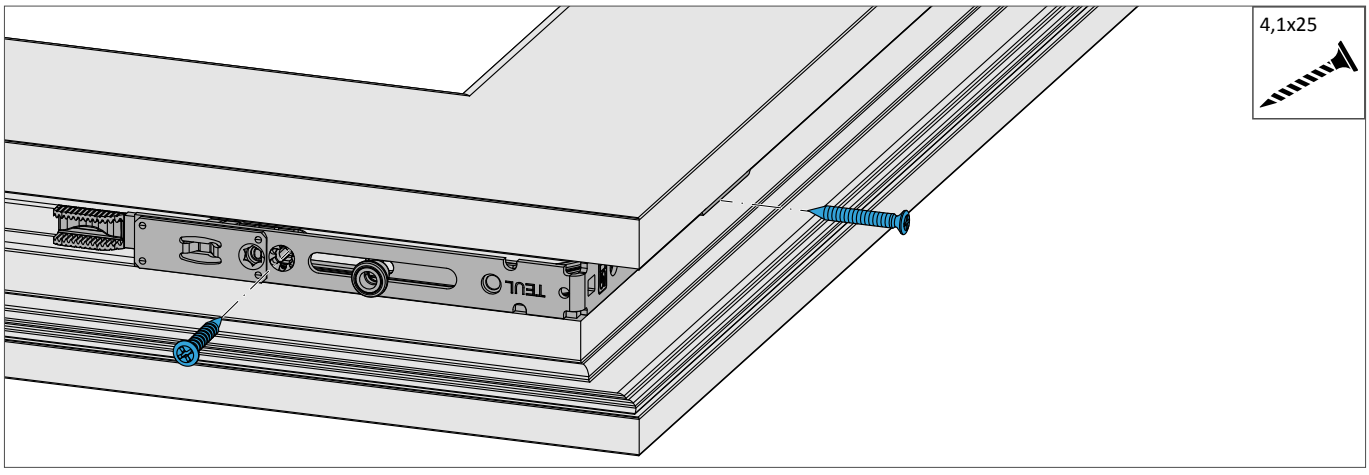
4.3.6 Installing the corner drives



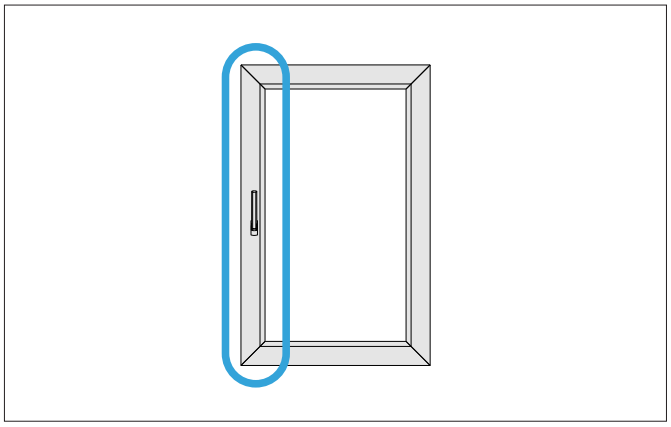
1. Insert the corner drive into the corner of the sliding sash so that the comfort mushroom cam is located on the vertical side of the sliding sash.



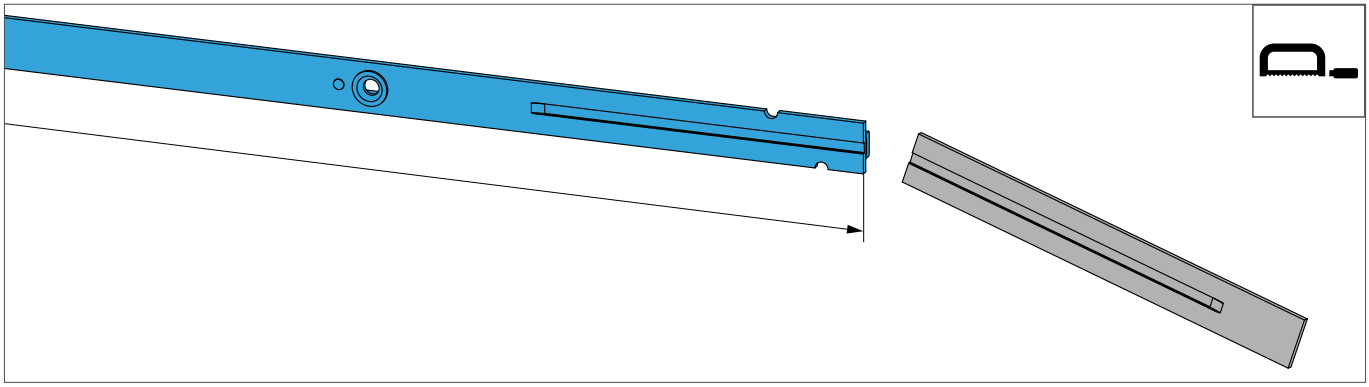
2. Screw the corner drive firmly into place.



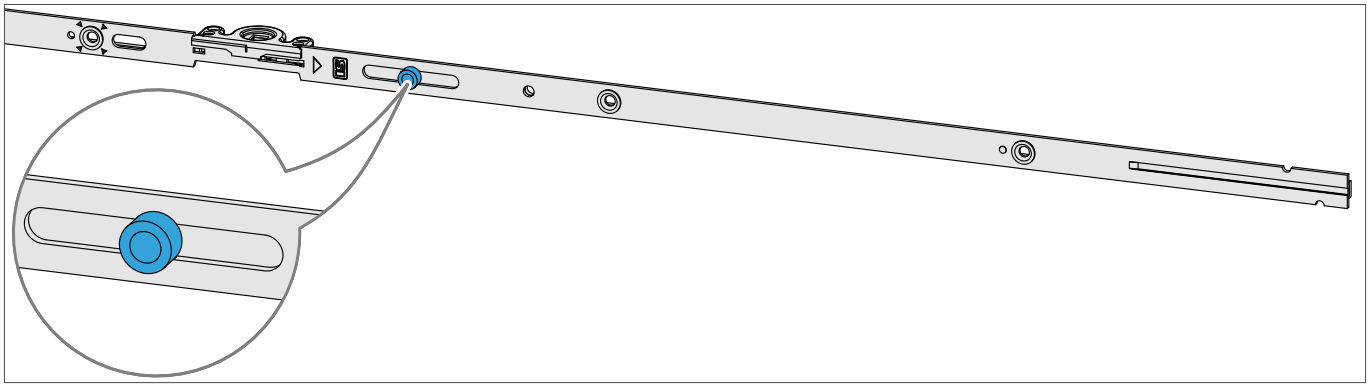
4.3.7 Installing the gear



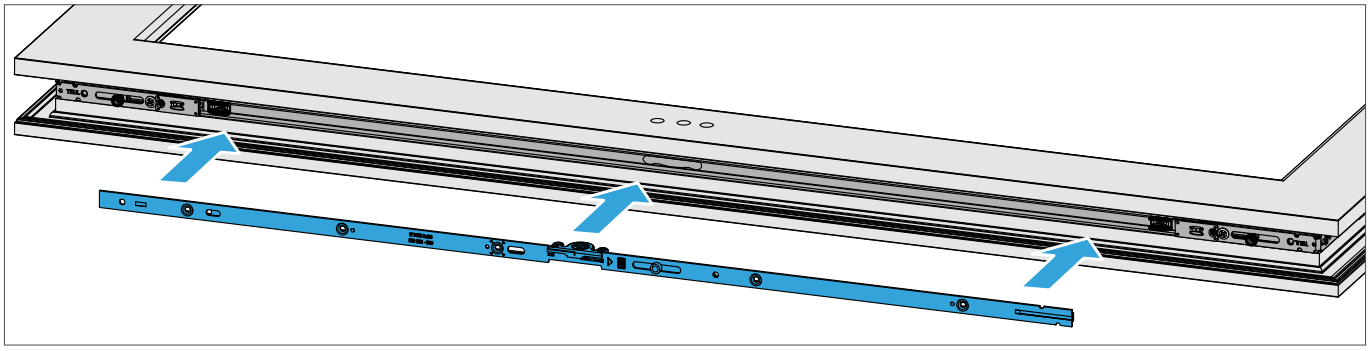
1. Measure and crop the gear.



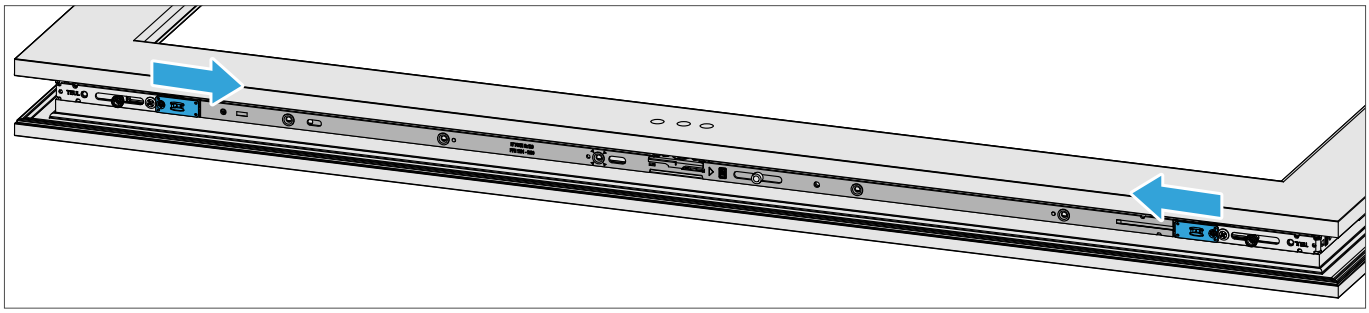
2. Move the gear to the central position.



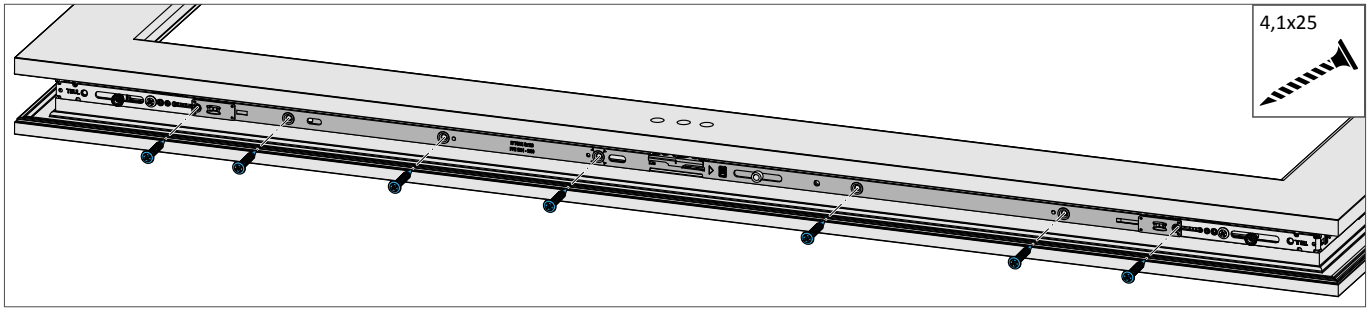
3. Insert the gear into the groove in the sliding sash and press into place.



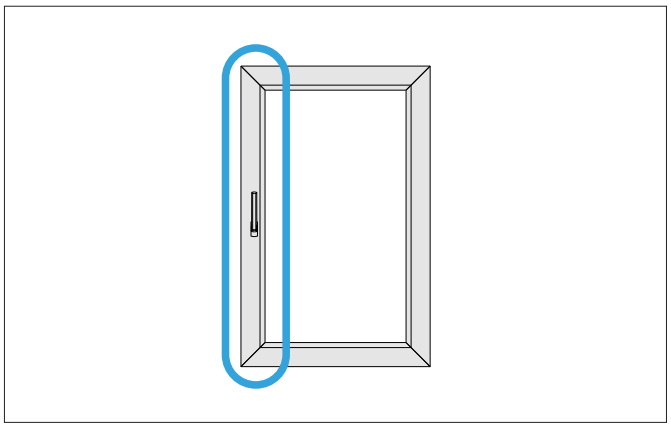
4. Lock the gear with the corner drives.



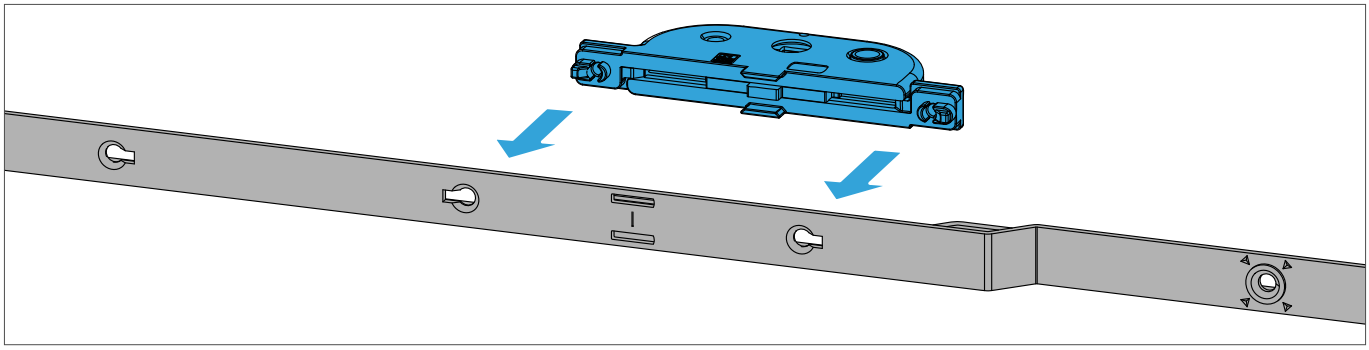
5. Screw the gear firmly into place.



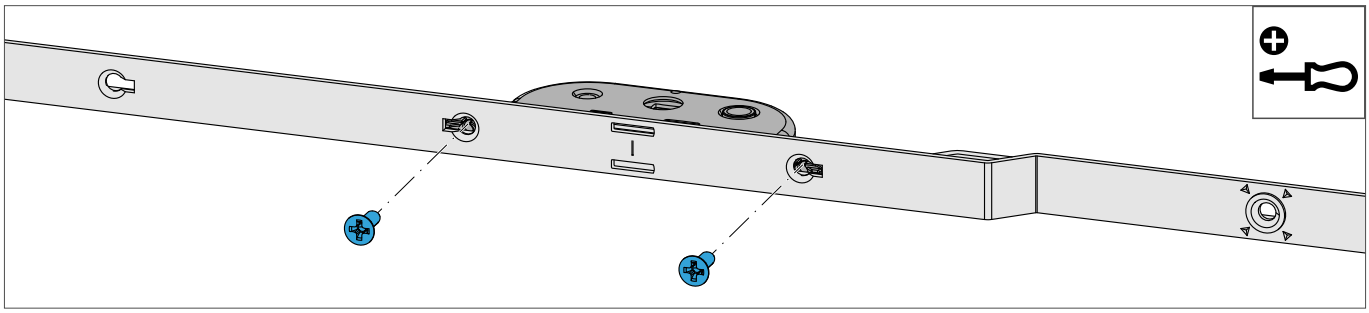
4.3.8 Install the gear OS/PZ



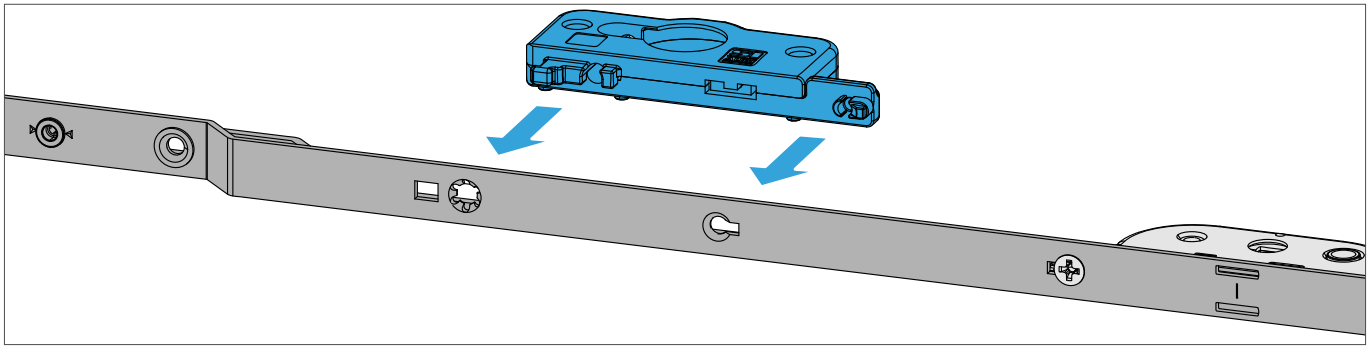
1. Place the gear box for the handle onto the gear.



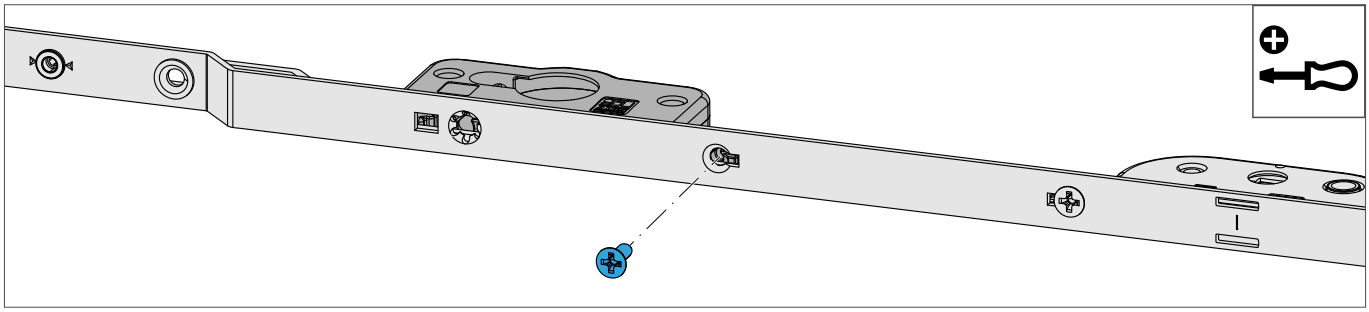
2. Screw the gear box for the handle firmly into place on the gear.



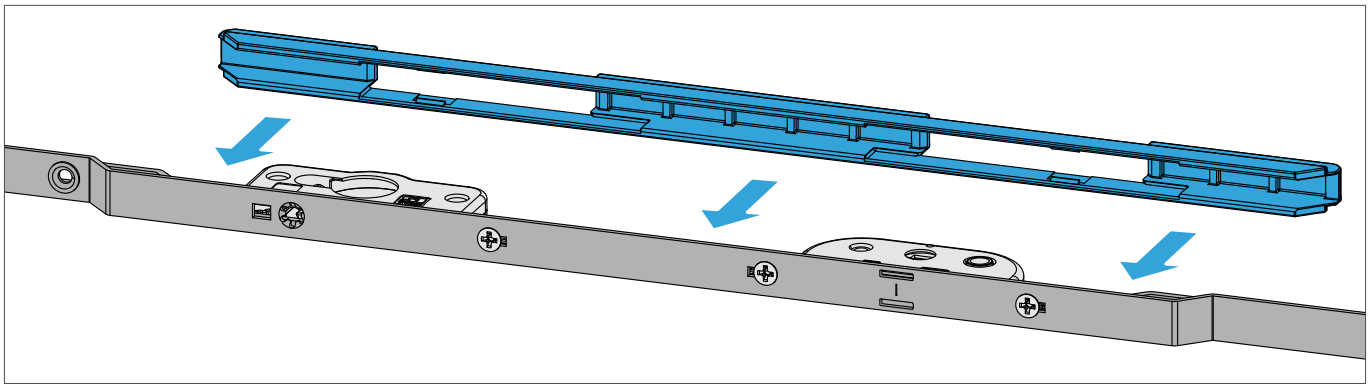
3. Suspend the gear box for the profile cylinder in the gear.



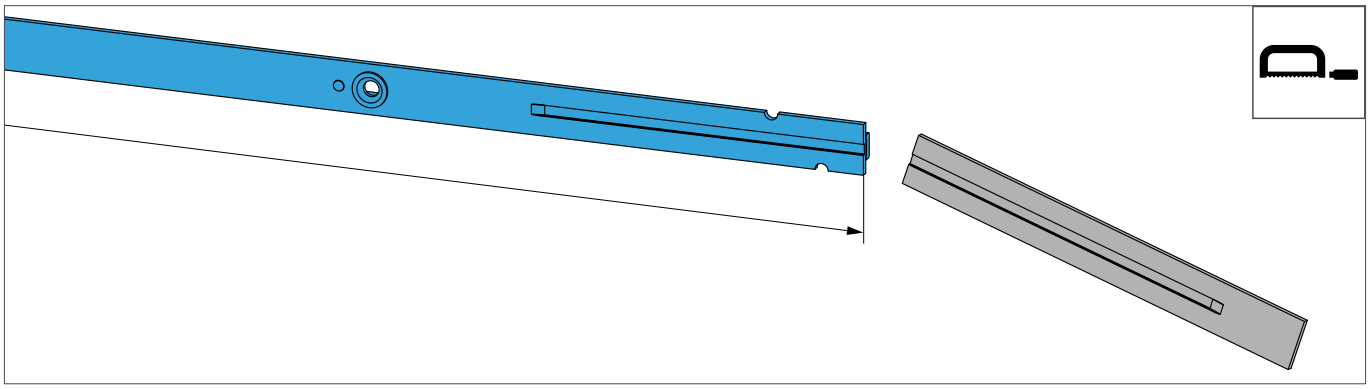
4. Screw the gear box for the profile cylinder firmly into place on the gear.



