Always precise

activPilot Ergo

The ergonomically controlled turn-tilt fitting system.

in windows

Product Catalogue 11/2013

Complementary range activPilot Ergo

This catalogue is intended to provide you with detailed information on our activPilot Ergo product range for turn-tilt windows. The activPilot Ergo turn-tilt fitting range is a complement to our extensive activPilot portfolio. You can find the standard activPilot components in our activPilot Concept product catalogue. In case you do not have it available, please ask us for our catalogue. Optionally you can download the currrent catalogue version on www.winkhaus.de. We are always glad to help you.

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Application diagram for ascertaining the admissible sash sizes

Max. sash weight: 80 kg

For PVC-U windows with 12 mm airgap

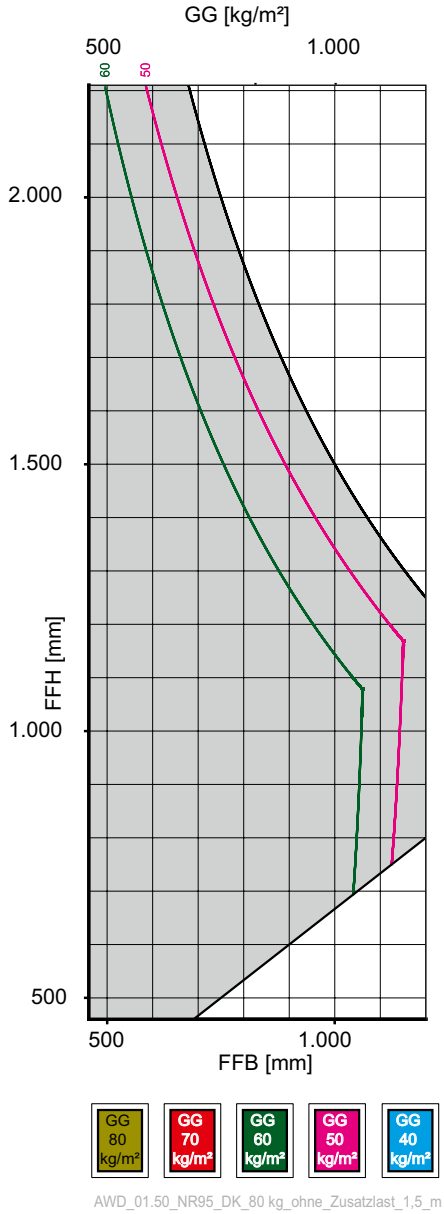
For timber windows with 12 mm airgap

For aluminium windows with 12 mm airgap and 16 mm eurogroove

Turn-tilt sash (DK)

Width-to-height ratio and additional load

Value calculated without additional load for a width-to-height ratio of 1.5:1.
The application diagrams have been established without considering additional loads. For ascertaining the max. sash sizes with additional loads, please ask your Winkhaus contact partners for comprehensive advice!



AWD_01.50_NR95_DK_80 kg_ohne_Zusatzlast_1,5_m

Advice for use

The permissible application range for using Winkhaus fittings is marked grey in the application diagrams. However, please do not take into account the complete grey surface, but only the part which is on the left side of the “filling weight GG” curve.

Abbreviations

- FFB = Sash rebate width [mm]
- FFH = Sash rebate height [mm]
- GG = Glass weight per square metre [kg/m²]

Application range

All fittings must be selected from the original Winkhaus activPilot fitting component range. We accept no liability in case of use of third party or non-approved system components.

- Min. sash rebate width 460 mm
- Max. sash rebate width 1200 mm
- Min. sash rebate height 460 mm
- Max. sash rebate height 2210 mm
- Max. sash size 1.5 m²
- Max. sash weight: 80 kg
- Width-height ratio FFB:FFH ≤ 1.5

Observe instructions on window profile

You must specifically take into account information provided by the profile manufacturer or system owner when determining the maximum sash sizes!

Important: The load-bearing fitting components, such as corner, shear and sash hinges, must be designed according to the TBDK guidelines. Please adapt the drill diameter of the fixing screws, the screw diameter and the screw length to the load situation.

Please observe the directives for window assembly!

When installing a window it is mandatory to observe all the relevant directives for window assembly.

Packing key in the Winkhaus logistics system

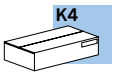
The shipping units were chosen in a way that our products can be handled without any problems at your works, ranging from cardboard packaging to complete pallet units. For instance, we provide KLTs (small load carriers) in different sizes which are eco-friendly and facilitate logistics. The reusable packaging units, which can be stacked on a europallet, have a bar code and enable optimal stock organisation and easy transport to the relevant workstations.
The packaging used for the products in question can be found on the corresponding product pages.

BL Goods packed in PE bags with bar code

KT Goods packed in cardboard boxes with bar code

BD Tied goods

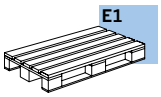
K3 Small cardboard box with bar code Dim.: 395 x 295 x 205 mm



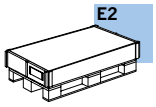
K4 Big cardboard box with bar code Dim: 595 x 395 x 205 mm

KK Small KLT 4321 Dim: 400 x 300 x 214 mm with cover, bar code, sealed, stackable

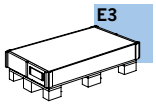
GK Big KLT 6412 Dim: 600 x 400 x 214 mm with cover, bar code, sealed, stackable



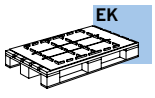
E1 europallet with KLT Pallet size 800 x 1,200 mm



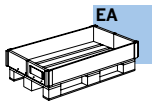
E2 europallet with cover box and bar code Pallet size 800 x 1,200 mm



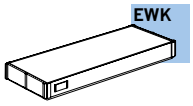
E3 One-way pallet with cover box and bar code



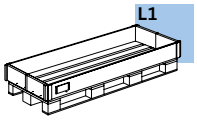
EK Europallet with KLT and fixing plate (avoids shifting of goods) Pallet size 800 x 1,200 mm



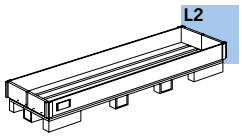
EA Europallet with frame and bar code Pallet size 800 x 1,200 mm



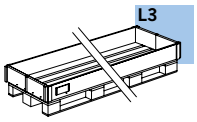
EWK Disposable cardboard box E3, L6 or L7



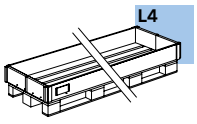
L1 Reusable pallet for long goods with frame and bar code Pallet size 800 x 1,800 mm



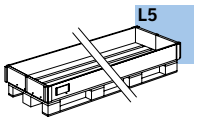
L2 Reusable pallet II for long goods with frame and bar code Pallet size 800 x 2,400 mm



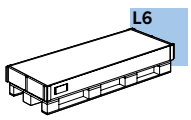
L3 Reusable pallet III for long goods with frame and bar code Pallet size 800 x 3,500 mm



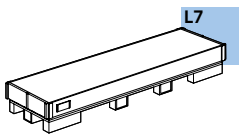
L4 Reusable pallet IV for long goods with frame and bar code Pallet size 800 x 4,200 mm



L5 Reusable pallet V for long goods with frame and bar code Pallet size 800 x 6,500 mm



L6 One-way pallet with cover box for long goods with bar code Pallet size 800 x 1,800 mm



L7 One-way pallet with cover box for long goods with bar code Pallet size 800 x 2,400 mm

Turn-tilt fitting – constant handle position

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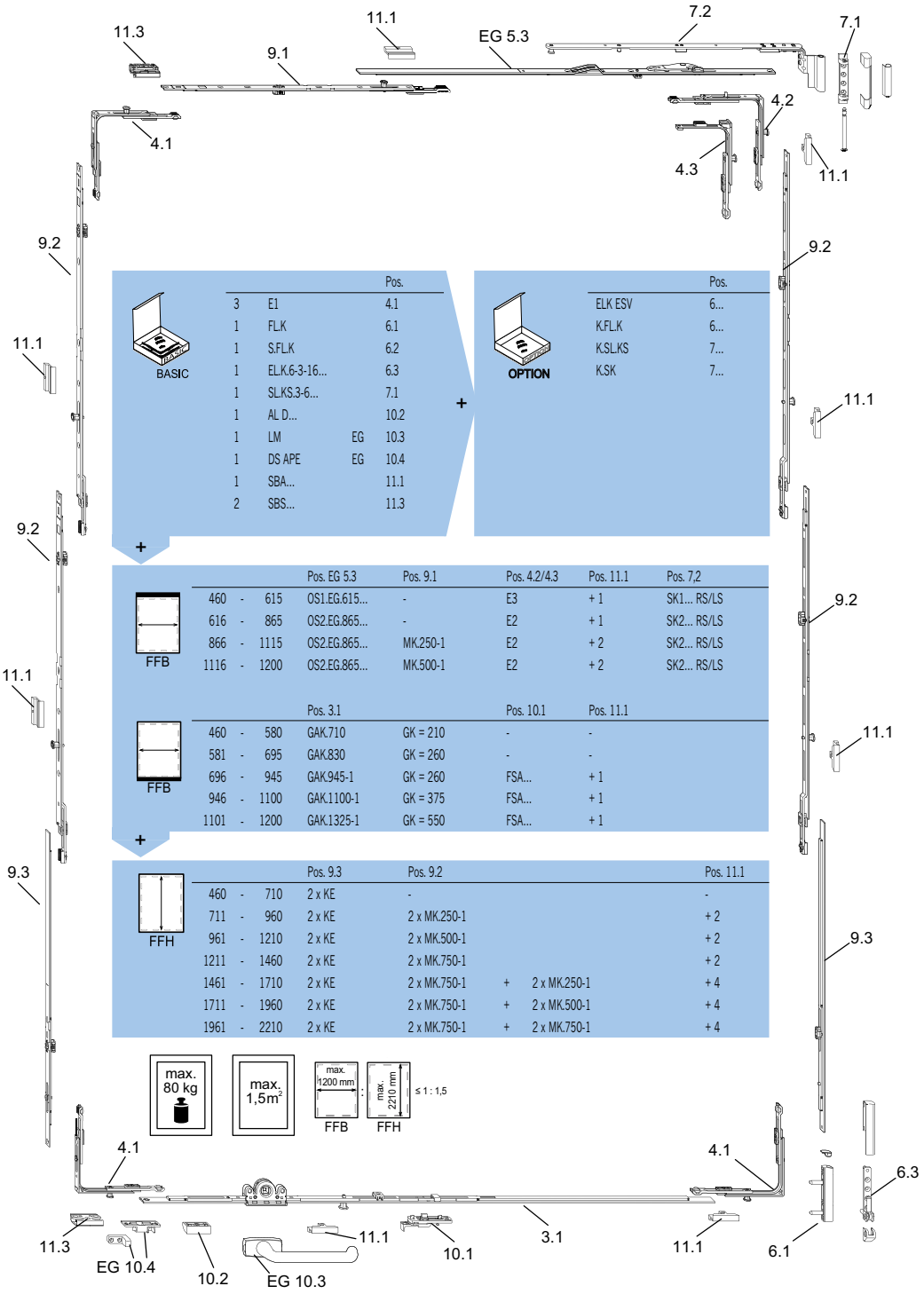


Pos.		
3	E1	4.1
1	FL.K	6.1
1	S.FL.K	6.2
1	EL.K.6-3-16...	6.3
1	SL.KS.3-6...	7.1
1	AL D...	10.2
1	LM EG	10.3
1	DS APE EG	10.4
1	SBA...	11.1
2	SBS...	11.3

Pos.	
ELK ESV	6...
K.FL.K	6...
K.SL.KS	7...
K.SK	7...

