

activPilot Concept

The turn-tilt fitting system for PVC-U windows.



in
windows

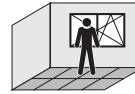
Product Catalogue 06/2017

Declaration of symbols

1

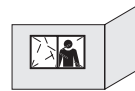


Sash weight max. x kg



Interior view

2

Max. sash size: x m²

Exterior view

3

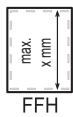


Max. sash rebate width (FFB): x mm



Basic set of fittings

4

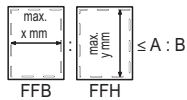


Max. sash rebate height (FFH): x mm

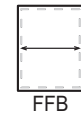


Optional fittings

5

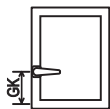


Ratio between sash rebate width (FFB) and sash rebate height (FFH) is less than or equal to A : B

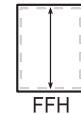


Size-dependent fittings depending on sash rebate width (FFB)

6

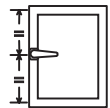


Constant handle height



Size-dependent fittings depending on sash rebate height (FFH)

7



Central handle height



Direction of view

8

9



Turn sash (D)



Pot hinge version

10

11

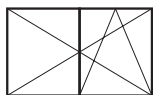


Turn-tilt sash (DK)



Rebate hinge version

12



Turn/Turn-tilt double sash (D/DK-Stulp)



Item for use on PVC-U windows

13



Turn or turn-tilt sash with parallel opening



Item for use on wooden windows with 12 mm airgap

14



Parallel action



Item for use on aluminium windows

15



Slide-tilt window



Component for use in threshold solutions

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General product
information

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Lists of Fittings

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Drive rods

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Corner drives

4

Top rods

5

Sash hinges/
Corner hinges

6

Shears/
Shear hinges

7

Turn hinges/
Tilt hinges

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Extension rods

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maintenance

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1 Many windows, many formats, one single fitting system.

2 **activPilot: The new standard of turn-tilt fittings**

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Developing a new system of fittings from the initial drafts to market maturity is a time-consuming process. It is not just a question of creative ideas, precise calculations and countless series of tests, but also of intensive monitoring of people and markets, evaluating current trends and ongoing analysis of general technical developments. We even question tried and trusted approaches to be able to leverage all this information, and apply our years of experience to create targeted, premium solutions that offer fitters and users a whole new range of opportunities. Both from an economical and functional point of view. It is this constant drive towards precision that has made Winkhaus one of the leading enterprises in the field of window and door technology. This is evident by the large number of industry standards that Winkhaus has established in over 160 years.

From established standards to the next generation standard

In designing activPilot we created all the solutions needed for the next-generation window fitting standard within a single system. An intelligent, clearly-structured modular system with far less components than was previously typical, activPilot meets all your requirements from a modern range of fittings. activPilot is suitable for any shape of window, any window material and any level of automation, from manual mounting to fully automated serial production. The high level of flexibility, the attractive auxiliary functions, the new locking system and the functional design all ensure that your business is perfectly geared today to meet your customers' needs and future requirements.

Modular design

activPilot optimises window construction. For the window builder, less components and multifunctionality mean uncomplicated and fast processing and rational mounting. Pre-mounted components and the unique design furthermore ensure that additional functions and safety classes can be achieved easily by retrofitting. activPilot thus sets the scene for sustainably cutting your production, warehousing, logistics and administration costs.

The locking system with octagonal locking bolts

activPilot enhances comfort. The functionally perfect locking mechanism not only guarantees precise entry of the locking bolt into the frame keep, but also a perfect seal. This is ensured by the excellent air gap tolerance of 9.8 to 14 mm and the octagonal locking bolt which allows easy adjustment of the contact pressure. Even adjusting forces and the non-positive and positive system fit of the components give this fitting the required stability and long-term functionality.

Add-on functions

activPilot gives you the ability to react flexibly to customer requests. Innovative multi-purpose components make it easy to retrofit features at any time. The use of a duo and/or tri functional element makes it simple to add a fail safe device with integrated limiter support and balcony door catch. The variable tilt device supports different sash tilt angles and thus fast, easily adjustable ventilation settings.

Design

activPilot offers you and your customers real added value. Surprising details, discreet accents, ergonomic design and comprehensive functions characterise the overall concept of the fitting system. In short, its attractive design will be a crucial factor when it comes to your customers making a purchase decision. activPilot also offers other convincing arguments such as outstanding durability, easy-to-clean surfaces, intuitive operation and, last but not least, aesthetically pleasing windows.

Surface

activPilot fittings feature a surface refinement finish based on nanotechnology, which is applied in our in-house electroplating facility. This surface stands out due to its very high resistance to all environmental influences. This is verified by quality controls consisting of alternate climate and salt spray testing according to DIN EN ISO 9227 and is certified on a regular basis by tests. Winkhaus also carries out tests in outside areas, thus testing component behaviour under realistic conditions. This enables Winkhaus to offer a ten-year warranty for functions and surfaces.

Effective security

Thanks to the unique modular system, any window can be modified to achieve the required security standard – easily, quickly and cost-efficiently. There is no need for custom parts. Depending on the number and type of keeps, various security levels are achievable using the same platform. At our works, comprehensive and strict tests – along with ongoing functional monitoring – ensure maximum security for customers. Approval marks and certificates by independent test authorities confirm our results. You can therefore be sure that activPilot meets the requirements customers place on a secure fitting system. Locking bolts are made of high-strength steel; even standard types guarantee effective basic security. Depending on the number and type of keeps, the fitting system can be enhanced for compliance with stricter security classes – including burglar protection to DIN EN 1627-1630, resistance class 2 (RC2).

Quality standard

The Winkhaus group successfully passed a group certification of production sites according to DIN ISO 9001. The group certification ensures that we use the same criteria and procedures in all Winkhaus subsidiaries and thus we can always offer consistent quality for our customers.



Winkhaus has successfully passed the demanding QM 328 certification.

Winkhaus' activPilot fittings are certified in accordance with QM 328. The turn-only and turn-tilt fittings for windows and French doors undergo a large number of tests in the stringent certification programme, which verifies aspects such as durability and quality control mechanisms. The certificate stands as a testament to Winkhaus' long tradition in high quality products.

Endurance test

Winkhaus activPilot is certified in accordance with EN 13126-8 (endurance test for turn-only and turn-tilt fittings) and EN 1191 (endurance test for windows and doors). The fitting system thus complies with the latest EN standards. Winkhaus' own permanent control in accordance with established production control guidelines as well as regular external monitoring by ift Rosenheim ensure outstanding product quality guaranteed on

a long-term basis.

The activPilot Concept fitting series was tested for sash weights of up to 130kg, for activPilot Select up to 150 kg and for activPilot Comfort up to 100 kg. As a result they clearly exceeded the required load values. The fittings may now bear the ift quality certification mark.

Your partner for service

Our services are solution-oriented, reliable and precisely geared to match your requirements – just as you would expect from your partner. We are always at your service. With application engineers on site, professional help from our product data service, and innovative software solutions to help optimise your workflow we safeguard and extend your capacity to act. On top of this, our comprehensive product information system and sophisticated logistics service guarantee fast delivery at all times.


Proper screw fixing in terms of load of security-relevant fitting components

In order to ensure the endurance and operating safety of windows and balcony doors over their expected service life, major importance must be attached to the installation of security-relevant fitting components!

Manufacturers of windows and balcony doors are responsible for fixing the fitting elements on the sash and the frame in a professional way and they must make sure that the specifications are adhered to.

Important: Please observe these guidelines! Use only screws that are long enough to bear the loads. We recommend you to fix the corner and shear hinge screws in the steel reinforcement of the PVC-U window.

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- 4 Corner drives
- 5 Top rods
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- 7 Shears/ Shear hinges
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ift-KONFORMITÄTSZERTIFIKAT
ift-CERTIFICATE OF CONFORMITY



Beschläge / Hardware

Produktfamilien
product families

Dreh- und Drehkippsbeschläge für Fenster und Fenstertüren
turn and tilt-turn hardware for windows and casement doors

Produkt
product

autoPilot, activPilot, proPilot

Einsatzbereich
field of application

Systeme mit entsprechender Beschlagaufnahme
systems with suitable hardware groove

max. Flügelgewicht
max. casement weight

200 kg

Hersteller
manufacturer

Aug. Winkhaus GmbH & Co. KG

August-Winkhaus-Str. 31, D 48291 Telgte

Produktionsstandort
production site

Aug. Winkhaus GmbH & Co. KG

August-Winkhaus-Str. 31, D 48291 Telgte



Mit diesem Zertifikat wird bescheinigt, dass die benannten Beschläge den Anforderungen des ift-Zertifizierungsprogramms für Beschläge (QM328:2014-5) entsprechen.

Grundlagen sind durch das Prüflabor erstellte Produktfamilien der aufgeführten Beschläge, Prüfung durch das Prüflabor nach EN 13126:2006 und EN 1191:2012 unter Berücksichtigung der Anwendungsdiagramme, eine werkseigene Produktionskontrolle des Herstellers und eine Fremdüberwachung der Fertigung durch die Überwachungsstelle in den benannten Standorten. Das Zertifikat ist nur in Verbindung mit dem dazugehörigen Überwachungsvertrag gültig.

Die Gültigkeitsdauer des Zertifikates beträgt 5 Jahre. Mit der Erteilung des Zertifikates ist eine regelmäßige Fremdüberwachung des Herstellers verbunden.

Das Zertifikat darf nur unverändert vervielfältigt werden. Alle Änderungen der Voraussetzungen für die Zertifizierung sind dem ift-Q-Zert mit den erforderlichen Nachweisen unverzüglich schriftlich anzuzeigen.

Das Unternehmen ist berechtigt, die Beschläge gemäß der ift-Zeichensatzung mit dem „ift-zertifiziert“-Zeichen zu kennzeichnen.

Dieses Zertifikat enthält 2 Anlagen:

- 1: Übersicht der Produktfamilien
- 2: Austauschbarkeit nach EN 14351-1

The present certificate attests that the hardware mentioned fulfils the requirements of the ift-certification scheme for hardware (QM328:2014-5).

Basis of the certificate are the product families of the hardware listed that have been compiled by the test laboratory, tests performed by the test laboratory as per EN 13126-8:2006 and EN 1191:2012 based on the application diagrams, factory production control by the manufacturer and third-party surveillance audits of the production by the surveillance bodies at the sites mentioned. The certificate is valid only in conjunction with the corresponding surveillance contract.

The certificate is valid for a period of 5 years. Award of the certificate is subject to regular third-party surveillance of the manufacturer.

The reproduction of the certificate without any change whatsoever from the original, is permitted. Any changes to the prerequisites applicable to certification shall be immediately communicated in writing to ift-Q-Zert accompanied by the necessary evidence.

The company is authorised to affix the "ift-certified"-mark to the hardware according to the ift rules for use of the "ift-certified"-mark.

This Certificate contains 2 Annexes:

- 1: List of product families
- 2: Interchangeability as per EN 14351-1



EN 1191
EN 12400
Klasse 2



Dauerfunktion
resistance to repeated opening and closing



Bedienungskräfte
operating forces



EN ISO 9227
EN 1670
Bis Klasse 5

Korrosionsschutz
corrosion protection

Rosenheim
07. Juni 2016

Christian Kehrer
Leiter ift Zertifizierungs- und Überwachungsstelle
Head of ift Certification and Surveillance Body

Ulrich Sieberath
Institutsleiter
Director of Institute

Vertrag-Nr. / Contract No.: 228 7019950

Zertifikat-Nr. / Certificate No.: 228 7019950-1-13

Gültig bis / Valid:

17. November 2018

2013-11 / 797

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Prüfung und Kalibrierung – EN ISO/IEC 17025
Inspektion – EN ISO/IEC 17020
Zertifizierung Produkte – EN ISO/IEC 17065
Zertifizierung Managementsysteme – EN ISO/IEC 17021

Notified Body 0757
PUZ-Stelle: BAY 18



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 Zertifikat-Nr./Certificate No.: 228 7019950-1-13
 Hersteller/manufacturer: Aug. Winkhaus GmbH & Co. KG
 Ausgabedatum/date of issue: 07. Juni 2016



In der Zertifizierung enthaltene Produktfamilien für Fenster- und Fenstertürsysteme mit geeigneter Beschlagaufnahme.
Product families for window and casement door systems with groove designed for accommodation of hardware, covered by certification.

Ifd. Nr./ no.	Ausführung Bandseite/ type hinge side	Ausführung Flügelbeschlag/ type casement hardware	Beschreibung der Ausführung der blendrahmenseitigen Beschlagausführung detail description of frame member hardware type				Flügelgewicht/ casement weight	Klassifizierung entsprechend der Nachweise nach EN 13126-8 classification in accordance with evidence as per EN 13126-8								
			Winkelband/ top stay connecting part	Scherenlager/ stay arm support	Eckband/ corner hinge	Ecklager/ corner pivot		1	2	3	4	5	6	7	8	9
1	autoPilot H 100	autoPilot H 100	SWTF 40-18/9-12	SWTF 18-12	FWTA 18/9-12	EWTA 18-12	100 kg	-	4	100	0	1	4	-	8	900/2300
2	autoPilot K 100	autoPilot K 100	SW 20/13	SWS 3-6	FK 20-6-20	ESV 6-3-16	100 kg	-	4	100	0	1	4	-	8	1300/1200
3	activPilot K 130	activPilot K 130	SK2.20-13	SL.KB.3-6	FWV 20-13	ESVW 6-3-16	130 kg	-	4	130	0	1	5	-	8	1300/1200
4	activPilot K 100	activPilot K 100	SK2.20.13	SL.KS.3-6	FL.KA. 20-6-20	EL.K. 6-3-16	100 kg	-	4	100	0	1	5	-	8	1300/1200
5	autoPilot K 130	autoPilot K 130	SW 20-13	SWB 3-6	FWV 20-13	ESVW 6-3-16	130 kg	-	4	130	0	1	4	-	8	1300/1200
6	autopilot VV K	autopilot VV K	SVV	ohne	FWV	EVV	90 kg	-	4	100	0	1	4	-	8	1300/1200
7	proPilot	proPilot	SK.U.2.20-13	SL.K.U.3-3	FL.K.U.6	EL.K.U.3-3	70 kg	-	4	70	0	1	4	-	8	1300/1200
8	proPilot	proPilot	SK.U.2.20-13	SL.K.U.3-3	FL.K.U.6.100	EL.K.U.3-3	100 kg	-	4	100	0	1	4	-	8	1300/1200
9	activPilot H 130	activPilot H 130	SH2.T. 18-13-12	SL.HT.18-12	FL.HT. 18-13-12	EL.HT.Z. 18-12	130 kg	-	4	130	0	1	5	-	8	1300/1200
10	activPilot Select H 150	activPilot Select H 150	SH.SE.29-13	ohne	FL.SE	EL.H.SE. 29-13 mit FLS.SE	150 kg	-	4	150	0	1	5	8	8	1550/1400
11	activPilot Select K 150	activPilot Select K 150	SK.SE	ohne	FL.SE	EL.K.SE mit FLS.SE	150 kg	-	4	150	0	1	5	8	8	900/2300

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 Zertifikat-Nr./Certificate No.: 228 7019950-1-13
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Ifd. Nr./ no.	Ausführung Bandseite/ type hinge side	Ausführung Flügelbeschlag/ type casement hardware	Beschreibung der Ausführung der blendrahmenseitigen Beschlagausführung detail description of frame member hardware type				Flügelgewicht/ casement weight	Klassifizierung entsprechend der Nachweise nach EN 13126-8 classification in accordance with evidence as per EN 13126-8								
			Winkelband/ top stay connecting part	Scherenlager/ stay arm support	Eckband/ corner hinge	Ecklager/ corner pivot		1	2	3	4	5	6	7	8	9
12	activPilot Comfort PADK 100	activPilot Comfort PADK 100	SK2.PA.20-13	SL.KS.3-6	FL.E.FWPA 20-13	ESV 6-3-16	100 kg	-	4	100	0	1	5	-	8	1300/1200
13	activPilot ALU 130	activPilot ALU 130	SK2.20-13	SL.KB.3-6	FWV 20-13	ESVW 6-3-16	130 kg	-	4	130	0	1	5	-	8	1300/1200
14	activPilot Select ALU 150	activPilot Select ALU 150	SK.SE	ohne	FL.SE	EL.K.SE mit FLS.SE	150 kg	-	4	150	0	1	5	8	8	1550/1400
15	activPilot H 150	activPilot H 150	SH2.T.18-13-12	SL.HT.18-12	FL.HT.18-13-12	EL.HT.Z. 18-12	150 kg	-	4	150	0	1	5	8	8	900/2300
16	activPilot Select K 100	activPilot Select K 100	SK.SE	ohne	FL.SE	EL.K.SE	100 kg	-	4	100	0	1	5	-	8	1300/1200
17	activPilot Select H 130	activPilot Select H 130	SH.SE.20-9.Z.	ohne	FL.SE	EL.H.SE. 20-9.Z.	130 kg	-	4	130	0	1	5	-	8	1300/1200
18	activPilot K 130 S	activPilot K 130 S	SK2.20-13	SL.K.3-6.130	FL.K. 20-6-28.130	ESV 6-3-16	130 kg	-	4	130	0	1	5	-	8	1300/1200
19	activPilot Comfort PADM 100	activPilot Comfort PADM 100	SK2.PAD. 20-13	SL.KS.3-6	FL.E.EFPA 20-13	ESV 6-3-16	100 kg	-	4	100	0	1	5	-	8	900/2300
20	activPilot Giant	activPilot Giant	SXL.20-13	SL.XL	FL.XL	EL.XL	200 kg	-	4	200	0	1	5	-	8	1550/1400
21	activPilot Topstar	activPilot Topstar	SH.IF.24-13	ohne	FL.IF	EL.H.IF. 24-13	130 kg	-	4	130	0	1	5	-	8	1300/1200

Die Ergebnisse sind auf folgende Ausführungsvarianten übertragbar: Beschlagausführung links/rechts, alle zulässigen Größen gemäß Anwendungsdiagramm sowie andere Falz- und Profیلgeometrien. Die technische Dokumentation des Beschlagherstellers, insbesondere die entsprechenden Anwendungsdiagramme, ist zu beachten.
 The results can be applied to the following design variants: hardware type left/right, all permissible sizes in accordance with the application diagram as well as other rebate and profile geometries. Observe technical documents of hardware manufacturer, in particular the relevant diagrams.

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1 Obligations regarding information and instructions

This document comprises important information and details regarding different fittings and their further processing. The information in this document is particularly intended for window and patio door manufacturers and fitting and structural component retailers. Accidents and physical damage can be avoided if you observe the information given here. For this reason, you must always make sure to pass on the relevant documents when submitting fittings over to somebody else. Information and documents should be handed over in printed form, on a CD ROM or online, for example.

2 Guidelines for the use of locking systems and fittings

Gütegemeinschaft Schlösser und Beschläge e.V., Velbert issues guidelines offering assistance for the use of locking systems and fittings for windows, doors and patio doors. These guidelines are established in cooperation with the trade association of the locks and fittings industry in Velbert as well as the testing institute PIV which is also based in Velbert. If required, they are agreed with the VFF technical committee and ift Rosenheim. As a result the experience and test findings of several decades are considered. The guidelines provide information about the intended use and maintenance of fittings for windows and patio doors. It is mandatory to observe these guidelines. The current guidelines can be accessed in different languages at the following Internet address: <http://www.beschlagindustrie.de/ggsb/richtlinien.asp>



As an alternative to using the www address, you can also scan the QR Code with your smartphone!

Follow this link to find the applicable and binding guidelines on the following topics:

- VHBH - Fittings for windows and patio doors [with guidelines / instructions on the product and liability]
- VHBE - Fittings for windows and patio doors [with guidelines / instructions for end users]
- TBDK - Attachment of supporting fitting components of turn and turn-tilt fittings [with definitions of turn and turn-tilt fittings as well as their possible mounting positions]
- FPKF - Safety and cleaning shears for tilt sashes and tilting fanlights [use of safety and cleaning shears]
- FPDF - Sash limiters for variable turn position of sashes [sash limiters controlled by central locking system – definitions and tests]



The VHBH guideline among others contains the chapter "Obligation to give instructions". A schematic illustration shows the documents and information to be submitted by / to the different target groups. The builder is obliged to pass the documents listed in this chapter on to the end user.



Gütegemeinschaft Schlösser und Beschläge e.V.

Richtlinie: TBCK

GRÜNDUNG 1974

Ausgabe: 2014-03-05

Richtlinie

Bewertung tragender Beschlagteile von Dreh- und Drehkipps-Beschlägen mit Definitionen zu Dreh- und Drehkipps-Beschlägen sowie deren möglichen Einbaulagen

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www.beschlagindustrie.de/ggsb/richtlinien.asp

Hinweis

Technische Angaben und Empfehlungen dieser Richtlinie beruhen auf dem Kenntnisstand bei Drucklegung. Es gilt der Inhalt des „Disclaimer“ auf der o.g. Internet-Seite.

Richtlinie TBCK

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Product liability guidelines

Turn and turn-tilt fittings for windows and patio doors

According to the current product liability legislation dealing with a manufacturer's liability for his products please observe the following information on turn and turn-tilt fittings for window and patio door sashes. The manufacturer will not accept any liability for noncompliance with these specifications.

1. Product Information and intended use

Turn and turn-tilt fittings within the meaning of this definition are single handle turn-tilt fittings for windows and patio doors as used in building applications. These interact with a manually operated handle to bring windows and window sashes into a turn or a tilt position as defined by the design of the shears. Turn and turn-tilt fittings are used on vertical installation windows and patio doors made of wood, PVC-U, aluminium or steel and corresponding combinations of materials. Standard turn-tilt fittings within the meaning of this definition are used for securing window and patio door sashes and to position them in different ventilation positions. Normally it is necessary to overcome the counter force of a seal when closing. Any other type of usage is not in accordance with the intended application. Windows and patio doors for special applications (i.e. burglar-resistance or for installation in humid conditions / in environments with corrosive atmospheric substances) require special fittings with separately agreed performance criteria, designed for the particular application. Open window and patio door sashes only have a protective function and do not meet requirements in terms of joint sealing, watertightness under heavy rain, sound proofing, heat insulation or burglar resistance. When it is windy or draughty, windows and window sashes need to be closed and locked. Windy or draughty as used in this definition means conditions when window or patio door sashes open or close unexpectedly by themselves as a result of air pressure or suction. A fixed open position of the window or patio door sashes can only be achieved by means of supplementary locking fittings. Resistance to loads imposed by wind on closed and locked windows depends on the design and construction of the individual windows / patio doors concerned. If wind stresses to DIN EN 12210 (pressure level p3 in particular) have to be withstood, suitable combinations of fittings must be designed and agreed separately for the design of window and frame material concerned. In general, the turn and turn-tilt fittings are able to meet the requirements to DIN 18025 relating to low-threshold design of flats. However, in this case special combinations and assembly of fittings are needed which must be adjusted and approved separately.

2. Misuse

Misuse – i.e. the use of a product in a manner contrary to the manufacturer's instructions – of turn-tilt fittings for windows and patio doors occurs

- if obstacles are placed in the opening area preventing the intended use.
- if sashes of window / patio doors are pushed or hit against the window reveal, either contrary to the manufacturer's instructions or in an uncontrolled way (e.g. by wind), that the fittings, the frame materials or other individual parts of the window sash or the patio door sash are damaged or destructed or subsequent damage occurs.
- if additional loads act on the sashes of windows or patio doors (e. g. children swinging on them).
- if someone grasps in the gap between the frame and sash when closing the window (risk of injury).

3. Liability

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: The screw / clamping connection of fitting components, such as corner, shear and sash hinges, must be designed according to the TBDK guidelines. Please adapt the fixing procedure to the load situation.

4. Product Capabilities - Application instructions of the manufacturer

The maximum sash weights for the individual types of fitting must not be exceeded. The component with the lowest permissible loading capacity determines the maximum weight of the sash. Please observe the diagrams and component installation instructions.

4.1 Sash sizes and areas of application

The graphs in the application diagram show the permitted sash rebate height to width ratios, as determined by different weights of glass and/or overall glass thicknesses. The resulting sash rebate dimensions or sash formats (portrait / landscape) and the maximum sash weight must under no circumstances be exceeded.

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4.2 Application diagram for determination of the permissible sash sizes

The application diagrams for this fitting series for the determination of permissible sash sizes are described and explained separately on the following pages!

4.3 Composition of fittings

You must comply with the manufacturer's specifications regarding the configuration of fittings (e.g. the use of additional shears, the layout of fittings for burglary-resistant windows and patio door sashes, etc.).

5. Product maintenance

Security-relevant fitting parts are to be inspected at least once a year to check for wear and to ensure they are firmly secured in position. Fastening screws must be tightened and faulty components must be replaced as required. The following servicing work must also be carried out at least once a year.

All mobile parts and locking points for fittings should be greased and tested for function.

Only oils and greases not affecting the materials of the fitting may be used.

The only cleaning and maintenance materials to be used are those which will not adversely affect the corrosion-resistant properties of the fittings components.



Adjustment work to the fittings – particularly in the area of the corner drive and the shears – as well as the replacement of parts and mounting and removal of opening sashes must be carried out by a trained specialist.

5.1 Maintaining surface quality

- The fittings and rebate spaces must be adequately ventilated, particularly during the construction stage, so that they are not exposed to the direct effects of moisture or condensation. It must be ensured in any case by appropriate measures that there is no possibility for (permanently) humid room air to condense in the rebate area.
- The fittings must be kept free from deposits and soiling due to building materials (building dust, gypsum plaster, cement etc). Possible soiling from plaster, mortar etc. must be removed prior to bonding with water.
- Corrosive vapours (e.g. formic acid, acetic acid, ammonia, amine and ammonia compounds, aldehydes, phenols, chlorine, tannic acid etc.) in the rebate space combined with even a small amount of condensation can cause rapid corrosion of the fittings. Therefore, such exhalations in the area of the windows must be avoided.
- Furthermore no sealants that cure with acetic or other acids, or sealants containing any of the above-mentioned substances, must be used. Both direct contact with the sealant and vapours released from it can damage the surface.
- Only use a mild and pH neutral detergent to clean the fittings. Under no circumstances use aggressive acidic cleaners or scouring agents containing the substances listed above.

6. Obligations to give information and instructions

For the implementation of information and instruction obligations as well as for the maintenance work the following documents are available. They must be submitted to (intermediate) dealers and manufacturers and to the end customer.

Planning documentation

Product catalogues

Mounting instructions

Maintenance and care instructions as well as operating instructions

7. Use of type-related fittings

The variants for the individual fitting systems (e.g. tilt and top-hung sash fittings or parallel action fittings providing an additional ventilation position by means of a circumferential gap all around the sash) must be used considering the product information, intended use, misuse, product capabilities, product maintenance and the obligations regarding the information and instruction.

8. Storage

Before the fitting components are assembled, they must be stored on a dry, protected and level surface.

activPilot Concept

Application diagram for ascertaining the admissible sash sizes

– Max. sash weight 100 kg



For PVC-U windows with 12 mm airgap



Turn sash (D)



Turn-tilt sash (DK)

Width-to-height ratio and additional load

Value calculated without additional load for a width-to-height ratio of 2:1

The application diagrams have been established without considering additional loads. For ascertaining the max. sash sizes with additional loads, please ask your authorised contact partner for comprehensive advice!

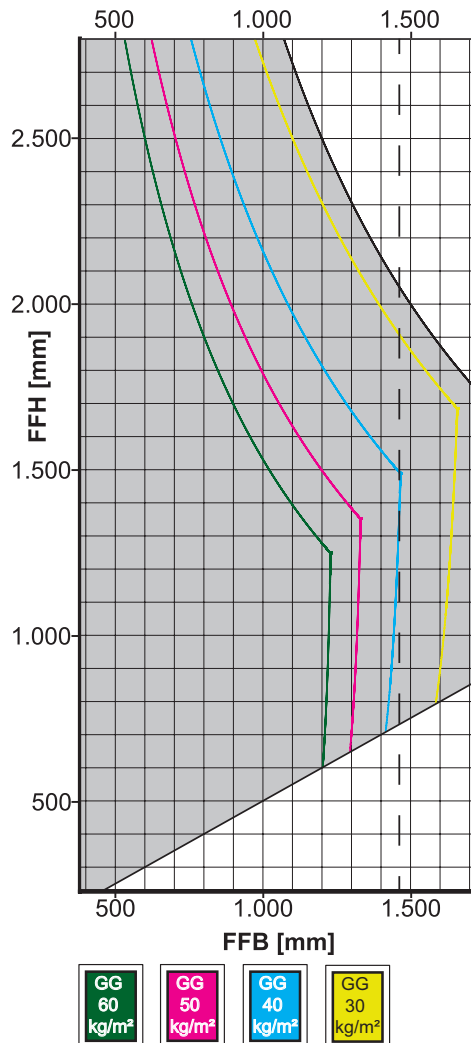
Advice for use

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.

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 270 mm
- Max. sash rebate width 1725 mm
- From 1475 mm sash rebate width with additional shear ZSR
- Min. sash rebate height 230 mm
- Max. sash rebate height 2,800 mm
- Max. sash size 3 m²
- Max. sash weight 100 kg
- Ratio between sash rebate width : sash rebate height ≤ 2:1



AWD_01.50_NR20_DK_100 kg_ohne_Zusatzlast_2_m

Abbreviations

- FFB = Sash rebate width [mm]
- FFH = Sash rebate height [mm]
- GG = Glass weight per square metre [kg/m²]
- ZSR = Additional shear (section on right of interrupted line)

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 and sash weights!



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.

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activPilot Concept

Application diagram for ascertaining the admissible sash sizes

– Max. sash weight 130 kg



For PVC-U windows with 12 mm airgap



Turn sash (D)



Turn-tilt sash (DK)

Width-to-height ratio and additional load

Value calculated without additional load for a width-to-height ratio of 2:1

The application diagrams have been established without considering additional loads. For ascertaining the max. sash sizes with additional loads, please ask your authorised contact partner for comprehensive advice!

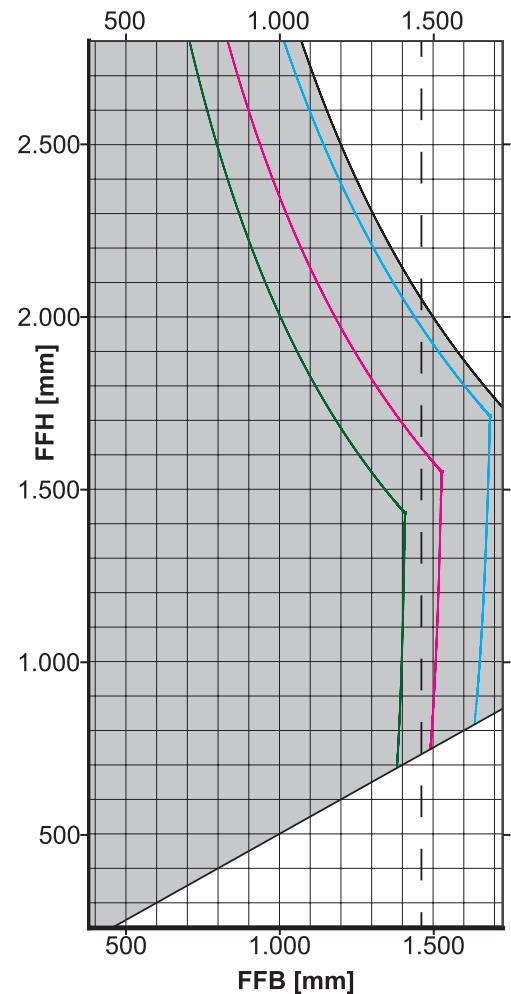
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- Min. sash rebate width 270 mm
- Max. sash rebate width 1725 mm
- From 1475 mm sash rebate width with additional shear ZSR
- Min. sash rebate height 230 mm
- Max. sash rebate height 2,800 mm
- Max. sash size 3 m²
- Max. sash weight 130 kg
- Ratio between sash rebate width : sash rebate height ≤ 2:1



AWD_01.50_NR30_DK_130 kg_ohne_Zusatzlast_2_m

Abbreviations

- FFB = Sash rebate width [mm]
- FFH = Sash rebate height [mm]
- GG = Glass weight per square metre [kg/m²]
- ZSR = Additional shear (section on right of interrupted line)

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 and sash weights!



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.

Further products

activPilot Select

The fully concealed turn-tilt fitting system.

The fitting system features fully concealed shear, turn and corner hinges housed in the rebate. When installed as a standard model, this elegantly designed turn and tilt fitting is able to bear sashes weighing up to 100 kg. With just two additional components, it can easily support sashes weighing up to 150 kg.



activPilot Control

Locking sensors up to VdS Class C.

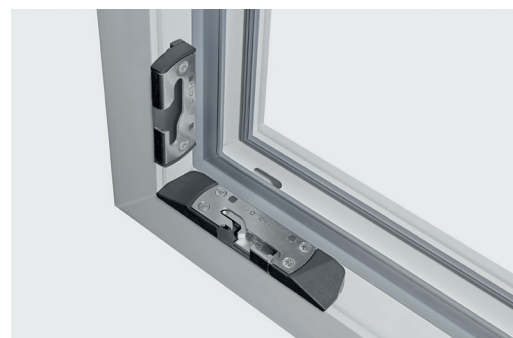
Unobtrusive closing sensors reliably report which windows and glazed doors are open or locked. At the same time heating and air-conditioning controls are supported.



activPilot Comfort

The fitting system with parallel action

Allround security thanks to innovative technology. The convenient approach to a healthy indoor atmosphere and improved illegal entry protection in parallel position.



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activPilot Ergo

The ergonomically controlled turn-tilt fitting system.

Actuating the handle tilts and returns the sash. Due to this intelligent controlled action, there is no need to pull the window sash to the front.



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easyPilot

Fittings for turn windows.

Simple, rational and easy to handle. Perfectly geared to the needs of international fitters thanks to innovative, country-specific solutions.



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duoPort SK

Slide-tilt fittings.

The slide-tilt doors delivered with the duoPort SK series support sash weights of up to 200 kg, with perfect functionality and elegant design. They can be operated conveniently by simply pressing the handle in combination with a pull-in shear device.



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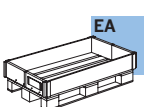

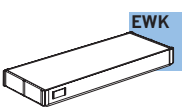

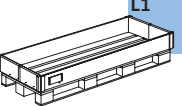

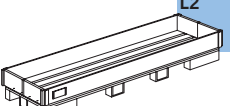

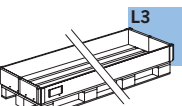

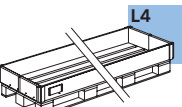

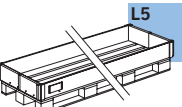
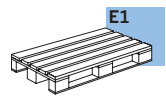
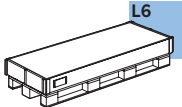
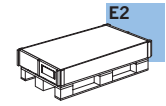
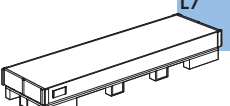
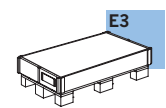
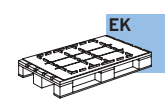
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Packing key in the Winkhaus logistics system

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		EA Europallet with frame and bar code Pallet size 800 x 1,200 mm
	KT Goods packed in cardboard boxes with bar code		EWK Disposable cardboard box E3, L6 or L7
	BD Tied goods with barcode		L1 Reusable pallet for long goods with frame and bar code Pallet size 800 x 1,800 mm
	K3 Small cardboard box with bar code Dim.: 395 x 295 x 205 mm		L2 Reusable pallet II for long goods with frame and bar code Pallet size 800 x 2,400 mm
	K4 Big cardboard box with bar code Dim: 595 x 395 x 205 mm		L3 Reusable pallet III for long goods with frame and bar code Pallet size 800 x 3,500 mm
	KK Small KLT 4321 Dim: 400 x 300 x 214 mm with cover, bar code, sealed, stackable		L4 Reusable pallet IV for long goods with frame and bar code Pallet size 800 x 4,200 mm
	GK Big KLT 6412 Dim: 600 x 400 x 214 mm with cover, bar code, sealed, stackable		L5 Reusable pallet V for long goods with frame and bar code Pallet size 800 x 6,500 mm
	E1 europallet with KLT Pallet size 800 x 1,200 mm		L6 One-way pallet with cover box for long goods with bar code Pallet size 800 x 1,800 mm
	E2 europallet with cover box and bar code Pallet size 800 x 1,200 mm		L7 One-way pallet with cover box for long goods with bar code Pallet size 800 x 2,400 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		

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Glossary

Code

AB.G.D	Drilling protection	HFG	Window Handle Case HFG
ADP	Adapter	HT	Timber windows, pot hinge version
AKR	Automatic shootbolt	HW	Timber windows, rebate version
AL...	Support plate	IF	activPilot Topstar
AP...SE	Adapter plate, activPilot Select	K.EL	Corner hinge cap
AS.DSL	Mini ventilation unit (turn position)	K.FL	Sash hinge cover
AS.SBA	Mini vent keep	K.SB	Shear hinge cap, timber
ASP ER-A	End plate	K.SK	Shear band cap
ASS AR	Corner drive	K.SL	Shear hinge cover
AWDR	Blocking plate	KB	Tilt hinge
BDT	Motor drive of the fitting system		Tilt limiter
BK	Balcony door catch	KBG	Coupling element
BK.KR	Catch bolt	KE	Tilt hinge
BO	Catch bolt	KLB	Shootbolt
BS	Ground sill	KR	Cable transition, separable
BST AP/FS	Punch	KUE-T1	
D	Backset	LE.B	Drilling jig
DB	Turn limiter	LE.N	Jig
DFE	Dual function element	LIN AP/FS	Ruler of fittings press
DL	Turn hinges	LM-RG	Round handle
DL...ET	Turn hinge, 1 piece	M	Interlocking rod
DLW ERW	Top hinge bracket	MK	Interlocking rod, extendable
DML	Turn middle hinge	MS.SO	Interlocking rod, double sash, keep top
DS	Window lock	MS.SU	Interlocking rod, double sash, keep bottom
E	Corner drive	MSL.OS	Variable tilt device top rod
E1.A	Corner drive for studio windows	OBV	Opening limiter
E1.MSL	Corner drive with variable tilt device	OS	Top rod
E1.SBS	Corner drive for double-sash window	OS...PA...	Top rod, PADK
EL	Corner hinge	OS. ...E	Top rod (turn before tilt)
EL.KB	Corner hinge up to 130 kg	OS.A	Screw clip
ESV	Corner hinge ESV	PA	Parallel action
ESVW	Corner hinge (up to 130 kg)	PAD	Parallel action, turn
FBP	Window limiter	PADK	Parallel action, turn-tilt
FH ...	Sash lifter	RA.DB...SE	Frame connection turn limiter, activPilot Select
FL	Sash hinge	RT.DFE-TFE	Frame part, dual/triple function element
FL.E.FK.PADSS	Sash hinge, PADS	RT.DFE-TFE.S	Frame part, dual/triple function element, double-sash windows
FL.E.FPAD	Sash hinge PAD	RT.MSL	Frame part, variable tilt device
FL.E.FWPA	Sash hinge, PADK		
FLS.SE	Sash hinge rail, activPilot Select		
FSA	Fail safe device FSA		
FSF	Fail safe device FSF		
FSR	Rebate shear		
FT	Adapter		
FWV	Sash hinge, rebate hinge		
GAK	Drive rod, constant handle position		
GAKA	Drive rod, constant handle position, lockable		
GAM	Drive rod, central handle position		
GAMA	Drive rod, central handle position, lockable		
GASK	Double sash drive rod, constant handle position		
GASM	Double sash drive rod, central handle position		
GAVM	Locking drive rod activPilot, central handle position		
GG	Handle set		
GK	Constant handle position		
GRT.RB	Round arch set		

S.FL	Sash hinge plug
SA	Run-up block
SB SZV	Keep, pull-in device
SBA...	Keep, contact pressure
SBA...T	Mini vent keep
SBK	Security tilt keep
SBK...E	Tilt keep (tilt before turn)
SBK...PA	Tilt keep (with slider), PADK
SBS...	Security keep
SBS...PAB	Security keep PAB, PADK
SBS...PAD	Security keep PAD
SE	activPilot Select
SH...T	Shear, pot hinge
SK	Shear, rebate hinge
SK...PA	Shear, PADK
SK...PAD	Shear PAD
SK ... A	Shear studio window
SK ... E	Shear (tilt before turn)
SKK	Shear, without turn restriction
SL	Shear hinge
SL.HW	Shear hinge, rebate hinge
SLK	Shear hinge cap, rebate hinge
SNH	Faceplate fastener
SP R	Faceplate
SR	Control unit
SZP	Geared cover plate
TFE	Triple function element
V	Distance between locking points
V.AK	Extension rod
VS R	Connection rod
VS RB	Connection rod round-arch window
XL	Components from activPilot Giant range
ZSR	Additional shear
ZSRE	Additional shear (tilt before turn)
ZSS.OS	Anti-slam device, top rod
ZV.FT	Pull-in device, sash part
ZV.RT	Pull-in device, frame part

Item description

...LS	Fitting direction left
...RS	Fitting direction right
...AGR	anthracite grey (similar to RAL 7016)
...BR	brown (similar to RAL 8019)
...BZ-AM	bronze – antique brass
...BZ-CU	bronze – coppery
...BZ-RB	bronze – red brown
...CW	creme white (similar to RAL 9001)
...EV1	anodised silver
...F1	silver coloured
...F1 anodised	(similar to F1) anodised silver
...F3	gold coloured
...F3-MG	gold mat
...F9	titanium coloured
...LBR	clay brown
...PW	pearl white (similar to RAL 1013)
...SG	silver-grey (similar to RAL 7001)
...SGB	grey (similar to RAL 9006)
...SGR	grey (similar to RAL 7037)
...SL	silver look (zinc galvanised)
...SW	jet black
...WS	white (similar to RAL 9016)

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
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1 Overview of min. dimensions for drive rods D = 15.5 mm

The following overview shows the applications supported by corner drives. Use depends on the variant "turn-tilt" or "turn double sash", and the window size. Depending on the application, other elements can be used as alternatives to corner drives.

3 Turn-tilt type, constant, single sash




	270 - 370	371 - 600	601 - max	
230 - 325				
326 - 420				
421 - max				

3 Turn/Turn-tilt double sash type, constant

	280 - max	371 - 600	601 - max	
230 - 450				230 - 450
451 - 545	GASK			451 - max
546 - max				

10 Turn-tilt type, central, single sash



	270 - 370	371 - 600	601 - max	
230 - 325		GAK 465 G=114	GAK 465 G=114	
326 - 510				
511 - max				

E1 E2 E3 KR

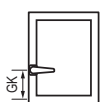
10 Turn/Turn-tilt double sash type, central











	280 - max	371 - 600	601 - max	
230 - 410		GAK 465 G=114	GAK 465 G=114	230 - 410
411 - 560	GASM			411 - 560
561 - 710				561 - max
711 - 980	GASM 1050			
981 - max				

Overview of min. dimensions for drive rods D = 7.5 mm











The following overview shows the applications supported by corner drives. Use depends on the variant “turn-tilt” or “turn double sash”, and the window size. Depending on the application, other elements can be used as alternatives to corner drives.

Turn-tilt type, constant, single sash

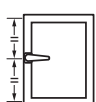












				
	270 - 370	371 - 600	601 - max	
338 - 433	X			
434 - 530				
531 - max				

Turn/Turn-tilt double sash type, constant

					
	280 - max	371 - 600	601 - max		
338 - 450				338 - 450	
451 - 545	GASK 830			451 - 545	
546 - max				546 - max	















Turn-tilt type, central, single sash



				
	270 - 370	371 - 600	601 - max	
381 - 574	X			
575 - 710				
711 - max				

E1 E2 E3 KR

Turn/Turn-tilt double sash type, central

					
	280 - max	371 - 600	601 - max		
381 - 410				381 - 410	
411 - 574				411 - 574	
575 - 710				575 - 710	
711 - 980	GASM 1050			711 - 980	
981 - max				981 - max	

1
General product information

2
Lists of Fittings

3
Drive rods

4
Corner drives

5
Top rods

6
Sash hinges/
Corner hinges

7
Shears/
Shear hinges

8
Turn hinges/
Tilt hinges

9
Extension rods

10
Accessories

11
Frame parts

12
Mounting accessories

13
Mounting instructions

14
Adjustment/
maintenance

15
Installation drawings

Overview of max. dimensions for drive rods D = 15.5 and 7.5 mm

This overview shows how the gear side is designed when tall windows up to 2,725/2,800 mm are involved. The maximum sash height depends on the position of the window handle, central or constant.

Turn-tilt type, constant, single sash



		min - max*
2226 - 2475	MK.250-1 + GAK.2225-...	
2476 - 2725	MK.500-1 + GAK.2225-...	

Turn/Turn-tilt double sash type, constant

	min - max*	min - max*	
2226 - 2475	MS.SO.250-1 + GASK.2225-...	MK.250-1 + GAK.2225-...	2226 - 2475
2476 - 2725	MS.SO.500-1 + GASK.2225-...	MK.500-1 + GAK.2225-...	2476 - 2725

Turn-tilt type, central, single sash



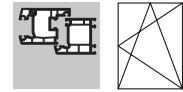
		min - max*
2301 - 2800	MK.250-1 + GAM.2300-3 + MK.250-1	

Turn/Turn-tilt double sash type, central

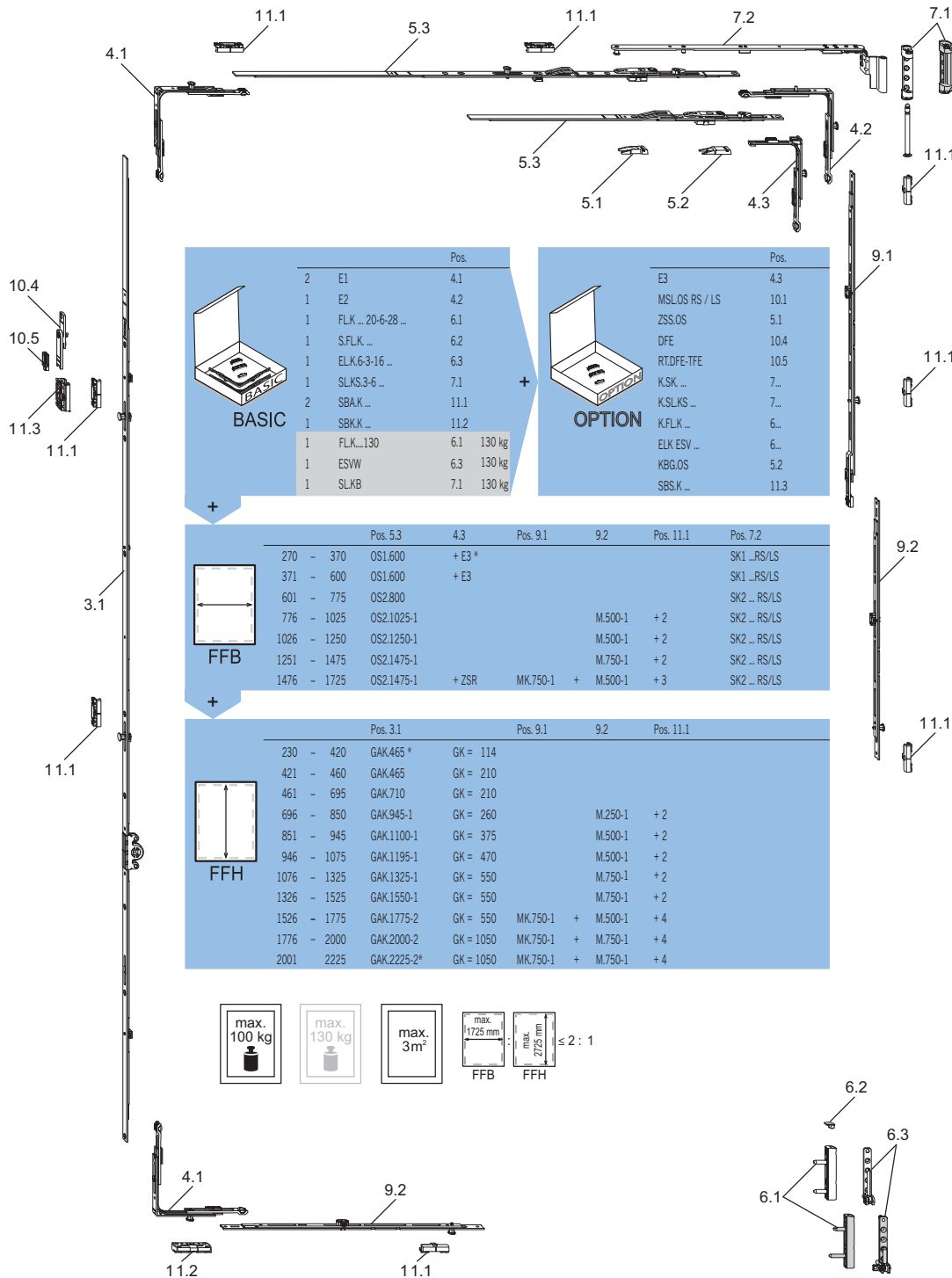
	min - max*	min - max*	
2301 - 2800	MS.SO.250-1 + GASM.2300-3 + MS.SU.250-1	MK.250-1 + GAM.2300-3 + MK.250-1	2301 - 2800

* Please observe the "Diagrams to determine permissible sash sizes"!

Turn-tilt fitting – constant handle position



Basic equipment



BASIC			OPTION		
		Pos.			Pos.
2	E1	4.1	E3		4.3
1	E2	4.2	MSLOS RS / LS		10.1
1	FLK ... 20-6-28 ...	6.1	ZSS.OS		5.1
1	S.FLK ...	6.2	DFE		10.4
1	ELK.6-3-16 ...	6.3	RTD/DFE-TFE		10.5
1	SLKS.3-6 ...	7.1	K.SK ...		7...
2	SBAK ...	11.1	K.SLKS ...		7...
1	SBKK ...	11.2	K.FLK ...		6...
1	FLK...130	6.1	130 kg		6...
1	ESVW	6.3	130 kg		6...
1	SLKB	7.1	130 kg		5.2
			KBG.OS		5.2
			SBS.K ...		11.3

		Pos. 5.3	4.3	Pos. 9.1	9.2	Pos. 11.1	Pos. 7.2
270 - 370	OS1.600	+ E3 *					SK1 _RS/LS
371 - 600	OS1.600	+ E3					SK1 _RS/LS
601 - 775	OS2.800						SK2 _RS/LS
776 - 1025	OS2.1025-1			M.500-1	+ 2		SK2 _RS/LS
1026 - 1250	OS2.1250-1			M.500-1	+ 2		SK2 _RS/LS
1251 - 1475	OS2.1475-1			M.750-1	+ 2		SK2 _RS/LS
1476 - 1725	OS2.1475-1	+ ZSR	MK.750-1	+ M.500-1	+ 3		SK2 _RS/LS

		Pos. 3.1	Pos. 9.1	9.2	Pos. 11.1
230 - 420	GAK.465 *	GK = 114			
421 - 460	GAK.465	GK = 210			
461 - 695	GAK.710	GK = 210			
696 - 850	GAK.945-1	GK = 260		M.250-1	+ 2
851 - 945	GAK.1100-1	GK = 375		M.500-1	+ 2
946 - 1075	GAK.1195-1	GK = 470		M.500-1	+ 2
1076 - 1325	GAK.1325-1	GK = 550		M.750-1	+ 2
1326 - 1525	GAK.1550-1	GK = 550		M.750-1	+ 2
1526 - 1775	GAK.1775-2	GK = 550	MK.750-1	+ M.500-1	+ 4
1776 - 2000	GAK.2000-2	GK = 1050	MK.750-1	+ M.750-1	+ 4
2001 - 2225	GAK.2225-2*	GK = 1050	MK.750-1	+ M.750-1	+ 4



* See overview Min/max. dimensions
Please pay attention to the application diagrams!

1 General product information

2 Lists of Fittings

3 Drive rods

4 Corner drives

5 Top rods

6 Sash hinges/ Corner hinges

7 Shears/ Shear hinges

8 Turn hinges/ Tilt hinges

9 Extension rods

10 Accessories

11 Frame parts

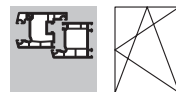
12 Mounting accessories

13 Mounting instructions

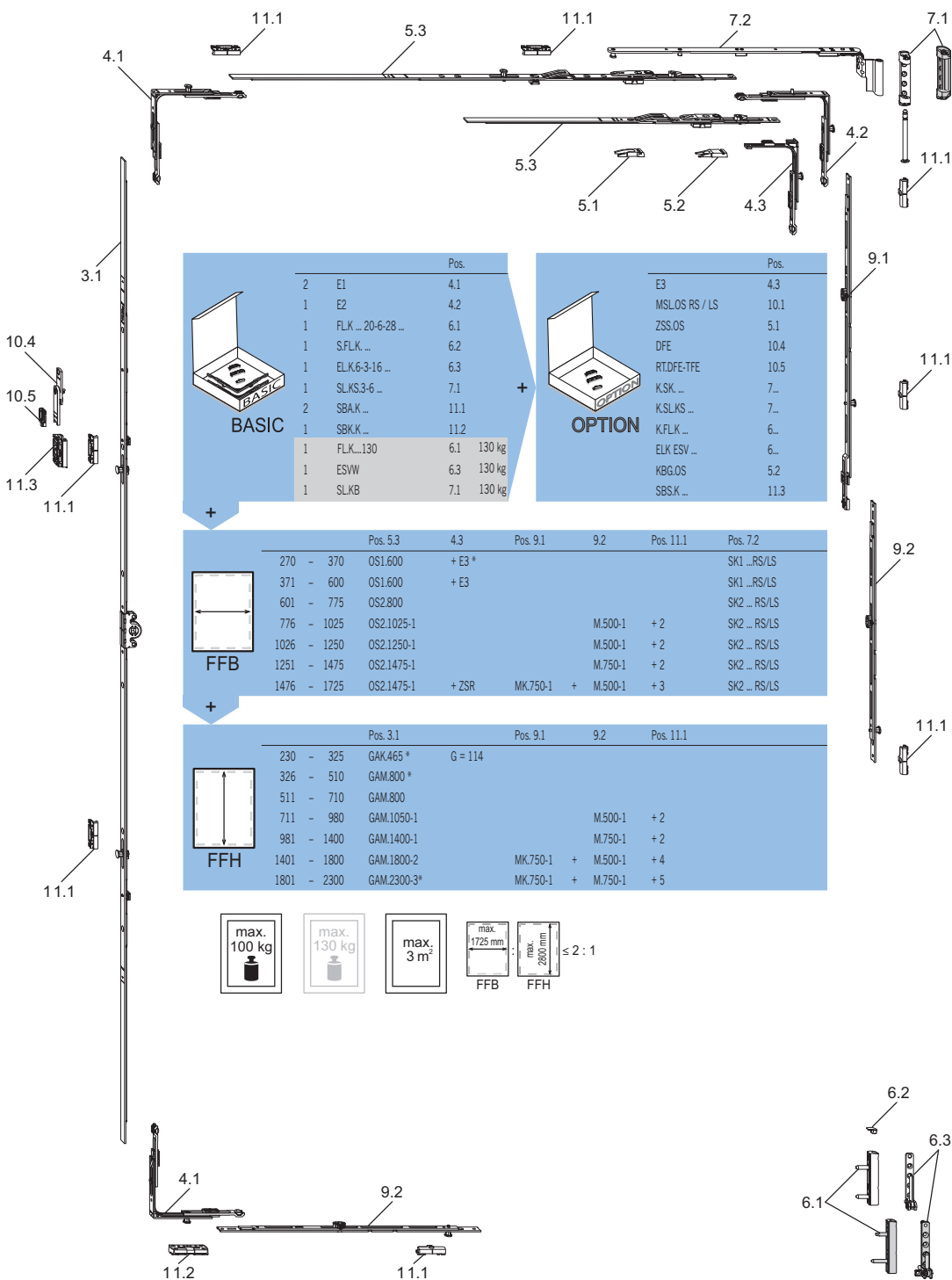
14 Adjustment/ maintenance

15 Installation drawings

Turn-tilt fitting – central handle position

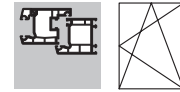


Basic equipment

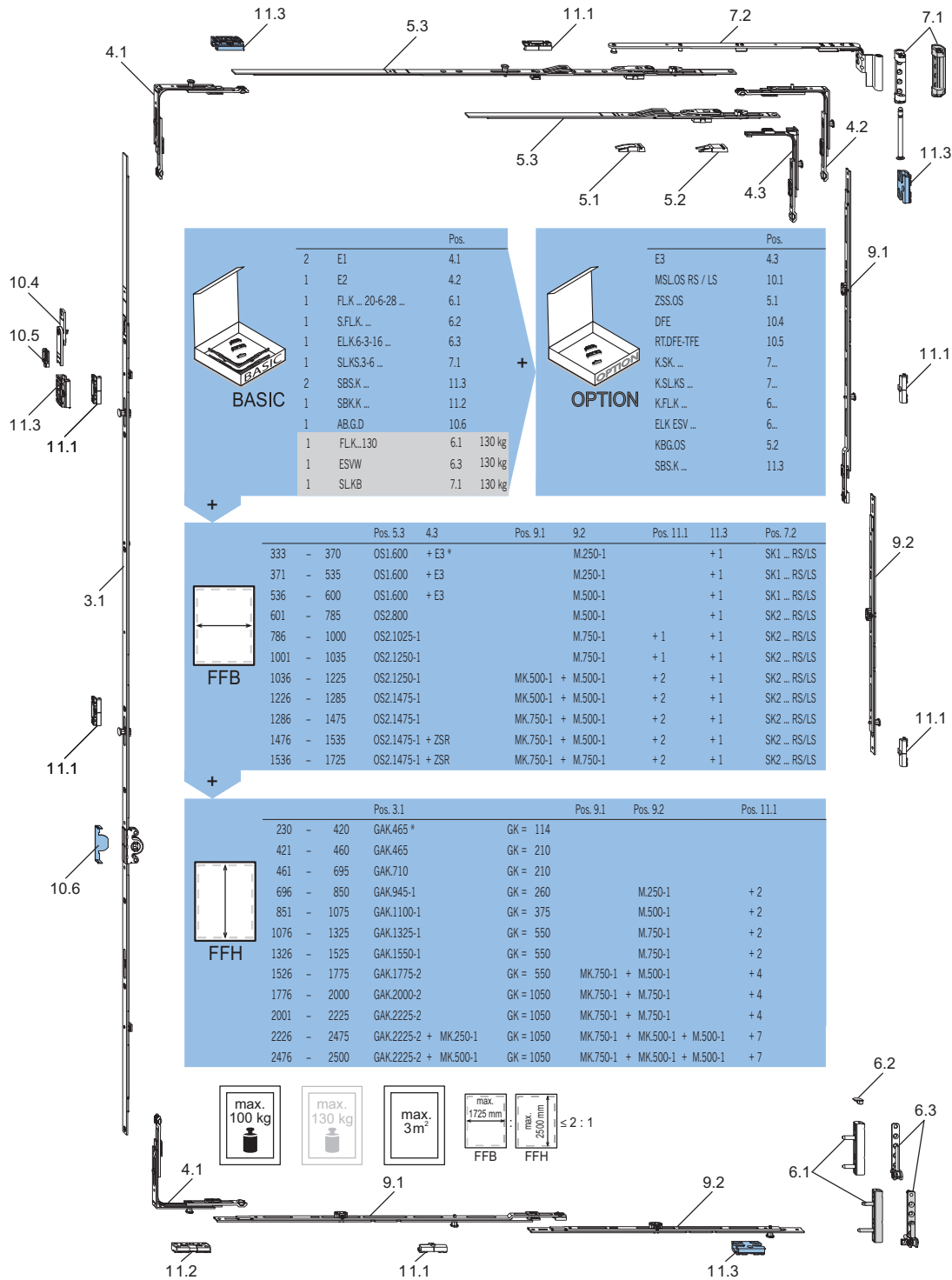


* See overview Min/max. dimensions
Please pay attention to the application diagrams!

Turn-tilt fitting – constant handle position



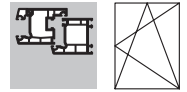
Suitable for burglary-resistant windows WK1/RC1N



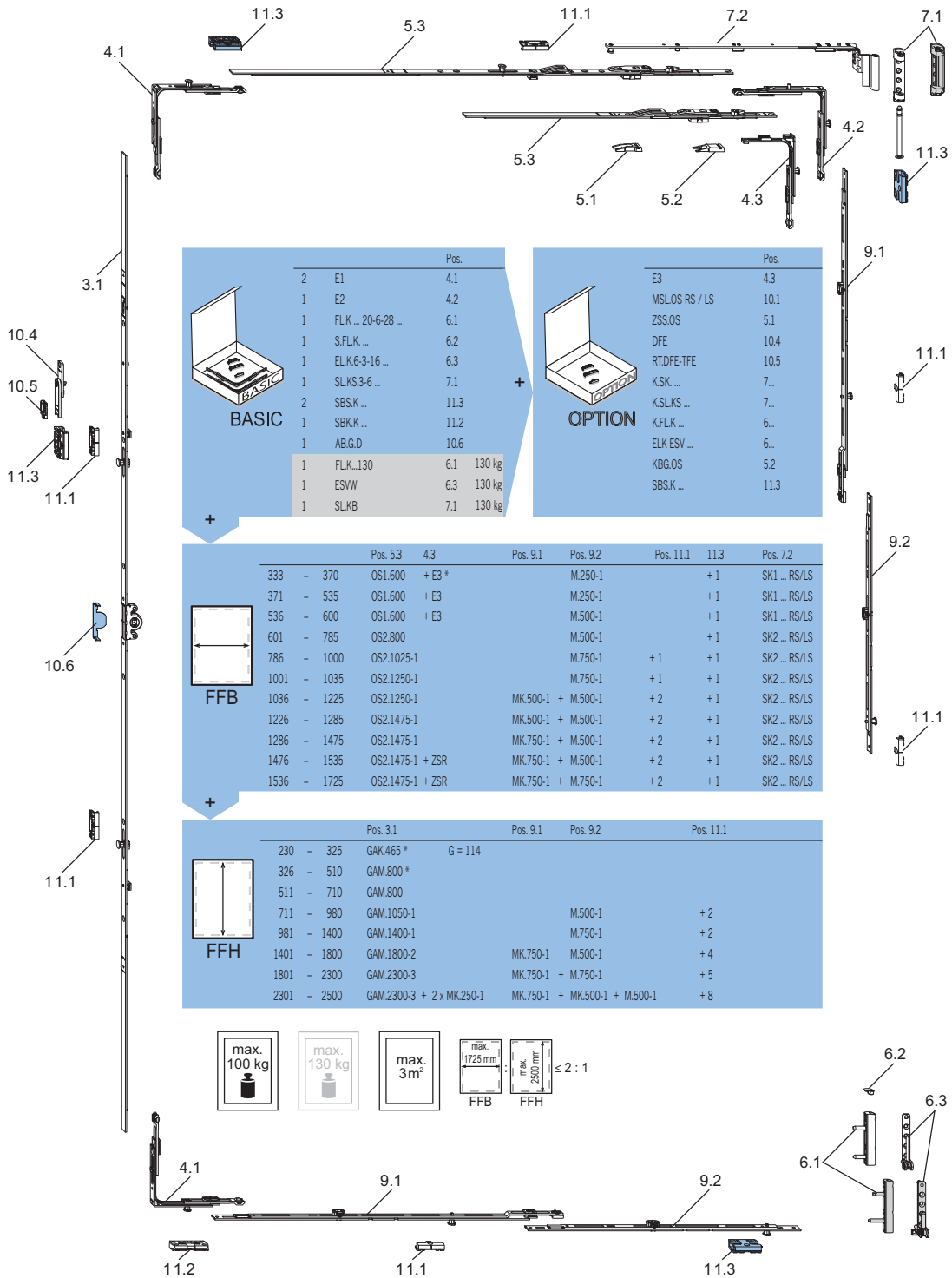
* See overview min. dimensions
 Please pay attention to the application diagrams!
 For further information please contact your Winkhaus representative.

- 1 General product information
- 2 Lists of Fittings
- 3 Drive rods
- 4 Corner drives
- 5 Top rods
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- 7 Shears/ Shear hinges
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- 9 Extension rods
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- 12 Mounting accessories
- 13 Mounting instructions
- 14 Adjustment/ maintenance
- 15 Installation drawings

Turn-tilt fitting – central handle position



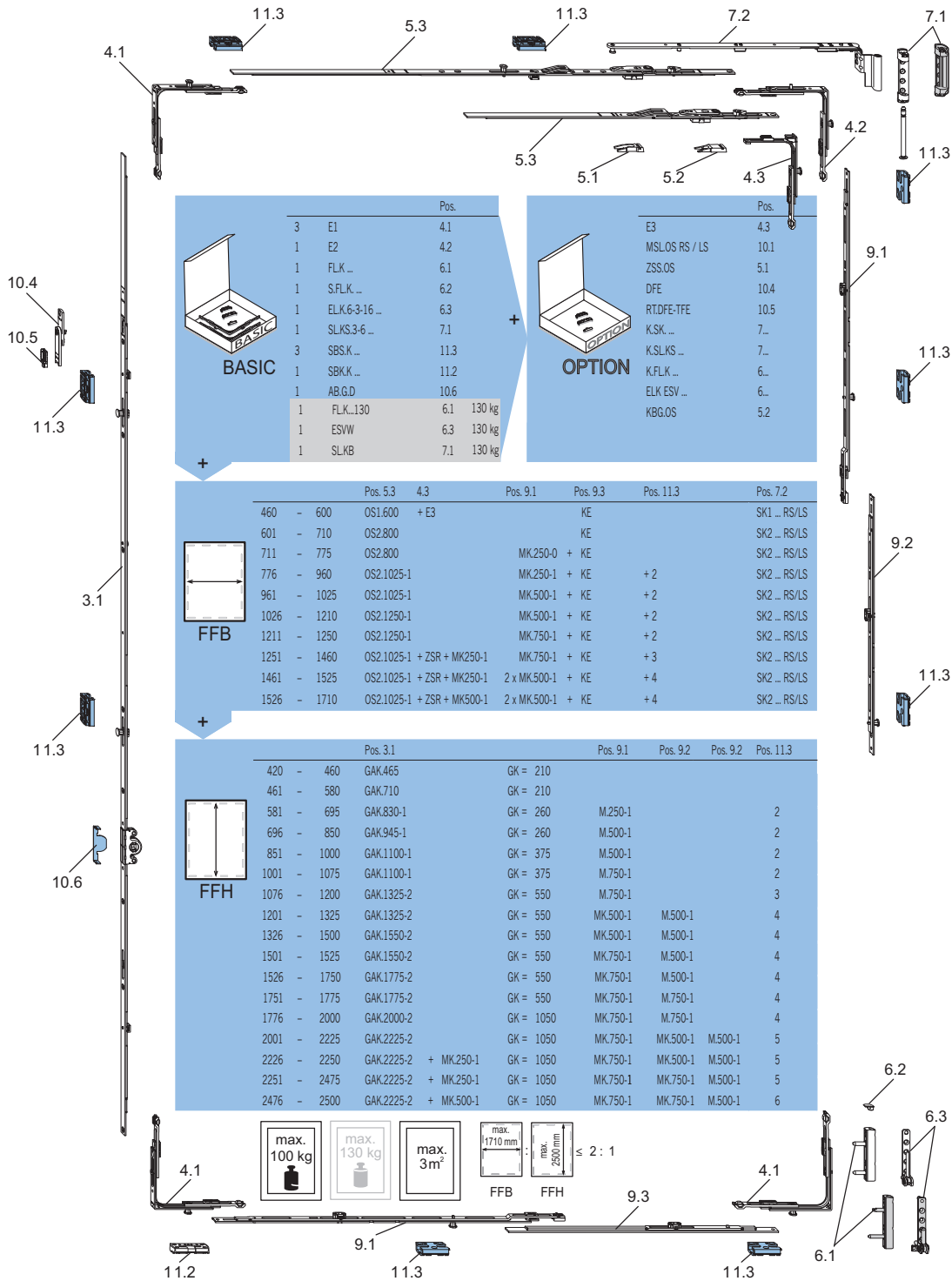
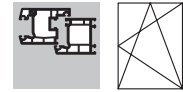
Suitable for burglary-resistant windows WK1/RC1N



* See overview min. dimensions
 Please pay attention to the application diagrams!
 For further information please contact your Winkhaus representative.

