

proPilot

The compact turn-tilt fitting.



in
windows

Product Catalogue 09/2016

Declaration of symbols

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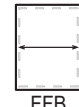
Sash weight max. x kg



Optional fittings



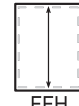
Max. sash size: x m²



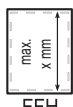
Size-dependent fittings depending on sash rebate width (FFB)



Max. sash rebate width (FFB): x mm



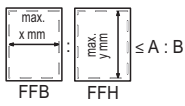
Size-dependent fittings depending on sash rebate height (FFH)



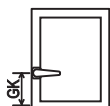
Max. sash rebate height (FFH): x mm



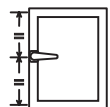
Direction of view



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



Constant handle height



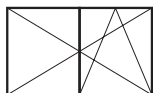
Central handle height



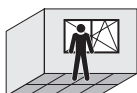
Turn sash (D)



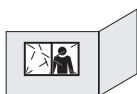
Turn-tilt sash (DK)



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



Interior view



Exterior view



Basic set of fittings

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2 German engineering

3 proPilot: The economical and functional turn-tilt fitting

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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.

proPilot

The compact turn-tilt fitting.

The Winkhaus proPilot fitting system has particularly been developed to suit economical requirements of dynamic markets. The Winkhaus brand fitting has a modular design, enabling the efficient production of rectangular windows. As a fail-safe device, mini vent keep and balcony door catch can easily be retrofitted to the proPilot fitting, we can flexibly respond to our customers' requests. Thus proPilot meets individual national market requirements. Due to the well-proven trimming technique and simple interlinking of the fitting parts, installation can quickly and easily be carried out. For special applications, e.g. studio and security windows, we recommend to use the activPilot fitting.

Tried and trusted quality

Our quality philosophy makes sure only first-quality products leave our works. The prerequisites for this are set in our construction department thanks to premium materials and thorough workmanship. In addition, a special refinement of surfaces guarantees permanent corrosion resistance and meets highest demands. The electroplating technique corresponds to DIN EN 1670 (2007), wear class 4. All these measures make sure that Winkhaus fittings are especially durable and run smoothly for many years.

Winkhaus has successfully passed the demanding QM 328 certification.

The Winkhaus proPilot fitting has been certified to QM 328. In this demanding certification program, the turn and turn-tilt fittings for windows and glazed doors pass numerous tests which prove the durability and quality control mechanisms. The certificate is a sign of Winkhaus' traditionally high product quality.

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.

Product liability

To ensure compliance with German product liability laws (article 4 ProdHaftG), please observe our manufacturer's information on turn-tilt fittings for windows and glazed doors. Failure to observe releases the manufacturer from any liability. Please consult your Winkhaus contact person for further information on this topic.

Please also observe the guidelines issued by Gütegemeinschaft Schlösser und Beschläge e.V. (Association for Quality Control of Locks and Fittings).

This information can be obtained at the following Internet address: <http://www.beschlagindustrie.de/ggsb/richtlinien.asp>

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.



Quality Management System DIN EN ISO 9001:2008

Energy Management System DIN EN ISO 50001:2011

Company

Aug. Winkhaus GmbH & Co. KG

August-Winkhaus-Str. 31

D – 48291 Telgte

Scope

Development, production and sales distribution of:

- fittings for windows and French doors,

- safety door locking devices and locking systems,

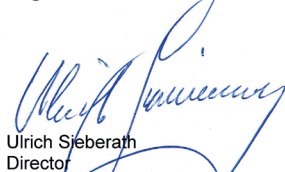
- mechanical and electronical cylinder locks,

electronical systems for monitoring emergency exits and mechanical security systems, access control and time recording systems

Branch Offices

Aug. Winkhaus GmbH & Co. KG, Berkeser Strasse 6, D – 98617 Meiningen

Aug. Winkhaus GmbH & Co. KG, Hessenweg 9, D – 48157 Münster


Ulrich Sieberath
Director

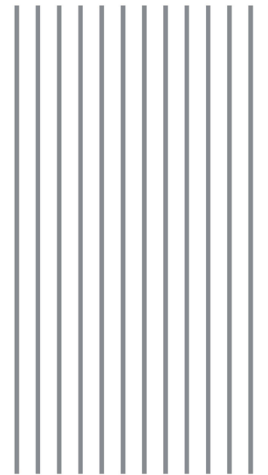
Rosenheim, 22.12.2014


Christian Kehr
Head of Certification Body

Certification Audit: September 2012, Audit Report No.: 791/796 7019950
Registration No. 14-011, Valid until: 21.12.2017



ift Rosenheim
Zertifizierungsstelle
Theodor-Gietl-Strasse 7-9
83026 Rosenheim



WINKHAUS

Basis

During the certification audit it was demonstrated that the company and all branches listed in this Certificate have established and are applying a management system that covers the specified scope.

Validity

The certificate is valid for 3 years. During this time the company is surveyed annually.

The certificate is only valid in combination with the accompanying certification and surveillance contract.

ift-Q-Zert shall be informed immediately in writing of all changes to the qualifications for certification and supplied with copies of all resulting new management documents.