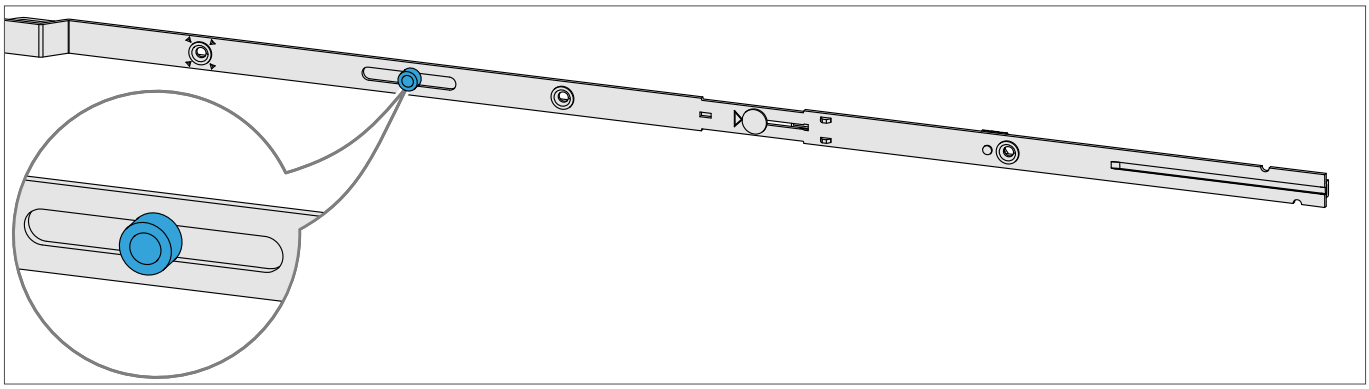
5. Place the cover cap onto the gear.



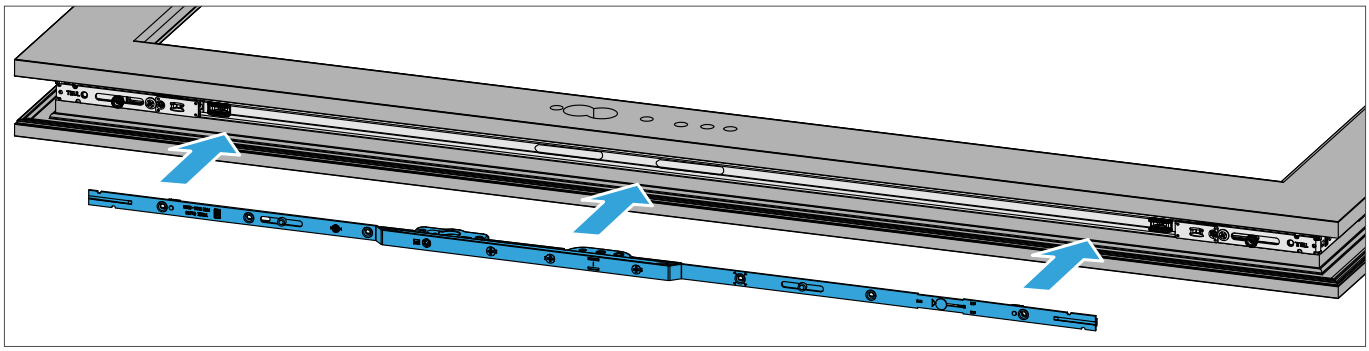
6. Measure and crop the gear.



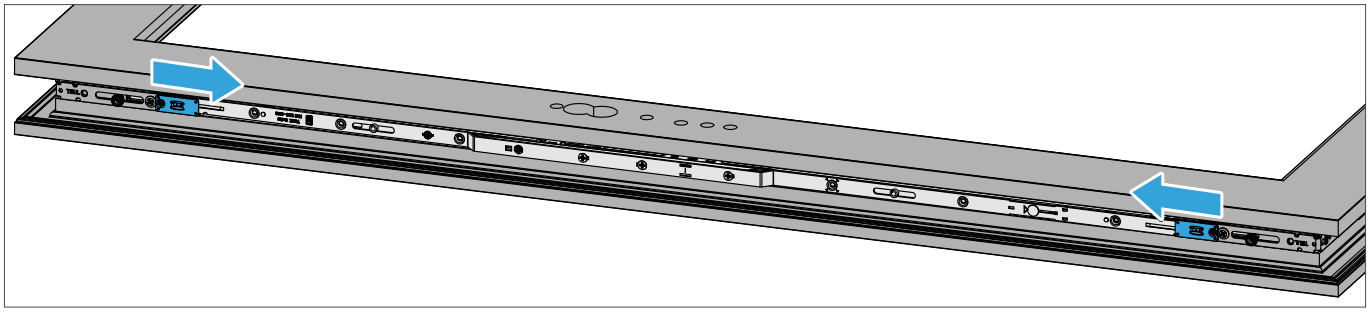
7. Move the gear to the central position.



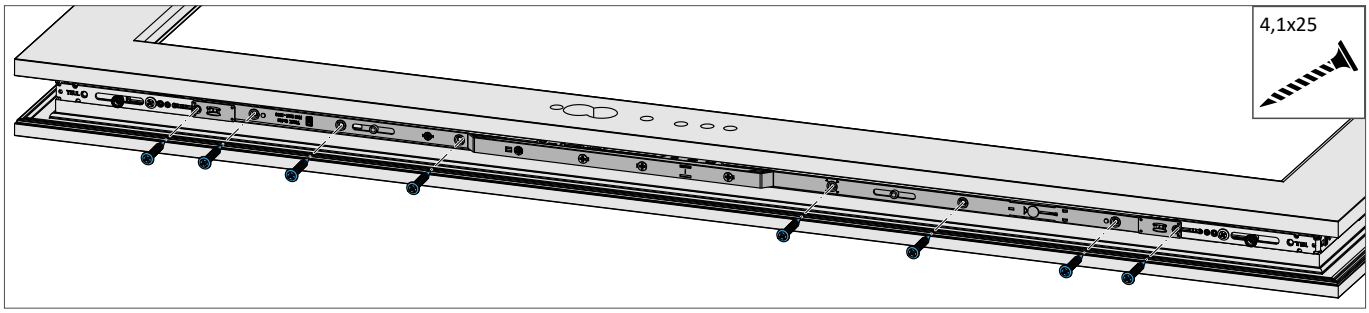
8. Insert the gear into the groove in the sliding sash and press into place.



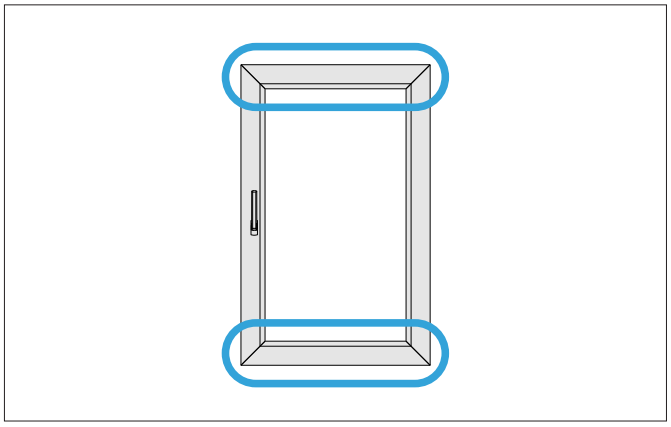
9. Lock the gear with the corner drives.



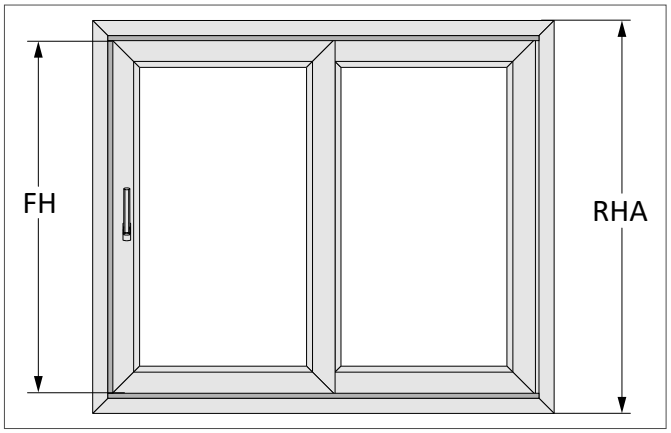
10. Screw the gear firmly into place with the countersunk screws.



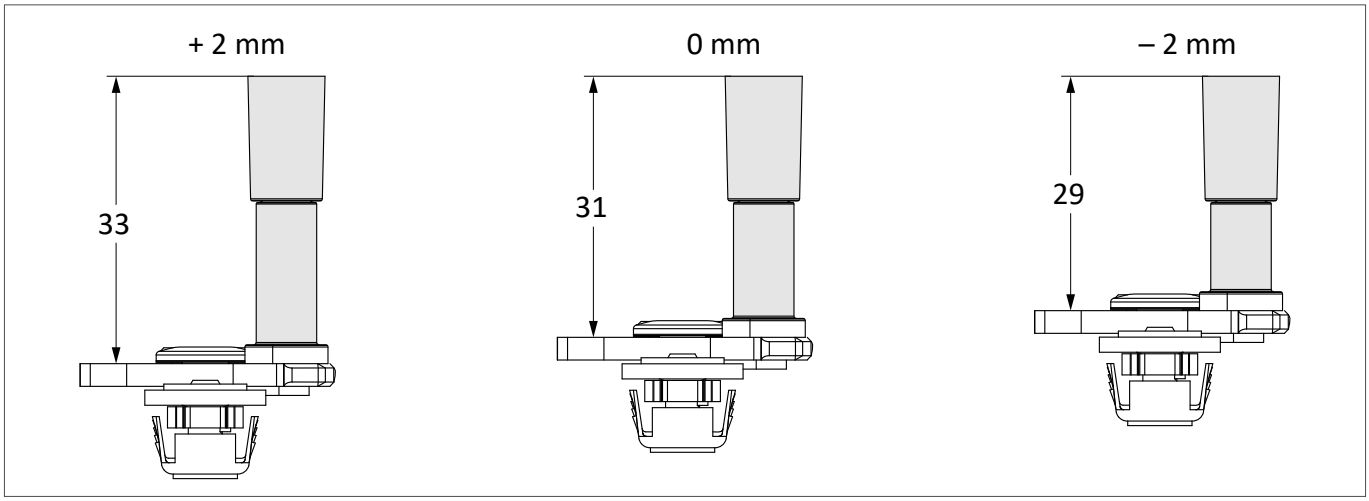
4.3.9 Installing the horizontal linkages



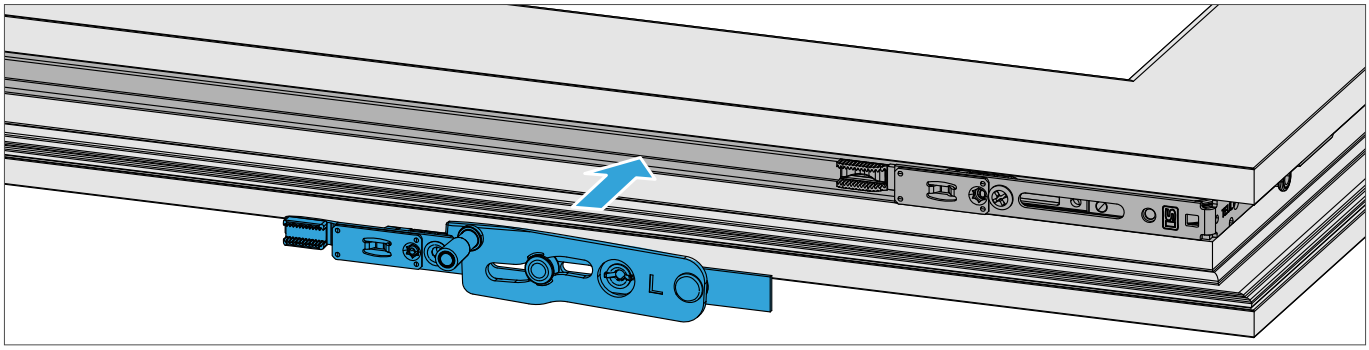
1. Determine the difference between frame height at the outside (RHA) and sash height (FH).



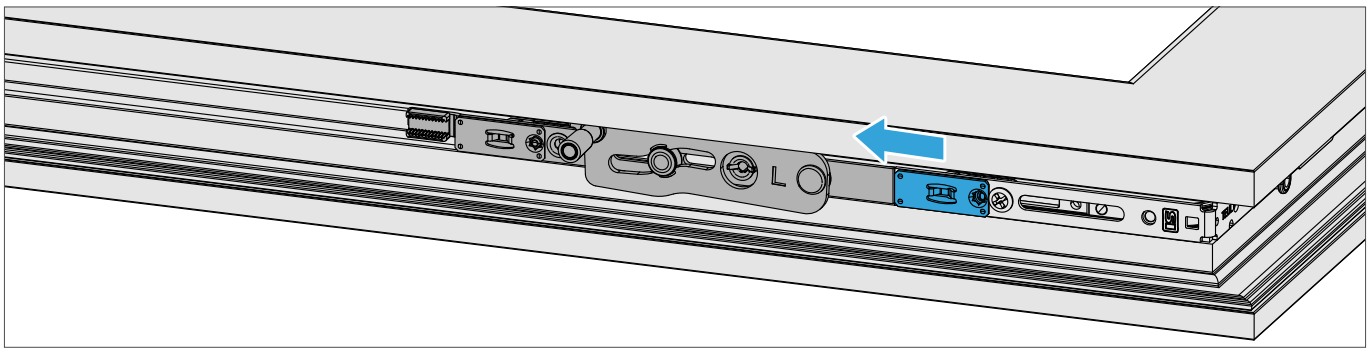
2. If the difference is in the 106 – 108 mm range, then use -2 mm linkages. If the difference is in the 112 – 114 mm range, then use +2 mm linkages.



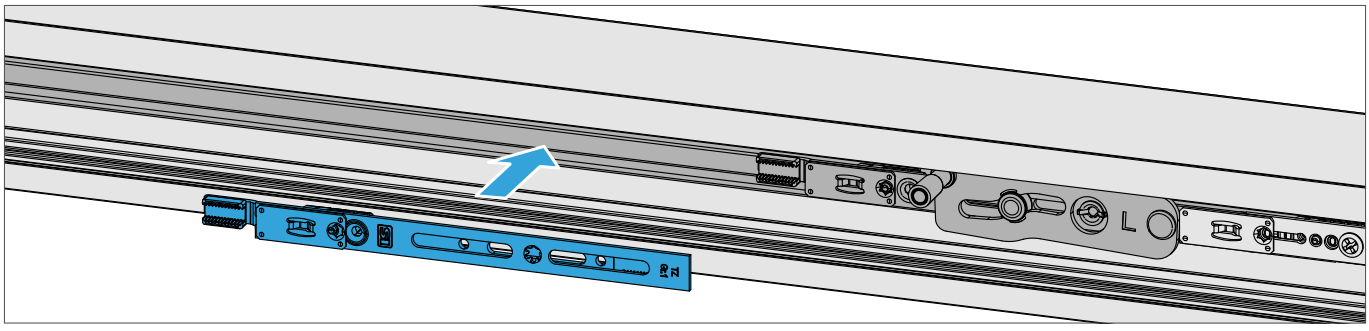
3. Insert the horizontal linkage into the sliding sash.



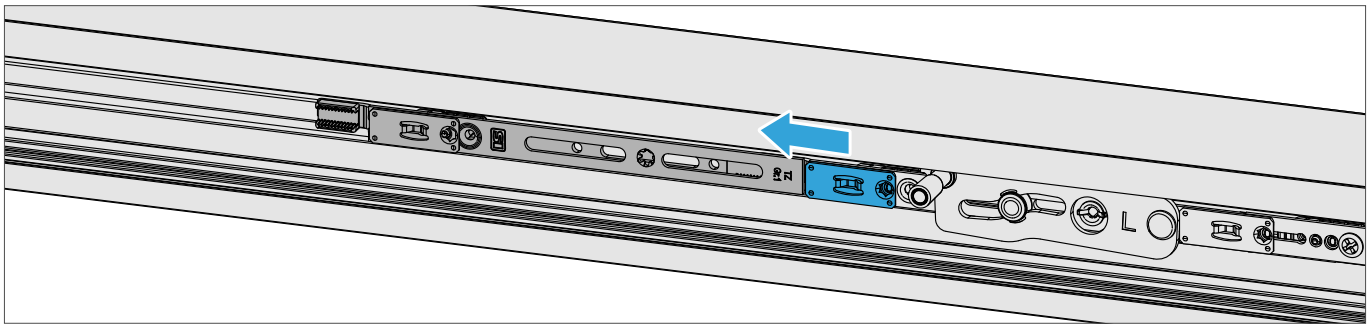
4. Lock the horizontal linkage with the corner drive.



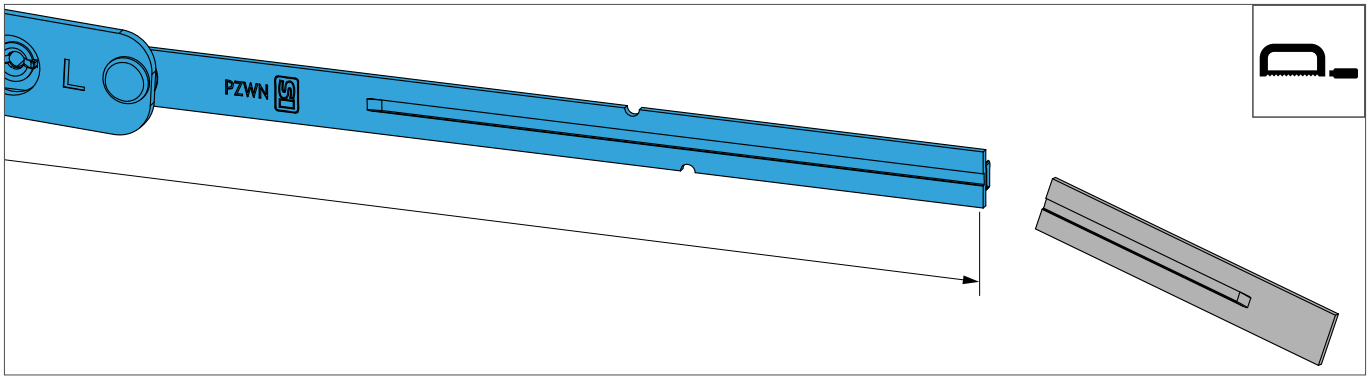
5. Insert the AF linkage into the sliding sash.



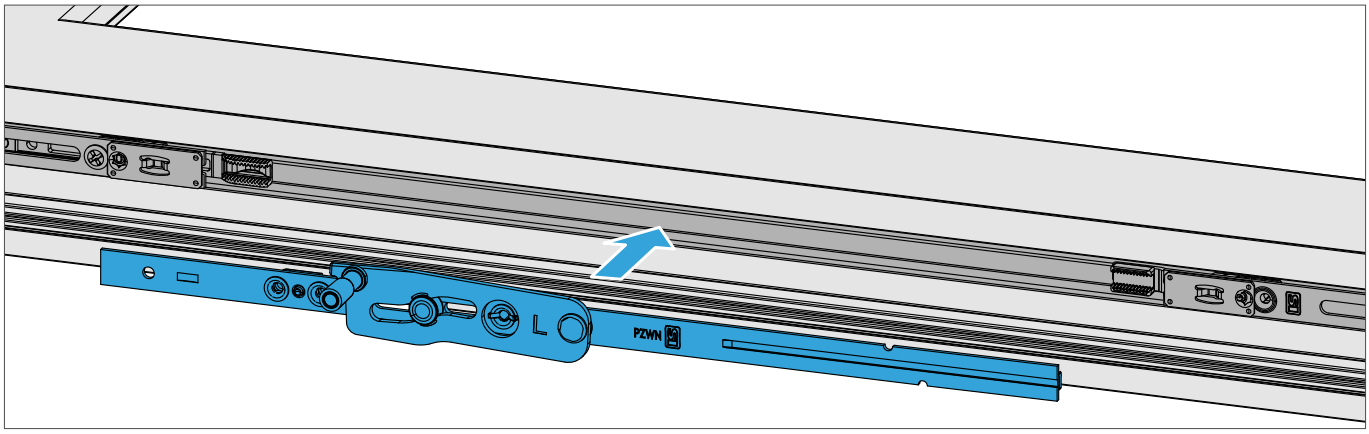
6. Lock the AF linkage with the horizontal linkage.



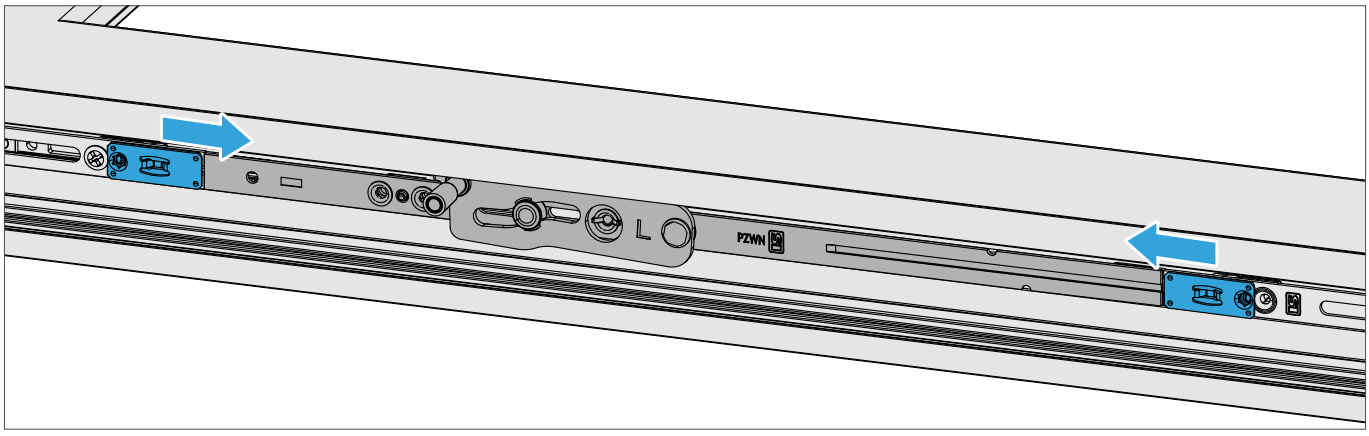
7. Measure and crop the horizontal, cut-to-length linkage.