	Pos. EG 5.3	Pos. 9.1	Pos. 4.2/4.3	Pos. 11.1	Pos. 7,2
460 - 615	OS1.EG.615...	-	E3	+ 1	SK1... RS/LS
616 - 865	OS2.EG.865...	-	E2	+ 1	SK2... RS/LS
866 - 1115	OS2.EG.865...	MK.250-1	E2	+ 2	SK2... RS/LS
1116 - 1200	OS2.EG.865...	MK.500-1	E2	+ 2	SK2... RS/LS

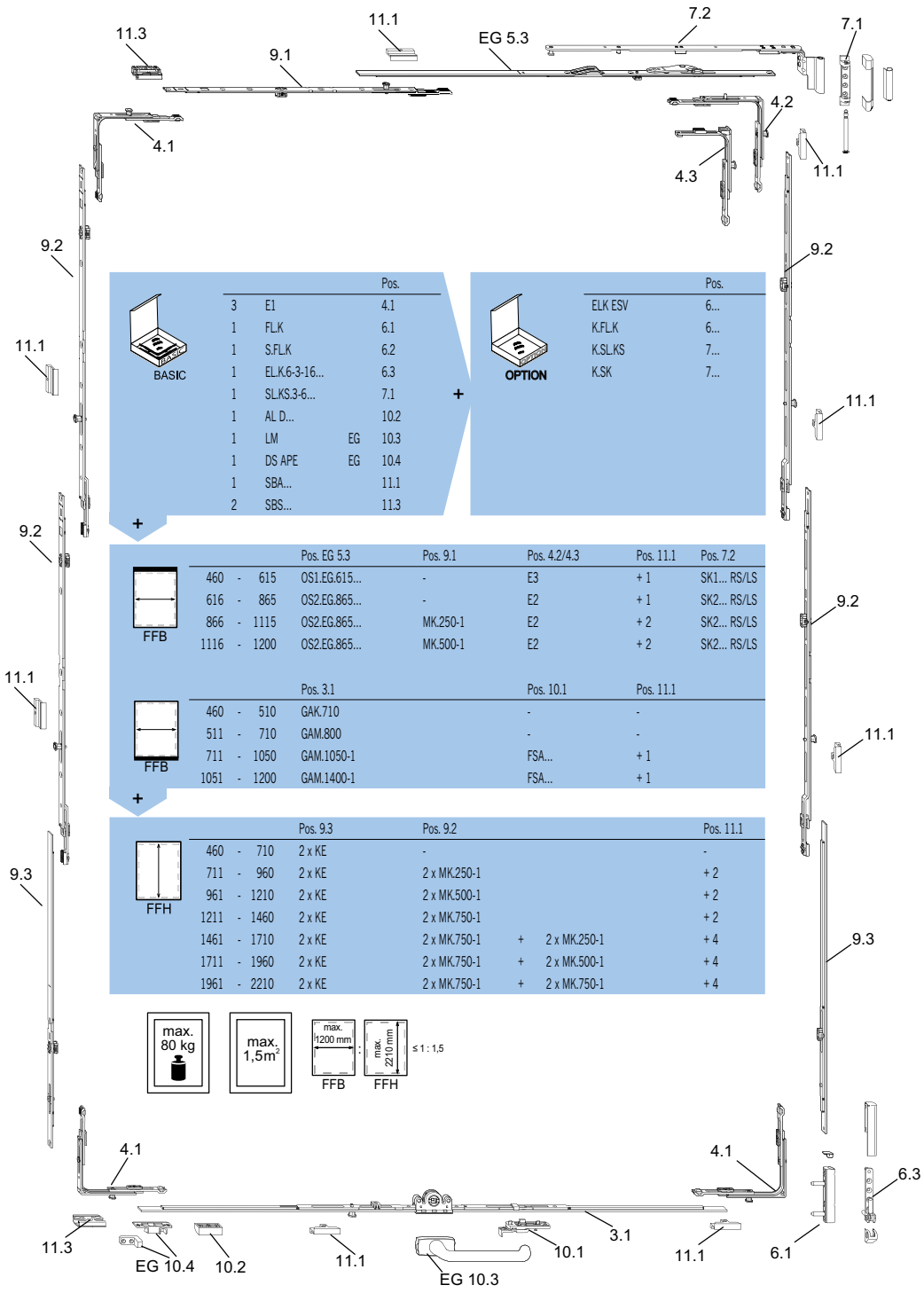
	Pos. 3.1		Pos. 10.1	Pos. 11.1
460 - 580	GAK.710	GK = 210	-	-
581 - 695	GAK.830	GK = 260	-	-
696 - 945	GAK.945-1	GK = 260	FSA...	+ 1
946 - 1100	GAK.1100-1	GK = 375	FSA...	+ 1
1101 - 1200	GAK.1325-1	GK = 550	FSA...	+ 1

	Pos. 9.3	Pos. 9.2	Pos. 11.1
460 - 710	2 x KE	-	-
711 - 960	2 x KE	2 x MK.250-1	+ 2
961 - 1210	2 x KE	2 x MK.500-1	+ 2
1211 - 1460	2 x KE	2 x MK.750-1	+ 2
1461 - 1710	2 x KE	2 x MK.750-1 + 2 x MK.250-1	+ 4
1711 - 1960	2 x KE	2 x MK.750-1 + 2 x MK.500-1	+ 4
1961 - 2210	2 x KE	2 x MK.750-1 + 2 x MK.750-1	+ 4

Please pay attention to the application diagrams!
Standard components can be found in the activPilot Concept product catalogue.

Turn-tilt fitting – central handle position

activPilot Ergo



		Pos.
3	E1	4.1
1	FL.K	6.1
1	S.FL.K	6.2
1	EL.K.6-3-16...	6.3
1	SL.KS.3-6...	7.1
1	AL D...	10.2
1	LM EG	10.3
1	DS APE EG	10.4
1	SBA...	11.1
2	SBS...	11.3

	Pos.
ELK ESV	6...
K.FL.K	6...
K.SL.KS	7...
K.SK	7...

	Pos. EG 5.3	Pos. 9.1	Pos. 4.2/4.3	Pos. 11.1	Pos. 7.2
460 - 615	OS1.EG.615...	-	E3	+ 1	SK1... RS/LS
616 - 865	OS2.EG.865...	-	E2	+ 1	SK2... RS/LS
866 - 1115	OS2.EG.865...	MK.250-1	E2	+ 2	SK2... RS/LS
1116 - 1200	OS2.EG.865...	MK.500-1	E2	+ 2	SK2... RS/LS

	Pos. 3.1	Pos. 10.1	Pos. 11.1
460 - 510	GAK.710	-	-
511 - 710	GAM.800	-	-
711 - 1050	GAM.1050-1	FSA...	+ 1
1051 - 1200	GAM.1400-1	FSA...	+ 1

	Pos. 9.3	Pos. 9.2	Pos. 11.1
460 - 710	2 x KE	-	-
711 - 960	2 x KE	2 x MK.250-1	+ 2
961 - 1210	2 x KE	2 x MK.500-1	+ 2
1211 - 1460	2 x KE	2 x MK.750-1	+ 2
1461 - 1710	2 x KE	2 x MK.750-1 + 2 x MK.250-1	+ 4
1711 - 1960	2 x KE	2 x MK.750-1 + 2 x MK.500-1	+ 4
1961 - 2210	2 x KE	2 x MK.750-1 + 2 x MK.750-1	+ 4

Please pay attention to the application diagrams!
Standard components can be found in the activPilot Concept product catalogue.

Turn-tilt fitting – constant handle position

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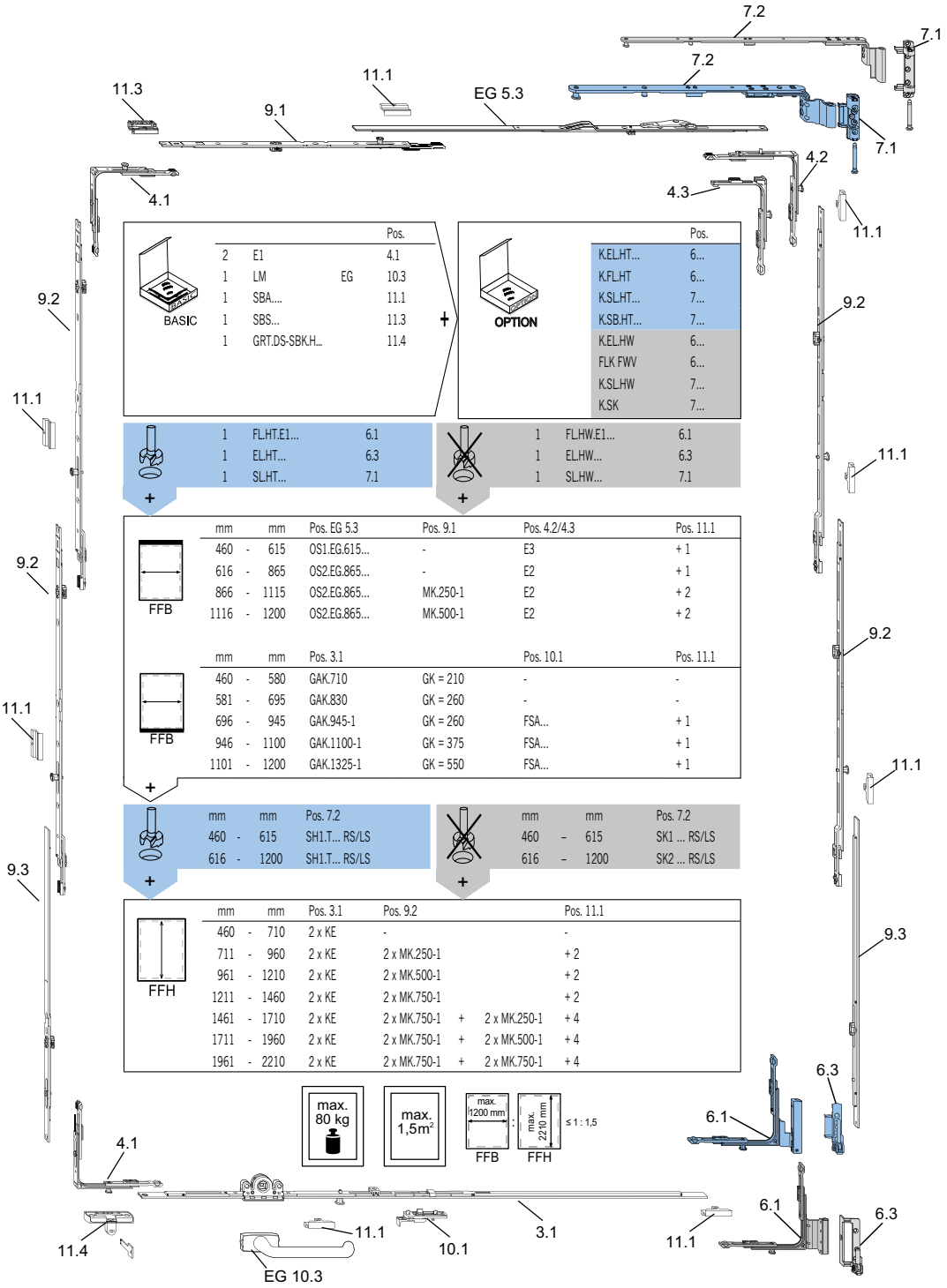
activPilot Ergo



			Pos.
2	E1		4.1
1	LM	EG	10.3
1	SBA....		11.1
1	SBS...		11.3
1	GRT.DS-SBK.H...		11.4

	Pos.
K.EL.HT...	6...
K.FL.HT	6...
K.SL.HT...	7...
K.SB.HT...	7...
K.EL.HW	6...
FLK FWV	6...
K.SL.HW	7...
K.SK	7...