Turn-tilt fitting – constant handle position

Suitable for burglary-resistant windows WK2/RC 2/RC 2N



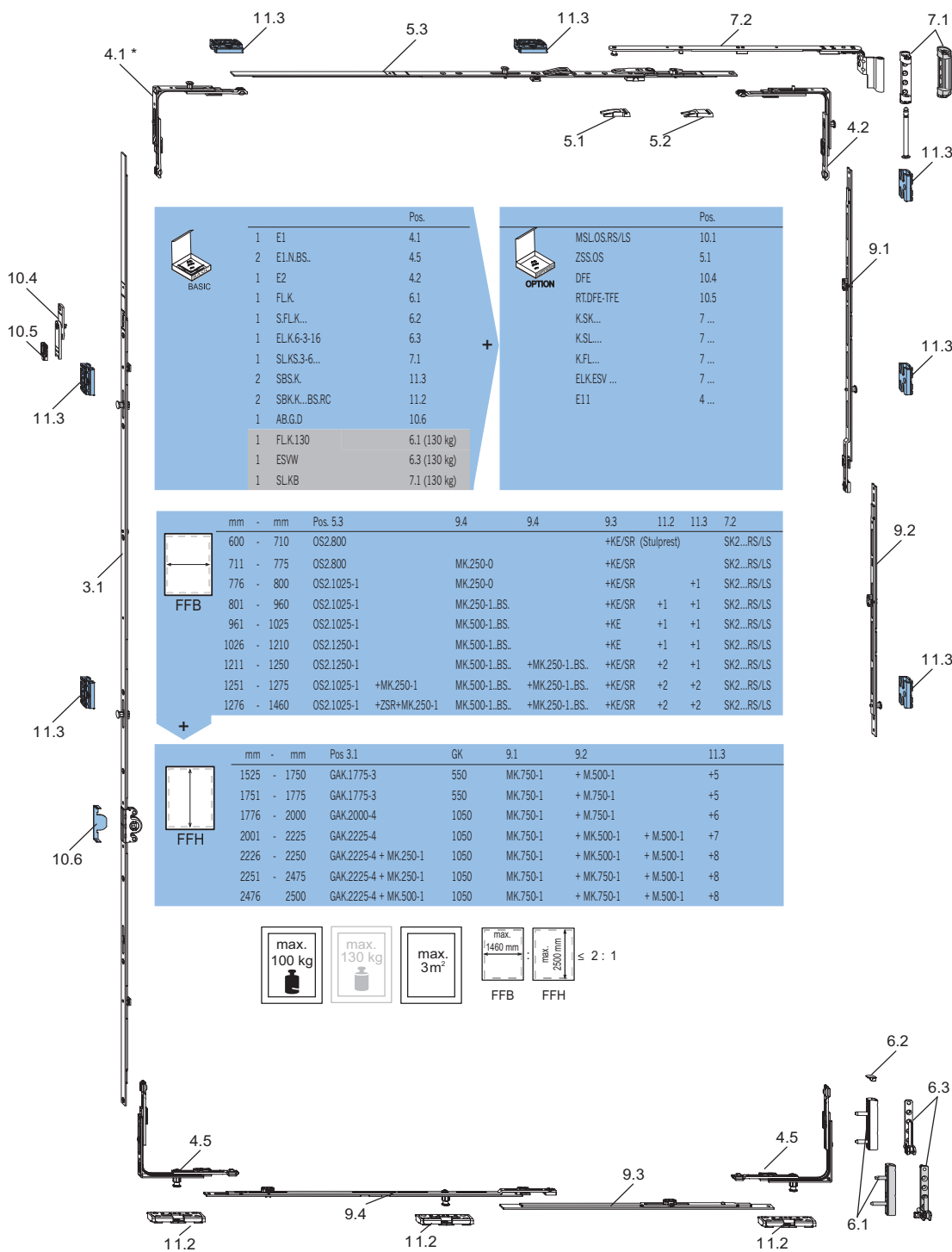
- 1 General product information
- 2 Lists of Fittings
- 3 Drive rods
- 4 Corner drives
- 5 Top rods
- 6 Sash hinges/ Corner hinges
- 7 Shears/ Shear hinges
- 8 Turn hinges/ Tilt hinges
- 9 Extension rods
- 10 Accessories
- 11 Frame parts
- 12 Mounting accessories
- 13 Mounting instructions
- 14 Adjustment/ maintenance
- 15 Installation drawings

The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

Turn-tilt fitting – constant handle position



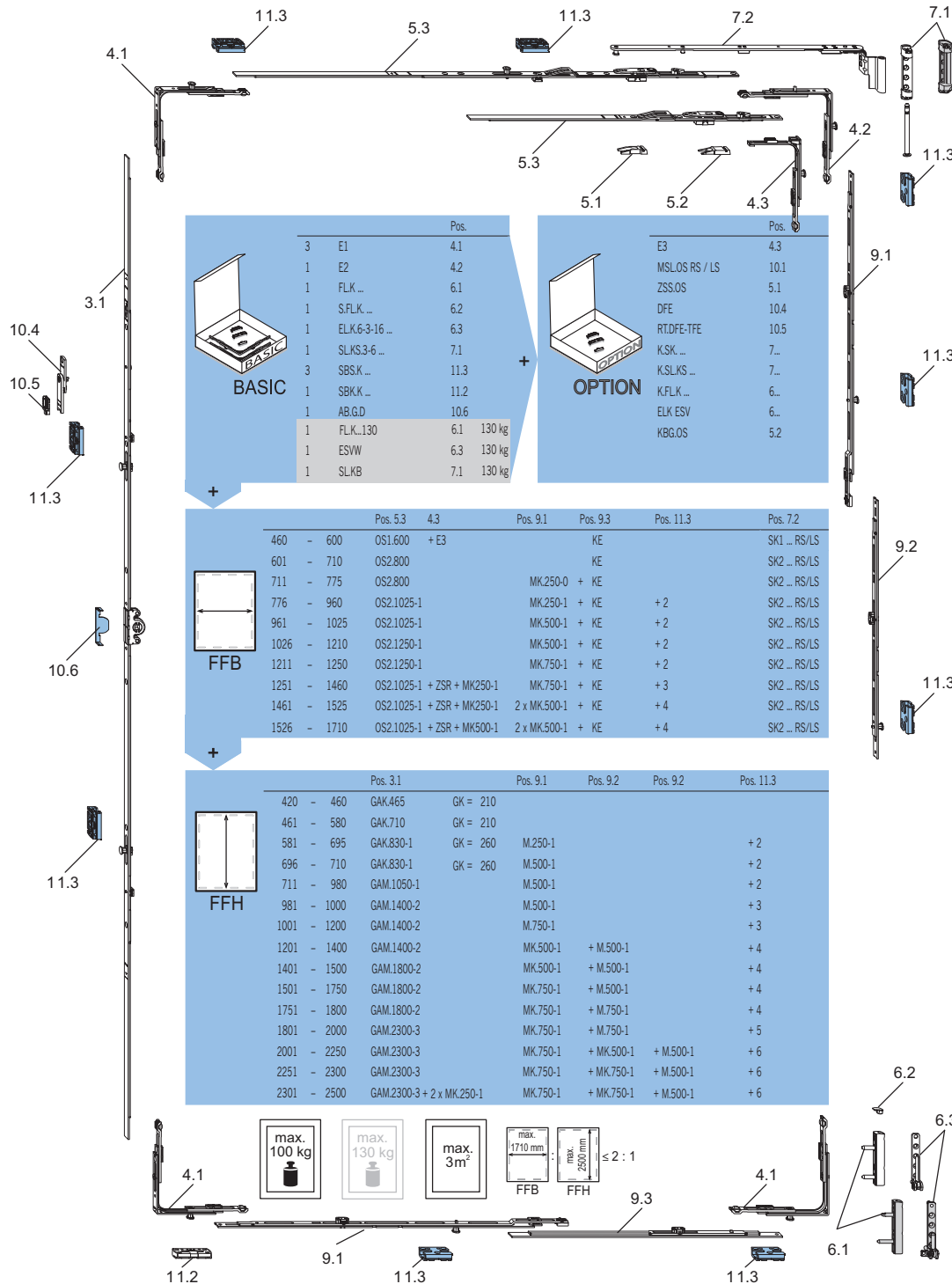
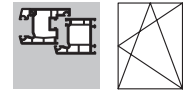
Suitable for burglary-resistant windows WK2/RC 2/RC 2N



* For single and double-sash units with roller shutter boxes the component E11 must be used. The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

Turn-tilt fitting – central handle position

Suitable for burglary-resistant windows WK2/RC 2/RC 2N



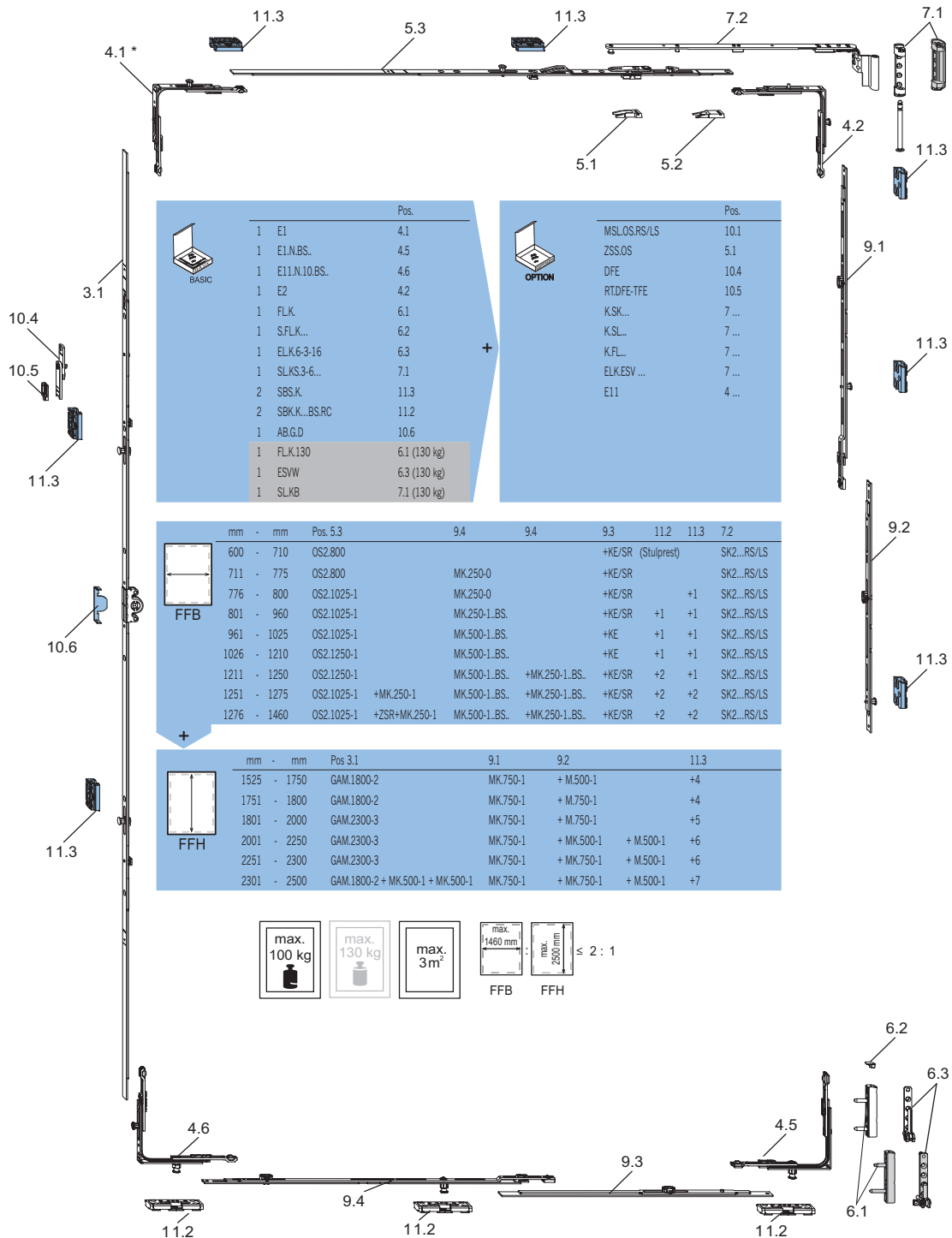
- 1 General product information
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- 4 Corner drives
- 5 Top rods
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- 12 Mounting accessories
- 13 Mounting instructions
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- 15 Installation drawings

The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

Turn-tilt fitting – central handle position

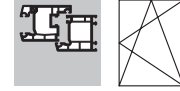


Suitable for burglary-resistant windows WK2/RC 2/RC 2N

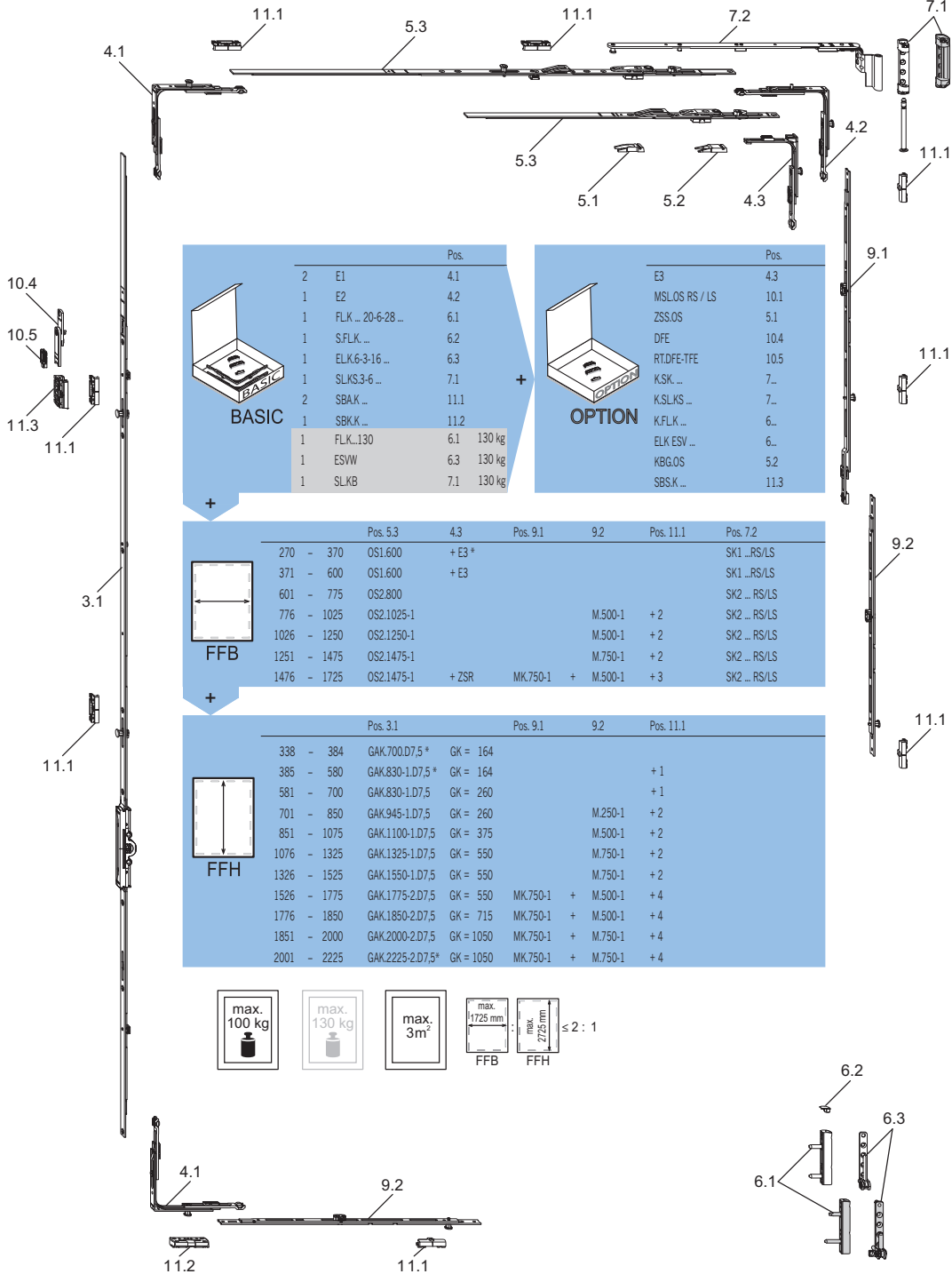


* For single and double-sash units with roller shutter boxes the component E11 must be used. The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

Turn-tilt fitting – constant handle position



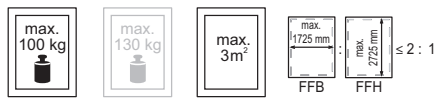
Basic equipment
Backset 7.5 mm



BASIC				OPTION			
		Pos.			Pos.		
2	E1	4.1	E3	4.3			
1	E2	4.2	MSLOS RS / LS	10.1			
1	FLK ... 20-6-28 ...	6.1	ZSS.OS	5.1			
1	S.FLK ...	6.2	DFE	10.4			
1	ELK.6-3-16 ...	6.3	RT.DFE-TFE	10.5			
1	SLKS.3-6 ...	7.1	K.SK ...	7...			
2	SBA.K ...	11.1	K.SLKS ...	7...			
1	SBK.K ...	11.2	K.FLK ...	6...			
1	FLK.130	6.1	130 kg	6...			
1	ESW	6.3	130 kg	ELK ESW ...	6...		
1	SLKB	7.1	130 kg	KB.GOS	5.2		
				SBSK ...	11.3		

	Pos. 5.3	4.3	Pos. 9.1	9.2	Pos. 11.1	Pos. 7.2
270 - 370	OS1.600	+ E3 *				SK1 ...RS/LS
371 - 600	OS1.600	+ E3				SK1 ...RS/LS
601 - 775	OS2.800					SK2 ...RS/LS
776 - 1025	OS2.1025-1			M.500-1	+ 2	SK2 ...RS/LS
1026 - 1250	OS2.1250-1			M.500-1	+ 2	SK2 ...RS/LS
1251 - 1475	OS2.1475-1			M.750-1	+ 2	SK2 ...RS/LS
1476 - 1725	OS2.1475-1	+ ZSR	MK.750-1	+ M.500-1	+ 3	SK2 ...RS/LS

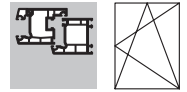
	Pos. 3.1	Pos. 9.1	9.2	Pos. 11.1
338 - 384	GAK.700.D7.5*	GK = 164		
385 - 580	GAK.830-1.D7.5*	GK = 164		
581 - 700	GAK.830-1.D7.5	GK = 260		+ 1
701 - 850	GAK.945-1.D7.5	GK = 260		M.250-1
851 - 1075	GAK.1100-1.D7.5	GK = 375		M.500-1
1076 - 1325	GAK.1325-1.D7.5	GK = 550		M.750-1
1326 - 1525	GAK.1550-1.D7.5	GK = 550		M.750-1
1526 - 1775	GAK.1775-2.D7.5	GK = 550	MK.750-1	+ M.500-1
1776 - 1850	GAK.1850-2.D7.5	GK = 715	MK.750-1	+ M.500-1
1851 - 2000	GAK.2000-2.D7.5	GK = 1050	MK.750-1	+ M.750-1
2001 - 2225	GAK.2225-2.D7.5*	GK = 1050	MK.750-1	+ M.750-1



* See overview Min/max. dimensions
Please pay attention to the application diagrams!

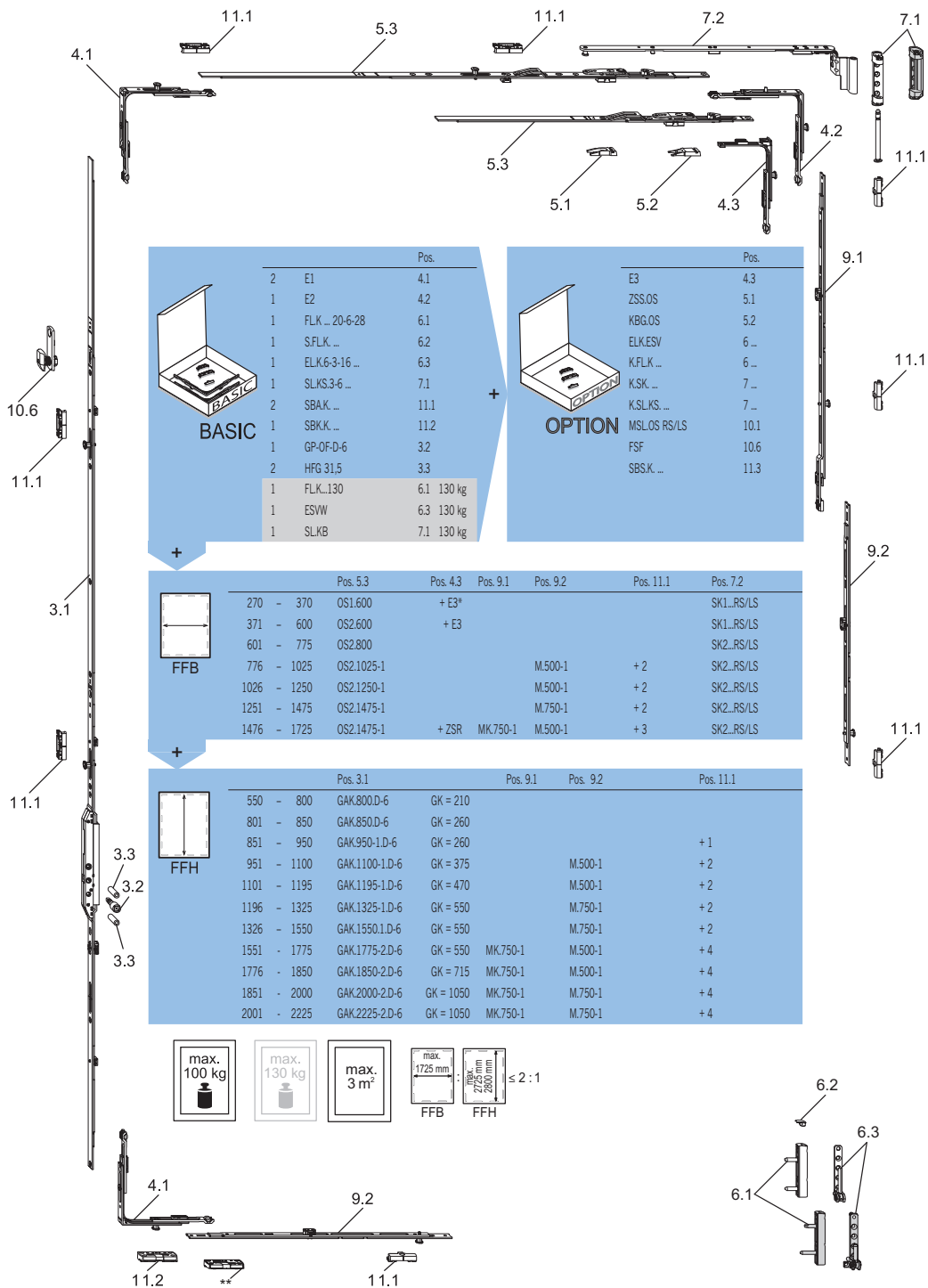
- 1 General product information
- 2 Lists of Fittings
- 3 Drive rods
- 4 Corner drives
- 5 Top rods
- 6 Sash hinges/ Corner hinges
- 7 Shears/ Shear hinges
- 8 Turn hinges/ Tilt hinges
- 9 Extension rods
- 10 Accessories
- 11 Frame parts
- 12 Mounting accessories
- 13 Mounting instructions
- 14 Adjustment/ maintenance
- 15 Installation drawings

Turn-tilt fitting – constant handle position



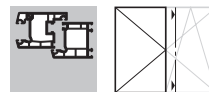
Basic equipment

Backset minus 6 mm

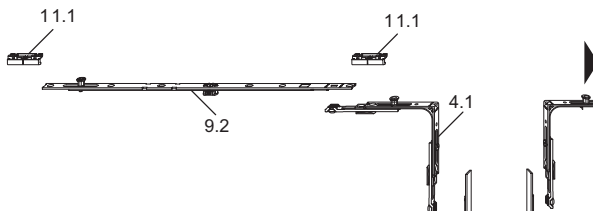
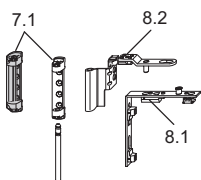


* See overview Min/max. dimensions
Please pay attention to the application diagrams!

Turn double-sash fitting – central handle position



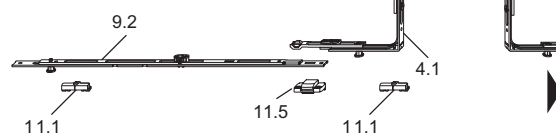
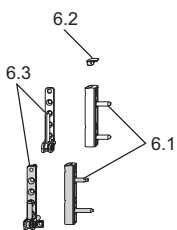
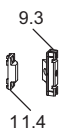
Basic equipment



BASIC		Pos.	OPTION		Pos.
2	E1	4.1	K.SK. ...		7...
1	FLK... 20-6-28...	6.1	K.SLKS. ...		7...
1	S.FLK. ...	6.2	K.FLK. ...		6...
1	EL.K.6-3-16...	6.3	ELK.ESV		6...
1	SLKS.3-6	7.1	RT.DFE-TFES		10.6
1	DLW.ERW	8.1	FH. ...		11.5
1	DLK.	8.2			
2	SBAK. ...	11.1			
1	FLK...130	6.1	130 kg		
1	ESW	6.3	130 kg		
1	SLKB	7.1	130 kg		

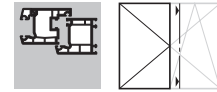
FFB	Pos. 9.1	9.2	Pos. 11.1
280 - 700			
701 - 1200	2 x	M.500-1	+ 2
1201 - 1450	2 x	M.750-1	+ 2
1451 - 1725	2 x	MK.500-1 + M.500-1	+ 4

FFH	Pos. 3.1	Pos. 9.3	11.4
410 - 560	GASM.800 *		
561 - 710	GASM.800 *		
711 - 980	GASM.1050.E3 *		
981 - 1400	GASM.1400-1	1 x ZV-FT	+ ZV-RT. ...
1401 - 1800	GASM.1800-2	2 x ZV-FT	+ ZV-RT. ...
1801 - 2300	GASM.2300-3*	2 x ZV-FT	+ ZV-RT. ...

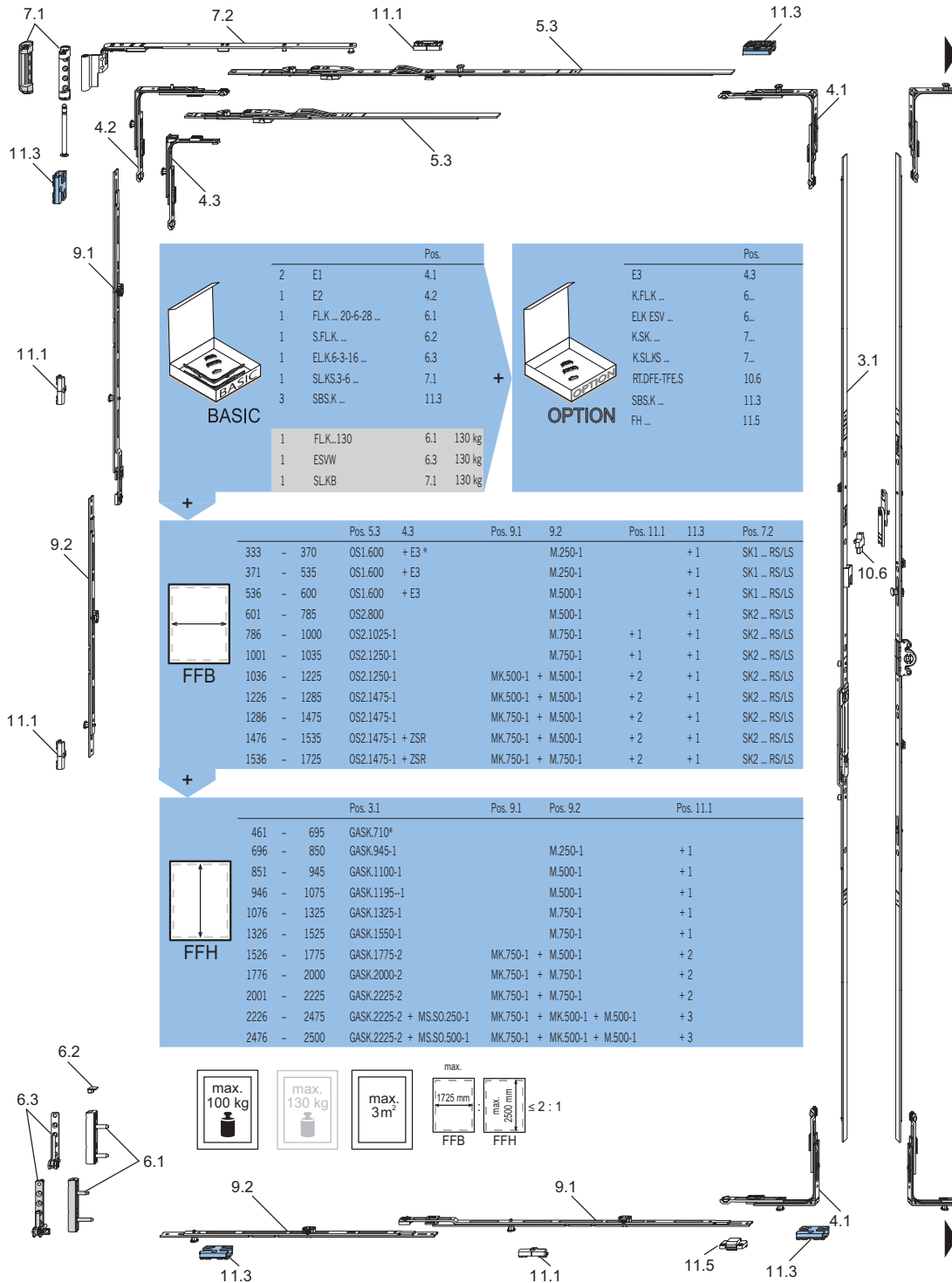


* See overview Min/max. dimensions
Please pay attention to the application diagrams!

Turn double sash fitting – constant handle position



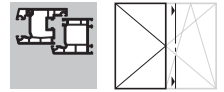
Suitable for burglary-resistant windows WK1/RC1N



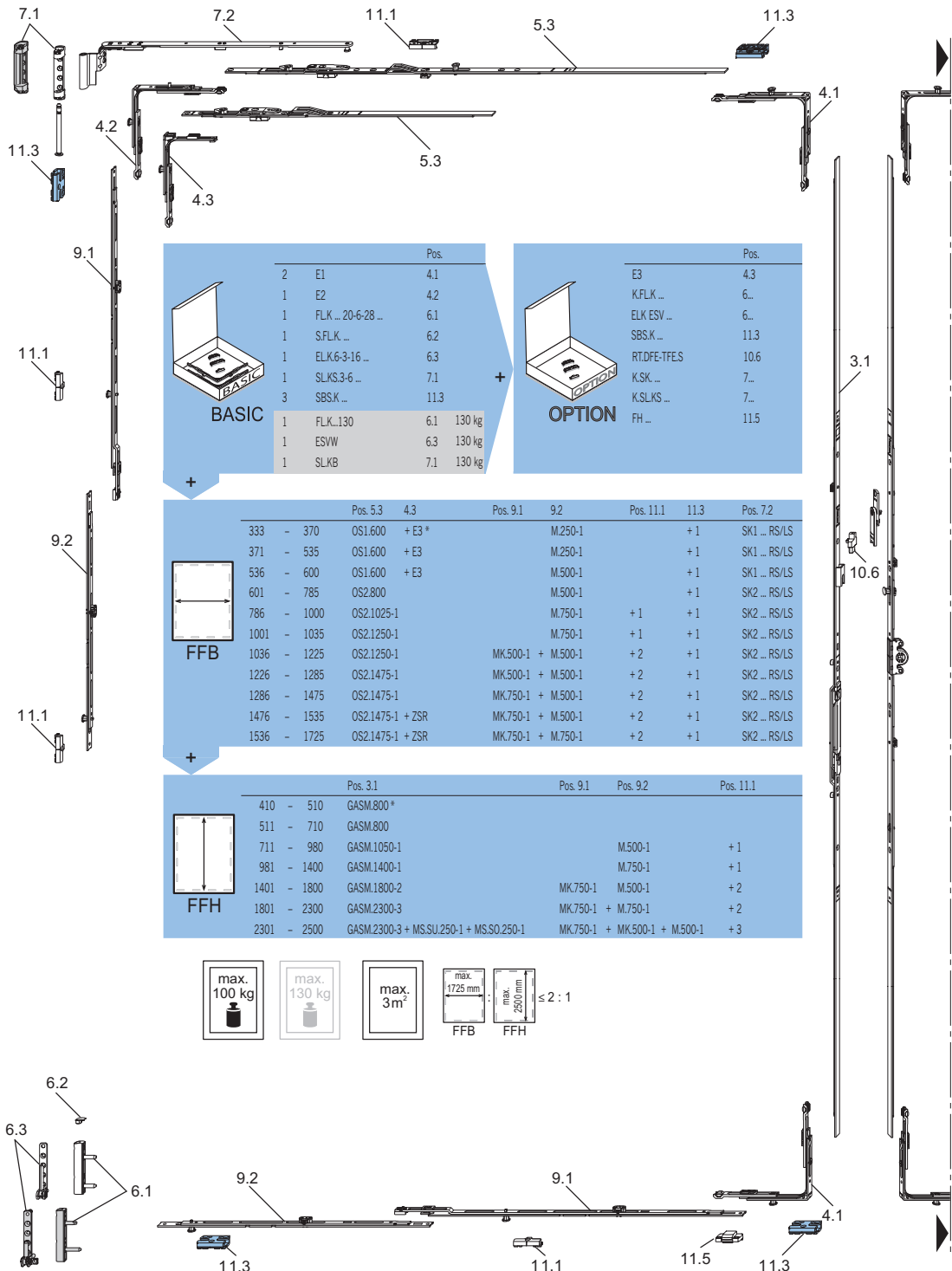
* See overview min. dimensions
 Please pay attention to the application diagrams!
 For further information please contact your Winkhaus representative.

- 1 General product information
- 2 Lists of Fittings
- 3 Drive rods
- 4 Corner drives
- 5 Top rods
- 6 Sash hinges/ Corner hinges
- 7 Shears/ Shear hinges
- 8 Turn hinges/ Tilt hinges
- 9 Extension rods
- 10 Accessories
- 11 Frame parts
- 12 Mounting accessories
- 13 Mounting instructions
- 14 Adjustment/ maintenance
- 15 Installation drawings

Turn double-sash fitting – central handle position

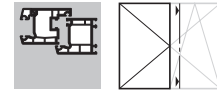


Suitable for burglary-resistant windows WK1/RC1N



* See overview min. dimensions
Please pay attention to the application diagrams!
For further information please contact your Winkhaus representative.

Turn double sash fitting – constant handle position



Suitable for burglar-resistant windows RC 2/RC 2 N with low threshold.

BASIC		Pos.
3	E1	4.1
1	E2	4.2
1	FLK...	6.1
1	S.FLK...	6.2
1	ELK.6-3-16...	6.3
1	SLKS3-6...	7.1
4	SBS.K...	11.3

OPTION		Pos.
K.SK...		7...
K.SLKS...		7...
K.FLK...		6...
ELK ESV		6...
RTDDE-TFES		10.6
FH...		11.5

	Pos. 5.3	4.3	Pos. 9.1	9.3	Pos. 11.3	Pos. 7.2
460 - 600	OS1.600	+ E3				SK1 ... RS/LS
601 - 710	OS2.800					SK2 ... RS/LS
711 - 775	OS2.800			MK.250-0+ KE		SK2 ... RS/LS
776 - 960	OS2.1025-1			MK.250-1+ KE	+ 2	SK2 ... RS/LS
961 - 1025	OS2.1025-1			MK.500-1+ KE	+ 2	SK2 ... RS/LS
1026 - 1210	OS2.1250-1			MK.500-1+ KE	+ 2	SK2 ... RS/LS
1211 - 1250	OS2.1250-1			MK.750-1+ KE	+ 2	SK2 ... RS/LS
1251 - 1460	OS2.1025-1 + ZSR + MK250-1			MK.750-1+ KE	+ 3	SK2 ... RS/LS
1461 - 1525	OS2.1025-1 + ZSR + MK250-1		2 x MK.500-1+ KE		+ 4	SK2 ... RS/LS
1526 - 1710	OS2.1025-1 + ZSR + MK500-1		2 x MK.500-1+ KE		+ 4	SK2 ... RS/LS

	Pos. 3.1	Pos. 9.1	Pos. 9.2	Pos. 9.2	Pos. 11.3
450 - 580	GASK.710				
581 - 695	GASK.830-1	M.250-1			+ 1
696 - 850	GASK.945-1	M.500-1			+ 1
851 - 1000	GASK.1100-1	M.500-1			+ 1
1001 - 1075	GASK.1100-1	M.750-1			+ 1
1076 - 1200	GASK.1325-2	M.750-1			+ 1
1201 - 1325	GASK.1325-2	MK.500-1	M.500-1		+ 2
1326 - 1500	GASK.1550-2	MK.500-1	M.500-1		+ 2
1501 - 1525	GASK.1550-2	MK.750-1	M.500-1		+ 2
1525 - 1750	GASK.1775-2	MK.750-1	M.500-1		+ 2
1751 - 1775	GASK.1775-2	MK.750-1	M.750-1		+ 2
1776 - 2000	GASK.2000-2	MK.750-1	M.750-1		+ 2
2001 - 2225	GASK.2225-2	MK.750-1	MK.500-1	M.500-1	+ 3
2226 - 2250	GASK.2225-2 + MS.S0.250-1	MK.750-1	MK.500-1	M.500-1	+ 3
2251 - 2475	GASK.2225-2 + MS.S0.250-1	MK.750-1	MK.750-1	M.500-1	+ 3
2476 - 2500	GASK.2225-2 + MS.S0.500-1	MK.750-1	MK.750-1	M.500-1	+ 3

max. 100 kg

max. 130 kg

max. 3m²

max. 1770 mm
FFB

max. 2500 mm
FFH

≤ 2 : 1

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- 11 Frame parts
- 12 Mounting accessories
- 13 Mounting instructions
- 14 Adjustment/ maintenance
- 15 Installation drawings

The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

Turn double sash fitting – constant handle position



Suitable for burglar-resistant windows RC 2/RC 2 N with low threshold.

BASIC		Pos.	OPTION		Pos.
1	E1	4.1	MS.LOS.RS/LS	10.1	
2	E1.N.BS.	4.5	ZSS.OS	5.1	
1	E2	4.2	D.FE	10.4	
1	FLK	6.1	RT.DFE-TFE	10.5	
1	S.FLK...	6.2	K.SK...	7 ...	
1	EL.K.6-3-16	6.3	K.SL...	7 ...	
1	SLKS.3-6...	7.1	K.FL...	7 ...	
2	SBS.K	11.3	EL.KESV ...	7 ...	
2	SBK.K...BSRC	11.2	E1.SBS.O	4 ...	
1	AB.G.D	10.6	E1.SBS.O.RC	4 ...	
1	FLK.130	6.1 (130 kg)			
1	ESVW	6.3 (130 kg)			
1	SLKB	7.1 (130 kg)			

mm	- mm	Pos. 5.3	9.4	9.4	9.3	11.2	11.3	7.2
600	- 710	OS2.800			+KE/SR (Stulprest)			SK2...RS/LS
711	- 775	OS2.800	MK.250-0		+KE/SR			SK2...RS/LS
776	- 800	OS2.1025-1	MK.250-0		+KE/SR	+1		SK2...RS/LS
801	- 960	OS2.1025-1	MK.250-1.BS.		+KE/SR	+1		SK2...RS/LS
961	- 1025	OS2.1025-1	MK.500-1.BS.		+KE	+1	+1	SK2...RS/LS
1026	- 1210	OS2.1250-1	MK.500-1.BS.		+KE	+1	+1	SK2...RS/LS
1211	- 1250	OS2.1250-1	MK.500-1.BS.	+MK.250-1.BS.	+KE/SR	+2	+1	SK2...RS/LS
1251	- 1275	OS2.1025-1	+MK.250-1	MK.500-1.BS.	+MK.250-1.BS.	+KE/SR	+2	SK2...RS/LS
1276	- 1460	OS2.1025-1	+ZSR+MK.250-1	MK.500-1.BS.	+MK.250-1.BS.	+KE/SR	+2	SK2...RS/LS

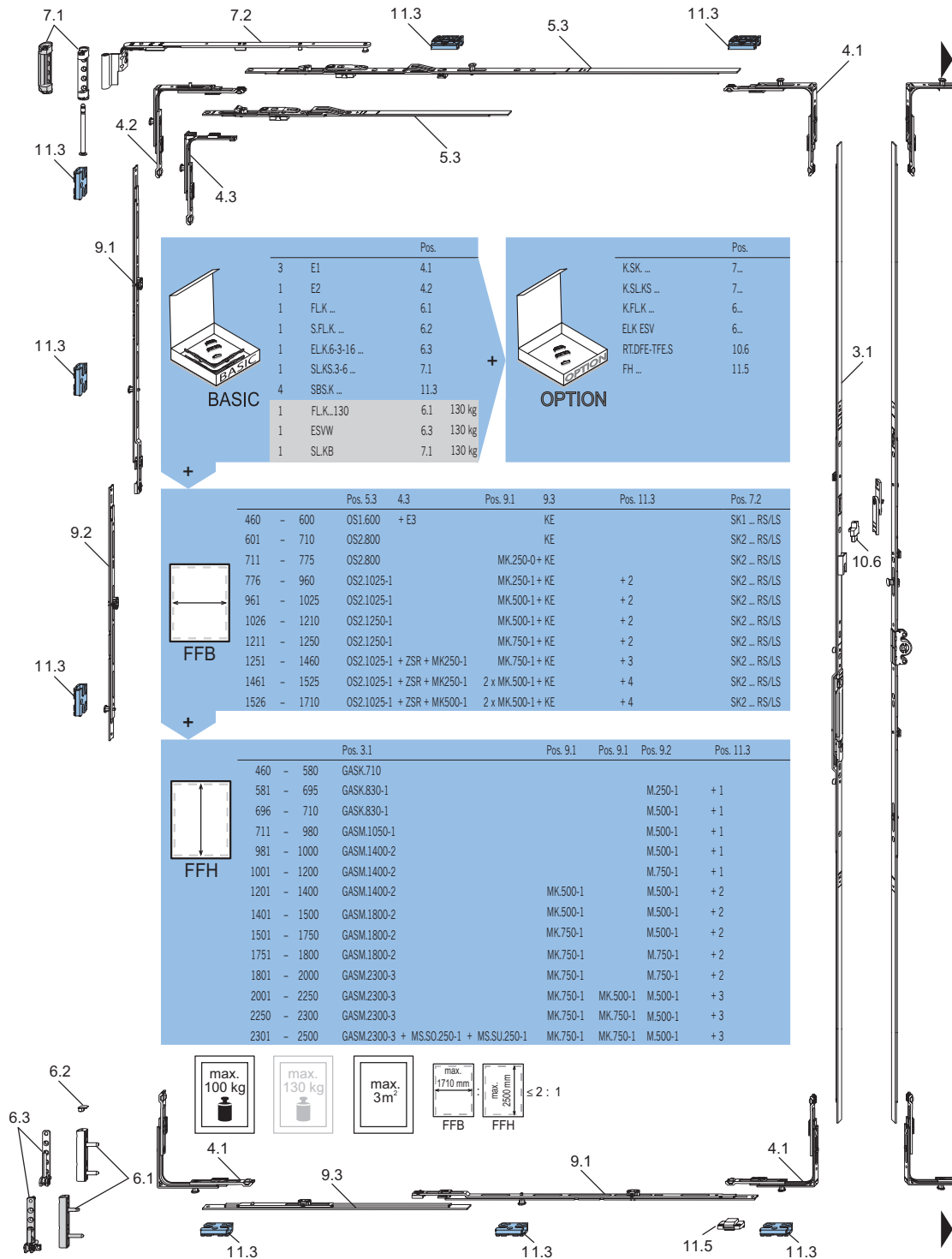
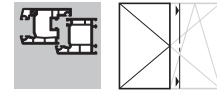
mm	- mm	Pos. 3.1	9.1	9.2	11.3
1525	- 1750	GASK.1775-3	MK.750-1	+ M.500-1	+2
1751	- 1775	GASK.1775-3	MK.750-1	+ M.750-1	+2
1776	- 2000	GASK.2000-4	MK.750-1	+ M.750-1	+2
2001	- 2225	GASK.2225-4	MK.750-1	+ MK.500-1	+ M.500-1
2226	- 2250	GASK.2225-4 + MS.S0.250-1	MK.750-1	+ MK.500-1	+ M.500-1
2251	- 2475	GASK.2225-4 + MS.S0.250-1	MK.750-1	+ MK.750-1	+ M.500-1
2476	- 2500	GASK.2225-4 + MS.S0.500-1	MK.750-1	+ MK.750-1	+ M.500-1

max. 100 kg	max. 130 kg	max. 3m ²	max. 1460 mm	max. 2500 mm	1:2
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For units with roller shutter boxes the component E1.SBS.O... must be used.

The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

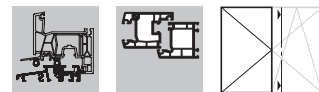
Turn double-sash fitting – central handle position



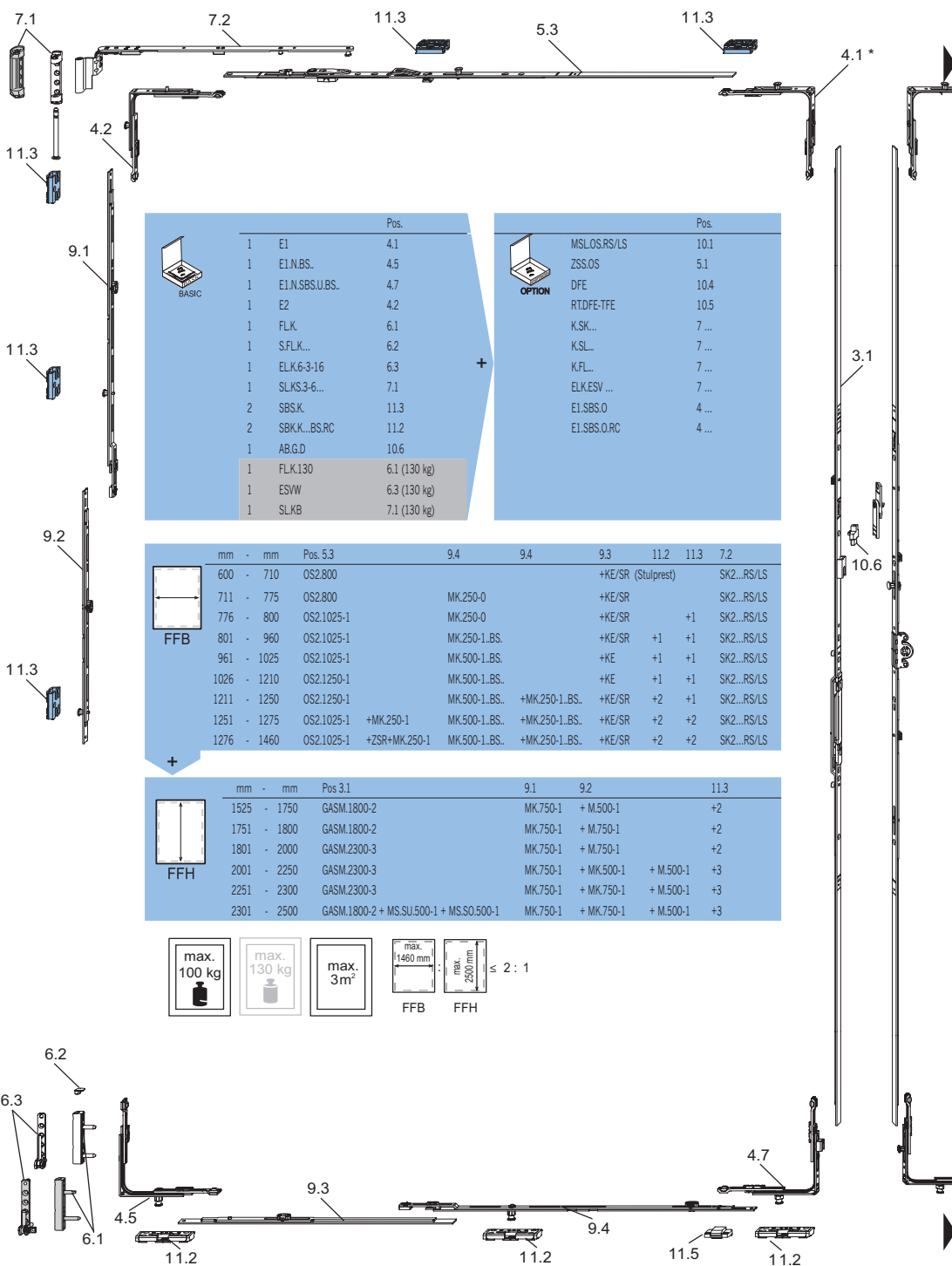
- 1 General product information
- 2 Lists of Fittings
- 3 Drive rods
- 4 Corner drives
- 5 Top rods
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- 7 Shears/ Shear hinges
- 8 Turn hinges/ Tilt hinges
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The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

Turn double-sash fitting – central handle position

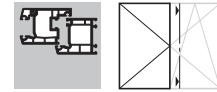


Suitable for burglar-resistant windows RC 2/RC 2 N with low threshold.

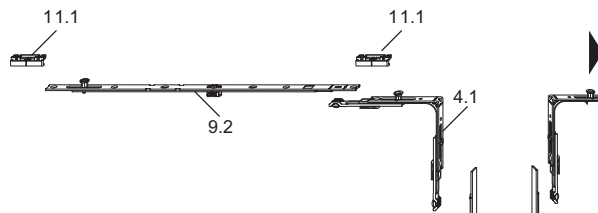
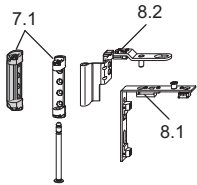


For units with roller shutter boxes the component E1.SBS.O... must be used.
 The processing details RC 2 can be gathered from the RC 2 system tests. The RC 2 fitting lists in this catalogue are only application examples. Please turn to your Winkhaus contact person.

Turn double sash fitting – constant handle position



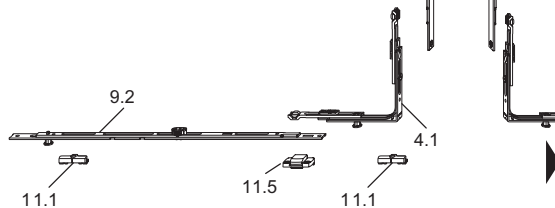
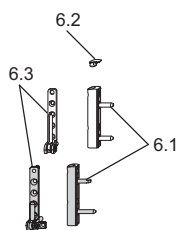
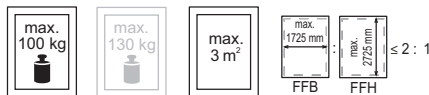
Basic equipment
Backset 7.5 mm



BASIC			OPTION		
		Pos.			Pos.
2	EI	4.1	K.SK. ...		7...
1	FLK... 20-6-28 ...	6.1	K.SL.K.S ...		7...
1	S.FLK. ...	6.2	K.FLK. ...		6...
1	EL.K.6-3-16 ...	6.3	ELK ESV		6...
1	SL.K.S.3-6	7.1	RT.DFE-TF.E.S		10.6
1	DLW ERW	8.1	FH ...		11.5
1	DLK	8.2			
2	S.BAK. ...	11.1			
1	FL.K._130	6.1	130 kg		
1	ESVW	6.3	130 kg		
1	SL.KB	7.1	130 kg		

		Pos. 9.1	9.2	Pos. 11.1
280 - 700				
701 - 1200	2 x	M.500-1	+ 2	
1201 - 1450	2 x	M.750-1	+ 2	
1451 - 1725	2 x	MK.500-1 +	M.500-1 + 4	

	Pos. 3.1	Pos. 9.3	11.4
335 - 485	KR711 *		
486 - 580	GASK.830-1 *		
581 - 700	GASK.830-1		
701 - 850	GASK.945-1	1 x ZV-FT +	ZV-RT ...
851 - 1075	GASK.1100-1	1 x ZV-FT +	ZV-RT ...
1076 - 1325	GASK.1325-1	1 x ZV-FT +	ZV-RT ...
1326 - 1525	GASK.1550-1	1 x ZV-FT +	ZV-RT ...
1526 - 1775	GASK.1775-2	2 x ZV-FT +	ZV-RT ...
1776 - 2000	GASK.2000-2	2 x ZV-FT +	ZV-RT ...
2001 - 2225	GASK.2225-2*	2 x ZV-FT +	ZV-RT ...



* See overview Min/max. dimensions
Please pay attention to the application diagrams!

1 General product information

2 Lists of Fittings

3 Drive rods

4 Corner drives

5 Top rods

6 Sash hinges/ Corner hinges

7 Shears/ Shear hinges

8 Turn hinges/ Tilt hinges

9 Extension rods

10 Accessories

11 Frame parts

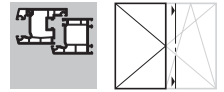
12 Mounting accessories

13 Mounting instructions

14 Adjustment/ maintenance

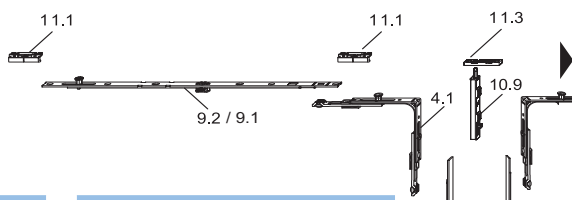
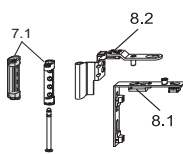
15 Installation drawings

Turn double sash fitting – constant handle position



Basic equipment

Backset minus 6 mm



BASIC				OPTION			
			Pos.				Pos.
2	E1		4.1	K.SK...			7...
1	FLK... 20-6-28 ...		6.1	K.SLKS...			7...
1	S.FLK...		6.2	K.FLK...			6...
1	ELK.6-3-16 ...		6.3	ELK.ESV...			6...
1	SLKS.3-6		7.1				
1	DLW.ERW		8.1				
1	DLK		8.2				
2	S.BAK...		11.1				
1	FLK...130	6.1	130 kg				
1	ESW	6.3	130 kg				
1	SLKB	7.1	130 kg				

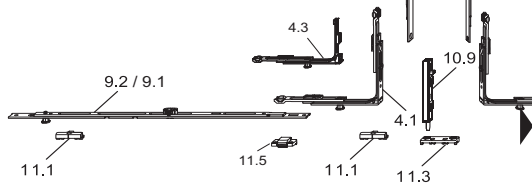
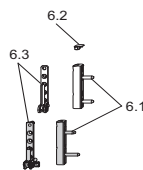
	Pos. 9.1	Pos. 9.2	Pos. 11.1
280 - 700			
701 - 1200	2 x	M.500-1	+ 2
1201 - 1450	2 x	M.750-1	+ 2
1451 - 1700	2 x	MK.500-1 + M.500-1	+ 2 + 2

	Pos. 10.9	Pos. 11.3	Pos. 9.3	Pos. 11.4
550 - 800	2 x KR.F711	2 x SA...	1 x ZV-FT +	1 x ZV-RT
801 - 1100	2 x KR.F711	2 x SA...	2 x ZV-FT +	2 x ZV-RT

	Pos. 3.1	Pos. 4.1	Pos. 4.3	Pos. 11.1	Pos. 9.3	Pos. 11.4
850 - 1100	GASK.1100-1.D-6.E3.N	1 x E1	1 x E3	2 x SBAK	1 x ZV-FT +	1 x ZV-RT
945 - 1195	GASK.1195-1.D-6.E3	1 x E1	1 x E3	2 x SBAK	1 x ZV-FT +	1 x ZV-RT
1075 - 1325	GASK.1325-1.D-6	2 x E1		2 x SBAK	2 x ZV-FT +	2 x ZV-RT
1300 - 1550	GASK.1550-1.D-6	2 x E1		2 x SBAK	2 x ZV-FT +	2 x ZV-RT
1525 - 1775	GASK.1775-2.D-6	2 x E1		2 x SBAK	2 x ZV-FT +	2 x ZV-RT
1600 - 1850	GASK.1850-2.D-6	2 x E1		2 x SBAK	2 x ZV-FT +	2 x ZV-RT
1751 - 2000	GASK.2000-2	2 x E1		2 x SBAK	2 x ZV-FT +	2 x ZV-RT
2001 - 2225	GASK.2225-2*	2 x E1		2 x SBAK	2 x ZV-FT +	2 x ZV-RT

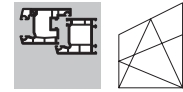


max. 100 kg
max. 130 kg
max. 2,5m²
max. 1700 mm
max. 2225 mm
≤ 2 : 1

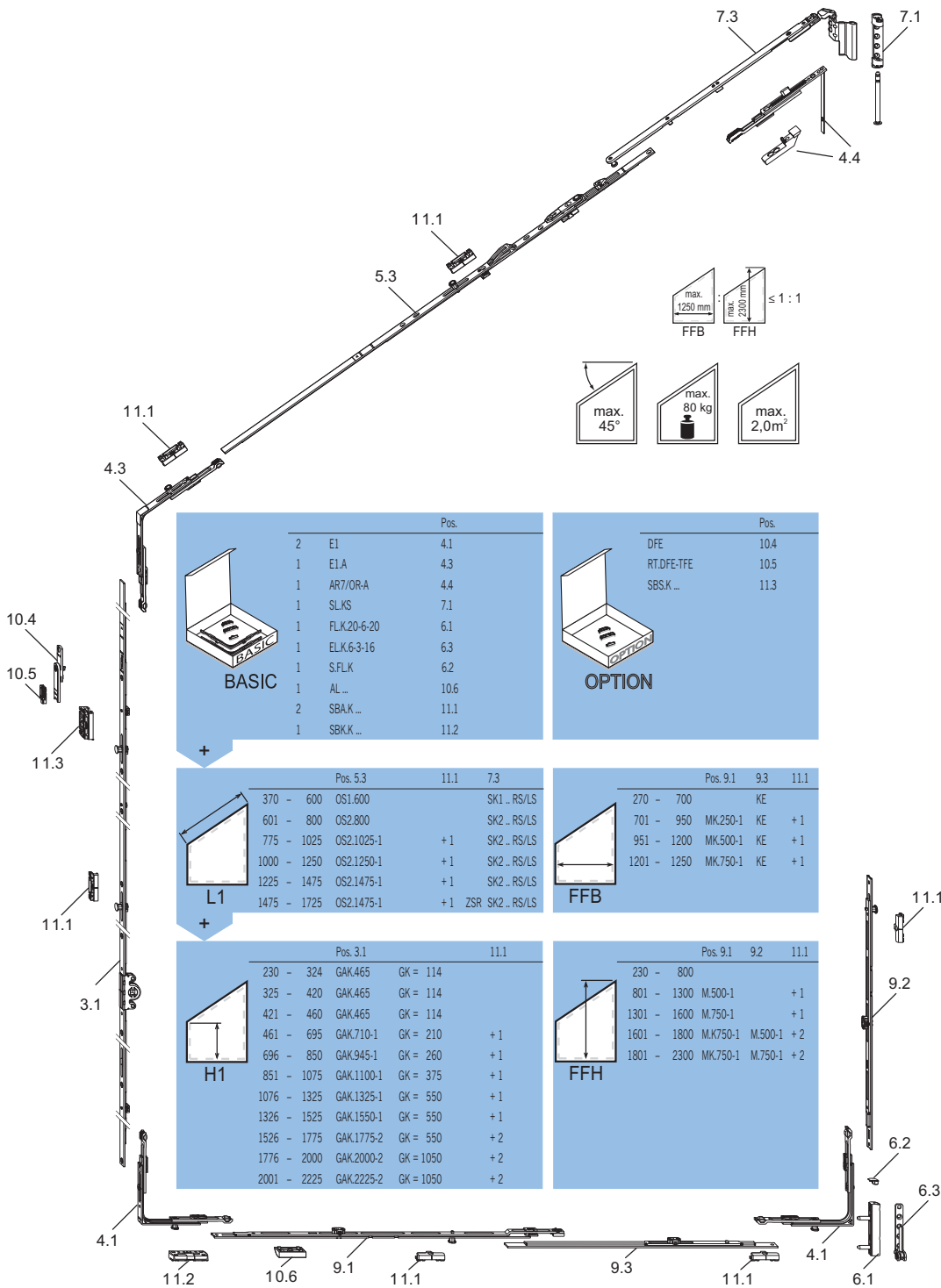


* See overview Min/max. dimensions
Please pay attention to the application diagrams!