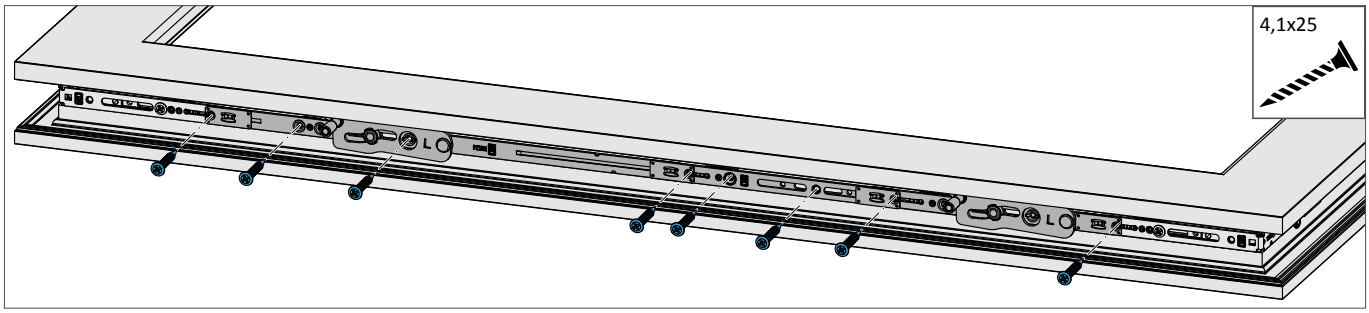
8. Insert the horizontal, cut-to-length linkage into the sliding sash.



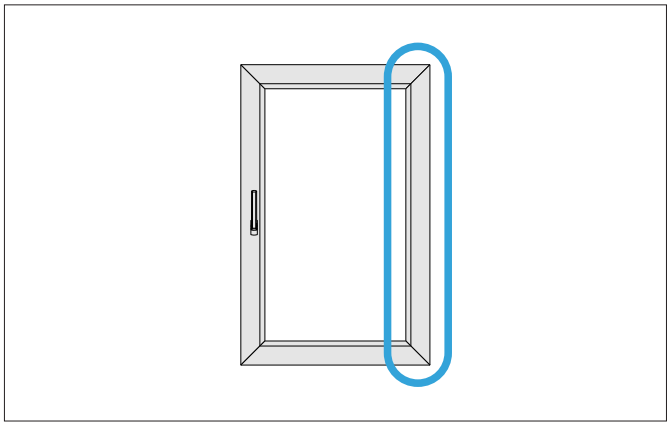
9. Lock the horizontal, cut-to-length linkage with the corner drive and the AF linkage.



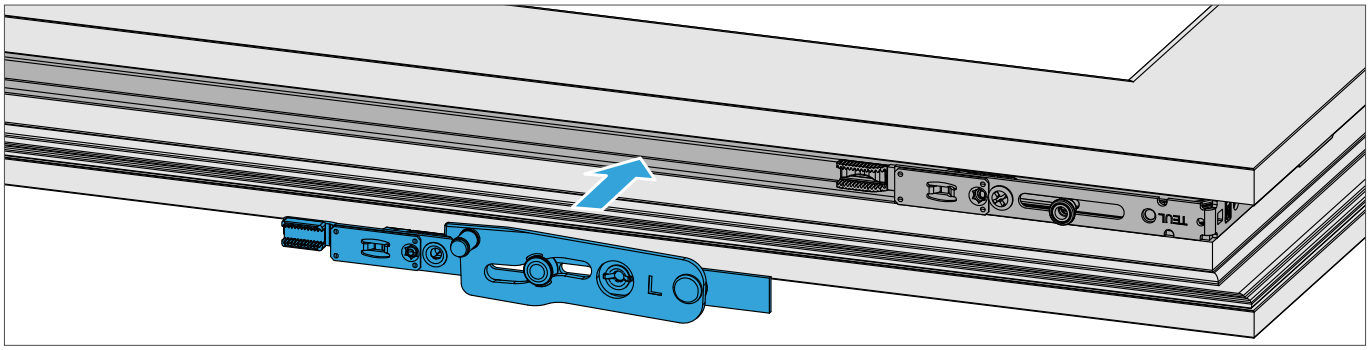
10. Screw the linkages firmly into place.



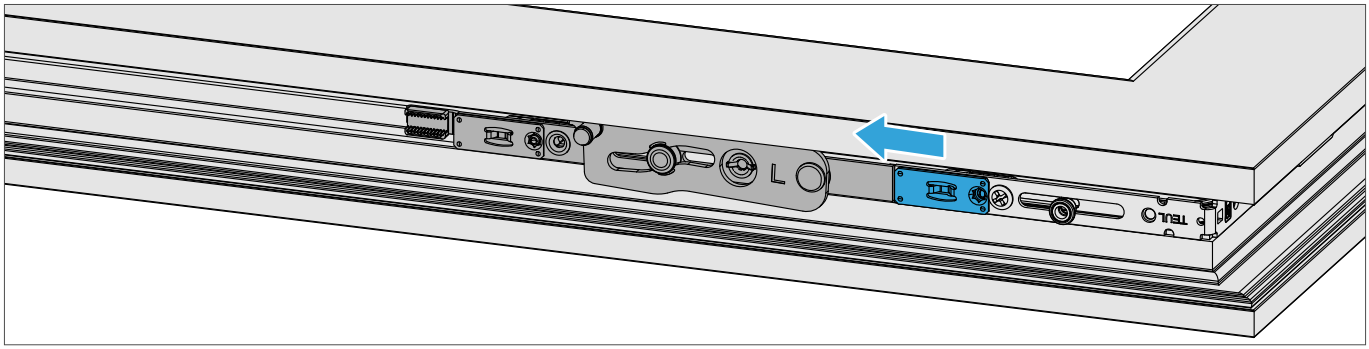
4.3.10 Installing the MPO and MPU linkages



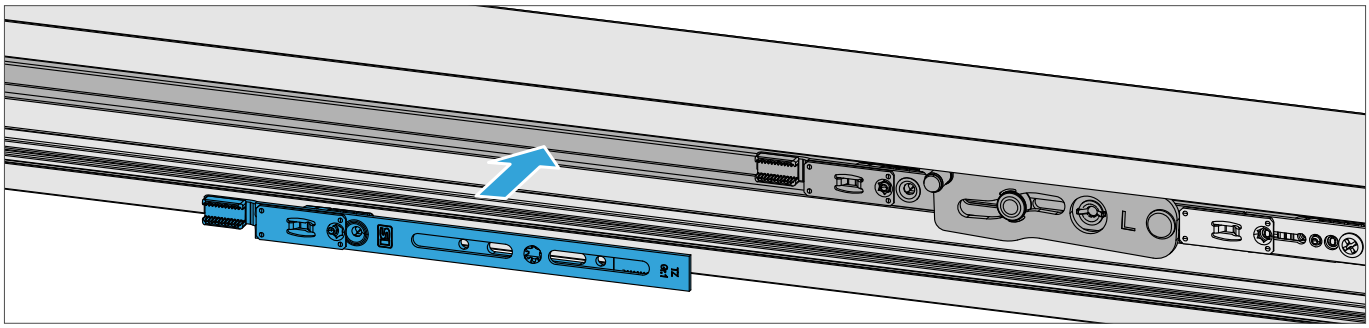
1. Insert the first MPO linkage into the sliding sash.



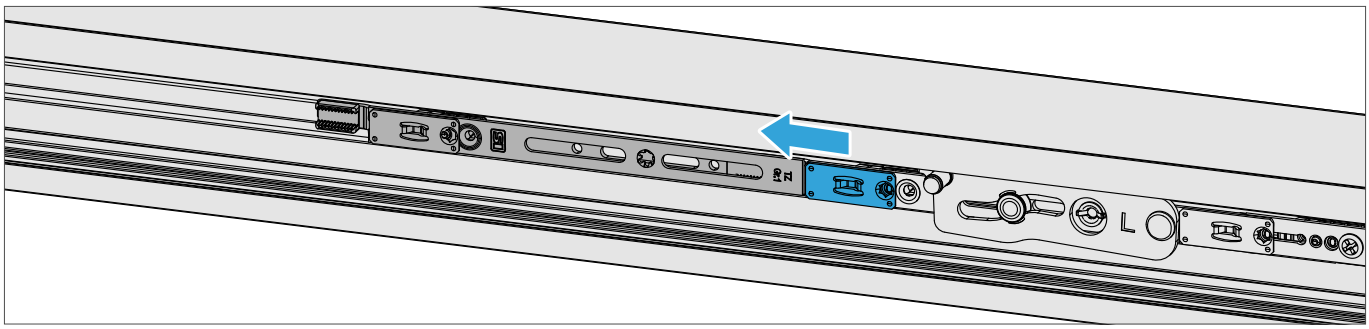
2. Lock the first MPO linkage with the corner drive.



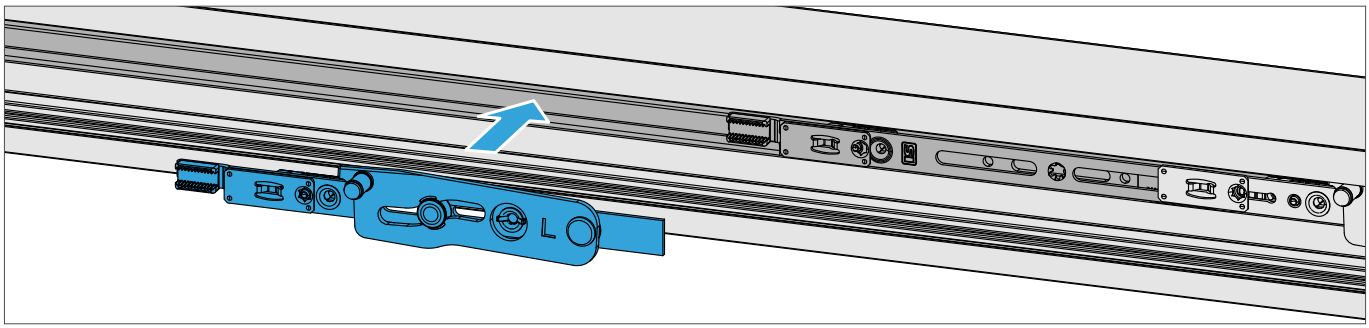
3. Insert the AF linkage into the sliding sash.



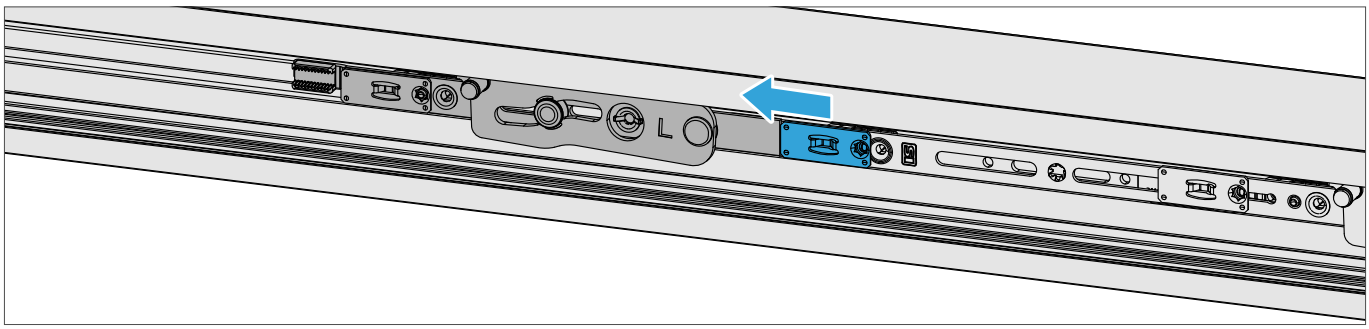
4. Lock the AF linkage with the MPO linkage.



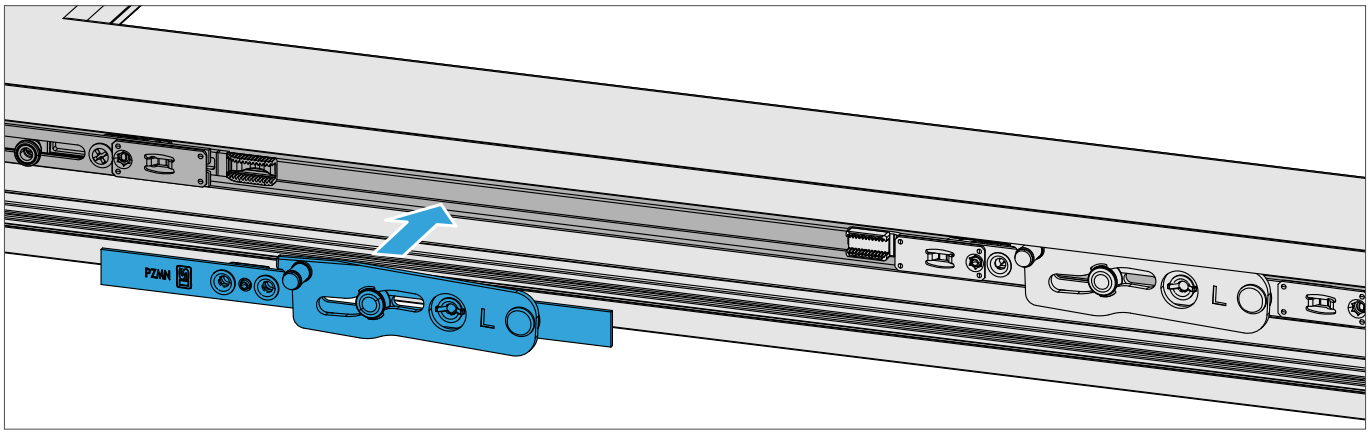
5. Insert the second MPO linkage into the sliding sash.



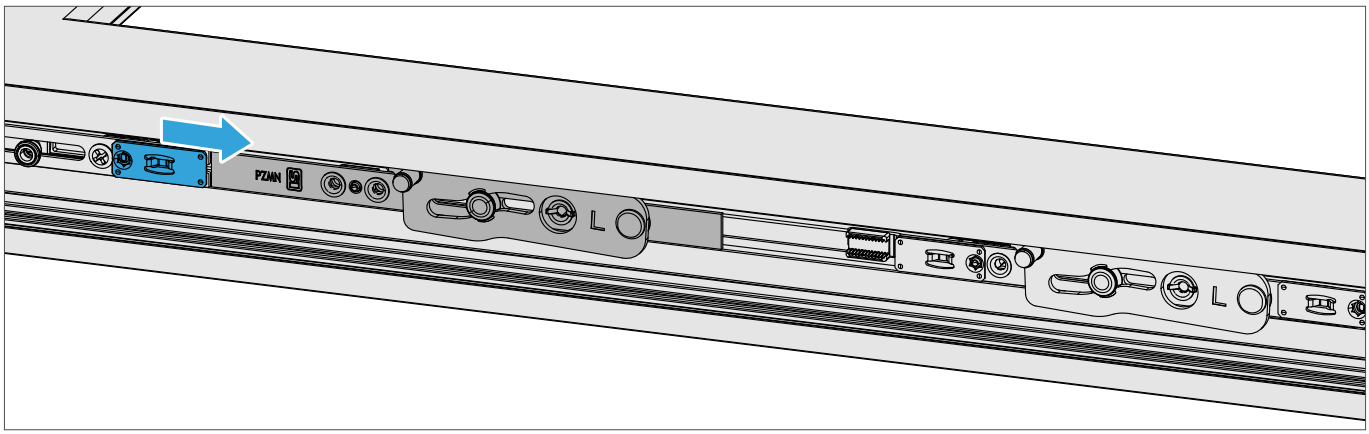
6. Lock the second MPO linkage with the AF linkage.



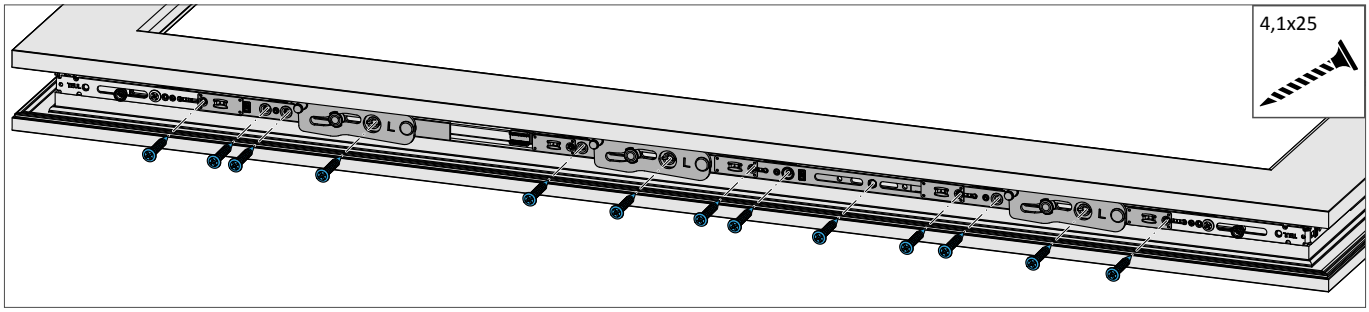
7. Insert the MPU linkage into the sliding sash.



8. Lock the MPU linkage with the corner drive.

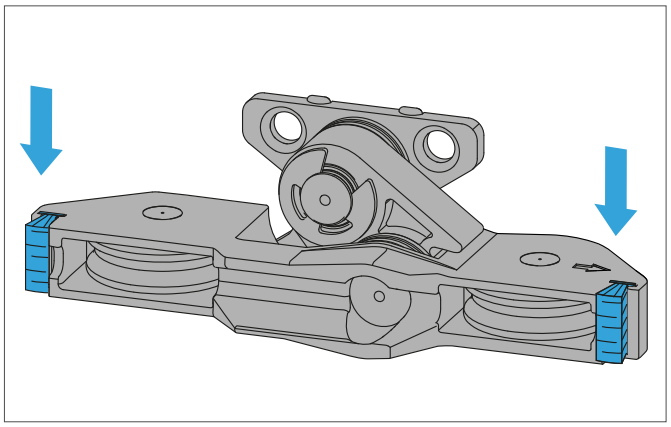


9. Screw the linkages firmly into place.

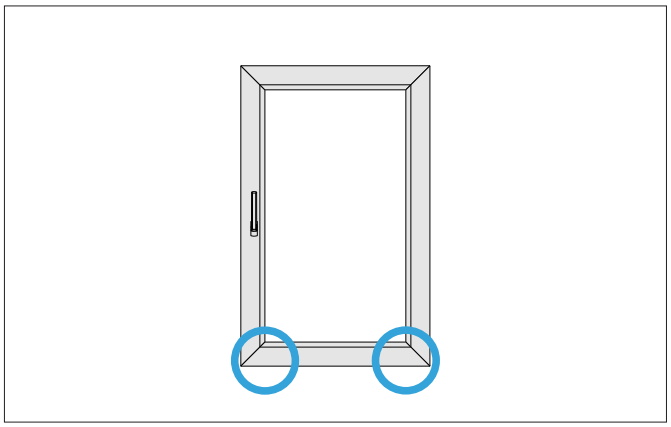


4.3.11 Install 13 mm sealing brush

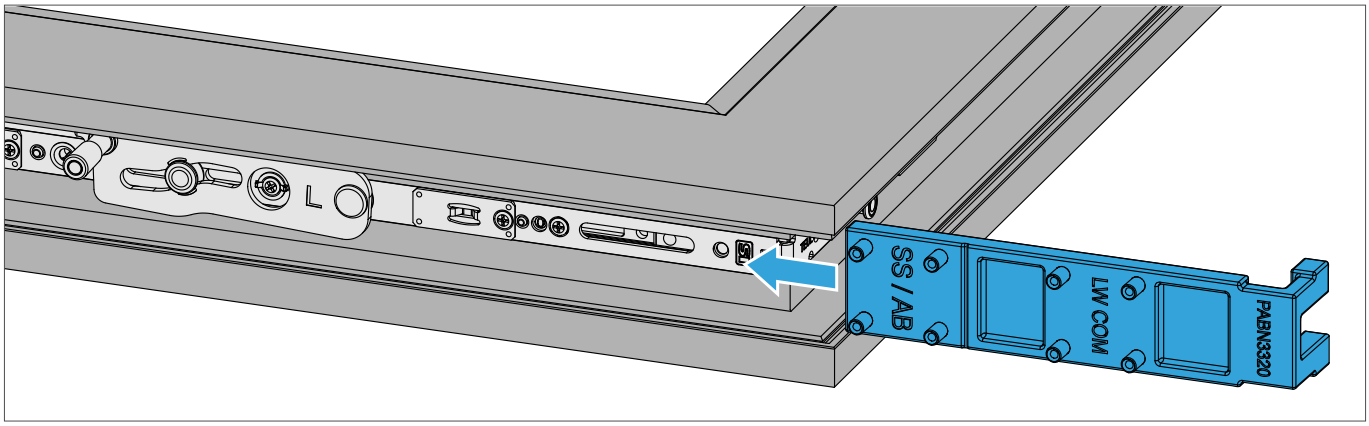
1. Slide the sealing brush into the front and rear brush groove on all bogie wheels.