1	FL.HT.E1...		6.1
1	EL.HT...		6.3
1	SL.HT...		7.1

1	FL.HW.E1...		6.1
1	EL.HW...		6.3
1	SL.HW...		7.1

mm		mm	Pos. EG 5.3	Pos. 9.1	Pos. 4.2/4.3	Pos. 11.1
460	-	615	OS1.EG.615...	-	E3	+ 1
616	-	865	OS2.EG.865...	-	E2	+ 1
866	-	1115	OS2.EG.865...	MK.250-1	E2	+ 2
1116	-	1200	OS2.EG.865...	MK.500-1	E2	+ 2

mm		mm	Pos. 3.1		Pos. 10.1	Pos. 11.1
460	-	580	GAK.710	GK = 210	-	-
581	-	695	GAK.830	GK = 260	-	-
696	-	945	GAK.945-1	GK = 260	FSA...	+ 1
946	-	1100	GAK.1100-1	GK = 375	FSA...	+ 1
1101	-	1200	GAK.1325-1	GK = 550	FSA...	+ 1

mm		mm	Pos. 7.2
460	-	615	SH1.T... RS/LS
616	-	1200	SH1.T... RS/LS

mm		mm	Pos. 7.2
460	–	615	SK1 ... RS/LS
616	–	1200	SK2 ... RS/LS

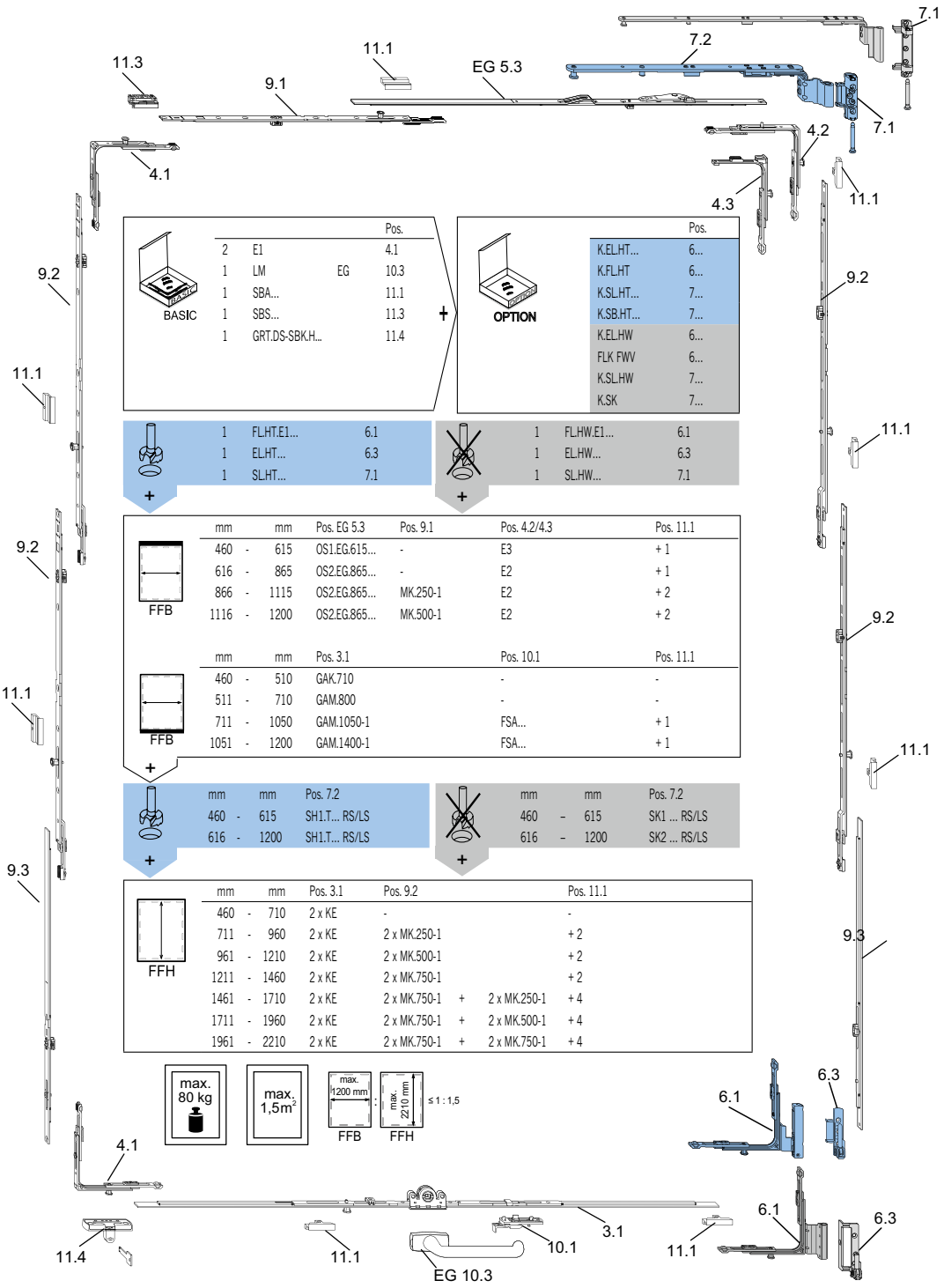
mm		mm	Pos. 3.1	Pos. 9.2	Pos. 11.1
460	-	710	2 x KE	-	-
711	-	960	2 x KE	2 x MK.250-1	+ 2
961	-	1210	2 x KE	2 x MK.500-1	+ 2
1211	-	1460	2 x KE	2 x MK.750-1	+ 2
1461	-	1710	2 x KE	2 x MK.750-1 + 2 x MK.250-1	+ 4
1711	-	1960	2 x KE	2 x MK.750-1 + 2 x MK.500-1	+ 4
1961	-	2210	2 x KE	2 x MK.750-1 + 2 x MK.750-1	+ 4

Please pay attention to the application diagrams!
Standard components can be found in the activPilot Concept product catalogue.

Turn-tilt fitting – central handle position

H12

activPilot Ergo



			Pos.
2	E1		4.1
1	LM	EG	10.3
1	SBA...		11.1
1	SBS...		11.3
1	GRT.DS-SBK.H...		11.4

	Pos.
K.EL.HT...	6...
K.FL.HT	6...
K.SL.HT...	7...
K.SB.HT...	7...
K.EL.HW	6...
FLK FWV	6...
K.SL.HW	7...
K.SK	7...

1	FL.HT.E1...		6.1
1	EL.HT...		6.3
1	SL.HT...		7.1

1	FL.HW.E1...		6.1
1	EL.HW...		6.3
1	SL.HW...		7.1

FFB

mm		mm	Pos. EG 5.3	Pos. 9.1	Pos. 4.2/4.3	Pos. 11.1
460	-	615	OS1.EG.615...	-	E3	+ 1
616	-	865	OS2.EG.865...	-	E2	+ 1
866	-	1115	OS2.EG.865...	MK.250-1	E2	+ 2
1116	-	1200	OS2.EG.865...	MK.500-1	E2	+ 2

FFB

mm		mm	Pos. 3.1	Pos. 10.1	Pos. 11.1
460	-	510	GAK.710	-	-
511	-	710	GAM.800	-	-
711	-	1050	GAM.1050-1	FSA...	+ 1
1051	-	1200	GAM.1400-1	FSA...	+ 1

mm		mm	Pos. 7.2
460	-	615	SH1.T... RS/LS
616	-	1200	SH1.T... RS/LS

mm		mm	Pos. 7.2
460	-	615	SK1 ... RS/LS
616	-	1200	SK2 ... RS/LS

FFH

mm		mm	Pos. 3.1	Pos. 9.2			Pos. 11.1
460	-	710	2 x KE	-			-
711	-	960	2 x KE	2 x MK.250-1			+ 2
961	-	1210	2 x KE	2 x MK.500-1			+ 2
1211	-	1460	2 x KE	2 x MK.750-1			+ 2
1461	-	1710	2 x KE	2 x MK.750-1	+	2 x MK.250-1	+ 4
1711	-	1960	2 x KE	2 x MK.750-1	+	2 x MK.500-1	+ 4
1961	-	2210	2 x KE	2 x MK.750-1	+	2 x MK.750-1	+ 4

Please pay attention to the application diagrams!
Standard components can be found in the activPilot Concept product catalogue.



Top rod OS..EG..

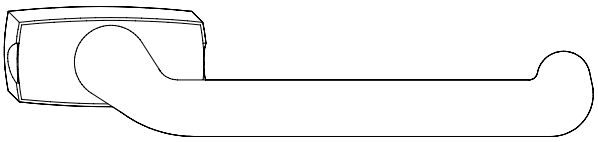
- With pull-in device for the tilt position
- Frame rebate depth min. 30 mm
- Overlapping system linkage without connecting plates
- Used in combination with shears SK1/SK2 or SH1/SH2
- Central fastening as standard
- Cutting area 250 mm
- Drilling and milling instructions for frame rebate depths < 30 mm see group 15, installation drawings B-5-1

Article description	Article No.		VPA1		VPA2		VPA3
			Qty.	Type	Qty.	Type	
OS1.EG.615.RS	5005427	2	20	BD	800	EA	
OS1.EG.615.LS	5005428	2	20	BD	800	EA	
OS2.EG.865.RS	5005429	3	20	BD	800	EA	
OS2.EG.865.LS	5005430	3	20	BD	800	EA	



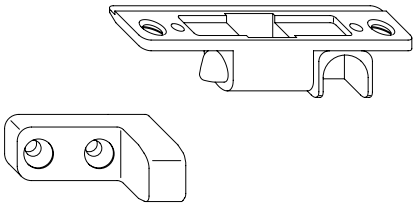
LM round handle

- Surface finish: white, brown or EV1
- Plug with ø 10 mm
- 7 mm spindle
- Handle length 170 mm



Article description	Article No.	VPA1		VPA2		VPA3	
		Qty.	Type	Qty.	Type	Qty.	Type
LM-RG WS	1468449	1	BL	20	KK	480	EK
LM-RG BR	1468318	1	BL	20	KK	160	EK
LM-RG EV 1	1468300	1	BL	20	KK	160	EK
LM-RG CW	4969580	1	BL	20	KK	160	EK

Rotation stop device DS APE



- Rotation stop device automatically closing
- Extension rod in tilt position
- Easy mounting with attached driling jig
- Smallest packaging unit consists of:
  10 x sash part rotation stop device DS APE,
  10 x frame part rotation stop device DS APE,
  1 x drilling jig DS APE

Article description	Article No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
DS APE WS	2221860	4	10	BL	100	KK	800	EK

Mounting instructions

Notes on these assembly instructions

Prerequisites

The mounting instructions are designed for mounting Winkhaus activPilot fittings for windows and glazed doors only. Fittings are designed for the following sash rebate sizes and sash weights:

- Min. sash rebate width 460 mm
- Max. sash rebate width 1200 mm
- Min. sash rebate height 460 mm
- Max. sash rebate height 2210 mm
- Max. sash size 1.5 m²
- Max. sash weight: 80 kg
- Width-height ratio FFB:FFH ≤ 1.5

Persons involved in mounting fittings must have read and understood this fitting guide. For all work with fittings, always follow Winkhaus' Product Liability Information. The manufacturer will accept no liability in case of failure to comply with this guide, deployment of insufficiently qualified staff and unauthorised alterations.