Fitting for studio windows – constant handle position



Basic equipment



		Pos.
2	E1	4.1
1	E1.A	4.3
1	AR7/OR-A	4.4
1	SLKS	7.1
1	FLK.20-6-20	6.1
1	ELK.6-3-16	6.3
1	S.FLK	6.2
1	AL...	10.6
2	SBAK...	11.1
1	SBKK...	11.2

BASIC

	Pos.
DFE	10.4
RT.DFE-TFE	10.5
SBSK...	11.3

OPTION

	Pos. 5.3	11.1	7.3
370 - 600	OS1.600		SK1..RS/LS
601 - 800	OS2.800		SK2..RS/LS
775 - 1025	OS2.1025-1	+1	SK2..RS/LS
1000 - 1250	OS2.1250-1	+1	SK2..RS/LS
1225 - 1475	OS2.1475-1	+1	SK2..RS/LS
1475 - 1725	OS2.1475-1	+1	ZSR SK2..RS/LS

L1

	Pos. 9.1	9.3	11.1
270 - 700		KE	
701 - 950	MK250-1	KE	+1
951 - 1200	MK500-1	KE	+1
1201 - 1250	MK750-1	KE	+1

FFB

	Pos. 3.1	GK =	11.1
230 - 324	GAK.465	GK = 114	
325 - 420	GAK.465	GK = 114	
421 - 460	GAK.465	GK = 114	
461 - 695	GAK.710-1	GK = 210	+1
696 - 850	GAK.945-1	GK = 260	+1
851 - 1075	GAK.1100-1	GK = 375	+1
1076 - 1325	GAK.1325-1	GK = 550	+1
1326 - 1525	GAK.1550-1	GK = 550	+1
1526 - 1775	GAK.1775-2	GK = 550	+2
1776 - 2000	GAK.2000-2	GK = 1050	+2
2001 - 2225	GAK.2225-2	GK = 1050	+2

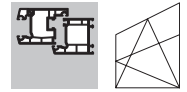
H1

	Pos. 9.1	9.2	11.1
230 - 800			
801 - 1300	M.500-1		+1
1301 - 1600	M.750-1		+1
1601 - 1800	M.K750-1	M.500-1	+2
1801 - 2300	M.K750-1	M.750-1	+2

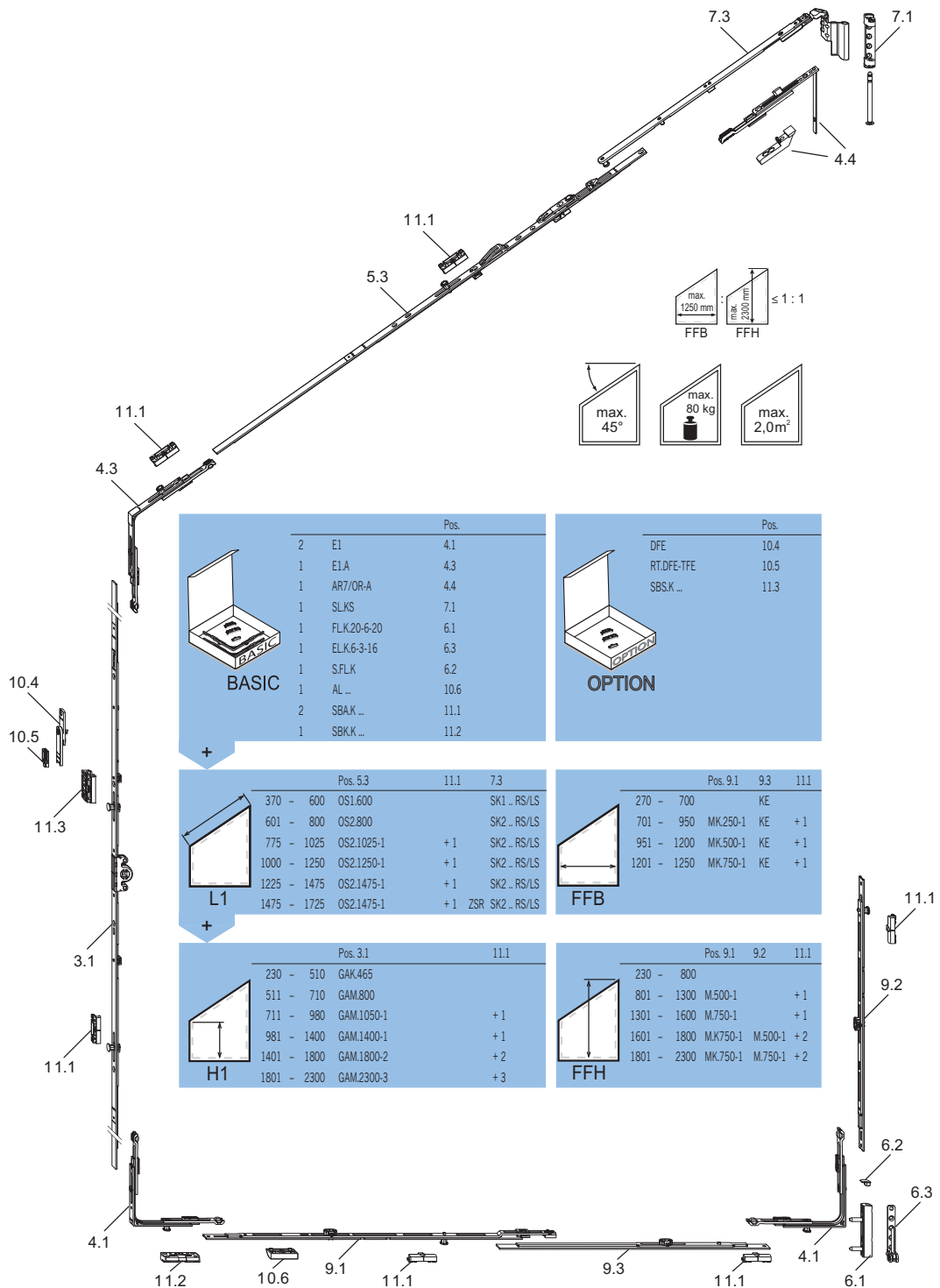
FFH

- 1 General product information
- 2 Lists of Fittings
- 3 Drive rods
- 4 Corner drives
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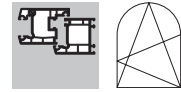
Fitting for studio windows – central handle position



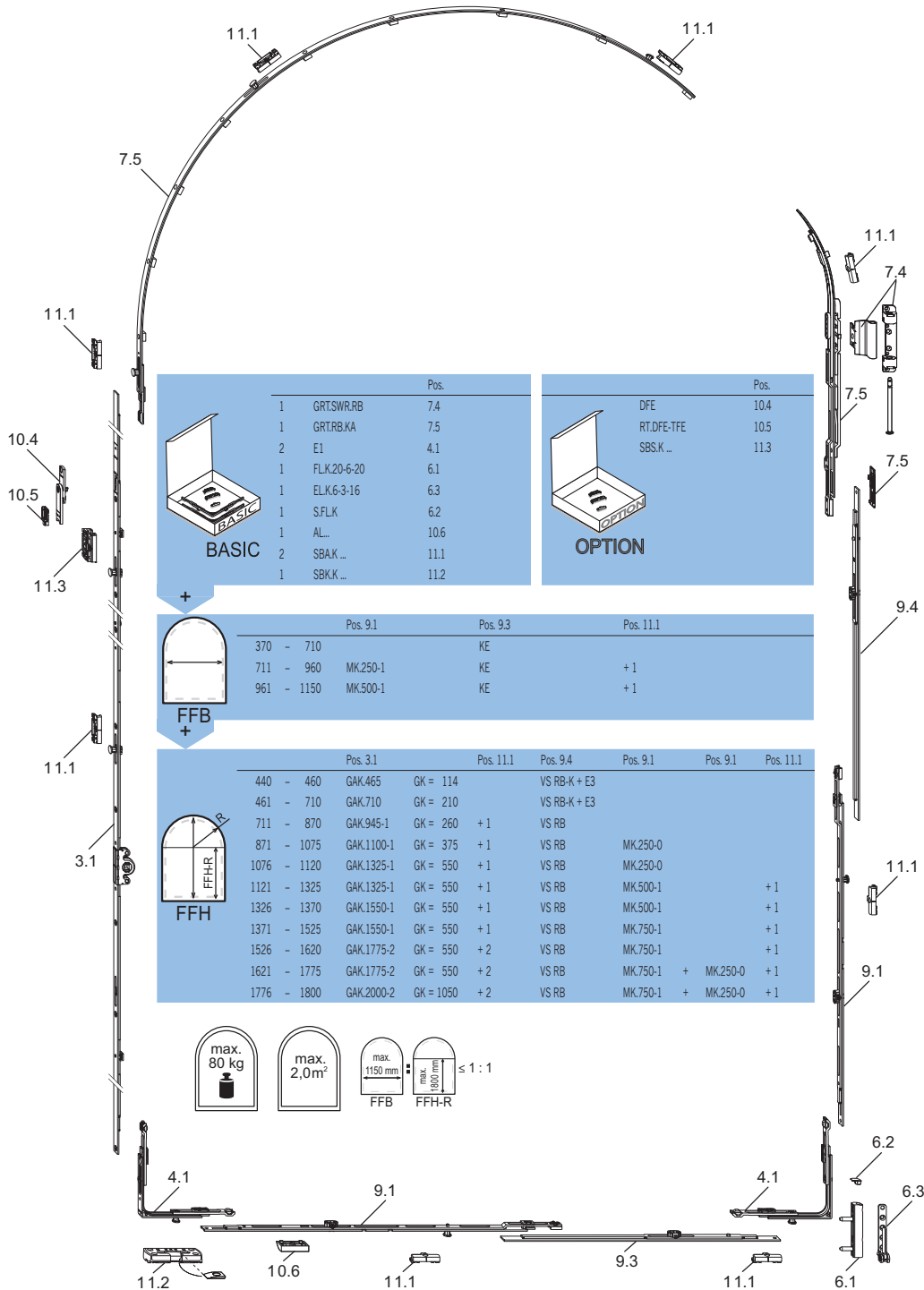
Basic equipment



Fitting for round arch windows – constant handle position



Basic equipment



BASIC			OPTION		
		Pos.			Pos.
1	GRT.SWR.RB	7.4	DFE		10.4
1	GRT.RB.KA	7.5	RT.DFE-TFE		10.5
2	E1	4.1	SBS.K...		11.3
1	FL.K20-6-20	6.1			
1	EL.K6-3-16	6.3			
1	S.FLK	6.2			
1	AL...	10.6			
2	SBAK...	11.1			
1	SBK.K...	11.2			

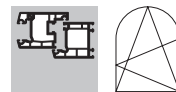
	Pos. 9.1	Pos. 9.3	Pos. 11.1
370 - 710		KE	
711 - 960	MK.250-1	KE	+1
961 - 1150	MK.500-1	KE	+1

	Pos. 3.1	Pos. 11.1	Pos. 9.4	Pos. 9.1	Pos. 9.1	Pos. 11.1
440 - 460	GAK.465	GK = 114		VS RB-K + E3		
461 - 710	GAK.710	GK = 210		VS RB-K + E3		
711 - 870	GAK.945-1	GK = 260 +1		VS RB		
871 - 1075	GAK.1100-1	GK = 375 +1		VS RB	MK.250-0	
1076 - 1120	GAK.1325-1	GK = 550 +1		VS RB	MK.250-0	
1121 - 1325	GAK.1325-1	GK = 550 +1		VS RB	MK.500-1	+1
1326 - 1370	GAK.1550-1	GK = 550 +1		VS RB	MK.500-1	+1
1371 - 1525	GAK.1550-1	GK = 550 +1		VS RB	MK.750-1	+1
1526 - 1620	GAK.1775-2	GK = 550 +2		VS RB	MK.750-1	+1
1621 - 1775	GAK.1775-2	GK = 550 +2		VS RB	MK.750-1 + MK.250-0	+1
1776 - 1800	GAK.2000-2	GK = 1050 +2		VS RB	MK.750-1 + MK.250-0	+1

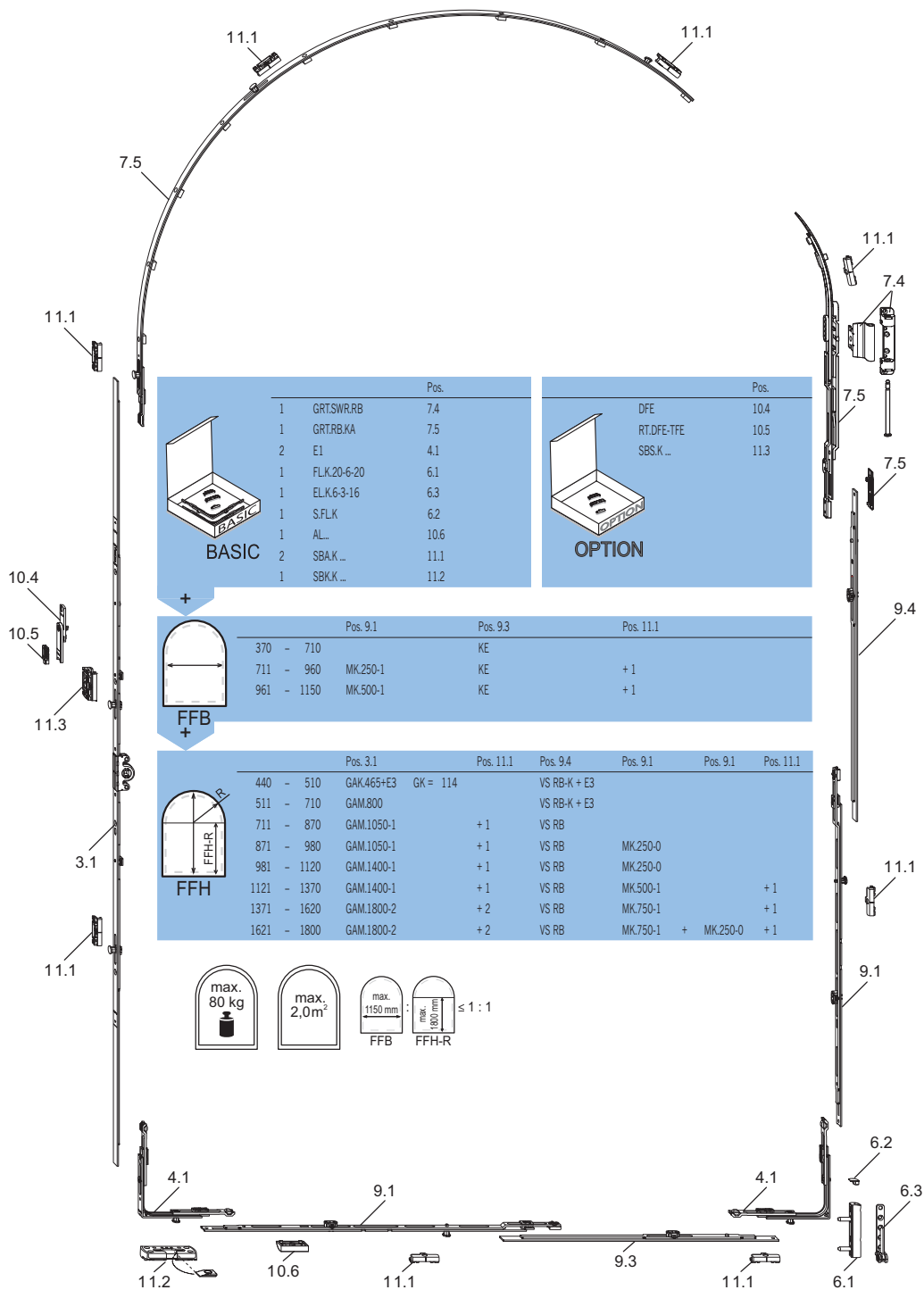


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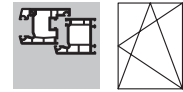
Fitting for round arch windows – central handle position



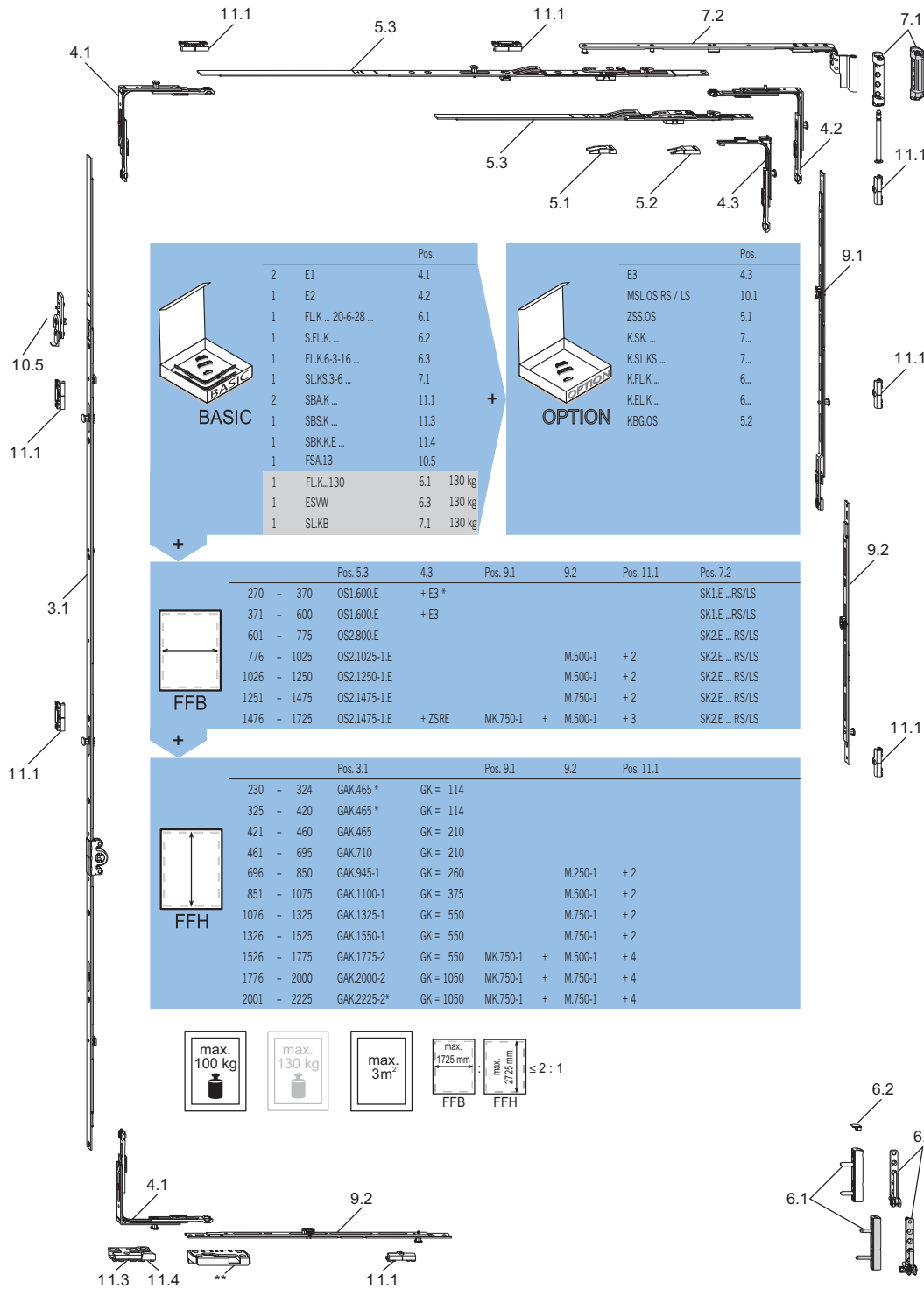
Basic equipment



Turn-tilt fitting – constant handle position



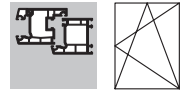
Basic equipment – Tilt before turn



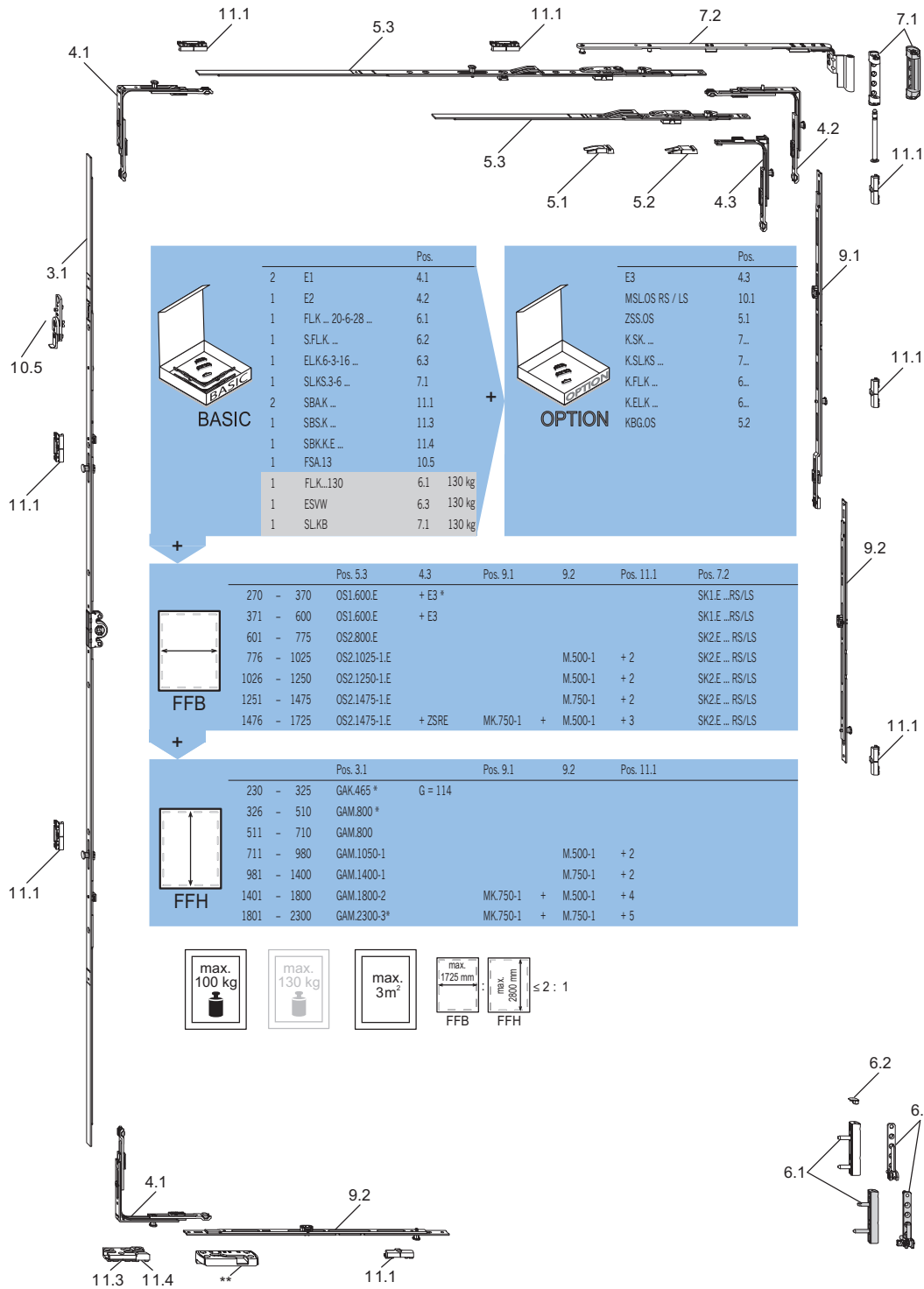
- 1 General product information
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* See overview Min/max. dimensions
 ** Instead of the positions 11.3 and 11.4 it is possible to use the security keep SBS.K.PAD... (but not type SBS.K.PAB...!). Please pay attention to the application diagrams!

Turn-tilt fitting – central handle position



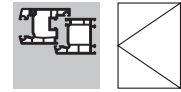
Basic equipment – Tilt before turn



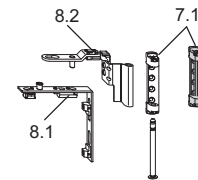
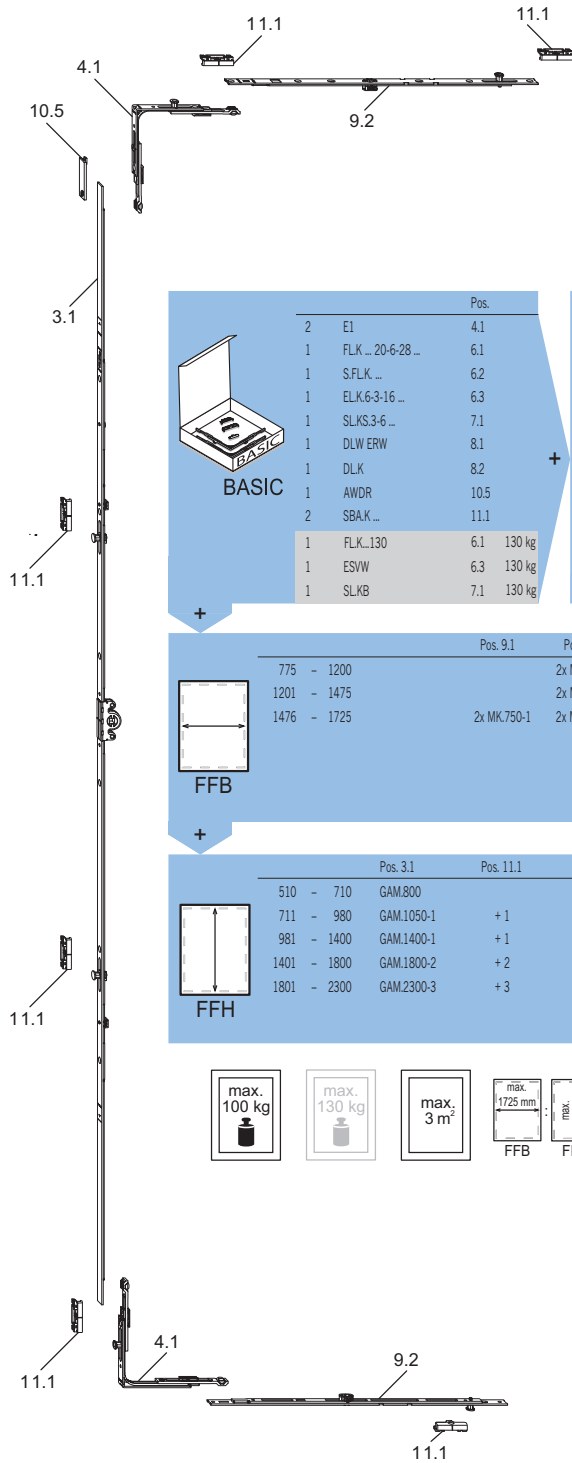
* See overview Min/max. dimensions

** Instead of the positions 11.3 and 11.4 it is possible to use the security keep SBS.K.PAD... (but not type SBS.K.PAB...!). Please pay attention to the application diagrams!

Turn-only fittings – central handle position



Basic equipment GAM



BASIC		Pos.	OPTION		Pos.
2	E1	4.1	K.SK ...	7...	
1	FLK ... 20-6-28 ...	6.1	K.SLKS ...	7...	
1	S.FLK ...	6.2	K.FLK ...	6...	
1	ELK.6-3-16 ...	6.3	ELK ESV ...	6...	
1	SLKS.3-6 ...	7.1			
1	DLW ERW	8.1			
1	DLK	8.2			
1	AWDR	10.5			
2	SBAK ...	11.1			
1	FLK...130	6.1	130 kg		
1	ESVW	6.3	130 kg		
1	SLKB	7.1	130 kg		

	Pos. 9.1	Pos. 9.2	Pos. 11.1
775 - 1200		2x M.500-1	+ 2
1201 - 1475		2x M.750-1	+ 2
1476 - 1725	2x MK.750-1	2x M.500-1	+ 4

	Pos. 3.1	Pos. 11.1	Pos. 9.3	Pos. 11.4
510 - 710	GAM.800			
711 - 980	GAM.1050-1	+ 1	1x ZV-FT	1x ZV-RT
981 - 1400	GAM.1400-1	+ 1	1x ZV-FT	1x ZV-RT
1401 - 1800	GAM.1800-2	+ 2	2x ZV-FT	2x ZV-RT
1801 - 2300	GAM.2300-3	+ 3	2x ZV-FT	2x ZV-RT

max.
100 kg

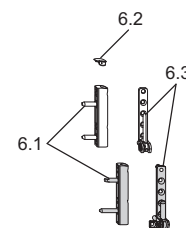
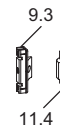
max.
130 kg

max.
3 m²

max.
1725 mm
FFB

max.
2250 mm
FFH

≤ 2 : 1



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11 Frame parts

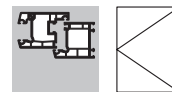
12 Mounting accessories

13 Mounting instructions

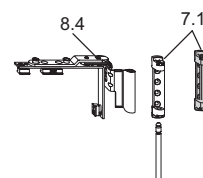
14 Adjustment/
maintenance

15 Installation drawings

Turn-only fittings – central handle position

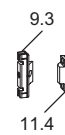


Basic equipment GAVM

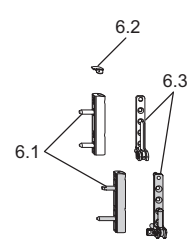
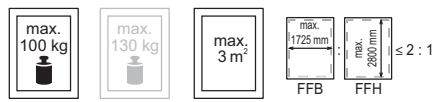


BASIC		OPTION	
1	FLK...20-6-28 ...	6.1	K.SK ...
1	S.FLK ...	6.2	K.SLKS ...
1	ELK.6-3-16 ...	6.3	K.FLK ...
1	SLKS.3-6 ...	7.1	ELK ESV ...
1	DLK.ET	8.4	
1	FLK...130	6.1	130 kg
1	ESVW	6.3	130 kg
1	SLKB	7.1	130 kg

FFB	
Pos. 3.1	Pos. 11.1

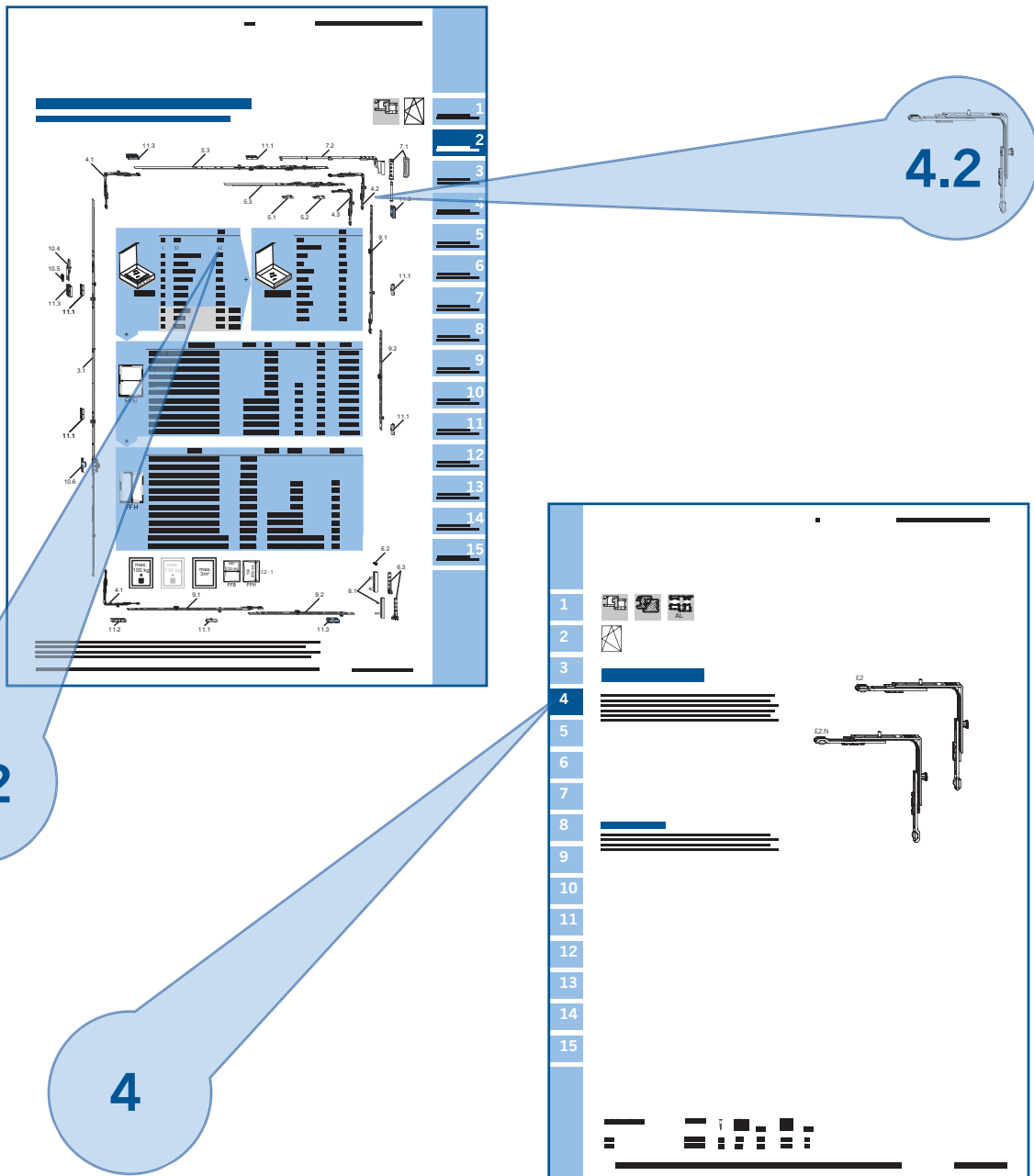


	Pos. 3.1	Pos. 11.1	Pos. 9.3	Pos. 11.4
175 - 299	GAVM.175-1	+1		
300 - 419	GAVM.300-2	+2		
420 - 619	GAVM.420-2	+2		
620 - 919	GAVM.620-2	+2	1x ZV-FT	1x ZV-RT
920 - 1219	GAVM.920-2	+2	1x ZV-FT	1x ZV-RT
1220 - 1319	GAVM.1220-3	+3	1x ZV-FT	1x ZV-RT
1320 - 1519	GAVM.1320-3	+3	1x ZV-FT	1x ZV-RT
1520 - 1819	GAVM.1520-3	+3	2x ZV-FT	2x ZV-RT
1820 - 2019	GAVM.1820-4	+4	2x ZV-FT	2x ZV-RT
2020 - 2350	GAVM.2020-4	+4	2x ZV-FT	2x ZV-RT



Quick orientation

Our register system allows you to quickly allocate the listed component to the item in the fitting overview drawing. The item number specifies the chapter number in which the component can be found.



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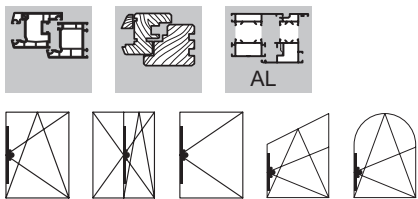
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Drive rod GAK

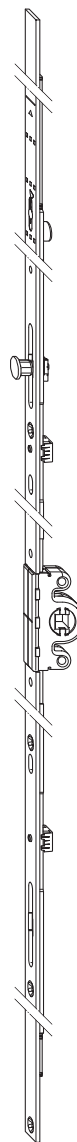
- Constant handle position GK
- Backset 15.5 mm
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates


Drive rod GAK ... BK

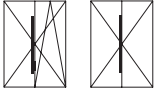
- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS

Drive rod GAK ... C

- incl. reinforced clamping mechanism within the profile groove

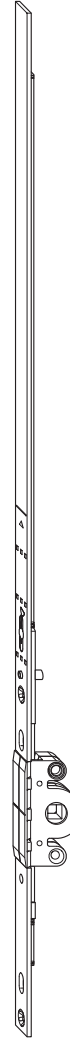



Item description	Item No.	Scope of application		Dimension GK	DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAK.465	4926221	FFH 420 - 520	0	210			10	BD	100	KK	800	EK
GAK.465.C	4935841	FFH 420 - 520	0	210			10	BD	100	KK	800	EK
GAK.710	4926207	FFH 460 - 710	1	210			20	BD	600	EA		
GAK.710.C	4935843	FFH 460 - 710	1	210			20	BD	600	EA		
GAK.830	4926230	FFH 580 - 830	2	260			20	BD	600	EA		
GAK.830-1	4926231	FFH 580 - 830	2	260			20	BD	600	EA		
GAK.945	4926208	FFH 695 - 945	3	260	*	*	20	BD	400	EA		
GAK.945-1	4926209	FFH 695 - 945	3	260	*	*	20	BD	400	EA		
GAK.1100-1	4926234	FFH 850 - 1100	3	375	*	*	20	BD	360	EA		
GAK.1195-1	4926236	FFH 945 - 1195	4	470	*	*	20	BD	360	EA		
GAK.1195-2	4926237	FFH 945 - 1195	4	470	*	*	20	BD	360	EA		
GAK.1325-1	4978659	FFH 1075 - 1325	4	550	*	*	20	BD	360	EA		
GAK.1325-1.G500	4937485	FFH 1075 - 1325	4	500	*	*	20	BD	360	EA		
GAK.1325-2	4978670	FFH 1075 - 1325	4	550	*	*	20	BD	360	EA		
GAK.1550-1	4926224	FFH 1300 - 1550	5	550	*	*	10	BD	360	L1		
GAK.1550-2	4926225	FFH 1300 - 1550	5	550	*	*	10	BD	360	L1		
GAK.1775-2	4926228	FFH 1525 - 1775	7	550	*	*	10	BD	400	L1		
GAK.1775-3	4926229	FFH 1525 - 1775	7	550	*	*	10	BD	400	L1		
GAK.1850-2	5000529	FFH 1600 - 1850	7	715	*	*	10	BD	360	L1		
GAK.2000-2	4938089	FFH 1750 - 2000	8	1050	*	*	10	BD	360	L2		
GAK.2000-2.BK	4942670	FFH 1750 - 2000	8	1050	*	*	10	BD	360	L2		
GAK.2000-4	4938120	FFH 1750 - 2000	8	1050	*	*	10	BD	360	L2		
GAK.2000-4.BK	4942671	FFH 1750 - 2000	8	1050	*	*	10	BD	360	L2		
GAK.2225-2	4938122	FFH 1975 - 2225	9	1050	*	*	10	BD	360	L2		
GAK.2225-2.BK	4942672	FFH 1975 - 2225	9	1050	*	*	10	BD	360	L2		
GAK.2225-4	4938123	FFH 1975 - 2225	9	1050	*	*	10	BD	360	L2		
GAK.2225-4.BK	4942673	FFH 1975 - 2225	9	1050	*	*	10	BD	360	L2		
GAK.2450-4	5021551	FFH 2200 - 2450	10	0	*	*	10	BD	360	L2		



Drive rod GAK 0

- Constant handle position GK
- Backset 15.5 mm
- No locking point
- Suitable for double-sash windows with a second handle, fitting concealed behind a front profile
- Clampable in fitting groove
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.	Scope of application		Dimension GK	DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAK.465	4926221	FFH 420 - 520	0	210			10	BD	100	KK	800	EK
GAK.710	4926207	FFH 460 - 710	1	210			20	BD	600	EA		
GAK.830	4926230	FFH 580 - 830	2	260			20	BD	600	EA		
GAK.945	4926208	FFH 695 - 945	3	260	•	•	20	BD	400	EA		
GAK.1100	4926233	FFH 850 - 1100	3	375	•	•	20	BD	360	EA		
GAK.1195	4926235	FFH 945 - 1195	4	470	•	•	20	BD	360	EA		
GAK.1325	4978658	FFH 1075 - 1325	4	550	•	•	20	BD	360	EA		
GAK.1550	4926223	FFH 1300 - 1550	5	550	•	•	10	BD	360	L1		
GAK.1775	4926227	FFH 1525 - 1775	7	550	•	•	10	BD	400	L1		
GAK.2000	4938088	FFH 1750 - 2000	8	1050	•	•	10	BD	360	L2		
GAK.2225	4938121	FFH 1975 - 2225	9	1050	•	•	10	BD	360	L2		

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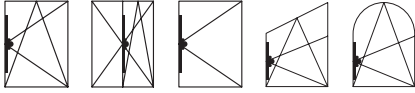
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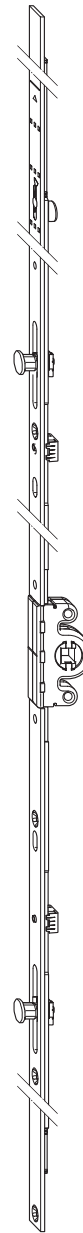



Drive rod GAK V < 700

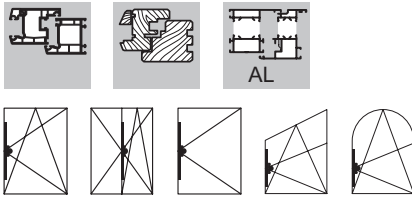
- Constant handle position GK
- Backset 15.5 mm
- Locking gap less than 700 mm (V < 700)
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Drive rod GAK ... BK

- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS



Item description	Item No.	Scope of application		Dimension GK	DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type
GAK.830-1	4926231	FFH 580 - 830	2	260			20	BD	600	EA
GAK.945-1	4926209	FFH 695 - 945	3	260	•	•	20	BD	400	EA
GAK.1100-1	4926234	FFH 850 - 1100	3	375	•	•	20	BD	360	EA
GAK.1195-2	4926237	FFH 945 - 1195	4	470	•	•	20	BD	360	EA
GAK.1325-2	4978670	FFH 1075 - 1325	4	550	•	•	20	BD	360	EA
GAK.1550-2	4926225	FFH 1300 - 1550	5	550	•	•	10	BD	360	L1
GAK.1775-3	4926229	FFH 1525 - 1775	7	550	•	•	10	BD	400	L1
GAK.2000-4	4938120	FFH 1750 - 2000	8	1050	•	•	10	BD	360	L2
GAK.2000-4.BK	4942671	FFH 1750 - 2000	8	1050	•	•	10	BD	360	L2
GAK.2225-4	4938123	FFH 1975 - 2225	9	1050	•	•	10	BD	360	L2
GAK.2225-4.BK	4942673	FFH 1975 - 2225	9	1050	•	•	10	BD	360	L2
GAK.2450-4	5021551	FFH 2200 - 2450	10	0	•	•	10	BD	360	L2

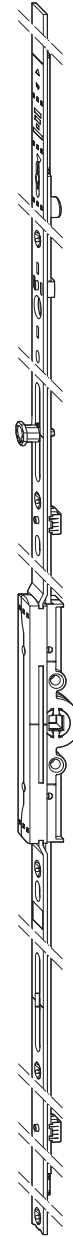


Drive rod GAK... D 7.5

- Constant handle position GK
- Backset 7.5 mm
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-2
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Drive rod GAK ... BK

- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS



Item description	Item No.	Scope of application	TFE	Dimension GK	DFE	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAK.700.D7,5	4983049	FFH 530 - 700	2	260		20	BD	400	EA		
GAK.830-1.D7,5	4969431	FFH 580 - 830	2	260		20	BD	400	EA		
GAK.945-1.D7,5	4969430	FFH 695 - 945	3	260	•	20	BD	400	EA		
GAK.1100-1.D7,5	4969429	FFH 850 - 1100	3	375	•	20	BD	360	EA		
GAK.1195-1.D7,5	4969428	FFH 945 - 1195	4	470	•	20	BD	360	EA		
GAK.1195-2.D7,5	4980490	FFH 945 - 1195	4	470	•	20	BD	360	EA		
GAK.1325-1.D7,5	4969427	FFH 1075 - 1325	4	550	•	20	BD	360	EA		
GAK.1325-2.D7,5	4969426	FFH 1075 - 1325	4	550	•	20	BD	360	EA		
GAK.1550-1.D7,5	4969425	FFH 1300 - 1550	5	550	•	10	BD	400	L1		
GAK.1550-2.D7,5	4969424	FFH 1300 - 1550	5	550	•	10	BD	400	L1		
GAK.1775-2.D7,5	4969423	FFH 1525 - 1775	7	550	•	10	BD	400	L1		
GAK.1775-3.D7,5	4969422	FFH 1525 - 1775	7	550	•	10	BD	400	L1		
GAK.1850-2.D7,5	4969416	FFH 1600 - 1850	8	715	•	10	BD	360	L1		
GAK.2000-2.D7,5	4969415	FFH 1750 - 2000	8	1050	•	10	BD	360	L2	900	EU2
GAK.2000-2.D7,5.BK	4969413	FFH 1750 - 2000	8	1050	•	10	BD	360	L2		
GAK.2000-4.D7,5	4969412	FFH 1750 - 2000	8	1050	•	10	BD	360	L2		
GAK.2000-4.D7,5.BK	4969411	FFH 1750 - 2000	8	1050	•	10	BD	360	L2		
GAK.2225-2.D7,5	4969410	FFH 1975 - 2225	9	1050	•	10	BD	360	L2	900	EU2
GAK.2225-2.D7,5.BK	4969409	FFH 1975 - 2225	9	1050	•	10	BD	360	L2		
GAK.2225-4.D7,5	4969407	FFH 1975 - 2225	9	1050	•	10	BD	360	L2		
GAK.2225-4.D7,5.BK	4969406	FFH 1975 - 2225	9	1050	•	10	BD	360	L2		

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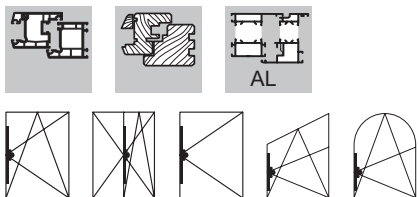
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Drive rod


GAK ... D 7,5 V < 700

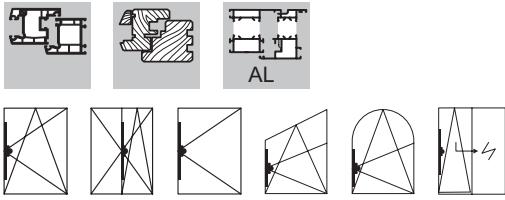
- Constant handle position GK
- Locking gap less than 700 mm ($V < 700$)
- Backset 7.5 mm
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-2
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Drive rod GAK ... BK

- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS

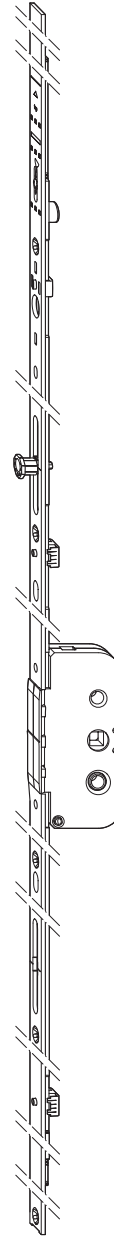



Item description	Item No.	Scope of application		TFE	Dimension GK	DFE	VPA1 Qty.	Type	VPA2 Qty.	Type
GAK.830-1.D7,5	4969431	FFH 580 - 830	2		260		20	BD	400	EA
GAK.945-1.D7,5	4969430	FFH 695 - 945	3	•	260	•	20	BD	400	EA
GAK.1100-1.D7,5	4969429	FFH 850 - 1100	3	•	375	•	20	BD	360	EA
GAK.1195-2.D7,5	4980490	FFH 945 - 1195	4	•	470	•	20	BD	360	EA
GAK.1325-2.D7,5	4969426	FFH 1075 - 1325	4	•	550	•	20	BD	360	EA
GAK.1550-2.D7,5	4969424	FFH 1300 - 1550	5	•	550	•	10	BD	400	L1
GAK.1775-3.D7,5	4969422	FFH 1525 - 1775	7	•	550	•	10	BD	400	L1
GAK.2000-4.D7,5	4969412	FFH 1750 - 2000	8	•	1050	•	10	BD	360	L2
GAK.2000-4.D7,5.BK	4969411	FFH 1750 - 2000	8	•	1050	•	10	BD	360	L2
GAK.2225-4.D7,5	4969407	FFH 1975 - 2225	9	•	1050	•	10	BD	360	L2
GAK.2225-4.D7,5.BK	4969406	FFH 1975 - 2225	9	•	1050	•	10	BD	360	L2



Drive rod GAK... D 25 - 50

- Constant handle position GK
- The backset is optionally 25, 30, 35, 40, 45 or 50 mm
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- Extensible with extension rods
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see group 15, installation drawings B-3-4
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.	Scope of application		Dimension GK	DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAK.1325-1.D25	4978671	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAK.1325-1.D30	4978672	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAK.1325-1.D35	4978673	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAK.1325-1.D40	4978674	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAK.1325-1.D45	4978675	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAK.1325-1.D50	4978676	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAK.2000-4.D25	4938143	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAK.2000-4.D30	4938150	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAK.2000-4.D35	4938151	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAK.2000-4.D40	4938152	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAK.2000-4.D45	4938153	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAK.2000-4.D50	4938154	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAK.2225-4.D25	4938145	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAK.2225-4.D30	4938146	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAK.2225-4.D35	4938147	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2	900	EU2
GAK.2225-4.D40	4938148	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAK.2225-4.D45	4938149	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAK.2225-4.D50	4938160	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		

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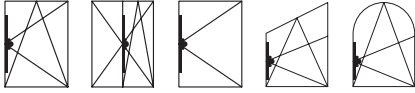
Frame parts **11**

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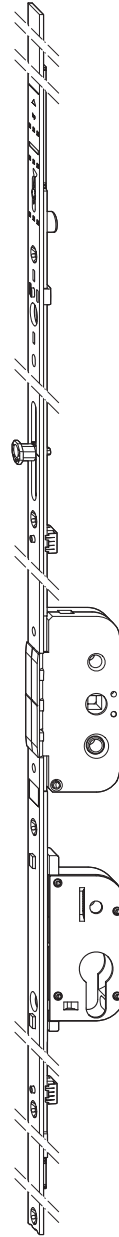
Adjustment/
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Installation drawings **15**



Drive rod GAKA

- Constant handle position GK
- The backset is optionally 25, 30, 35, 40, 45 or 50 mm
- Lockable, suitable for turn-tilt patio doors
- Clampable in fitting groove
- Extensible with extension rods
- Functional parts such as DFE and TFE retrofittable (see table)
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-3
- Handle set see Group 10, accessories
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.	Scope of application		Dimension GK	DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAKA.1325-1.D25	4933449	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAKA.1325-1.D30	4933473	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAKA.1325-1.D35	4933474	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAKA.1325-1.D40	4933475	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAKA.1325-1.D45	4933479	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAKA.1325-1.D50	4933490	FFH 1075 - 1325	4	550	•	•	10	BD	200	EA		
GAKA.2000-4.D25	4929007	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAKA.2000-4.D30	4929008	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2	900	EU2
GAKA.2000-4.D35	4929009	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAKA.2000-4.D40	4929010	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAKA.2000-2.D45	5015014	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAKA.2000-4.D45	4929011	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAKA.2000-2.D50	5015015	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAKA.2000-4.D50	4929012	FFH 1750 - 2000	8	1050	•	•	10	BD	200	L2		
GAKA.2225-4.D25	4929013	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAKA.2225-4.D30	4929014	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAKA.2225-4.D35	4929015	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAKA.2225-4.D40	4929016	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAKA.2225-2.D45	5015012	FFH 1975 - 2225	9	0	•	•	10	BD	200	L2		
GAKA.2225-4.D45	4929017	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		
GAKA.2225-2.D50	5015013	FFH 1975 - 2225	9	0	•	•	10	BD	200	L2		
GAKA.2225-4.D50	4929018	FFH 1975 - 2225	9	1050	•	•	10	BD	200	L2		



Drive rod GAK ... D -6


- Constant handle position GK
- Backset minus 6 mm
- For double-sash windows with a handle in the centre of the stop bead
- The double sash window opposite is to be fitted with shoot-bolts or double-sash drive rod GASK...D-6 (with double-sash drive rod GASK...for sash rebate heights of 1,850 mm and more). You also need to take into account fitting overview "Double sash fittings with minus 6 mm backset".
- Clampable in fitting groove
- Fail safe device FSF, retrofittable (double function element DFE and triple function element TFE cannot be used).
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- See Group 15, Installation Drawings B-3-5 for drilling and milling instructions
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default

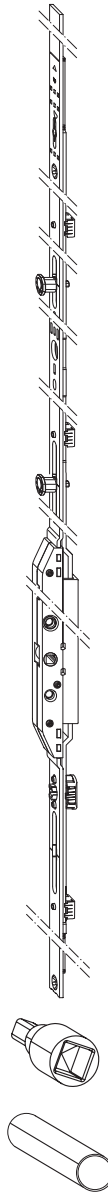
Adapter ADP.GR-OF-D-6

- 4-edge adapter for holding the window handle

Window Handle Case HFG

- Serves as a spacer between drive and handle (cuttable)
- Available in different lengths
- Colour: anthracite grey or silver-grey

Item description	Item No.	Scope of application		FSF	Dimension GK	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAK.800.D-6	5041227	FFH 550 - 800	1		210	20	BD	600	EA		
GAK.850.D-6	5041240	FFH 600 - 850	2		260	20	BD	400	EA		
GAK.950-1.D-6	5041241	FFH 700 - 950	3		260	20	BD	400	EA		
GAK.1100-1.D-6.N	5041242	FFH 850 - 1100	3	•	375	20	BD	360	EA		
GAK.1195-1.D-6	5041243	FFH 945 - 1195	4	•	470	20	BD	360	EA		
GAK.1325-1.D-6	5041244	FFH 1075 - 1325	4	•	550	20	BD	360	EA		
GAK.1550-1.D-6	5041245	FFH 1300 - 1550	5	•	550	10	BD	360	L1		
GAK.1775-2.D-6	5041246	FFH 1525 - 1775	7	•	550	10	BD	400	L1		
GAK.1850-2.D-6	5041247	FFH 1600 - 1850	7	•	715	10	BD	400	L1		
GAK.2000-2.D-6	5041248	FFH 1750 - 2000	8	•	1050	10	BD	400	L2		
GAK.2225-2.D-6	5041264	FFH 1975 - 2225	8	•	1050	10	BD	400	L2		
ADP.GR-OF-D-6	4926713					50	BL	200	KK	1600	EK
HFG 18,5 SG	4952549					100	BL	2500	KK	20000	EK
HFG 20,5 AGR	4952548					100	BL	2500	KK	20000	EK
HFG 26,5 SG	4994700					100	BL	1200	KK	9600	EK
HFG 27,0 SG	4994699					100	BL	1200	KK	9600	EK
HFG 28,0 SG	4994698					100	BL	1200	KK	9600	EK
HFG 29,5 SG	4994697					100	BL	1200	KK	9600	EK
HFG 30,0 SG	4994695					100	BL	1200	KK	9600	EK
HFG 31,5 SG	4926814					100	BL	1200	KK	9600	EK



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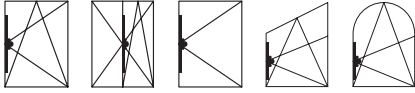
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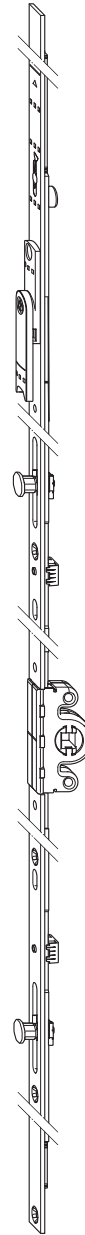



Drive rod GAK ... DFE

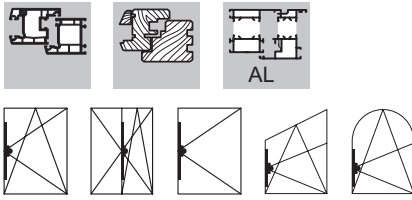
- Constant handle position GK
- Backset 15.5 mm
- With pre-assembled dual function element (limiter support and fail safe device)
- Clampable in fitting groove
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Drive rod GAK ... BK

- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS



Item description	Item No.	Scope of application		Dimension GK	VPA1 Qty.	Type	VPA2 Qty.	Type
GAK.945-1.DFE	4927337	FFH 695 - 945	3	260	20	BD	400	EA
GAK.1100-1.DFE	4927338	FFH 850 - 1100	3	375	20	BD	360	EA
GAK.1195-1.DFE	4927339	FFH 945 - 1195	4	470	20	BD	360	EA
GAK.1195-2.DFE	4927340	FFH 945 - 1195	4	470	20	BD	360	EA
GAK.1325-1.DFE	4978677	FFH 1075 - 1325	4	550	20	BD	360	EA
GAK.1325-2.DFE	4978678	FFH 1075 - 1325	4	550	20	BD	360	EA
GAK.1550-1.DFE	4927343	FFH 1300 - 1550	5	550	10	BD	360	L1
GAK.1550-2.DFE	4927344	FFH 1300 - 1550	5	550	10	BD	360	L1
GAK.1775-2.DFE	4927345	FFH 1525 - 1775	7	550	10	BD	400	L1
GAK.1775-3.DFE	4927346	FFH 1525 - 1775	7	550	10	BD	400	L1
GAK.2000-2.DFE	4938124	FFH 1750 - 2000	8	1050	10	BD	360	L2
GAK.2000-4.DFE	4938125	FFH 1750 - 2000	8	1050	10	BD	360	L2
GAK.2000-4.DFE.BK	4965482	FFH 1750 - 2000	8	1050	10	BD	360	L2
GAK.2225-2.DFE	4938126	FFH 1975 - 2225	9	1050	10	BD	360	L2
GAK.2225-4.DFE	4938127	FFH 1975 - 2225	9	1050	10	BD	360	L2



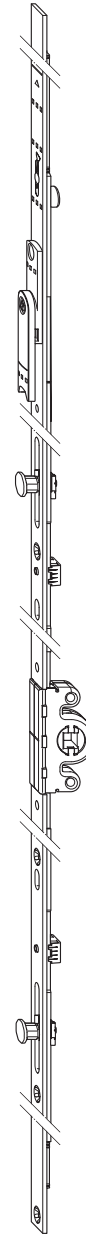
Drive rod

GAK ... DFE V < 700

- Constant handle position GK
- Backset 15.5 mm
- Locking gap less than 700 mm ($V < 700$)
- With pre-assembled dual function element (limiter support and fail safe device)
- Clampable in fitting groove
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Drive rod GAK ... BK

- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS



Item description	Item No.	Scope of application	FFH	Dimension GK	VPA1		VPA2		Type
					Qty.	Type	Qty.	Type	
GAK.945-1.DFE	4927337	FFH 695 - 945	3	260	20	BD	400	EA	
GAK.1100-1.DFE	4927338	FFH 850 - 1100	3	375	20	BD	360	EA	
GAK.1195-2.DFE	4927340	FFH 945 - 1195	4	470	20	BD	360	EA	
GAK.1325-2.DFE	4978678	FFH 1075 - 1325	4	550	20	BD	360	EA	
GAK.1550-2.DFE	4927344	FFH 1300 - 1550	5	550	10	BD	360	L1	
GAK.1775-3.DFE	4927346	FFH 1525 - 1775	7	550	10	BD	400	L1	
GAK.2000-4.DFE	4938125	FFH 1750 - 2000	8	1050	10	BD	360	L2	
GAK.2000-4.DFE.BK	4965482	FFH 1750 - 2000	8	1050	10	BD	360	L2	
GAK.2225-4.DFE	4938127	FFH 1975 - 2225	9	1050	10	BD	360	L2	

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Top rods **5**

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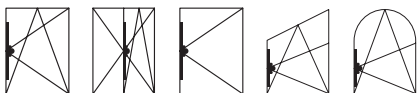
Frame parts **11**

Mounting accessories **12**

Mounting instructions **13**

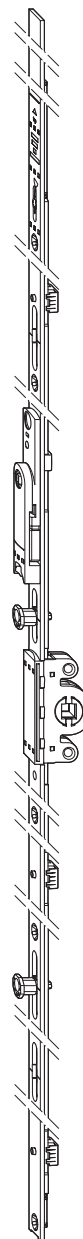
Adjustment/
maintenance **14**


Installation drawings **15**



Drive rod GAK ... TFE

- Constant handle position GK
- Backset 15.5 mm
- With pre-assembled triple function element (limiter support, fail safe device and balcony door catch)
- Clampable in fitting groove
- Handle position with reference to the sash rebate edge, in conformity with "dimension GK" (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

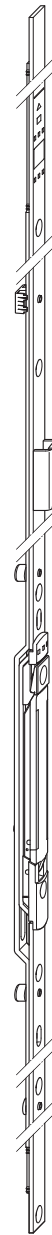


Item description	Item No.	Scope of application		Dimension GK	VPA1 Qty.	Type	VPA2 Qty.	Type
GAK.1325-1.TFE	4978679	FFH 1075 - 1325	4	550	20	BD	360	EA
GAK.2000-2.TFE	4938128	FFH 1750 - 2000	8	1050	10	BD	360	L2
GAK.2000-4.TFE	4938129	FFH 1750 - 2000	8	1050	10	BD	360	L2
GAK.2225-2.TFE	4938130	FFH 1975 - 2225	9	1050	10	BD	360	L2
GAK.2225-4.TFE	4938135	FFH 1975 - 2225	9	1050	10	BD	360	L2



Double sash drive rod GASK

- For constant handle position, in case of opposite fitting groove
- 1 piece
- Clampable in fitting groove
- Concealed lever, easily accessible
- 1-piece locking stroke similar to drive rod GAK or GAM
- Safety keeps are generally pre-assembled
- Adapter for functional elements DFE and TFE for mounting in security keeps – from GASK.945-1 and up
- Central fastening as standard
- Can be used left and right hand
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GASK.710	4927021	FFH 550 - 710	1	10	BD	400	EA		
GASK.830-1	4927023	FFH 580 - 830	2	10	BD	400	EA		
GASK.945-1	4933702	FFH 695 - 945	2	10	BD	400	EA		
GASK.1100-1	4933703	FFH 850 - 1100	4	10	BD	400	EA		
GASK.1195-1	4998165	FFH 945 - 1195	4	10	BD	400	EA		
GASK.1325-1	4933705	FFH 1075 - 1325	5	10	BD	400	EA		
GASK.1325-2	4933706	FFH 1075 - 1325	5	10	BD	400	EA		
GASK.1550-1	4933707	FFH 1300 - 1550	6	10	BD	400	L1	900	EU2
GASK.1550-2	4933708	FFH 1300 - 1550	6	10	BD	400	L1		
GASK.1775-2	4933709	FFH 1525 - 1775	7	10	BD	400	L1		
GASK.1775-3	4933720	FFH 1525 - 1775	7	10	BD	400	L1		
GASK.2000-2	4933721	FFH 1750 - 2000	8	10	BD	400	L2	900	EU2
GASK.2000-4	4933722	FFH 1750 - 2000	8	10	BD	400	L2		
GASK.2225-2	4933723	FFH 1975 - 2225	9	10	BD	400	L2	900	EU2
GASK.2225-4	4933724	FFH 1975 - 2225	9	10	BD	400	L2		

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Double sash drive rod GASK V < 700

- For constant handle position, in case of opposite fitting groove
- Locking gap less than 700 mm (V < 700)
- 1 piece
- Clampable in fitting groove
- Concealed lever, easily accessible
- 1-piece locking stroke similar to drive rod GAK or GAM
- Safety keeps are generally pre-assembled
- Adapter for functional elements DFE and TFE for mounting in security keeps – from GASK.945-1 and up
- Central fastening as standard
- Can be used left and right hand
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
GASK.830-1	4927023	FFH 580 - 830	2	10	BD	400	EA
GASK.945-1	4933702	FFH 695 - 945	2	10	BD	400	EA
GASK.1100-1	4933703	FFH 850 - 1100	4	10	BD	400	EA
GASK.1325-2	4933706	FFH 1075 - 1325	5	10	BD	400	EA
GASK.1550-2	4933708	FFH 1300 - 1550	6	10	BD	400	L1
GASK.1775-3	4933720	FFH 1525 - 1775	7	10	BD	400	L1
GASK.2000-4	4933722	FFH 1750 - 2000	8	10	BD	400	L2
GASK.2225-4	4933724	FFH 1975 - 2225	9	10	BD	400	L2

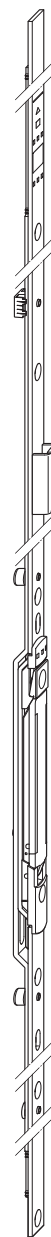


Double-sash drive rod GASK. ... D-6

- For constant handle position, in case of opposite fitting groove
- Used in combination with GAK...D-6 drive rod
- 1 piece
- Clampable in fitting groove
- Concealed lever, easily accessible
- 1-piece locking stroke similar to drive rod GAK...D-6
- Safety keeps are generally pre-assembled
- Central fastening as standard
- Can be used left and right hand
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates
- The GASK drive rod can be used from a sash rebate height > 1775 mm.