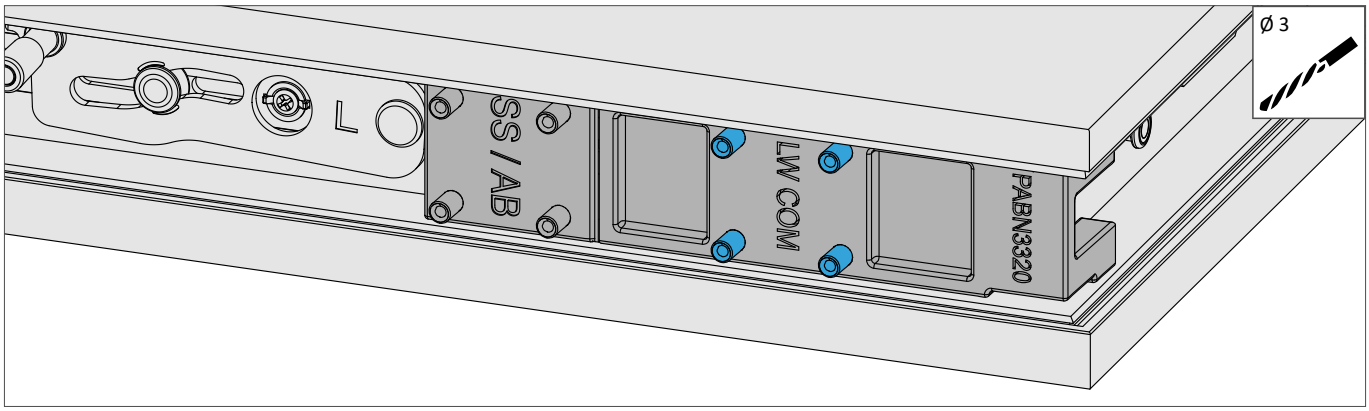
4.3.12 Install ES CO COM bogie wheels



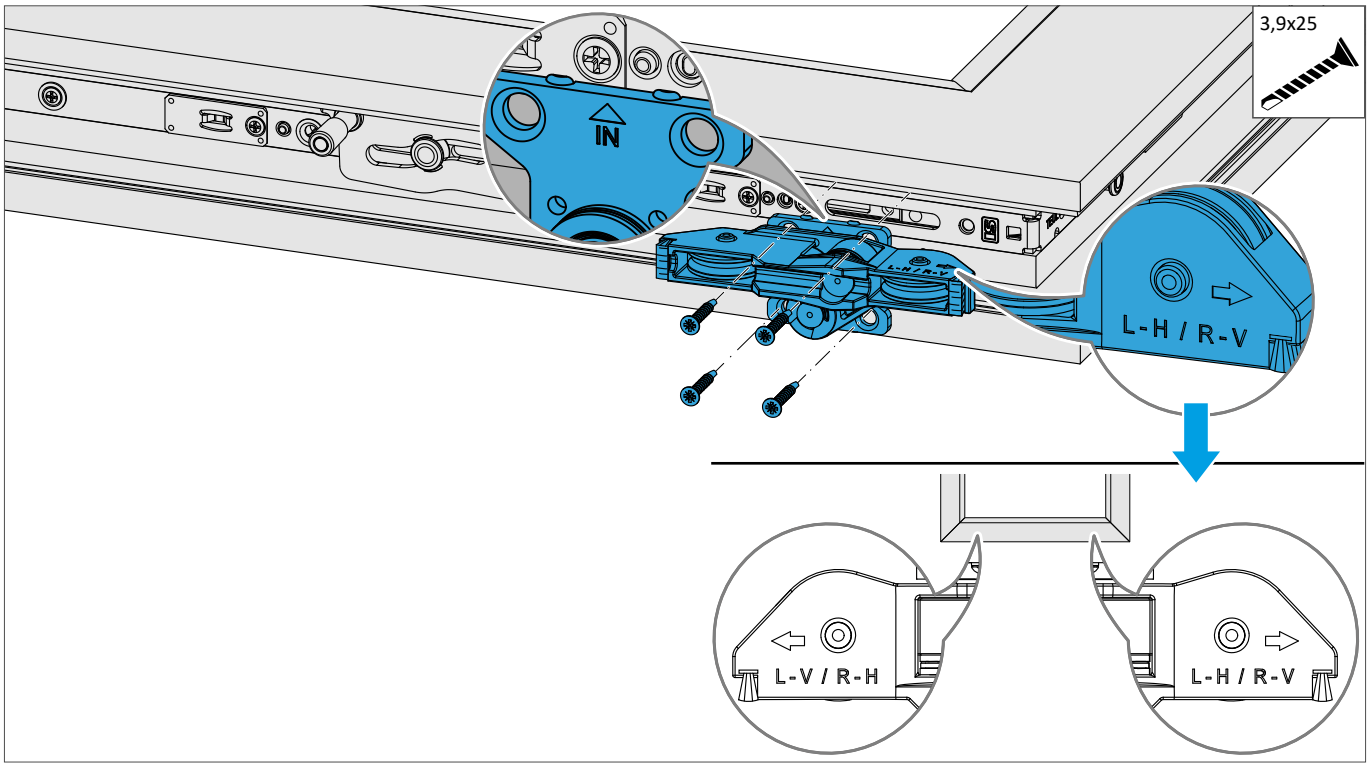
1. Place the PABN3320 jig at the corner of the sash rebate.



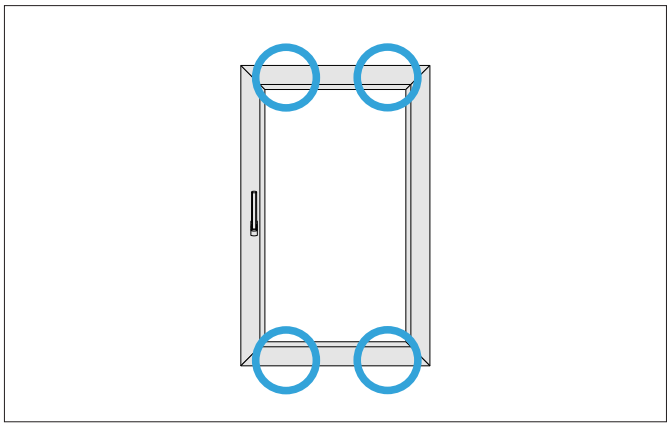
2. Make the holes in the LW COM area of the jig.



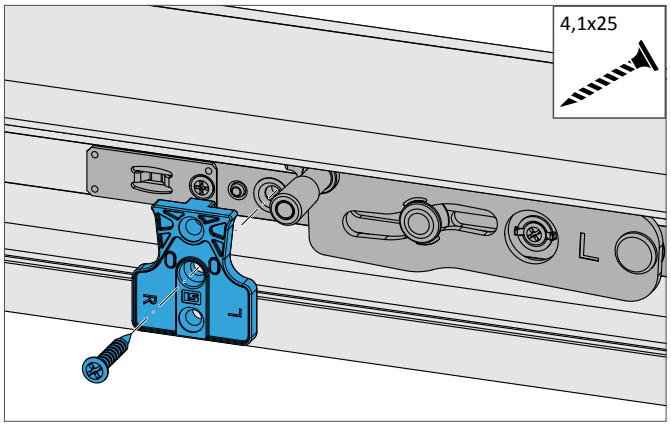
3. Position the bogie wheels according to the arrows and firmly into place in the reinforcement. If the bogie wheels can only be screwed with 2 of the 4 screws, use 4.1x25 countersunk screws.



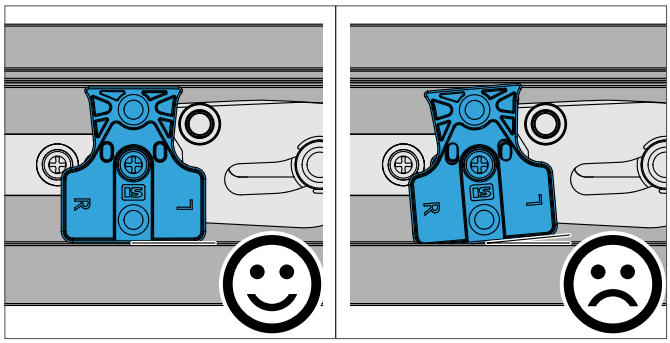
4.3.13 Installing the retaining plate



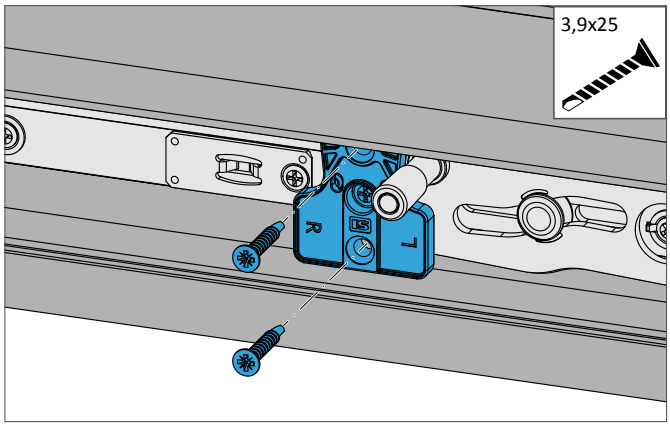
1. Insert the retaining plate in front of the bolt of the linkage and pre-fix with the countersunk screw.



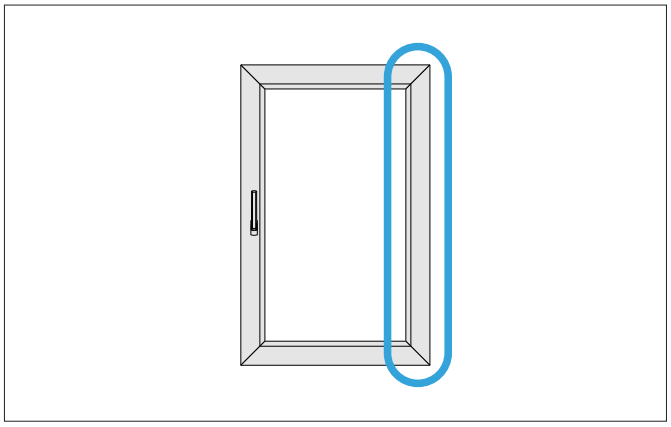
2. Ensure that the retaining plate is parallel to the sash rebate.



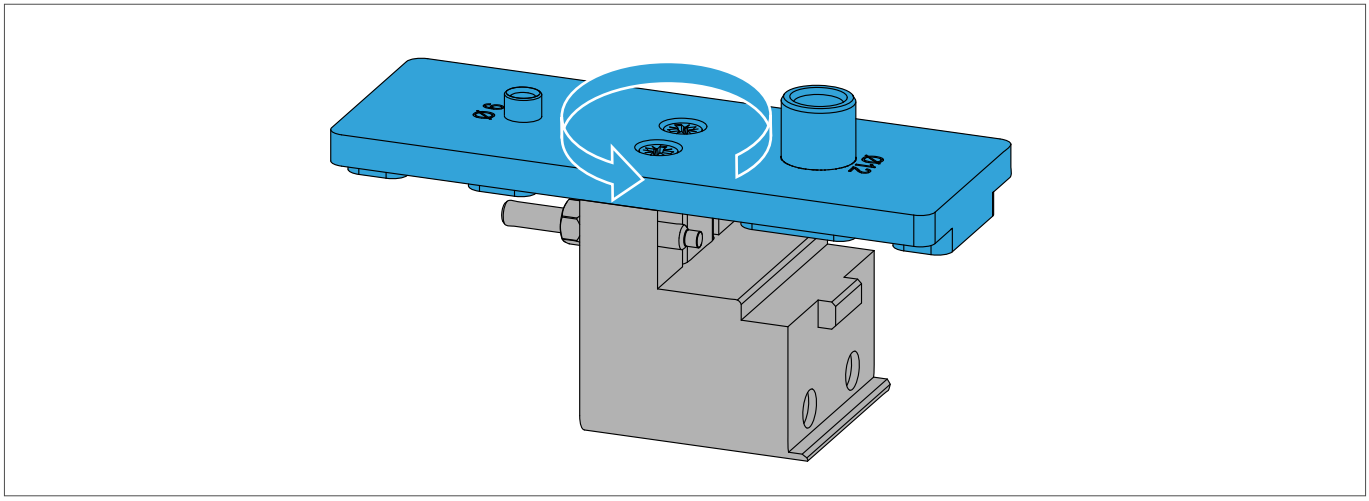
3. Screw the retaining plate firmly into place.



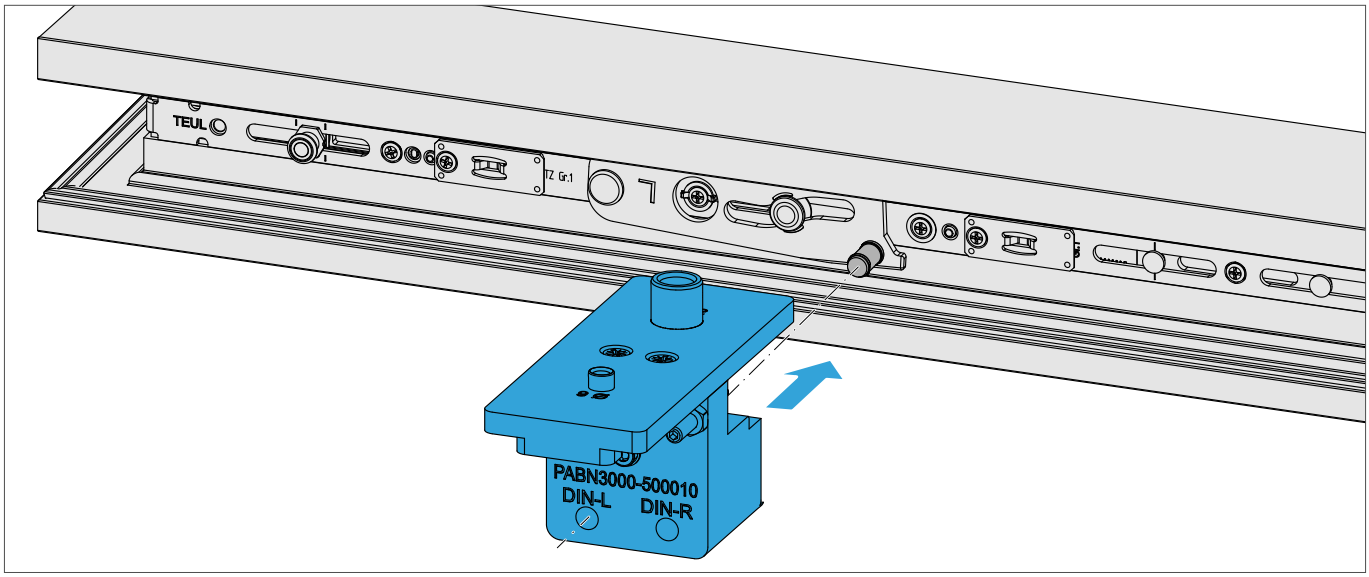
4.3.14 Installing the locking bolt



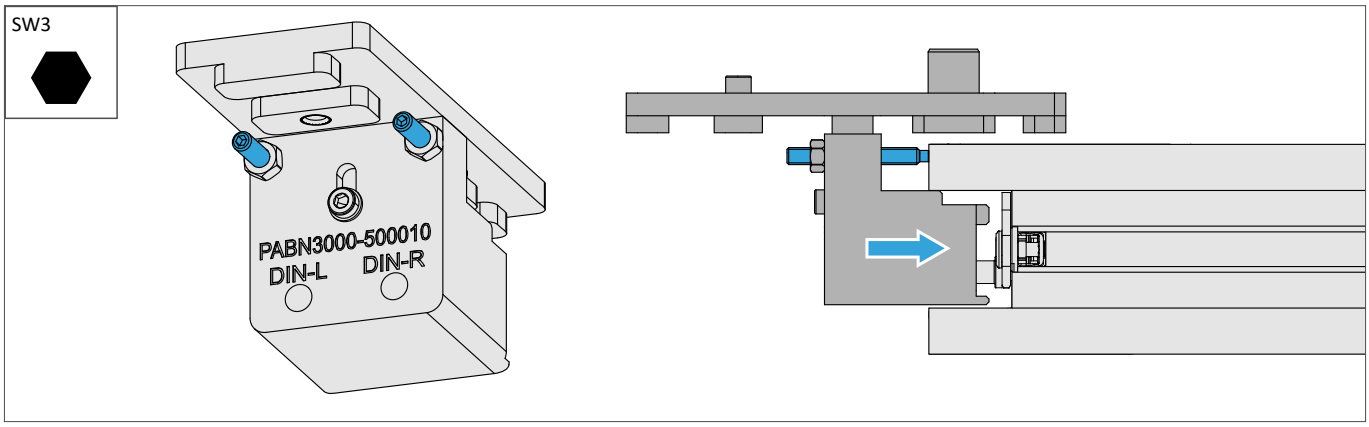
1. Adjust the top part of the jig to Ø12 mm.



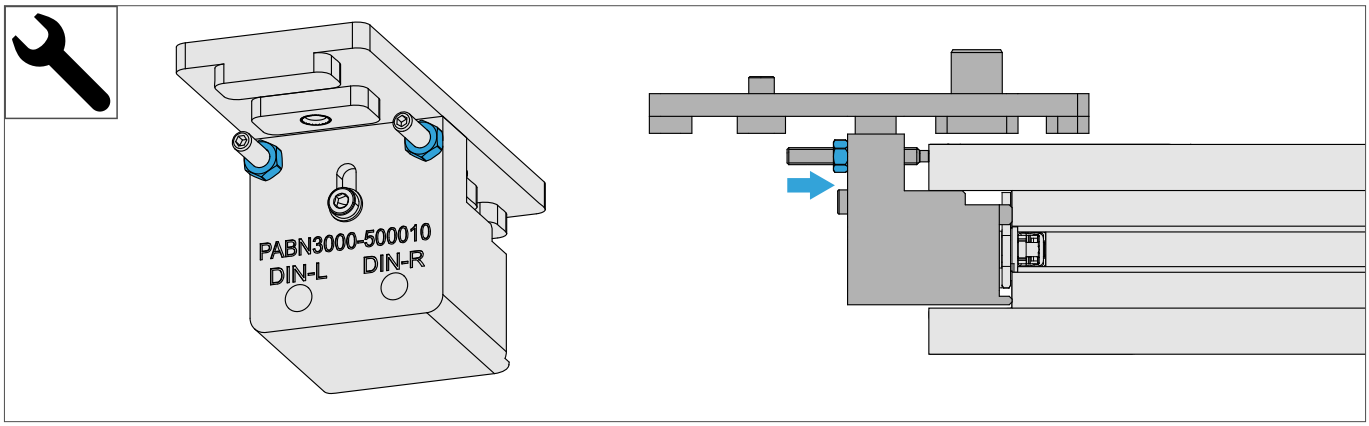
2. Lay the sliding sash against the inside.
3. Position the PABN3000 jig on the bolt of the MPU/MPO linkage.



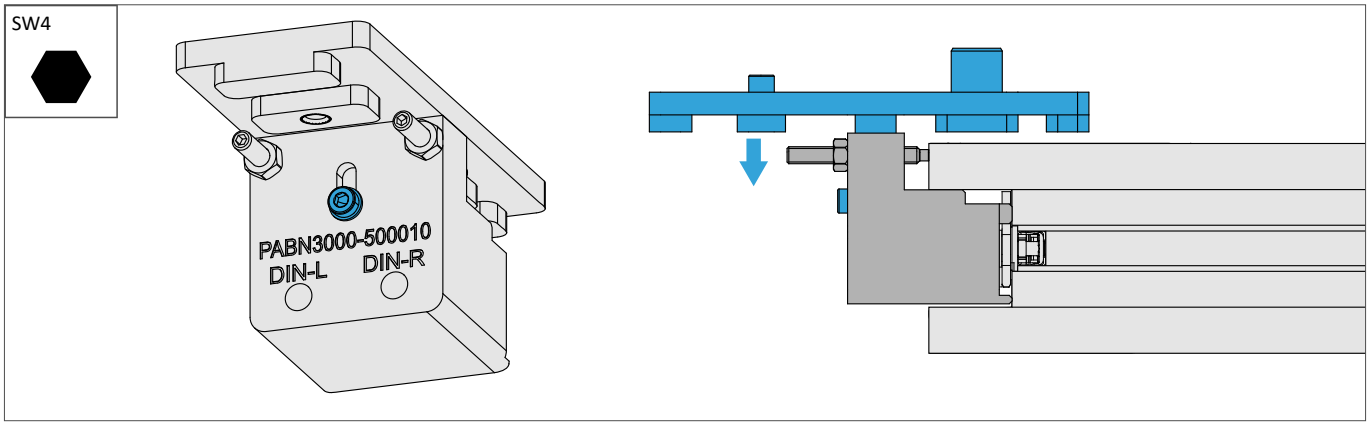
4. Set the depth of the jig to maximum.



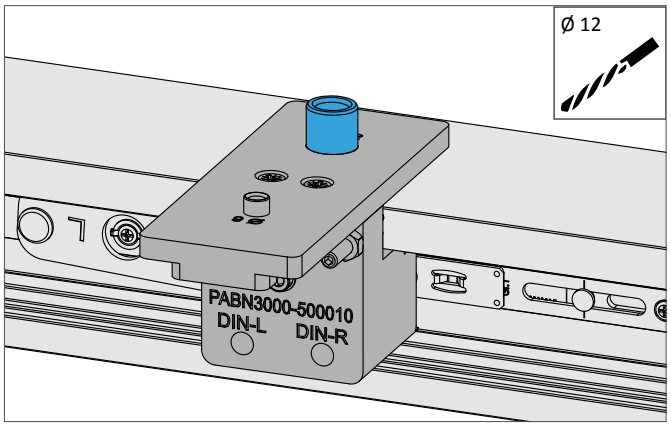
5. Turn the screws and lock with a lock nut.



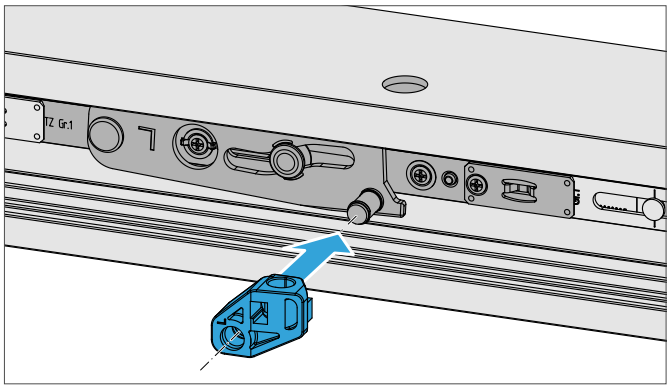
6. Set the height of the jig.



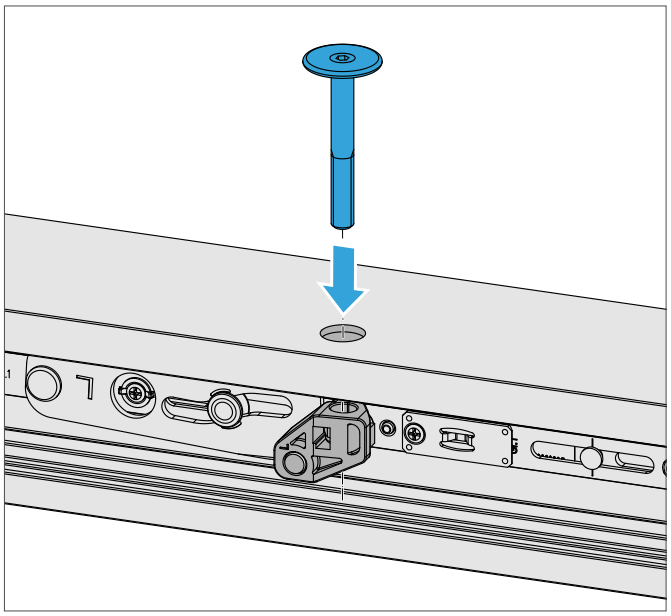
7. Drill the hole.