Rules for branch office certification

This Certificate has been issued on the basis of the rules for branch office certification. The higher ranking company (headquarters) is responsible for the maintenance and further development of the management system as well as the control of central tasks.

Notes on Publication

The certificate shall only be reproduced unchanged. Regulations for the use of reports are given in the „Allgemeine Bedingungen für die Zertifizierung von Management-Systemen“.

The company is entitled to use the "ift-certified" mark in accordance with the ift "Zeichensatzung" (Rules on the use of the ift mark).



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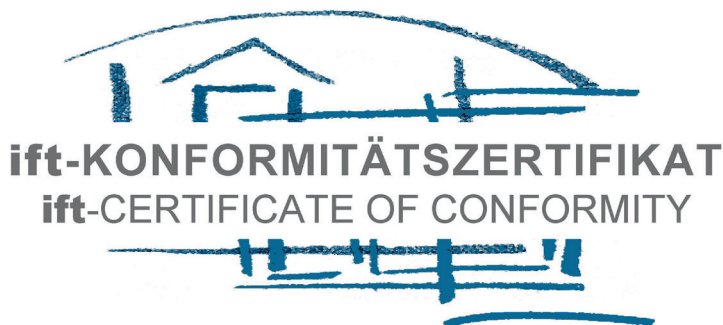
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ift-KONFORMITÄTSZERTIFIKAT

ift-CERTIFICATE OF CONFORMITY



Beschläge / Hardware

Produktfamilien
product families

Dreh- und Drehkippschläge 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



EN 12046-1
EN 13115
Klasse 2

Bedienungskräfte
operating forces



EN ISO 9227
EN 1670
Bis Klasse 5

Korrosionsschutz
corrosion protection

Christian Kehrer

Rosenheim
07. Juni 2016

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

Ulrich Sieberath

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

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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 Bandsseite/ 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	FVV	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

Anlage/annex 1 Seite/page 2 von 2
 Zertifikat-Nr./Certificate No.: 228 7019950-1-13
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Ifd. Nr./ no.	Ausführung Bandsseite/ 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	900/2300
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 Profillegeometrien. 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.

proPilot

Application diagram for ascertaining the admissible sash sizes

– Max. sash weight 70 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 1.5:1.

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

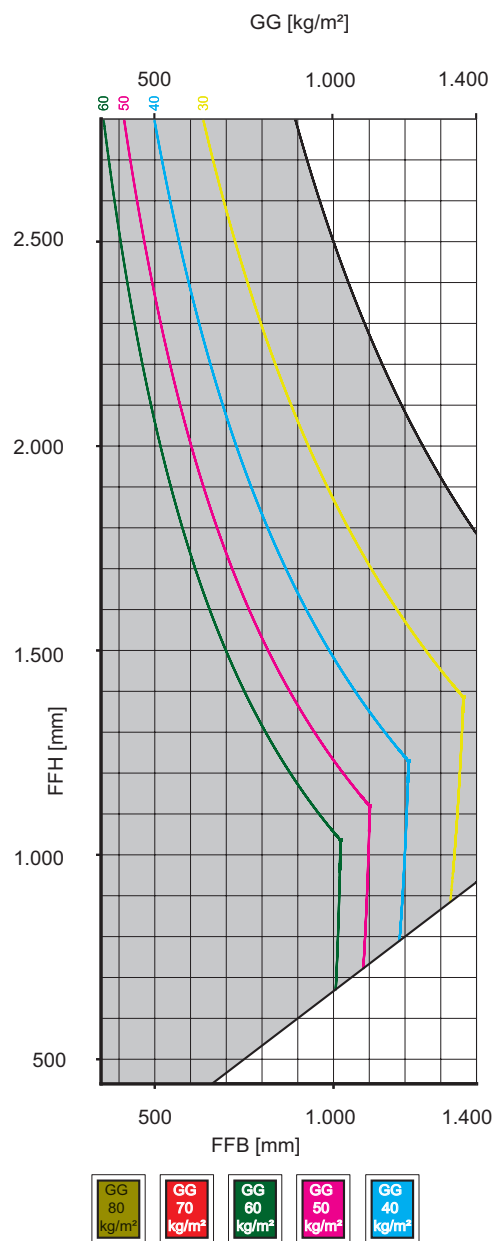
Advice for use

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

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.

- Min. sash rebate width 350 mm
- Min. sash rebate width 250 mm with E.U.3/E.K.U.3
- Max. sash rebate width 1400 mm
- Min. sash rebate height 440 mm
- Min. sash rebate height 340 mm with E.U.3/E.K.U.3
- Max. sash rebate height 2,800 mm
- Max. sash size 2.5 m²
- (1 mm glass thickness = 2.5 kg/m²)
- Max. sash weight 70 kg
- Width-height ratio FFB:FFH ≤ 1.5



AWD_01.50_NR04_DK_70 kg_ohne Zusatzlast_1,5_m

Abbreviations

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

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.