Double-sash drive rod GASK. ...D-6.E3

- See above
- Used in combination with bottom corner drive E3



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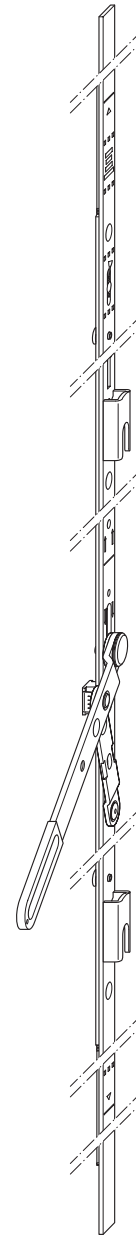
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Item description	Item No.	Scope of application		VPA1		VPA2	
				Qty.	Type	Qty.	Type
GASK.1100-1.D-6.E3.N	4990921	FFH 850 - 1100	4	10	BD	400	EA
GASK.1195-1.D-6.E3	4990922	FFH 945 - 1195	5	10	BD	400	EA
GASK.1325-1.D-6	4990923	FFH 1075 - 1325	4	10	BD	400	EA
GASK.1550-1.D-6	4990924	FFH 1300 - 1550	5	10	BD	400	L1
GASK.1775-2.D-6	4990925	FFH 1525 - 1775	6	10	BD	400	L1
GASK.1850-2.D-6	4990926	FFH 1600 - 1850	6	10	BD	400	L1

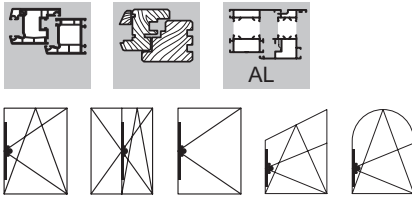


Double sash drive rod GASK.GZ

- For constant handle position, in case of opposite fitting groove
- 1 piece
- 1-piece locking stroke similar to drive rod GAK or GAM
- Safety keeps are generally pre-assembled
- Adapter for functional elements DFE and TFE for mounting in security keeps (not possible for GASK.GZ.710 and GASK.GZ.830)
- Central fastening as standard
- Cutting is performed when open
- Functional elements DFE and TFE cannot be used in combination with GASK.GZ.710 and GASK.GZ.830!
- The models GASK.GZ.710, 830 and 945 always need to be fitted with E3 corner drive (bottom corner).
- Cannot be combined with backsets D7.5, D8.5 and D-6
- Can be used left and right hand
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates
- Not suitable for automatic screwing machines



Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
GASK.GZ.710.E3	4974967	FFH 460 - 710	2	10	BD	400	EA
GASK.GZ.830-1.E3	4974968	FFH 580 - 830	3	10	BD	400	EA
GASK.GZ.945-1.E3	4974969	FFH 695 - 945	4	10	BD	400	EA
GASK.GZ.1100-1	4965449	FFH 850 - 1100	4	10	BD	400	EA
GASK.GZ.1195-2	4965451	FFH 945 - 1195	4	10	BD	400	EA
GASK.GZ.1325-1	4965452	FFH 1075 - 1325	5	10	BD	400	EA
GASK.GZ.1325-2	4965453	FFH 1075 - 1325	5	10	BD	400	EA
GASK.GZ.1550-1	4965454	FFH 1300 - 1550	6	10	BD	400	L1
GASK.GZ.1550-2	4965455	FFH 1300 - 1550	6	10	BD	400	L1
GASK.GZ.1775-2	4965456	FFH 1525 - 1775	7	10	BD	400	L1
GASK.GZ.1775-3	4965457	FFH 1525 - 1775	7	10	BD	400	L1
GASK.GZ.2000-2	4965458	FFH 1750 - 2000	9	10	BD	400	L2
GASK.GZ.2000-4	4965459	FFH 1750 - 2000	9	10	BD	400	L2
GASK.GZ.2225-2	4965461	FFH 1975 - 2225	9	10	BD	400	L2
GASK.GZ.2225-4	4965462	FFH 1975 - 2225	9	10	BD	400	L2
GASK.GZ.2450-4	5021553	FFH 2200 - 2450	10	10	BD	400	L2




Drive rod GAM

- Central handle position
- Backset 15.5 mm
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Drive rod GAM ... BK

- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS



Item description	Item No.	Scope of application		TFE	DFE	VPA1 Qty.	Type	VPA2 Qty.	Type
GAM.800	4926267	FFH 510 - 800	2			20	BD	400	EA
GAM.1050	4926268	FFH 710 - 1050	2	•	•	20	BD	360	EA
GAM.1050-1	4926269	FFH 710 - 1050	2	•	•	20	BD	360	EA
GAM.1400	4926290	FFH 900 - 1400	4	•	•	20	BD	360	L1
GAM.1400-1	4926291	FFH 900 - 1400	4	•	•	20	BD	360	L1
GAM.1400-2	4926292	FFH 900 - 1400	4	•	•	20	BD	360	L1
GAM.1800	4926293	FFH 1300 - 1800	6	•	•	10	BD	360	L1
GAM.1800-2	4926295	FFH 1300 - 1800	6	•	•	10	BD	360	L1
GAM.2300	4938161	FFH 1800 - 2300	8	•	•	10	BD	360	L2
GAM.2300-3	4938163	FFH 1800 - 2300	8	•	•	10	BD	360	L2
GAM.2300-3.BK	4942674	FFH 1800 - 2300	8		•	10	BD	360	L2

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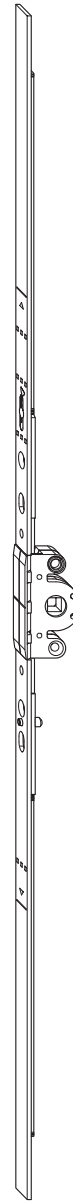
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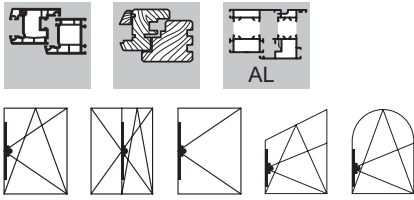


Drive rod GAM 0

- Central handle position
- Backset 15.5 mm
- No locking point
- Suitable for double-sash windows with a second handle, fitting concealed behind a front profile
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.	Scope of application		DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type
GAM.800	4926267	FFH 510 - 800	2			20	BD	400	EA
GAM.1050	4926268	FFH 710 - 1050	2	•	•	20	BD	360	EA
GAM.1400	4926290	FFH 900 - 1400	4	•	•	20	BD	360	L1
GAM.1800	4926293	FFH 1300 - 1800	6	•	•	10	BD	360	L1
GAM.2300	4938161	FFH 1800 - 2300	8	•	•	10	BD	360	L2

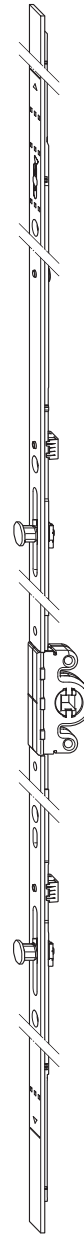



Drive rod GAM V < 700

- Central handle position
- Backset 15.5 mm
- Locking gap less than 700 mm ($V < 700$)
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Drive rod GAM ... BK

- With pre-assembled balcony door catch bolt
- Not suitable for activPilot Comfort / duoPort PAS



Item description	Item No.	Scope of application		TFE	DFE	VPA1		VPA2	
						Qty.	Type	Qty.	Type
GAM.1400-2	4926292	FFH 900 - 1400	4	•	•	20	BD	360	L1
GAM.1800-2	4926295	FFH 1300 - 1800	6	•	•	10	BD	360	L1
GAM.2300-3	4938163	FFH 1800 - 2300	8	•	•	10	BD	360	L2
GAM.2300-3.BK	4942674	FFH 1800 - 2300	8		•	10	BD	360	L2

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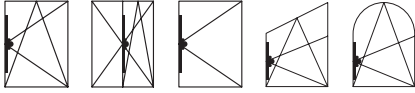
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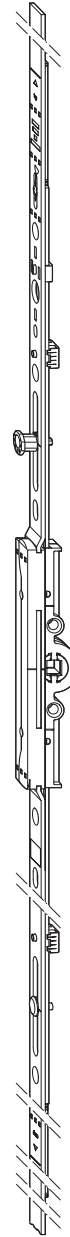
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
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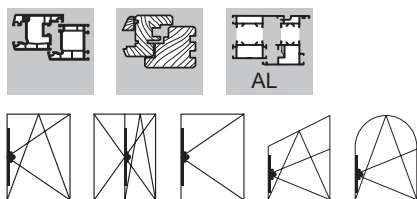


Drive rod GAM ... D 7.5

- Central handle position
- Backset 7.5 mm
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- For drilling and milling instructions see Group 15 installation drawings B-3-2
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



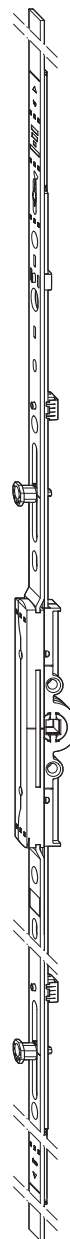
Item description	Item No.	Scope of application		DFE	TFE	VPA1		VPA2		VPA3	
						Qty.	Type	Qty.	Type	Qty.	Type
GAM.800.D7,5	4969404	FFH 575 - 800	2			20	BD	400	EA		
GAM.1050-1.D7,5	4969403	FFH 710 - 1050	2	•	•	20	BD	360	EA		
GAM.1400-1.D7,5	4969402	FFH 900 - 1400	4	•	•	20	BD	360	L1		
GAM.1400-2.D7,5	4969401	FFH 900 - 1400	4	•	•	20	BD	360	L1		
GAM.1800-2.D7,5	4969400	FFH 1300 - 1800	6	•	•	10	BD	360	L1		
GAM.2300-3.D7,5	4969289	FFH 1800 - 2300	8	•	•	10	BD	360	L2	900	EU2



Drive rod

GAM ... D 7,5 V < 700

- Central handle position
- Backset 7.5 mm
- Locking gap less than 700 mm ($V < 700$)
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- For drilling and milling instructions see Group 15 installation drawings B-3-2
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



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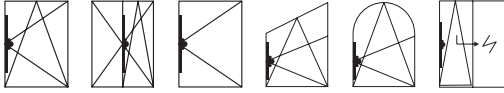
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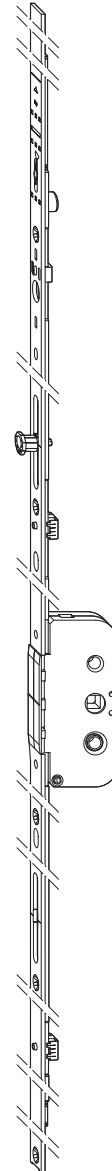
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Item description	Item No.	Scope of application		DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAM.1400-2.D7,5	4969401	FFH 900 - 1400	4	•	•	20	BD	360	L1		
GAM.1800-2.D7,5	4969400	FFH 1300 - 1800	6	•	•	10	BD	360	L1		
GAM.2300-3.D7,5	4969289	FFH 1800 - 2300	8	•	•	10	BD	360	L2	900	EU2

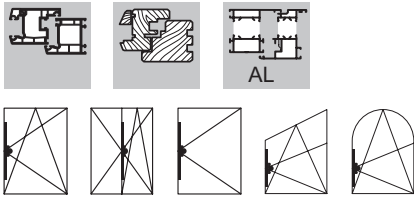


Drive rod GAM ... D25 - 50

- Central handle position
- The backset is optionally 25, 30, 35, 40, 45 or 50 mm
- Clampable in fitting groove
- Functional parts such as DFE and TFE retrofittable (see table), does not apply to activPilot Comfort
- For drilling and milling instructions see group 15, installation drawings B-3-4
- Extensible with extension rods
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

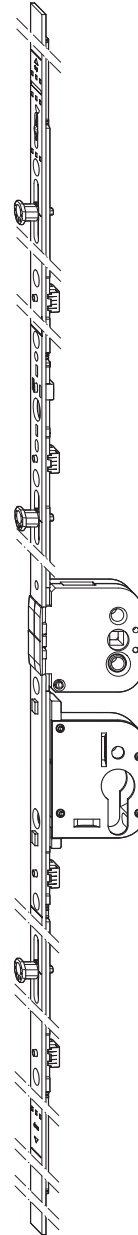


Item description	Item No.	Scope of application		DFE	TFE	VPA1		VPA2		VPA3	
						Qty.	Type	Qty.	Type	Qty.	Type
GAM.800.D25	4941067	FFH 510 - 800	2			10	BD	200	EA		
GAM.800.D30	4941069	FFH 510 - 800	2			10	BD	200	EA		
GAM.1050-1.D25	4941081	FFH 710 - 1050	2	•	•	10	BD	200	EA		
GAM.1050-1.D30	4941082	FFH 710 - 1050	2	•	•	10	BD	200	EA		
GAM.1400-1.D25	4927159	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-1.D30	4927171	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-1.D35	4927172	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-1.D40	4927173	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-1.D45	4927174	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-1.D50	4927175	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-2.D25	4933312	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-2.D30	4933313	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-2.D35	4933315	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-2.D40	4933316	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-2.D45	4933317	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1400-2.D50	4933318	FFH 900 - 1400	4	•	•	10	BD	200	L1		
GAM.1800-2.D25	4933319	FFH 1300 - 1800	6	•	•	10	BD	200	L1		
GAM.1800-2.D30	4933340	FFH 1300 - 1800	6	•	•	10	BD	200	L1		
GAM.1800-2.D35	4933341	FFH 1300 - 1800	6	•	•	10	BD	200	L1		
GAM.1800-2.D40	4933342	FFH 1300 - 1800	6	•	•	10	BD	200	L1		
GAM.1800-2.D45	4933343	FFH 1300 - 1800	6	•	•	10	BD	200	L1		
GAM.1800-2.D50	4933344	FFH 1300 - 1800	6	•	•	10	BD	200	L1		
GAM.2300-3.D25	4938167	FFH 1800 - 2300	8	•	•	10	BD	200	L2	900	EU2
GAM.2300-3.D30	4938168	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAM.2300-3.D35	4938169	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAM.2300-3.D40	4936028	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAM.2300-3.D40	4938170	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAM.2300-3.D45	4938427	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAM.2300-3.D50	4938428	FFH 1800 - 2300	8	•	•	10	BD	200	L2	900	EU2



Drive rod GAMA

- Central handle position
- The backset is optionally 25, 30, 35, 40, 45 or 50 mm
- Lockable, suitable for turn-tilt patio doors
- Extensible with extension rods
- Clampable in fitting groove
- Handle set see Group 10, accessories
- Functional parts such as DFE and TFE retrofittable (see table)
- For drilling and milling instructions see Group 15 installation drawings B-3-3
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



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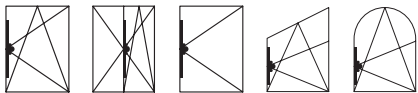
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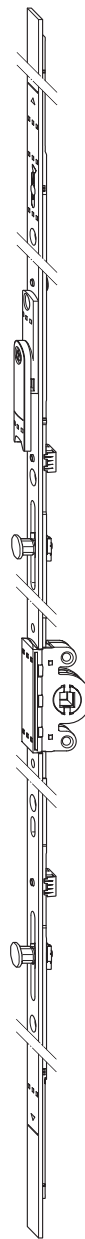
15 Installation drawings


Item description	Item No.	Scope of application		DFE	TFE	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GAMA.2300-3.D25	4927099	FFH 1800 - 2300	8	•	•	10	BD	200	L2	900	EU2
GAMA.2300-3.D30	4927160	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAMA.2300-3.D35	4927161	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAMA.2300-3.D40	4927162	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAMA.2300-3.D45	4927164	FFH 1800 - 2300	8	•	•	10	BD	200	L2		
GAMA.2300-3.D50	4927166	FFH 1800 - 2300	8	•	•	10	BD	200	L2		

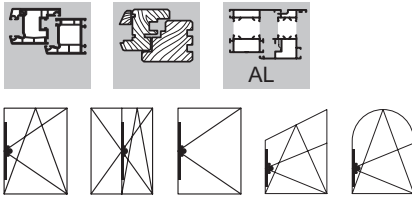


Drive rod GAM ... DFE

- Central handle position
- Backset 15.5 mm
- With pre-assembled dual function element (limiter support and fail safe device)
- Clampable in fitting groove
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
GAM.1050-1.DFE	4927354	FFH 710 - 1050	2	20	BD	360	EA
GAM.1400-1.DFE	4927355	FFH 900 - 1400	4	20	BD	360	L1
GAM.1400-2.DFE	4927356	FFH 900 - 1400	4	20	BD	360	L1
GAM.1800-2.DFE	4927357	FFH 1300 - 1800	6	10	BD	360	L1
GAM.2300-3.DFE	4938164	FFH 1800 - 2300	8	10	BD	360	L2



Drive rod GAM ... TFE

- Central handle position
- Backset 15.5 mm
- With pre-assembled triple function element (limiter support, fail safe device and balcony door catch)
- Clampable in fitting groove
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Drive stroke approx. 37 mm with window handle rotation by 180°
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



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Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
GAM.1400-2.TFE	4935019	FFH 900 - 1400	4	20	BD	360	L1
GAM.1800-2.TFE	4927363	FFH 1300 - 1800	6	10	BD	360	L1
GAM.2300-3.TFE	4938165	FFH 1800 - 2300	8	10	BD	360	L2

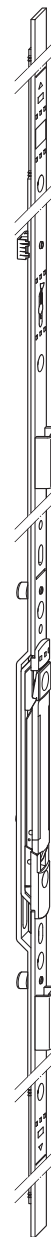



Double sash drive rod GASM

- Central handle position with opposing eurogroove
- 1 piece
- GASM.1050 is always used in combination with corner drive E3.
- Clampable in fitting groove
- Concealed lever, easily accessible
- 1-piece locking stroke similar to drive rod GAK or GAM
- Safety keeps are generally pre-assembled
- Adapters for functional parts DFE and TFE can be fitted to security keeps – from GASM.1050-1 onwards (not applicable to activPilot Comfort!)
- Central fastening as standard
- Can be used left and right hand
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Double-sash drive rod GASM ... L

- As described above, but with long lever

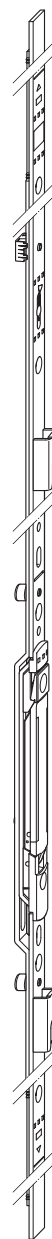


Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GASM.800	4927112	FFH 560 - 800	2	10	BD	400	EA		
GASM.1050-1.E3	4933666	FFH 710 - 1050	4	10	BD	400	EA		
GASM.1400-1	4933667	FFH 900 - 1400	5	10	BD	400	L1		
GASM.1400-1.L	4933669	FFH 900 - 1400	5	10	BD	400	L1		
GASM.1400-2	4933668	FFH 900 - 1400	5	10	BD	400	L1		
GASM.1400-2.L	4936721	FFH 900 - 1400	5	10	BD	400	L1		
GASM.1800-2	4933700	FFH 1300 - 1800	6	10	BD	400	L1		
GASM.2300-3	4933701	FFH 1800 - 2300	8	10	BD	400	L2	900	EU2



Double sash drive rod GASM V < 700

- Central handle position with opposing eurogroove
- Locking gap less than 700 mm (V < 700)
- 1 piece
- Clampable in fitting groove
- Concealed lever, easily accessible
- 1-piece locking stroke similar to drive rod GAK or GAM
- Safety keeps are generally pre-assembled
- Adapters for functional parts DFE and TFE can be fitted to security keeps – from GASM.1050-1 onwards (not applicable to activPilot Comfort!)
- Central fastening as standard
- Can be used left and right hand
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



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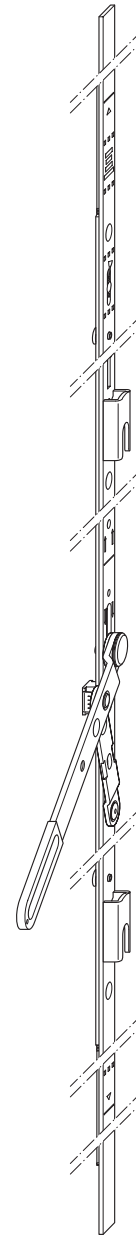
Installation drawings **15**


Item description	Item No.	Scope of application		VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
GASM.1400-2	4933668	FFH 900 - 1400	5	10	BD	400	L1		
GASM.1800-2	4933700	FFH 1300 - 1800	6	10	BD	400	L1		
GASM.2300-3	4933701	FFH 1800 - 2300	8	10	BD	400	L2	900	EU2

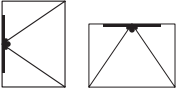


Double sash drive rod GASM.GZ

- Central handle position with opposing eurogroove
- 1 piece
- 1-piece locking stroke similar to drive rod GAK or GAM
- Safety keeps are generally pre-assembled
- Adapters for functional components DFE and TFE can be installed in security keeps – from GASM.GZ.1400-1 (and up)
- Central fastening as standard
- Can be used left and right hand
- Cutting is performed when open
- The GASM.GZ.800 drive rod is always fitted with E3 corner drive (bottom corner).
- Cannot be combined with backsets D7.5, D8.5 and D-6
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates
- Not suitable for automatic screwing machines

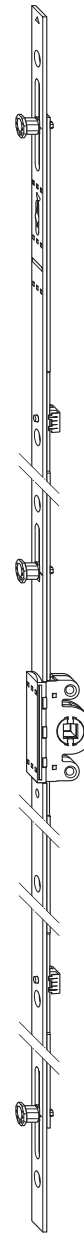



Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GASM.GZ.800.E3	4974991	FFH 530 - 800	3	10	BD	400	EA		
GASM.GZ.1050-1	4965127	FFH 710 - 1050	3	10	BD	400	EA		
GASM.GZ.1400-1	4965128	FFH 900 - 1400	4	10	BD	400	L1		
GASM.GZ.1400-2	4965129	FFH 900 - 1400	4	10	BD	400	L1		
GASM.GZ.1800-2	4965130	FFH 1300 - 1800	7	10	BD	400	L1		
GASM.GZ.2300-3	4965131	FFH 1800 - 2300	9	10	BD	400	L2	900	EU2



Locking gear GAVM

- Cannot be coupled
- Central handle position
- Backset 15.5 mm
- 18.5 mm drive stroke when window handle is turned by 90°
- For drilling and milling instructions see Group 15 installation drawings B-3-1
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Faceplate width 16 mm



Item description	Item No.	Scope of application		VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
GAVM.175-1	4927927	FFH/FFB 175 - 299	2	20	BD	400	EA		
GAVM.300-2	4927928	FFH/FFB 300 - 419	3	20	BD	400	EA		
GAVM.420-2	4927929	FFH/FFB 420 - 619	4	20	BD	400	EA		
GAVM.620-2	4927940	FFH/FFB 620 - 919	4	20	BD	400	EA		
GAVM.920-3	4927941	FFH/FFB 920 - 1219	6	20	BD	400	EA		
GAVM.1220-3	4996829	FFH/FFB 1220 - 1319	8	10	BD	400	L1		
GAVM.1320-3	4927942	FFH/FFB 1320 - 1519	8	10	BD	400	L1		
GAVM.1520-3	4996828	FFH/FFB 1520 - 1819	8	10	BD	400	L1		
GAVM.1820-4	4927943	FFH/FFB 1820 - 2019	10	10	BD	300	L2		
GAVM.2020-4	4996827	FFH/FFB 2020 - 2350	12	10	BD	300	L2	900	EU2

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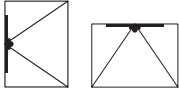
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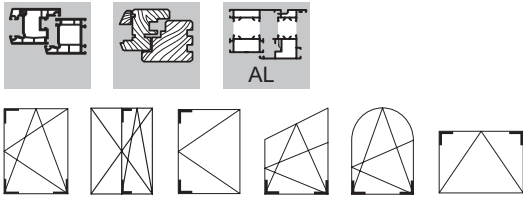


Locking drive GAVM D7.5

- Cannot be coupled
- Central handle position
- Backset 7.5 mm
- 18.5 mm drive stroke when window handle is turned by 90°
- For drilling and milling instructions see group 15, installation drawings
- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Gear case for milling from rebate
- Gear case for mounting in drilled hole
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Faceplate width 16 mm



Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
GAVM.420-2.D7,5	5015492	FFH/FFB 420 - 619	4	20	BD	1200	E3
GAVM.620-2.D7,5	5015493	FFH/FFB 620 - 919	4	20	BD	1200	E3
GAVM.920-3.D7,5	5015494	FFH/FFB 920 - 1219	6	20	BD	1200	E3
GAVM.1220-3.D7,5	5015495	FFH/FFB 1220 - 1319	8	10	BD	400	L6
GAVM.1320-3.D7,5	5015496	FFH/FFB 1320 - 1519	8	10	BD	400	L6
GAVM.1520-3.D7,5	5015497	FFH/FFB 1520 - 1819	8	10	BD	300	L6
GAVM.1820-4.D7,5	5015498	FFH/FFB 1820 - 2019	10	10	BD	300	L7
GAVM.2020-4.D7,5	5015499	FFH/FFB 2020 - 2350	12	10	BD	300	L7



Corner drive E1

- Can be used left and right hand
- Bracket length 98.5 mm
- Safety locking pin as an adjustable octagonal bolt
- Automatic and manual assembly possible
- Smooth operation, due to rust-free spring steel hinges inserted in C-rail
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Corner drive E1.N

- Same version as E1, including supporting element to fix to the fitting groove of the sash.

Corner drive E11

- Same construction as E1 with an additional octagonal bolt on the second arm

Corner drive E11.F

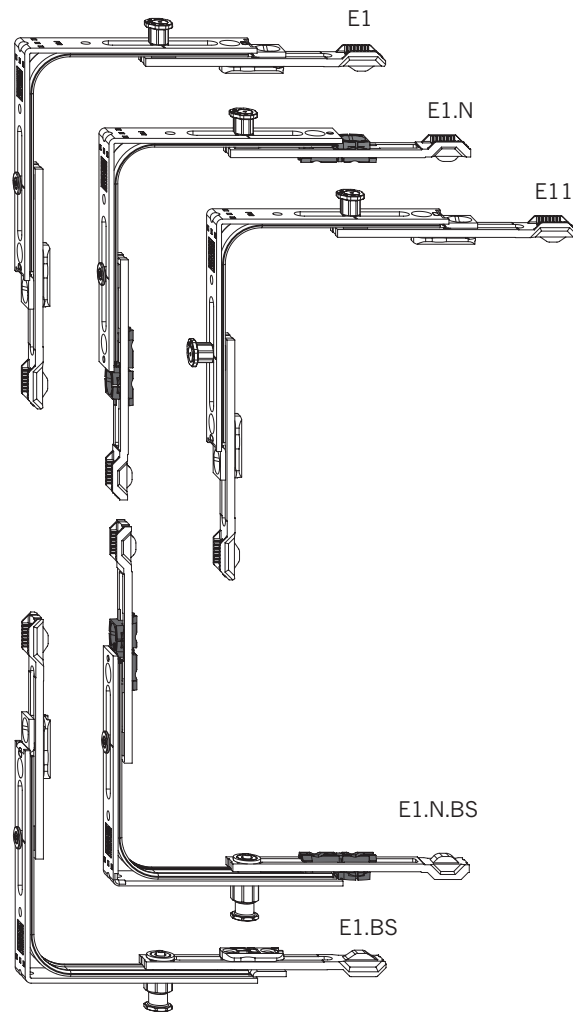
- Clampable design


Corner drive E1.BS

- Bottom corner drive with extended bolt for balcony doors with low threshold
- ...BS13 for airgaps 7 – 9 mm from upper edge of threshold clip rail
- ...BS16 for airgaps 10 – 12 mm from upper edge of threshold clip rail
- Not suitable for activPilot Comfort / duoPort PAS

Corner drive E1.N.BS

- Same version as E1, including supporting element to fix to the fitting groove of the sash.



Item description	Item No.		VPA1		VPA2	
			Qty.	Type	Qty.	Type
E1	2841823	4	100	KK	2400	EK
E1.N	5019146	4	100	KK	2400	EK
E11	4936017	4	100	KK	2400	EK
E11.F	4942960	4	100	KK	2400	EK
E1.BS13	4941425	4	100	KK	800	EK
E1.BS16	4926330	4	100	KK	800	EK
E1.N.BS16	5026983	4	100	KK	800	EK

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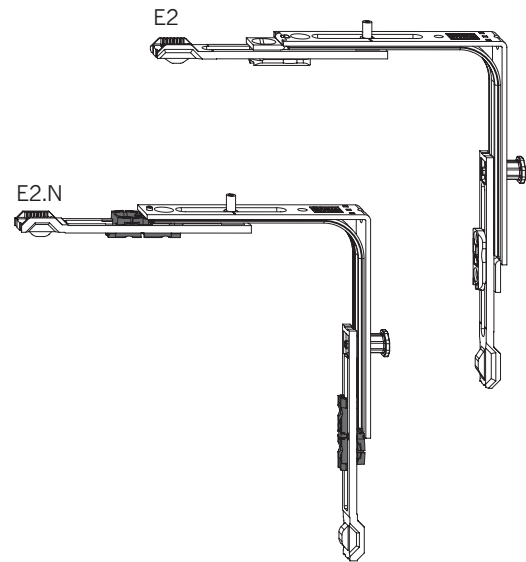
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Corner drive E2

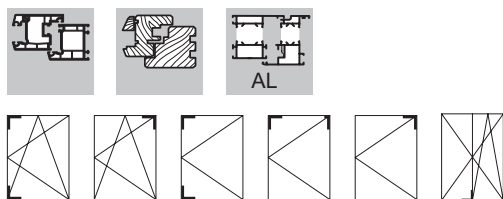
- Coupled with OS2 on the hinge side
- Can be used left and right hand
- Bracket length 98.5 mm
- Safety locking pin as an adjustable octagonal bolt
- Automatic and manual assembly possible
- Smooth operation, due to rust-free spring steel hinges inserted in C-rail
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Corner drive E2.N

- Same version as E2, including supporting element to fix to the fitting groove of the sash.

Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
E2	2842017	4	100	KK	2400	EK
E2.N	5019147	4	100	KK	2400	EK



Corner drive E3

- Can be used left and right hand
- Bracket length 98.5 mm (on one side)
- With shortened bracket on one side
- Safety locking pin as an adjustable octagonal bolt
- Automatic and manual assembly possible
- Smooth operation, due to rust-free spring steel hinges inserted in C-rail
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates
- The screw for fixing the adjoining faceplate (on the short piece) with the corner drive is included in the scope of delivery.

Corner drive E3.F

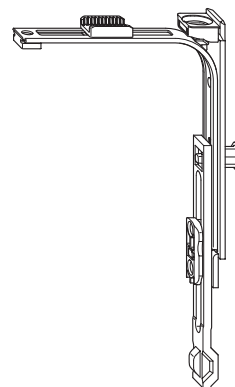
- Same design as E3, but clampable in the fitting groove

Corner drive E3.L

- Automatic mounting carried out by Lemuth
- Corner piece for diagonal screw connection

Corner drive E3.F.L

- Same design as E3.L, but clampable



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Item description	Item No.		VPA1		VPA2	
			Qty.	Type	Qty.	Type
E3	2842244	3	100	KK	2400	EK
E3.F	4929791	3	100	KK	2400	EK
E3.L	4927430	3	100	KK	2400	EK
E3.F.L	5009086	3	100	KK	2400	EK



Corner drive E1.MSL

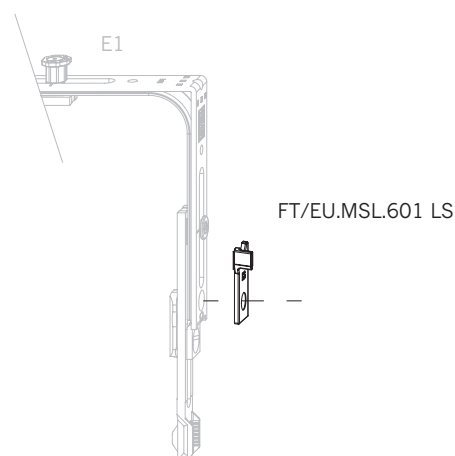
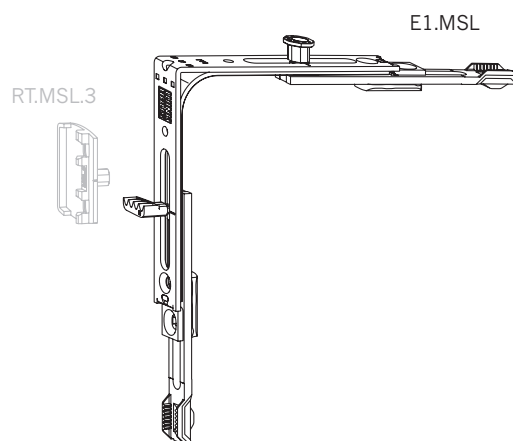
- Mini ventilation of approx. 7 to 20 mm is possible
- Engages into the frame part RT.MSL.3
- Bracket length 98.5 mm
- Safety locking pin as an adjustable octagonal bolt
- Smooth operation, due to rust-free spring steel hinges inserted in C-rail
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates


Frame part RT.MSL.3

- Counterpart to interlock with E1.MSL, located on the frame
- For profile allocation see Group 11, frame parts

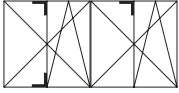
Sash part FT/EU.MSL.601

- Matching part on the sash for clicking in place the E1.MSL corner drive on double-sash windows
- To screw on the E1 corner drive of the inactive sash
- The indication of direction refers to the hinge side of the sash in question.
- For double-sash windows the E1.MSL.RS corner drive is combined with the sash part FT/EU.MSL.601 LS.



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
E1.MSLLS	5007005	4	100	KK	2400	EK
E1.MSLRS	5007004	4	100	KK	2400	EK
FT/EU.MSL601 LS	5025834	1	800	KK	6400	EK
FT/EU.MSL601 RS	5025832	1	800	KK	6400	EK

RS = right, LS = left



Corner drive E1.SBS

- For installation into the inactive (second-opening) sash with opposing eurogroove when an E11 corner drive is used for the sash opened first.
- With security keep welded to the vertical arm
- Can be used left and right hand
- Bracket length 98.5 mm
- Safety locking pin as an adjustable octagonal bolt
- Automatic and manual assembly possible
- Smooth operation, due to rust-free spring steel hinges inserted in C-rail
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Corner drive E1.SBS.O

- For installation into the inactive sash (top area)

Corner drive E1.SBS.U

- For installation into the inactive sash (bottom area)

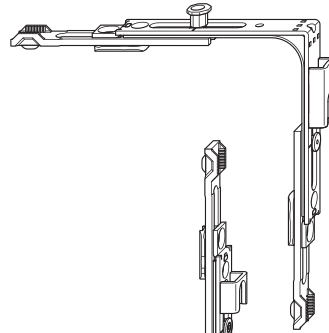
Corner drive E1.SBS...F

- Clampable design

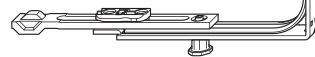
Corner drive E1.SBS.O.RC.F

- See above
- With slide lock (beneath the welded keep) against manipulation when the turn-tilt sash is locked.
- Clampable design

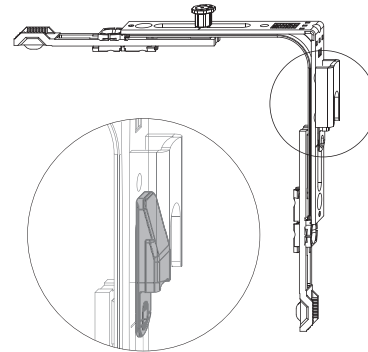
E1.SBS.O




E1.SBS.U



E1.SBS.O.RC.F



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
E1.SBS.O	4964898	4	100	KK	2400	EK
E1.SBS.O.F	4964900	4	100	KK	2400	EK
E1.SBS.U	4964899	4	100	KK	2400	EK
E1.SBS.U.F	4964901	4	100	KK	2400	EK
E1.SBS.O.RC.F	5037101	4	100	KK	2400	EK

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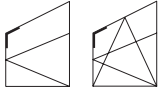
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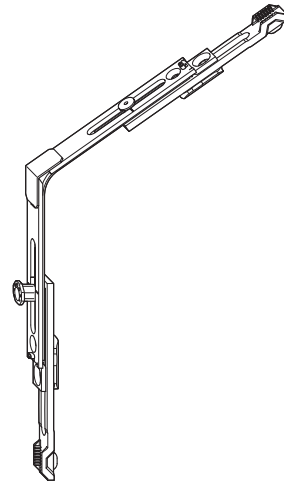
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Corner drive E1.A

- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Used for non right-angled corners on sashes
- Adjustable angle setting
- Smooth operation, due to rust-free spring steel hinges inserted in C-rail
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
E1.A	4926350	4	100	KK	2400	EK



Connecting rail ASS AR 7/OR-A SL

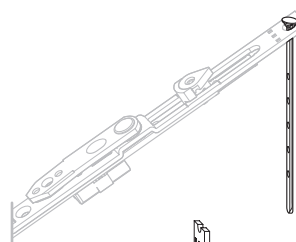
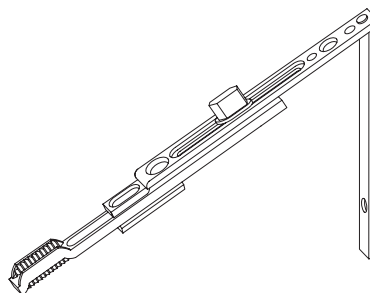
- In combination with OS2. ... for studio windows
- Airgap 12 mm
- For non square edges in the shear area
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Screw clip OS.A

- Only in combination with OS1.600 for studio windows
- The screw clip is led through the last top rod screw hole and is screwed in the vertical fitting groove.

Connecting rail ASS.AS.1

- For turn windows in combination with drive rod GAM or GAK
- Not suited for turn-tilt windows
- Use the stop piece ANS ACP or stroke limiter AWDR SL for stroke limitation.



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Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
ASS AR 7/OR-A SL	1811091	2	10	BD	150	KK	1200	EK
OSA	5000283	1	50	BL	1000	KK	8000	EK
ASS.AS.1	4937603	2	150	KK	3600	EK		



Connecting rails

Connecting rail ASS.SP - 1

- Including rod design and shortened bracket for narrow patio doors
- To enable handicapped persons locking of low threshold doors with ground sleeves
- Without run-up block
- With security locking pin designed as adjustable octagonal locking bolt
- For turn-tilt doors at the bottom locking point (gear side)
- Connection of interlocking rod is not possible

Connecting rail ASS.SP - 1.18

- Same design as ASS.SP - 1, but with 18 mm rod extension

Connecting rail ASS.SP.GGL.SB

- Same design as ASS.SP-1
- For turn double-sash doors, in combination with ASS.SP-1
- Installed security keep

Connecting rail ASS.SP.GGL.SB.18

- Same design as ASS.SP.GGL.SP, but with 18 mm rod extension
- For turn double-sash doors, in combination with ASS.SP-1

Connecting rail ASS.SP

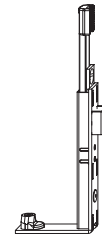
- Including rod design and shortened bracket for narrow patio doors
- For turn-only doors (top locking point)
- Connection of interlocking rod is not possible

Connecting rail ASS.SP.GGL

- Same design as ASS.SP
- With return stroke if used on turn and turn-double sashes at the bottom locking point
- To enable handicapped persons locking of low threshold doors with ground sleeves



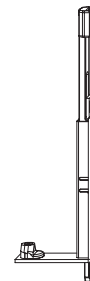
ASS.SP - 1
ASS.SP - 1.18



ASS.SP.GGL.SB
ASS.SP.GGL.SB.18



ASS.SP




ASS.SP.GGL

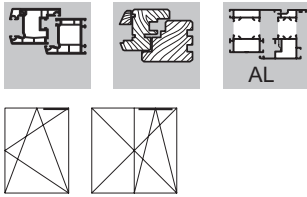


BH 17/20 SL



BH 17/30 SL

Item description	Item No.	Scope of application		VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
ASS.SP-1	5019459	FFH > 420 mm	2	150	KK	1200	EK		
ASS.SP-1.18	5030253	FFH > 420 mm	2	150	KK	1200	EK		
ASS.SP.GGL.SB	5019457	FFH > 420 mm	2	150	KK	1200	EK		
ASS.SP.GGL.SB.18	5030252	FFH > 420 mm	2	150	KK	1200	EK		
ASS.SP	5019458	FFH > 420 mm	2	150	KK	1200	EK		
ASS.SP.GGL	5019455	FFH > 420 mm	2	150	KK	1200	EK		
BH 17/20 SL	2309087		0	20	BL	200	KK	1600	EK
BH 17/30 SL	1885242		0	20	BL	200	KK	1600	EK



Top rod OS1.600

- In combination with shears SK1/SH1/SHW1
- OS1.600 is always combined with an E3 corner drive on the hinge side
- Integrated anti-slam block in tilt position as standard
- Progressive shear retraction: adjustable from 18 to 25 mm
- After assembly the top rod and the shear are firmly attached to one another
- Clampable in fitting groove
- Can be used left and right hand
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates
- Variable tilt device MSL.OS as retrofit option for window profiles with a frame rebate depth of 25 mm



Top Rod OS ... MSL

- With pre-assembled variable tilt device
- Progressive shear retraction 18 mm
- (Frame rebate depth at least 25 mm)

Top Rod OS ... ZSS

- With pre-assembled anti-slam device

Variable tilt device MSL-OS


- See Group 10, accessories

Tilt limiter KBG.OS1

- See Group 10, accessories

Anti slam device ZSS.OS1

- See Group 10, accessories

Item description	Item No.	Scope of application		VPA1		VPA2	
				Qty.	Type	Qty.	Type
OS1.600	2847141	FFB 370 - 600	3	20	BD	800	EA
OS1.600.MSL.LS	4926908	FFH 370 - 600	3	20	BD	800	EA
OS1.600.MSL.RS	4926906	FFH 370 - 600	3	20	BD	800	EA
OS1.600.ZSS	4938601	FFH 370 - 600	3	20	BD	800	EA

RS = right, LS = left

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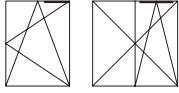
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Top rod OS2



- OS2 ... is used in combination with E2 on the hinge side
- In combination with shears SK2/SH2/SHW2
- After assembly the top rod and the shear are firmly attached to one another
- Clampable in fitting groove
- Progressive shear retraction: adjustable from 18 to 25 mm
- Integrated anti-slam block in tilt position as standard
- From 1475 mm sash rebate width with additional shear ZSR
- Safety locking pin as an adjustable octagonal bolt
- Can be used left and right hand
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates
- Variable tilt device MSL.OS as retrofit option for window profiles with a frame rebate depth of 25 mm

Top Rod OS ... MSL

- With pre-assembled variable tilt device
- Progressive shear retraction 18 mm
- (Frame rebate depth at least 25 mm)

Top Rod OS ... ZSS

- With pre-assembled anti-slam device

Variable tilt device MSL-OS


- See Group 10, accessories

Tilt limiter KBG.OS2

- See Group 10, accessories

Anti slam device ZSS.OS2

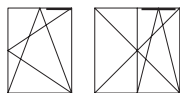
- See Group 10, accessories

Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
OS2.800	4928979	FFB 600 - 800	4	20	BD	800	EA
OS2.800.MSLLS	4928986	FFB 600 - 800	4	20	BD	800	EA
OS2.800.MSLRS	4928987	FFB 600 - 800	4	20	BD	800	EA
OS2.800.ZSS	4937413	FFB 600 - 800	4	20	BD	800	EA
OS2.1025	2849278	FFB 775 - 1025	5	20	BD	500	EA
OS2.1025-1	2848275	FFB 775 - 1025	5	20	BD	500	EA
OS2.1025-1.MSLLS	4926913	FFB 775 - 1025	5	20	BD	500	EA
OS2.1025-1.MSLRS	4926912	FFB 775 - 1025	5	20	BD	500	EA
OS2.1025-1.ZSS	4937450	FFB 775 - 1025	5	20	BD	500	EA
OS2.1250-1	2848291	FFB 1000 - 1250	6	20	BD	500	EA
OS2.1250-1.MSLLS	4926915	FFB 1000 - 1250	6	20	BD	500	EA
OS2.1250-1.MSLRS	4926914	FFB 1000 - 1250	6	20	BD	500	EA
OS2.1250-1.ZSS	4937451	FFB 1000 - 1250	6	20	BD	500	EA
OS2.1475-1	2848304	FFB 1225 - 1475	6	20	BD	500	L1
OS2.1475-1.ZSS	4937454	FFB 1225 - 1475	6	20	BD	500	L1

RS = right, LS = left

Application note for wooden windows with 4 mm airgap:

In the case of a 4/15 rebate geometry, corner drive ER 7/OR is combined with top rod OS2 and shear SWT 40-15/9-4 for sash rebate widths greater than 600 mm.



Top rod OS ... E

- For the type of fitting "Tilt before turn"
- In combination with SK/SH. ...E shears
- From 1250 mm sash rebate width with additional shear ZSRE
- After assembly the top rod and the shear are firmly attached to one another
- Clampable in fitting groove
- Safety locking pin as an adjustable octagonal bolt
- Can be used left and right hand
- Central fastening as standard
- Tilt position is the factory default
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



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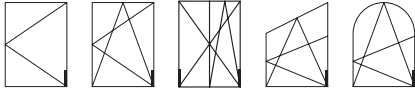
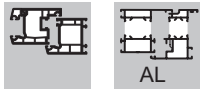
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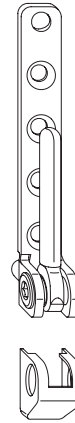
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Item description	Item No.	Scope of application		VPA1		VPA2	
				Qty.	Type	Qty.	Type
OS1.600.E	4926108	FFB 370 - 600	3	20	BD	800	EA
OS2.800.E	4928985	FFB 600 - 800	4	20	BD	800	EA
OS2.1025-1.E	4926177	FFB 775 - 1025	5	20	BD	500	EA
OS2.1250-1.E	4926178	FFH 1000 - 1250	6	20	BD	500	EA
OS2.1475-1.E	4926180	FFB 1225 - 1475	6	20	BD	500	L1



Corner hinge EL.K

- Used in combination with sash hinges FL.K... or FL.KA...
- Corner hinge EL.K with symmetrical drill holes to match shear hinge SL.KS
- In case of sash overlap of 20 mm: corner hinge and cap flush with the lower edge of the sash
- Drilling template see Group 15, installation drawings B-6-3
- Side adjustment ± 2 mm
- Can be used left and right hand
- For sash weight see overview of articles

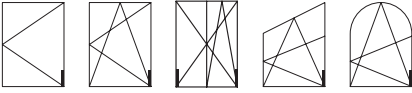
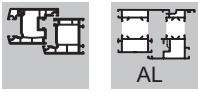


Corner hinge cap ELK ESV

- Can be used left and right hand

Item description	Item No.	🔩	Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
EL.K.3-3-3	4926256	4	80	400	KK	9600	EK		
EL.K.3-3-3.WS	4928409	4	80	400	KK	9600	EK		
EL.K.3-3-3.BR	4938886	4	80	400	KK	3200	EK		
EL.K.3-3-3.CW	4938887	4	80	400	KK	3200	EK		
EL.K.3-3-3.F9	4938888	4	80	400	KK	3200	EK		
EL.K.6-3-3	4926937	4	80	400	KK	3200	EK		
EL.K.6-3-3.WS	4926936	4	80	400	KK	3200	EK		
EL.K.6-3-3.BR	4926939	4	80	400	KK	3200	EK		
EL.K.6-3-3.F9	4926938	4	80	400	KK	3200	EK		
EL.K.6-3-10	4932434	4	100	400	KK	9600	EK		
EL.K.6-3-10.WS	4932435	4	100	400	KK	9600	EK		
EL.K.6-3-10.BR	4932437	4	100	400	KK	3200	EK		
EL.K.6-3-10.F9	4932436	4	100	400	KK	9600	EK		
EL.K.6-3-16	2844602	4	100	400	KK	9600	EK		
EL.K.6-3-16.WS	2844637	4	100	400	KK	9600	EK		
EL.K.6-3-16.BR	4926830	4	100	400	KK	3200	EK		
EL.K.6-3-16.CW	4928066	4	100	400	KK	3200	EK		
EL.K.6-3-16.F9	2844653	4	100	400	KK	9600	EK		
EL.K.6-3-16.BZ-CU	5007544	4	100	400	KK	9600	EK		
EL.K.6-3-16.LBR	5002889	4	100	400	KK	9600	EK		
EL.K.6-3-16.LGR	5002888	4	100	400	KK	9600	EK		
EL.K.6-3-16.PW	5002887	4	100	400	KK	9600	EK		
EL.K.6-16-3	4993871	4	100	400	KK	3200	EK		
EL.K.6-16-3.BR	4993874	4	100	400	KK	3200	EK		
EL.K.6-16-3.WS	4993872	4	100	400	KK	3200	EK		
EL.K.6-16-3.F9	5020821	4		400	KK	3200	EK		
ELK ESV BR	4990531			200	BL	2000	KK	16000	EK
ELK ESV BZ-AM	4990539			100	BL	1000	KK	8000	EK
ELK ESV BZ-RB	4990590			100	BL	1000	KK	8000	EK
ELK ESV CW	4990533			100	BL	1000	KK	8000	EK
ELK ESV F1	4990535			100	BL	1000	KK	8000	EK
ELK ESV F3	4995111			100	BL	1000	KK	8000	EK
ELK ESV F3-MG	4990537			100	BL	1000	KK	8000	EK
ELK ESV F9	4990530			100	BL	1000	KK	8000	EK
ELK ESV LBR	4990532			100	BL	1000	KK	8000	EK
ELK ESV LGR	5002840			100	BL	300	KK	2400	EK
ELK ESV PW	5002833			100	BL	300	KK	2400	EK
ELK ESV SW	4990538			200	BL	2000	KK	16000	EK
ELK ESV WS	4990509			200	BL	2000	KK	48000	EK

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white



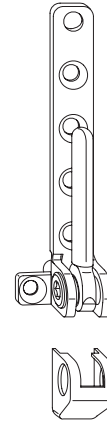
Corner hinge EL.KB


- Used in combination with sash hinges FL.K... or FL.KA...
- Side adjustment ± 2 mm
- In case of sash overlap of 20 mm: corner hinge and cap flush with the lower edge of the sash
- Drilling template see Group 15, installation drawings B-6-3
- Non-handed

Corner hinge cover ELK ESWW

- Non-handed

Attention: For screwing in place the load-bearing fitting parts, such as corner hinges, shear and sash hinges, the TBDK guideline must be adhered to.



Item description	Item No.		Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
EL.KB.6-3-16.LS	4926920	5	130	400	KK	3200	EK		
EL.KB.6-3-16.RS	4926919	5	130	400	KK	3200	EK		
EL.KB.6-3-16.LS.WS	2903959	5	130	400	KK	3200	EK		
EL.KB.6-3-16.RS.WS	2903879	5	130	400	KK	3200	EK		
EL.KB.6-3-16.LS.BR	4926804	5	130	400	KK	3200	EK		
EL.KB.6-3-16.RS.BR	4926803	5	130	400	KK	3200	EK		
EL.KB.6-3-16.LS.F9	2903983	5	130	400	KK	3200	EK		
EL.KB.6-3-16.RS.F9	2903967	5	130	400	KK	3200	EK		
EL.KB.6-3-16.LS.BZ-CU	5009538	5	130	400	KK	3200	EK		
EL.KB.6-3-16.RS.BZ-CU	5009537	5	130	400	KK	3200	EK		
ELK ESWW LS WS	4990471			100	BL	1000	KK	8000	EK
ELK ESWW RS WS	4990500			100	BL	1000	KK	8000	EK
ELK ESWW LS BR	4990473			100	BL	1000	KK	8000	EK
ELK ESWW RS BR	4990502			100	BL	1000	KK	8000	EK
ELK ESWW LS F1	4990476			100	BL	1000	KK	8000	EK
ELK ESWW RS F1	4990505			100	BL	1000	KK	8000	EK
ELK ESWW LS F3	4990478			100	BL	1000	KK	8000	EK
ELK ESWW RS F3	4990506			100	BL	1000	KK	8000	EK
ELK ESWW LS F9	4990472			100	BL	1000	KK	8000	EK
ELK ESWW RS F9	4990501			100	BL	1000	KK	8000	EK
ELK ESWW LS CW	4990475			100	BL	1000	KK	8000	EK
ELK ESWW RS CW	4990504			100	BL	1000	KK	8000	EK
ELK ESWW LS LBR	4990474			100	BL	1000	KK	8000	EK
ELK ESWW RS LBR	4990503			100	BL	1000	KK	8000	EK
ELK ESWW LS SW	4990479			100	BL	1000	KK	8000	EK
ELK ESWW RS SW	4990507			100	BL	1000	KK	8000	EK

RS = right, LS = left

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white

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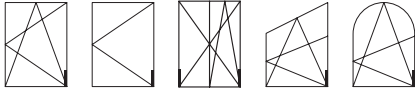
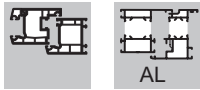
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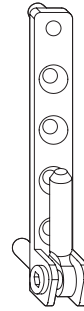
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Corner hinge ESV

- Used in combination with sash hinges FL.K.20-6-28.130, FWV..., FL.E...PA.. or FK-F...
- Can be used left and right hand
- ESV corner hinge with symmetrical drilling pattern, according to shear hinge SL.KS.3-6
- Corner hinge/shear hinge drilling possible on loose pieces
- Side adjustment ± 2 mm
- Max. sash weight 100 kg; 130 kg on request (ESV 6-3-16)
- In case of sash overlap of 20 mm: corner hinge and cap flush with the lower edge of the sash
- For drill and screw templates see group 15, installation drawings B-6-3




Corner hinge cap ELK ESV

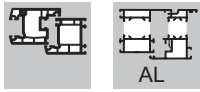
- Can be used left and right hand



Attention: For screwing in place the load-bearing fitting parts, such as corner hinges, shear and sash hinges, the TBDK guideline must be adhered to.

Item description	Item No.		Max. sash weight (kg)	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
ESV 3-3-3 SL	1939503	4	80	400	KK	3200	EK		
ESV 3-3-3 SL/BR	1934711	4	80	400	KK	3200	EK		
ESV 3-3-3 SL/WS	2067604	4	80	400	KK	3200	EK		
ESV 6-3-3 SL	1846551	4	100	400	KK	3200	EK		
ESV 6-3-3 SL/BR	2071267	4	100	400	KK	3200	EK		
ESV 6-3-3 SL/F9	4983321	4	100	400	KK	3200	EK		
ESV 6-3-3 SL/WS	2071283	4	100	400	KK	3200	EK		
ESV 6-3-10 SL	2595571	4	100	400	KK	9600	EK		
ESV 6-3-10 SL/BR	2595562	4	100	400	KK	3200	EK		
ESV 6-3-10 SL/F9	4949435	4	100	400	KK	9600	EK		
ESV 6-3-10 SL/WS	2583975	4	100	400	KK	3200	EK		
ESV 6-3-16 SL	1898609	4	100/130	400	KK	9600	EK		
ESV 6-3-16 SL/BR	1930488	4	100/130	400	KK	9600	EK		
ESV 6-3-16 SL/CW	2548707	4	100/130	400	KK	3200	EK		
ESV 6-3-16 SL/F9	2010481	4	100/130	400	KK	9600	EK		
ESV 6-3-16 SL/WS	1930470	4	100/130	400	KK	9600	EK		
ESV 6-16-16 SL/BR	2051346	4	100/130	400	KK	3200	EK		
ESV 6-16-16 SL/WS	2051274	4	100/130	400	KK	3200	EK		
ELK ESV WS	4990509			200	BL	2000	KK	48000	EK
ELK ESV BR	4990531			200	BL	2000	KK	16000	EK
ELK ESV BZ-AM	4990539			100	BL	1000	KK	8000	EK
ELK ESV BZ-RB	4990590			100	BL	1000	KK	8000	EK
ELK ESV CW	4990533			100	BL	1000	KK	8000	EK
ELK ESV F1	4990535			100	BL	1000	KK	8000	EK
ELK ESV F3	4995111			100	BL	1000	KK	8000	EK
ELK ESV F3-MG	4990537			100	BL	1000	KK	8000	EK
ELK ESV F9	4990530			100	BL	1000	KK	8000	EK
ELK ESV SW	4990538			200	BL	2000	KK	16000	EK
ELK ESV LBR	4990532			100	BL	1000	KK	8000	EK
ELK ESV PW	5002833			100	BL	300	KK	2400	EK
ELK ESV LGR	5002840			100	BL	300	KK	2400	EK
ELK ESV F1-ELOX.	5021122			100	BL	1000	K3	8000	E3

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white



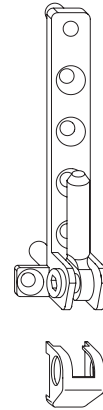
Corner hinge ESWW


- Used in combination with sash hinges FL.K.20-6-28.130, FWV..., FL.E...PA.. or FK-F...
- Side adjustment ± 2 mm
- Max. sash weight 130 kg
- For drill and screw templates see group 15, installation drawings B-6-3

Corner hinge cover ELK ESWW

- Non-handed

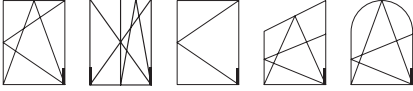
Attention: For screwing in place the load-bearing fitting parts, such as corner hinges, shear and sash hinges, the TBDK guideline must be adhered to.



Item description	Item No.		Max. sash weight (kg)	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
ESWW 6-3-16 LS SL/WS	1934737	5	130	400	KK	3200	EK		
ESWW 6-3-16 RS SL/WS	1934788	5	130	400	KK	3200	EK		
ESWW 6-3-16 LS SL/F9	4978704	5	130	400	KK	3200	EK		
ESWW 6-3-16 RS SL/F9	4978703	5	130	400	KK	3200	EK		
ELK ESWW LS WS	4990471			100	BL	1000	KK	8000	EK
ELK ESWW RS WS	4990500			100	BL	1000	KK	8000	EK
ELK ESWW LS BR	4990473			100	BL	1000	KK	8000	EK
ELK ESWW RS BR	4990502			100	BL	1000	KK	8000	EK
ELK ESWW LS CW	4990475			100	BL	1000	KK	8000	EK
ELK ESWW RS CW	4990504			100	BL	1000	KK	8000	EK
ELK ESWW LS F1	4990476			100	BL	1000	KK	8000	EK
ELK ESWW RS F1	4990505			100	BL	1000	KK	8000	EK
ELK ESWW LS F3	4990478			100	BL	1000	KK	8000	EK
ELK ESWW RS F3	4990506			100	BL	1000	KK	8000	EK
ELK ESWW LS F9	4990472			100	BL	1000	KK	8000	EK
ELK ESWW RS F9	4990501			100	BL	1000	KK	8000	EK
ELK ESWW LS LBR	4990474			100	BL	1000	KK	8000	EK
ELK ESWW RS LBR	4990503			100	BL	1000	KK	8000	EK
ELK ESWW LS SW	4990479			100	BL	1000	KK	8000	EK
ELK ESWW RS SW	4990507			100	BL	1000	KK	8000	EK
ELK ESWW LS F1-ELOX.	5021126			100	BL	1000	K3	8000	E3
ELK ESWW RS F1-ELOX.	5021127			100	BL	1000	K3	8000	E3

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white

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Sash hinge FL.K

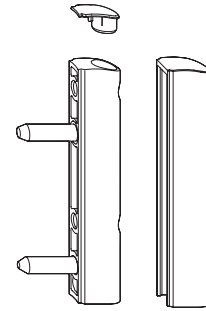
- Used in combination with corner hinges EL.K... or EL.KB...
- Can be used left and right hand
- Height adjustment ± 3 mm

Sash hinge plug S.FL.K

- Can be used left and right hand

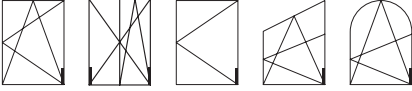
Sash hinge cover K.FL.K

- Can be used left and right hand



Item description	Item No.	🔩	Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
FL.K.20-6-20	4928429	2	100	250	KK	6000	EK		
FL.K.20-6-20.WS	4928434	2	100	250	KK	6000	EK		
FL.K.20-6-20.BR	4928437	2	100	250	KK	2000	EK		
FL.K.20-6-20.CW	4928438	2	100	250	KK	2000	EK		
FL.K.20-6-20.F9	4928436	2	100	250	KK	6000	EK		
FL.K.20-6-20.BZ-CU	5007545	2	100	250	KK	6000	EK		
FL.K.20-6-28	2919459	2	100	250	KK	2000	EK		
FL.K.20-6-28.WS	2919475	2	100	250	KK	2000	EK		
FL.K.20-6-28.BR	4926827	2	100	250	KK	2000	EK		
FL.K.20-6-28.CW	4928065	2	100	250	KK	6000	EK		
FL.K.20-6-28.F9	2919491	2	100	250	KK	2000	EK		
K.FL.K.WS	2846552			100	BL	300	KK	7200	EK
K.FL.K.BR	4927425			100	BL	300	KK	7200	EK
K.FL.K.CW	4927562			100	BL	300	KK	2400	EK
K.FL.K.F1	4928486			100	BL	300	KK	2400	EK
K.FL.K.F3	4995090			100	BL	300	KK	2400	EK
K.FL.K.BZ-RB	4933298			100	BL	300	KK	2400	EK
K.FL.K.F9	2846561			100	BL	300	KK	2400	EK
K.FL.K.LBR	4939037			100	BL	300	KK	2400	EK
K.FL.K.F3-MG	4987481			100	BL	300	KK	2400	EK
K.FL.K.PW	5002865			100	BL	300	KK	2400	EK
K.FL.K.LGR	5002871			100	BL	300	KK	2400	EK
K.FL.K.SW RAL9005	4939058			100	BL	300	KK	2400	EK
K.FL.K.F1-ELOX.	5021121			100	BL	300	K3	7200	E3
S.FL.K.WS	2846536			500	BL	3000	KK	72000	EK
S.FL.K.BR	4927423			500	BL	3000	KK	72000	EK
S.FL.K.CW	4928081			500	BL	3000	KK	72000	EK
S.FL.K.F1	4935041			500	BL	3000	KK	24000	EK
S.FL.K.F9	2846544			500	BL	3000	KK	72000	EK

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white



Sash hinge FL.KA

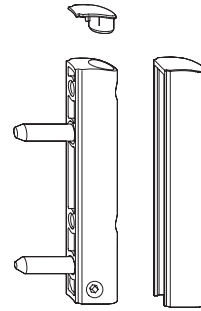
- Used in combination with corner hinges EL.K... or EL.KB...
- Can be used left and right hand
- Height adjustment ± 3 mm
- With contact pressure adjustment ± 1.2 mm


Sash hinge plug S.FL.K

- Can be used left and right hand

Sash hinge cover K.FL.K

- Can be used left and right hand



Item description	Item No.		Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
FL.KA.20-6-20	2844661	2	100	250	KK	6000	EK		
FL.KA.20-6-20.WS	2844670	2	100	250	KK	6000	EK		
FL.KA.20-6-20.BR	4928443	2	100	250	KK	2000	EK		
FL.KA.20-6-20.CW	4928063	2	100	250	KK	2000	EK		
FL.KA.20-6-20.F9	2844688	2	100	250	KK	6000	EK		
FL.KA.20-6-28	4926186	2	100	250	KK	6000	EK		
FL.KA.20-6-28.WS	4926171	2	100	250	KK	6000	EK		
FL.KA.20-6-28.BR	4926826	2	100	250	KK	2000	EK		
FL.KA.20-6-28.F9	4926170	2	100	250	KK	2000	EK		
FL.KA.20-6-20.BZ-CU	5009536	2	100	250	KK	6000	EK		
K.FL.K.WS	2846552			100	BL	300	KK	7200	EK
K.FL.K.BR	4927425			100	BL	300	KK	7200	EK
K.FL.K.CW	4927562			100	BL	300	KK	2400	EK
K.FL.K.F1	4928486			100	BL	300	KK	2400	EK
K.FL.K.F3	4995090			100	BL	300	KK	2400	EK
K.FL.K.F3-MG	4987481			100	BL	300	KK	2400	EK
K.FL.K.BZ-RB	4933298			100	BL	300	KK	2400	EK
K.FL.K.F9	2846561			100	BL	300	KK	2400	EK
K.FL.K.LBR	4939037			100	BL	300	KK	2400	EK
K.FL.K.SW RAL9005	4939058			100	BL	300	KK	2400	EK
S.FL.K.WS	2846536			500	BL	3000	KK	72000	EK
S.FL.K.BR	4927423			500	BL	3000	KK	72000	EK
S.FL.K.CW	4928081			500	BL	3000	KK	72000	EK
S.FL.K.F1	4935041			500	BL	3000	KK	24000	EK
S.FL.K.F9	2846544			500	BL	3000	KK	72000	EK

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white

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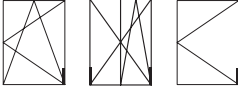
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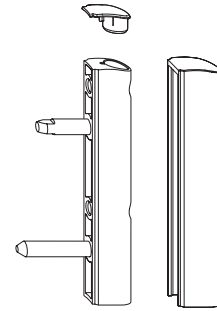
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Sash hinge FL.K.20-6-28.130

- Used in combination with corner hinge ESV.6-3-16, max. sash weight 100 kg; 130 kg on request (subject to profile)
- Used in combination with corner hinge ESVW.6-3-16, max. sash weight 130 kg
- Can be used left and right hand
- Height adjustment ± 3 mm




Sash hinge plug S.FL.K

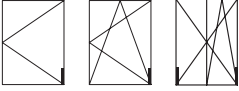
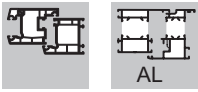
- Can be used left and right hand

Sash hinge cap K.FL.K.130

- Can be used left and right hand

Item description	Item No.		Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
FL.K.20-6-28.130	4987907	2	100/130	250	KK	2000	EK		
FL.K.20-6-28.130.BR	4995561	2	100/130	250	KK	2000	EK		
FL.K.20-6-28.130.F9	4995560	2	100/130	250	KK	2000	EK		
FL.K.20-6-28.130.WS	4995559	2	100/130	250	KK	2000	EK		
K.FL.K.130.F3-MG	5014722			100	BL	300	KK	2400	EK
K.FL.K.130.WS	4987940			100	BL	300	KK	2400	EK
K.FL.K.130.BR	4987947			100	BL	300	KK	2400	EK
K.FL.K.130.F1	4987949			100	BL	300	KK	2400	EK
K.FL.K.130.CW	4987951			100	BL	300	KK	2400	EK
K.FL.K.130.F1-ELOX.	5021125			100	BL	300	K3	2400	E3
S.FL.K.WS	2846536			500	BL	3000	KK	72000	EK
S.FL.K.BR	4927423			500	BL	3000	KK	72000	EK
S.FL.K.CW	4928081			500	BL	3000	KK	72000	EK
S.FL.K.F1	4935041			500	BL	3000	KK	24000	EK
S.FL.K.F9	2846544			500	BL	3000	KK	72000	EK

WS = white, BR = brown, SL = silver, EV1 = anodised silver, F1 = silver colour, F3 = gold colour, BZ-RB = bronze red brown, F9 = titanium coloured, CW = creme white



Sash hinge FWV 20-13

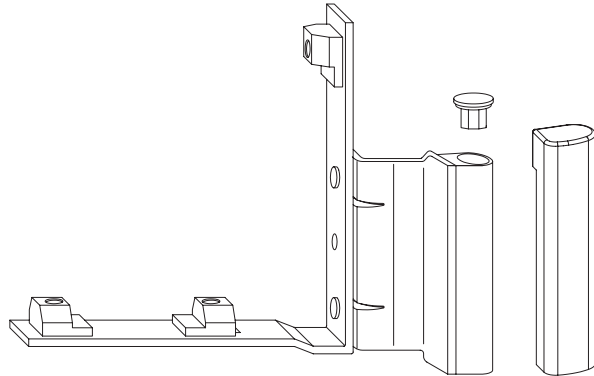
- For use in combination with corner hinges ESV..., ESWV... and EL.HW...
- Rebate hinge version
- Height adjustment ± 3 mm
- Automatic and manual assembly possible


Sash hinge cover FLK FWV

- Plastic cover for the visible sash hinge roll
- Available in different colours

Sash hinge plug FLS FWV

- PVC plug to protect the adjusting screw
- Available in different colours
- Non-handed



Item description	Item No.		Overlap	Groove centre position	Max. sash weight (kg)	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
FWV 20-13 LS SL	1945225	4	20	13	130	100	KK	800	EK		
FWV 20-13 RS SL	1945188	4	20	13	130	100	KK	800	EK		
FWV 20-13 LS SL/WS	1934850	4	20	13	130	100	KK	800	EK		
FWV 20-13 RS SL/WS	1935035	4	20	13	130	100	KK	800	EK		
FWV 20-13 LS SL/BR	1934809	4	20	13	130	100	KK	800	EK		
FWV 20-13 RS SL/BR	1934956	4	20	13	130	100	KK	800	EK		
FWV 20-13 LS SL/CW	4935834	4	20	13	130	100	KK	800	EK		
FWV 20-13 RS SL/CW	4935833	4	20	13	130	100	KK	800	EK		
FWV 20-13 LS SL/F9	4978702	4	20	13	130	100	KK	800	EK		
FWV 20-13 RS SL/F9	4978701	4	20	13	130	100	KK	800	EK		
FLK FWV LS WS	2301624					100	BL	300	KK	2400	EK
FLK FWV RS WS	2301616					100	BL	300	KK	2400	EK
FLK FWV LS BR	2301608					100	BL	300	KK	2400	EK
FLK FWV RS BR	2301595					100	BL	300	KK	2400	EK
FLK FWV LS F1	2394154					100	BL	300	KK	2400	EK
FLK FWV RS F1	2394162					100	BL	300	KK	2400	EK
FLK FWV LS F3	4995003					100	BL	300	KK	2400	EK
FLK FWV RS F3	4995001					100	BL	300	KK	2400	EK
FLK FWV LS F9	2854798					100	BL	300	KK	2400	EK
FLK FWV RS F9	2854801					100	BL	300	KK	2400	EK
FLK FWV LS BZ-AM	4984413					100	BL	300	KK	2400	EK
FLK FWV RS BZ-AM	4984414					100	BL	300	KK	2400	EK
FLK FWV LS CW	4997445					100	BL	300	KK	2400	EK
FLK FWV RS CW	4997441					100	BL	300	KK	2400	EK
FLK FWV LS SW	1260457					100	BL	300	KK	2400	EK
FLK FWV RS SW	1260458					100	BL	300	KK	2400	EK
FLK FWV LS F1-ELOX.	5021129					100	BL	300	K3	2400	E3
FLK FWV RS F1-ELOX.	5021130					100	BL	300	K3	2400	E3
FLS FWV SL	1993420					500	BL	5000	KK	40000	EK
FLS FWV WS	1521617					500	BL	5000	KK	40000	EK
FLS FWV BR	1521625					500	BL	5000	KK	40000	EK
FLS FWV F9	2854819					500	BL	5000	KK	40000	EK

RS = right, LS = left

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white

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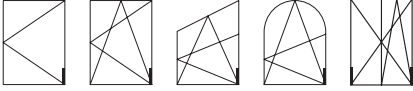
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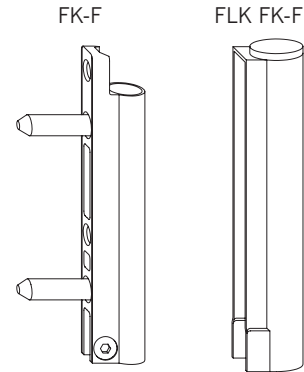


Sash hinge FK-F


- Used in combination with corner hinges ESV... or ESVW...
- Can be used left and right hand
- Height adjustment ± 3 mm
- Sash weight max. 100 kg
- Load bearing parts are made of steel
- Integrated friction turn control

Accessories: Sash hinge covers FLK FK-F

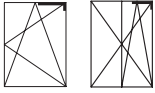
- Can be used left and right hand



Sash hinge with adjustment screw for regulating the friction turn control

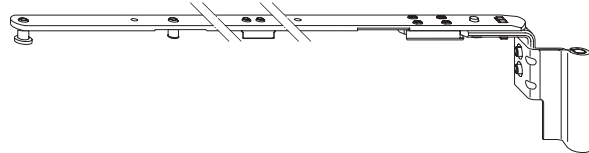
Item description	Item No.		Max. sash weight (kg)	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
FK-F 20-6/20 SL	1898617	2	100	250	KK	2000	EK		
FK-F 20-6/20 BR	1568909	2	100	250	KK	2000	EK		
FK-F 20-6/20 CW	2548731	2	100	250	KK	2000	EK		
FK-F 20-6/20 F9	2010421	2	100	250	KK	2000	EK		
FK-F 20-6/20 WS	1568896	2	100	250	KK	2000	EK		
FK-F 20-6-28 WS	1557943	2	100	250	KK	2000	EK		
FK-F 20-6-28/20 SL	2588830	2	100	250	KK	6000	EK		
FK-F 20-6-28/20 SL/F9	4949436	2	100	250	KK	6000	EK		
FLK FK-F 20-6/20 WS	1536448			100	BL	300	KK	7200	EK
FLK FK-F 20-6/20 BR	1536456			100	BL	300	KK	7200	EK
FLK FK-F 20-6/20 BZ-AM	4984412			100	BL	300	KK	7200	EK
FLK FK-F 20-6/20 F1	2201906			100	BL	300	KK	2400	EK
FLK FK-F 20-6/20 F3	4995034			100	BL	300	KK	2400	EK
FLK FK-F 20-6/20 F9	2548248			100	BL	300	KK	2400	EK
FLK FK-F 20-6-20 CW	4965802			100	BL	300	KK	2400	EK
FLK FK-F 20-6-20 SW	4930264			100	BL	300	KK	2400	EK

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Shear SK ... 18-9

- For 18 mm overlap and 9 mm eurogroove position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- Sash weight max. 130 kg
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.18-9.LS	4986901	18	9	10	BD	60	KK	480	EK
SK1.18-9.RS	4986900	18	9	10	BD	60	KK	480	EK
SK1.18-9.LS.WS	4998660	18	9	10	BD	60	KK	480	EK
SK1.18-9.RS.WS	4998659	18	9	10	BD	60	KK	480	EK
SK1.18-9.LS.F9	4998662	18	9	10	BD	60	KK	480	EK
SK1.18-9.RS.F9	4998661	18	9	10	BD	60	KK	480	EK
SK2.18-9.LS	4986903	18	9	10	BD	80	GK	960	EK
SK2.18-9.RS	4986902	18	9	10	BD	80	GK	960	EK
SK2.18-9.LS.WS	4998700	18	9	10	BD	80	GK	960	EK
SK2.18-9.RS.WS	4998669	18	9	10	BD	80	GK	960	EK
SK2.18-9.LS.F9	4998702	18	9	10	BD	80	GK	960	EK
SK2.18-9.RS.F9	4998701	18	9	10	BD	80	GK	960	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

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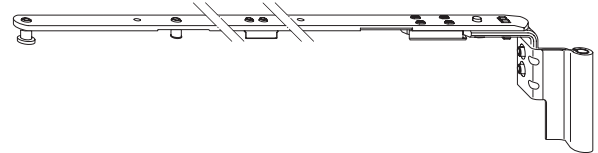
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Shear SK ... 20-9

- For 20 mm overlap and 9 mm groove centre position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- Sash weight max. 130 kg
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.20-9.LS	4926345	20	9	10	BD	60	KK	480	EK
SK1.20-9.RS	4926344	20	9	10	BD	60	KK	480	EK
SK1.20-9.LS.WS	4926348	20	9	10	BD	60	KK	480	EK
SK1.20-9.RS.WS	4926346	20	9	10	BD	60	KK	480	EK
SK1.20-9.LS.F9	4926380	20	9	10	BD	60	KK	480	EK
SK1.20-9.RS.F9	4926349	20	9	10	BD	60	KK	480	EK
SK2.20-9.LS	4926384	20	9	10	BD	80	GK	960	EK
SK2.20-9.RS	4926383	20	9	10	BD	80	GK	960	EK
SK2.20-9.LS.WS	4926386	20	9	10	BD	80	GK	960	EK
SK2.20-9.RS.WS	4926385	20	9	10	BD	80	GK	960	EK
SK2.20-9.LS.F9	4926388	20	9	10	BD	80	GK	960	EK
SK2.20-9.RS.F9	4926387	20	9	10	BD	80	GK	960	EK

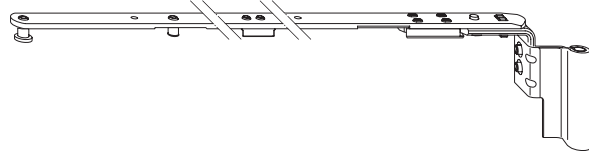
RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured