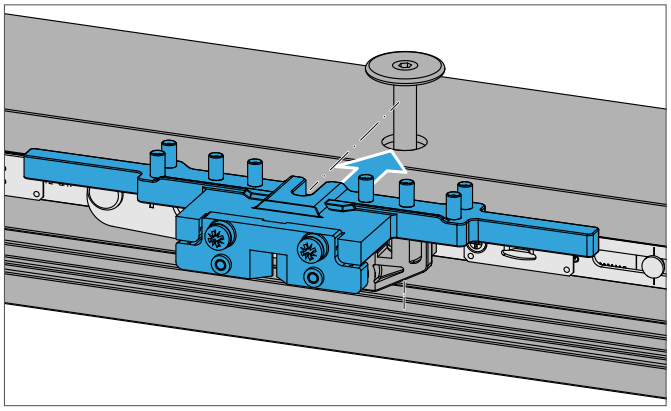
8. Insert the adapter of the MP striker until it engages audibly.



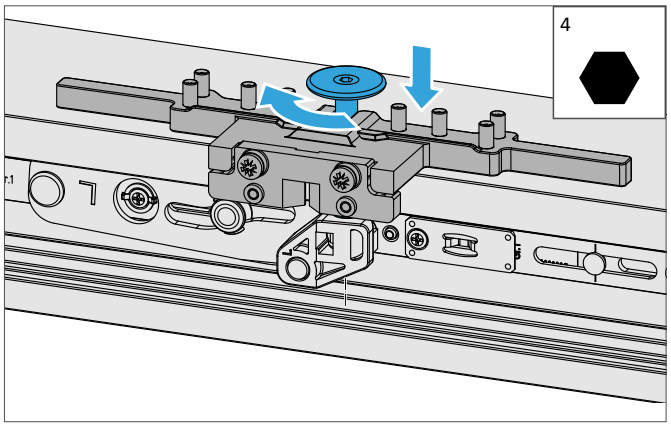
9. Screw the locking bolt loosely one turn (approx. 1 mm) into the adapter.



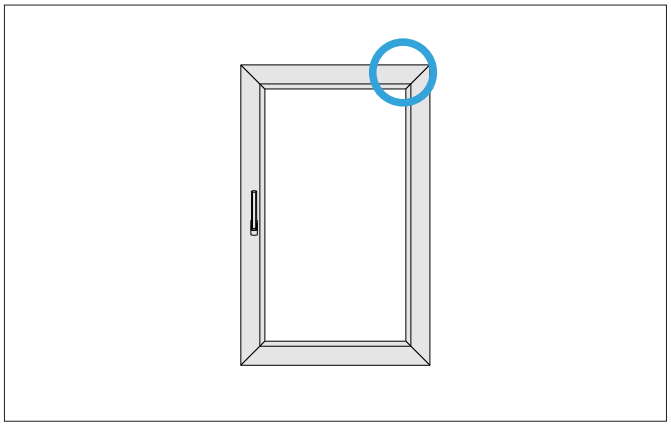
10. If installing an aluminium facing, S-MP install the locking bolt without the jig. Push the S-MP jig over the locking bolt.



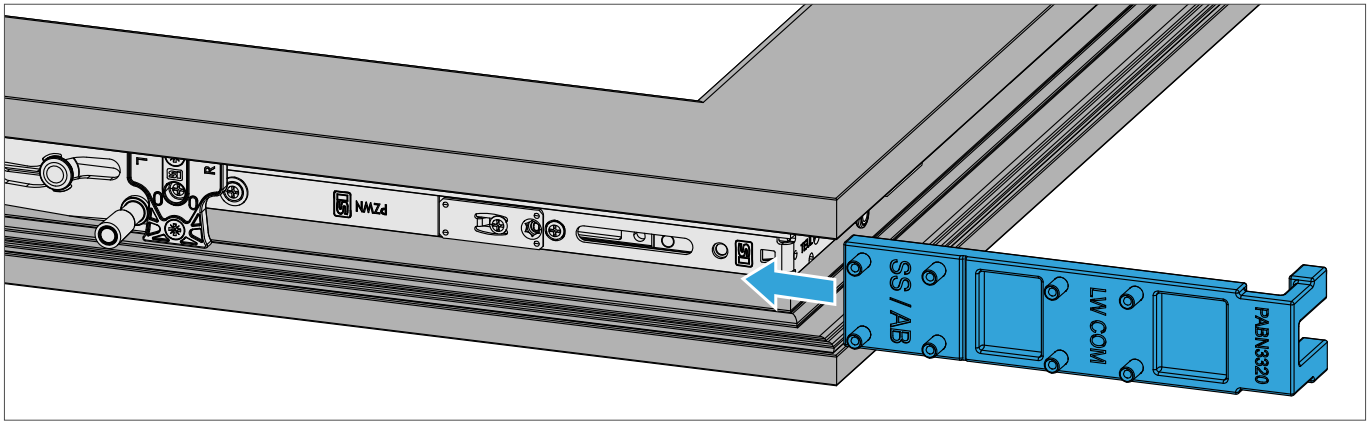
11. Screw in the locking bolt until it touches the jig without applying pressure.



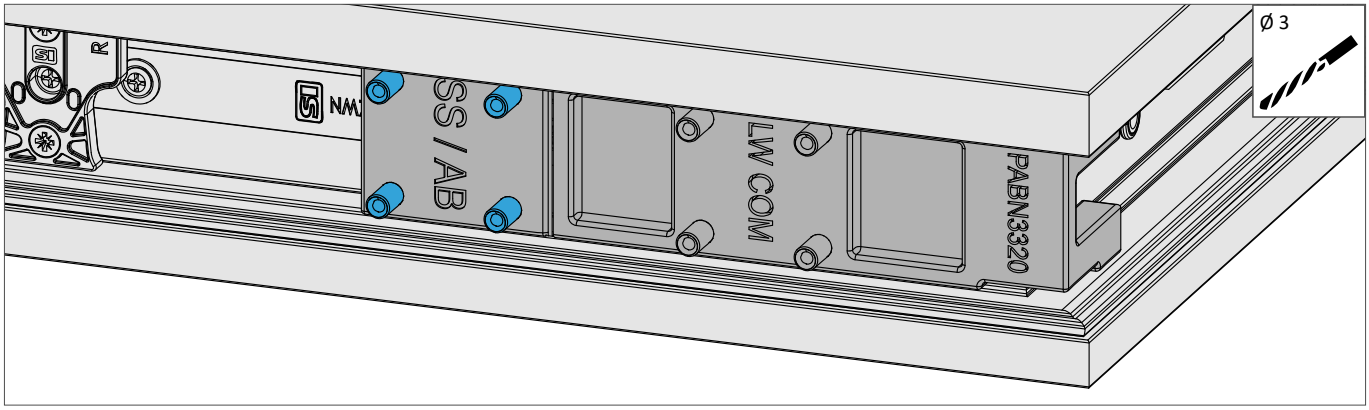
4.3.15 Install sash part AB



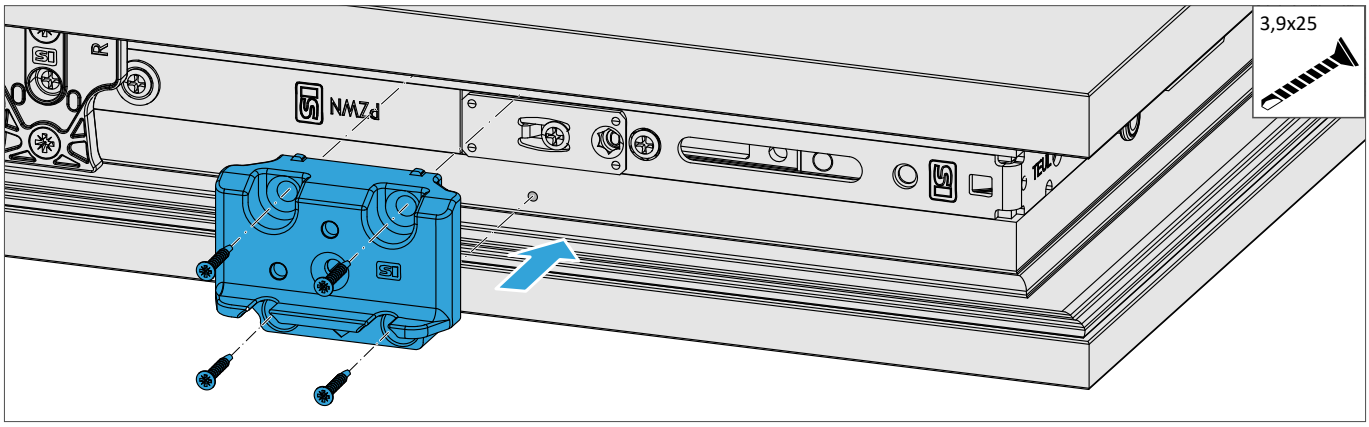
1. Place the PABN3320 jig at the corner of the sash rebate.



2. Make the holes in the SS / AB area of the jig.

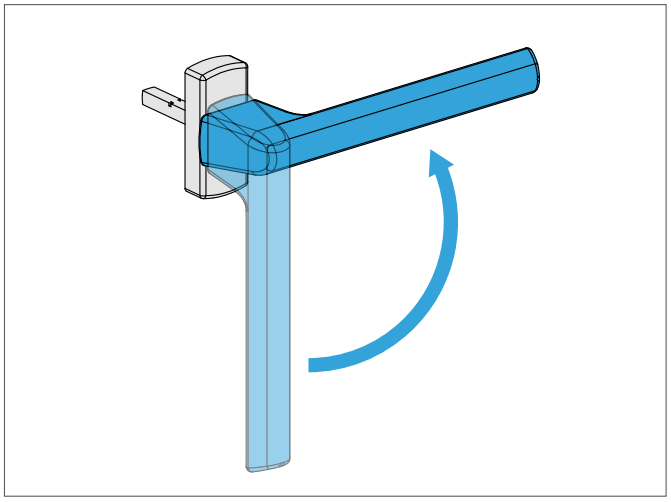


3. Screw sash part AB firmly into place.

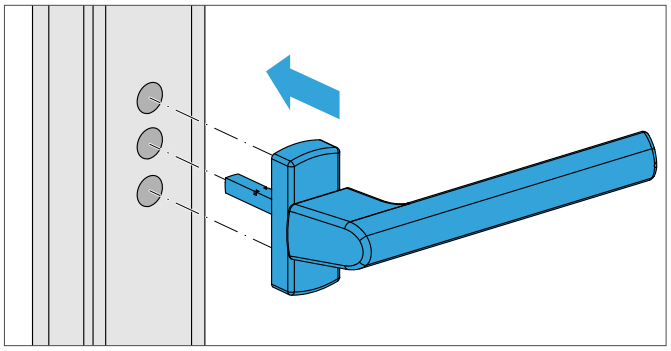


4.3.16 Install the handle Si-line

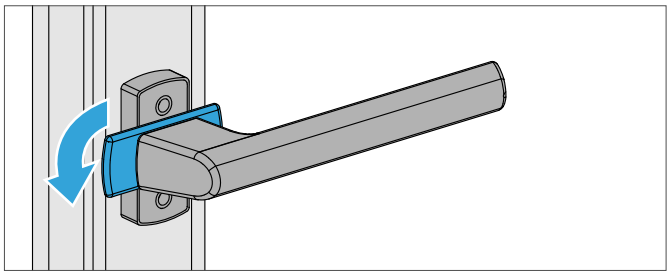
1. Move the handle to the central position.



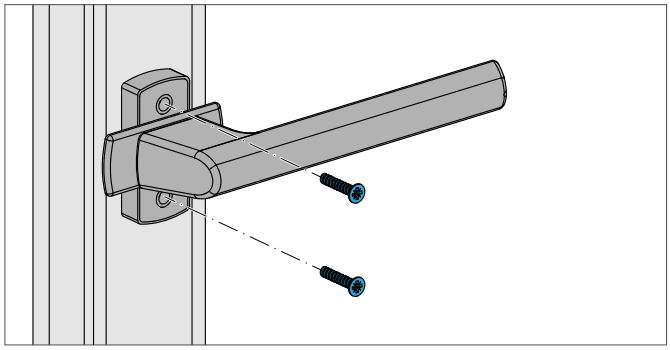
2. Insert the handle into the frame.



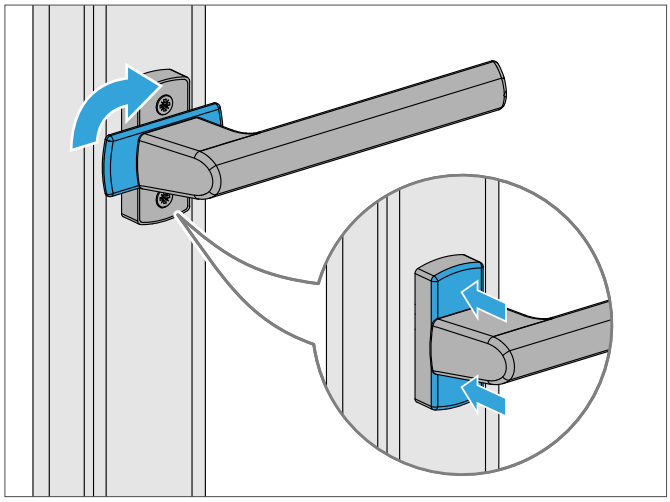
3. Open the cover.



4. Screw the handle together with the gear.

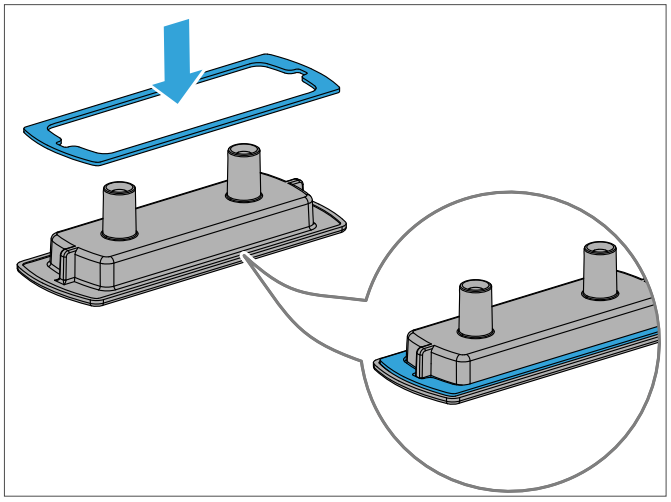


5. Close the cover.

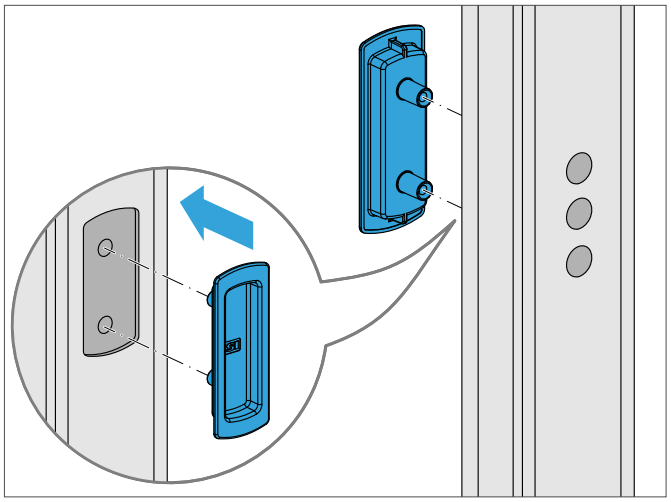


4.3.17 Install the handle with the sliding grip

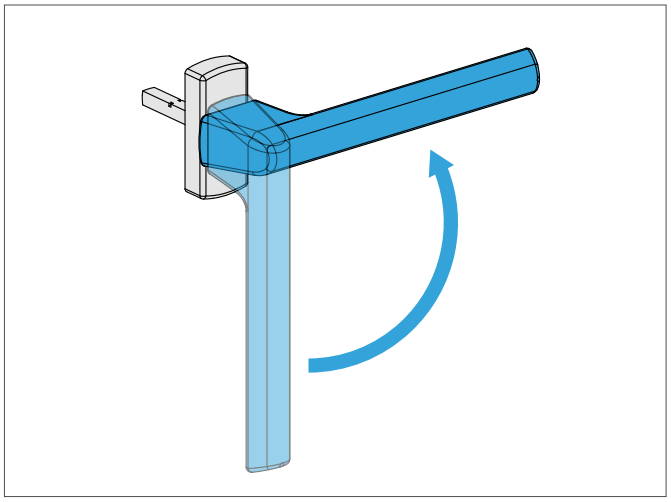
1. Place the sealing plate on the sliding grip.



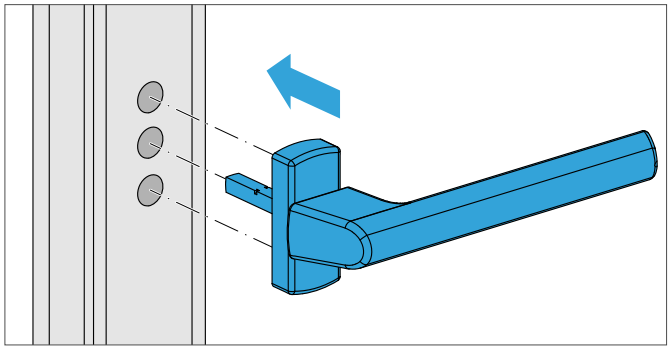
2. Insert the sliding grip into the frame.



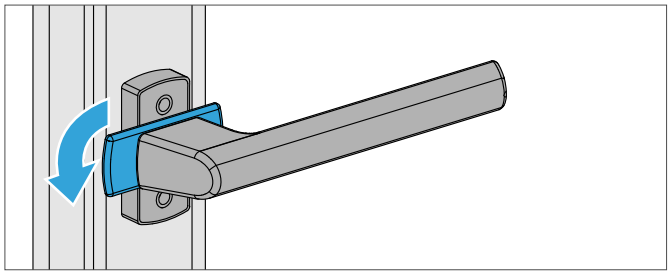
3. Move the handle to the central position.



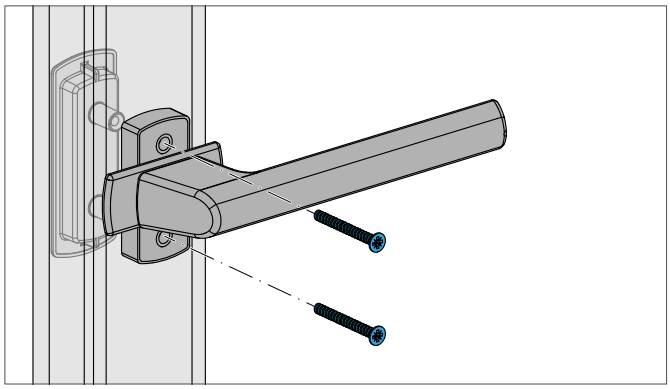
4. Insert the handle into the frame.



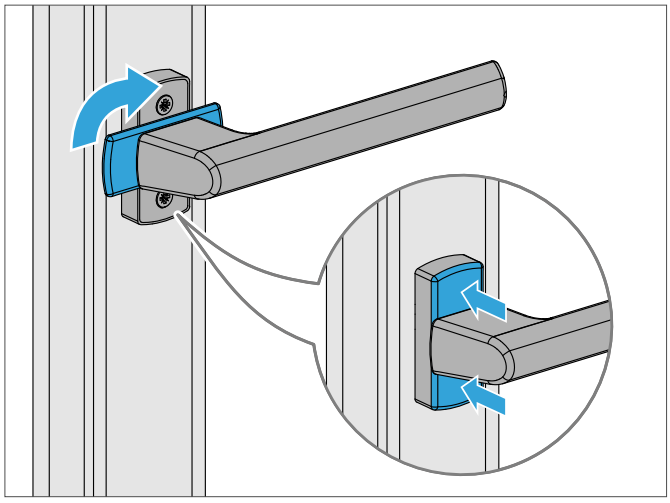
5. Open the cover.