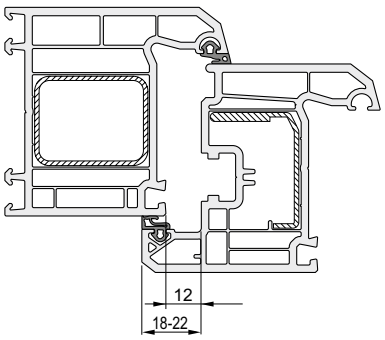
All fittings must be selected from the original Winkhaus activPilot fitting component range. We accept no liability in case of use of third party or non-approved system components.

Attention! Winkhaus does not provide fastening screws for fittings. Always use fastening screws suitable for the window type and window dimensions.

Standard profile dimensions

See figure: Profile cross-section

The fitting is suitable for all PVC-U windows with standard fitting groove and designed for an airgap of 12 mm and overlaps of 18 to 22 mm.



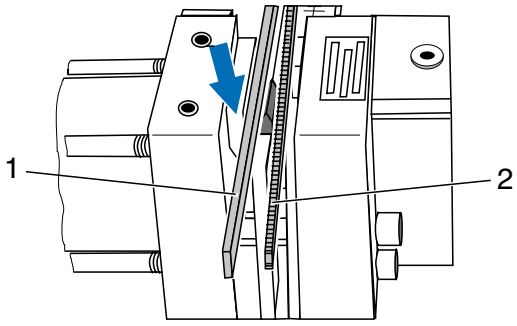
Profile cross-section

Shortening the fittings

A detailed description on shortening of fittings is available here. This description will be referred to in these assembly instructions.

See figure: Fittings prior to punching

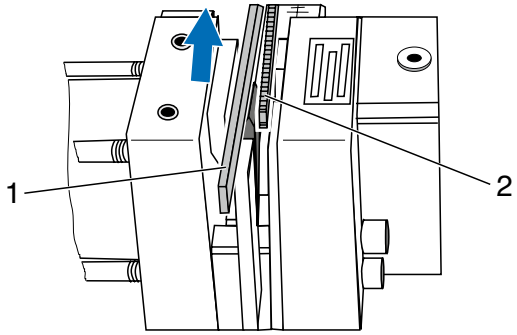
- Always insert the face plate (1) and drive rod (2) perpendicularly from the top with the face plate (1) pointing to the pressure cylinder.



Fittings prior to punching

See figure: Fittings after punching

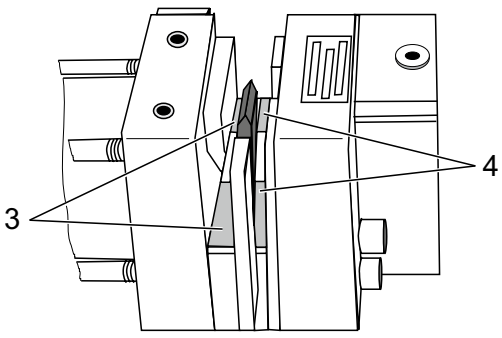
- After punching, always remove the face plate (1) and drive rod (2) perpendicularly in an upwards direction.



Fittings after punching

See figure: Cleaning the supporting surfaces

- Keep the supporting surfaces (3) and (4) clean.



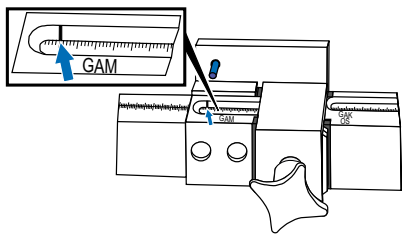
Cleaning the supporting surfaces

Shorten the drive rod GAM (central handle position)

See figure: Marking GAM

- Adjust the measured value FFB to the GAM mark on the measuring device.

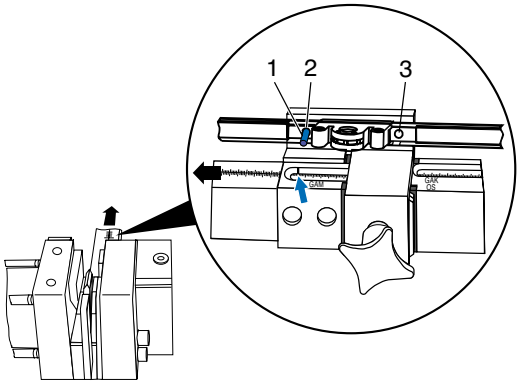
Attention! If the GAM scale is displaced by one sub-marking, this corresponds to a longitudinal shift of 2 mm.



Marking GAM

See figure: Position for shortening drive rod

- Position the GAM drive rod at the scale; slot drill hole (2) onto bolt (1).
- Turn the GAM drive rod around, and slot the drill hole (3) onto the bolt (1), then trim the other side.
- Shorten the drive rod using the fitting punch.

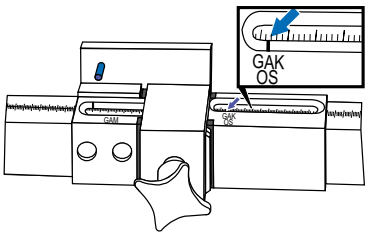


Position for shortening drive rod

Cutting the Drive Rod GAK to length (constant handle position)

See figure: Markings GAK and OS

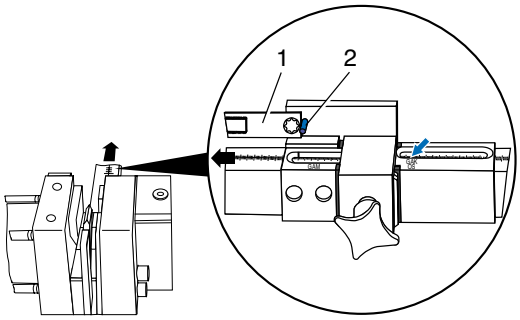
- Adjust the measured value FFB (GAK) to the GAK/OS mark on the measuring device.



Markings GAK and OS

See figure: Position for shortening drive rod and/or top rod

- Cutting the top rod OS...
  - Position the drive rod GAK/GASK (fixed handle position) (1) or the top rod OS (1) at the bolt (2).
  - Shorten the drive rod (1) or the top rod (1).



Position for shortening drive rod and/or top rod

Mounting of fittings on sash

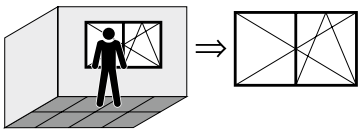
Turn-tilt type – Rectangular window

Prepare the window for fitting. Then proceed as follows:

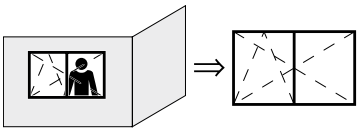
Please note: The following figures refer to a window for right-hand use. When fitting a window for left-hand use, the figures will be mirror-inverted.

The following also applies:

- When viewing the window from the inside, the symbol is depicted as a full line.



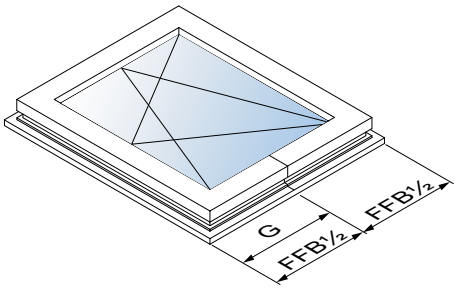
- When viewing the window from the outside, the symbol is depicted as a dotted line.



Determine the handle position for drive rod GAM.

See figure: Sash rebate width FFB with central handle position G

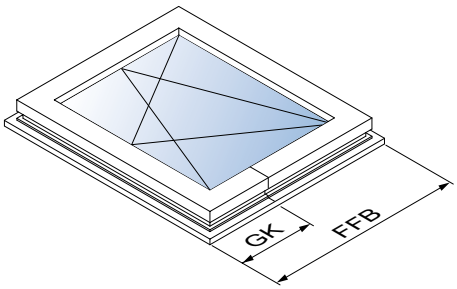
In case of a central handle position, the “dimension G” is half the sash rebate width (FFB).



Sash rebate width FFB with central handle position G

Determine the handle position for drive rod GAK.

See figure: Sash rebate width FFB with constant handle position GK



460 - 580	GK = 210
581 - 695	GK = 260
696 - 945	GK = 260
946 - 1100	GK = 375
1101 - 1200	GK = 550

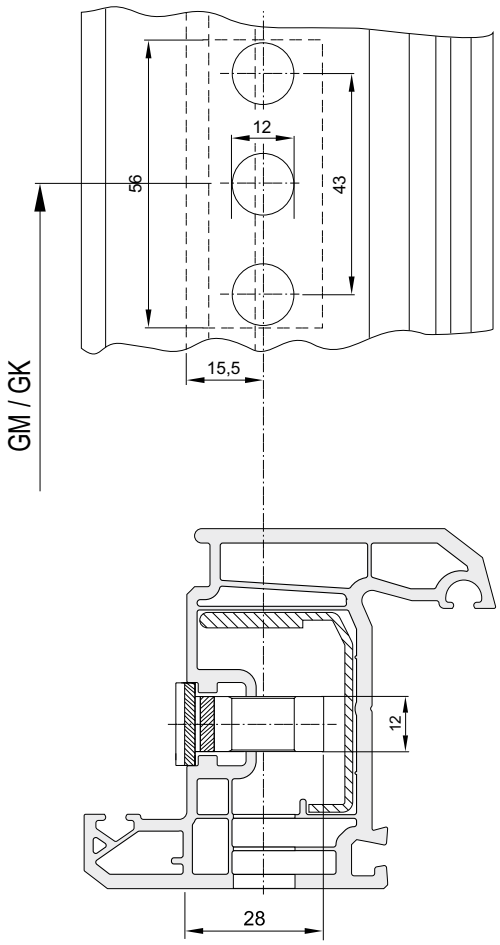
Sash rebate width FFB with constant handle position GK

Assembly of PVC-U windows

See figure: Scale drawing “Gear lock”

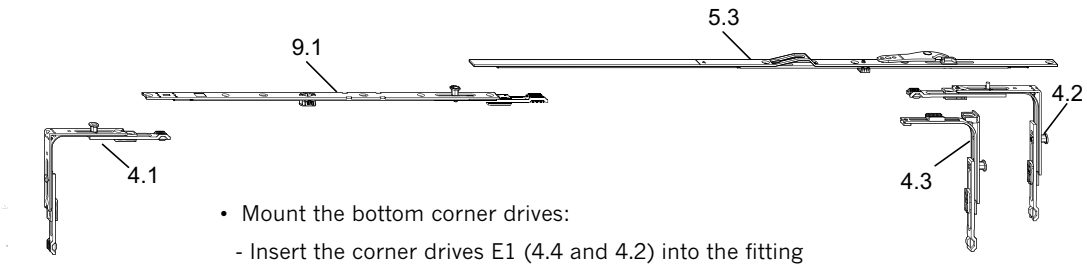
- Drill holes for gear case (ø 12 mm) as per scale drawing.