Shear SK ... 18-13

- For 18 mm overlap and 13 mm groove centre position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- Sash weight max. 130 kg
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.18-13.LS	4998664	18	13	10	BD	60	KK	480	EK
SK1.18-13.RS	4998663	18	13	10	BD	60	KK	480	EK
SK1.18-13.LS.WS	4998666	18	13	10	BD	60	KK	480	EK
SK1.18-13.RS.WS	4998665	18	13	10	BD	60	KK	480	EK
SK1.18-13.LS.F9	4998668	18	13	10	BD	60	KK	480	EK
SK1.18-13.RS.F9	4998667	18	13	10	BD	60	KK	480	EK
SK2.18-13.LS	4998704	18	13	10	BD	80	GK	960	EK
SK2.18-13.RS	4998703	18	13	10	BD	80	GK	960	EK
SK2.18-13.LS.WS	4998706	18	13	10	BD	80	GK	960	EK
SK2.18-13.RS.WS	4998705	18	13	10	BD	80	GK	960	EK
SK2.18-13.LS.F9	4998708	18	13	10	BD	80	GK	960	EK
SK2.18-13.RS.F9	4998707	18	13	10	BD	80	GK	960	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

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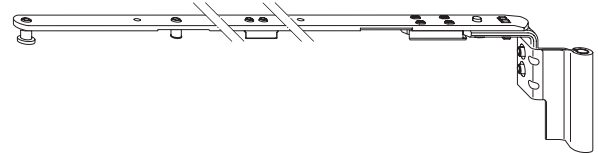
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Shear SK ... 20-13

- For 20 mm overlap and 13 mm groove centre position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- Sash weight max. 130 kg
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

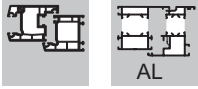
- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.20-13.LS	2844101	20	13	10	BD	60	KK	480	EK
SK1.20-13.RS	2842578	20	13	10	BD	60	KK	480	EK
SK1.20-13.RS.WS	2858289	20	13	10	BD	60	KK	480	EK
SK1.20-13.LS.WS	2858406	20	13	10	BD	60	KK	480	EK
SK1.20-13.RS.F9	2858449	20	13	10	BD	60	KK	480	EK
SK1.20-13.LS.F9	2858481	20	13	10	BD	60	KK	480	EK
SK1.20-13.LS.BR	4926392	20	13	10	BD	60	KK	480	EK
SK1.20-13.RS.BR	4926391	20	13	10	BD	60	KK	480	EK
SK1.20-13.LS.CW	4928072	20	13	10	BD	60	KK	480	EK
SK1.20-13.RS.CW	4928071	20	13	10	BD	60	KK	480	EK
SK2.20-13.RS	2842586	20	13	10	BD	80	GK	960	EK
SK2.20-13.LS	2844143	20	13	10	BD	80	GK	960	EK
SK2.20-13.RS.WS	2858684	20	13	10	BD	80	GK	960	EK
SK2.20-13.LS.WS	2858730	20	13	10	BD	80	GK	960	EK
SK2.20-13.RS.F9	2858781	20	13	10	BD	80	GK	960	EK
SK2.20-13.LS.F9	2858810	20	13	10	BD	80	GK	960	EK
SK2.20-13.LS.BR	4926394	20	13	10	BD	80	GK	960	EK
SK2.20-13.RS.BR	4926393	20	13	10	BD	80	GK	960	EK
SK2.20-13.LS.CW	4928074	20	13	10	BD	80	GK	960	EK
SK2.20-13.RS.CW	4928073	20	13	10	BD	80	GK	960	EK

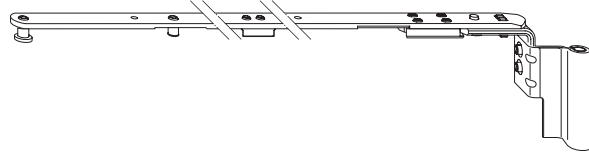
RS = right, LS = left

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white



Shear SK ... 21-13

- For 21 mm overlap and 13 mm groove centre position
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- Sash weight max. 130 kg
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW

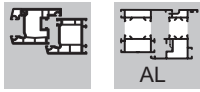


Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.21-13.LS	4926397	21	13	10	BD	60	KK	480	EK
SK1.21-13.RS	4926396	21	13	10	BD	60	KK	480	EK
SK1.21-13.LS.WS	4926399	21	13	10	BD	60	KK	480	EK
SK1.21-13.RS.WS	4926398	21	13	10	BD	60	KK	480	EK
SK1.21-13.LS.BR	4926403	21	13	10	BD	60	KK	480	EK
SK1.21-13.RS.BR	4926402	21	13	10	BD	60	KK	480	EK
SK1.21-13.LS.CW	4928076	21	13	10	BD	60	KK	480	EK
SK1.21-13.RS.CW	4928075	21	13	10	BD	60	KK	480	EK
SK1.21-13.LS.F9	4926401	21	13	10	BD	60	KK	480	EK
SK1.21-13.RS.F9	4926400	21	13	10	BD	60	KK	480	EK
SK2.21-13.LS	4926405	21	13	10	BD	80	GK	960	EK
SK2.21-13.RS	4926404	21	13	10	BD	80	GK	960	EK
SK2.21-13.LS.WS	4926407	21	13	10	BD	80	GK	960	EK
SK2.21-13.RS.WS	4926406	21	13	10	BD	80	GK	960	EK
SK2.21-13.LS.BR	4926411	21	13	10	BD	80	GK	960	EK
SK2.21-13.RS.BR	4926410	21	13	10	BD	80	GK	960	EK
SK2.21-13.LS.CW	4928078	21	13	10	BD	80	GK	960	EK
SK2.21-13.RS.CW	4928077	21	13	10	BD	80	GK	960	EK
SK2.21-13.LS.F9	4926409	21	13	10	BD	80	GK	960	EK
SK2.21-13.RS.F9	4926408	21	13	10	BD	80	GK	960	EK

RS = right, LS = left

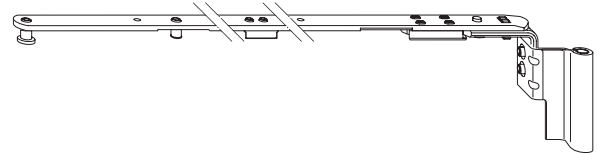
WS = white, BR = brown, SL = silver, EV1 = anodised silver, F1 = silver colour, F3 = gold colour, BZ-RB = bronze red brown, F9 = titanium coloured, CW = creme white

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Shear SK ... 22-13

- For 22 mm overlap and 13 mm groove position
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- Sash weight max. 130 kg
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



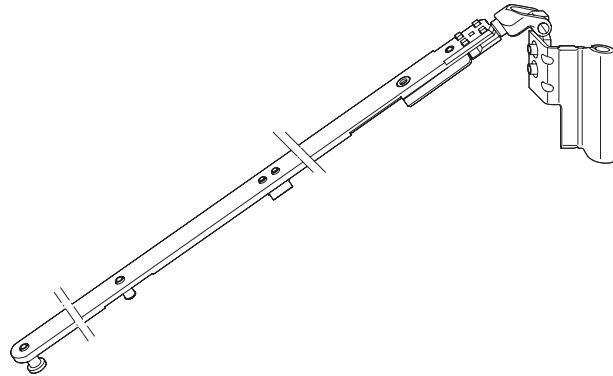
Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.22-13.LS	4935763	22	13	10	BD	60	KK	480	EK
SK1.22-13.RS	4935762	22	13	10	BD	60	KK	480	EK
SK2.22-13.LS	4935767	22	13	10	BD	80	GK	960	EK
SK2.22-13.RS	4935766	22	13	10	BD	80	GK	960	EK

RS = right, LS = left



Shear SK ... A.18-9

- For 18 mm overlap and 9 mm eurogroove position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- For non square edges in the shear area
- Adjustable angle setting
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Max. sash weight 80 kg
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.A.18-9.LS	4998720	18	9	10	BD	60	KK	480	EK
SK1.A.18-9.RS	4998709	18	9	10	BD	60	KK	480	EK
SK1.A.18-9.LS.WS	4998722	18	9	10	BD	60	KK	480	EK
SK1.A.18-9.RS.WS	4998721	18	9	10	BD	60	KK	480	EK
SK1.A.18-9.LS.F9	4998724	18	9	10	BD	60	KK	480	EK
SK1.A.18-9.RS.F9	4998723	18	9	10	BD	60	KK	480	EK
SK2.A.18-9.LS	4998742	18	9	10	BD	80	GK	320	EK
SK2.A.18-9.RS	4998741	18	9	10	BD	80	GK	320	EK
SK2.A.18-9.LS.WS	4998744	18	9	10	BD	80	GK	320	EK
SK2.A.18-9.RS.WS	4998743	18	9	10	BD	80	GK	320	EK
SK2.A.18-9.LS.F9	4998746	18	9	10	BD	80	GK	320	EK
SK2.A.18-9.RS.F9	4998745	18	9	10	BD	80	GK	320	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

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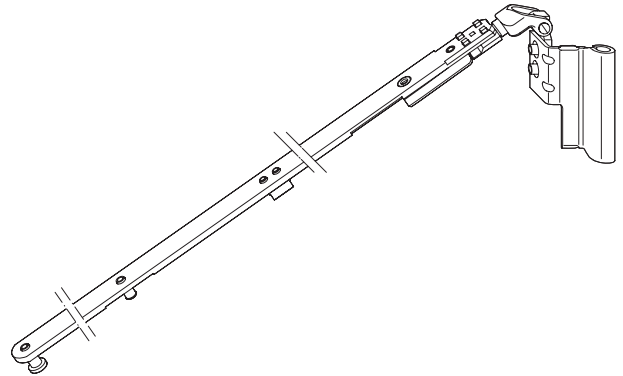
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Shear SK ... A.20-9

- For 20 mm overlap and 9 mm groove centre position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- For non square edges in the shear area
- Adjustable angle setting
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Max. sash weight 80 kg
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.A.20-9.LS	4926615	20	9	10	BD	60	KK	480	EK
SK1.A.20-9.RS	4926613	20	9	10	BD	60	KK	480	EK
SK1.A.20-9.LS.BR	4926627	20	9	10	BD	60	KK	480	EK
SK1.A.20-9.RS.BR	4926625	20	9	10	BD	60	KK	480	EK
SK2.A.20-9.LS	4926651	20	9	10	BD	80	GK	320	EK
SK2.A.20-9.RS	4926650	20	9	10	BD	80	GK	320	EK

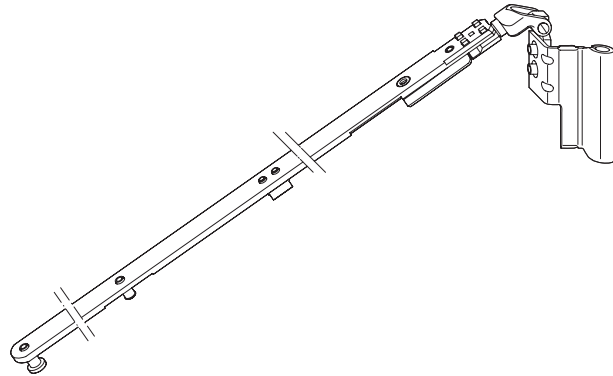
RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured



Shear SK ... A.18-13

- For 18 mm overlap and 13 mm groove centre position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- For non square edges in the shear area
- Adjustable angle setting
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Max. sash weight 80 kg
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.A.18-13.LS	4998726	18	13	10	BD	60	KK	480	EK
SK1.A.18-13.RS	4998725	18	13	10	BD	60	KK	480	EK
SK1.A.18-13.LS.WS	4998728	18	13	10	BD	60	KK	480	EK
SK1.A.18-13.RS.WS	4998727	18	13	10	BD	60	KK	480	EK
SK1.A.18-13.LS.F9	4998740	18	13	10	BD	60	KK	480	EK
SK1.A.18-13.RS.F9	4998729	18	13	10	BD	60	KK	480	EK
SK2.A.18-13.LS	4998748	18	13	10	BD	80	GK	320	EK
SK2.A.18-13.RS	4998747	18	13	10	BD	80	GK	320	EK
SK2.A.18-13.LS.WS	4998750	18	13	10	BD	80	GK	320	EK
SK2.A.18-13.RS.WS	4998749	18	13	10	BD	80	GK	320	EK
SK2.A.18-13.LS.F9	4998752	18	13	10	BD	80	GK	320	EK
SK2.A.18-13.RS.F9	4998751	18	13	10	BD	80	GK	320	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

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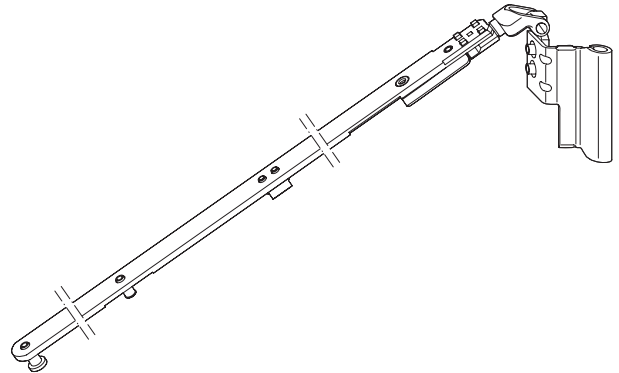
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Shear SK ... A.20-13

- For 20 mm overlap and 13 mm groove centre position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- For non square edges in the shear area
- Adjustable angle setting
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Max. sash weight 80 kg
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



Shear hinge cap K.SK

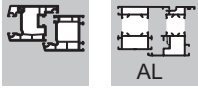
- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.A.20-13.LS	4926634	20	13	10	BD	60	KK	480	EK
SK1.A.20-13.RS	4926631	20	13	10	BD	60	KK	480	EK
SK1.A.20-13.LS.WS	4926636	20	13	10	BD	60	KK	480	EK
SK1.A.20-13.RS.WS	4926635	20	13	10	BD	60	KK	480	EK
SK1.A.20-13.LS.BR	4926647	20	13	10	BD	60	KK	480	EK
SK1.A.20-13.RS.BR	4926646	20	13	10	BD	60	KK	480	EK
SK1.A.20-13.LS.F9	4926642	20	13	10	BD	60	KK	480	EK
SK1.A.20-13.RS.F9	4926637	20	13	10	BD	60	KK	480	EK
SK2.A.20-13.LS	4926659	20	13	10	BD	80	GK	320	EK
SK2.A.20-13.RS	4926658	20	13	10	BD	80	GK	320	EK
SK2.A.20-13.LS.WS	4926672	20	13	10	BD	80	GK	320	EK
SK2.A.20-13.RS.WS	4926670	20	13	10	BD	80	GK	320	EK
SK2.A.20-13.LS.F9	4926674	20	13	10	BD	80	GK	320	EK
SK2.A.20-13.RS.F9	4926673	20	13	10	BD	80	GK	320	EK
SK2.A.20-13.LS.BR	4926676	20	13	10	BD	80	GK	320	EK
SK2.A.20-13.RS.BR	4926675	20	13	10	BD	80	GK	320	EK

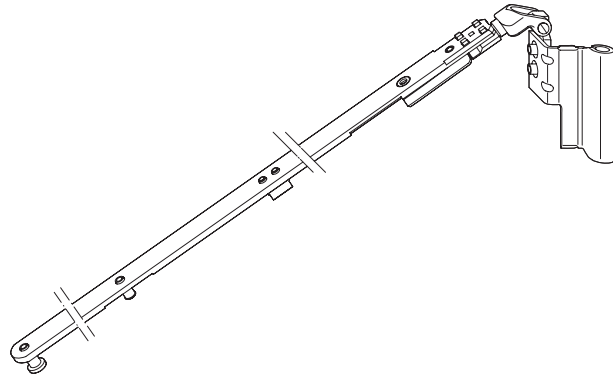
RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured



Shear SK ... A.21-13

- For 21 mm overlap and 13 mm groove centre position
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Angle hinge shear for PVC-U windows
- Max. sash weight 80 kg
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Adjustable angle setting
- Visible parts available in various colours
- For non square edges in the shear area



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW



Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.A.21-13.LS	4926678	21	13	10	BD	60	KK	480	EK
SK1.A.21-13.RS	4926677	21	13	10	BD	60	KK	480	EK
SK1.A.21-13.LS.WS	4926680	21	13	10	BD	60	KK	480	EK
SK1.A.21-13.RS.WS	4926679	21	13	10	BD	60	KK	480	EK
SK1.A.21-13.LS.BR	4926684	21	13	10	BD	60	KK	480	EK
SK1.A.21-13.RS.BR	4926683	21	13	10	BD	60	KK	480	EK
SK1.A.21-13.LS.F9	4926682	21	13	10	BD	60	KK	480	EK
SK1.A.21-13.RS.F9	4926681	21	13	10	BD	60	KK	480	EK
SK2.A.21-13.LS	4926686	21	13	10	BD	80	GK	320	EK
SK2.A.21-13.RS	4926685	21	13	10	BD	80	GK	320	EK
SK2.A.21-13.LS.WS	4926688	21	13	10	BD	80	GK	320	EK
SK2.A.21-13.RS.WS	4926687	21	13	10	BD	80	GK	320	EK
SK2.A.21-13.LS.BR	4926702	21	13	10	BD	80	GK	320	EK
SK2.A.21-13.RS.BR	4926701	21	13	10	BD	80	GK	320	EK
SK2.A.21-13.LS.F9	4926700	21	13	10	BD	80	GK	320	EK
SK2.A.21-13.RS.F9	4926689	21	13	10	BD	80	GK	320	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

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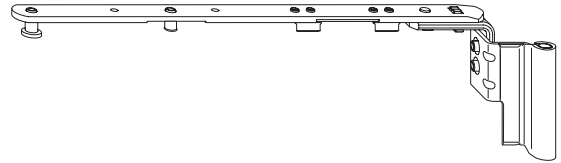
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Shear SK ... E...

- Useable for 9 mm and 13 mm groove centre position
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- For the type of fitting "Tilt before turn"
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- In combination with top rod OS. E
- Sash weight max. 130 kg
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours



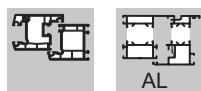
Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW

Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.E.18-13.LS	5012366	18	13	10	BD	60	KK	480	EK
SK1.E.18-13.RS	5012365	18	13	10	BD	60	KK	480	EK
SK1.E.20-9.LS	4926183	20	9	10	BD	60	KK	480	EK
SK1.E.20-9.RS	4926182	20	9	10	BD	60	KK	480	EK
SK1.E.20-9.LS.WS	4926162	20	9	10	BD	60	KK	480	EK
SK1.E.20-9.RS.WS	4926161	20	9	10	BD	60	KK	480	EK
SK1.E.20-13.LS	4926185	20	13	10	BD	60	KK	480	EK
SK1.E.20-13.RS	4926184	20	13	10	BD	60	KK	480	EK
SK1.E.20-13.LS.WS	4926164	20	13	10	BD	60	KK	480	EK
SK1.E.20-13.RS.WS	4926163	20	13	10	BD	60	KK	480	EK
SK1.E.20-13.RS.F9	4969036	20	13	10	BD	60	KK	480	EK
SK1.E.20-13.LS.F9	4969037	20	13	10	BD	60	KK	480	EK
SK1.E.20-13.LS.BR	4929697	20	13	10	BD	60	KK	480	EK
SK1.E.20-13.RS.BR	4929696	20	13	10	BD	60	KK	480	EK
SK2.E.18-13.LS	5012368	18	13	10	BD	80	GK	320	EK
SK2.E.18-13.RS	5012367	18	13	10	BD	80	GK	320	EK
SK2.E.20-9.LS	4926167	20	9	10	BD	80	GK	960	EK
SK2.E.20-9.RS	4926166	20	9	10	BD	80	GK	960	EK
SK2.E.20-9.LS.WS	4926191	20	9	10	BD	80	GK	960	EK
SK2.E.20-9.RS.WS	4926190	20	9	10	BD	80	GK	960	EK
SK2.E.20-13.LS	4926169	20	13	10	BD	80	GK	960	EK
SK2.E.20-13.RS	4926168	20	13	10	BD	80	GK	960	EK
SK2.E.20-13.LS.WS	4926193	20	13	10	BD	80	GK	960	EK
SK2.E.20-13.RS.WS	4926192	20	13	10	BD	80	GK	960	EK
SK2.E.20-13.RS.F9	4969038	20	13	10	BD	80	GK	960	EK
SK2.E.20-13.LS.F9	4969039	20	13	10	BD	80	GK	960	EK
SK2.E.20-13.LS.BR	4929699	20	13	10	BD	80	GK	960	EK
SK2.E.20-13.RS.BR	4929698	20	13	10	BD	80	GK	960	EK

RS = right, LS = left

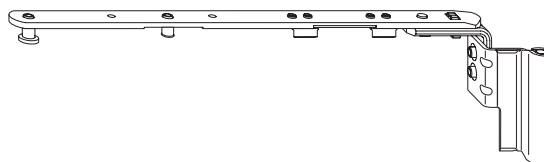
WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured



Shears

SK ... E.21-13

- For 21 mm overlap and 13 mm groove centre position
- For the type of fitting "Tilt before turn"
- Only two shear sizes
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Use tilt limiter KBG.OS for sash rebate heights \leq 600 mm
- In combination with top rod OS. E
- Shear with tandem action
- After assembly the top rod and the shear are firmly attached to one another
- Integrated turn restriction via plastic sleeve in shear hinge
- Visible parts available in various colours
- Sash weight max. 130 kg



Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW

Item description	Item No.	Overlap	Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SK1.E.21-13.LS	4969578	21	13	10	BD	60	KK	480	EK
SK1.E.21-13.RS	4969656	21	13	10	BD	60	KK	480	EK
SK1.E.21-13.LS.BR	4969652	21	13	10	BD	60	KK	480	EK
SK1.E.21-13.RS.BR	4969657	21	13	10	BD	60	KK	480	EK
SK1.E.21-13.LS.F9	4969655	21	13	10	BD	60	KK	480	EK
SK1.E.21-13.RS.F9	4969672	21	13	10	BD	60	KK	480	EK
SK1.E.21-13.LS.WS	4969654	21	13	10	BD	60	KK	480	EK
SK1.E.21-13.RS.WS	4969671	21	13	10	BD	60	KK	480	EK
SK2.E.21-13.LS	4969674	21	13	10	BD	80	GK	960	EK
SK2.E.21-13.RS	4969679	21	13	10	BD	80	GK	960	EK
SK2.E.21-13.LS.BR	4969675	21	13	10	BD	80	GK	960	EK
SK2.E.21-13.RS.BR	4980351	21	13	10	BD	80	GK	960	EK
SK2.E.21-13.LS.F9	4969678	21	13	10	BD	80	GK	960	EK
SK2.E.21-13.RS.F9	4969682	21	13	10	BD	80	GK	960	EK
SK2.E.21-13.LS.WS	4969677	21	13	10	BD	80	GK	960	EK
SK2.E.21-13.RS.WS	4969681	21	13	10	BD	80	GK	960	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

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Round arch set GRT.RB.K.A

- For round-arch windows
- Only one shear size
- Integrated lifter for lifting the sash in tilt position
- Max. sash weight 80 kg
- In combination with GRT.RB.K.SB

Round arch set GRT.RB.K.A consisting of:

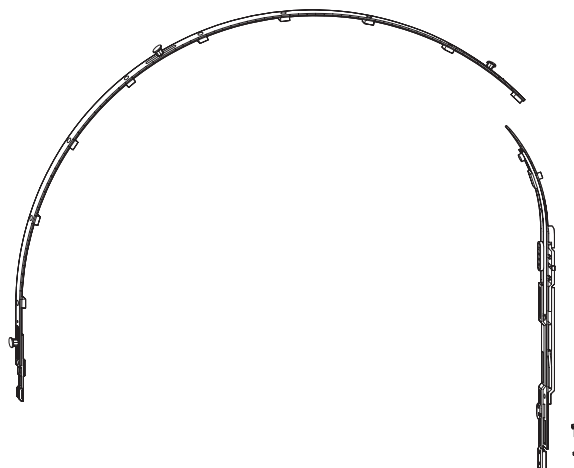
- Shear GR1.SL
- Connecting rail AARB 1000-3
- Accessories kit round-arch windows

Round arch accessories kit consisting of:

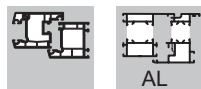
- Dual function element DFE
- Frame part DFE-TFE
- Limiter K-SEF 1 SC
- Connecting plate RB.SL

Set GRT.RB.K

- Without connecting rail AARB 1000-3

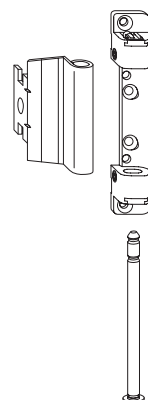


Item description	Item No.	VPA1		VPA2	
		Qty.	Type	Qty.	Type
GRT.RB.K.A	4927282	1	KT	60	EA
GRT.RB.K	4927309	10	GK	120	EK




Round arch, shear hinge set GRT.RB.K.SB

- For round-arch windows
- Designed for 12 mm airgap
- Groove centre position 9 mm and 13 mm
- Max. sash weight 80 kg
- Can be used left and right hand
- In combination with round-arch set GRT.RB.K
- Shear hinge cap and shear hinge insert cap in white and brown are included in the scope of delivery.



Round-arch shear hinge kit GRT.RB.K.SB ... WS/F9/BR/BZ-CU

- As described above, but the shear hinge and shear hinge insert are powdered in the respective colours

Item description	Item No.	Scope of application		Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GRT.RB.K.SB.18-9	4927249	FB	4	18	9	1	BL	50	KK	400	EK
GRT.RB.K.SB.18-9.F9	4939518	FB	4	18	9	1	BL	50	KK	400	EK
GRT.RB.K.SB.18-9.WS	4939519	FB	4	18	9	1	BL	50	KK	400	EK
GRT.RB.K.SB.18-13	4927248	FB	4	18	13	1	BL	50	KK	400	EK
GRT.RB.K.SB.18-13.F9	4939514	FB	4	18	13	1	BL	50	KK	400	EK
GRT.RB.K.SB.18-13.WS	4939515	FB	4	18	13	1	BL	50	KK	400	EK
GRT.RB.K.SB.20-9.WS	1935123	FB	4	20	9	1	BL	50	KK	400	EK
GRT.RB.K.SB.20-9.F9	2012419	FB	4	20	9	1	BL	50	KK	400	EK
GRT.RB.K.SB.20-13	1898916	FB	4	20	13	1	BL	50	GK	200	EK
GRT.RB.K.SB.20-13.WS	1853611	FB	4	20	13	1	BL	50	GK	200	EK
GRT.RB.K.SB.20-13.BR	5007557	FB	4	20	13	1	BL	50	KK	400	EK
GRT.RB.K.SB.20-13.BZ-CU	5007556	FB	4	20	13	1	BL	50	KK	400	EK
GRT.RB.K.SB.20-13.F9	2012099	FB	4	20	13	1	BL	50	KK	400	EK
GRT.RB.K.SB.21-13	4927247	FB	4	21	13	1	BL	50	KK	400	EK
GRT.RB.K.SB.22-13	2125940	FB	4	22	13	1	BL	50	KK	400	EK

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white

TB – pot hinge, FB – rebate hinge

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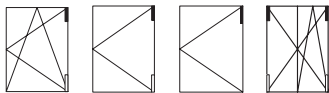
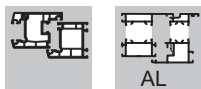
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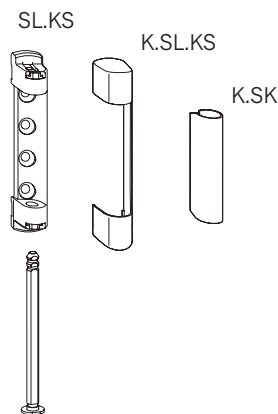
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Shear hinge SL.KS

- Shear hinge SL.KS with symmetrical drill holes, corresponding to corner hinge EL.K / ESV
- Patented shear hinge pin protection
- Shear hinge and cover flush with upper edge of sash (for 20 mm sash overlap)
- With anti-twist protection of shear hinge pin
- Shear hinge/corner hinge drilling possible on unwelded profile pieces
- SL.KS shear hinge for sash weights up to 100 kg
- For drill and screw templates, see Group 15, installation drawings B-7-1




Shear hinge cap K.SL.KS

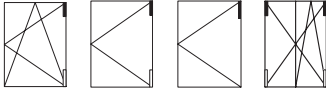
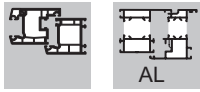
- Can be used left and right hand

Shear hinge cap K.SK

- Can be used left and right hand

Item description	Item No.		Max. sash weight (kg)	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
SL.KS.3-3	4926253	4	100	200	KK	1600	EK		
SL.KS.3-3.BR	4938869	4	100	200	KK	1600	EK		
SL.KS.3-3.CW	4938883	4	100	200	KK	1600	EK		
SL.KS.3-3.F9	4938885	4	100	200	KK	1600	EK		
SL.KS.3-3.WS	4928400	4	100	200	KK	4800	EK		
SL.KS.3-6	2844434	4	100	200	KK	1600	EK		
SL.KS.3-6.BR	4927491	4	100	200	KK	1600	EK		
SL.KS.3-6.BZ-CU	5007558	4	100	200	KK	1600	EK		
SL.KS.3-6.CW	4928060	4	100	200	KK	1600	EK		
SL.KS.3-6.F9	2844531	4	100	200	KK	1600	EK		
SL.KS.3-6.WS	2844506	4	100	200	KK	1600	EK		
K.SL.KS.WS	2844928			100	BL	300	KK	7200	EK
K.SL.KS.BR	4927420			100	BL	300	KK	7200	EK
K.SL.KS.BZ-RB	4933295			100	BL	300	KK	2400	EK
K.SL.KS.CW	4927558			100	BL	300	KK	2400	EK
K.SL.KS.F1	4928483			100	BL	300	KK	2400	EK
K.SL.KS.F3	4995008			100	BL	300	KK	2400	EK
K.SL.KS.F3-MG	4987448			100	BL	300	KK	2400	EK
K.SL.KS.F9	2845277			100	BL	300	KK	7200	EK
K.SL.KS.LBR	4939020			100	BL	300	KK	2400	EK
K.SL.KS.LGR	5002873			100	BL	300	KK	2400	EK
K.SL.KS.PW	5002872			100	BL	300	KK	2400	EK
K.SL.KS.SW	4939052			100	BL	300	KK	2400	EK
K.SL.KS.F1-ELOX.	5021123			100	BL	300	K3	2400	E3
K.SK.WS	2845285			100	BL	600	KK	14400	EK
K.SK.BR	4927421			100	BL	600	KK	14400	EK
K.SK.BZ-RB	4933296			100	BL	600	KK	4800	EK
K.SK.CW	4927572			100	BL	600	KK	4800	EK
K.SK.F1	4928484			100	BL	600	KK	4800	EK
K.SK.F3	4995009			100	BL	600	KK	4800	EK
K.SK.F3-MG	4987480			100	BL	600	KK	4800	EK
K.SK.F9	2845293			100	BL	600	KK	14400	EK
K.SK.LBR	4939036			100	BL	600	KK	4800	EK
K.SK.SW	4939055			100	BL	600	KK	4800	EK
K.SK.F1-ELOX.	5021124			100	BL	600	K3	4800	E3

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white



Shear hinge SL.KB

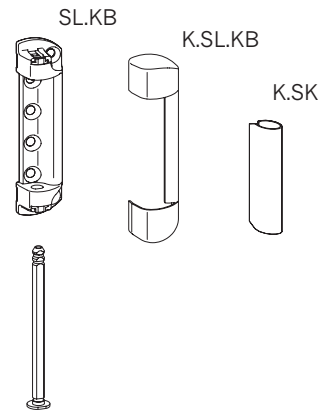
- Patented shear hinge pin protection
- Shear hinge and cover flush with upper edge of sash (for 20 mm sash overlap)
- With anti-twist protection of shear hinge pin
- Shear hinge/corner hinge drilling possible on unwelded profile pieces
- Sash weight max. 130 kg
- For drill and screw templates, see Group 15, installation drawings B-7-1

Shear hinge cap K.SL.KB

- Can be used left and right hand

Shear hinge cap K.SK

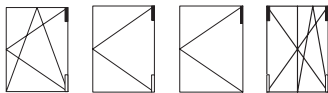
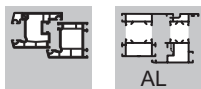
- Can be used left and right hand



Item description	Item No.	🔩	Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SL.KB.3-6	2901380	6	130	200	KK	1600	EK		
SL.KB.3-6.BR	4927414	6	130	200	KK	1600	EK		
SL.KB.3-6.CW	4928062	6	130	200	KK	1600	EK		
SL.KB.3-6.F9	2901398	6	130	200	KK	1600	EK		
SL.KB.3-6.WS	2901371	6	130	200	KK	1600	EK		
K.SL.KB.WS	2919272	100		100	BL	300	KK	2400	EK
K.SL.KB.BR	4927427	100		100	BL	300	KK	2400	EK
K.SL.KB.BZ-RB	4933291	100		100	BL	300	KK	2400	EK
K.SL.KB.CW	4927557	100		100	BL	300	KK	2400	EK
K.SL.KB.F1	4928481	100		100	BL	300	KK	2400	EK
K.SL.KB.F3	4995007	100		100	BL	300	KK	2400	EK
K.SL.KB.F9	2919281	100		100	BL	300	KK	2400	EK
K.SL.KB.F1-ELOX.	5021128	100		100	BL	300	K3	2400	E3
K.SK.WS	2845285	100		100	BL	600	KK	14400	EK
K.SK.BR	4927421	100		100	BL	600	KK	14400	EK
K.SK.BZ-RB	4933296	100		100	BL	600	KK	4800	EK
K.SK.CW	4927572	100		100	BL	600	KK	4800	EK
K.SK.F1	4928484	100		100	BL	600	KK	4800	EK
K.SK.F3	4995009	100		100	BL	600	KK	4800	EK
K.SK.F3-MG	4987480	100		100	BL	600	KK	4800	EK
K.SK.F9	2845293	100		100	BL	600	KK	14400	EK
K.SK.LBR	4939036	100		100	BL	600	KK	4800	EK
K.SK.SW	4939055	100		100	BL	600	KK	4800	EK

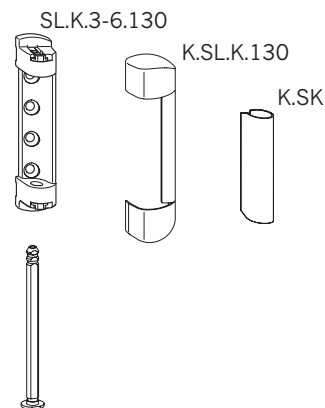
AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white

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Shear hinge SL.K.3-6.130

- Shear hinge SL.KS with symmetrical drill holes, corresponding to corner hinge EL.K / ESV
- Patented shear hinge pin protection
- Shear hinge and cover flush with upper edge of sash (for 20 mm sash overlap)
- With anti-twist protection of shear hinge pin
- Shear hinge/corner hinge drilling possible on unwelded profile pieces
- Max. sash weight 130 kg (approval on request, subject to profile)
- For drill and screw templates, see Group 15, installation drawings B-7-1



Shear hinge cap K.SL.K.130


- Can be used left and right hand

Shear hinge cap K.SK

- Can be used left and right hand

Important for PVC-U windows:

- Screwing of the shear hinge must be performed according to the TBDK guidelines. Adapt the drilling diameter for the fixing screws, the screw diameter and the screw length to the load situation.

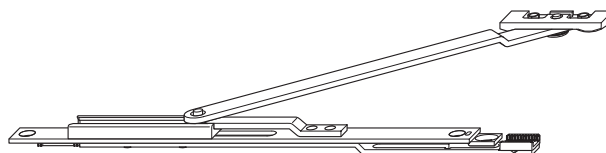
Item description	Item No.		Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SL.K.3-6.130	4987933	4	130	200	KK	1600	EK		
SL.K.3-6.130.BR	4995565	4	130	200	KK	1600	EK		
SL.K.3-6.130.F9	4995564	4	130	200	KK	1600	EK		
SL.K.3-6.130.WS	4995563	4	130	200	KK	1600	EK		
K.SL.K.130.WS	4987952			100	BL	300	KK	2400	EK
K.SL.K.130.BR	4987953			100	BL	300	KK	2400	EK
K.SL.K.130.F1	4987954			100	BL	300	KK	2400	EK
K.SL.K.130.CW	4987955			100	BL	300	KK	2400	EK
K.SL.K.130.F3-MG	5014723			100	BL	300	KK	2400	EK
K.SL.K.130.F1-ELOX.	5024312			100	BL	300	KK	2400	EK
K.SK.WS	2845285			100	BL	600	KK	14400	EK
K.SK.BR	4927421			100	BL	600	KK	14400	EK
K.SK.CW	4927572			100	BL	600	KK	4800	EK
K.SK.F1	4928484			100	BL	600	KK	4800	EK
K.SK.F3	4995009			100	BL	600	KK	4800	EK
K.SK.F3-MG	4987480			100	BL	600	KK	4800	EK
K.SK.BZ-RB	4933296			100	BL	600	KK	4800	EK
K.SK.F9	2845293			100	BL	600	KK	14400	EK
K.SK.LBR	4939036			100	BL	600	KK	4800	EK
K.SK.SW	4939055			100	BL	600	KK	4800	EK

AGR = anthracite grey, BR = brown, BZ-AM = bronze - antique brass, BZ-RB = bronze - red brown, BZ-CU = bronze coppery, CW = creme white, EV1 = anodised silver, F1 = silver colour, F1-elox = sim. to F1 anodised silver, F3 = gold colour, F3-MG = gold mat, F9 = titanium coloured, LBR = clay brown, PW = pearl white, SG = silver grey, SGB = grey, SGR = dusty grey, SL = silver look (zinc galvanised), SW = jet black, WS = white



Additional shear ZSR SL

- Airgap 12 mm
- Faceplate width 16 mm
- Overlap 18 to 22 mm
- For width FFB > 1475 mm
- Screw-connect-type frame plate preadjusted for insertion of WSK part (profile-dependent, see Group 11)
- Installation situation see Group 15, installation drawings B-7-4
- Profile adaption using adapters FT - WSK see group Frame Parts



Additional shear ZSRE SL

- Use in turn-tilt windows with operating sequence tilt before turn
- In all other respects construction is the same as additional shear ZSR
- Installation situation see group 15, installation drawings B-7-5

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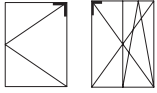
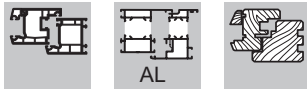
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Item description	Item No.	Scope of application		VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
ZSR SL	5048941	FFB > 1475	5	10	BD	80	KK	640	EK
ZSRE SL	5048946	FFB > 1475	5	10	BD	80	KK	640	EK



Top hinge DL.K ... 9

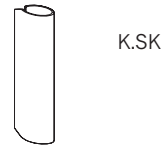
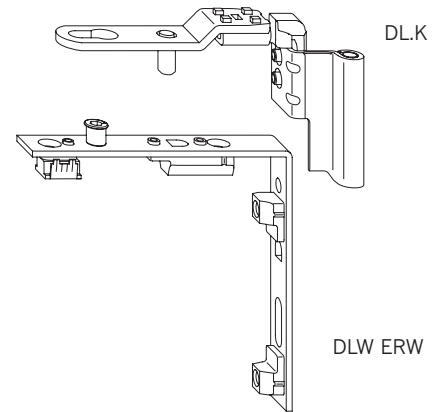
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- Available for mounting left and right hand
- Integrated turn restriction via plastic sleeve in shear hinge
- Adjustment for lifting and lowering the sash (+3/-2 mm)
- Pressure adjustment: +/- 0.8 mm
- Groove centre position 9 mm
- Max. sash weight 130 kg

Top hinge bracket DLW ERW

- Can be used left and right hand
- Faceplate width 16 mm
- Automatic and manual assembly possible
- Used to hold the turn hinge DLB
- Clampable in fitting groove

Shear hinge cap K.SK

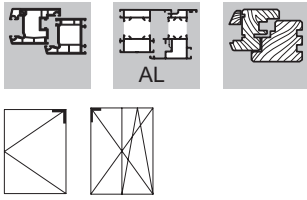
- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW
- Available in different colours



Item description	Item No.	🔩	Overlap	Groove centre position	VPA1		VPA2	
					Qty.	Type	Qty.	Type
DLW ERW SL	2300023	4			100	KK	800	EK
DL.K.18-9.LS	4998754	0	18	9	100	KK	800	EK
DL.K.18-9.RS	4998753	0	18	9	100	KK	800	EK
DL.K.18-9.LS.WS	4998756	0	18	9	100	KK	800	EK
DL.K.18-9.RS.WS	4998755	0	18	9	100	KK	800	EK
DL.K.18-9.LS.F9	4998758	0	18	9	100	KK	800	EK
DL.K.18-9.RS.F9	4998757	0	18	9	100	KK	800	EK
DL.K.20-9.LS	4928091	0	20	9	100	KK	800	EK
DL.K.20-9.RS	4928090	0	20	9	100	KK	800	EK
DL.K.20-9.LS.WS	4928095	0	20	9	100	KK	800	EK
DL.K.20-9.RS.WS	4928093	0	20	9	100	KK	800	EK
DL.K.20-9.LS.F9	4928097	0	20	9	100	KK	800	EK
DL.K.20-9.RS.F9	4928096	0	20	9	100	KK	800	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured



Top hinge DL.K ... 13

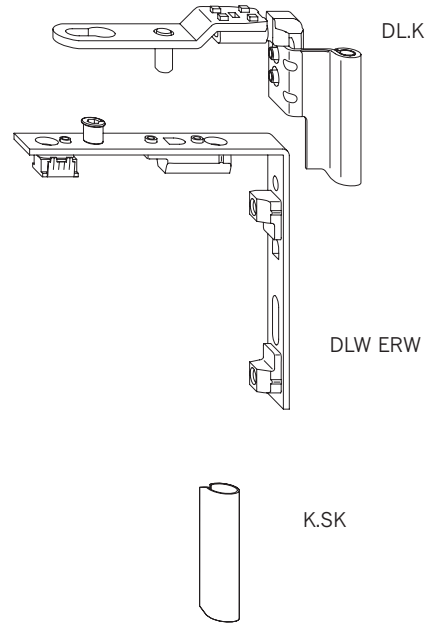
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- Available for mounting left and right hand
- Integrated turn restriction via plastic sleeve in shear hinge
- Adjustment for lifting and lowering the sash (+3/-2 mm)
- Pressure adjustment: +/- 0.8 mm
- Groove centre position 13 mm
- Max. sash weight 130 kg

Top hinge bracket DLW ERW

- Can be used left and right hand
- Faceplate width 16 mm
- Automatic and manual assembly possible
- Used to hold the turn hinge DLB
- Clampable in fitting groove

Shear hinge cap K.SK

- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW
- Available in different colours

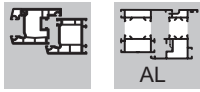


Item description	Item No.	🔩	Overlap	Groove centre position	VPA1		VPA2	
					Qty.	Type	Qty.	Type
DLW ERW SL	2300023	4			100	KK	800	EK
DL.K.18-13.LS	4998760	0	18	13	100	KK	800	EK
DL.K.18-13.RS	4998759	0	18	13	100	KK	800	EK
DL.K.18-13.LS.WS	4998762	0	18	13	100	KK	800	EK
DL.K.18-13.RS.WS	4998761	0	18	13	100	KK	800	EK
DL.K.18-13.LS.F9	4998764	0	18	13	100	KK	800	EK
DL.K.18-13.RS.F9	4998763	0	18	13	100	KK	800	EK
DL.K.20-13.LS	4926931	0	20	13	100	KK	800	EK
DL.K.20-13.RS	4926930	0	20	13	100	KK	800	EK
DL.K.20-13.LS.WS	2903203	0	20	13	100	KK	800	EK
DL.K.20-13.RS.WS	2903191	0	20	13	100	KK	800	EK
DL.K.20-13.LS.F9	2903238	0	20	13	100	KK	800	EK
DL.K.20-13.RS.F9	2903211	0	20	13	100	KK	800	EK
DL.K.20-13.LS.BR	4926808	0	20	13	100	KK	800	EK
DL.K.20-13.RS.BR	4926807	0	20	13	100	KK	800	EK
DL.K.20-13.LS.CW	4928069	0	20	13	100	KK	800	EK
DL.K.20-13.RS.CW	4928068	0	20	13	100	KK	800	EK
DL.K.20-13.LS.BZ-CU	5007554	0	20	13	100	KK	800	EK
DL.K.20-13.RS.BZ-CU	5007553	0	20	13	100	KK	800	EK
DL.K.21-13.LS	4926283	0	21	13	100	KK	800	EK
DL.K.21-13.RS	4926282	0	21	13	100	KK	800	EK
DL.K.21-13.LS.WS	4926285	0	21	13	100	KK	800	EK
DL.K.21-13.RS.WS	4926284	0	21	13	100	KK	800	EK
DL.K.21-13.LS.F9	4926287	0	21	13	100	KK	800	EK
DL.K.21-13.RS.F9	4926286	0	21	13	100	KK	800	EK
DL.K.21-13.LS.BR	4926289	0	21	13	100	KK	800	EK
DL.K.21-13.RS.BR	4926288	0	21	13	100	KK	800	EK
DL.K.22-13.LS	4935775	0	22	13	100	KK	800	EK
DL.K.22-13.RS	4935774	0	22	13	100	KK	800	EK
DL.K.22-13.LS.WS	4935777	0	22	13	100	KK	800	EK
DL.K.22-13.RS.WS	4935776	0	22	13	100	KK	800	EK

RS = right, LS = left

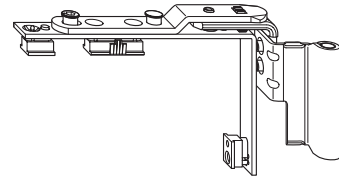
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Turn hinge DL.K.ET

- Corner bracket and turn hinge are firmly connected to each other
- Available for mounting left and right hand
- Integrated turn restriction via plastic sleeve in shear hinge
- Adjustment for lifting and lowering the sash (+3/-2 mm)
- Pressure adjustment: +/- 0.8 mm
- Max. sash weight 130 kg




DL.K.ET

Shear hinge cap K.SK

- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW

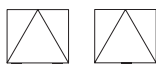
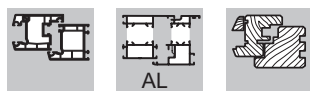


K.SK

Item description	Item No.		Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
DL.K.ET.18-9.LS	4986905	4	18	9	10	BD	100	GK	400	EK
DL.K.ET.18-9.RS	4986904	4	18	9	10	BD	100	GK	400	EK
DL.K.ET.20-9.LS	4986907	4	20	9	10	BD	100	GK	400	EK
DL.K.ET.20-9.RS	4986906	4	20	9	10	BD	100	GK	400	EK
DL.K.ET.20-10.LS	4994957	4	20	10	10	BD	100	GK	400	EK
DL.K.ET.20-10.RS	4994956	4	20	10	10	BD	100	GK	400	EK
DL.K.ET.20-13.LS.BR	4978153	4	20	13	10	BD	100	GK	400	EK
DL.K.ET.20-13.RS.BR	4978152	4	20	13	10	BD	100	GK	400	EK
DL.K.ET.20-13.LS.F9	4978151	4	20	13	10	BD	100	GK	400	EK
DL.K.ET.20-13.RS.F9	4978150	4	20	13	10	BD	100	GK	400	EK
DL.K.ET.20-13.LS.WS	4978149	4	20	13	10	BD	100	GK	400	EK
DL.K.ET.20-13.RS.WS	4978146	4	20	13	10	BD	100	GK	400	EK
DL.K.ET.20-13.PLS	5017999	4	20	13	10	BD	100	GK	400	EK
DL.K.ET.20-13.PRS	5017998	4	20	13	10	BD	100	GK	400	EK

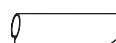
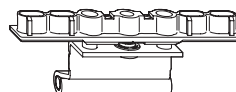
RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured




Tilt hinge KB.K

- Faceplate width 16 mm
- Clampable in fitting groove
- Max. sash weight 80 kg
- Visible parts available in various colours
- In combination with shear hinge SL.KS, SL.KB, SL.HW



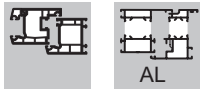
Shear hinge cap K.SK

- Can be used left and right hand
- Plastic cover for the shear hinge
- Available in different colours
- See shear hinge SL.KS, SL.KB, SL.HW

Item description	Item No.		Max. sash weight (kg)	Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
KB.K.18-9	4999683	4	80	18	9	10	BL	100	KK	800	EK
KB.K.18-9.WS	4999684	4	80	18	9	10	BL	100	KK	800	EK
KB.K.18-9.F9	4999685	4	80	18	9	10	BL	100	KK	800	EK
KB.K.18-13	4999686	4	80	18	13	10	BL	100	KK	800	EK
KB.K.18-13.WS	4999687	4	80	18	13	10	BL	100	KK	800	EK
KB.K.18-13.F9	4999688	4	80	18	13	10	BL	100	KK	800	EK
KB.K.20-9	4928109	4	80	20	9	10	BL	100	KK	800	EK
KB.K.20-9.WS	4928110	4	80	20	9	10	BL	100	KK	800	EK
KB.K.20-9.F9	4928113	4	80	20	9	10	BL	100	KK	800	EK
KB.K.20-10	4994958	4	80	20	10	10	BL	100	KK	800	EK
KB.K.20-13	4926935	4	80	20	13	10	BL	100	KK	800	EK
KB.K.20-13.WS	2903297	4	80	20	13	10	BL	100	KK	800	EK
KB.K.20-13.F9	2903300	4	80	20	13	10	BL	100	KK	800	EK
KB.K.20-13.BZ-CU	5007555	4	80	20	13	10	BL	100	KK	800	EK
KB.K.20-13.BR	4926805	4	80	20	13	10	BL	100	KK	800	EK
KB.K.20-13.CW	4928070	4	80	20	13	10	BL	100	KK	800	EK
KB.K.21-13	4926313	4	80	21	13	10	BL	100	KK	800	EK
KB.K.21-13.WS	4926314	4	80	21	13	10	BL	100	KK	800	EK
KB.K.21-13.F9	4926315	4	80	21	13	10	BL	100	KK	800	EK
KB.K.21-13.BR	4926316	4	80	21	13	10	BL	100	KK	800	EK
KB.K.22-13	4935772	4	80	22	13	10	BL	100	KK	800	EK
KB.K.22-13.WS	4935773	4	80	22	13	10	BL	100	KK	800	EK

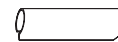
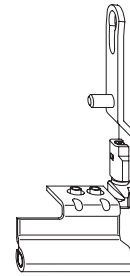
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Tilt hinge KLB

- In combination with sheaar hinge SL.KS, SL.KB, SL.HW
- Available for mounting left and right hand
- Integrated turn restriction via plastic sleeve in shear hinge
- Adjustment for lifting and lowering the sash (+3/-2 mm)
- Pressure adjustment: +/- 0.8 mm
- Use in combination with top hinge bracket DLW ERW
- Max. sash weight: 80 kg



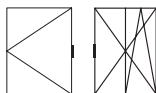
Shear hinge cap K.SK

- Can be used left and right hand
- See shear hinge SL.KS, SL.KB, SL.HW

Item description	Item No.		Max. sash weight (kg)	Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type
DLW ERW SL	2300023	4				100	KK	800	EK
KLB.20-9.LS	4928529		80	20	9	100	KK	800	EK
KLB.20-9.RS	4928528		80	20	9	100	KK	800	EK
KLB.20-9.LS.WS	4928531		80	20	9	100	KK	800	EK
KLB.20-9.RS.WS	4928530		80	20	9	100	KK	800	EK
KLB.20-9.LS.F9	4928533		80	20	9	100	KK	800	EK
KLB.20-9.RS.F9	4928532		80	20	9	100	KK	800	EK
KLB.20-13.LS	4928514		80	20	13	100	KK	800	EK
KLB.20-13.RS	4928513		80	20	13	100	KK	800	EK
KLB.20-13.LS.WS	4928517		80	20	13	100	KK	800	EK
KLB.20-13.RS.WS	4928515		80	20	13	100	KK	800	EK
KLB.20-13.LS.BR	4928521		80	20	13	100	KK	800	EK
KLB.20-13.RS.BR	4928520		80	20	13	100	KK	800	EK
KLB.20-13.LS.F9	4928519		80	20	13	100	KK	800	EK
KLB.20-13.RS.F9	4928518		80	20	13	100	KK	800	EK
KLB.20-13.LS.CW	4938891		80	20	13	100	KK	800	EK
KLB.20-13.RS.CW	4938889		80	20	13	100	KK	800	EK
KLB.21-13.LS.WS	4928525		80	21	13	100	KK	800	EK
KLB.21-13.RS.WS	4928524		80	21	13	100	KK	800	EK
KLB.21-13.LS.F9	4928527		80	21	13	100	KK	800	EK
KLB.21-13.RS.F9	4928526		80	21	13	100	KK	800	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, EV1 = anodised silver, F1 = silver colour, F3 = gold colour, BZ-RB = bronze red brown, F9 = titanium coloured, CW = creme white



Turn only middle hinge DML.K ...

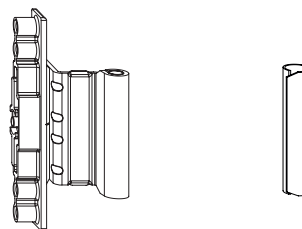
- Used in combination with shear hinges SL.KS, SL.KB or SL.HW
- Integrated turn restriction via plastic sleeve in shear hinge
- Vertical and lateral float mounting
- Pressure adjustment: +/- 0.8 mm
- Can be used left and right hand

Turn middle hinge DML.K ... P

- Same design as above, but plus 1 mm contact pressure

Shear hinge cap K.SK

- Plastic cover for the shear hinge
- Available in different colours
- See shear hinge SL.KS, SL.KB, SL.HW
- Can be used left and right hand



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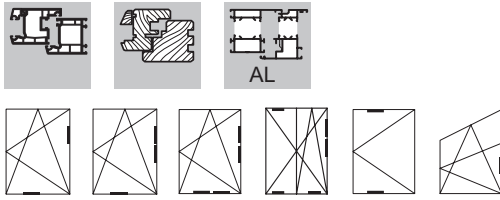
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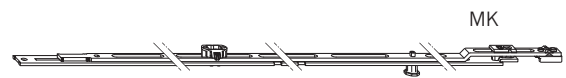
Item description	Item No.		Groove centre position	Overlap	VPA1		VPA2		VPA3	
					Qty.	Type	Qty.	Type	Qty.	Type
DML.K.20-10	5016271	4	10	20	10	BL	100	KK	800	EK
DML.K.20-13	5016272	4	13	20	10	BL	100	KK	800	EK
DML.K.20-9	5016270	4	9	20	10	BL	100	KK	800	EK
DML.K.20-13.P	5016273	4	13	20	10	BL	100	KK	800	EK

A silver colour is standard for visible components (zinc galvanised)



Interlocking rod M

- Can be used left and right hand
- Safety locking pin as an adjustable octagonal bolt
- Faceplate width 16 mm
- Central fastening loosens automatically by tightening fitting screw
- Functional both vertically and horizontally
- Overlapping system linkage without connecting plates
- Clampable in fitting groove



Interlocking rod MK


- Extendable interlocking rod, can be combined with Winkhaus standard gearing
- Otherwise this design is identical to interlocking rod M

Interlocking rod MK ... BS

- Bottom horizontal interlocking rod with extended bolt for balcony doors with accessible threshold
- In combination with corner drive E1.BS
- ...BS13 for airgaps 7 – 9 mm from upper edge of threshold clip rail
- ...BS16 for airgaps 10 – 12 mm from upper edge of threshold clip rail
- Not suitable for activPilot Comfort / duoPort PAS

Interlocking rod M/MK ... C

- Same construction as M/MK..., but with additional clamping piece

Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
M.250-1	2822471	2	20	BD	100	KK	800	EK
M.350-1	5012660	2	20	BD	100	KK	2400	EK
M.500-1	4933994	3	20	BD	100	GK	1200	EK
M.500-1.C	4933999	3	20	BD	100	GK	1200	EK
M.750-1	4940652	5	20	BD	500	EA		
MK.150-1	5043228	2	20	BD	100	KK	800	EK
MK.250-0	4929185	1	20	BD	100	KK	800	EK
MK.250-1	2824919	1	20	BD	100	KK	800	EK
MK.500-0	4929187	3	20	BD	500	EA		
MK.500-0.C	4932315	3	20	BD	500	EA		
MK.500-1	2824986	3	20	BD	500	EA		
MK.500-1.C	4932287	3	20	BD	500	EA		
MK.750-1	4940653	5	20	BD	500	EA		
MK.750-2	5009140	5	20	BD	500	EA		
MK.500-1.BS13	4941427	3	20	BD	500	EA		
MK.250-1.BS16	5009909	1	20	BD	100	KK	800	EK
MK.500-1.BS16	4926332	3	20	BD	500	EA		
MK.500-1.BS16.C	4932316	3	20	BD	500	EA		



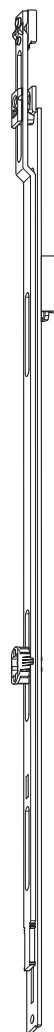
Interlocking rod MS.SU

- For fitting vertically below the double-sash drive rod
- Safety keeps are generally pre-assembled
- Clampable in fitting groove
- Designed for 12 mm airgap
- Can be used left and right hand
- Central fastening loosens automatically by tightening fitting screw
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

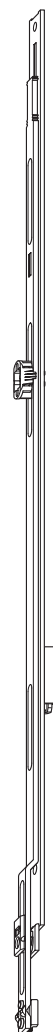
Interlocking rod MS.SO


- For fitting vertically above the double-sash drive rod
- Otherwise this type is identical to interlocking rod MS.SU

MS.SU.



MS.SO.



Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
MS.SO.250-1	4934014	1	20	BD	100	KK	800	EK
MS.SO.500-1	2838982	3	20	BD	2700	EA		
MS.SU.250-1	4933801	1	20	BD	100	KK	800	EK
MS.SU.500-1	2838464	3	20	BD	2700	EA		

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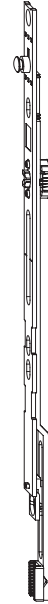
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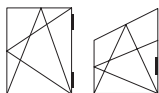


Interlocking rod MK.250.0-Hautau

- For tilt windows
- In combination with safety shears (brand: Hautau)
- Designed for 12 mm airgap
- Can be used left and right hand
- Central fastening loosens automatically by tightening fitting screw
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates



Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
MK.250.0-HAUTAU	5044624	2	20	BD	100	KK	800	EK



Coupling element KE SL

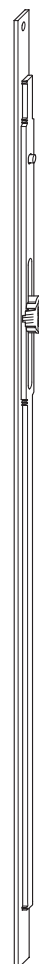
- Application area: connecting two gear ends, e.g. corner drive E1 with an interlocking rod MK
- Can be used left and right hand
- Faceplate width 16 mm
- Clampable in fitting groove
- Overlapping system linkage without connecting plates
- Functional both vertically and horizontally
- Central fastening loosens automatically by tightening fitting screw
- Cutting area 250 mm
- Component length 510 mm

Connection rod VS RB SL


- Connection between round arch set (Chapter 7) and standard gearing

Connection rod VS RB-K SL

- Connection between round arch set (Chapter 7) and standard gearing
- For small window heights see Group 1, lists of fittings



KE SL

Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
KE SL	4982891	2	10	BD	1000	EA		
VS RB SL	1811411	1	10	BD	100	GK	400	EK
VS RB-K SL	1811420	1	10	BD	100	KK	800	EK

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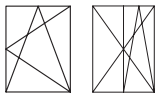
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Extension rod V.AK.450-1

- Used to position a locking point near the sash hinge (up to WK2/RC 2/RC 2N)
- Functional both vertically and horizontally
- Not extendable
- Clampable in fitting groove
- Can be used left and right hand
- Component length 450 mm
- Cutting area 250 mm
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

V.AK.450-1



VK.AK.450-1



V.AK.450-1.BS16




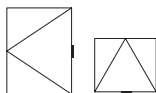
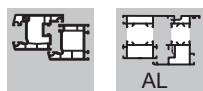
Extension rod VK.AK.450-1

- Same construction as described above, but it can be connected to Winkhaus standard gearing

Extension rod V.AK.450-1.BS16

- With extended bolt for patio doors with low threshold
- V.AK.450-1.BS16 for airgaps 10 – 12 mm from upper edge of threshold clip rail

Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
V.AK.450-1	4942706	3	10	BD	1000	EA		
VK.AK.450-1	5002559	3	20	BD	100	GK	400	EK
V.AK.450-1.BS16	5022129	3	10	BD	1000	EA		

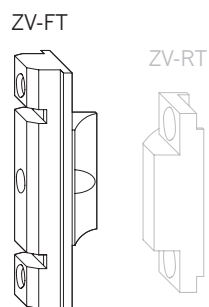



Pull-in device ZV-FT SL

- Central locking device for turn-only windows
- Eurogroove fitted
- Concealed in the rebate
- Adjustable for airgaps of 11 to 14 mm
- In combination with ZV-RT SL frame parts

Keep ZV-RT SL

- Central locking device for turn-only windows
- Installation in frame
- Concealed in the rebate
- For rebate clearance of 11 to 14 mm
- Profile attribution see keep overview



Item description	Item No.		Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
ZV-FT SL	2359324	2	9/13	10	BL	100	KK	800	EK

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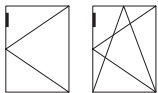
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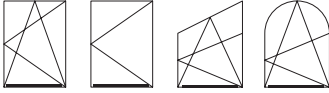


Extension rod MK.250.FSF

- Functional parts such as fail safe device FSF and dual function element DFE retrofittable
- Extension rod cannot be cut to length
- Face plate length 250 mm
- For tall windows with low handle position
- Installation position on the upper drive side

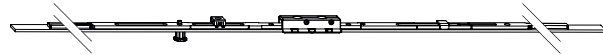



Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
MK.250.FSF	5009920	3	20	BD	100	KK	800	EK



Connection rod VSAM

- One-piece connection rod for linking two corner drives
- For radius head and studio windows
- Can be used left and right hand
- Mounted in centre
- Locking positions identical to GAM drive rod range



Item description	Item No.	Scope of application		VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
VSAM.800	5014974	FFH/FFB 510 - 800	2	20	BD	400	EA		
VSAM.1050	5014975	FFH/FFB 710 - 1050	2	20	BD	400	EA		
VSAM.1050-1	5014976	FFH/FFB 710 - 1050	2	20	BD	400	EA		
VSAM.1400-1	5014977	FFH/FFB 900 - 1400	4	20	BD	400	L1		
VSAM.1800-2	5014979	FFH/FFB 1300 - 1800	6	10	BD	400	L1		
VSAM.2300-3	5015010	FFH/FFB 1800 - 2300	9	10	BD	400	L2	900	EU2

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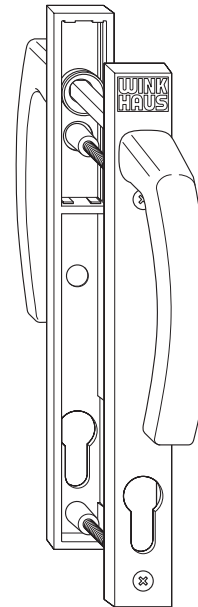
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Handle set GG RN

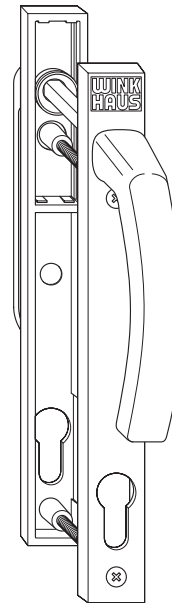
- For glazed doors without blinds
- Variable sash thickness
- Sash thickness up to max. 70 mm
- Gap between handle and profile cylinder to match drives GAMA/GAKA
- Available in different colours
- Screw into place from the interior side of the sash



GG RN

Handle set GG RRW

- For glazed doors with blinds (exterior flat type)
- Variable sash thickness
- Gap between handle and profile cylinder to match drives GAMA/GAKA
- Available in different colours
- Screw into place from the interior side of the sash



GG RR

Item description	Item No.	VPA1		VPA2		VPA3	
		Qty.	Type	Qty.	Type	Qty.	Type
GG RN WS	2508641	1	KT	10	KK	80	EK
GG RN BR	2508633	1	KT	10	KK	80	EK
GG RN F1	2508561	1	KT	10	KK	80	EK
GG RN F9	2508650	1	KT	10	KK	80	EK
GG RR WS	2508684	1	KT	10	KK	80	EK
GG RR BR	2508676	1	KT	10	KK	80	EK
GG RR F1	2508668	1	KT	10	KK	80	EK
GG RR F9	2508692	1	KT	10	KK	80	EK

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

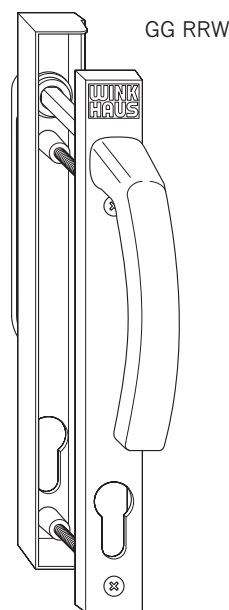
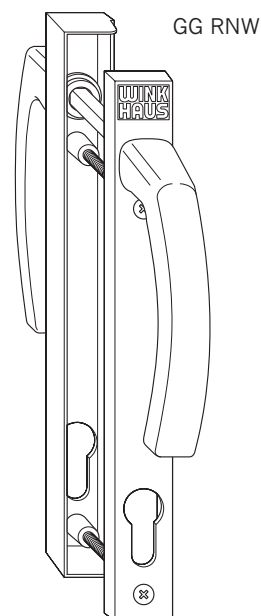


Handle set GG RNW

- For glazed doors without blinds
- Variable sash thickness
- Gap between handle and profile cylinder to match drives
GAMA/GAKA
- Available in different colours
- To adapt to flush-mounted profiles
- Screw into place from the interior side of the sash

Handle set GG RRW

- For glazed doors with blinds (exterior flat type)
- Variable sash thickness
- Gap between handle and profile cylinder to match drives
GAMA/GAKA
- Available in different colours
- To adapt to flush-mounted profiles
- Screw into place from the interior side of the sash



Item description	Item No.	VPA1		VPA2		VPA3	
		Qty.	Type	Qty.	Type	Qty.	Type
GG RNW LS F9	2508772	1	KT	10	KK	80	EK
GG RNW R74 LS WS	2508959	1	KT	10	KK	80	EK
GG RNW R74 RS WS	2508924	1	KT	10	KK	80	EK
GG RNW R74 LS F9	2508975	1	KT	10	KK	80	EK
GG RNW R74 RS F9	2508941	1	KT	10	KK	80	EK
GG RRW R74 LS WS	2508895	1	KT	10	KK	80	EK
GG RRW R74 RS WS	2508861	1	KT	10	KK	80	EK
GG RRW R74 LS F9	2508916	1	KT	10	KK	80	EK
GG RRW R74 RS F9	2508887	1	KT	10	KK	80	EK

RS = right, LS = left

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured

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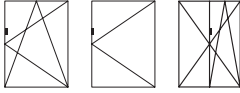
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Dual and triple function element

Dual function element DFE

- For screwing onto the drive rod
- DFE includes the fail safe device and limiter support functions
- Centrally fixed when supplied and thus available for right and left-handed use
- Is activated on the sash after mounting
- See Group 14 for instructions on adjustment
- Max. sash weight 130 kg


Dual function element DFE-P

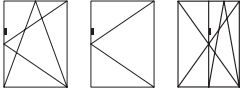
- as above, but as a pendulum variant

Triple function element TFE

- For screwing onto the drive rod
- TFE includes the fail safe device, limiter support and balcony door catch
- Centrally fixed when supplied and thus available for right and left-handed use
- Is activated on the sash after mounting
- See Group 14 for instructions on adjustment
- Max. sash weight 130 kg



Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
DFE	4931451	1	50	BL	250	KK	2000	EK
TFE	4931450	1	50	BL	250	KK	2000	EK
DFE-P	4932220	1	50	BL	250	KK	2000	EK



Frame Parts RT.DFE-TFE

Frame part RT.DFE-TFE

- Serves as an adapter for dual or triple function element in standard security keeps SBS. ...
- Profile-independent as the adapter is fitted in the case of the security keeps
- Height adjustable (see Group 14)

Frame part RT.DFE-TFE LS/RS

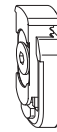
- Serves as an adapter for dual or triple function element in standard security keeps SBS. ...
- Rear stop surface prevents the sash from overlapping
- Profile-independent as the adapter is fitted in the case of the security keeps
- Height adjustable (see Group 14)

Frame part RT.DFE-TFE.S

- Serves as an adapter for dual and triple function elements on double-sash drive rods
- Profile-independent as the adapter is fitted to the double-sash gear keeps
- Height adjustable (see Group 14)

Frame part RT.DFE-TFE.S LS/RS

- Serves as an adapter for dual and triple function elements on double-sash drive rods
- Rear stop surface prevents the sash from overlapping
- Profile-independent as the adapter is fitted to the double-sash gear keeps
- Height adjustable (see Group 14)



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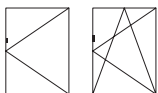
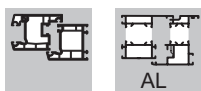
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			Qty.	Type	Qty.	Type	Qty.	Type
RT.DFE-TFE.ZN	4937821	0	100	BL	500	KK	4000	EK
RT.DFE-TFE.LS	5017246	0	100	BL	500	KK	4000	EK
RT.DFE-TFE.RS	5017244	0	100	BL	500	KK	4000	EK
RT.DFE-TFE.S	4933544	0	100	BL	500	KK	4000	EK
RT.DFE-TFE.S.LS	4933547	0	100	BL	500	KK	4000	EK
RT.DFE-TFE.S.RS	4933545	0	100	BL	500	KK	4000	EK

RS = right, LS = left



Balcony door catch BK SL

- For glazed doors with 12 mm air gap
- Light latching force when closing the door
- Improved retaining force
- Profile dependent see Group 11, Frame Parts
- Catch bolt BO BH-BK E SL included in the scope of delivery

Balcony door catch BK Z-8 SL

- Similar to BK balcony door catch, but with pins for positioning on the double-sash drive rod

Latch bolt BO BH-BK E SL

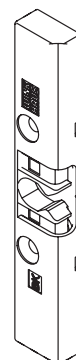
- Latch bolt for mounting on the drive rod

Latch bolt BO BK FC SL

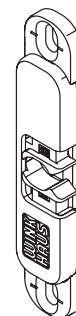
- Latch bolt to be installed in the sash's fitting groove, positionable with machine

Balcony door catch BK BN SL

- Mounted into the fitting groove



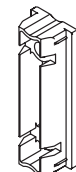
BK SL



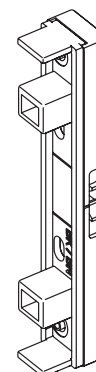
BK Z-8 SL




BO BH-BK E SL

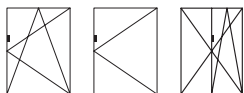
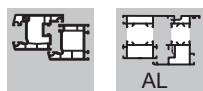


BO BK FC SL



BK BN SL

Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
BK SL	1793250	2	100	KK	800	EK		
BK Z-8 SL	2446778	2	200	KK	1600	EK		
BO BH-BK E SL	1848732	1	100	BL	2000	KK	16000	EK
BO BK FC SL	2310977	2	100	BL	800	KK	6400	EK
BK BN SL	1848353	2	100	KK	800	EK		

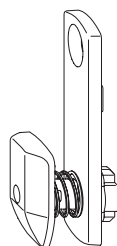
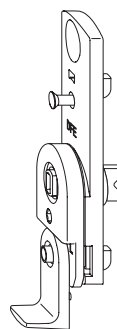


Fail safe device FSA

- For screwing onto the drive rod
- Prevents an actuation of the handle when the sash is open
- Centrally fixed when supplied and thus available for right and left-handed use
- Is activated on the sash after mounting
- Separate frame part is not necessary (hits the frame)
- For groove position 9 mm or 13 mm

Fail safe device FSF

- For screwing onto the drive rod
- Prevents an actuation of the handle when the sash is open
- Centrally fixed when supplied and thus available for right and left-handed use
- Separate frame part is not necessary
- Suitable for groove positions from 9 to 13 mm



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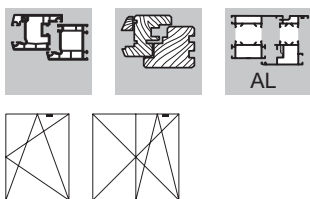
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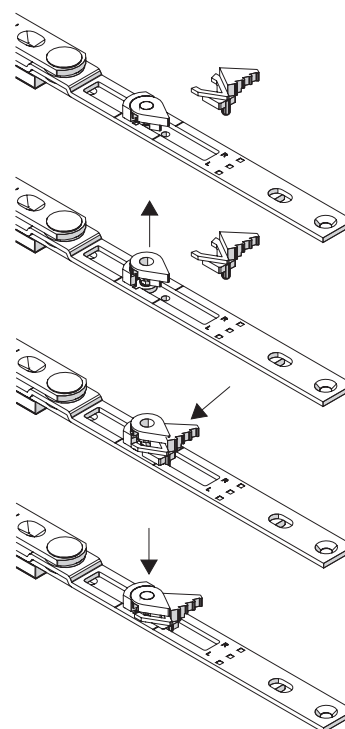
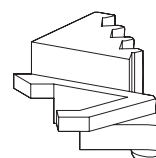
Item description	Item No.		Groove centre position	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
FSA.9	4940796	1	9	100	BL	500	KK	4000	EK
FSA.13	4926367	1	13	100	BL	500	KK	4000	EK
FSF	5031156	1	9/13	100	BL	500	KK	4000	EK


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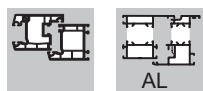


Variable tilt device MSL-OS

- Enables mini ventilation of approx. 20 – 45 mm in the tilt position
- Variable tilt device MSL.OS as retrofit option for window profiles with a frame rebate depth of 25 mm and 9 mm eurogroove position
- Simple mounting without tools
- MSL.OS can easily be retrofitted to the progressive shear retraction by pulling it up and inserting the MSL.OS device
- Can be retrofitted to all top rods OS ... with progressive shear retraction
- Right and left handed variants available



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
MSL-OS.LS	4941704	0	50	BL	750	KK	6000	EK
MSL-OS.RS	4941703	0	50	BL	750	KK	6000	EK
RS = right, LS = left								



Support plate

- For lifting the sash during closing

Support plate AL.M.F12

- For assembly in the suitable holes of the extension rod or for direct fitting in the sash-side fitting groove
- Installation height 11,5 mm
- Colour: anthracite grey or dusty grey

Support plate AL FR BN 13/12 FC SL

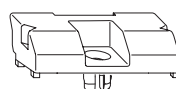
- Direct fitting in the eurogroove
- Installation height 11,5 mm
- Colour: silver

Support plate AL.BN.F12

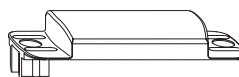
- Direct fitting in the eurogroove
- Suitable for use on screwdriving units
- Installation height 11,5 mm
- Colour: anthracite grey

Support plate AL.E.F


- Is fixed to the corner drive on the sash side if no interlocking rod is used
- Suitable for use on screwdriving units
- Installation height 11,5 mm
- Colour: anthracite grey
- Not suitable for activPilot Comfort / duoPort PAS



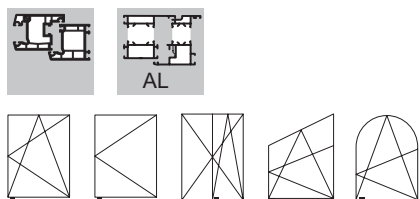
AL.M.F12

AL FR BN.../
AL.BN.F12

AL.E.F

Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
AL.M.F12.AGR	4927494	1	100	BL	400	KK	9600	EK
AL.M.F12.SGR	5008456	1	100	BL	400	KK	9600	EK
AL FR BN 13/12 FC SL	2295640	1	100	BL	400	KK	3200	EK
AL.BN.F12	4927493	1	100	BL	400	KK	9600	EK
AL.E.F	4933076	1	200	KK	1600	EK		

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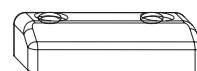


Support plate

- For lifting the sash during closing

Support plate AL D

- Installation in frame.
- Can be used for different profile systems thanks to adapter FT.WSK...
- Installation height 11 mm
- Colour: anthracite grey or white



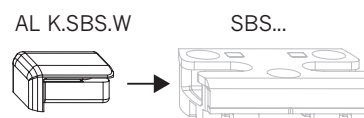
AL D

Support plate AL D 10 WS

- Installation in frame.
- Can be used for different profile systems thanks to adapter FT.WSK...
- Installation height 10 mm
- Colour white

Keep AL K.SBS.W

- Mounted into security keep SBS...
- Colour: dust grey similar to RAL 7037



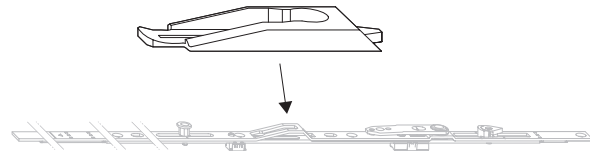
Item description	Item No.	🔩	VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
AL D AGR	4969481	2	100	BL	400	KK	3200	EK
AL D WS	1475542	2	100	BL	400	KK	3200	EK
AL D 10 WS	2091583	2	100	BL	400	KK	3200	EK
AL K.SBS.W	4978509	0	100	BL	1000	KK	8000	EK




Anti-slam device ZSS.OS

- Can be used left and right hand
- Prevents tilted windows slamming shut in case of light draughts and low window sashes

- ZSS.OS1 for top rod OS1. ...
- ZSS.OS2 for top rod OS2. ...



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
ZSS.OS1	4936654	0	100	BL	1000	KK	8000	EK
ZSS.OS2	4936655	0	100	BL	1000	KK	8000	EK

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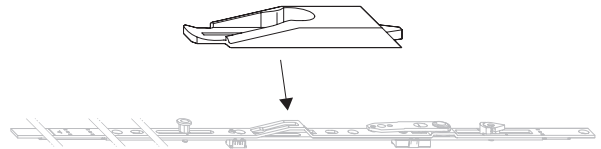
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Tilt limiter KBG.OS

- Can be used left and right hand
- Reduces tilt opening width by approx. 50 mm
- Recommended for use with sash heights below 600 mm



- KBG.OS1 for top rod OS1. ...
- KBG.OS2 for top rod OS2. ...

Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
KBG.OS1	5026065	0	100	BL	1000	KK	8000	EK
KBG.OS2	4936659	0	100	BL	1000	KK	8000	EK



Drilling protection AB.G.D

- Protects drive rods against drilling open from the outside in line with DIN EN 1627-1630
- Can be used left and right hand
- Material: steel 1 mm thick, hardened

Drilling protection AB.G.D.15.5

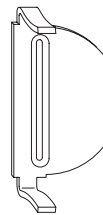
- Backset 15.5 mm

Drilling protection AB.G.D.7.5

- Backset 7.5 mm



AB.G.D.15,5



AB.G.D.7,5

Item description	Item No.	VPA1		VPA2		VPA3	
		Qty.	Type	Qty.	Type	Qty.	Type
AB.G.D.15,5	4939745	100	BL	1000	KK	8000	EK
AB.G.D.7,5	4939747	50	BL	250	KK	2000	EK

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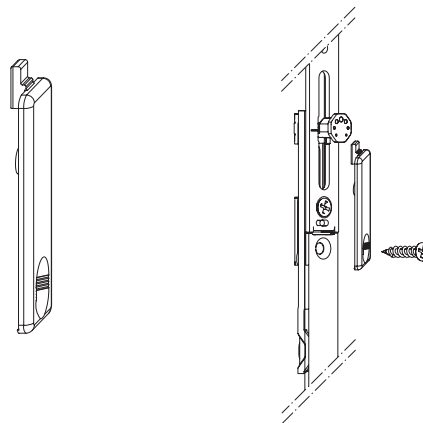


Blocking plate AWDR SL

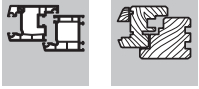
- To arrest tilt position for turn-tilt fittings
- Can be used left and right hand

Blocking plate ANS ACP

- To arrest tilt position for turn-tilt fittings
- Can be used left and right hand
- PVC-U component to click into the corner drive



Item description	Item No.	Image	VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
AWDR SL	2308084		100	BL	1000	KK	8000	EK
ANS ACP	5009363		1000	BL	5000	KK	40000	EK



Opening limiter OBV

- For limiting the opening width independently of the control sequence
- Prevents the window from slamming shut
- Turn opening possible by two-hand control
- Protection against unintentional turn opening
- Automatic retainer: when the window is closed from the turn position, the opening limiter clicks back into place
- Limits opening width to approx. 50 mm when mounted on locking side; variable opening width possible if fitted horizontally
- Easy mounting due to height-adjustable frame parts
- Easy to maintain as the adjustment scope of the frame component is +/- 3 mm
- For drilling and milling instructions see group 15, installation drawings B-10-2

Opening limiter OBVA

- Lockable version – Locking by means of Allen head screw
- Apart from that same construction as opening limiter OBV



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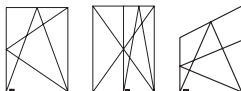
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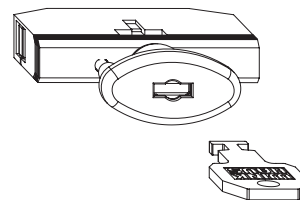
Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
OBV.WS	4929276	3	1	BL	100	KK	2400	EK
OBV.BR	4929277	3	1	BL	100	KK	800	EK
OBV.SGB	4929755	3	1	BL	100	KK	800	EK
OBVA.WS	4929278	3	1	BL	100	KK	2400	EK
OBVA.BR	4929279	3	1	BL	100	KK	800	EK

WS = white, BR = brown, SL = silver, F1 = silver coloured, F3 = gold coloured, F9 = titanium coloured



Rotation stop device DS.24

- Lockable with special key
- Protection against unintentional turn opening
- Suitable for retrofit installation, independent of arrangement of fittings
- Only usable with SBA. ... roller keep
- Required frame rebate depth >24 mm
- Can be used for sash overlap heights of 20 mm +2.5/-5 mm
- Consisting of:
 - 1 window lock
 - 2 screws DIN 965 M3 x 35
 - 4 packers FSV
- Rebate depth min. 22 mm in case of 9 mm groove centre position
- Rebate depth min. 26 mm in the case of 13 mm groove position
- For drilling and milling instructions see Group 15 installation drawings B-10-3
- The SLUE.DS.SL key must be ordered separately.
- We recommend you to order the jig for rotation stop device LE.DS.



Rotation stop device DS.29

- Required frame rebate depth >29 mm
- Suitable for sash overlap heights of 25 mm +2.5/-5 mm

Key SLUE.DS.SL

- For activating the window lock

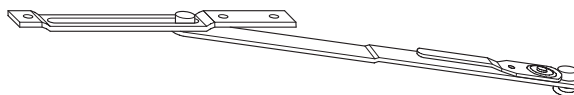
Item description	Item No.	VPA1		VPA2		VPA3	
		Qty.	Type	Qty.	Type	Qty.	Type
DS.24.WS	5033454	10	BL	100	KK	800	EK
DS.24.BR	5033455	10	BL	100	KK	800	EK
DS.24.F9	5033456	10	BL	100	KK	800	EK
DS.29.WS	5033457	10	BL	100	KK	800	EK
DS.29.BR	5033458	10	BL	100	KK	800	EK
DS.29.F9	5033459	10	BL	100	KK	800	EK
SLUE FSV SL	2102246	10	BL	1000	KK	8000	EK
LE.FSV/ACTIVPILOT	4970409	10	KK	80	EK		

WS = white, BR = brown, SL = silver



Rebate shear GRT FSR SL

- For tilt windows
- Sash weight max. 80 kg taking product liability in chapter "General Product Information" into account




Accessory: Packer UF BK WS

- Used as a mounting adapter between the sash eurogroove and the shear arm of the rebate shear
- Shade: white

Important:

- To secure the tilting sash in 90° opening position, or during cleaning, the window must also be fitted with standard cleaning or supporting shears.
- The sashes must be secured in cleaning position to prevent excessive force acting on the hinges.
- After cleaning the window, the rebate shear must be reinserted and secured.
- Close windows in case of wind and draft. Move the fitting to locking position.

Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
GRT FSR SL	1811067	4	10	BD	150	KK	1200	EK
UF BK WS	1477943	2	100	BL	500	KK	4000	EK

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Connection rod VS R SL

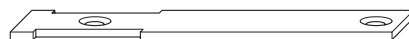
- Used to connect two long parts with interlocking action



VS R SL

End plate ASP ER-A SL

- Serves as an end profile on corner drives or extensible interlocking rods to cover the connecting rod / the gearing



ASP ER-A...

End plate ASP ER-A.F

- Design as described above, but clampable

Connecting plate SP.R SL

- For connecting a corner drive with a component that needs shortening, e.g. a drive rod or top rod
- Use only in case of repair, as a positive and non-positive fit is no longer guaranteed
- The element to be shortened can be cut straight



SP R SL

Item description	Item No.	🔩	VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
VS R SL	1882172	2	20	BL	100	KK	800	EK
ASP ER-A SL	1793209	2	500	KK	4000	EK		
ASP ER-A.F	4991062	2	500	KK	4000	EK		
SP.R SL	1934201	1	100	BL	1000	KK	8000	EK



Shootbolt KR F 711

- For double-sash windows without a mullion
- Airgap 12 mm
- Locks into shootbolt keeps SA on top / bottom

Shootbolt KR 16/ ...

- Designed for 12 mm airgap
- Locks into shootbolt keeps SA on top / bottom
- Profile-dependent shootbolt keeps see chapter Frame Parts
- Material: Steel

Shootbolt keep SA

- For wooden windows
- To hold the shootbolt interlock
- Depending on the profile
- Application scope see below

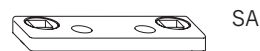
Shootbolt keep SA

- For PVC-U and aluminium windows
- To hold the shootbolt interlock
- Shootbolt keep SA see Group 11, Frame Parts

KR F 711



KR 16



SA

Item description	Item No.	Scope of application	Length	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
KR F 711.C AGR	5026320		2	100	KK	800	EK		
KR F 711.C SL	5026321		2	100	KK	800	EK		
KR F 711.C SL/WS	5026322		2	100	KK	800	EK		
KR 16/200 SL	2070168		2	200	KK	2400	EK		
KR 16/500 SL	4941328		2	500	GK	400	EK		
SA W 7 SL	1846913	EF 18	2	100	BL	500	KK	4000	EK
SA W 80 SL	2921241	EN 7/8	2	100	BL	500	KK	4000	EK
SA W 81 SL	2049801	EN 6/8	2	100	BL	500	KK	4000	EK

EF = standard rebate
EN = eurogroove

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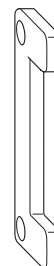
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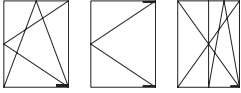
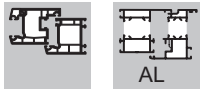


Faceplate fastener SNH.AGR

- For additional securing of the faceplate
- When short drive rods are used and in combination with corner drive E3.
- To screw on and retain the drive
- Profile-independent due to sash-side mounting.

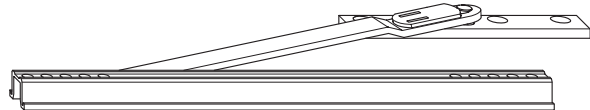


Item description	Item No.		VPA1		VPA2	
			Qty.	Type	Qty.	Type
SNH.AGR	4938874	2	400	KK	9600	EK



Turn limiter DB 11 SL

- Turn limiter to fit in existing fitting groove
- For additional sash hinge
- Friction adjustment with hexagonal span SW 4
- Screw-connect-type frame plate preadjusted for insertion of WSK part (profile-dependent, see Group 11)
- Also serves as an opening limiter
- Opening angle of the sash depending on the position of the stop in the turn limiter, adjustable from 70° to 90°
- Installation situation see Group 15, installation drawings B-10-1



Turn limiter DB 11/1 SL

- For rebate sash hinges (FWV/FWSB/FL.HT)
- Installation situation see Group 15, installation drawings B-10-1

Turn limiter DB11-350 SL

- Screw-on sash hinge
- For sash rebate widths from 350 mm and more

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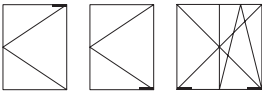
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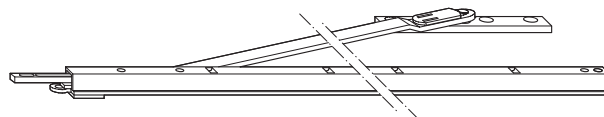
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Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
DB 11 SL	1848599	FFB > 460 mm	6	80	KK	640	EK
DB 11/1 SL	1848601	FFB > 640 mm	6	80	GK	320	EK
DB 11-350 SL	1848564	FFB > 350 mm	3	80	KK	640	EK



Window limiter FBP-11 650 SL

- FBP-11 650 SL for small sizes as of FFB > 480 mm
- For insertion into existing fitting groove
- Airgap 12 mm
- Various opening positions are achieved via the handle (in closed position) while the window is open, which is controlled via a rod connecting the FBP to the mechanism.
- Cannot be used in combination with a rebate sash hinge
- Screw-on frame plate, preadjusted for insertion of the WSK part (depending on profile)
- For assembly see chapter Mounting of Accessories
- Cannot be used with hinge parts (rebate sash hinge) assembled in the fitting groove




- Cannot be used for:
- Threshold solutions
- Tilt before turn
- activPilot Select - The fully concealed turn-tilt fitting.
- Resistance classes WK1, WK2, RC 1, RC 2
- Timber or aluminium profiles

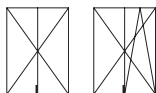
Window Limiter FBP-11 SL

- See above
- FBP-11 SL only possible for sash rebate widths (FFB) > 630 mm

Spacer FT WSK

- Profile adaption using adapters FT - WSK see group Frame Parts

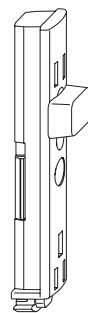
Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
FBP-11 650 SL	1997367	ab FFB 480 - 730	4	1	BL	50	GK	200	EK
FBP-11 SL	1997148	ab FFB 630 - ...	4	1	BL	50	GK	200	EK



Catch bolt BK.KR...

- Automatic catch bolt function with additional manual locking by means of a rod

- Used in combination with keep SA OF..
- Bolt can be locked and unlocked manually
- Can be used right/left and top/bottom
- Used on the inactive sash
- Positioning flush with the sash rebate edge
- Is activated when turn-tilt sash is opened
- The catch bolt retains the sash in the frame with light engagement forces, even if the rod is not locked.
- Length: 85 mm




Keep SA OF H...

- For timber windows with 12 mm airgap
- Can be used left and right hand
- Pressure adjustment by turning the component (+0.5 mm)

Keep SA OF...

- As described above, but for PVC-U windows



Item description	Item No.		VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
BK.KR.SGR	5008300	1	20	BL	100	KK	800	EK
BK.KR.WS	5008301	1	20	BL	100	KK	800	EK
SA OF H.9-18	5004589	2	300	KK	2400	EK		
SA OF H.13-22	5004588	2	300	KK	2400	EK		
SA OF 17 SL	4939996	2	50	BL	300	KK	2400	EK
SA OF 60 SL	2859521	2	50	BL	300	KK	2400	EK
SA OF 61 SL	4940007	2	50	BL	300	KK	2400	EK
SA OF 74 SL	4926924	2	300	KK	2400	EK		
SA OF 77 SL	4940953	2	300	KK	2400	EK		
SA OF 126 SL	2859513	2	50	BL	300	KK	2400	EK
SA OF 144 SL	2859530	2	50	BL	300	KK	2400	EK
SA OF 152 SL	2859505	2	50	BL	300	KK	2400	EK
SA OF 169 SL	5019156	2	50	BL	300	KK	2400	EK
SA OF 192 SL	4932035	2	50	BL	300	KK	2400	EK

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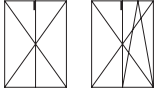
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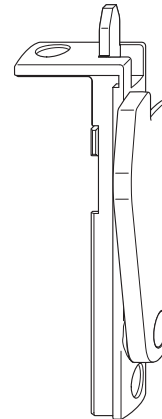
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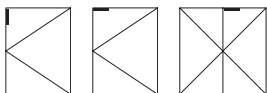


Automatic deadbolt AKR ...

- Used in combination with keep SA OF...
- The rod is extended by closing the active sash.
- Installation position upper fitting groove
- Unlocking by means of spring action when first-opening sash is opened

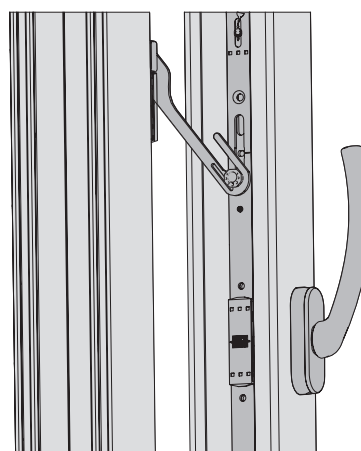
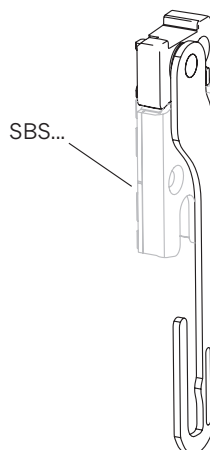



Item description	Item No.	🔩	VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
AKR LS.WS	5008299	2	20	BL	100	KK	800	EK
AKR RS.WS	5008298	2	20	BL	100	KK	800	EK
AKR LS.SGR	5008297	2	20	BL	100	KK	800	EK
AKR RS.SGR	5008295	2	20	BL	100	KK	800	EK



Mini ventilation unit AS DSL... (turn position)

- Mini ventilation for turn windows
- Mini ventilation position with standard activPilot corner drive
- Opening width approx. 70 mm, according to the profile
- Used in combination with the security keep SBS...
- Installation position on the drive side, horizontally at top or bottom
- Profile systems: currently suitable for Rehau Geneo and Brilliant Design; for use with other profile systems please contact your Winkhaus partner.



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
AS DSL60.LS	5008365	1	20	BL	100	KK	800	EK
AS DSL60.RS	5008344	1	20	BL	100	KK	800	EK
RS = right, LS = left								

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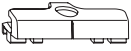
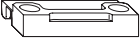
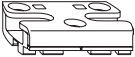

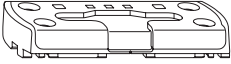

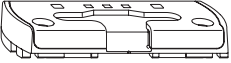
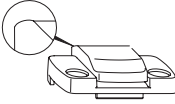
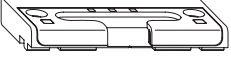
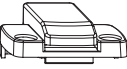


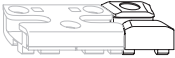


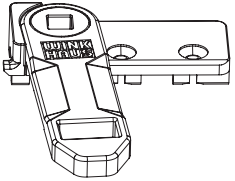

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General deployment instruction keeps

	Description / Code / 	Description / Code / 	
	Keep / SBA... / 1		Adapter / FT WSK / 2
	Security keep / SBS... / 3		Pull-in device / ZV-RT / 2
	Security tilt keep / SBK... / 4		Sash lifter / FH ... / 2
	Security tilt keep / SBK... V Screwed in the prechamber / 2		Sash lifter / FH.R. ... / 2 (Radius at rear edge)
	Security tilt keep / SBK... BS / 2 Ground sill		Sash lifter / FH.L. ... / 2 (Long version)
	Keep for dual and triple function element / SBA .. DFE-TFE / 1		Mini vent keep / AS.SBA.K.T / 2
	Tilt keep (tilt before turn) / SBK...E / 1		Run-up block / SA ... / 2
	Security keep / SBS.K.PAD (Parallel action/Tilt before Turn)		Mini vent keep / AS OF / 2
Item description Item No.			Run-up block / SA OF / 2

Aluplast

Ideal 2000 - 3000	
AS SBA.K.T.13-3	4937780
BK 60 SL	1919553
BK 61 RC SL	4933092
FH.152	4949428
FH.R.152	4995853
FT WSK 61	1497653
RT.MSL.3	5007006
SA OF 61 SL	4940007
SA 152 SL	2366946
SBA.K.61	2892073
SBK.K.61	2892209
SBK.K.61.V	2892170
SBK.K.61.166.BS	2920433
SBK.K.E.3	4935945
SBS.K.61	2892129
ZV-RT 60 RC	2312155

Ideal 4000 - 8000, Energeto	
AS SBA.K.T.13-5	4937782
BK 61 RC SL	4933092
FH.161	4949431
FH.R.161	4995855
FT WSK 66	1530185
RT.MSL.3	5007006
SA 66 SL	2209887
SA OF.161	5031823
SBA.K.161	2824071
SBS.K.161	2861672
SBK.K.161	2861621
SBK.K.E.5	4935956
SBS.K.161.M3	4927769
SBK.K.61.166.BS	2920433
SBK.K.161.V	4927435
SBK.K.161.M3	4927851
SBA.K.161.DFE-TFE.L.S	4934013
SBA.K.161.DFE-TFE.L.RS	4934010
SBA.K.644.V	5031490
SBK.K.161.I.K.SC	4949425
SBS.K.161.I.K.SC	4949424
SBS.K.PAD.161.LS	4995615
SBS.K.PAD.161.RS	4995614
SBA.K.161.DFE-TFE.RS	4935789
SBA.K.161.DFE-TFE.LS	4935788
ZV-RT 161 RC SL	1213945

Brügmann

System AD/MD	
AS SBA.K.T.13-3	4937780
BK 552 RC SL	2522321
FH.152	4949428
FH.R.152	4995853
FT WSK152	1787079
RT.MSL.3	5007006
SA 152 SL	2366946
SBA.K.94.P7	4927716
SBK.K.94.P7	4927718
SBK.K.94.V.P7	4927719
SBK.K.E.3	4935945
SBS.K.94.P7	4927717
ZV-RT 452/13 SL	2074732

Deceuninck

Zendow	
AS SBA.K.T.13-4	4937781
BKS 169 RC-V SL	2356852
FH.205	4949429
FH.L.205	5002710
FH.R.205	4995854
FT WSK169	2356596
RT.MSL.3	5007006
SA OF 169 SL	5019156
SA 169 SL	2359447
SBA.K.169	4926362
SBK.K.169	4926366
SBK.K.169.V	4926368
SBK.K.169.P7	4974642
SBK.K.E.4	4935954
SBS.K.169	4926363
SBS.K.PAD.169.LS	4995621
SBS.K.PAD.169.RS	4995620
ZV-RT 169 RC	2398147

Gealan

3000	
AS SBA.K.T.13-4	4937781
BK 134 SL	2103935
FH.205	4949429

FH.L.205	5002710
FH.R.205	4995854
FT WSK 62	1348121
RT.MSL.3	5007006
SA 62 SL.6 SL	2749461
SBA.K.62	4926222
SBA.K.162	4929796
SBK.K.62	4929831
SBK.K.162	4929797
SBK.K.10.BS	4994366
SBK.K.E.4	4935954
SBS.K.162	4929798
SBK.K.162.V.P7	4964888
SBK.K.162.P7	4964887
SBS.K.162.P7	4964886
ZV-RT 162 SL	2088350

6000, 7000, 8000, 9000

AS SBA.K.T.13-4	4937781
BK 134 SL	2103935
FH.205	4949429
FH.L.205	5002710
FH.R.205	4995854
FT WSK 62	1348121
RT.MSL.3	5007006
SA 62 SL.6 SL	2749461
SBK.K.10.BS	4994366
SBA.K.162	4929796
SBK.K.162	4929797
SBK.K.162.V	4929799
SBK.K.E.4	4935954
SBS.K.162	4929798
SBK.K.162.V.P7	4964888
SBK.K.162.P7	4964887
SBS.K.162.P7	4964886
SBK.K.162.S	4986548
SBS.K.162.S	4988102
SBS.K.PAD.162.LS	4995617
SBS.K.PAD.162.RS	4995616
ZV-RT 162 SL	2088350

Inoutic

Arcade, Prestige, Deluxe, Elite, MD100, Eforite	
AS SBA.K.T.13-5	4937782
BK192 S12 RC	4939193
FH.192	4949434
FH.L.192	5008876
FH.R.192	4995858
FT WSK 192	1330722
SA OF 192 SL	4932035
SA 192 SL	1919932
SBA.K.192	5002139
SBK.K.192	4932276
SBK.K.192.V	4932277
SBS.K.192	4932275
SBA.K.192.S12	4939192
SBK.K.E.192	4942838
SBK.K.192.S12.ZN	4937573
SBS.K.192.S12.ZN	4937572
SBS.K.PAD.192.LS	4995623
SBS.K.PAD.192.RS	4995622
ZV-RT 192 RC SL	4935038

Internova

Internova 6000	
AS SBA.K.T.13-3	4937780
BK SL	1793250
FH.152	4949428
FH.R.152	4995853
FT WSK 62	1348121
RT.MSL.3	5007006
SA SL	1895985
SBA.K.16	4936437
SBS.K.16	4936031
SBK.K.16	4936032
SBK.K.E.3	4935945
FT WSK 76	1500787
ZV-RT 169 RC SL	2398147

KBE (Profine)

70 AD / 70 MD / 76 AD / 76 MD / 88+	
AS SBA.K.T.13-4	4937781
BK SL	1793250
BK 169 RC-V SL	2356852
FH.205	4949429
FH.L.205	5002710
FH.R.205	4995854
FT WSK205	1809590
RT.MSL.3	5007006
SA SL	1895985

SA 169 SL	2359447
SBK.K.10.BS	4994366
SBA.K.205.P5	2922210
SBK.K.205.P5	4996028
SBK.K.205.V.P5	4996027
SBK.K.E.4	4935954
SBS.K.205.P5	4996029
SBS.K.PAD.205.LS	4995625
SBS.K.PAD.205.RS	4995624
ZV-RT 169 RC SL	2398147

Kömmerling (Profine)

Classic, Elegance, Avantgarde, 88+	
AS SBA.K.T.13-5	4937782
BK 144 SL	1919570
FH.144	4949433
FH.R.144	4995856
FT WSK144	1326221
RT.MSL.3	5007006
SA OF 60 SL	2859521
SA 144 SL	2366911
SBA.K.144	2920652
SBA.K.144.V	4927431
SBA.K.144.DFE-TFE.LS	4935785
SBA.K.144.DFE-TFE.RS	4935786
SBK.K.144.S	2920687
SBK.K.144.V	4927432
SBS.K.144	2920661
SBS.K.144.S	4969911
SBS.K.144.M3	5013386
SBK.K.144.S.A	4982884
SBK.K.E.144	4995421
SBS.K.PAD.144.LS	4995609
SBS.K.PAD.144.RS	4995608
ZV-RT 144 SL14	2020081

76 AD / 76 MD

AS SBA.K.T.13-4	4937781
BK 60 SL	1919553
BK 61 RC SL	4933092
FH.205	4949429
FH.L.205	5002710
FH.R.205	4995854
FT WSK 61	1497653
FT WSK205	1809590
RT.MSL.3	5007006
SA 60 SL	1929209
SBK.K.10.BS	4994366
SBA.K.205.P5	2922210
SBK.K.205.P5	4996028
SBK.K.205.V.P5	4996027
SBK.K.E.4	4935954
SBS.K.205.P5	4996029
SBS.K.PAD.205.LS	4995625
SBS.K.PAD.205.RS	4995624
ZV-RT 169 RC SL	2398147

L.B. Plastic

PAD / PMD / PCD	
FH.152	4949428
FH.R.152	4995853
FT WSK 12-W	1511486
RT.MSL.3	5007006
SA SL	1895985
SBA.K.12	4926372
SBK.K.12	4926374
SBK.K.12.V	4926375
SBK.K.E.3	4935945
SBS.K.12	4926373
BK 60 SL	1919553
ZV-RT 61 RC SL	1213944

Plustec

Plustec	
BK 60 SL	1919553
AS SBA.K.T.13-4	4937781
FH.152	4949428
FH.R.152	4995853
FT WSK 76	1500787
RT.MSL.3	5007006
SA 60 SL	1929209
SBK.K.76.V.M3	4926438
SBA.K.76	4926432
SBK.K.76.M3	4926437
SBS.K.76.M3	4926436
ZV-RT 61 RC SL	1213944

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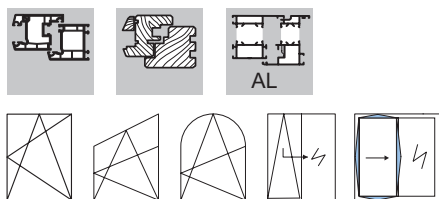
Installation drawings

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Rehau	
	Geneo, Synego
AS SBA.K.T.13-4	4937781
BK 60 SL	1919553
FH.205	4949429
FH.L.205	5002710
FH.R.205	4995854
FT WSK 60	1345393
RT.MSL.3	5007006
SA 60 SL	1929209
SBA.K.160	4933116
SBK.K.160	4933118
SBK.K.E.4	4935954
SBS.K.160.S16.WK2	4941217
SBK.K.60.BS	4932072
SBK.K.60.BS.4S	4969659
SBK.K.60.BS.4S.P7	5001118
SBS.K.160.WK2	4933803
SBS.K.PAD.160.LS	4995613
SBS.K.PAD.160.RS	4995612
ZV-RT 160	4933117
	Euro-Design 86, Character-Design, Brillant-Design
AS SBA.K.T.13-3	4937780
BK 61 RC SL	4933092
BK 60 SL	1919553
FH.60	4949432
FH.R.60	4995857
FT WSK 60	1345393
FT WSK 61	1497653
RT.MSL.3	5007006
SA OF 60 SL	2859521
SA 60 SL	1929209
SBK.K.60	2861584
SBK.K.60.M3	4927850
SBK.K.60.V	4927433
SBA.K.60	2824046
SBS.K.60	2861656
SBS.K.60.M3	4927768
SBK.K.60.BS	4932072
SBK.K.60.M3.LK.SC	4949427
SBK.K.60.BS.4S	4969659
SBK.K.60.BS.4S.P7	5001118
SBK.K.E.60	4942833
SBS.K.60.M3.LK.SC	4949426
SBS.K.PAD.60.RS	4995602
SBS.K.PAD.60.LS	4995603
ZV-RT 60 RC SL	2312155
	Roplasto
	7001 AD, 7001 MD
AS SBA.K.T.13-4	4937781
BK SL	1793250
FH.205	4949429
FH.R.205	4995854
FH.L.205	5002710
RT.MSL.3	5007006
SA SL	1895985
SBA.K.211	4931329
SBK.K.E.4	4935954
SBK.K.211	4931331
SBK.K.211.V	4931333
SBS.K.211	4931330
FT WSK205	1809590
	Salamander
	2D / 3D / MD / Streamline
AS SBA.K.T.13-4	4937781
BK 134 SL	2103935
FH.144	4949433
FH.R.144	4995856
FT WSK134	1537651
RT.MSL.3	5007006
SA 134 SL	2367181
SBA.K.28	4926452
SBK.K.28.V	4926455
SBA.K.28.DFE-TFE.LS	4935783
SBA.K.28.DFE-TFE.RS	4935784
SBK.K.28	4926454
SBS.K.28	4926453
SBK.K.E.28	4942832
SBS.K.PAD.28.LS	4995601
SBS.K.PAD.28.RS	4995600
ZV-RT 134	2864478

	bluEvolution 82 / 92
AS SBA.K.T.13-4	4937781
FH.205	4949429
FH.L.205	5002710
FH.R.205	4995854
FT WSK134	1537651
RT.MSL.3	5007006
SA 134 SL	2367181
SBA.K.28	4926452
SBA.K.28.DFE-TFE.LS	4935783
SBA.K.28.DFE-TFE.RS	4935784
SBK.K.128	4941002
SBK.K.128.V	4941004
SBS.K.128	4941001
BK 134 SL	2103935
SBK.K.E.28	4942832
ZV-RT 134	2864478
	Schüco
	Corona 60
AS SBA.K.T.13-5	4937782
BK 60 SL	1919553
BK 61 RC SL	4933092
FH.161	4949431
FH.R.161	4995855
FT WSK 61	1497653
FT WSK 66	1530185
RT.MSL.3	5007006
SA OF 60 SL	2859521
SA 60 SL	1929209
SA 66 SL	2209887
SBA.K.166	4930272
SBK.K.60	2861584
SBK.K.66.P5	4936142
SBK.K.66.VP5	4936143
SBS.K.66.P5	4936140
SBK.K.166	4930269
SBK.K.E.5	4935956
SBS.K.60	2861656
SBS.K.166	4930271
ZV-RT 60 RC SL	2312155
	Corona 70 / Corona SI 82
BK 60 SL	1919553
FH.152	4949428
FH.R.152	4995853
FT WSK 61	1497653
RT.MSL.3	5007006
SA 60 SL	1929209
SBA.K.166	4930272
SBK.K.61.166.BS	2920433
SBK.K.166	4930269
SBK.K.166.V	4930270
SBS.K.166	4930271
SBK.K.E.3	4935945
SBS.K.PAD.166.LS	4995619
SBS.K.PAD.166.RS	4995618
ZV-RT 60 RC	2312155
	Trocal (Profine)
	88+
FT WSK 42	1320680
SA SL	1895985
SBA.K.126	4926196
SBK.K.126.VP3	4998434
SBS.K.126.ZN	4926198
SBK.K.E.126	4942834
SBS.K.PAD.126.RS	4995604
SBS.K.PAD.126.LS	4995605
ZV-RT 26/9/13 RC SL	2047769
	InnoNova 70 A5 / M5
BK 226 RC SL	2393055
FH.152	4949428
FH.R.152	4995853
FT WSK226	2304155
RT.MSL.3	5007006
SA SL	1895985
SBA.K.226	2921090
SBK.K.10.BS	4994366
SBK.K.E.3	4935945
SBK.K.226.P5	2921217
SBK.K.226.VP5	2921233
SBS.K.226.P5	2921137
SBS.K.PAD.226.LS	4995627
SBS.K.PAD.226.RS	4995626
ZV-RT 226 RC	2389494

	76 AD / 76 MD
AS SBA.K.T.13-4	4937781
BK 60 SL	1919553
BK 61 RC SL	4933092
FH.205	4949429
FH.L.205	5002710
FH.R.205	4995854
FT WSK 61	1497653
FT WSK205	1809590
RT.MSL.3	5007006
SA 60 SL	1929209
SBK.K.10.BS	4994366
SBA.K.152+0.5	4938952
SBK.K.205.P5	4996028
SBK.K.205.VP5	4996027
SBK.K.E.4	4935954
SBS.K.205.P5	4996029
SBS.K.PAD.205.LS	4995625
SBS.K.PAD.205.RS	4995624
ZV-RT 169 RC SL	2398147
	VEKA
	Softline 70 AD/MD, Topline AD, Swingline, Alphasine
AS SBA.K.T.13-3	4937780
BK 552 RC SL	2522321
FH.152	4949428
FH.R.152	4995853
FH.R.152.M10	5011126
FT WSK152	1787079
RT.MSL.3	5007006
SA OF 126 SL	2859513
SA 152 SL	2366946
SBA.K.152	2824062
SBA.K.152+0.5	4938952
SBK.K.152.BS.LGR	4970470
SBA.K.152.DFE-TFE.LS	4939503
SBA.K.152.DFE-TFE.RS	4939502
SBK.K.152	4938546
SBK.K.152.P5	4939133
SBK.K.152.V	4938547
SBK.K.152.VP5	4939137
SBS.K.152	4990061
SBS.K.152.P5	4938954
SBK.K.E.3	4935945
SBS.K.152.S	4937038
SBS.K.PAD.152.RS	4995610
SBS.K.PAD.152.LS	4995611
SBA.K.552+0.5	4994829
ZV-RT 452/13 SL	2074732
	Wymar
	2500
FH.152	4949428
FH.R.152	4995853
RT.MSL.3	5007006
SBA.K.14	4936196
SBK.K.14	4936198
SBS.K.14	4936197
FT WSK 61	1497653
SA 152 SL	2366946
BK 552 RC SL	2522321
ZV-RT 61 RC SL	1213944
	3000
AS SBA.K.T.13-5	4937782
FH.161	4949431
FH.R.161	4995855
RT.MSL.3	5007006
SA 152 SL	2366946
SBA.K.114	4936243
SBK.K.114	4936246
SBS.K.114	4936244
FT WSK 66	1530185
SA 66 SL	2209887
ZV-RT 162 SL	2088350



Punches for window fittings

Punch BST AP/FS

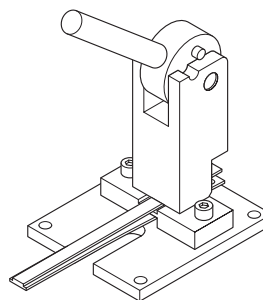
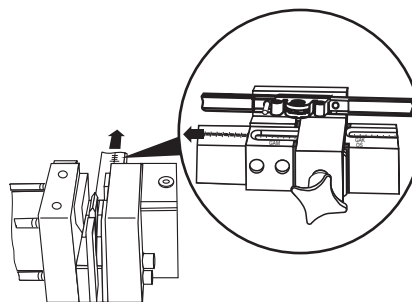
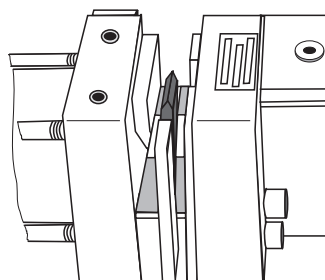
- Used to cut fitting elements
- Punch including footswitch
- Pedal operated
- Can be used together with fitting ruler
- Required operating pressure 6 bar

Ruler LIN AP/FS

- Dimensional positioning of the fitting elements to be cut
- Cutting of both central and constant parts

Fitting punch, lever AP.HH

- Serves as repair punch – not suitable for permanent use
- Manual operation
- Used to cut fitting elements



Item description	Item No.	VPA1		VPA2	
		Qty.	Type	Qty.	Type
BST AP/FS	1466339	1	GK	12	EK
LIN AP/FS LS	1466321	20	L2		
AP.HH	4970430	1	KT	48	EA

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Tilt hinges **8**

Extension rods **9**

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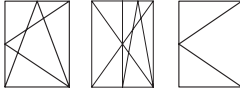
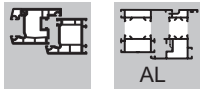
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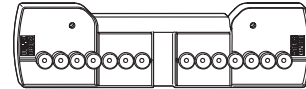
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maintenance **14**

Installation drawings **15**



Drilling jig

LE.B.EL-SL.K



- Drilling jig to drill the pilot holes for corner and shear hinges
- Overlap dimension adjustable from 18 to 22 mm
- Preadjusted to a defined dimension

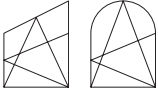
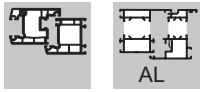
LE.B.EL-SL.K.3-3

- For hinge with 3 mm pin

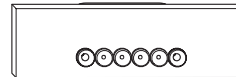
LE.B.EL-SL.K.BR

- For 130 kg hinge

Item description	Item No.	Overlap
LE.B.EL-SL.K-18	4966329	18
LE.B.EL-SL.K-20	4966340	20
LE.B.EL-SL.K-21	4966341	21
LE.B.EL-SL.K-22	4966342	22
LE.B.EL.SL.K. 3-3-18	4966343	18
LE.B.EL.SL.K. 3-3-20	4966345	20
LE.B.EL.SL.K. 3-3-21	4966346	21
LE.B.EL.SL.K. 3-3-22	4966347	22
LE.B.EL.SL.K. BR-18	4966348	18
LE.B.EL.SL.K. BR-20	4966350	20
LE.B.EL.SL.K. BR-21	4966351	21
LE.B.EL.SL.K. BR-22	4966352	22



Drilling jig studio shear LE.B.SW-A



Drilling jig studio shear LE.B.SW-A

- Drilling jig to make pilot holes
- Fixed overlap dimension
- For studio windows

Drilling jig round arch LE.B.SWR

- (without figure)

Item description	Item No.
LE.B.SW-A 18.3-3	4978111
LE.B.SW-A 18.6-3	4978097
LE.B.SW-A 20.3-3	4978112
LE.B.SW-A 20.6-3	4978098
LE.B.SW-A 21.6-3	4978099
LE.B.SW-A 22.6-3	4978110
LE.B.SWR	1467446

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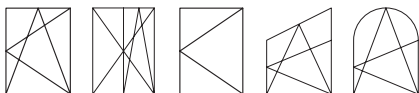
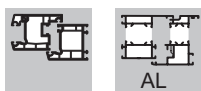
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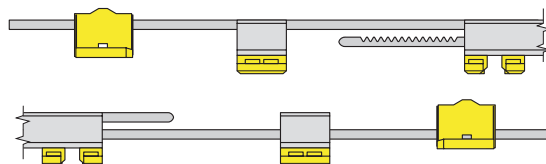
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Jigs

- Used to position keeps in frame rebate
- Can be used left and right hand
- How to use please see mounting instructions

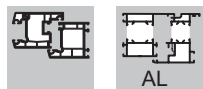


Different models:

- LE.N.K jig, constant handle position
- LE.N.T jig, central handle position (telescopic jig), locking drive GAM
- LE.N.T.ST jig, central handle position (telescopic jig), double-sash windows
- LE.N.T.GAVM jig, central handle position (telescopic jig) locking drive GAVM



Item description	Item No.
LE.N.T.GAVM 300	4936773
LE.N.T.GAVM 420	4937047
LE.N.T.GAVM 620	4937061
LE.N.T.GAVM 920	4937063
LE.N.T.GAVM 1320	4937064
LE.N.T.GAVM 1850	4937065
LE.N.T.ST.0550-1200	4926548
LE.N.T.ST.1201-2170	4926549
LE.N.K.0290-0709	4926540
LE.N.K.0710-1100	4926541
LE.N.K.1101-1550	4926542
LE.N.K.1551-2225	4926543
LE.N.K.2225-4	4941065
LE.N.T.0710-1050	4926545
LE.N.T.1051-1800	4926546
LE.N.T.1801-2300	4926547

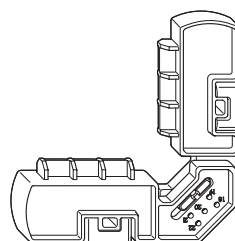


Drilling jig – Sash hinges LE.B.FL.K

- For sash hinges FL.K and FL.KB (except for FL.K...130)
- Drilling jig to pre-drill holes for sash hinge
- Fixed overlap dimension
- Fixed groove central position

Drilling jig sash hinge LE.B.FL.FK

- For sash hinge FL.K...130
- Drilling jig to pre-drill holes for sash hinge
- Fixed overlap dimension
- Fixed groove central position



Item description	Item No.	Overlap	Groove centre position
LE.B.FL.K 20-9	4977449	20	9
LE.B.FL.K 21-9	4977450	21	9
LE.B.FL.K 22-9	4977451	22	9
LE.B.FL.FK 20-9	4977453	20	9
LE.B.FL.K 20-13	4926550	20	13
LE.B.FL.K 21-13	4940819	21	13
LE.B.FL.K 22-13	4977452	22	13
LE.B.FL.FK 20-13	4933842	20	13
LE.B.FL.FK 21-13	4940818	21	13
LE.B.FL.FK 22-13	4977456	22	13

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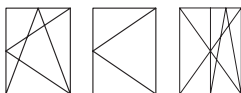
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Various jigs

LE.N.T.SBS.K.160 WK2

- Jig for positioning SBS.K.160 WK2, central handle position (telescopic jig)

LE.N.K.SBS.160 WK2

- Jig for positioning SBS.K.160 WK2, constant handle position

LE.N.T.ST.SBS.K160WK2

- Jig for positioning SBS.K.160.WK2 on double-sash windows, central handle position

LE.B.K.SB144

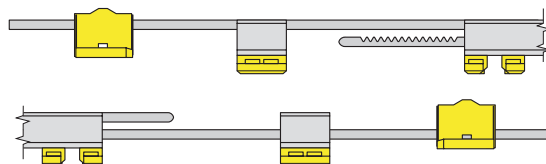
- Drilling jig for pre-drilling the screw holes of keeps series 144, constant handle position

LE.B.T.SB144

- Drilling jig for pre-drilling the screw holes of keeps series 144, central handle position

LE.B.T.ST.SB144

- Drilling jig for pre-drilling the screw holes of keeps series 144 on double-sash windows, central handle position



Item description	Item No.	Scope of application
LE.N.T.SBS.K.160 WK2 0710-1050	4952611	710 - 1050
LE.N.T.SBS.K.160 WK2 1051-1801	4952615	1051 - 1801
LE.N.T.SBS.K.160 WK2 1801-2300	4952617	1801 - 2300
LE.N.K.SBS.160 WK2 0209-0709	4952620	209 - 709
LE.N.K.SBS.160 WK2 0710-1100	4952622	710 - 1100
LE.N.K.SBS.160 WK2 1101-1550	4952623	1101 - 1550
LE.N.K.SBS.160 WK2 1551-2225	4952624	1551 - 2225
LE.N.K.SBS.160 WK2 2225-4	4952625	1975 - 2225
LE.N.T.ST.SBS.K160WK2 550-1200	4952626	550 - 1200
LE.N.T.ST.SBS.K160WK2 1201-217	4952627	1201 - 217
LE.B.K.SB144.SL16.0250-0709	4941299	250 - 709

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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 height 270 mm (see also Group 1)
- Max. sash rebate width 1725 mm
- From 1475 mm sash rebate width with additional shear ZSR
- Min. sash rebate height 230 mm
- Max. sash rebate height 2,800 mm
- Max. sash size 3 m²
- Max. sash weight 100/130 kg
- (1 mm glass thickness = 2.5 kg/m²)
- Ratio between sash rebate width : sash rebate height ≤ 2:1



Note: In order to ascertain the permissible sash sizes and sash weights, please refer to the diagrams in the chapter "General Product Information".

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 and sash weights!

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.



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.

The respective fitting may only consist of the original Winkhaus proPilot fitting parts. We do not assume any liability in case third-party or non-approved system components are used.

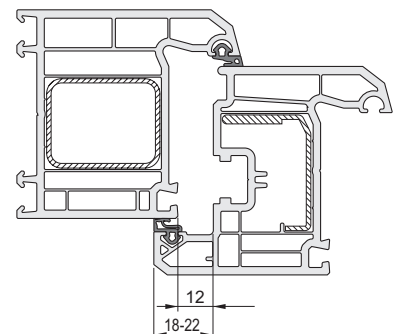


Attention! Winkhaus does not provide fastening screws for fittings assembly. Always use fastening screws suitable for the window type and window dimensions.

Standard profile dimensions

See figure: Profile cross-section

The fitting is suitable for all PVC-U windows with standard fitting groove (eurogroove position 9 or 13 mm) and designed for an airgap of 12 mm and overlaps of 18 to 22 mm.



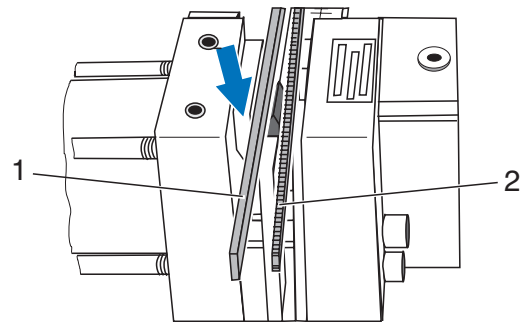
Profile cross-section

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

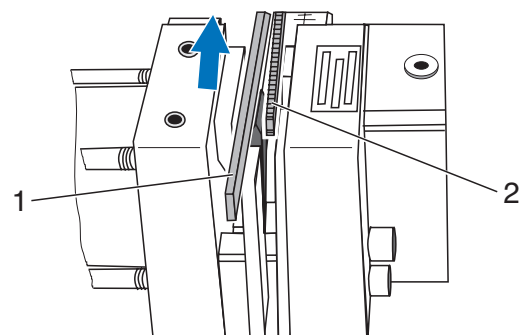
- Always insert the face plate (1) and drive rod (2) perpendicularly from the top with the face plate (1) pointing to the pressure cylinder.



Fittings prior to punching

See figure: Fittings after punching

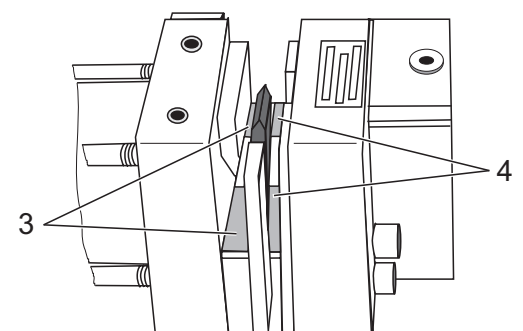
- After punching, always remove the face plate (1) and drive rod (2) perpendicularly in an upwards direction.



Fittings after punching

See figure: Cleaning the supporting surfaces

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



Cleaning the supporting surfaces

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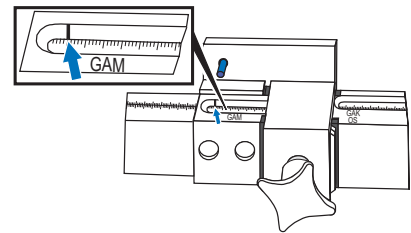
Shorten the drive rod GAM (central handle position)

See figure: Marking GAM

- Set measuring value FFH on the measuring device to the GAM mark.



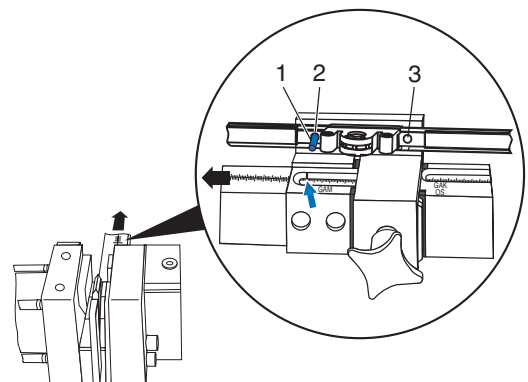
Attention! If the GAM scale is displaced by one sub-marking, this corresponds to a longitudinal shift of 2 mm.



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.



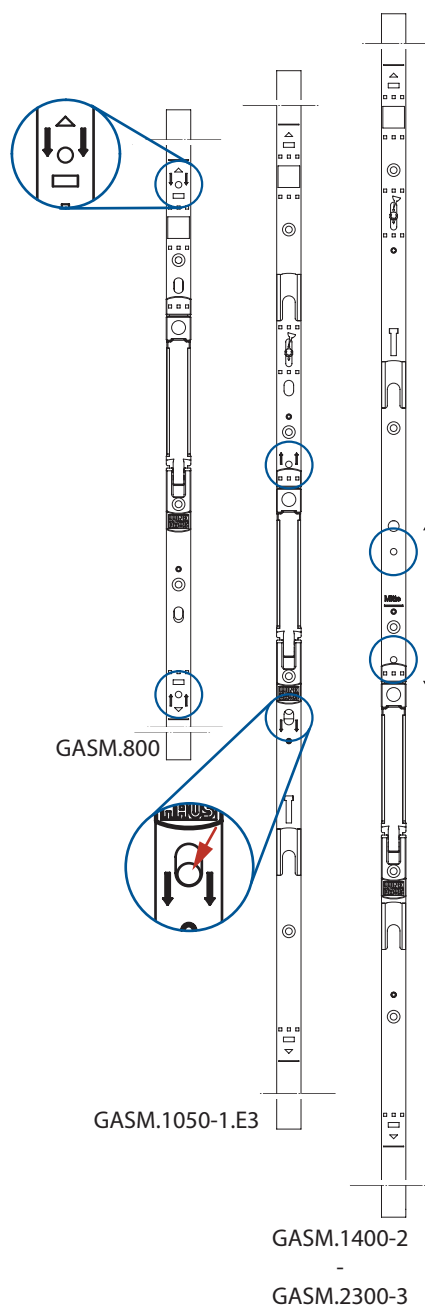
Position for shortening drive rod

Cutting of double sash drive rods GASM

GASM.800

See figure: Cutting instructions GASM

- Adjust the ruler to FFH + 400 mm (example: measured FFH = 567; adjust ruler to 567mm + 400 mm = 967 mm).
- Connect the drive to the marked hole on the ruler (arrows pointing to cutter).
- Cut off the element.



Cutting instructions GASM

GASM.1050 – GASM.2300

See figure: Cutting instructions GASM

- Adjust the ruler to FFH (sash rebate height).
- Connect the drive to the marked hole on the ruler (arrows pointing to cutter).
- In case of GASM.1050 please make sure that the bolt in the elongated hole is positioned as indicated (red arrow).
- Cut off the element.
- GASM.1050 is always used in combination with corner drive E3.



Note: The double-sash drive rod must be trimmed before delivery.

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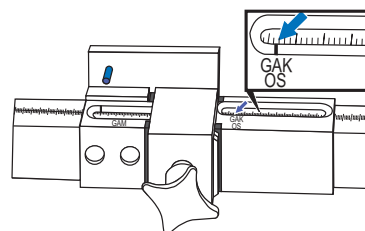
Shorten the GAK / GASK drive rod (constant handle position) and top rod OS



Note: The double-sash drive rod must be trimmed before delivery.

See figure: Markings GAK and OS

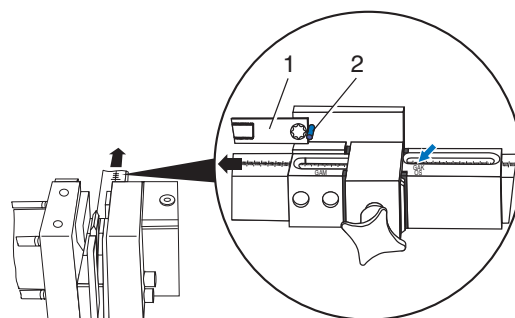
- Set the measuring value FFH (GAK/GASK) or FFB (OS) on the measuring device to the GAK/OS mark.



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).

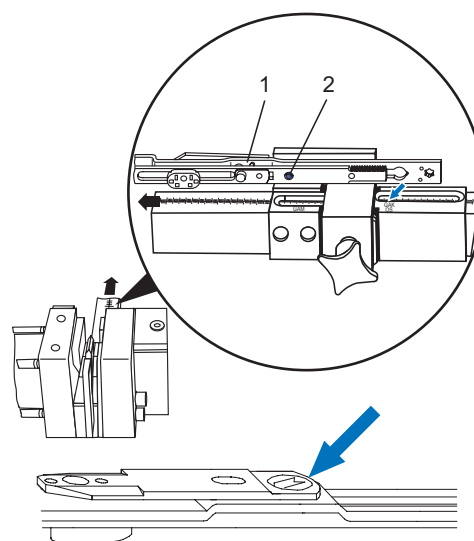


Position for shortening drive rod and/or top rod

Only applies to top rod OS1.600 (OS1.PA.600/OS.XL):

See figure: Position for shortening top rod

- Position the top rod (1) with square holes at bolt (2). Press the offset (see arrow) against the bolt (2).
- Shorten the top rod (1).



Position for shortening top rod

Mounting of fittings on sash

Turn-tilt type – Rectangular window

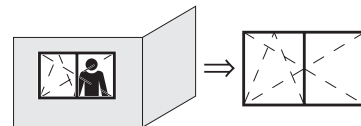
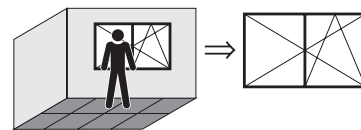
Prepare the window for fitting. Then proceed as follows:



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.

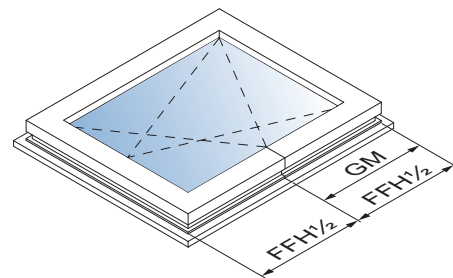


Determine the handle height:

Handle height for drive rod GAM

See figure: Sash rebate height FFH with central handle height GM

If you use a GAM drive rod ... (central handle position), the dimension GM is half the sash rebate height FFH.

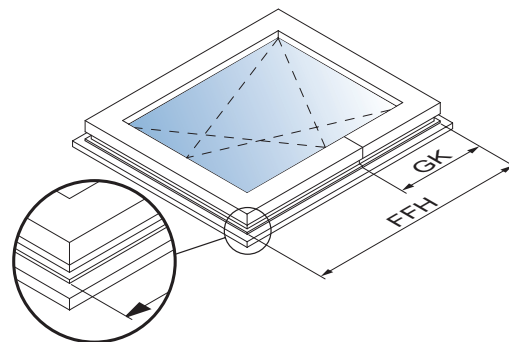


Sash rebate height FFH with central handle height GM

Handle height for drive rod GAK

See figure: Sash rebate height FFH with constant handle position GK

If you use a GAK drive rod ... (constant handle position), dimension GK changes to reflect the sash rebate height FFH. The exact dimensions are specified in the following table.



Sash rebate height FFH with constant handle position GK

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See figure: Synoptical table: sash rebate height (FFH) / handle position (GK)

The table on the right gives a survey on the handle height (GK) of GAK with regard to the sash rebate height (FFH).

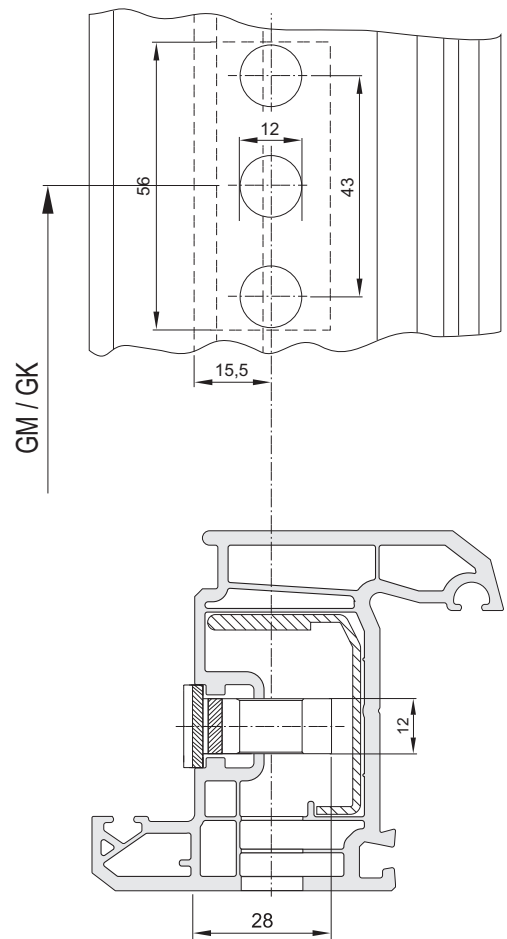
230 – 324	GK = 114 *
325 – 420	GK = 114 *
421 – 460	GK = 210
461 – 700	GK = 210
701 – 850	GK = 260
851 – 1100	GK = 375
1101 – 1325	GK = 550
1326 – 1525	GK = 550
1526 – 1775	GK = 550
1776 – 2000	GK = 1050
2001 – 2225	GK = 1050

Synoptical table: sash rebate height (FFH) / handle position (GK)

* Requires the use of E3 corner drive

See figure: Scale drawing "Gear lock"

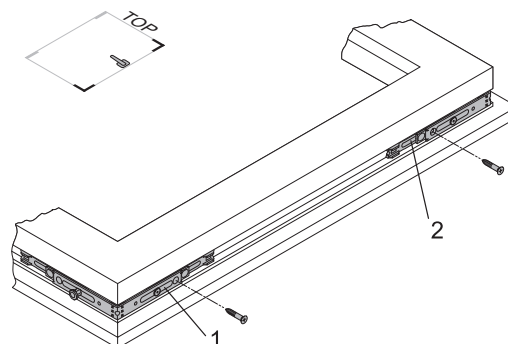
- Drill holes for gear case (ø 12 mm) as per scale drawing.
- Mill the gear housing from the rebate side.