6. Screw the handle together with the sliding grip.

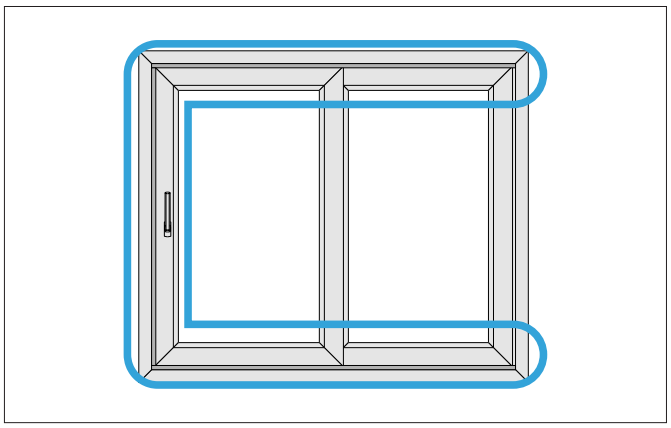


7. Close the cover.

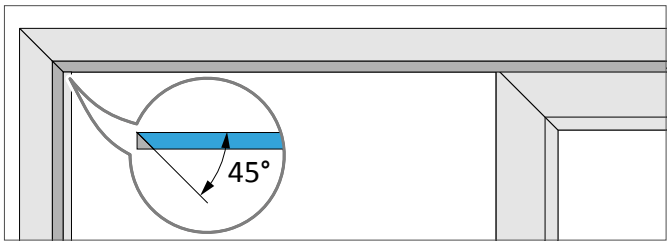


4.4 Mounting the frame parts

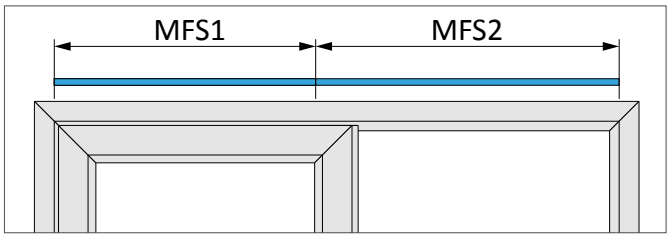
4.4.1 Installing the multifunctional rail



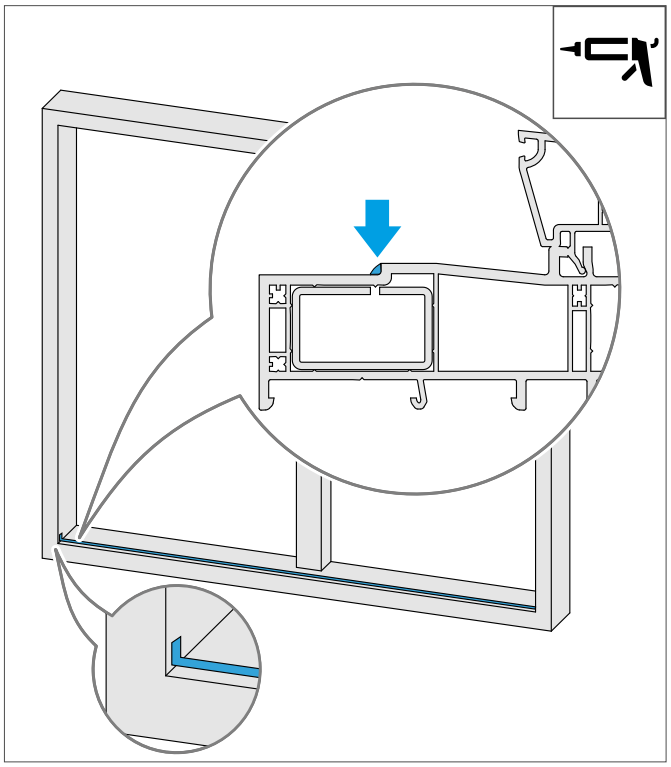
1. If the multifunctional rail is installed mitred, then cut the multifunctional rail at an angle of 45°.



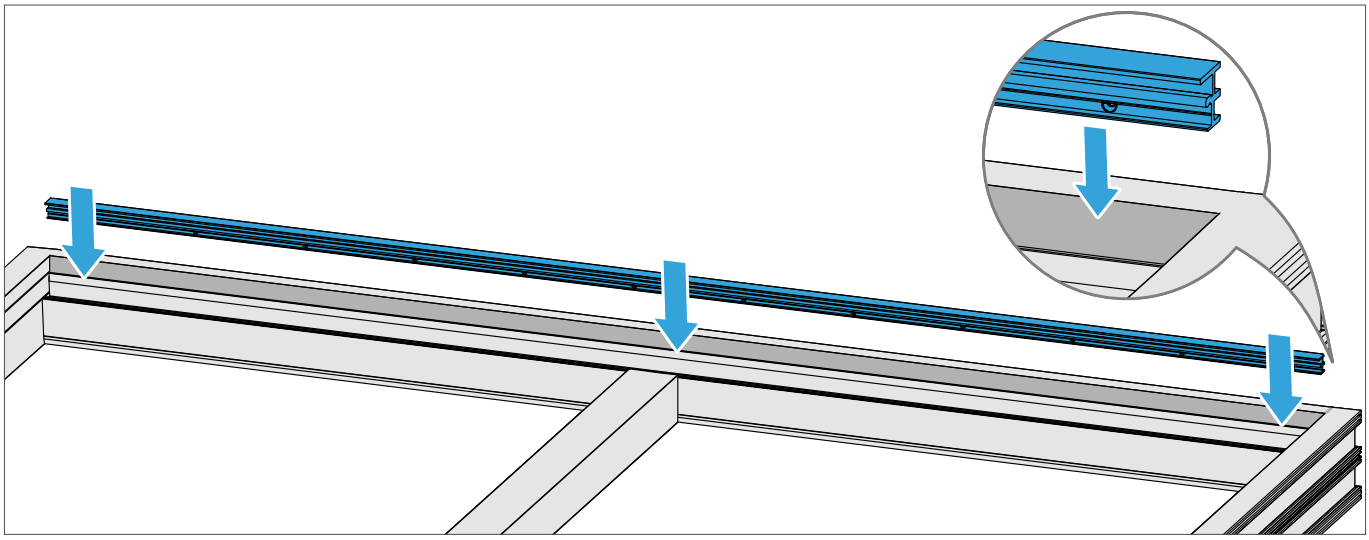
2. If the upper multifunctional rail is designed in sections, then determine the length of parts MFS1 and MFS2:
   MFS = RBA - 71
   MFS1 = SW-S - 60
   MFS2 = MFS - MFS1



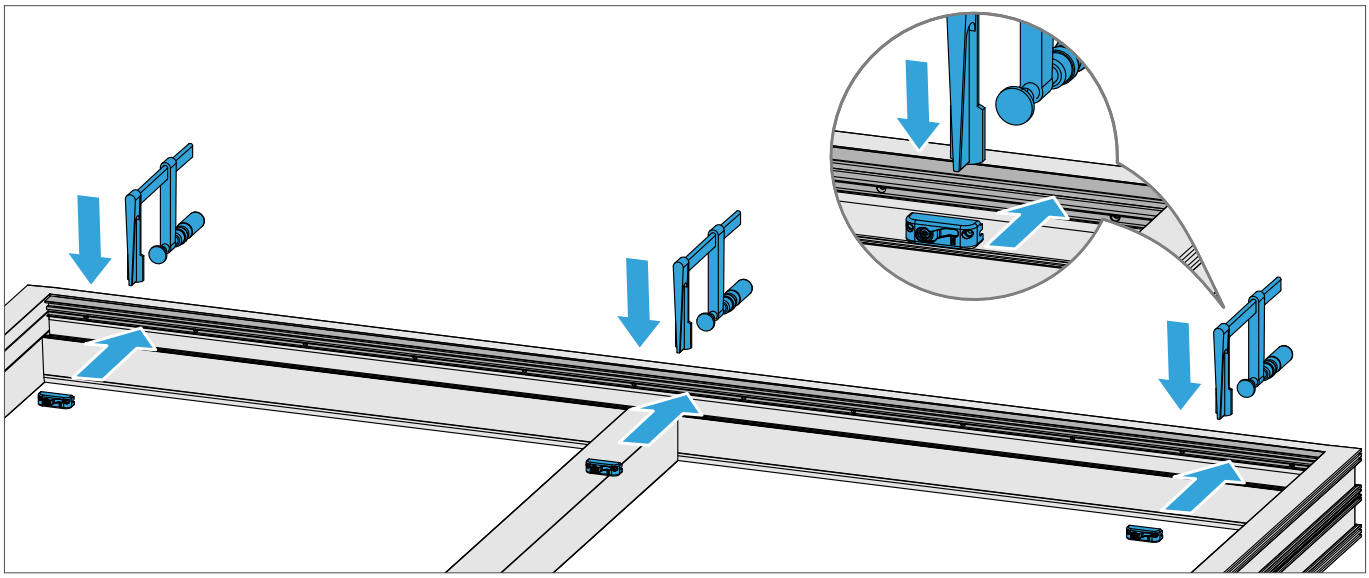
3. Apply sealant to the area around the bottom multifunctional rail.



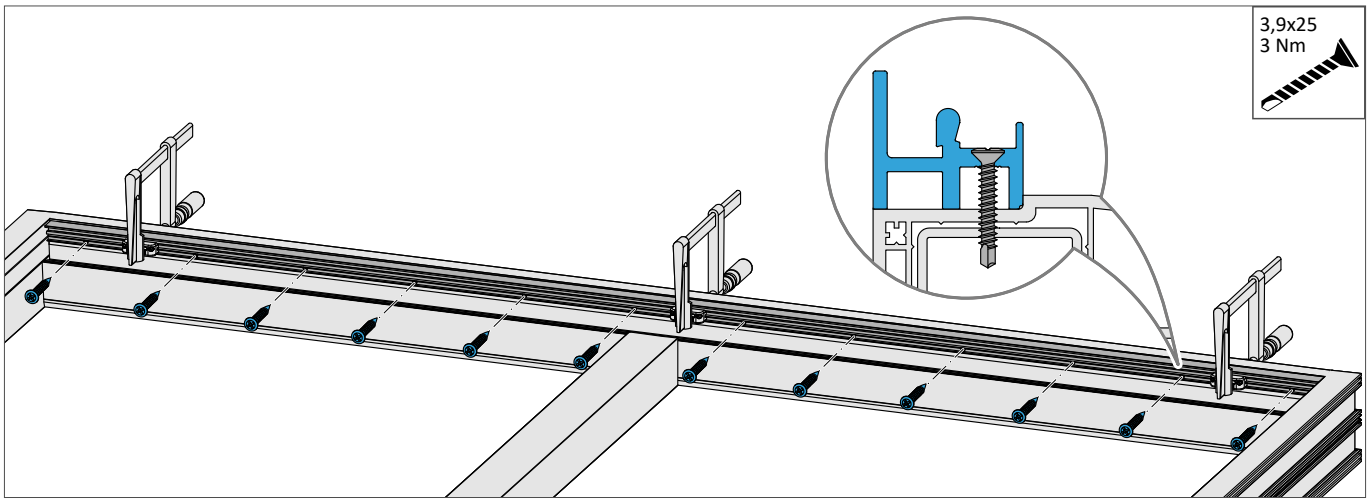
4. Position the multifunctional rail on the frame.



5. Clamp the multifunctional rail to the frame. Old strikers are suitable for clamping.

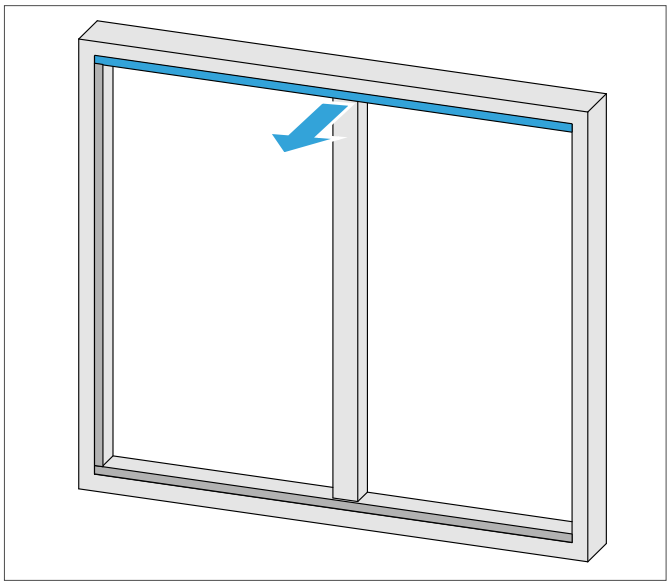


6. Screw the multifunctional rail firmly in place on the frame.

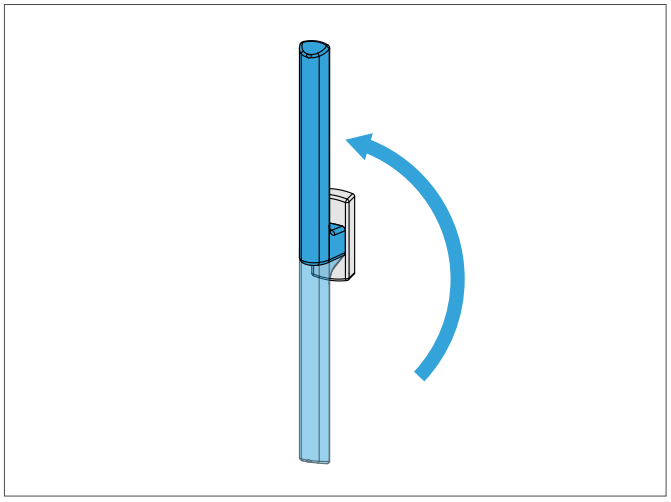


4.4.2 Inserting the sliding sash

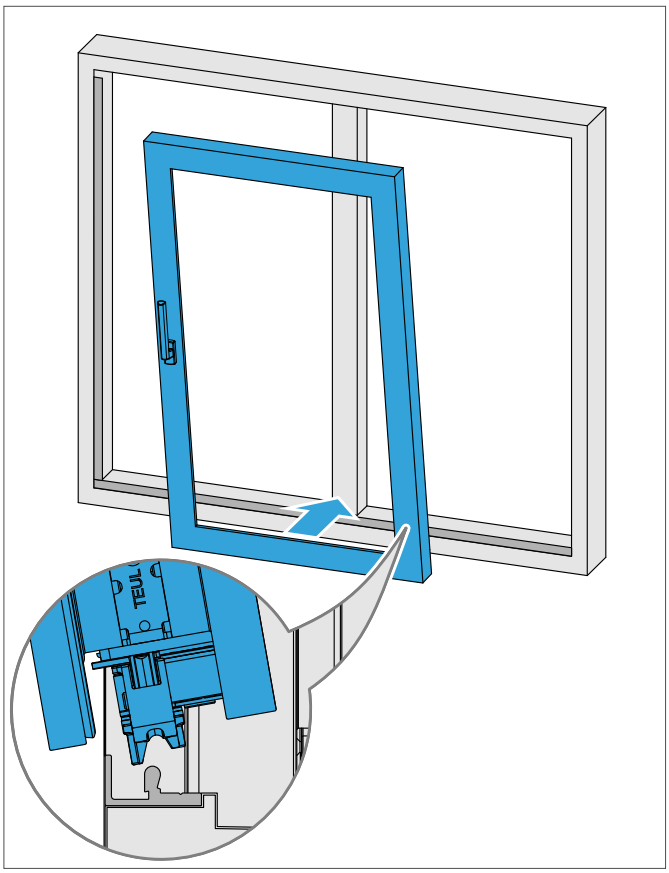
1. Detach the top multifunctional rail.



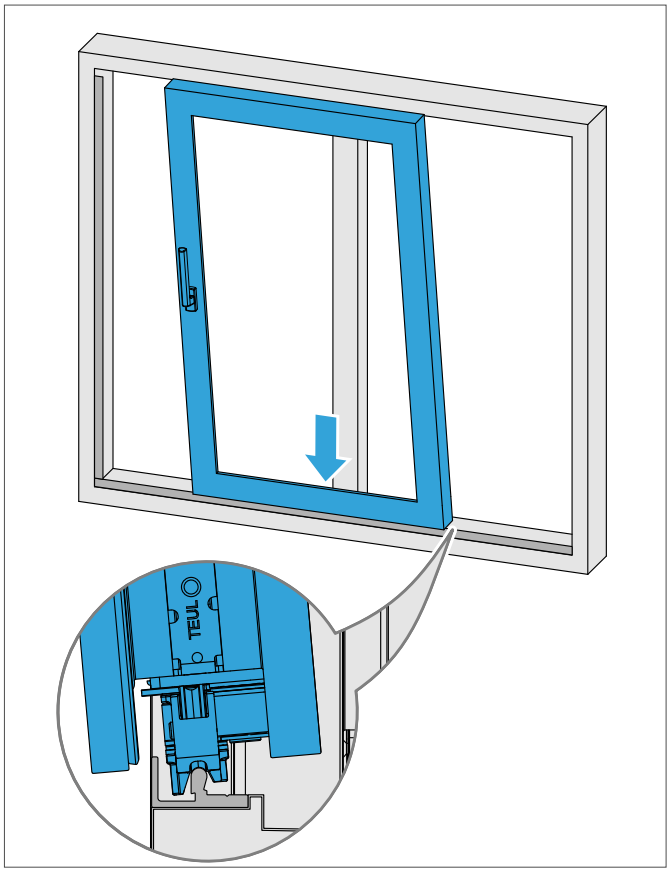
2. Move the handle to the opened position.



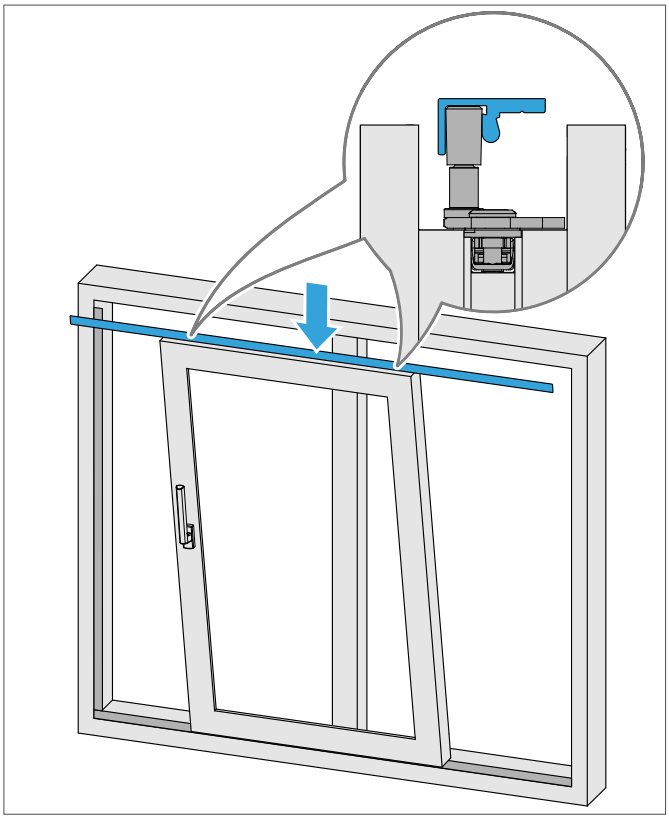
3. Position the sliding sash with the inside rebate on the bottom multifunctional rail.



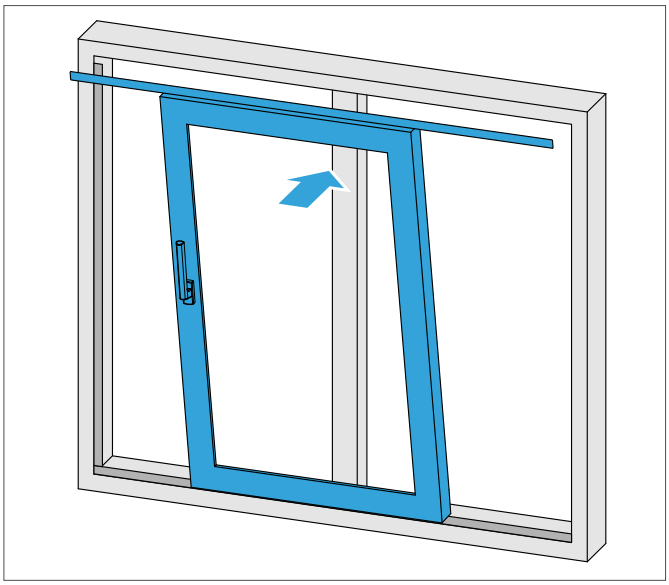
4. Insert the sliding sash into the bottom of the frame so that the bogie wheels are located on the hump of the multifunctional rail.



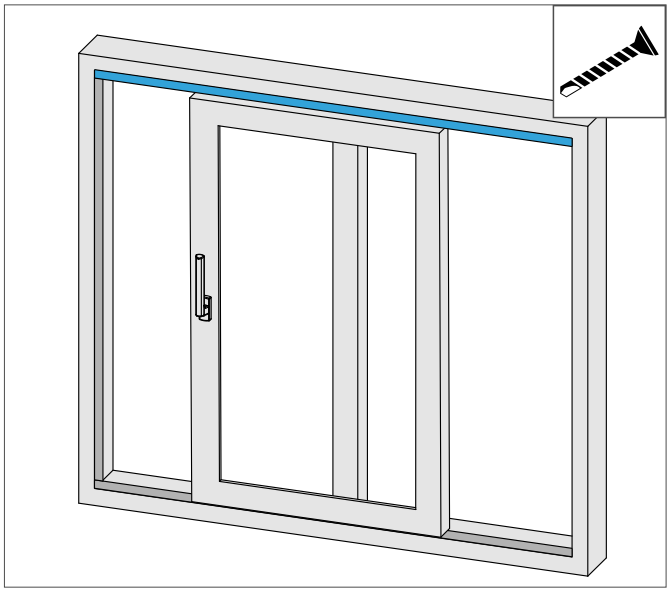
5. Insert the top multifunctional rail into the sash so that the pressure bolts are positioned in the groove of the multifunctional rail.



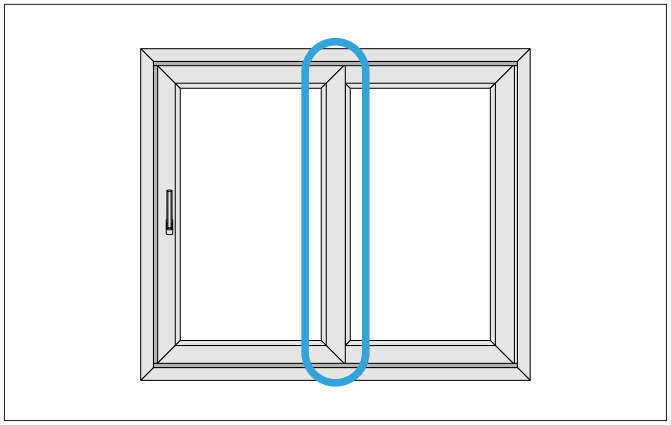
6. Pivot the sliding sash with the multifunctional rail into the frame.