Mill the gear housing from the rebate side.



Scale drawing “Gear lock”

Installation on the sash (horizontal)



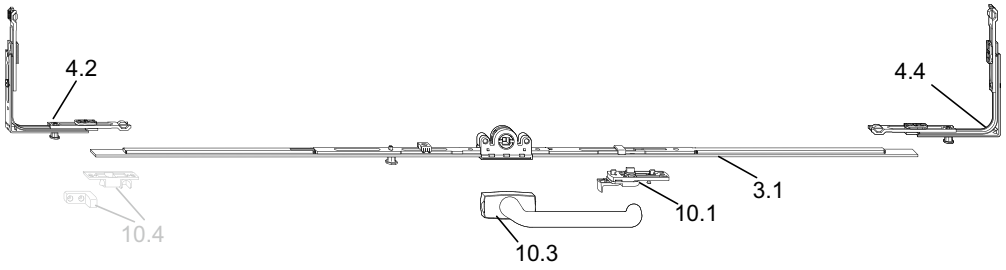
- Mount the bottom corner drives:
  - Insert the corner drives E1 (4.4 and 4.2) into the fitting groove at the bottom sash, with the mushroom bolt being on the bottom side.
  - Fix the corner drives with a screw each.

- Mount the drive rod:
  - Measure the sash rebate width (FFB).
  - Trim the drive rod as described. Abut the drive rod (3.1) against the corner drive (4.4).
  - Allow the teeth on the drive rod to click into position on the gear rack on the corner drive.
  - Click the drive rod into the corner drive (4.2) in the same way.
  - Press the drive rod into the eurogroove.
  - Screw the drive rod in place from the hinge side towards the exterior side.
  - If any, mount the fail safe device FSA... (10.1) and fix with screws.

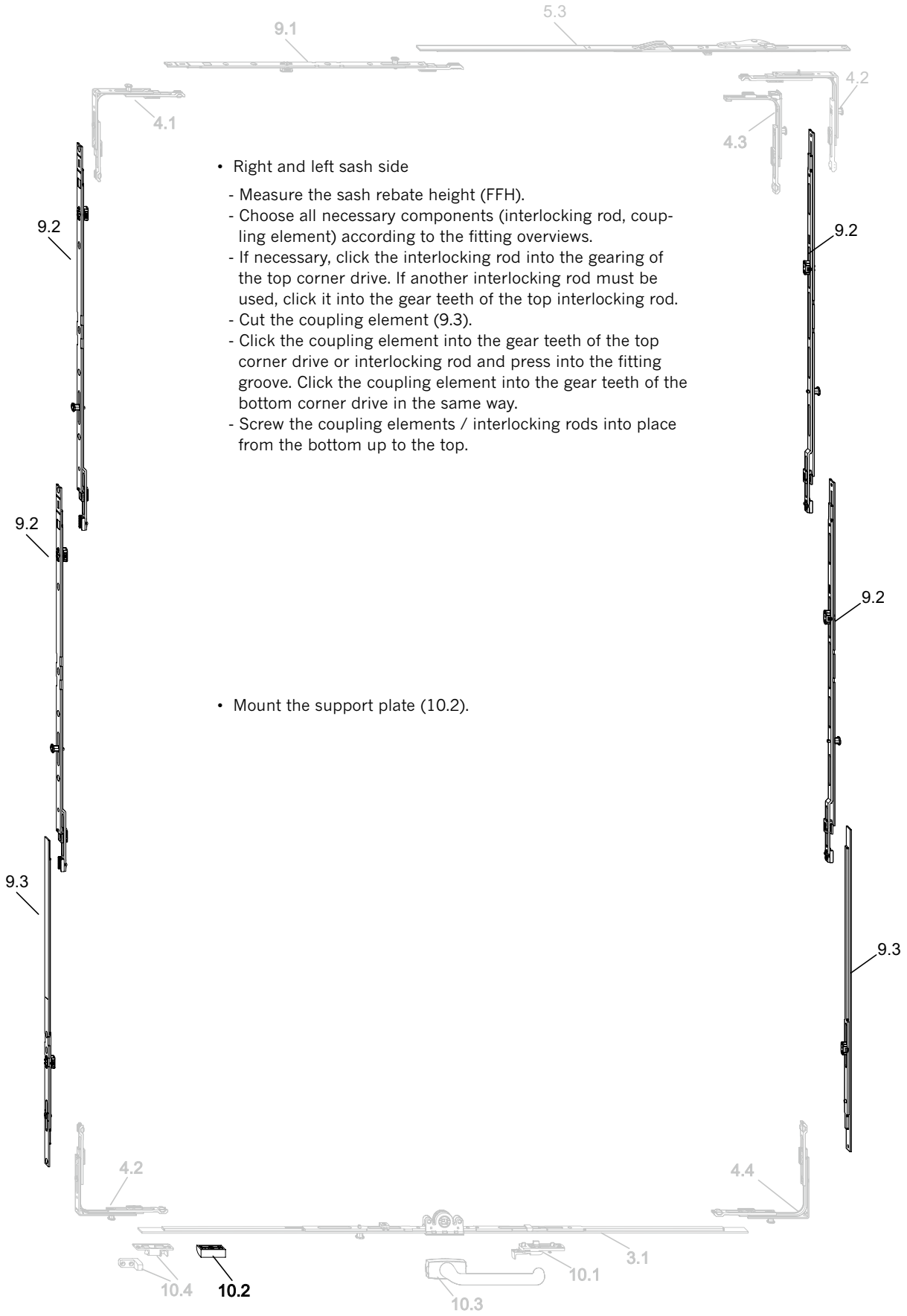
- Mount the top corner drive:
  - Insert the corner drive E1 (4.1) into the fitting groove on the upper sash, so that the mushroom bolt is located at the top.
  - Insert the corner drive E2 (4.2) / E3 (4.3) into the fitting groove on the upper sash, so that the mushroom bolt is on the hinge side.
  - Fix both corner drives at the top side of the sash with a screw each.

- Installing the top rod OS...EG... (5.3):

  - Measure the sash rebate width (FFB). From a sash rebate width FFB > 865 mm it is necessary to use a horizontal locking extension (9.1) in addition to the top rod.
  - Cut the top rod OS...EG... (5.3) to length.
  - Abut the interlocking rod (9.1) and / or top rod OS...EG... (5.3) against the corner drive (4.1). Click the gear teeth of the locking device or the top rod OS...EG... into the gearing of the corner drive. If needed, click the top rod OS...EG... into the gearing of the locking device.
  - Click the top rod OS...EG... into the corner drive E2 (4.2) / E3 (4.3) in the same way.
  - Press the top rod OS...EG... into the eurogroove.
  - Screw the top rod OS...EG... in place from the hinge side towards the exterior side.



Installation on the sash (vertical)



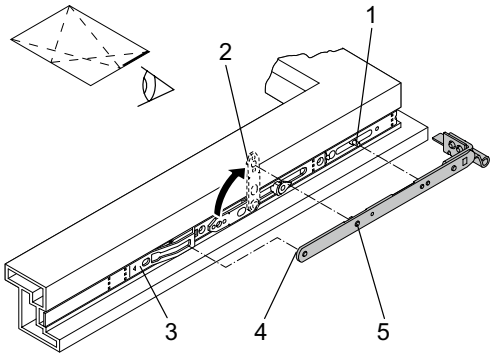
- Right and left sash side
  - Measure the sash rebate height (FFH).
  - Choose all necessary components (interlocking rod, coupling element) according to the fitting overviews.
  - If necessary, click the interlocking rod into the gearing of the top corner drive. If another interlocking rod must be used, click it into the gear teeth of the top interlocking rod.
  - Cut the coupling element (9.3).
  - Click the coupling element into the gear teeth of the top corner drive or interlocking rod and press into the fitting groove. Click the coupling element into the gear teeth of the bottom corner drive in the same way.
  - Screw the coupling elements / interlocking rods into place from the bottom up to the top.

- Mount the support plate (10.2).

See figure: Shear SK

- Mount the shear:
  - Swivel out the hold-up shore (2) (see arrow).
  - Clip shear into the top rod (3) using mushroom bolt (4).
  - Press the shear bolt (5) into the spring on the hold-up shore.
  - Swivel the hold-up shore and shear to home position.
  - Press the shear onto the bolt (1).

Warning! Risk of Injury. The sash can fall out and cause injuries if the shear and top rod are not securely fastened.



Shear SK

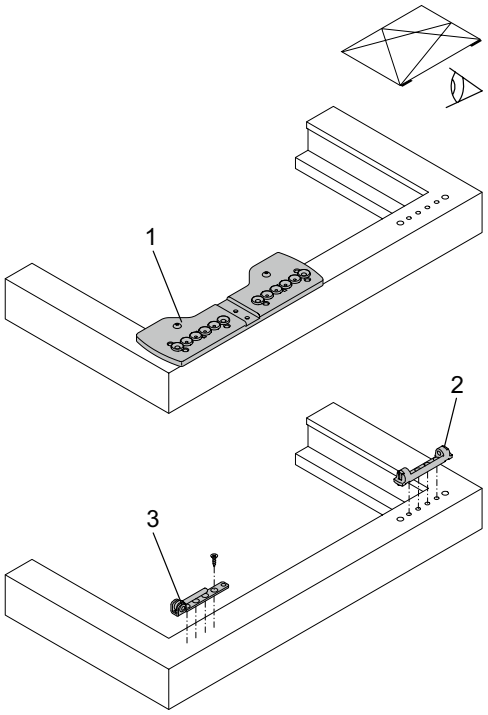
Mounting of fittings on the window frame

Turn-tilt type – Rectangular window

See figure: Holes for corner and shear hinges

- Drill ø 2.5 to 3 mm pilot holes for shear and corner hinges and drill ø 6 mm pilot holes for spindle plug positions.
- Use the template (1) to drill holes for corner hinge (3) and shear hinge (2). Distance between drill holes for shear and corner hinges is the same.

Note: Fit the shear and corner hinges after fitting the keeps!



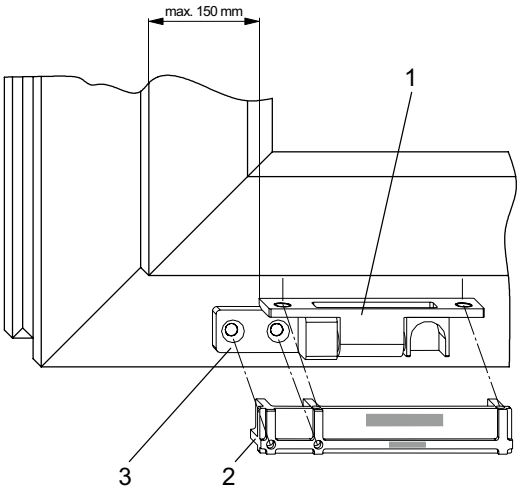
Holes for corner and shear hinges

Mounting the rotation stop device

See figure: Rotation stop device DS APE

- Position the mounting jig (2) on the bottom side of the sash of the closed window with a max. distance of 150 mm from the drive side.
- Predrill the ø 3 mm holes for the sash element of the rotation stop device (1) and the securing plate (3) according to the mounting jig (2).
- Fix the sash element of the rotation stop device (1) on the sash overlap with screws 4.0 mm x 20 mm.
- Fix the securing plate (3) to the frame using screws 4 mm x 20 mm.