Scale drawing "Gear lock"

See figure: Corner drive E1

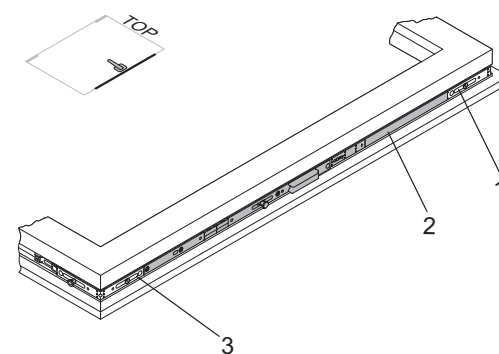
- Mounting of interlocking rods:
 - Fit the corner drive (2) into the fitting groove at the top of the sash so that the octagonal bolt is on the top side.
 - Fit the corner drive (1) into the fitting groove at the bottom of the sash so that the octagonal bolt is on the underside.
 - Fix both corner drives (1, 2) on the drive side with a single screw each.
 - Measure the sash rebate height (FFH).



Corner drive E1

See figure: Drive rod GAM/GAK

- Cut the drive rod according to the instructions.
- Mount the drive rod:
 - Abut the drive rod (2) flush against the corner drive (3).
 - Allow the teeth on the drive rod to click into position on the gear rack on the corner drive.
 - Clip the drive rod into the corner drive (1) in the same way.
 - Press the drive rod into the eurogroove.
 - Screw the drive rod from the bottom up.



Drive rod GAM/GAK



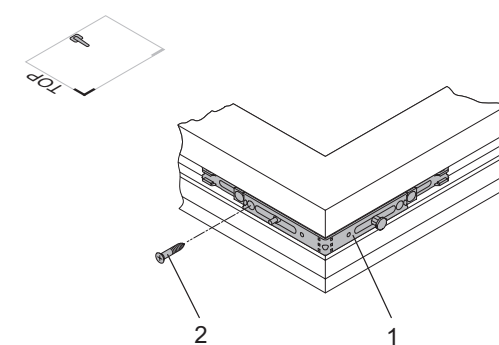
Remark: Please make sure that the installation position of the drive rod is correct!

See figure: Corner drive E2

- Mounting of E2 corner drive:
 - Fit the corner drive (1) into the fitting groove at the top of the sash so that the octagonal bolt is on the hinge side.
 - Fasten the corner drive on the sash using a screw (2).
 - Measure the sash rebate width (FFB).



Please note: If you use an OS1.600 top rod, replace corner drive E2 with corner drive E3.



Corner drive E2

- Cut the top rod (see chapter 'Shortening the fittings').



Please note: For FFH < approx. 600 mm (depending on profile), place tilt limiter on top rod OS... (2).

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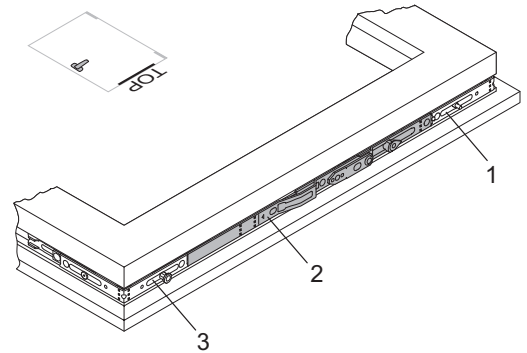
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See figure: Top rod OS

- Insert the top rod and screw into position.
 - Fit the top rod flush against the corner drive (1).
 - Allow the gear teeth to click into place on the rack in the corner drive.
 - Clip the top rod into the corner drive (3) in the same way.
 - Press the top rod into the fitting groove.
 - Screw the top rod from the hinge side to the drive side.



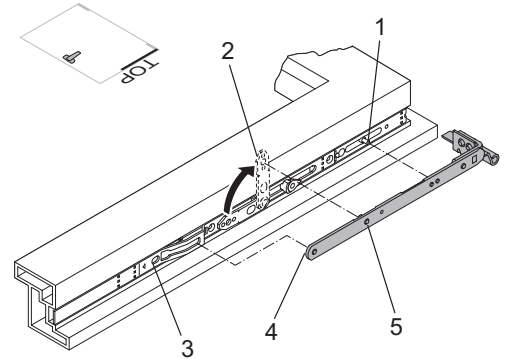
Top rod OS

See figure: Shear SK

- Mounting 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).



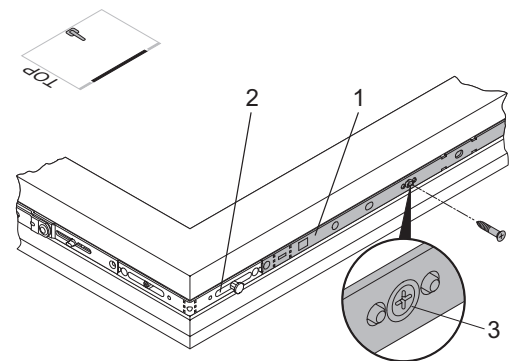
Warning! Risk of Injury. The sash can fall out and cause injuries if the shear and top rod are not securely fastened.



Shear SK

See figure: Interlocking rod M/MK (hinge side)

- Install Interlocking Rod on the hinge side.
 - Fit the interlocking rod (1) flush against the corner drive (2).
 - Click the interlocking rod gears into the teeth of the corner drive.
 - Press the interlocking rod into the fitting groove.
 - Screw the interlocking rod from the top down.
 - Tighten the screw (3) fully to release the central fastening.



Interlocking rod MK (hinge side)



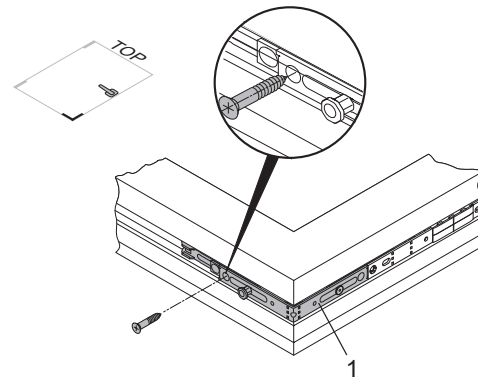
Please note: For a sash rebate height (FFH) and/or sash rebate width (FFB) of approx 800 mm (depending on the profile) an interlocking rod should also be fitted hinge-side and/or horizontally at the bottom / top.



Attention! Damage to fittings. If the central fastening is not released, the gearing cannot be actuated. Use of force will lead to torsion of the fittings. Always insert the screw fully up to the stop.

See figure: Corner drive E1

- Screw the corner drive (1) in place.



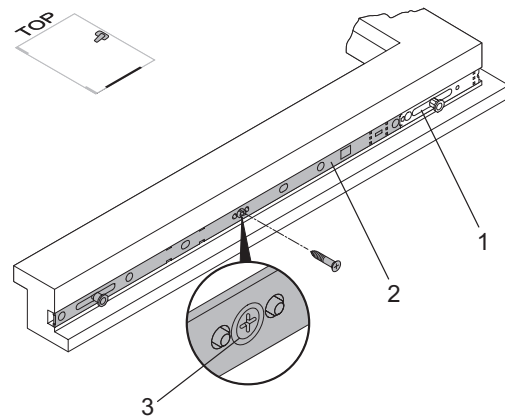
Corner drive E1



Please note: The following step is not needed, if you do not fit an interlocking rod to the corner drive.

See figure: Interlocking rod M/MK (horizontal)

- Mount interlocking rod on the underside:
 - Abut the interlocking rod (2) flush against the corner drive (1).
 - Click the interlocking rod gears into the teeth of the corner drive.
 - Press the interlocking rod into the fitting groove.
 - Screw the interlocking rod from the corner drive to the centre of the window.
 - Tighten the screw (3) fully to release the central fastening.



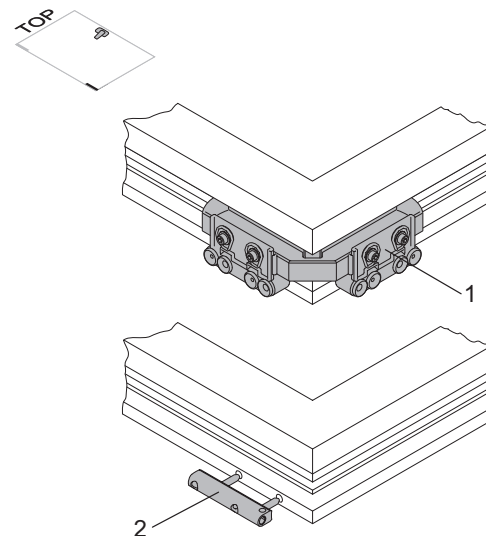
Interlocking rod M/MK (horizontal)



Attention! Damage to fittings. If the central fastening is not released, the gearing cannot be actuated. Use of force will lead to torsion of the fittings. Always insert the screw fully up to the stop.

See figure: Sash hinge FL.KA / Mounting jig LE.B.FL.K

- Fitting the sash hinge:
 - Position the mounting jig (1), clamp into the fitting groove and drill \varnothing 6 mm holes for the hinge plugs.
 - Pre-drill the screw holes through the first wall.
 - Insert the sash hinge (2) and fix it in place.
 - Make sure the sash hinge is fitted correctly into position.



Sash hinge FL.KA / Mounting jig LE.B.FL.K



Attention! Check if all screws are fixed into place on the fitting parts.

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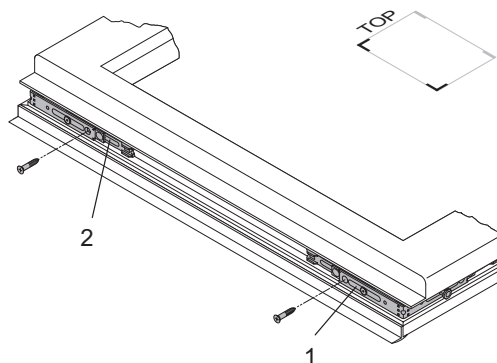
Turn double sash type – Rectangular window



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

See figure: Corner drive E1

- Mounting of interlocking rods:
 - Fit the corner drive (2) into the fitting groove at the top of the sash so that the octagonal bolt is on the top side.
 - Fit the corner drive (1) into the fitting groove at the bottom of the sash so that the octagonal bolt is on the underside.
 - Fix both corner drives (1, 2) on the drive side with a single screw each.
 - Measure the sash rebate height (FFH).



Corner drives E1

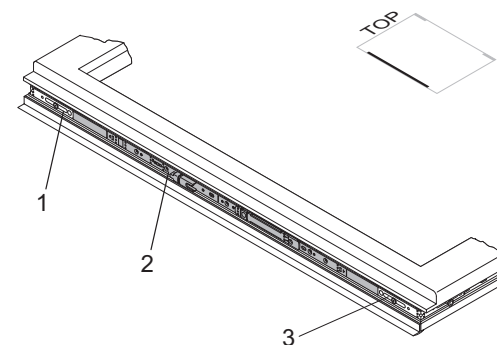
- Shorten the drive rod:
 - Shorten drive rod GASM or drive rod GASK in line with description "Shortening the fittings".



Please note: Make sure you shorten the drive rod in closed state (as delivered).

See figure: Drive rod GASM/GASK

- Mount the drive rod:
 - Abut the drive rod (2) flush against the corner drive (3).
 - Allow the teeth on the drive rod to click into position on the gear rack on the corner drive.
 - Clip the drive rod into the corner drive (1) in the same way.
 - Press the drive rod into the eurogroove.
 - Screw the drive rod from the bottom up.



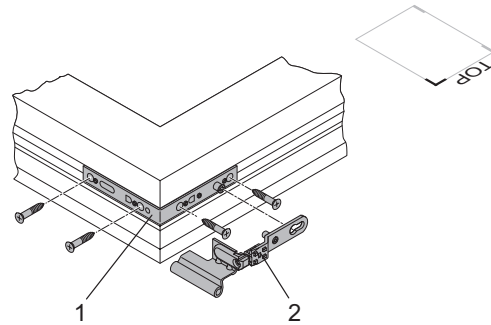
Drive rod GASM/GASK



Please note: To keep a neutral position, do not perform a function test until all fittings are in place.

See figure: Turn hinge bracket ERW/Turn hinge DL.K

- Mount the top hinge bracket and top hinge:
 - Fit the turn hinge bracket (1) into the eurogroove at the top of the sash so that the connecting bolt is on the top side.
 - Make sure the turn hinge bracket is flush.
 - Screw the turn hinge bracket onto the sash.
 - Insert the turn hinge (2) into the turn hinge bracket (1).



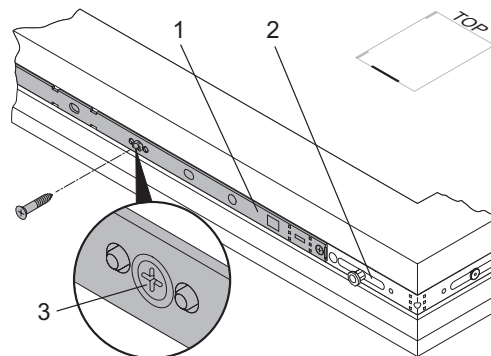
Turn hinge bracket ERW/Turn hinge DL.K



Please note: For a sash rebate height (FFH) and/or sash rebate width (FFB) of approx 800 mm (depending on the profile) an interlocking rod should also be fitted hinge-side and/or horizontally at the bottom / top. Observe the profile system supplier's processing guidelines in this respect.

See figure: Interlocking rod M (top)

- Mount the interlocking rod on the top side:
 - Fit the interlocking rod (1) flush against the corner drive (2).
 - Click the interlocking rod gears into the teeth of the corner drive.
 - Press the interlocking rod into the fitting groove.
 - Screw the interlocking rod tight from the hinge side to the gear side.
 - Tighten the screw (3) fully to release the central fastening.



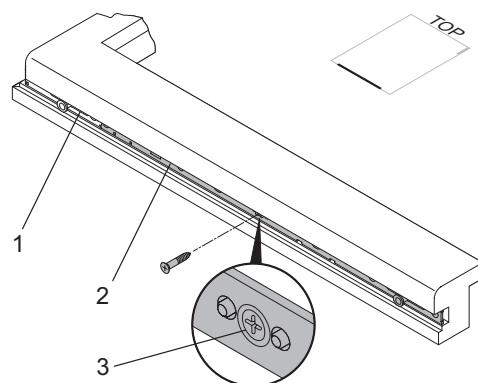
Interlocking rod M (top)



Attention! Damage to fittings. If the central fastening is not released, the gearing cannot be actuated. Use of force will lead to torsion of the fittings. Always insert the screw fully up to the stop.

See figure: Interlocking rod M (bottom)

- Mount interlocking rod on the underside:
 - See above



Interlocking rod M (bottom)

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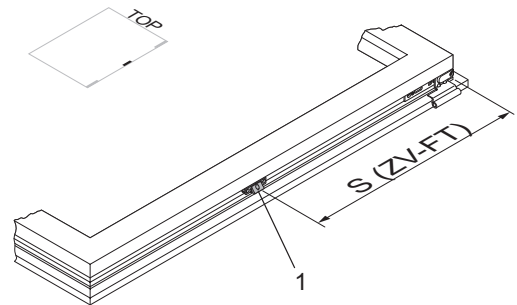
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See figure: Pull-in device ZV-FT (hinge side)

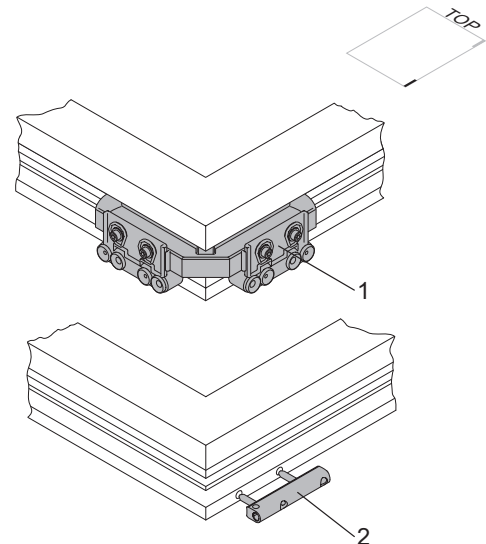
- Position the pull-in device (1):
 - S (ZV-FT) = sash rebate edge to centre of keep ZV-FT
 - Press the pull-in device into the eurogroove and screw in place.



Pull-in device ZV-FT (hinge side)

See figure: Sash hinge FL.KA / Mounting jig LE.B.FL.K

- Fitting the sash hinge:
 - Position the mounting jig (1), clamp into the fitting groove and drill $\varnothing 6$ mm holes for the hinge plugs.
 - Pre-drill the screw holes through the first wall.
 - Insert the sash hinge (2) and fix it in place.
 - Make sure the sash hinge is fitted correctly into position.



Sash hinge FL.KA / Mounting jig LE.B.FL.K

Mounting of fittings on the window frame

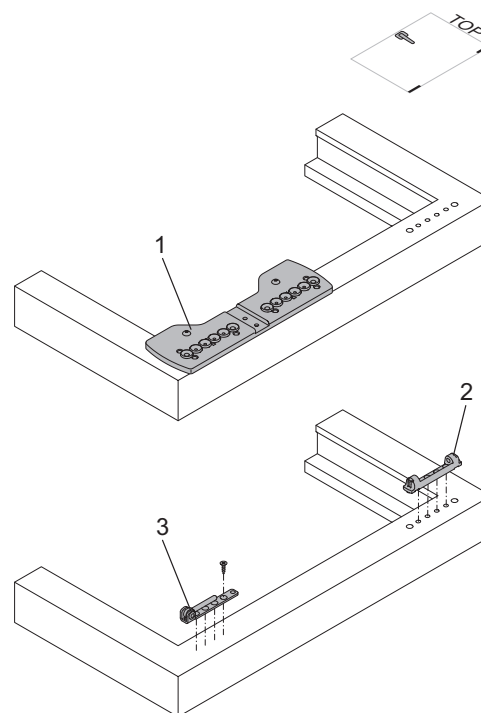
Turn-tilt type – Rectangular window

See figure: Holes for corner and shear hinges

- Pre-drill the holes for shear and corner hinges and pre-drill the pin positions with \varnothing 6 mm.
- 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



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.

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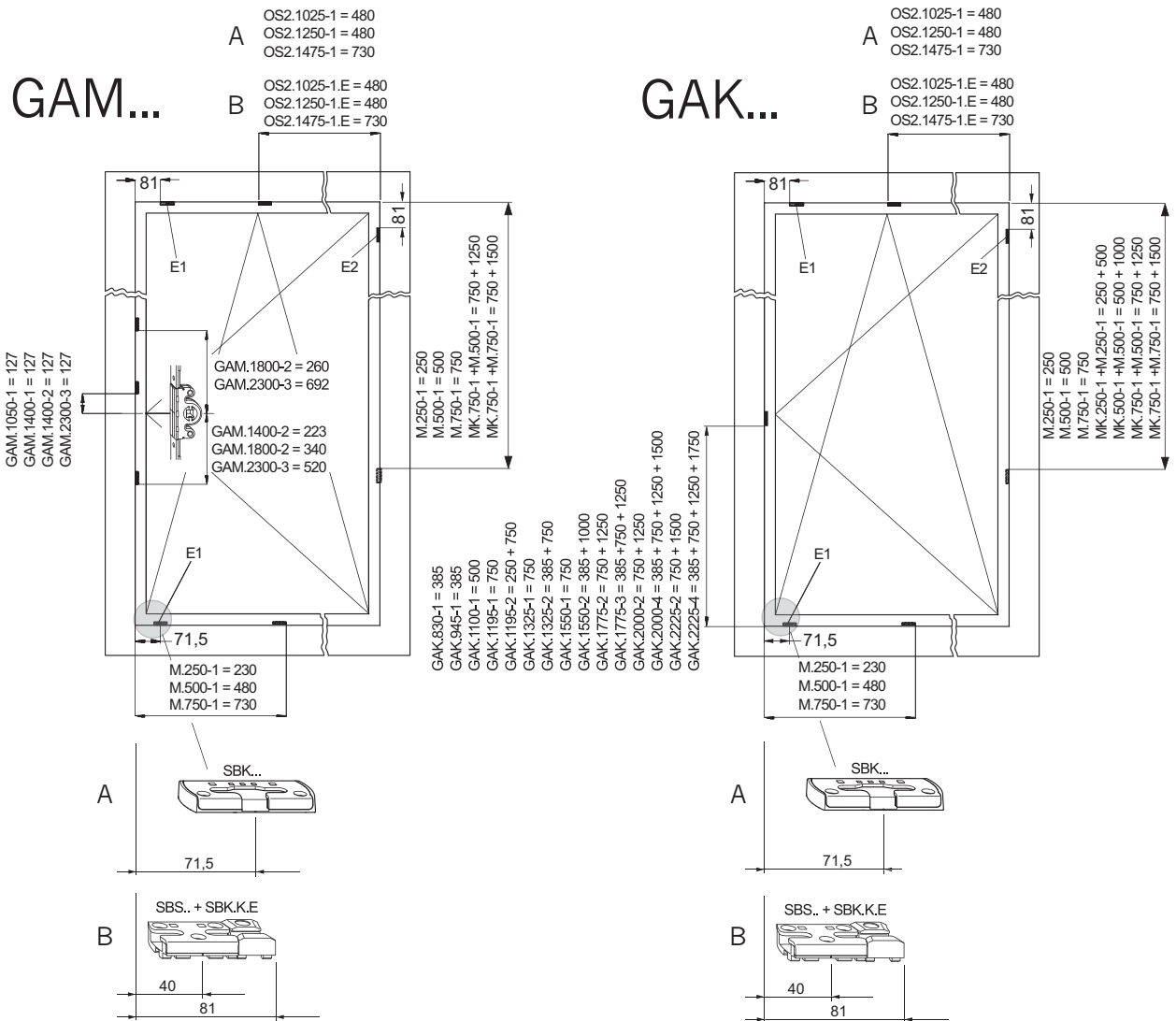
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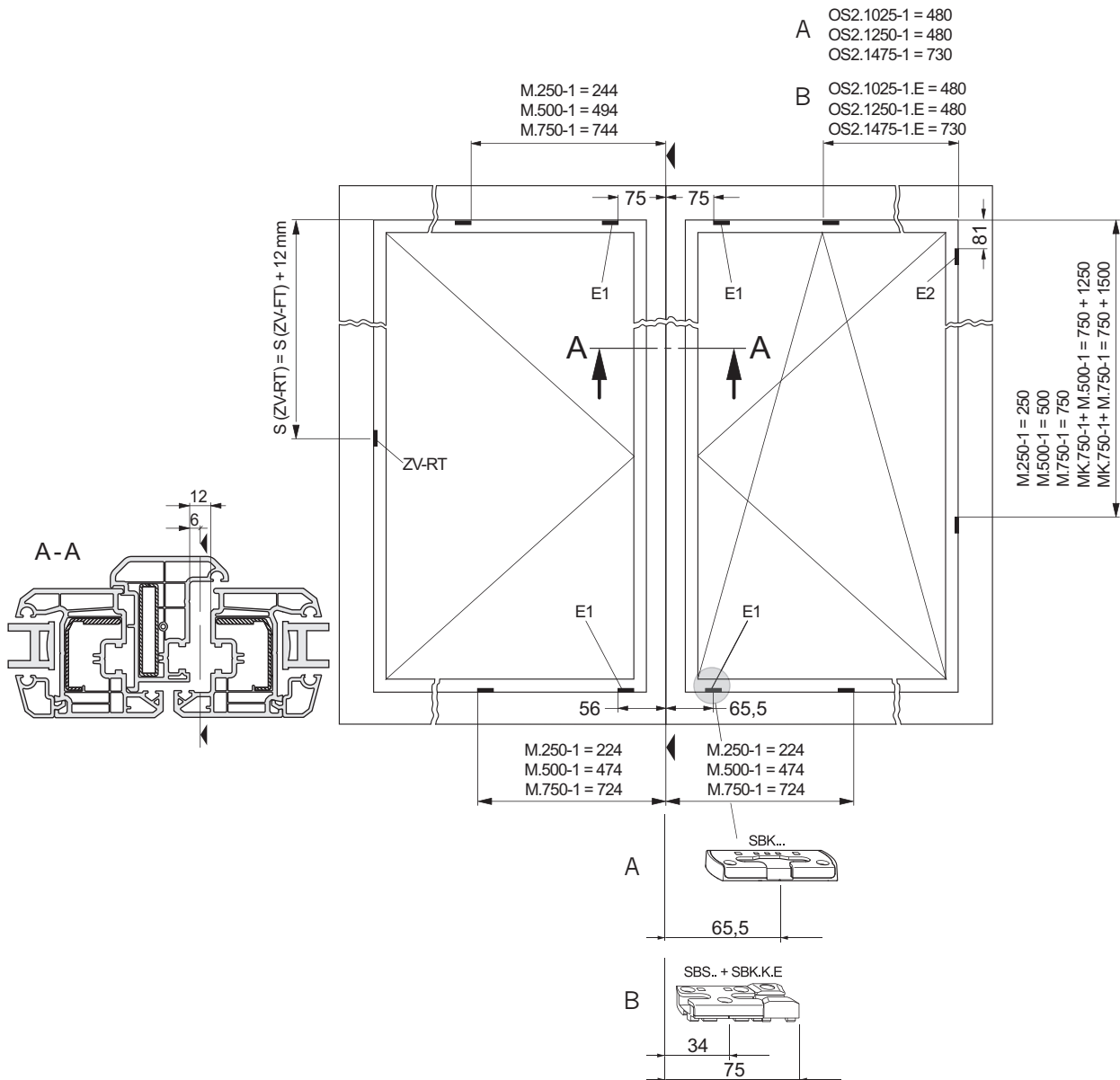
Turn-tilt window



A = standard operating sequence turn tilt
 B = operating sequence tilt before turn

The illustration GAM.../GAK... shows the keep positions for backsets D15.5, D7.5 and D25-50. They also apply to GAMA /GAKA drive rods.

Turn double sash type



Keep positions, double sash window D/DK

A = standard operating sequence turn tilt

B = operating sequence tilt before turn

S (ZV-FT) = sash rebate edge to centre of keep ZV-FT

S (ZV-RT) = frame rebate edge to centre of pull-in device ZV-FT

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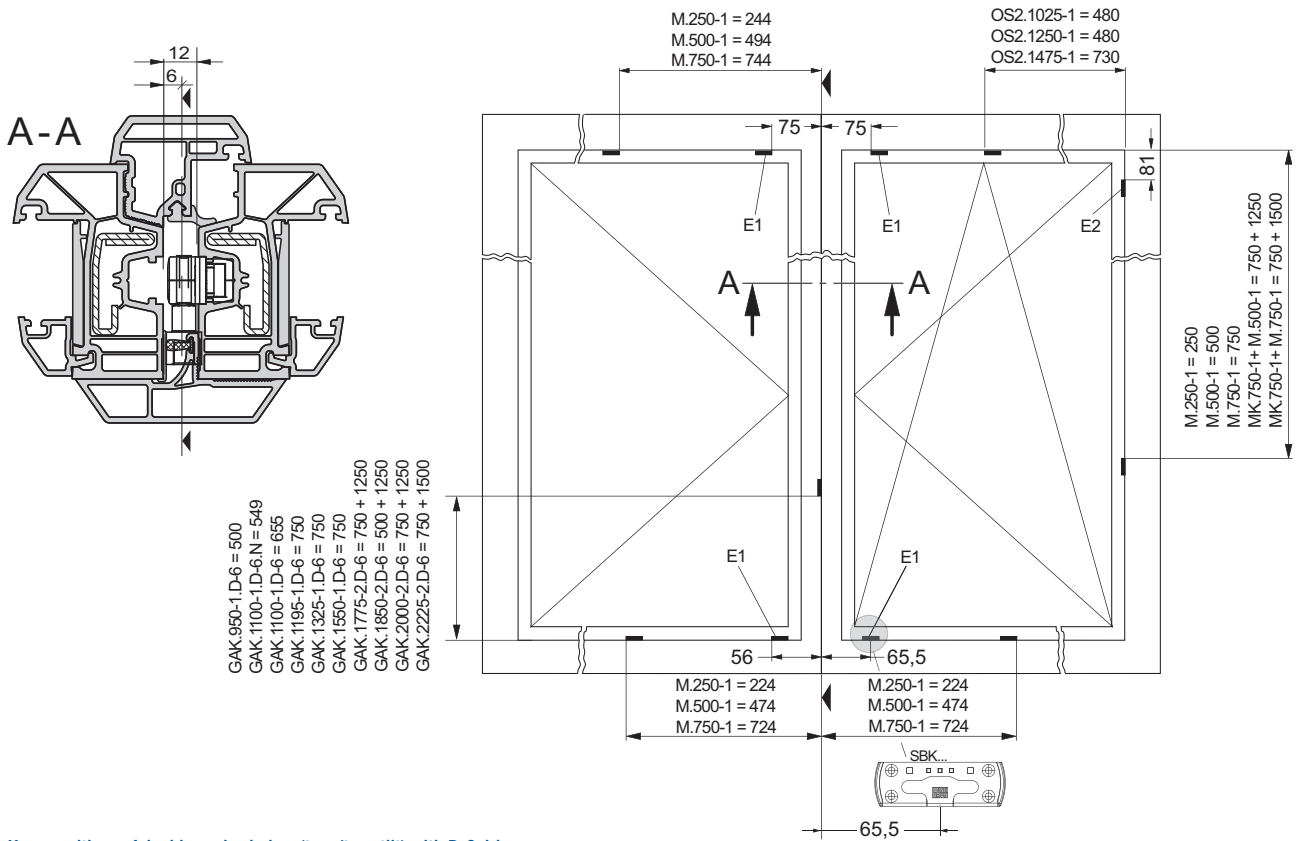
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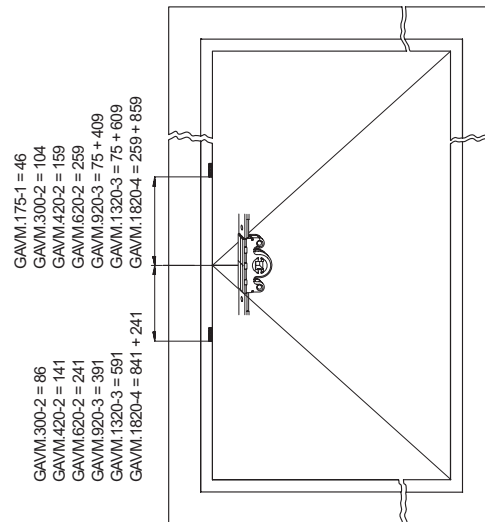
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Turn double sash type with D-6 drives



Keep positions of double-sash window (turn/turn-tilt) with D-6 drive

Turn type window with GAVM



Keep positions turn window with drive rod GAVM

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Fitting the keeps

Handling of mounting jigs is explained by reference to the L.E.N.K. 710-1100 mounting jig in the following. Other mounting jigs are handled in the same way. To position keeps, place the mounting jig on the frame rebate edge.

2

3

4

Labelling of mounting jigs

↔ Horizontal attachment = red element (for top rod and interlocking rod)

↑↓ Vertical attachment = yellow element (for drive rods and interlocking rods)

↕↔ Vertical / horizontal attachment = blue element (for corner drives)

→ = Keep run-in

5

6

7

Keep top horizontal

- Align the mounting jig with the yellow element in the top corner.
- Place the SBA keep on the blue element labelled "E1" and "E2".

8

9

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12

Keep for top rod OS...

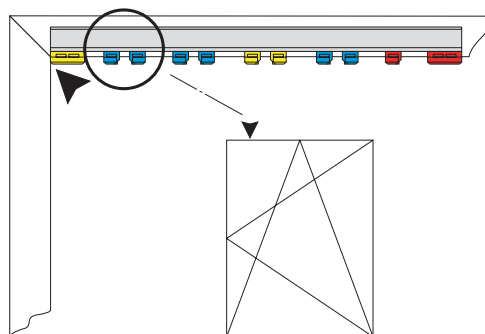
See figure: Keep for top rod OS...

- Align the mounting jig with the red element in the top corner.
- Place the keep SBA on the blue element labelled "OS. ...".

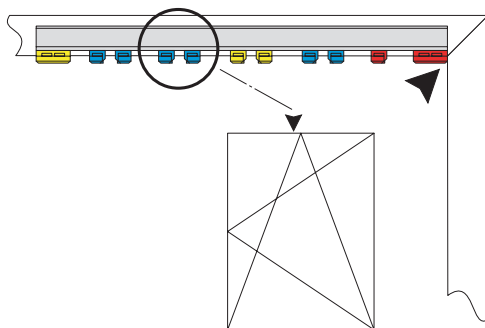
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Keep top horizontal



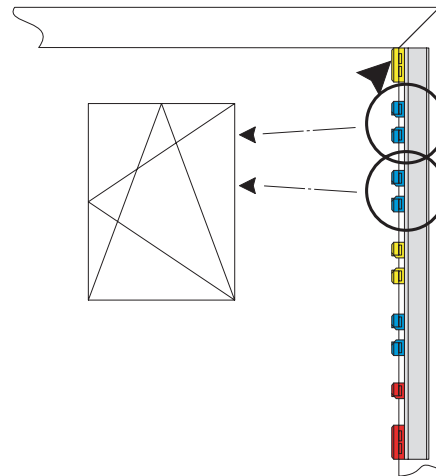
Keep for top rod OS...

Keeps hinge side

- Align the mounting jig with the yellow element in the top corner.
- Position the keep for the corner drive on the blue element.
- Position the keep for interlocking rod on the yellow element.



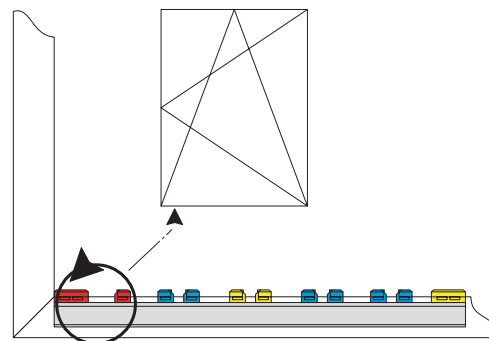
Note: The markings on the interlocking rod must match the marking on the yellow element.



Keeps hinge side

Tilt keep SBK... bottom horizontal

- Align the mounting jig with the red element in the lower corner.
- Place the SBK... keep on the red element marked "Kippblech SBK".

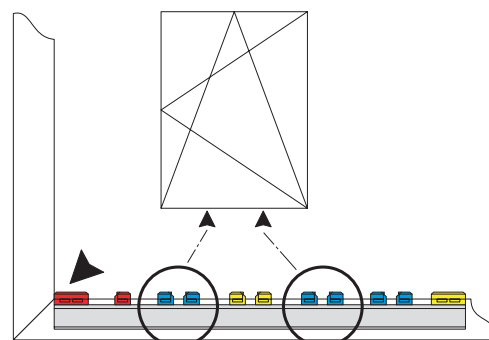


Tilt keep SBK... bottom horizontal

Interlocking Rod M, bottom, horizontal

See figure: M bottom horizontal

- Align the mounting jig with the red element in the lower corner.
- Position the keep on the blue element marked "M" or "MK".



M bottom horizontal

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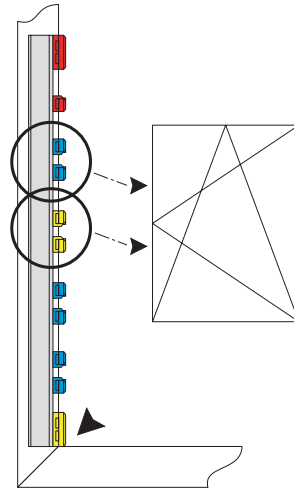
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Keeps SBA... for vertical GAK

See figure: SBA... for vertical GAK

- Align the mounting jig with the yellow element in the bottom corner.
- Place the SBA. ... keeps on the yellow and blue elements marked "GAK. ...".



SBA... for vertical GAK

Keeps for GAM

See figure: Keeps for GAM

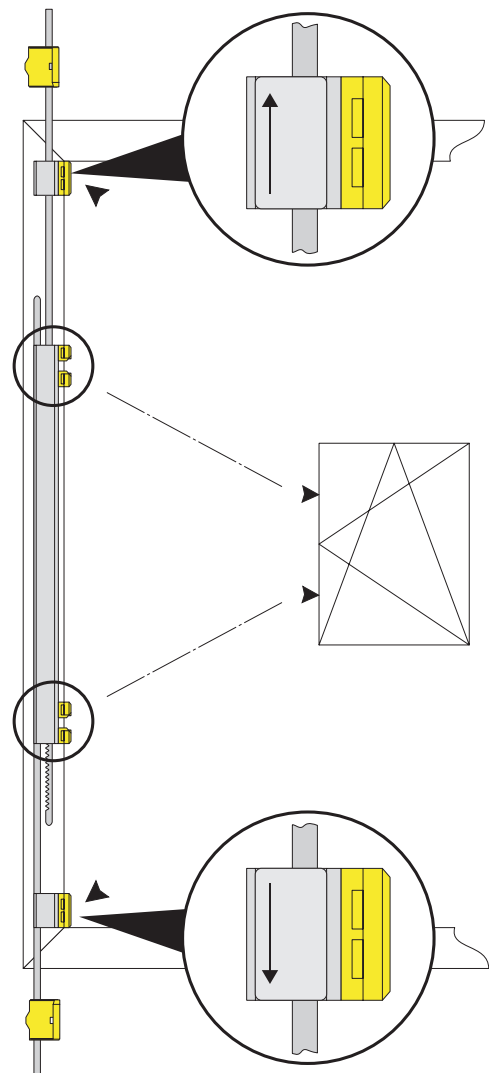
- Attach the corresponding mounting jig labelled "top" or "bottom".
- Fit keeps in line with the labelling on the mounting template.

There are three telescopic jigs depending on the window height:

- LE.N.T. 0710-1050 for drive rod GAM 1050-1
- LE.N.T. 1051-1800 for drive rod GAM 1400-1/2 / 1800-2
- LE.N.T. 1801-2300 for drive rod GAM 2300-3



Please note: The labelling on the drive rod must match the labelling on the yellow templates.



Keeps for GAM

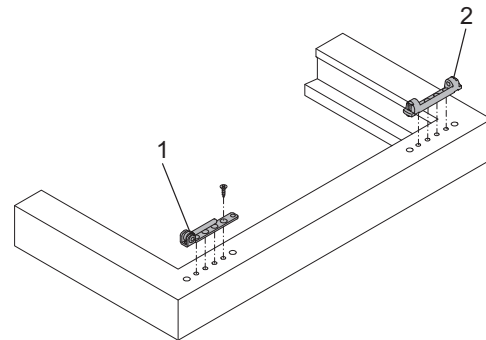
Mounting shear and corner hinges

See figure: Shear and corner hinges

- Fix the shear hinge (2) and corner hinge (1) with screws.



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



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.

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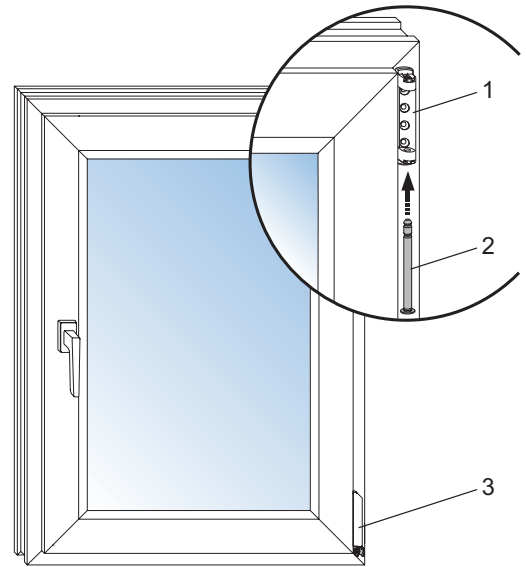
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Fitting the sash

- 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).



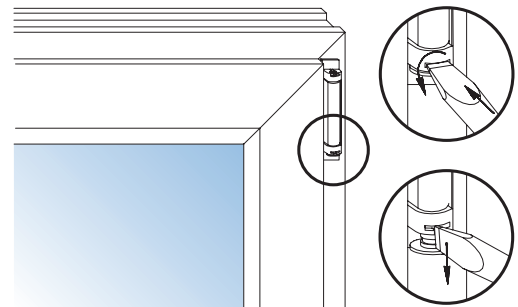
Shear and corner hinge

Removal 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

Support the sash!



In order to save the sash hinge and corner hinge from damage, sagging of the sash during assembly must be prevented (give horizontal support)!



Caution: Secure the window sash from falling. Take the heavy sash weight into account!

Mounting of fittings on sash

Turn-tilt type – studio window

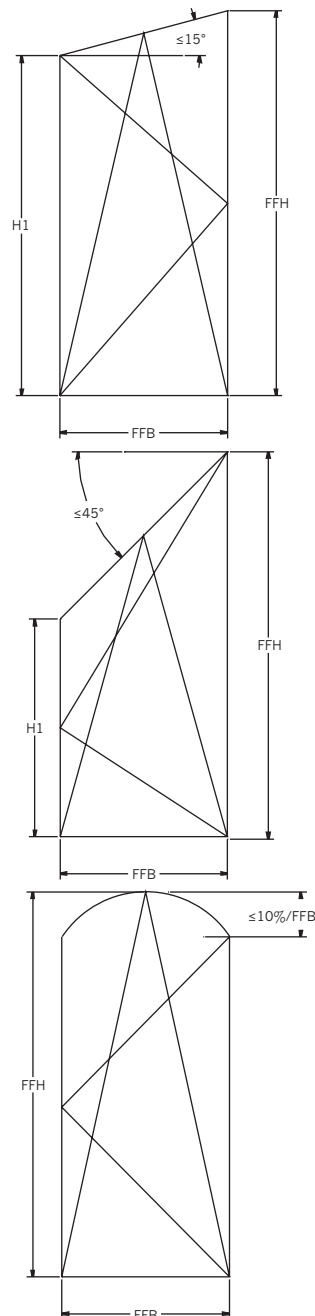
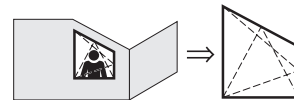
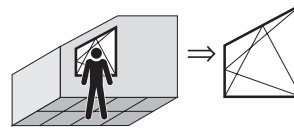
Prepare the window for fitting. Then proceed as follows:



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.



Possible frame variants

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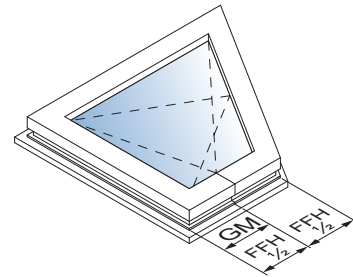
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Determine the handle height:

Handle height for drive rod GAM

See figure: Sash rebate height FFH with central handle height GM

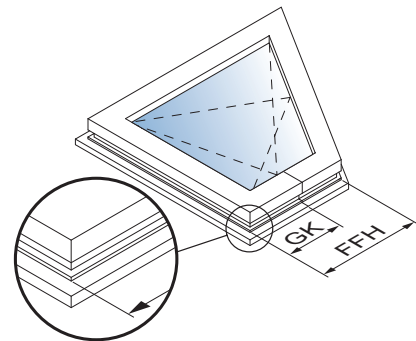
If you use a GAM drive rod ... (central handle position), the dimension GM is half the sash rebate height FFH.



Sash rebate height FFH with central handle height GM

Handle height for drive rod GAK

If you use a GAK drive rod ... (constant handle position), dimension GK changes to reflect the sash rebate height FFH. The exact dimensions are specified in the following table.



Sash rebate height FFH with constant handle position GK

See figure: Synoptical table: sash rebate height (FFH) / handle position (GK)

The table on the right gives a survey on the handle height (GK) of GAK with regard to the sash rebate height (FFH).

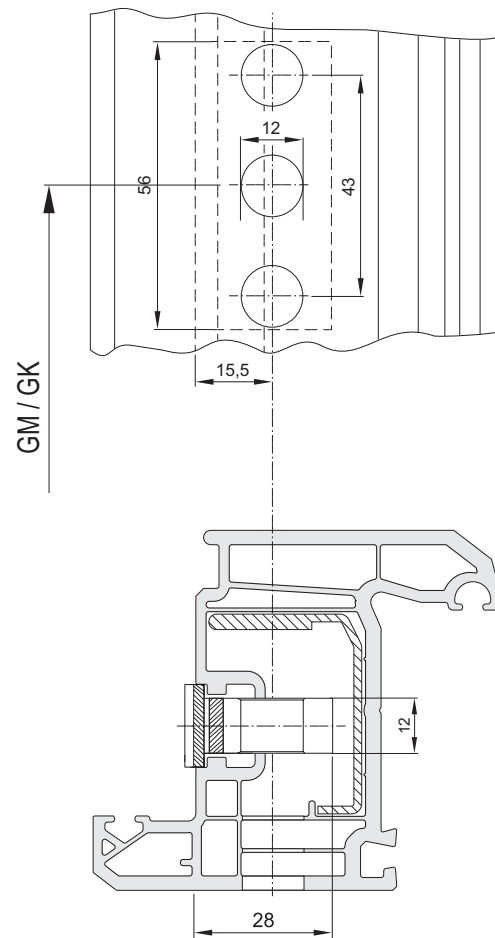
230 – 324	GK = 114 *
325 – 420	GK = 114 *
421 – 460	GK = 210
461 – 700	GK = 210
701 – 850	GK = 260
851 – 1100	GK = 375
1101 – 1325	GK = 550
1326 – 1525	GK = 550
1526 – 1775	GK = 550
1776 – 2000	GK = 1050
2001 – 2225	GK = 1050

Synoptical table: sash rebate height (FFH) / handle position (GK)

* Requires the use of E3 corner drive

See figure: Scale drawing "Gear lock"

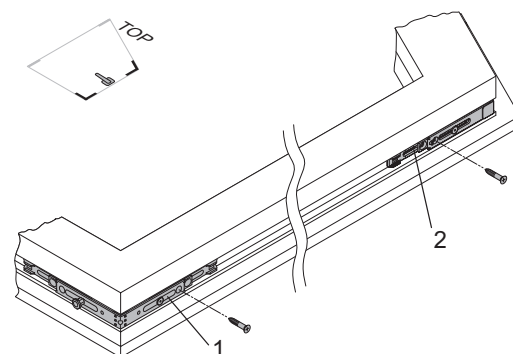
- Mill the gear housing from the rebate side.
- Drill holes for gear case (\varnothing 12 mm) as per scale drawing.



Scale drawing "Gear lock"

See figure: Corner drives E1 (1), E1.A (2)

- Mounting of interlocking rods:
 - Fit the corner drive (2) into the fitting groove at the top of the sash so that the octagonal bolt is on the top side.
 - Prior to insertion, bend the corner drive E1.A to rectangular shape.
 - Fit the corner drive (1) into the fitting groove at the bottom of the sash so that the octagonal bolt is on the underside.
 - Fix both corner drives (1, 2) on the drive side with a single screw each.



Corner drives E1 (1), E1.A (2)

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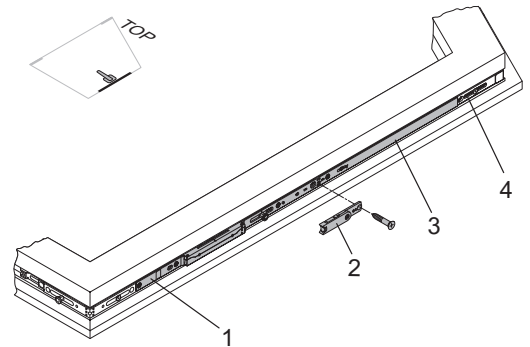
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See figure: Drive rod GAM/GAK

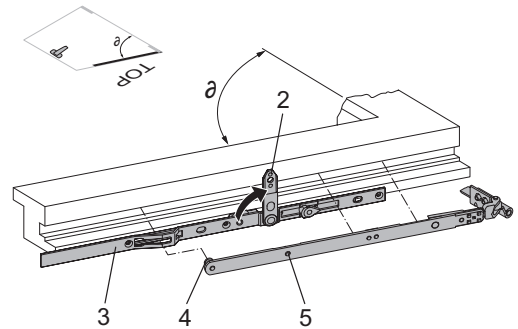
- Mount the drive rod:
 - Press the drive rod into the eurogroove.
 - Fit the handle to position the drive rod.
 - Mark the length of the drive rod on the flush edges of the corner drives.
 - Remove the handle and take the drive rod out of the fitting groove.
 - Mark and trim the drive rod using a punching press.
 - Mount the drive rod:
 - Abut the drive rod (3) flush against the corner drive (1).
 - Allow the teeth on the drive rod to click into position on the gear rack on the corner drive.
 - Clip the drive rod into the corner drive (4) in the same way.
 - Screw the drive rod from the bottom up.
 - Insert the optional dual function element (2) and screw into place.



Drive rod GAM/GAK

See figure: Top rod OS..., shear S...-A

- Connect shear and top rod:
 - 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.



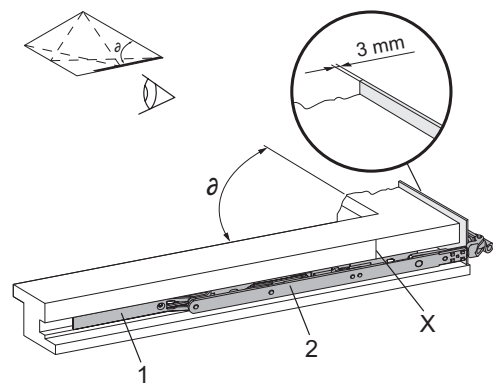
Top rod OS..., shear S...-A

See figure: Top rod OS..., shear S...-A

- Insert top rod OS... (1) and shear S...A into the eurogroove:
 - Insert a glazing block (d = 3 mm) between the shear hinge and sash to position the top rod.
 - Mark the length of the connecting rod at the joint edge of the corner drive.
 - Remove the top rod from the eurogroove.
 - Mark and trim the top rod using a punching press.



Please note: "X" marks the position of the connecting rail ASS AR 7/OR-A.



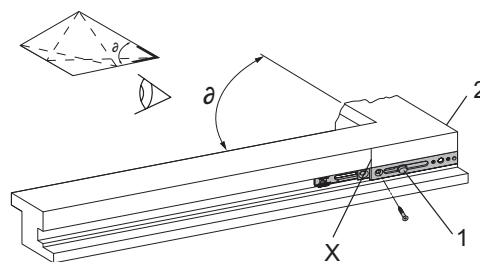
Top rod OS..., shear S...-A

See figure: Connecting rail ASS AR7/OR-A

- Mounting of the connecting rail:
 - Fit the connecting rail (1) into the fitting groove at the joint edge (X).
 - Screw-tight the corner drive at the top side.
 - Bend over the metal lug (2) and screw on.



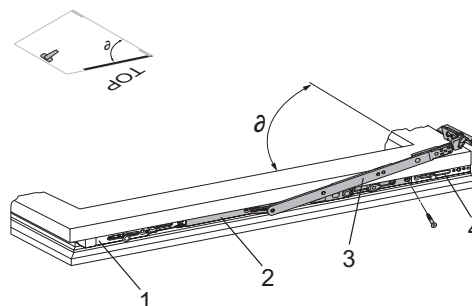
Attention! Damage to sash frame. If you set the outer screw at too sharp an angle " α ", there is a danger of the screw protruding hinge side and damaging the profile. You may need to fix the connecting rod at the top with just one screw.



Connecting rail ASS AR7/OR-A

See figure: Top rod OS..., shear S...-A

- Screw on the top rod OS:
 - Swivel out the shear (3).
 - Fit the top rod (2) into the eurogroove and press flush against the connecting rail (4).
 - Click the top rod gears into the teeth in the connecting rail.
 - Clip the top rod (2) into the corner drive (1) in the same way.
 - Screw the top rod towards the drive side.
 - Swivel the shear (3) back into home position.



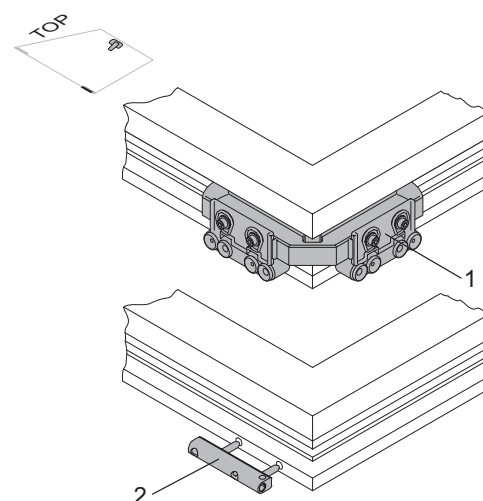
Top rod OS..., shear S...-A



Please note: When using the top rod OS1.600 please also insert an OS.A screw clip.

See figure: Sash hinge FL.KA / Mounting jig LE.B.FL.K

- Fitting the sash hinge:
 - Position the mounting jig FK (1) and drill \varnothing 6 mm holes for the hinge plugs. Depth 20 mm.
 - Pre-drill the screw holes through the first wall.
 - Insert the sash hinge (2) and fix it in place.
 - Make sure the sash hinge is fitted correctly into position.



Sash hinge FL.KA / Mounting jig LE.B.FL.K

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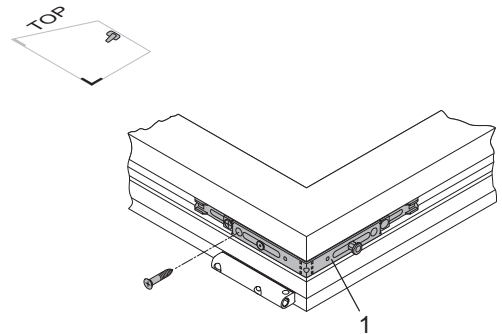
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See figure: Corner drive E1

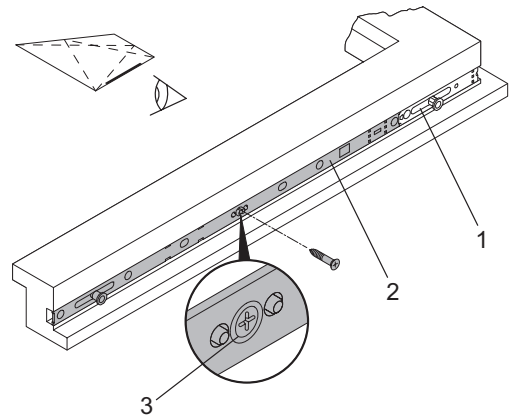
- Fix the corner drive into place on the bottom side.
 - Fit the corner drive (1) into the fitting groove at the bottom of the sash so that the octagonal bolt is on the underside.
 - Fasten the corner drive into place with a screw.
 - Measure the sash rebate width (FFB).



Corner drive E1

See figure: Interlocking rod MK (horizontal)

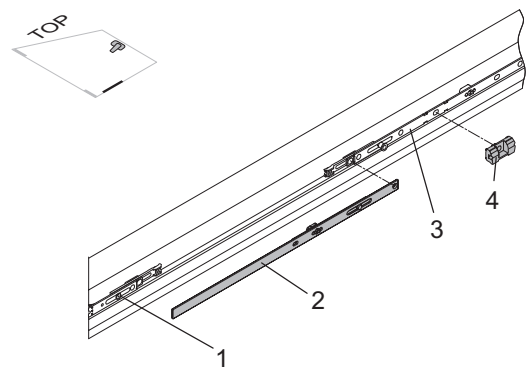
- Fit the interlocking rod at the bottom:
 - Abut the interlocking rod (2) flush against the corner drive (1).
 - Click the interlocking rod gears into the teeth of the corner drive.
 - Press the interlocking rod into the fitting groove.
 - Screw the interlocking rod in place.
 - Tighten the screw (3) fully to release the central fastening.



Interlocking rod MK (horizontal)

See figure: Coupling element KE (horizontal)

- Mount coupling element on the underside:
 - Abut the coupling element (2) flush against the corner drive (1) and slot into eurogroove.
 - Mark the length of the coupling element at the joint edge of the interlocking rod (3).
 - Remove the coupling element from the eurogroove.
 - Mark and trim the coupling element using a punching press.
 - Abut the coupling element (2) flush against the corner drive (1).
 - Click the coupling element into the teeth in the corner drive.
 - Slot the coupling element into the gearing of the interlocking rod (3) in the same way.
 - Press the coupling element into the eurogroove.
 - Screw the coupling element in place.



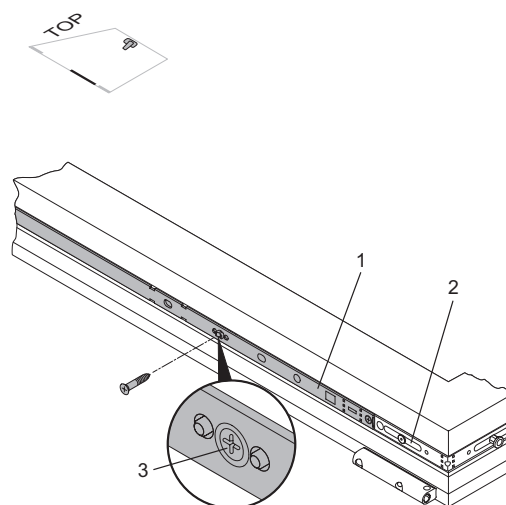
Coupling element KE (horizontal)

See figure: Interlocking rod M/MK (hinge side)

- Install Interlocking Rod on the hinge side.
 - Fit the interlocking rod (1) flush against the corner drive (2).
 - Click the interlocking rod gears into the teeth of the corner drive.
 - Press the interlocking rod into the fitting groove.
 - Screw the interlocking rod from the bottom up.
 - Tighten the screw (3) fully to release the central fastening.



Attention! Damage to fittings. If the central fastening is not released, the gearing cannot be actuated. Use of force will lead to torsion of the fittings. Always insert the screw fully up to the stop.



Interlocking rod M/MK (hinge side)



Please note: The last locking point should be as close to the top as possible. You may need to fit multiple interlocking rods on hinge side for this reason.

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Mounting of fittings on the window frame

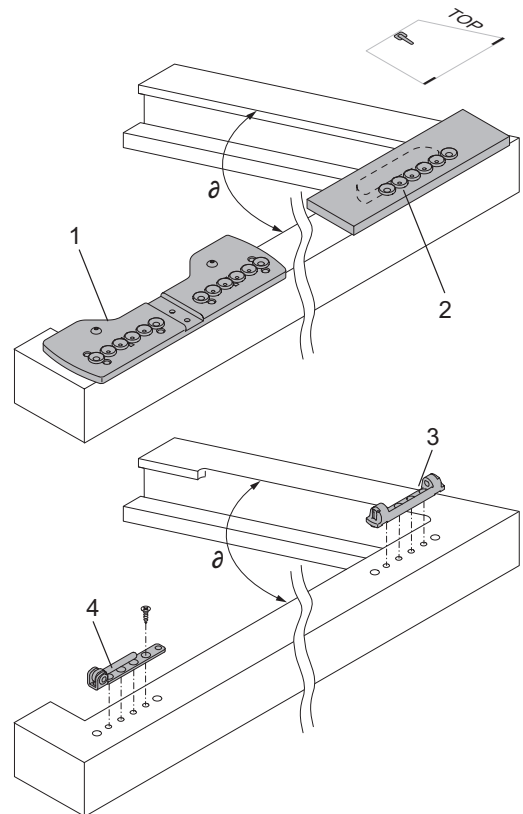
Turn-tilt type – studio window

See figure: Holes for corner and shear hinges

- Pre-drill the holes for the corner hinge as well as the pin positions (\varnothing 6 mm).
- Drill holes for the corner hinge (4) using the mounting jig LE.B.EL-SL.K (1) and for the shear hinge (3) using mounting jig SW-A (2). Distance between drill holes for shear and corner hinges is the same.



Please note: Do not fit shear hinges and corner hinges until after milling off the frame rebate edge and fitting the keeps.



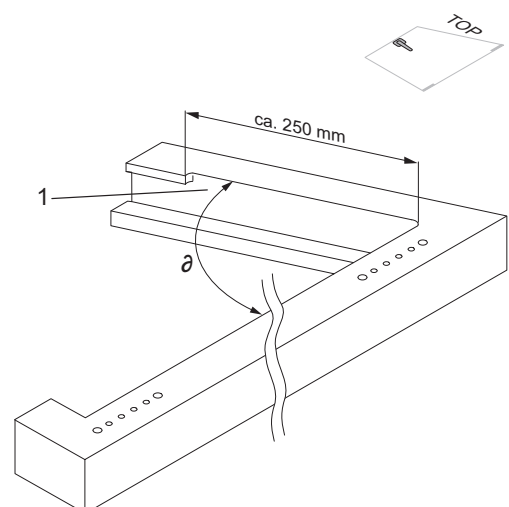
Holes for corner and shear hinges

See figure: Cut-out for shear arm

- Mill off the frame rebate edge to a length of approx. 250 mm using a router.



Attention! Damage to frame. To avoid the shear arm touching the frame when opening / closing the window, the frame rebate edge in the upper acute-angled area (1) of the profile must be bevelled or milled down. The length and slope of the routing depend on the angle of the upper corner.



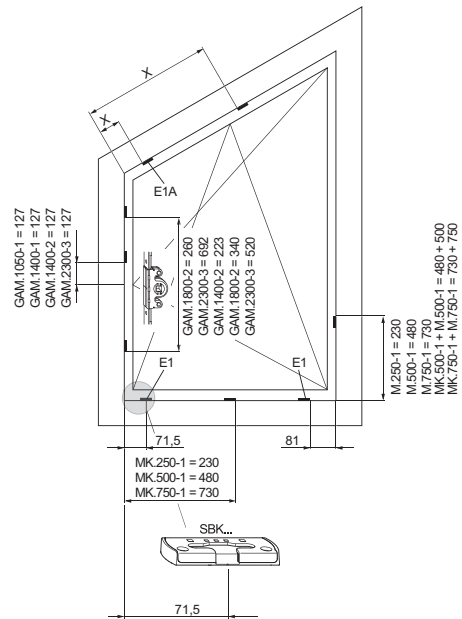
Cut-out for shear arm

Keep positions

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



Please note: The dimensions in the figures are from frame rebate edge to keep profile edge! Due to the top part of the frame not being right-angled for studio windows, it is impossible to use a mounting template to fit the keeps. This is why you need to mark the keep positions manually on the frame.

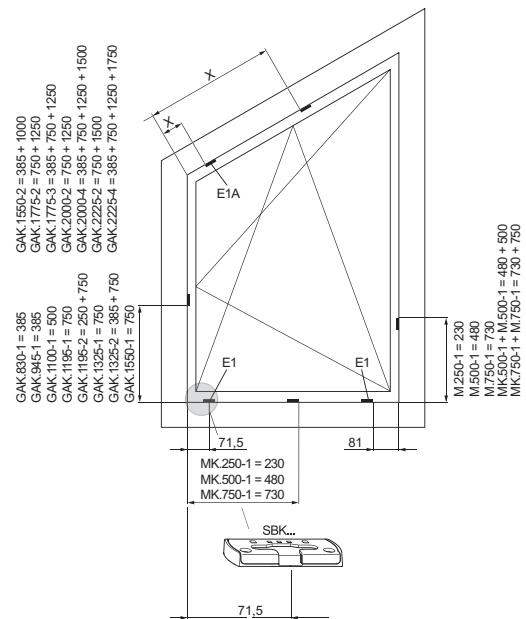


Keep positions "central handle position"

X = Dimension in elevation

See figure: Keep positions "constant handle position"

- Keep position X on slopes:
 - Mount the sash.
 - The handle is in horizontal position; the window is unlocked so that the mushroom heads are in a central position.
 - Abut the sash so that you can mark the outer edge of the mushroom bolt on the frame.
 - Position the keep:
 - The gap between the outer edge of the mushroom bolt and the profile edge of the keep is 3 to 4 mm.

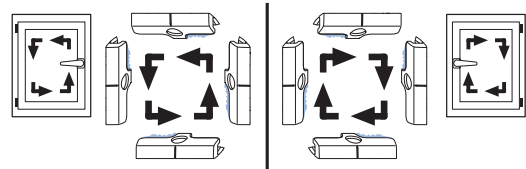


Keep positions "constant handle position"

X = Dimension in elevation



Please note: When marking, note the run-in sides of the keeps.



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Mounting of fittings on sash

Turn-tilt type – Round-arch window

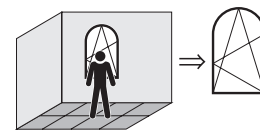
Prepare the window for fitting. Then proceed as follows:



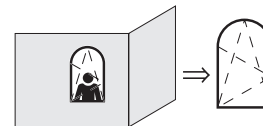
Please note: The following figures refer to a window for right-hand use. When fitting a window for left-hand use, the figures will be mirror-inverted.

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.

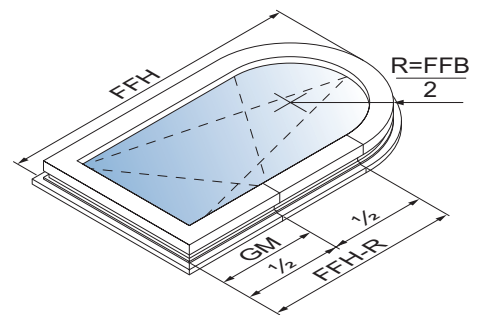


Determine the handle height:

Handle height for drive rod GAM

See figure: Sash rebate height FFH-R with central handle position GM

If you use a GAM drive rod (central handle position), dimension GM is half the sash rebate height FFH-R.

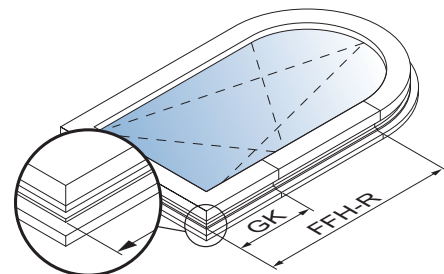


Sash rebate height FFH-R with central handle position GM

Handle height for drive rod GAK

See figure: Sash rebate height FFH-R with constant handle height GK

If you use a GAK drive rod ... (constant handle position), dimension GK changes to reflect the sash rebate height FFH-R. The exact dimensions are specified in the following table.



Sash rebate height FFH-R with constant handle height GK

See figure: Synoptical table sash rebate height (FFH-R) / handle position

The table on the right gives a survey on the handle height (GK) of GAK with regard to the sash rebate height (FFH).