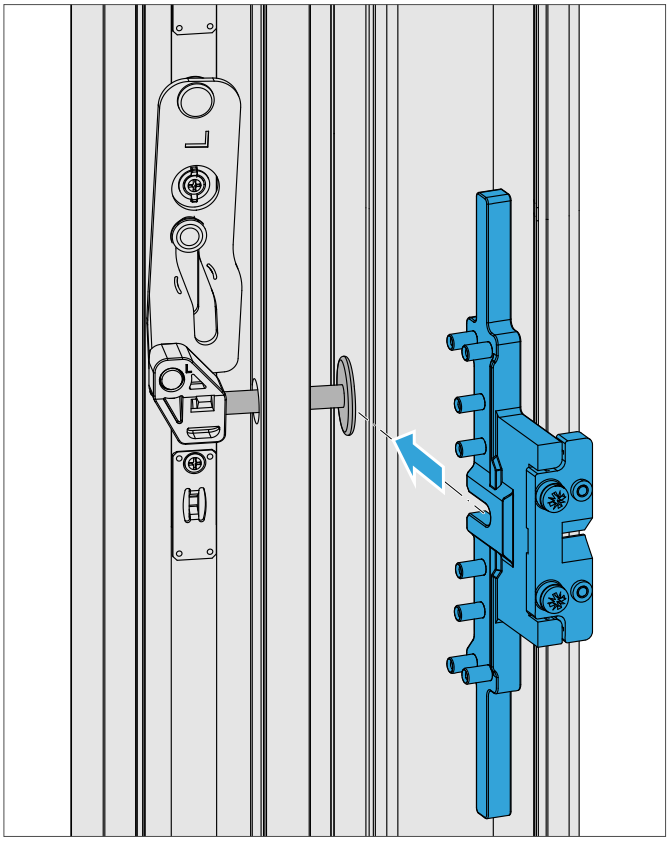
7. Screw the multifunctional rail firmly in place back on the frame.



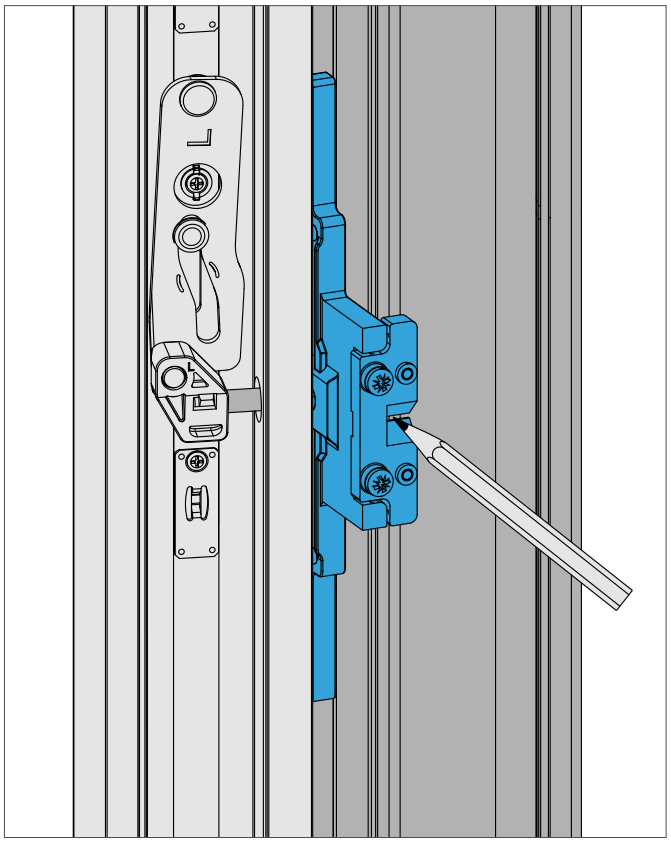
4.4.3 Install the MP striker or the MP-OB striker



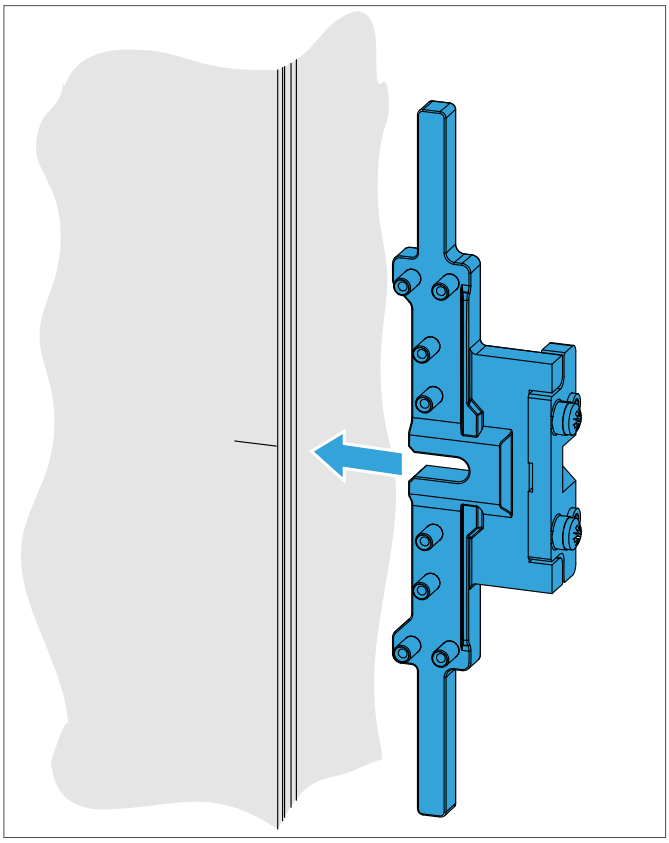
1. Close the sliding sash, but do not lock it. Close the sliding sash, S-MP but do not lock it.



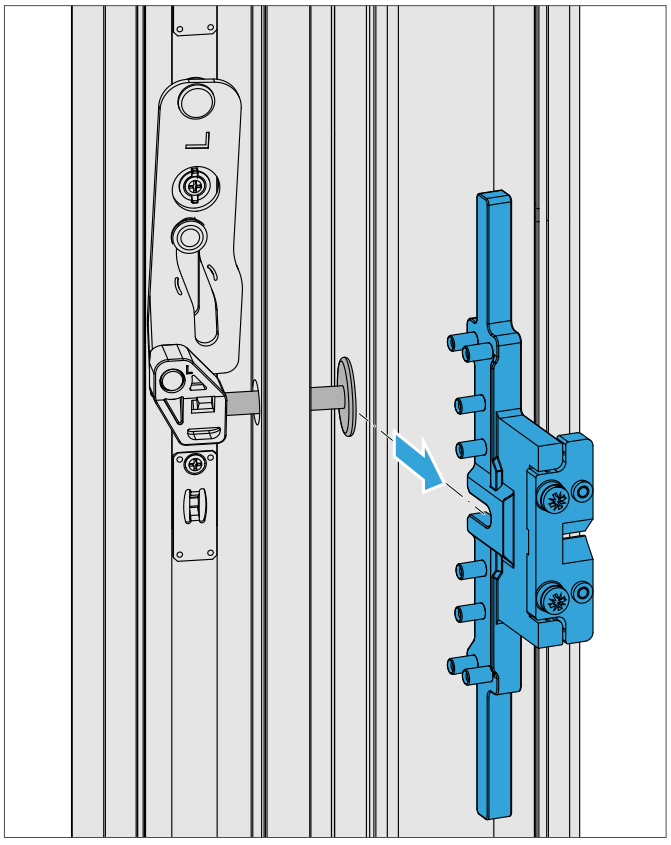
2. Mark the position of the jig on the jamb.



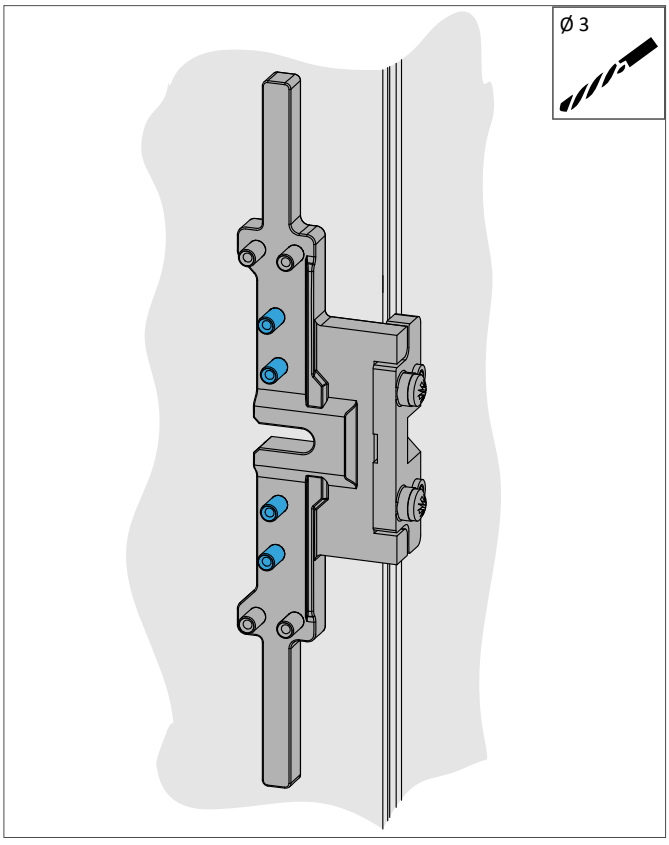
4. Position the jig on the mark on the jamb.



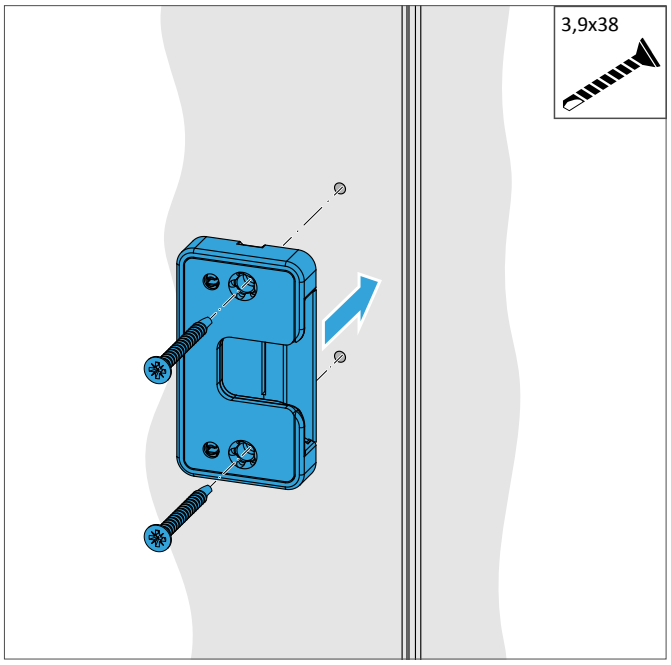
3. Remove the jig and open the sliding sash.



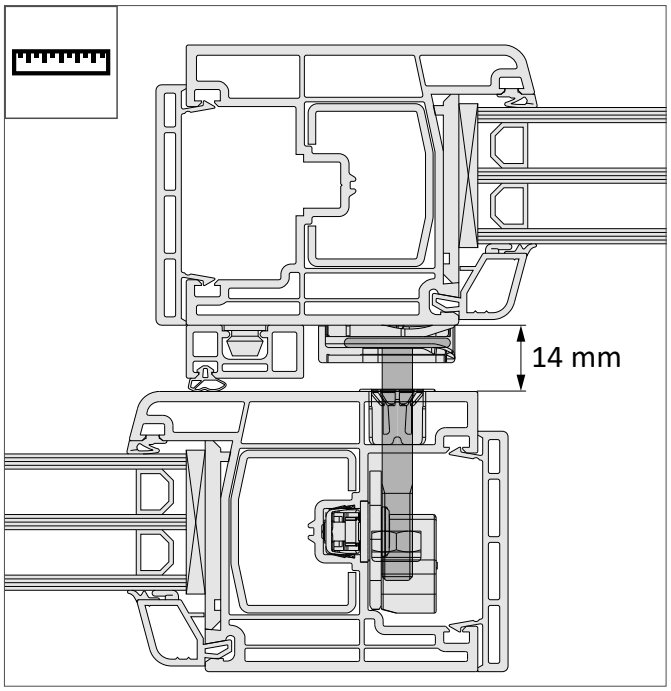
5. Make the holes.



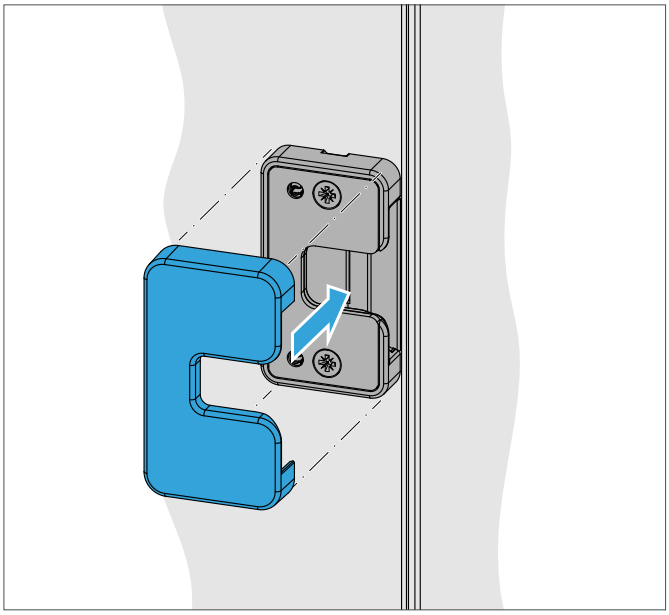
6. Screw the MP striker to the jamb.



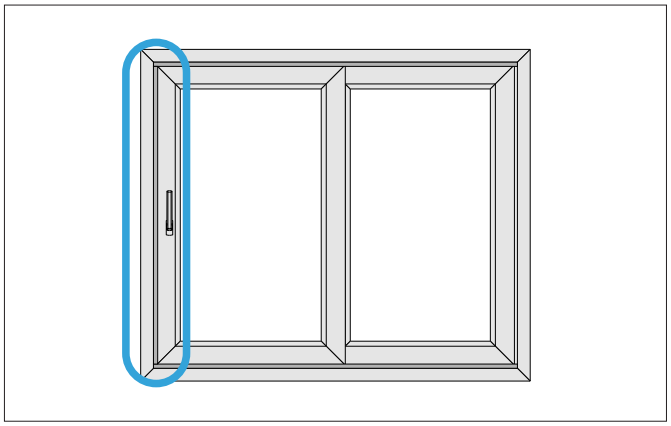
7. Check the interval between the sliding sash and the frame. If necessary: Correct the interval by screwing the locking bolt in or out at 14 mm.



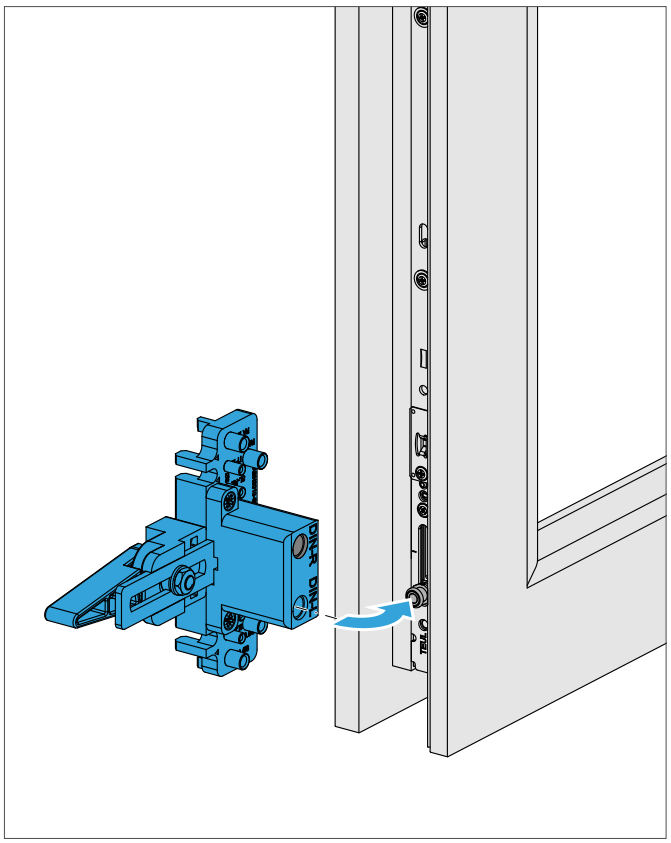
8. Optionally, place the MP cover cap onto the MP striker.



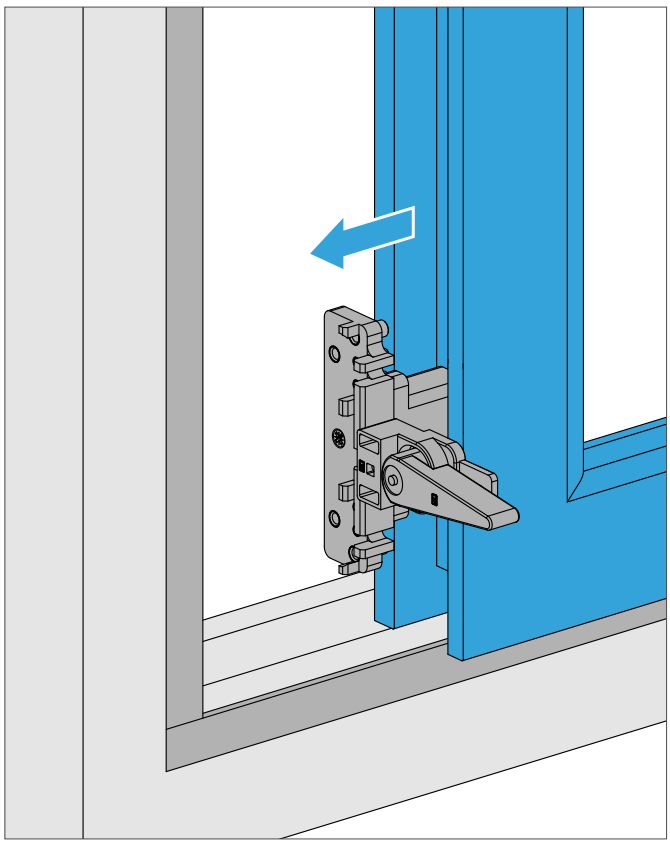
4.4.4 Mounting the VS striker



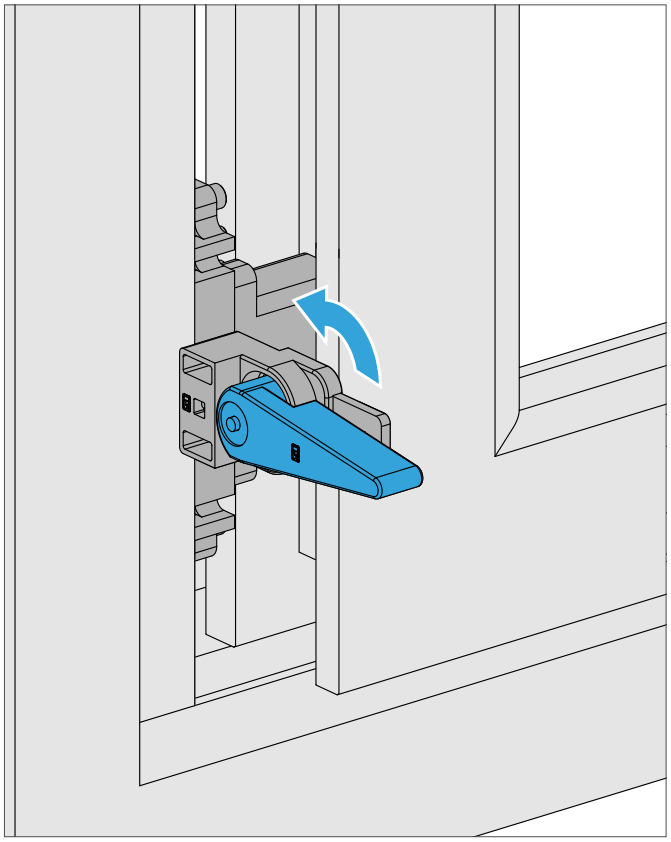
1. Position the PABN3010 jig on the bolt of the gear.



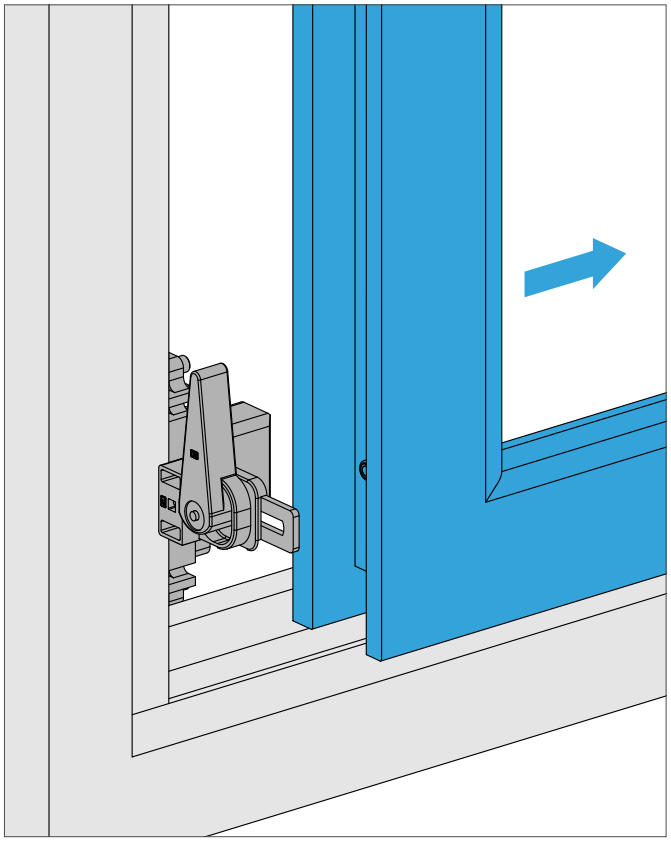
2. Close the sliding sash.