Please note: The marking on the mounting jig must be visible.

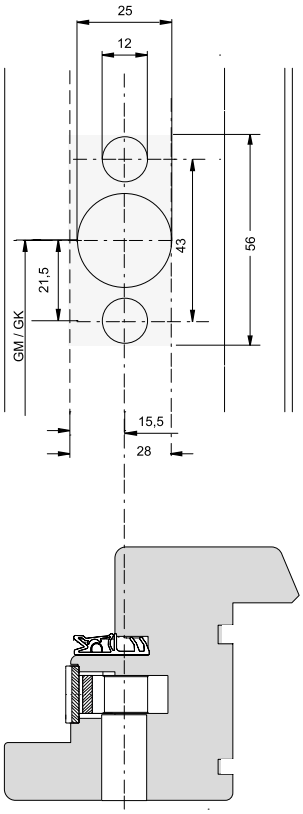


Rotation stop device DS APE

Assembly of timber windows

See figure: Scale drawing “Gear lock” for backset = 15.5 mm

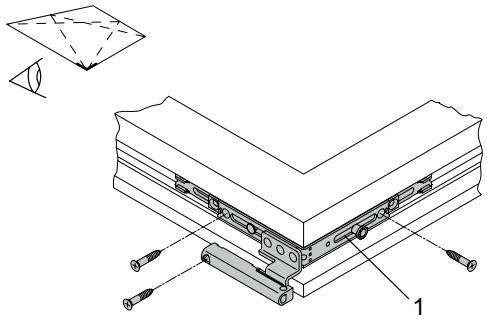
- Drill holes for gear case (ø 12 and ø 25 mm) as per scale drawing.
  - Mill the gear housing from the rebate side.



Scale drawing “Gear lock” for backset = 15.5 mm

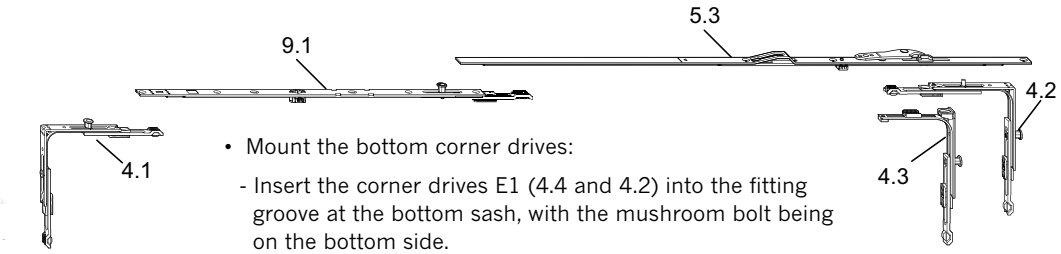
See figure: Corner drive FL.HT.E1

- Fit the sash hinge:
  - Insert the sash hinge (1) into the eurogroove.
  - Make sure the sash hinge is fitted correctly into position.
  - First screw corner drive tight on the hinge side.
  - Afterwards screw the corner drive tight from the bottom.



Corner drive FL.HT.E1

Installation on the sash (horizontal)

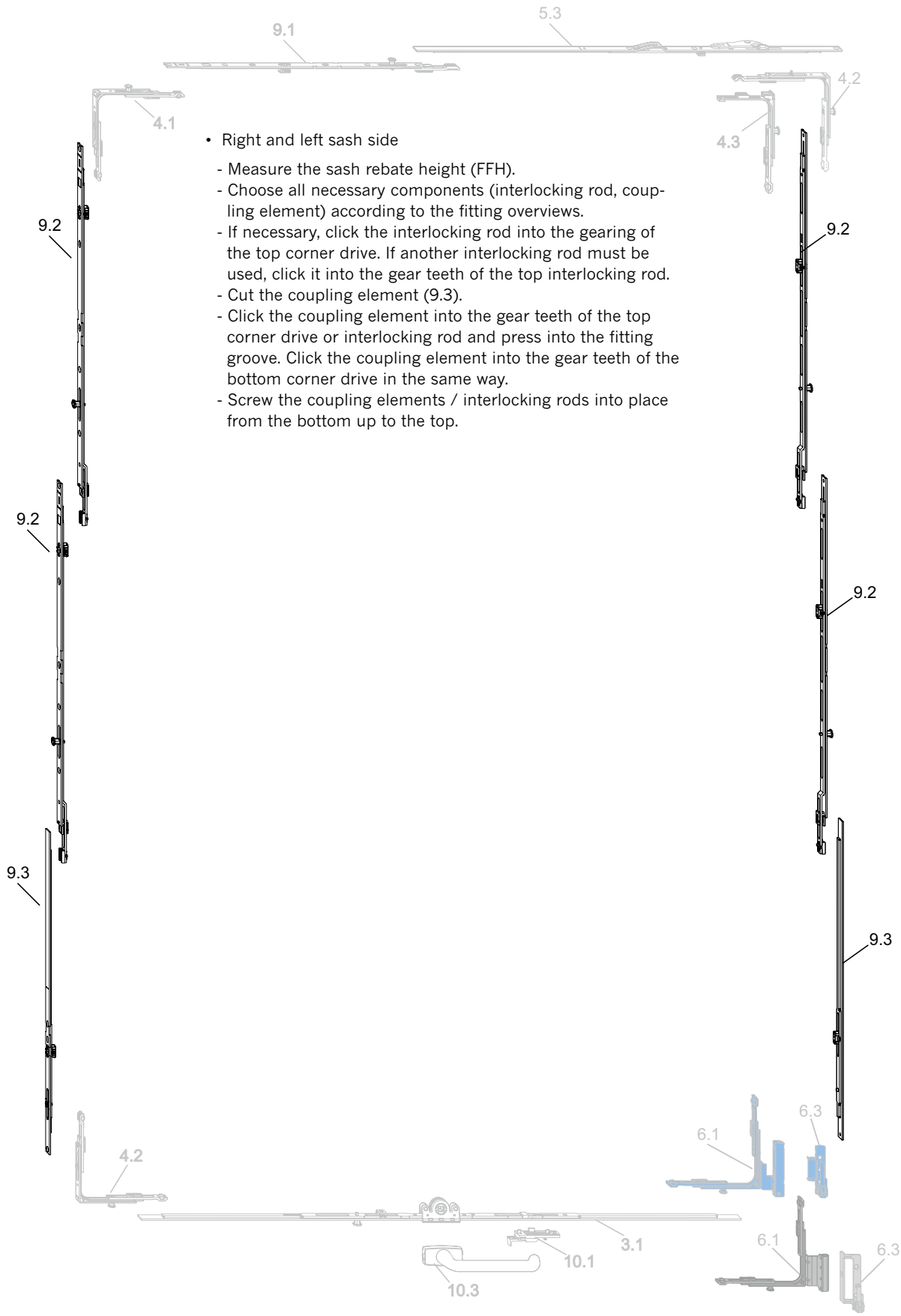


- Mount the bottom corner drives:
  - Insert the corner drives E1 (4.4 and 4.2) into the fitting groove at the bottom sash, with the mushroom bolt being on the bottom side.
  - Fix the corner drives with a screw each.

- Mount the drive rod:
  - Measure the sash rebate width (FFB).
  - Trim the drive rod as described. Abut the drive rod (3.1) against the corner drive (4.4).
  - Allow the teeth on the drive rod to click into position on the gear rack on the corner drive.
  - Click the drive rod into the corner drive (4.2) in the same way.
  - Press the drive rod into the eurogroove.
  - Screw the drive rod in place from the hinge side towards the exterior side.
  - If any, mount the fail safe device FSA... (10.1) and fix with screws.

- Mount the top corner drive:
  - Insert the corner drive E1 (4.1) into the fitting groove on the upper sash, so that the mushroom bolt is located at the top.
  - Insert the corner drive E2 (4.2) / E3 (4.3) into the fitting groove on the upper sash, so that the mushroom bolt is on the hinge side.
  - Fix both corner drives at the top side of the sash with a screw each.

- Installing the top rod OS...EG... (5.3):
  - Measure the sash rebate width (FFB). From a sash rebate width FFB > 865 mm it is necessary to use a horizontal locking extension (9.1) in addition to the top rod.
  - Cut the top rod OS...EG... (5.3) to length.
  - Abut the interlocking rod (9.1) and / or top rod OS...EG... (5.3) against the corner drive (4.1). Click the gear teeth of the locking device or the top rod OS...EG... into the gearing of the corner drive. If needed, click the top rod OS...EG... into the gearing of the locking device.
  - Click the top rod OS...EG... into the corner drive E2 (4.2) / E3 (4.3) in the same way.
  - Press the top rod OS...EG... into the eurogroove.
  - Screw the top rod OS...EG... in place from the hinge side towards the exterior side.

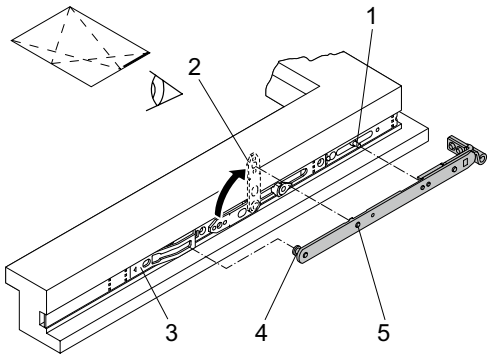


- Right and left sash side
  - Measure the sash rebate height (FFH).
  - Choose all necessary components (interlocking rod, coupling element) according to the fitting overviews.
  - If necessary, click the interlocking rod into the gearing of the top corner drive. If another interlocking rod must be used, click it into the gear teeth of the top interlocking rod.
  - Cut the coupling element (9.3).
  - Click the coupling element into the gear teeth of the top corner drive or interlocking rod and press into the fitting groove. Click the coupling element into the gear teeth of the bottom corner drive in the same way.
  - Screw the coupling elements / interlocking rods into place from the bottom up to the top.

See figure: Shear SH ...

- Mount the shear:
  - Swivel out the hold-up shore (2) (see arrow).
  - Clip shear into the top rod (3) using mushroom bolt (4).
  - Press the shear bolt (5) into the spring on the hold-up shore.
  - Swivel the hold-up shore and shear to home position.
  - Press the shear onto the bolt (1).

Warning! Risk of Injury. The sash can fall out and cause injuries if the shear and top rod are not securely fastened.



Shear SH ...