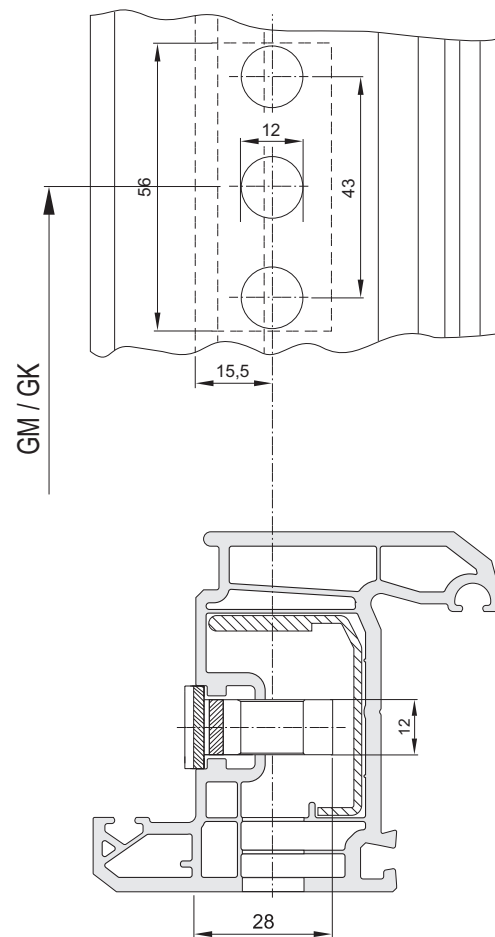
230 – 324	GK = 114 *
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1776 – 2000	GK = 1050
2001 – 2225	GK = 1050

Synoptical table sash rebate height (FFH-R) / handle position

* Requires the use of E3 corner drive

See figure: Scale drawing "Gear lock"

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



Scale drawing "Gear lock"

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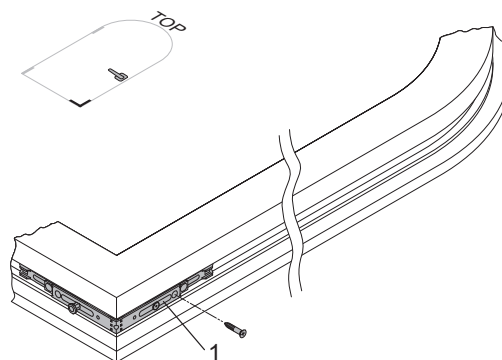
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See figure: Corner drive E1

- Fix the bottom corner drive into place.
 - Fit the corner drive (1) into the fitting groove at the bottom of the sash so that the octagonal bolt is on the underside.
 - Attach the corner drive (1) hinge side with a single screw.



Corner drive E1

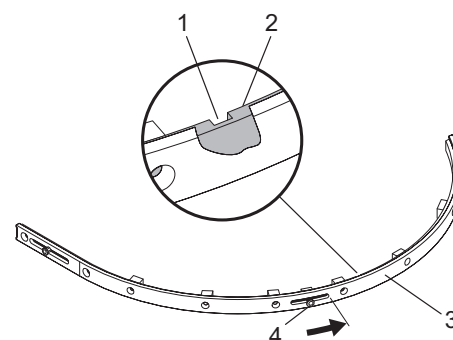


Please note: If sash rebate width $FFB < 750$ mm, the connecting rail AARB (1) must be shortened behind the drill hole for the second locking bolt.

Only for sash rebate width $FFB < 750$ mm:

See figure: Connecting rail AARB for $FFB < 750$ mm

- Before shortening, push the locking bolt (4) into locking position (see arrow) to make sure the spring (2) is cut at the right position.
- Saw through the connecting rail (3) at the notch (1).



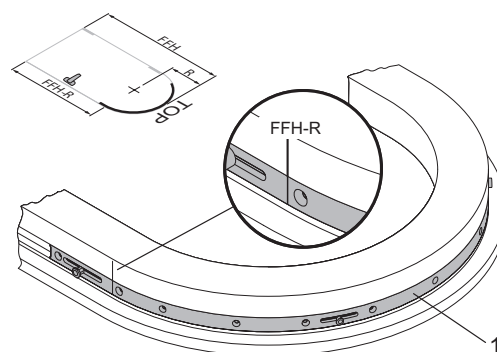
Connecting rail AARB for $FFB < 750$ mm

See figure: Connecting rail AARB

- Mounting of the connecting rail:
 - Make mark "FFH-R" on the sash.
 - Place the connecting rail (1) into the eurogroove, aligning the notch mark with the "FFH-R" mark.
 - Screw the connecting rail from the "FFH-R" mark in the direction of the bend.



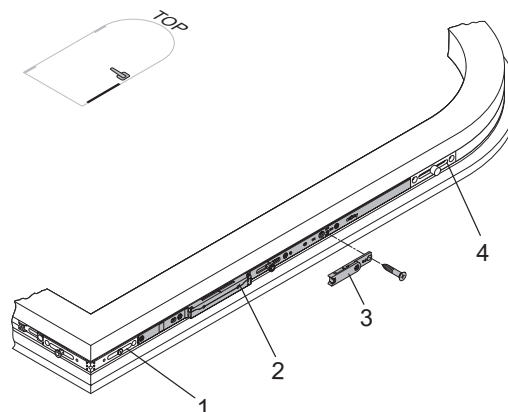
Attention! Damage to connecting rail. You must not bend out the connecting rail (1) as it may otherwise buckle at drill hole positions. The connecting rail would not perfectly match the contour of the arch when screwed into place.



Connecting rail AARB

See figure: Drive rod GAM/GAK

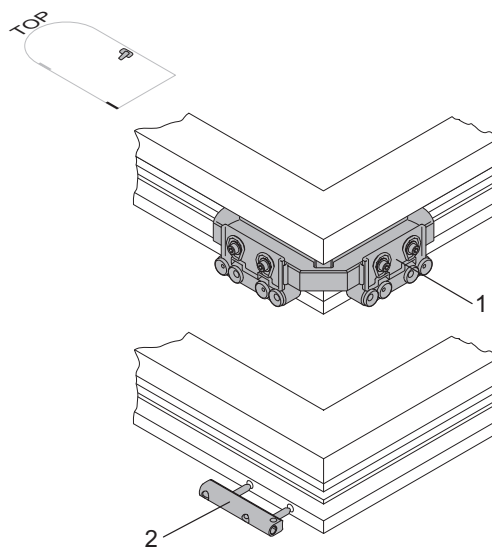
- Mount the drive rod:
 - Press the drive rod into the eurogroove.
 - Fit the handle to position the drive rod.
 - Mark the length of the drive rod on the butt joint with the corner drive (1) and on the butt joint with the connecting rail (4).
 - Remove the handle and take the drive rod out of the fitting groove.
 - Mark and trim the drive rod using a punching press.
 - Mount the drive rod:
 - Abut the drive rod (2) flush against the corner drive (1).
 - Allow the teeth on the drive rod to click into position on the gear rack on the corner drive.
 - Clip the drive rod into the connecting rail (4) in the same way.
 - Screw the drive rod from the bottom up.
 - Insert the optional dual function element (3) and screw into place.



Drive rod GAM/GAK

See figure: Sash hinge FL.KA / Mounting jig LE.B.FL.K

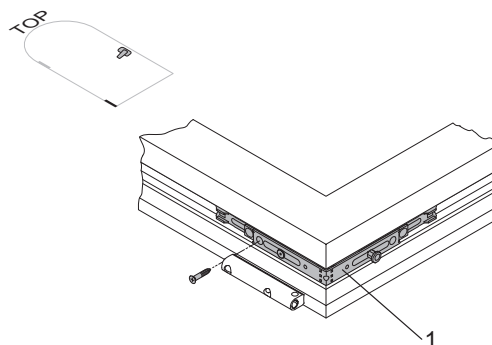
- Fitting the sash hinge:
 - Position the mounting jig LE.B.FL.K (1) and drill \varnothing 6 mm holes hinge side for the hinge plugs. Drilling depth min. 20 mm.
 - Pre-drill the screw holes through the first wall.
 - Insert the sash hinge (2) and fix it in place.
 - Make sure the sash hinge is fitted correctly into position.



Sash hinge FL.KA / Mounting jig LE.B.FL.K

See figure: Corner drive E1

- Fix the bottom corner drive into place.
 - Fit the corner drive (1) into the fitting groove at the bottom of the sash so that the octagonal bolt is on the underside.
 - Fix the corner drive in place with a single screw hinge side.
 - Measure the sash rebate width (FFB).



Corner drive E1

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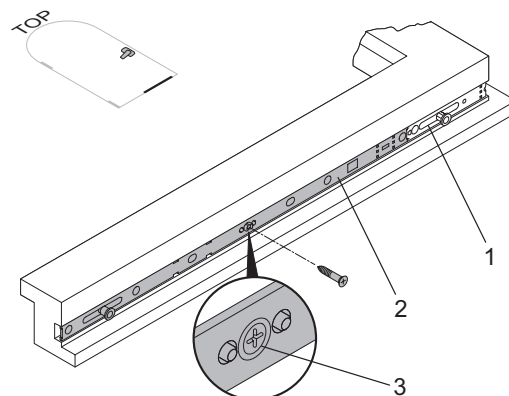
15
Installation drawings

See figure: Interlocking rod MK (horizontal)

- Mount interlocking rod on the underside:
 - Abut the interlocking rod (2) flush against the corner drive (1).
 - Click the interlocking rod gears into the teeth of the corner drive.
 - Press the interlocking rod into the fitting groove.
 - Screw the interlocking rod in place.
 - Tighten the screw (3) fully to release the central fastening.



Attention! Damage to fittings. If the central fastening is not released, the gearing cannot be actuated. Use of force will lead to torsion of the fittings. Always insert the screw fully up to the stop.



Interlocking rod MK (horizontal)

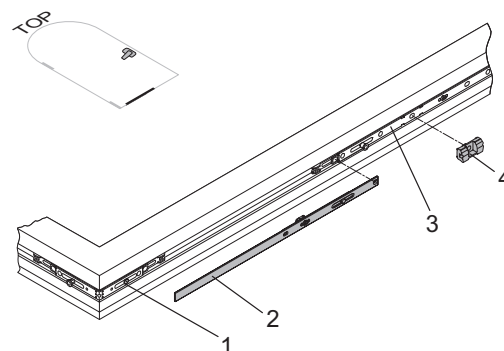
See figure: Coupling element KE (horizontal)

- Mount coupling element on the underside:
 - Abut the coupling element (2) flush against the corner drive (1) and slot into eurogroove.
 - Mark the length of the coupling element at the joint edge of the interlocking rod (3).
 - Remove the coupling element from the eurogroove.
 - Mark and trim the coupling element using a punching press.
 - Abut the coupling element (2) flush against the corner drive (1).
 - Click the coupling element into the teeth in the corner drive.
 - Slot the coupling element into the gearing of the interlocking rod (3) in the same way.
 - Press the coupling element into the eurogroove.
 - Screw the coupling element in place.



Attention! Check if all screws are fixed into place on the fitting parts.

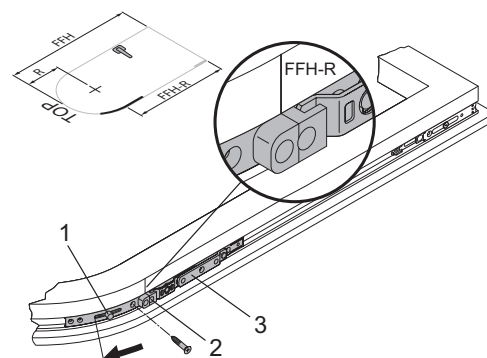
- Clip the run-up block (4) into the interlocking rod (3) and screw into place.



Coupling element KE (horizontal)

See figure: Shear GRT.SWR

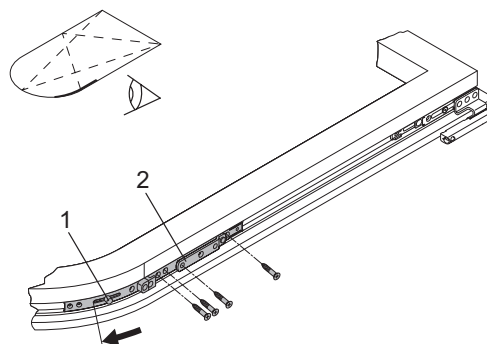
- Mounting the shear:
 - Make mark "FFH-R" on the sash.
 - Place the shear (2) into the fitting groove, aligning the notch mark with the "FFH-R" mark.
 - Fix the shear (2) in place with a single screw.



Shear GRT.SWR

See figure: Shears

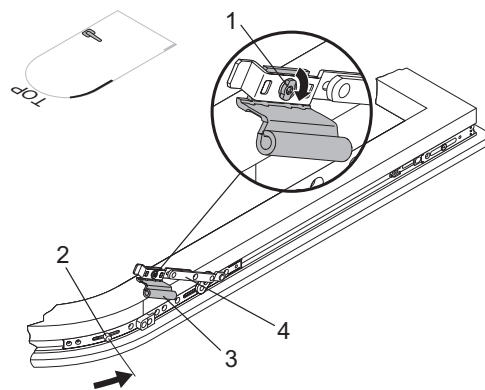
- Screw the shear into position.
 - To swivel out the shear arm (2), push the locking bolt (1) to tilt position (see arrow).
 - Swivel out the shear arm (2).
 - Screw the shear into position.



Shears

See figure: Shear hinge

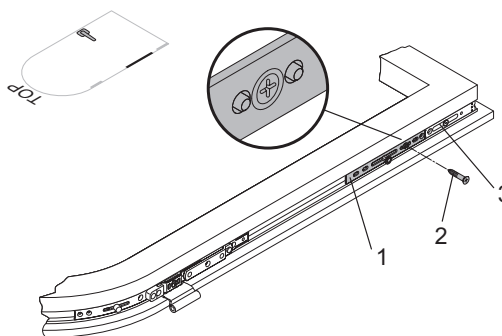
- Insert the shear hinge (3) into the shear arm (4):
 - The shear hinge must point towards the sash overlap.
 - After mounting the shear hinge, turn the hammerhead (1) through 90° using a T20 (Torx) tool.
 - Swivel the shear arm (4) back in.
 - Push the locking bolt (2) back to the centre position (see arrow) to allow a correct combination of the shear with the connecting rod RB.



Shear hinge

See figure: Interlocking rod MK

- Mount the interlocking rod MK hinge side depending on the height of FFH-R:
 - Select an interlocking rod to match the sash rebate height FFH-R and the length of connecting rod RB.
 - Fit the interlocking rod (1) flush against the corner drive (3).
 - Click the interlocking rod gears into the teeth of the corner drive.
 - Press the interlocking rod into the fitting groove.
 - Screw the interlocking rod from the bottom up.
 - Tighten the screw (2) fully to release the central fastening.



Interlocking rod MK



Attention! Damage to fittings. If the central fastening is not released, the gearing cannot be actuated. Use of force will lead to torsion of the fittings. Always insert the screw fully up to the stop.

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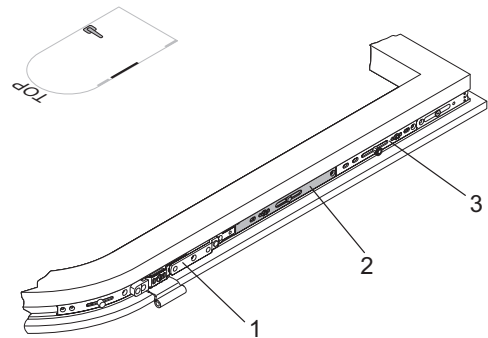
Installation drawings 15

See figure: Connecting rod RB / RB-K

- Abut the connecting rod (2) with the shear (1) and slot into the eurogroove.
- Mark the length of the connecting rod at the joint edge of the interlocking rod (3).
- Remove the connecting rod from the eurogroove.
- Mark and trim the connection rod using a punching press.
- Abut the connecting rod (2) flush against the shear (1).
- Click the connecting rod gears into the teeth of the shear.
- Slot the connecting rod into the gearing of the interlocking rod (3) in the same way.
- Press connection rod into the fitting groove.
- Screw the connection rod into position.



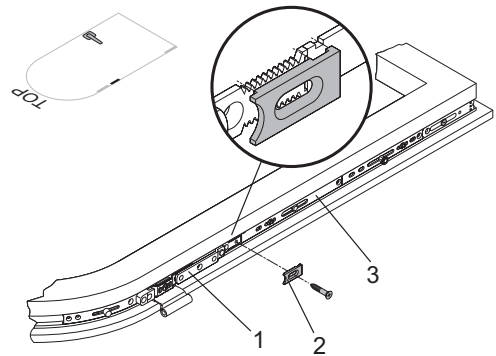
Attention! Check if all screws are fixed into place on the fitting parts.



Connecting rod RB / RB-K

See figure: Connecting plate

- Place the connecting plate (2) in the shear (1) and connecting rod (3) notch and screw tight.



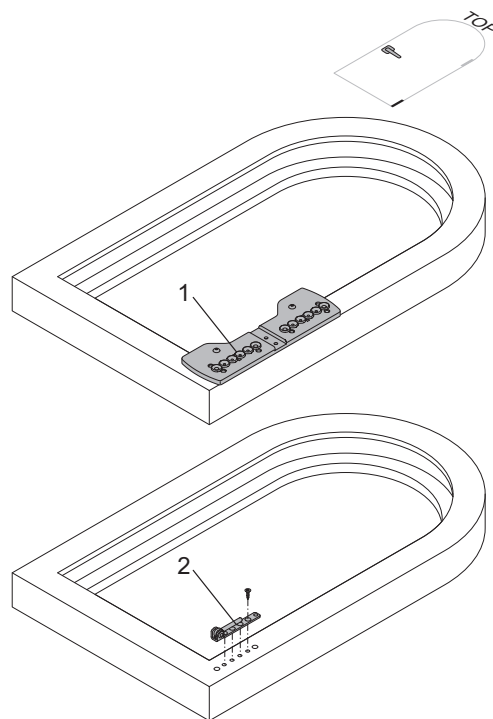
Connecting plate

Mounting of fittings on the window frame

Turn-tilt type – Round-arch window

See figure: Corner hinge EL.K.../ drilling jig LE.B.EL-SL.K

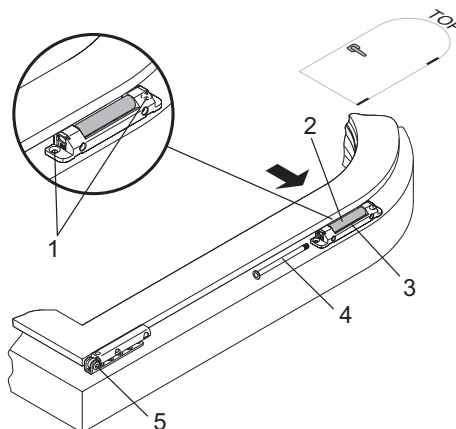
- Mounting the corner hinge.
 - Pre-drill the holes for the corner hinge as well as the pin positions (\varnothing 6 mm).
 - Drill holes for corner hinge (2) in line with mounting jig (1).
 - Fit the corner hinge (2) and use screws to fasten in place in line with product instructions.



Corner hinge EL.K.../ drilling jig LE.B.EL-SL.K

See figure: Shear hinge SWR ... for round arch

- Mount the shear hinge.
 - Mount the shear hinge (3) on the shear band (2) using the pin (4).
 - Mount the sash.
 - Place the sash on the corner hinge (5).
 - Place the sash on the frame.
 - Press the sash and shear hinge as far out as possible (see arrow) against the frame edge.
 - Pre-drill the screw positions (4x) through the shear hinge holes (1).
 - Screw the shear hinge into place (screws in line with details in Product Liability Information).



Shear hinge SWR ... for round arch

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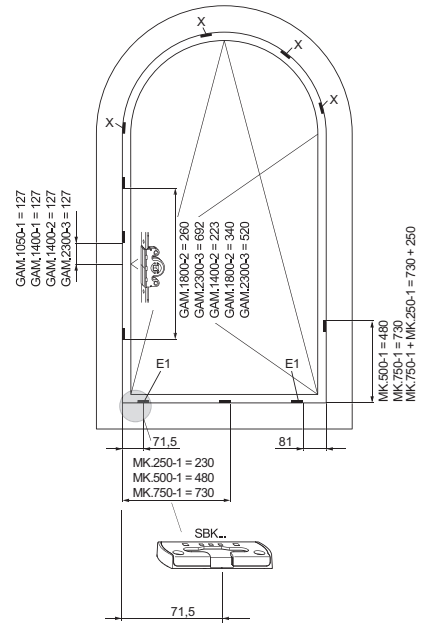
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Keep positions

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



Please note: The dimensions in the figures are for frame rebate edge to keep profile edge! Due to the top part of the frame not being right-angled in round-arch windows, it is impossible to use a mounting template to fit the keeps. This is why you need to mark the keep positions manually on the frame.

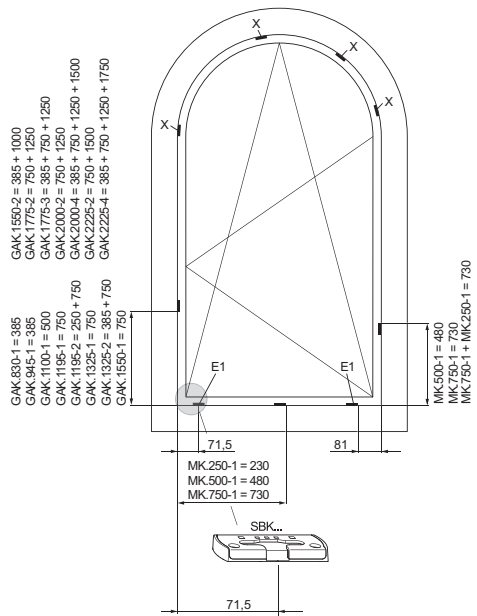


Keep positions “central handle position”
X = Dimension in elevation

- Keep position x on the round arch:

Initial situation:

- Mount the sash.
- The handle is in horizontal position; the window is unlocked so that the mushroom heads are in a central position.
- Abut the sash so that you can mark the outer edge of the mushroom bolt on the frame.
- The gap between the outer edge of the mushroom bolt and the profile edge of the keep is 3 to 4 mm.

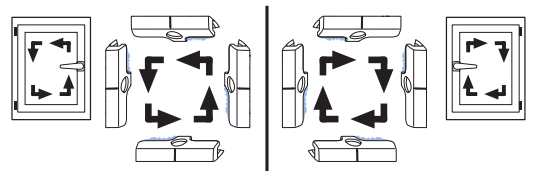


Keep position “constant handle position”
X = Dimension in elevation



Please note: When marking, note the run-in sides of the keeps.

Position the keep:

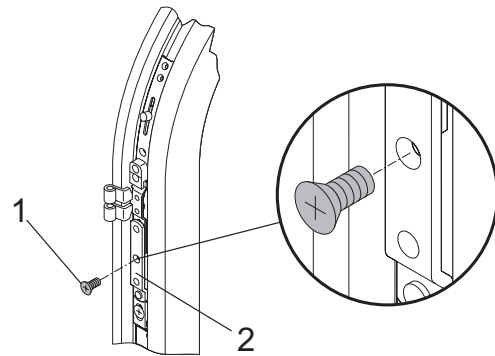


Run-in sides

Fitting the sash

See figure: Removing the retaining screw

- Remove the retaining screw (1) before mounting the sash.
- Set the shear arm (2) parallel to the shear casing.
- Mount the sash, move it into the sealing plane and secure in the shear hinge using the pin.



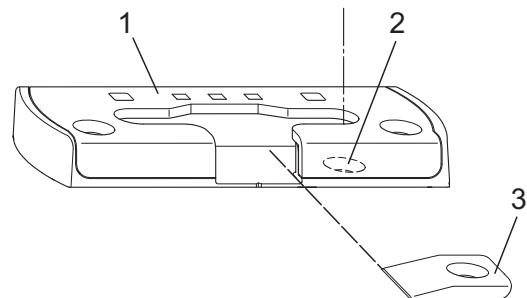
Removing the retaining screw

Security tilt keep SBK... and limiter K-SEF-1

See figure: Position of limiter K-SEF

For round-arch windows you need a security tilt keep SBK... and additionally a „Limiter K-SEF“.

- Position the limiter (3) on the profile edge of the keep (1).
- Label the screw hole (2).
- Drill pilot holes into the tilt keep (1).
- Screw the shootbolt keep into the tilt keep.



Position of limiter K-SEF

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Function test

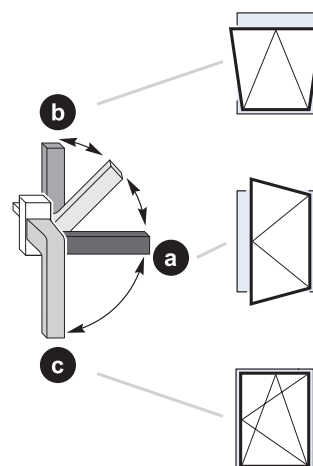
Turn-tilt type

See figure: Function test turn-tilt window

- Place the handle and operate once as follows to release the central fastening.
 - Push the handle down (c). The window is closed.
 - Move the handle to the central position (a). The window is unlocked; the sash can now be opened fully.
 - Close sash. Push the handle up (b). The window is unlocked; the sash can now be tilted.



Please note: Initial actuation is not as easy as actuation in normal operations. A clicking noise will be heard during actuation. Keep the window closed during actuation.



Function test turn-tilt window

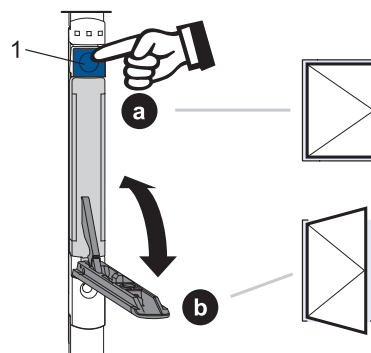
Turn double sash type

See figure: Function test turn double sash window

- Actuate the handle as follows to release the central fastening.
 - Press the unlocking button (1) and press the lever down to its limit position.
 - The window is unlocked; the sash can now be opened fully.



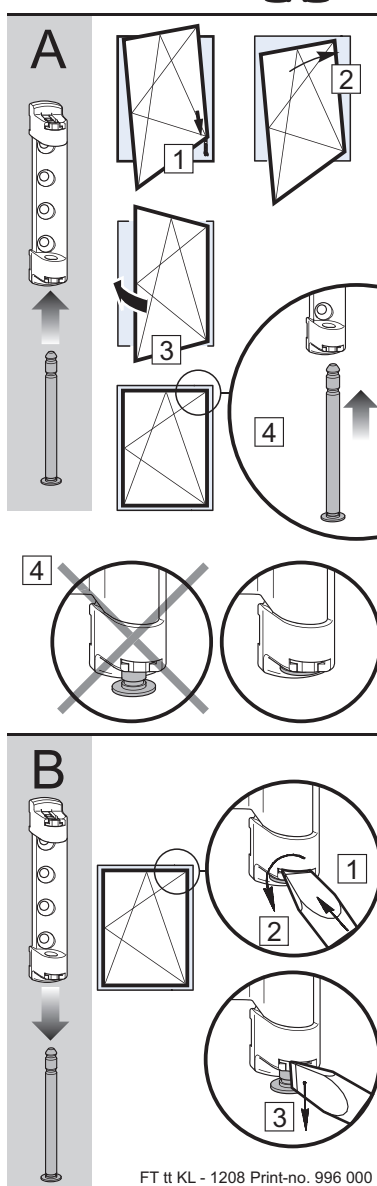
Please note: When you lift the lever for the first time, the gearing is "unblocked" and coupling to the connected fittings is established. Thus, the initial actuation is not as smooth as in normal operations. A clicking noise will be heard during initial actuation. Keep the window closed during actuation.



Function test turn double sash window

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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Mounting of accessories

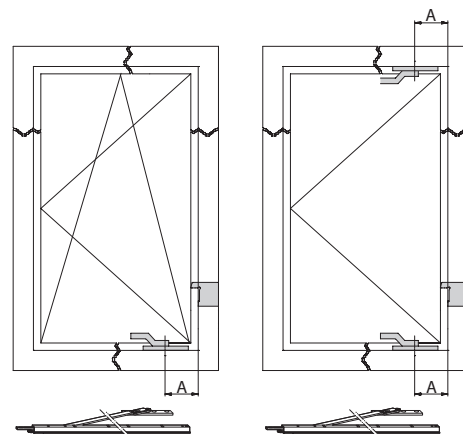
Window Limiter FBP-11 SL

Window Limiter FBP-11-650 SL

Installation in frame

The frame plate must be positioned according to the drawing and it must be screwed flush with the inner edge of the frame. In case of profiled frames it is important to use spacers FT WSK ... for adaption.

Number of spacers FT WSK: 2 pcs per frame plate



FBP-11 A = 113 mm

FBP-11-650 A = 50 mm

Eurogroove fitted

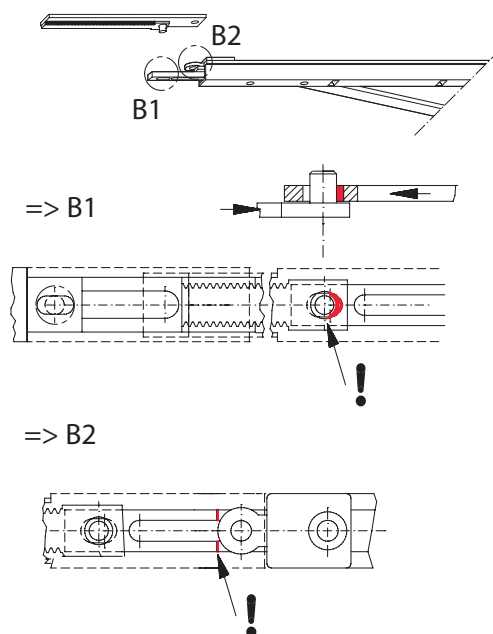
Top

Turn sash (D)

- Insert the window limiter into the eurogroove, then screw into place flush with the sash rebate edge on the hinge side.
- Handle position "open"
- When installing the window limiter "top" please make sure that the connection rod is compression mounted.
- Observe the marks on the control rail.
- Mark and trim the connection rod using a punching press.
- Screw the connection rod into position.



Note: The braking force can be adjusted by inserting the connection rod gears into the tothing system in an offset manner.

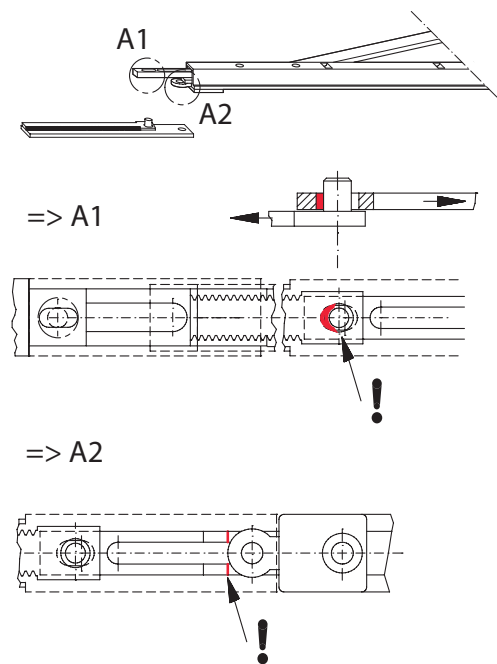


Eurogroove fitted Bottom Turn-tilt sash (DK)

- Insert the window limiter into the eurogroove, then screw into place flush with the sash rebate edge on the hinge side.
- Handle position "open"
- When mounting the window limiter "bottom" please make sure that the connection rod is installed "to tension".
- Observe the marks on the control rail.
- Mark and trim the connection rod using a punching press.
- Screw the connection rod into position.



Note: The braking force can be adjusted by inserting the connection rod gears into the tothing system in an offset manner.



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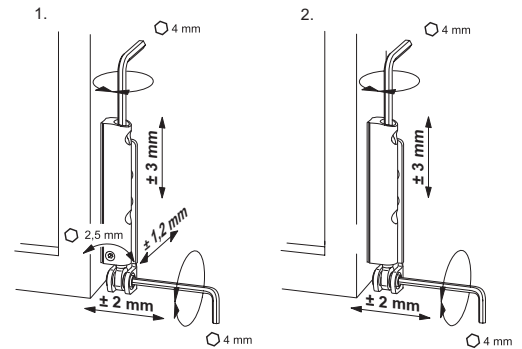
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Adjustment options

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.

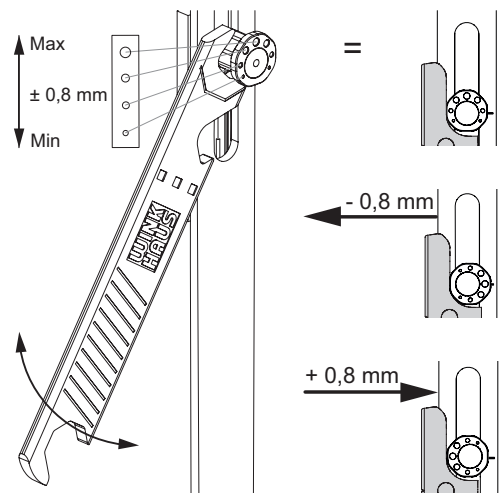


1. with contact pressure adjustment

2. without contact pressure adjustment

Octagonal bolt

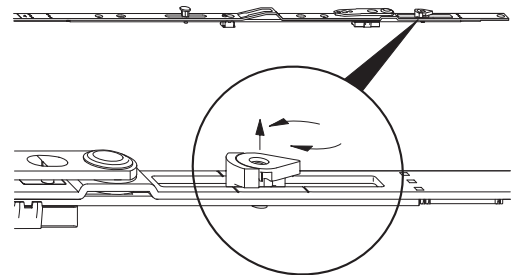
Regulate the contact pressure between the sash and the frame (± 0.8 mm) by turning the octagonal bolt. The adjustment can be carried out by means of the Winkhaus adjustment key (V.ST. SCH.HV-11).



Octagonal bolt

Shear retraction

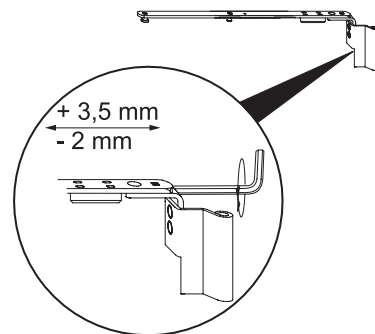
The progressive shear pull-in is adjustable from 18 to 28 mm. Release the catch by pulling up on the adjustment latch then pivot the adjustment latch away from the overlap. A variable tilt device, MSL.OS, can be used as an alternative to the progressive shear pull-in.



Shear retraction

Shear – Rectangular window

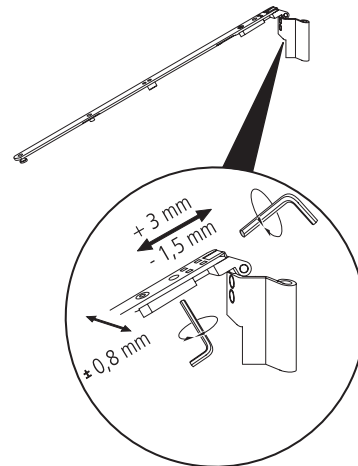
Lifting and lowering the sash (from -2 to +3.5 mm) by means of a 4 mm Allen key.



Shear – Rectangular window

Shear – studio window

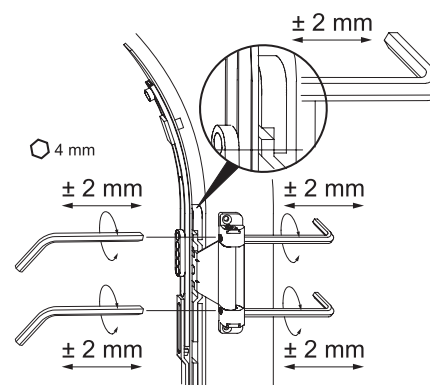
Lifting and lowering the sash and adjustment of contact pressure by means of a 4 mm Allen key.



Shear – studio window

Shear – round-arch window

Lifting and lowering the sash and adjustment of contact pressure by means of a 4 mm Allen key.



Shear – round-arch window

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Fail safe device FSF

After installation the tip of the pressure piece must be directed towards the frame!

For airgaps smaller or larger than 12 mm an adjustment is possible by turning the plastic part to the left or to the right!

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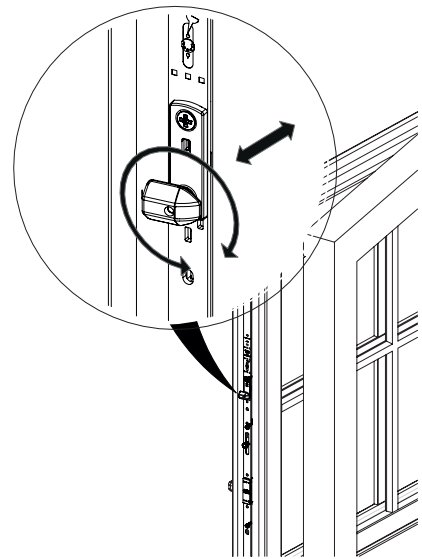
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Adjustment and maintenance

Dual/triple function element

DFE/TFE activation

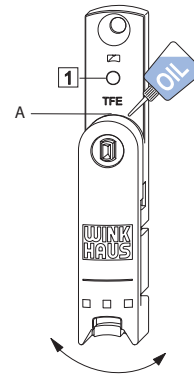
The DFE/TFE element is supplied in the neutral position. Please proceed as follows:

Drive in the protruding pin to fix in place (1).

Drive in the protruding pin to fix in place (1).

Can be used left/right by swivelling out the lever once only.

Dribble a few drops of oil (free of resin and acid) onto lubrication points.

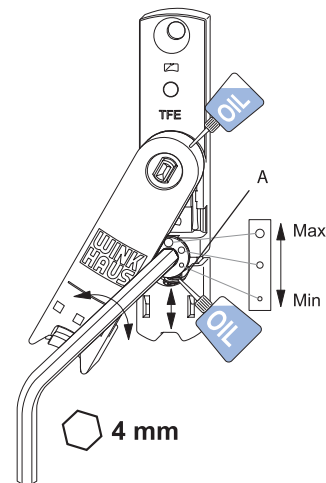


DFE/TFE activation

TFE – Retaining force of balcony door catch

Adjusting the holding force by re-setting the eccentric cam with a 4 mm Allen key.

Dribble a few drops of oil (free of resin and acid) onto lubrication points.

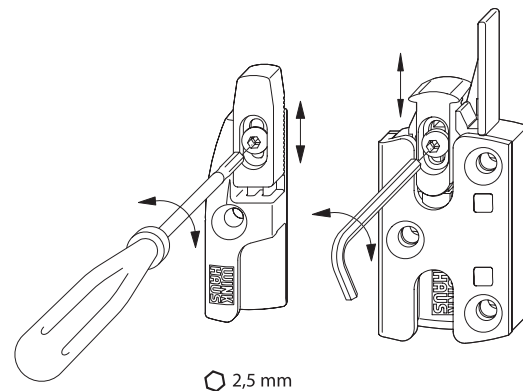


TFE – Retaining force of balcony door catch

Frame part DFE/TFE

Height adjustment (+/- 3 mm) for sash support plate.

Each time fittings are adjusted, the DFE/TFE height setting should also be checked using a 2.5 mm Allen key.



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Lubrication points

See figure: Overview of lubrication points

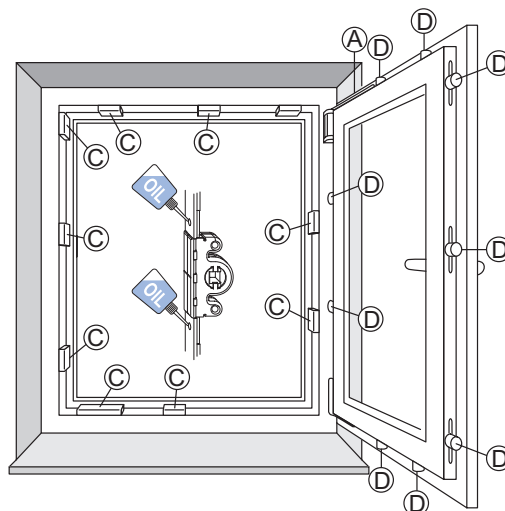
The figure shows the location of possible lubrication points which should be lubricated at least once a year. Positions A, C, D = lubrication points relevant to function.



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.



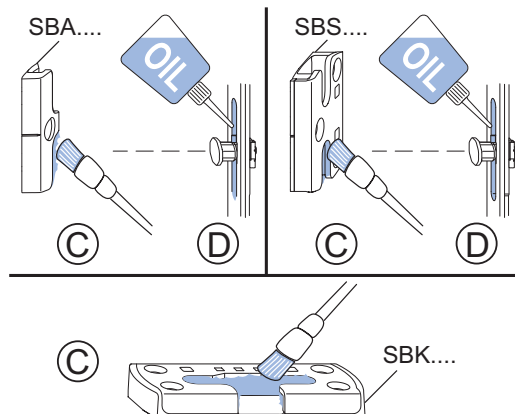
Overview of lubrication points

Keeps

See figure: Lubrication points

To keep fittings running smoothly, you must lubricate the keeps at least 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.

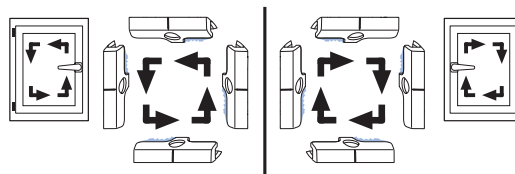


Lubrication points

Ascertaining the run-in sides

See figure: Run-in sides

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



Run-in sides

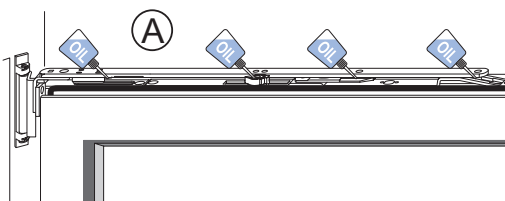
Shears

See figure: Shears

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



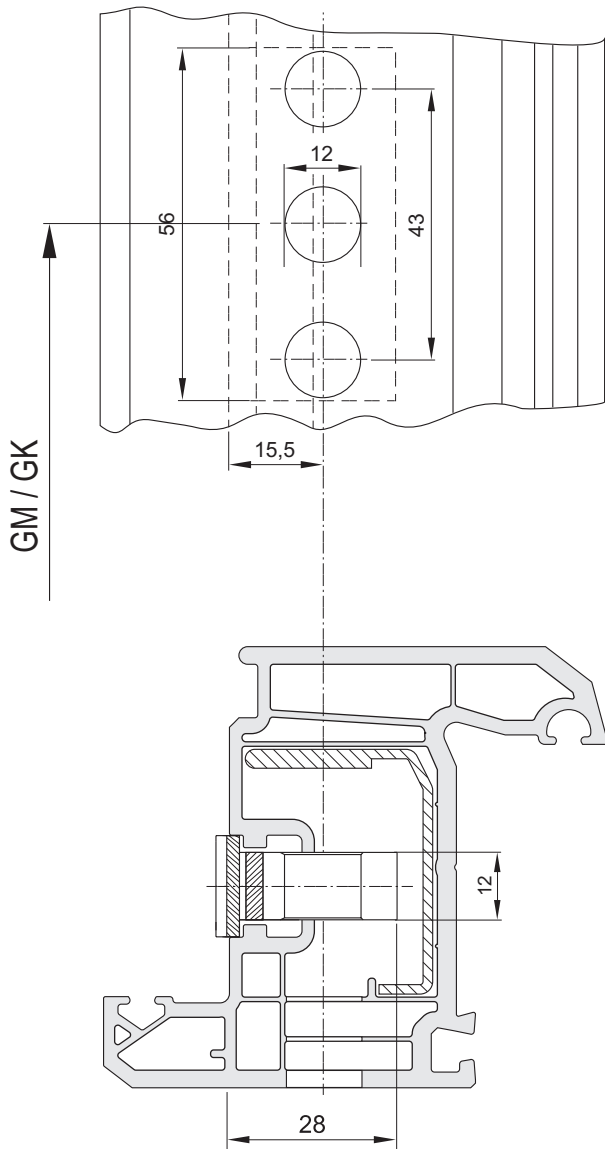
Note: The shear hinge must not be oiled or greased.



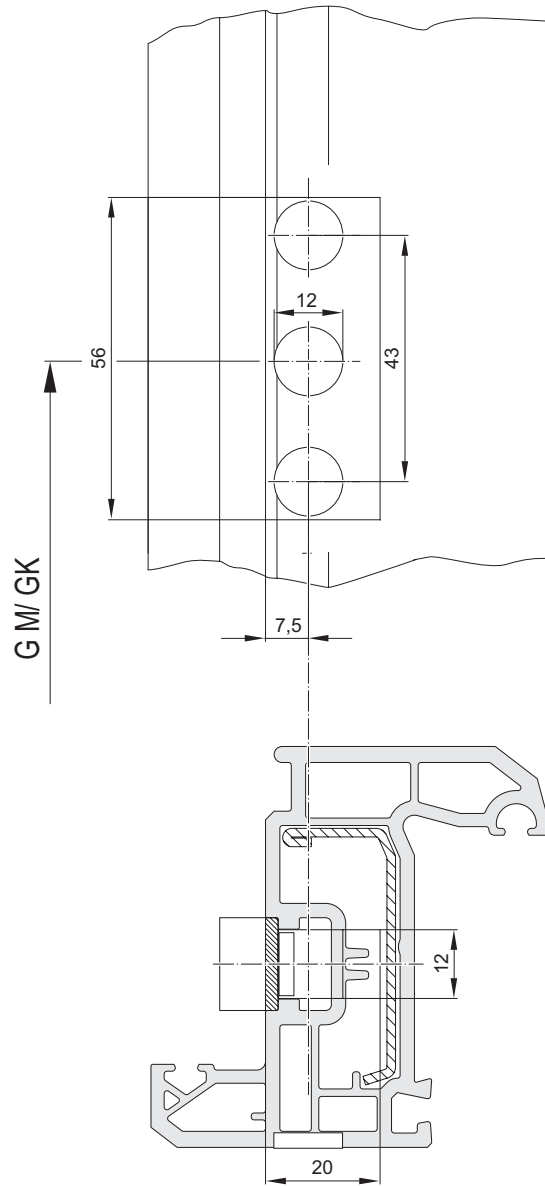
Shears

Installation drawings

Drive rods



B-3-1: Drilling and milling instructions GAK/GAM ... D = 15.5 mm



B-3-2: Drilling and milling instructions GAK/GAM ... D = 7.5 mm

1 General product information

2 Lists of Fittings

3 Drive rods

4 Corner drives

5 Top rods

6 Sash hinges/ Corner hinges

7 Shears/ Shear hinges

8 Turn hinges/ Tilt hinges

9 Extension rods

10 Accessories

11 Frame parts

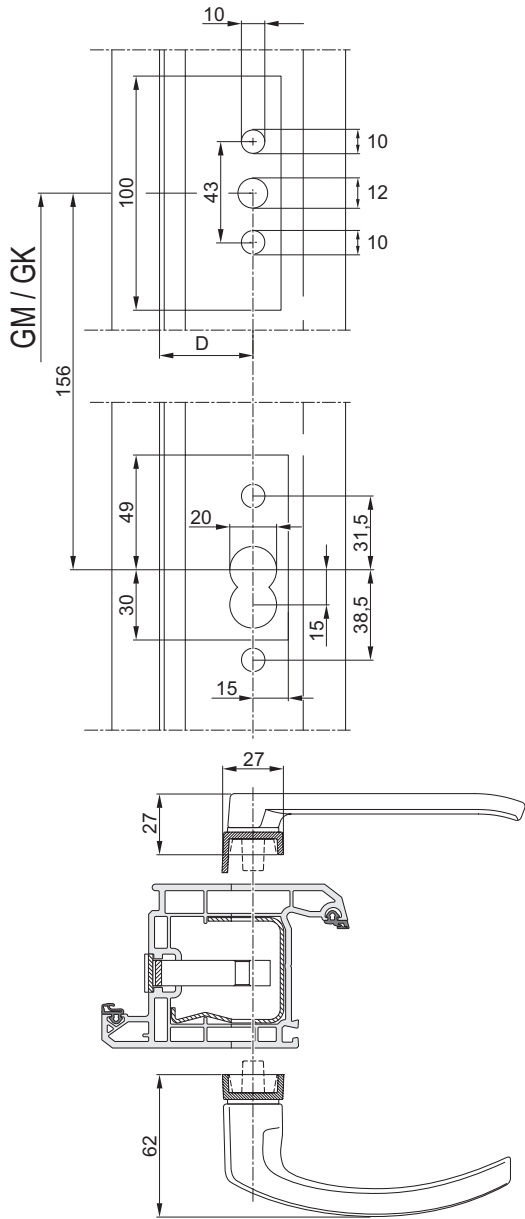
12 Mounting accessories

13 Mounting instructions

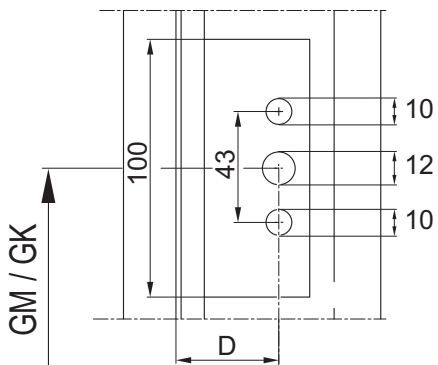
14 Adjustment/ maintenance

15 Installation drawings

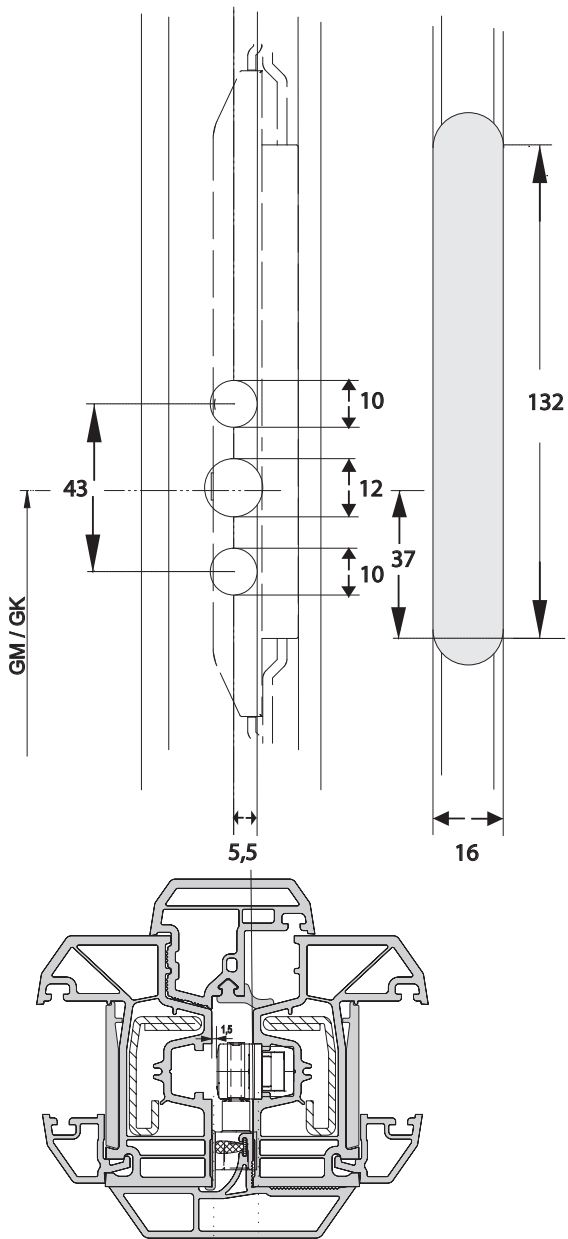
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



B-3-3: Drilling and milling instructions GAKA/GAMA D ...
D = Backset



B-3-4: Drilling and milling instructions GAK/GAM ... D 25 ... 50
D = Backset



B-3-5: Drilling and cut template GAK ...
Backset minus 6 mm

General product information **1**

Lists of Fittings **2**

Drive rods **3**

Corner drives **4**

Top rods **5**

Sash hinges/
Corner hinges **6**

Shears/
Shear hinges **7**

Turn hinges/
Tilt hinges **8**

Extension rods **9**

Accessories **10**

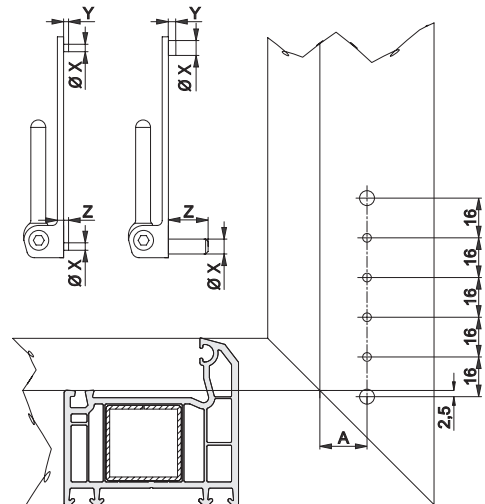
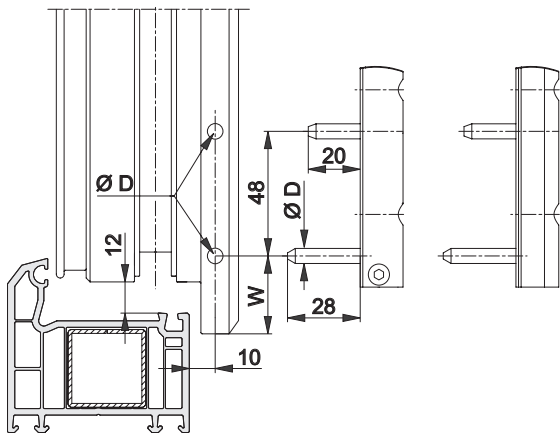
Frame parts **11**

Mounting accessories **12**

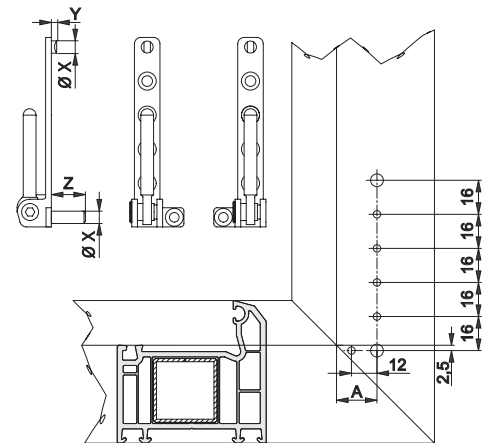
Mounting instructions **13**

Adjustment/
maintenance **14**

Installation drawings **15**



	UEB	SK...	Ø D	W
FL.K.20-6-20	20	...20-9	6	30
FL.KA.20-6-20				
FL.K.20-6-28				
FL.KA.20-6-28	20	...20-13	6	30
FL.K.20-6-20				
FL.KA.20-6-20				
FL.K.20-6-28	21	...21-13	6	31
FL.KA.20-6-20				
FL.K.20-6-28				
FL.KA.20-6-28	20	...20-9	6	38
FL.K.20-6-28.130				
FL.K.20-6-28.130				
FL.K.20-6-28.130	20	...20-13	6	38
FL.K.20-6-28.130	21	...21-13	6	39
FK-F 20-6/20	20	...20-9	6	38
FK-F 20-6/20	20	...20-13	6	38
FK-F 20-6/20	21	...21-13	6	39
FK-F 20-6/28	20	...20-9	6	38
FK-F 20-6/28	20	...20-13	6	38
FK-F 20-6/28	21	...21-13	6	39



UEB	A
20	19
21	20

EL.K. X - Y - Z
 EL.KB. X - Y - Z
 ESV X - Y - Z
 ESVW X - Y - Z

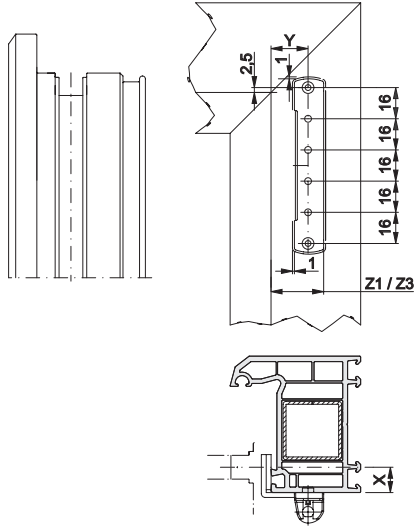
X=6
 Y=3
 Z=16
 ELK.6-3-16

B-6-2: Drilling and milling instructions FL.K./FL.KA. ...
 UEB = overlap

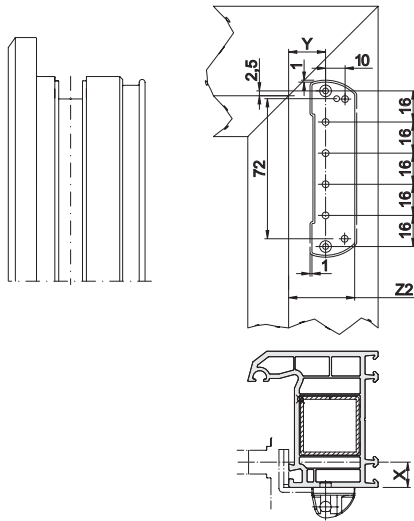
B-6-3: Drilling template corner hinge EL.K.../ESV... (top) / EL.KB.../ESVW...(bottom)
 UEB = overlap

Shears / shear hinges

SL.KS... / SL.KS...130



SL.KB...

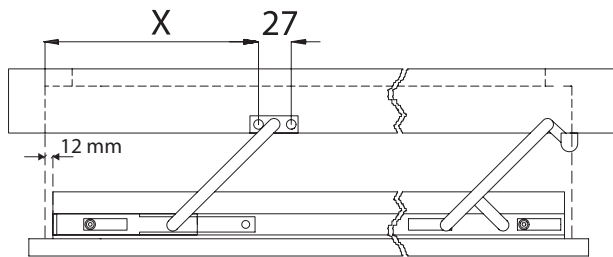
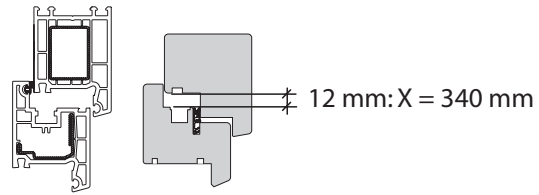


	X	Y	SL.KS... Z1	SL.KB... Z2	SL.KS...130 Z3
SK... 20 - 9	9	19	27	34	29
SK... 20 - 13	13	19	27	34	29
SK... 21 - 13	13	20	28	35	30

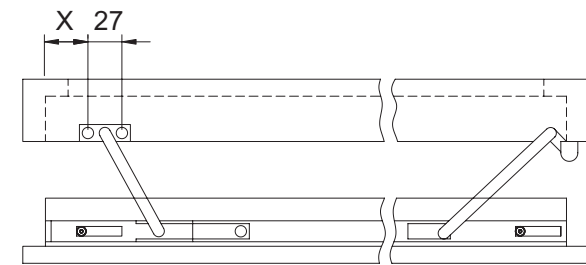
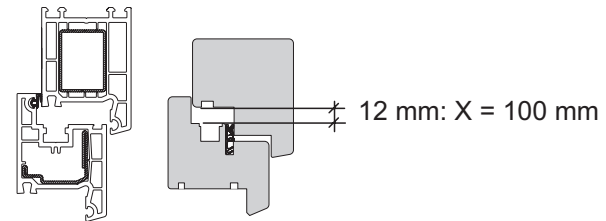
B-7-1: Drilling template shear hinge SL.KS. ...

Drilling template shear hinge SL.KB. ...

Drilling template shear hinge SL.K.3-6.130



B-7-4: Installation drawing additional shear ZSR
(X with regard to frame rebate edge)



B-7-5: Installation drawing additional shear ZSRE (for fitting type "Tilt before turn")

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General product information

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Corner drives

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Top rods

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Sash hinges/
Corner hinges

7
Shears/
Shear hinges

8
Turn hinges/
Tilt hinges

9
Extension rods

10
Accessories

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Frame parts

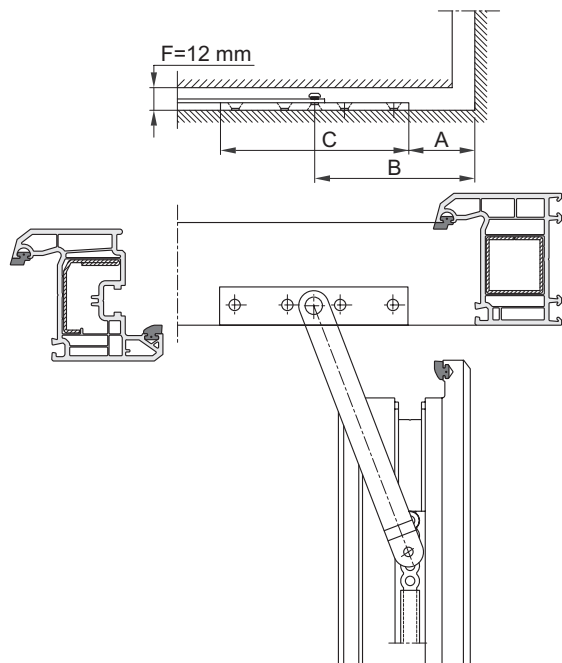
12
Mounting accessories

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maintenance

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Installation drawings

Accessories



	A	B	C
DB 11	0	50	100
DB 11/1	85	135	100
DB 11-350	0	9	59

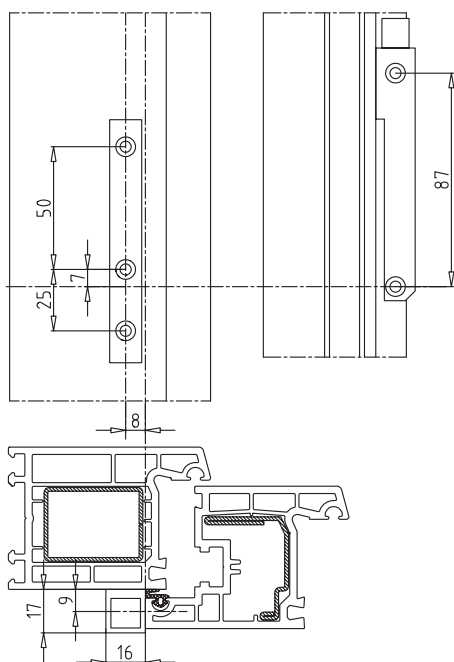
B-10-1: Drilling template turn limiter DB 11 ...

F = airgap

A = distance frame plate, lateral

B = distance pivot point, lateral

C = length frame plate



B-10-2: Drilling template opening limiter OBV

Rotation stop device DS

Legend

A = component of window lock DS

B = Jig for window lock LE.DS

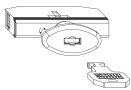
UEB = overlap

NML = groove centre position

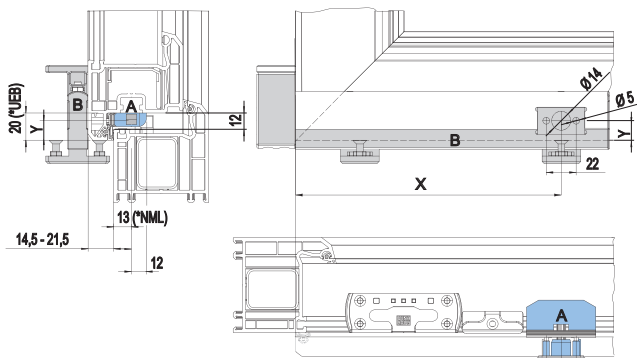
* = Example dimension



Fill the difference between inner edge of window lock and sash overlap (screw level) using packers DS.



UEB (mm)	X (mm)	Y (mm)
18	194	12
20	196	14
21	197	15
22	198	16



B-10-3: Drilling template window lock DS

1
General product information

2
Lists of Fittings

3
Drive rods

4
Corner drives

5
Top rods

6
Sash hinges/
Corner hinges

7
Shears/
Shear hinges

8
Turn hinges/
Tilt hinges

9
Extension rods

10
Accessories

11
Frame parts

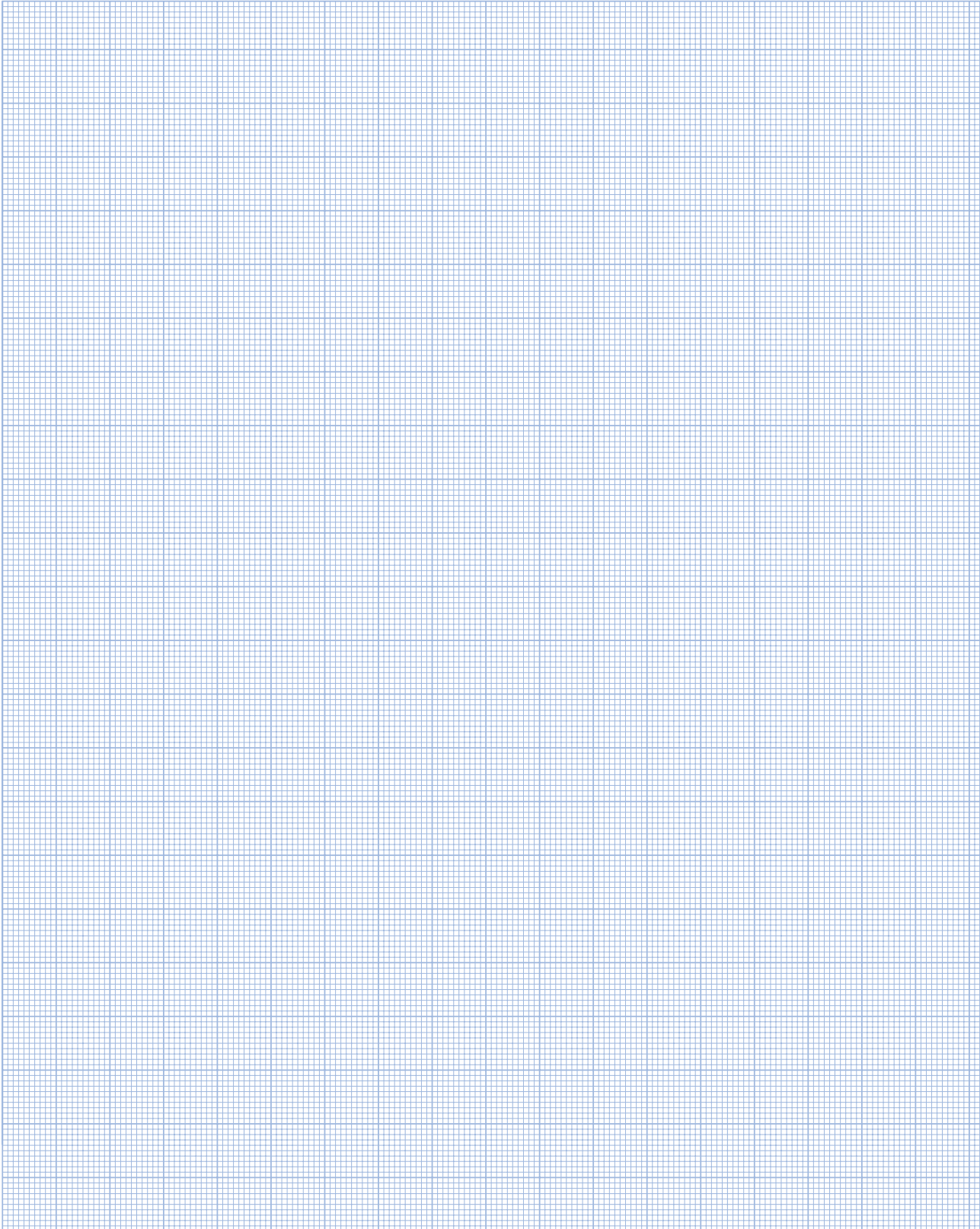
12
Mounting accessories

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Mounting instructions

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Adjustment/
maintenance

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Notes



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