3. Fix the jig to the multifunctional rail. Turn the handle of the jig upwards to do this.

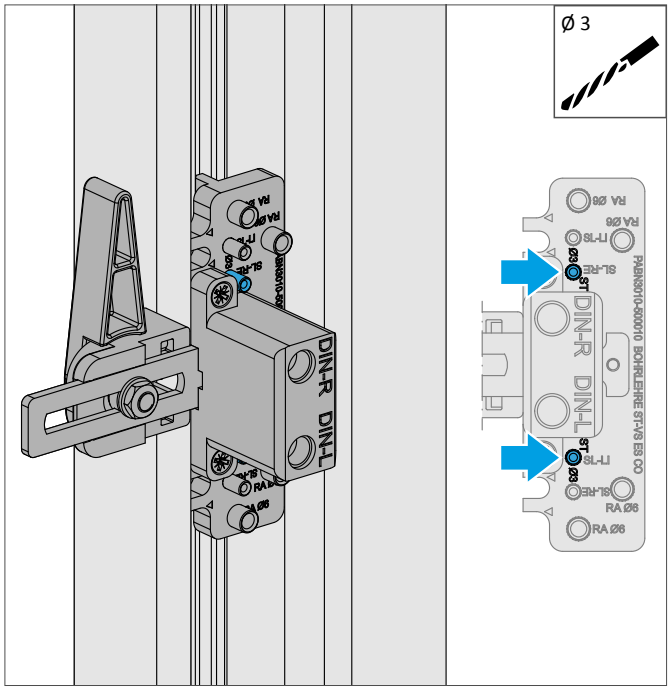


4. Open the sliding sash.

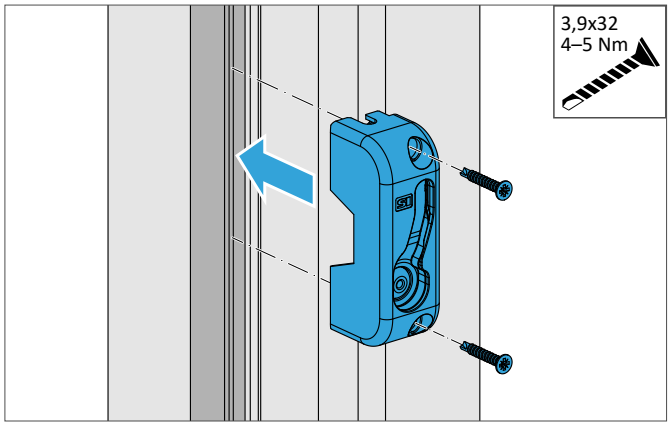


5. If the screw position of the striker is over the screw of the multifunctional rail, remove the screw from the multifunctional rail and screw the striker with the multifunctional rail into the reinforcement using 3.9x50 countersunk head screws.

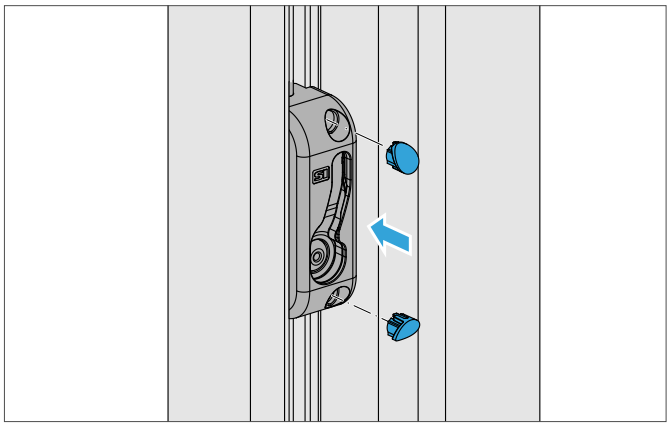
6. Drill the Ø3 mm holes using the ST holes on the jig.



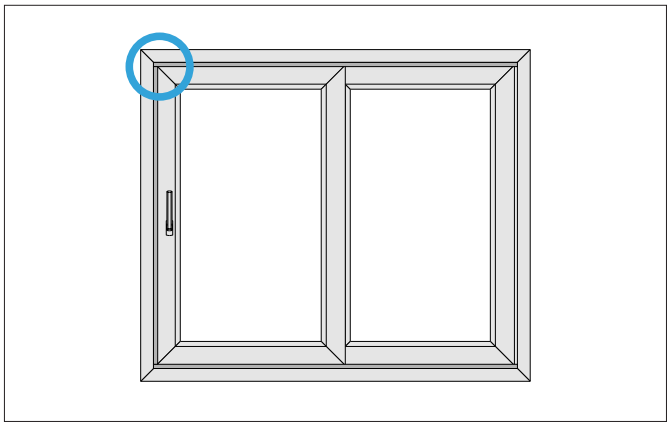
7. Screw the VS striker onto the multifunctional rail with 3.9x32 countersunk head screws. Torque approx. 4–5 Nm.



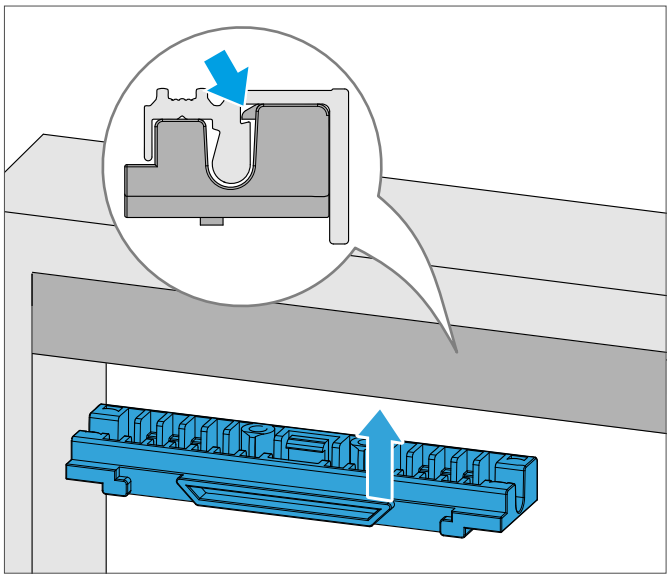
8. Place the caps on the VS striker.



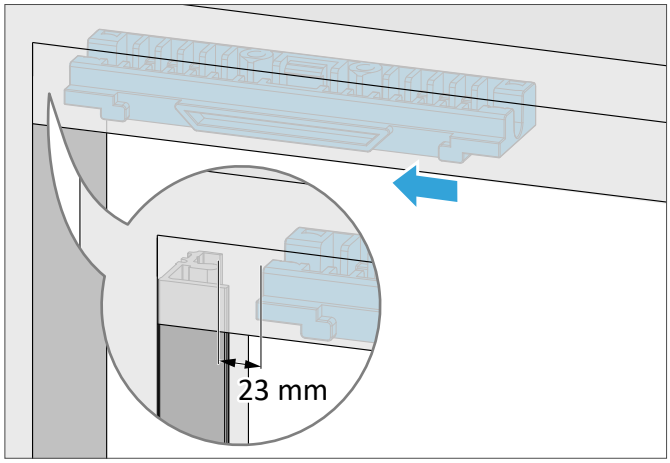
4.4.5 Optional: Install the Soft-Stop



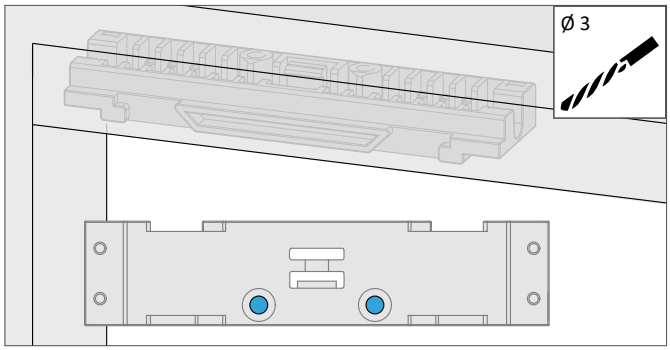
1. Push the base plate onto the multifunctional rail until it audibly snaps into place.



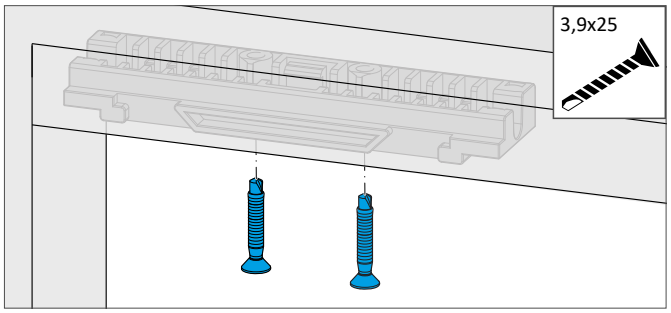
2. Position the base plate 23 mm in front of the multifunctional rail track.



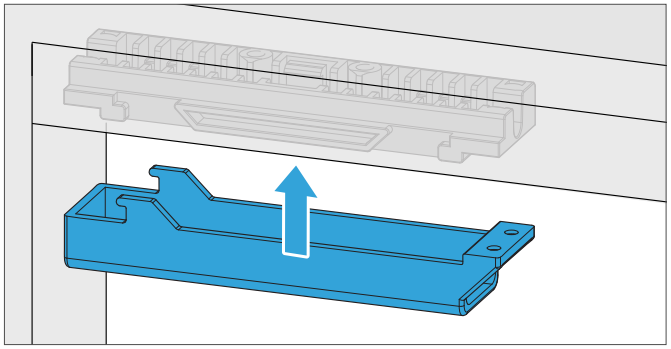
3. Make the holes.



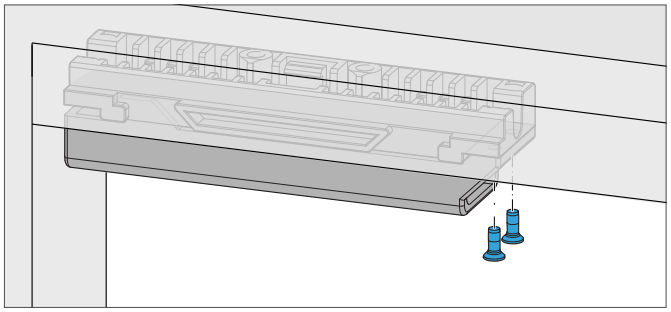
4. Screw the base plate firmly into place.



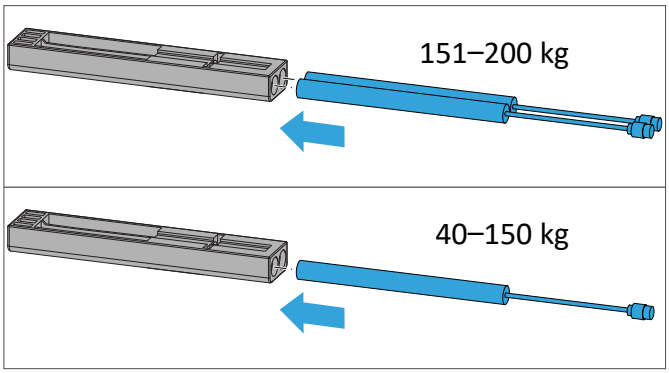
5. Put the casing on the base plate.



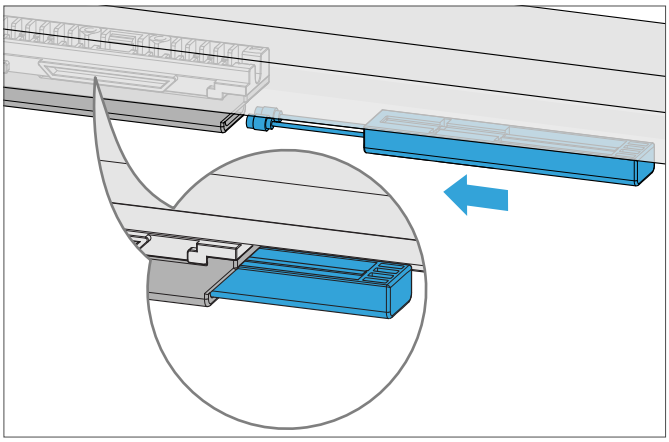
6. Screw the casing firmly into place on the base plate.



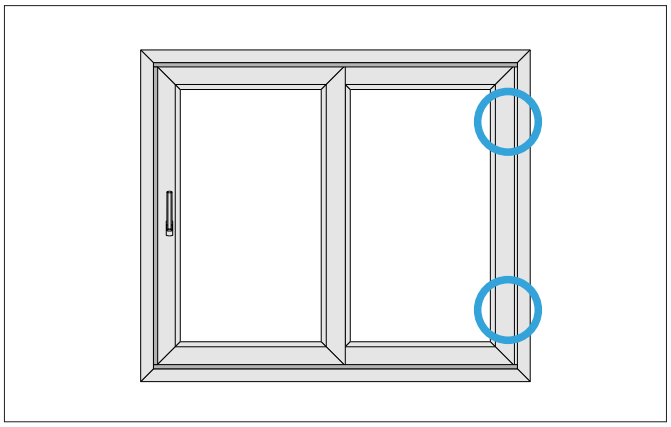
7. Install the damper on the slide.



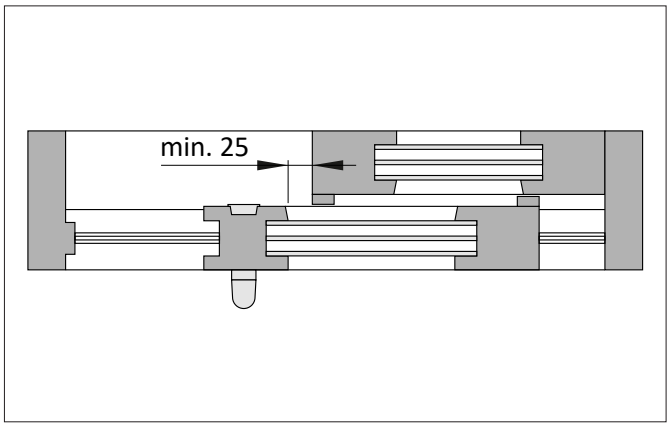
8. Push the slide with damper onto to casing until it audibly snaps into place.



4.4.6 Installing the HS stop

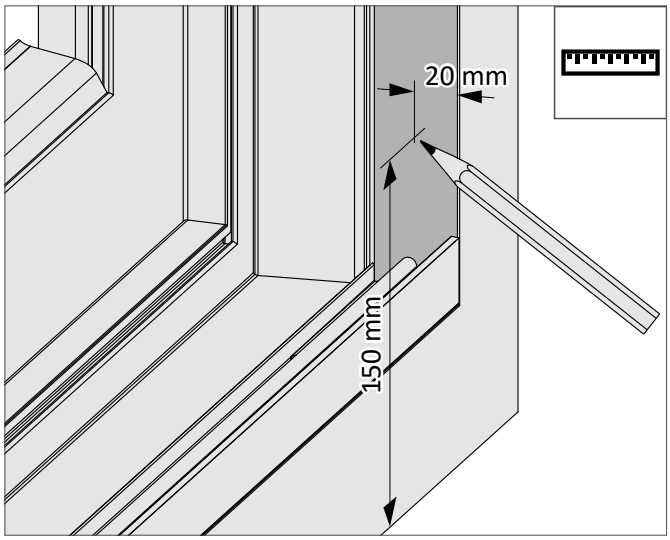


When the sliding sash is opened, a shearing zone is created between the sliding sash and fixed sash, in which body parts can be severed or crushed. Installing a stop prevents a shearing zone from forming. Install the stop in such a way that there is a gap of at least 25 mm in the shearing zone when the sliding sash is opened.

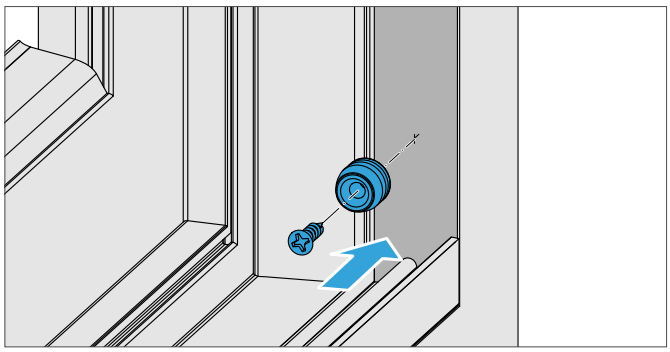


The HS stop only prevents the shearing zone in asymmetrical designs. The ES CO stop must be used for symmetrical designs.

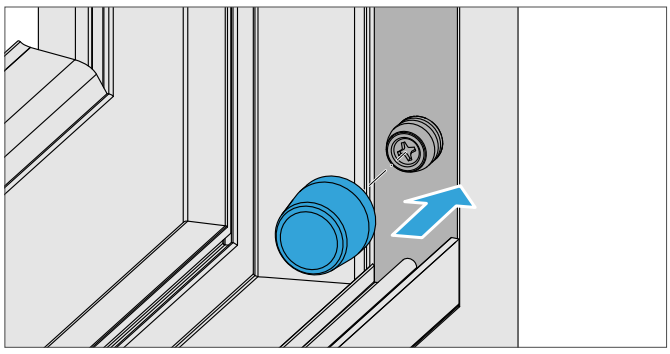
1. Measure and mark the installation dimension of the HS stop.



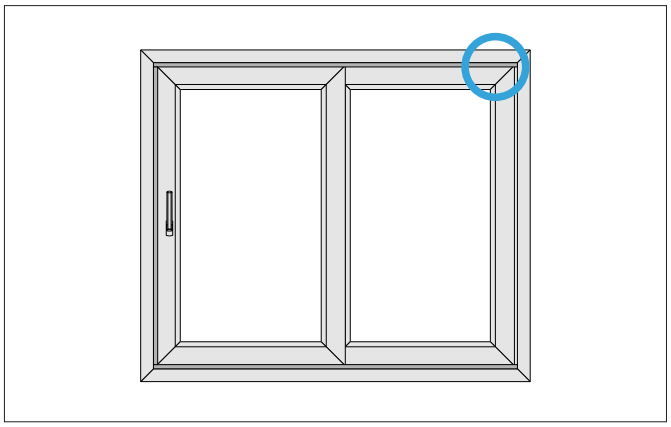
2. Screw the inside of the HS stop securely to the frame.



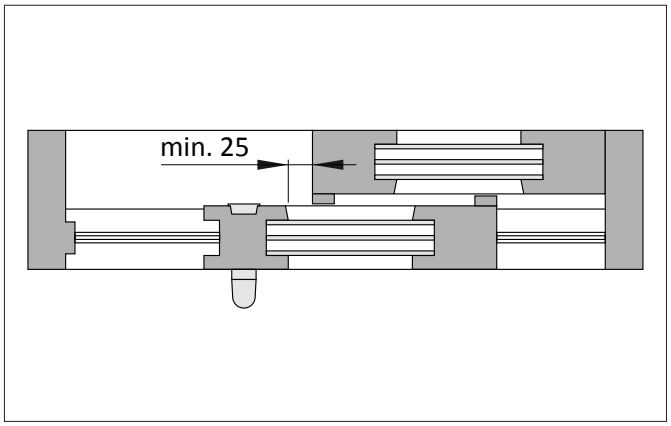
3. Attach the buffer of the HS stop to the inside.



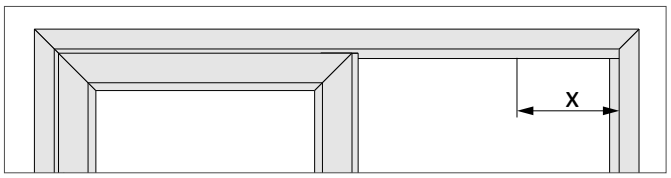
4.4.7 Installing the ES CO stop



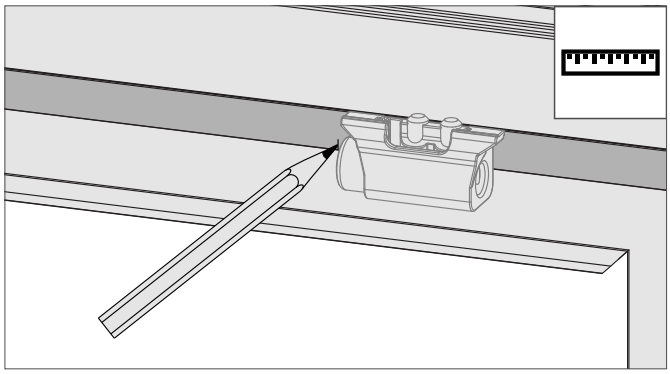
When the sliding sash is opened, a shearing zone is created between the sliding sash and fixed sash, in which body parts can be crushed. To prevent crushing, the interval between sliding sash and fixed sash must be at least 25 mm when the sliding sash is open.



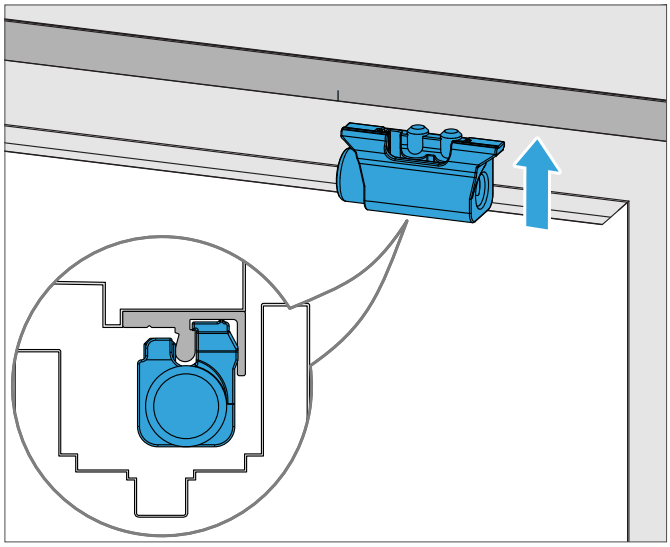
1. Choose the installation position x of the stop so that an interval between sliding sash and fixed sash of at least 25 mm is guaranteed when the sliding sash is open.



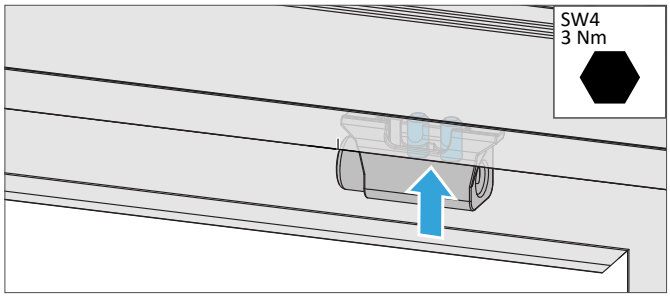
2. Mark the installation position x of the stop on the multifunctional rail.



3. Insert the stop into the multifunctional rail.



4. Fix the stop in the multifunctional rail with a torque of 3 Nm.



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