Mounting of fittings on the window frame

Turn-tilt type – Rectangular window

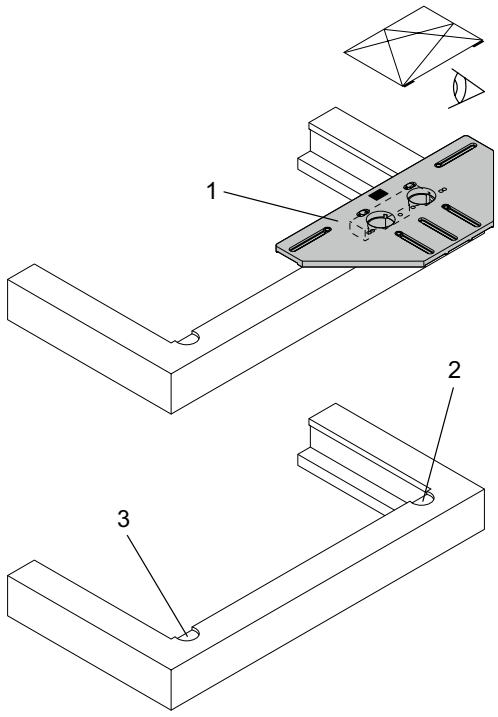
- The following description refers to pot hinges without positioning plugs.
- For drill positions of these pins see the installation drawings.

Attention! Damage to lacquer coat! Routing at the frame must be performed prior to painting. Otherwise the varnish coat at the milled area would come off which would leave the wood unprotected against penetration of humidity.

See figure: Position the routing jig and mill pot holes.

- Position the routing jig (1):
  - Position the routing jig in the frame edge and push the clamping elements against the frame profile from the outside.
  - Then position the routing jig in the corner of the frame again and press it against the frame profile with your hand.
  - The routing jig is held by the clamping mechanism.
  - Set up router:
  - Milling cutter ø 34 mm
  - Copying ring ø 40 mm
  - Position the router with the copying ring on the routing jig (1).
  - Mill the pot for the shear hinge (2).
  - Cutting depth at least 5 mm
  - plus allowance for lacquer coat
  - When milling the cut-out for the shear hinge, please also make the cut-out for the corner hinge (3).

Note: Fit the shear and corner hinges after fitting the keeps!



Position the routing jig and mill pot holes.
EWT-SWT (1)

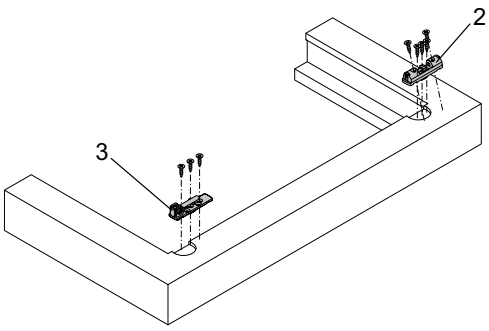
Mounting shear and corner hinges

See figure: Shear and corner hinges

- Insert the shear hinge (2) and corner hinge (3) into the milled holes and screw into place.

(Number of screws see product page)

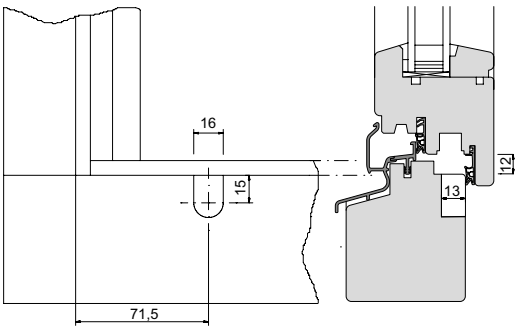
Please note: Window builders must ensure that hinges and their anchorings are designed to support the expected loads and are professionally mounted.



Shear and corner hinges

See figure: Installation drawing Rotation Stop DS.SBK.H...

- Mounting of rotation stop GRT.DS-SBK.H...



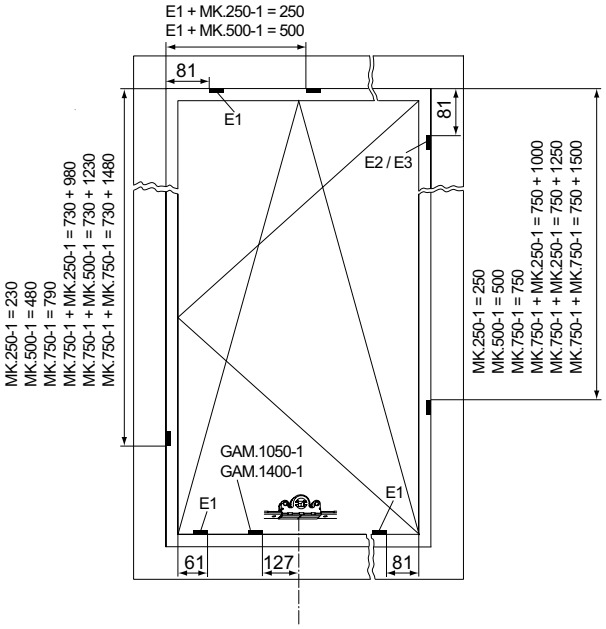
Installation drawing Rotation Stop DS.SBK.H...

Keep positions

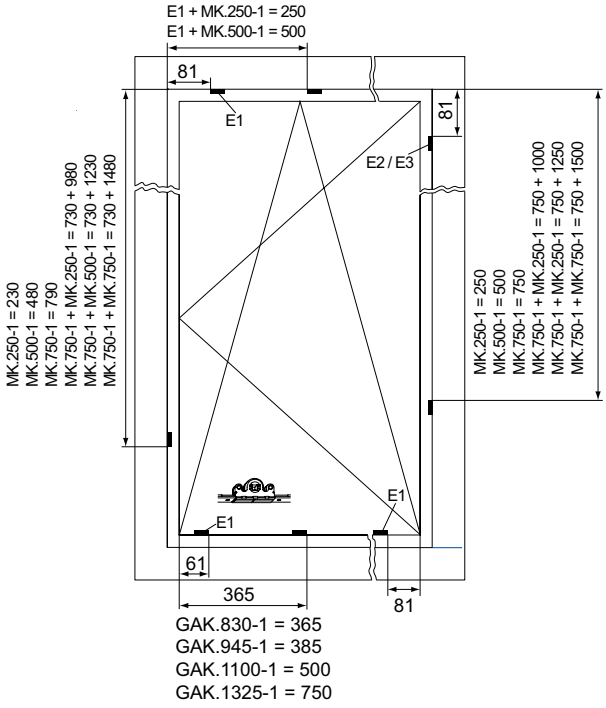
The figures show the keep position options. The number of keeps depends on the size of the window.

Note: The dimensions in the drawings are for frame rebate edge to keep profile edge.

GAM...



GAK...

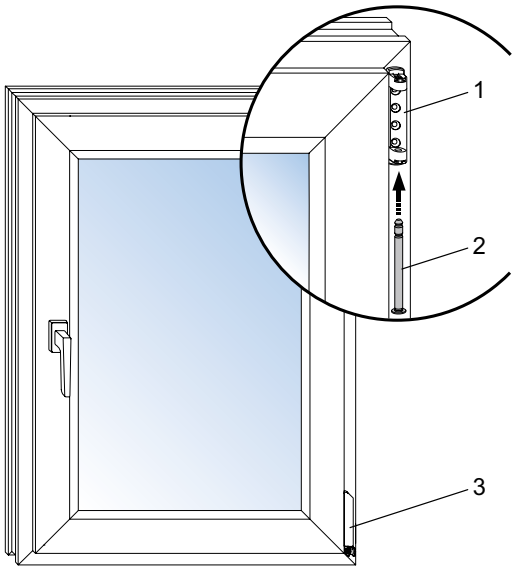


GAK.830-1 = 365
GAK.945-1 = 385
GAK.1100-1 = 500
GAK.1325-1 = 750

Fitting the sash

- Mount the sash, adjust for a good seal and fit the pin to secure against the shear hinge.
- Push all end caps and sealing caps onto the shear and corner hinges.

Note: Insert pin from bottom (see arrow).

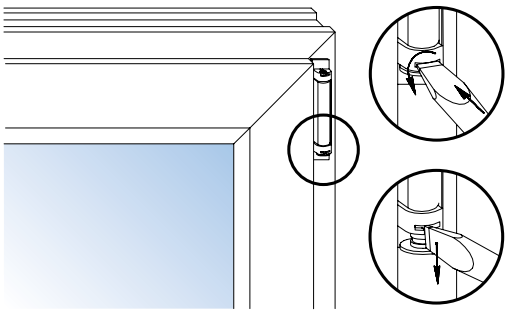


Shear and corner hinge

Dismounting of the sash

- Close the sash.
- Release the pin from the shear hinge.
- Remove the sash.

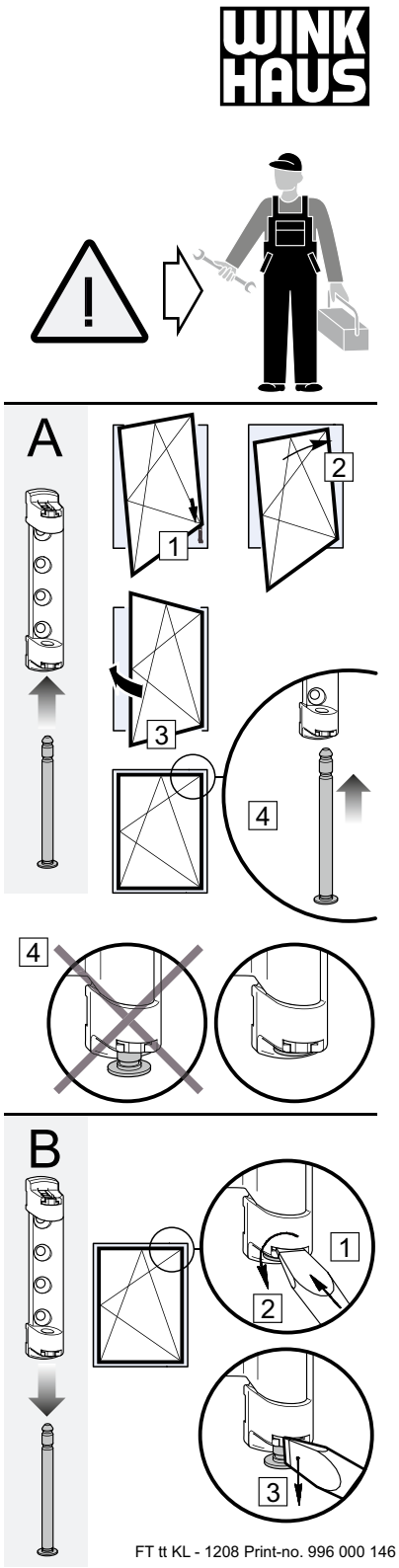
Attention! Damage to shear hinge. In case of improper use and if you attempt to drive out the pin forcibly, the shear hinge will be damaged. Use only a screwdriver to release the pin as shown in the figure.



Release the pin in the shear hinge

Notes on professional fitting and removing of sashes

For professional mounting and removal of the window sash please refer to our mounting advice. We recommend to place this mounting advice on the window sash.



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Operation

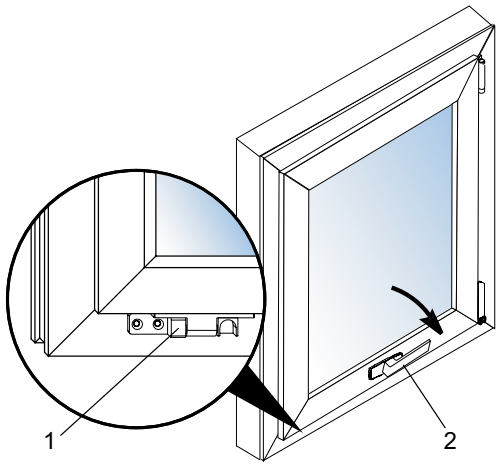
Note: The handle will be stiffer than normal the first time it is used. You will hear a clicking noise when you turn it. In case of improper use and if you try to operate the window handle forcibly, the fitting parts will be damaged.

Basic position

See figure: Rotation stop device / Basic position

Close the window.
Turn the window handle (2) by 90° towards the hinge side, so that the handle is in the basic position.
The window is locked.
In the basic position the window is completely closed and locked. The window handle is parallel to the bottom edge of the window sash. The rotation stop device DS APE (1) is engaged.

Important! Before turning the handle, please make sure that the rotation stop device APE has snapped into place.

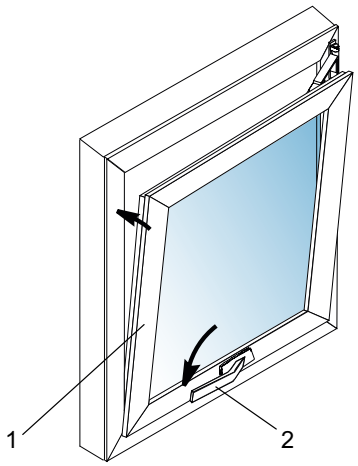


Rotation stop device / Basic position

Open to tilt position

See figure: Tilt position

- Turn the window handle (2) by 180° starting from the basic position. The window sash (1) is opened into the tilt position.



Tilt position

Closing the window

- Turn back the window handle (2) by 180° into the basic position.

Open to turn position

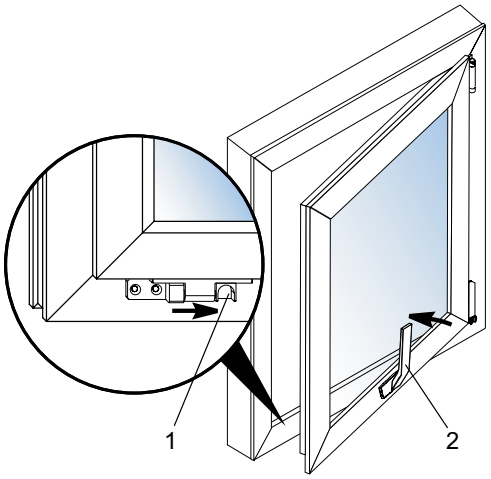
See figure: Turn position

- Turn the window handle (2) fom the basic position by 90°.
- Push the slide lock towards the hinge side using your second hand and hold.
- The rotation stop device is unlocked.
- Open the window sash.

Closing the window

- Close the window sash, so that the slide lock (1) clicks into the rotation stop device.
- Turn back the window handle (2) by 90° into the basic position.

Please note: The window can be moved into the tilt position directly from the turn position. Simply turn the window handle (2) by 90° towards the rotation stop device.



Turn position

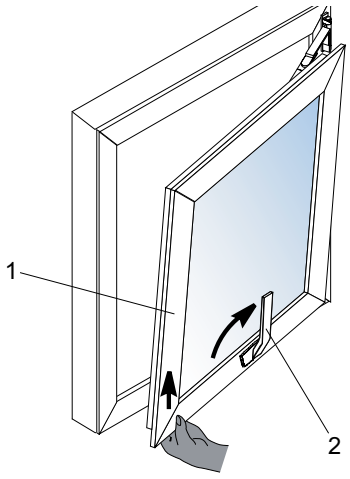
In case of faulty operation

See figure: Repositioning the sash in case of faulty operation

An additionally mounted fail-safe device prevents improper operation almost completely. If faulty switching occurs nevertheless, the window can be returned to the closed position as follows:

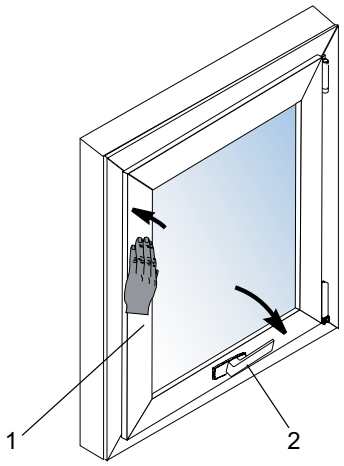
- Lift the window sash (1) by a few centimetres while moving the window handle (2) vertically into the turn position.
- The fail safe device must be operated manually.

Note: When turning the window handle it might be necessary to shake the handle a little.



Repositioning the sash in case of faulty operation

- Close the window sash (1), allowing the slide lock to click into the rotation stop device.
- Make sure that the window sash lies fully against the frame.
- Turn the window handle (2) by 90° into the basic position.

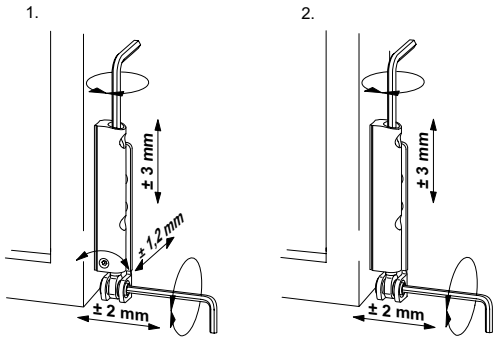


Basic position

Adjustment options

Corner hinge/sash hinge

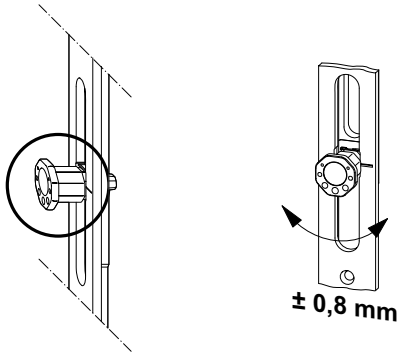
Sash hinge height adjustment (±3 mm) and corner hinge side adjustment (±2 mm).
For sash hinge adjustment of the contact pressure between sash and frame (+/– 1.2 mm) using a 2.5 mm Allen key.



1. with contact pressure adjustment
2. without contact pressure adjustment

Octagonal bolt

Regulate the contact pressure between the sash and the frame (±0.8 mm) by turning the octagonal bolt. The adjustment can be carried by means of the Winkhaus adjustment key.



Shears / shear hinges

Note: There is no adjustment device for lifting and lowering the sash and no shear pull-in. Please bear this in mind when setting the blocks of the window.

Maintenance

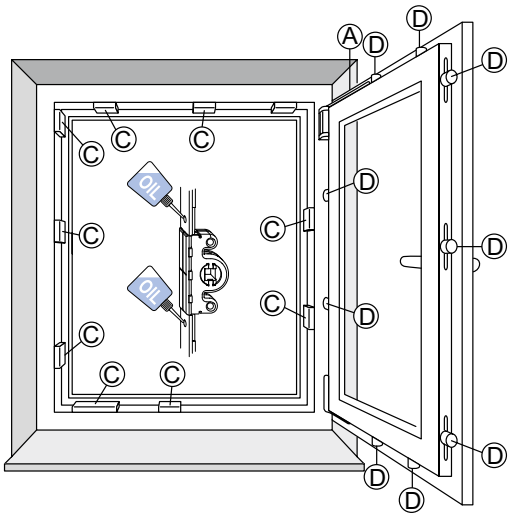
Lubrication points

See figure: Overview of lubrication points

The figure shows the location of possible lubrication points which should be lubricated at least once a year.
Positions A, C, D = lubrication points relevant to function.

Please note: The fitting schematic shown adjacent does not necessarily match the existing fitting. The number of locking positions will vary depending on size and type of the window sash.

Attention! Risk of injury. The window could fall on removal and thus injure persons. Do not remove the window for maintenance.



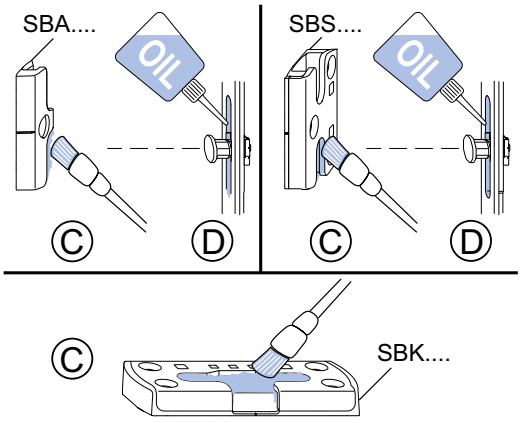
Overview of lubrication points

Keeps

See figure: Lubrication points

To keep fittings running smoothly, you must lubricate the keeps once a year.

- Lubricate the keeps (C) at the run-in side with technical Vaseline or any other suitable grease.
- Coat the running surfaces of the locking bolts (D) with an oil that is free of resins and acids.

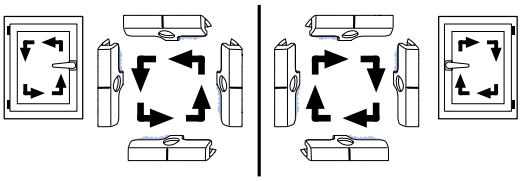


Lubrication points

Ascertaining the run-in sides

See figure: Run-in sides

- Left-handed window; handle right
- Right-handed window; handle left



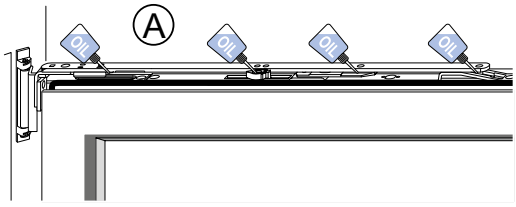
Run-in sides

Shears

See figure: Shears

All of the shear's contact points with the top rod should be oiled once annually.

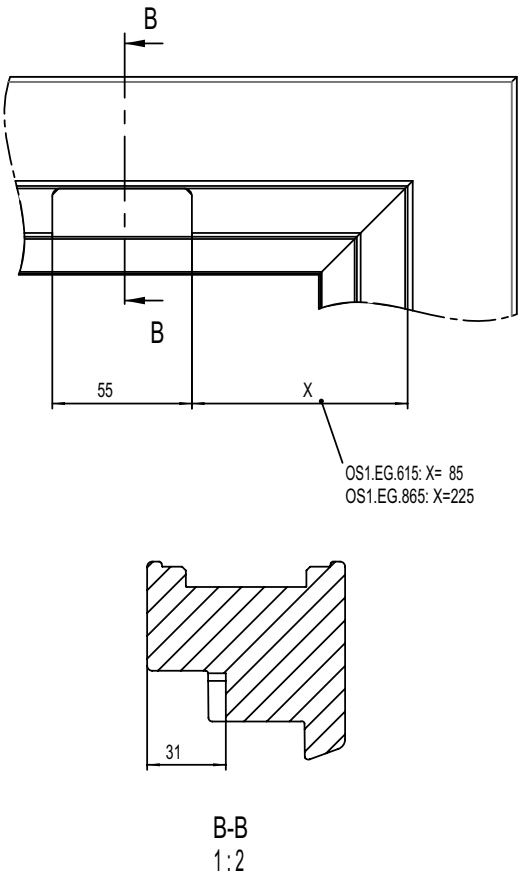
Note: The shear hinge must not be oiled or greased.



Shears

Installation drawings

Further installation drawings can be found in our activPilot Concept product catalogue.



B-5-1: Drilling and milling instructions OS..EG..

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