proPilot

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

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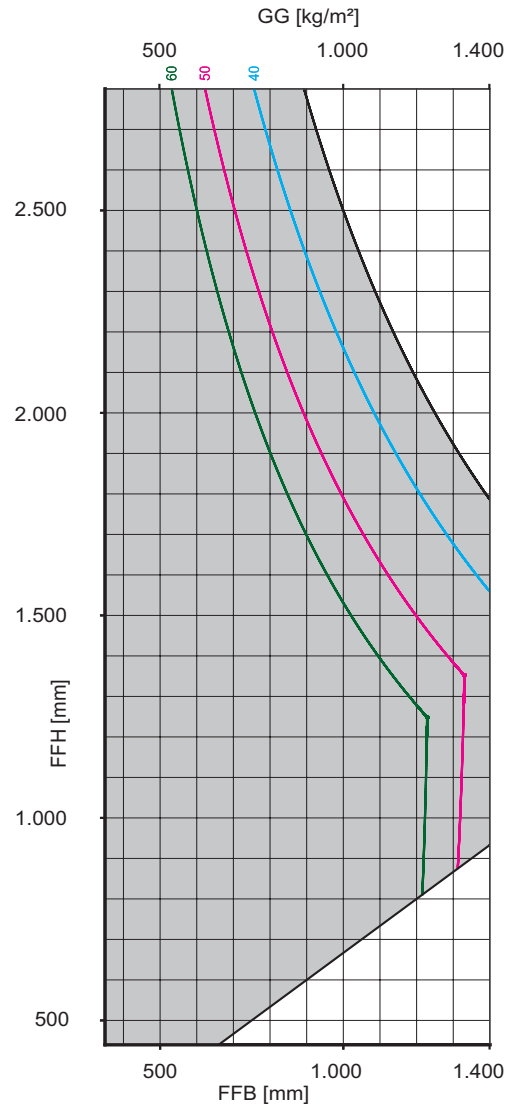
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- Min. sash rebate width 350 mm
- Min. sash rebate width 250 mm with E.U.3/E.K.U.3
- Max. sash rebate width 1400 mm
- Min. sash rebate height 440 mm
- Min. sash rebate height 340 mm with E.U.3/E.K.U.3
- Max. sash rebate height 2,800 mm
- Max. sash size 2.5 m²
- (1 mm glass thickness = 2.5 kg/m²)
- Max. sash weight 100 kg
- Width-height ratio FFB:FFH ≤ 1.5



AWD_01.50_NR14_DK_100_kg_ohne_Zusatzlast_1,5_m

Abbreviations

- FFB = Sash rebate width [mm]
- FFH = Sash rebate height [mm]
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Further products

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activPilot Concept

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

A modular system that combines the solutions of a future standard. A new closing system, attractive value-added functions and functional design.



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.



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.



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.



duoPort S

The fitting for sliding windows

A solid solution for space-saving opening of a window. The fitting is primarily characterised by its compact article range, easy installation and high durability. Premium bogies as well as rollers made of special plastic enable a smooth and quiet running of the sash.



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Corner drives/
Connecting rails **4**

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Sash hinges/
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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



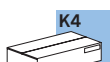
KT Goods packed in cardboard boxes with bar code



BD Tied goods with barcode



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



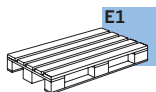
K4 Big cardboard box with bar code Dim: 595 x 395 x 205 mm



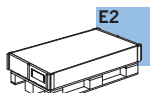
KK Small KLT 4321 Dim: 400 x 300 x 214 mm with cover, bar code, sealed, stackable



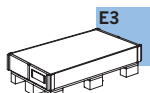
GK Big KLT 6412 Dim: 600 x 400 x 214 mm with cover, bar code, sealed, stackable



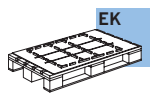
E1 europallet with KLT Pallet size 800 x 1,200 mm



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



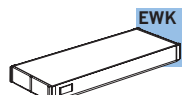
E3 One-way pallet with cover box and bar code



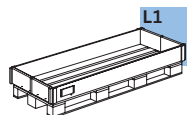
EK Europallet with KLT and fixing plate (avoids shifting of goods) Pallet size 800 x 1,200 mm



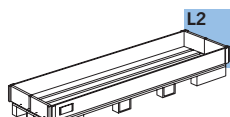
EA Europallet with frame and bar code Pallet size 800 x 1,200 mm



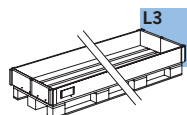
EWK Disposable cardboard box E3, L6 or L7



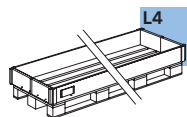
L1 Reusable pallet for long goods with frame and bar code Pallet size 800 x 1,800 mm



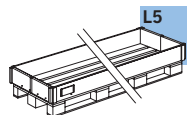
L2 Reusable pallet II for long goods with frame and bar code Pallet size 800 x 2,400 mm



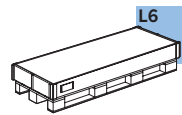
L3 Reusable pallet III for long goods with frame and bar code Pallet size 800 x 3,500 mm



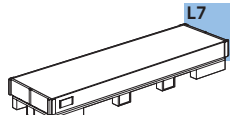
L4 Reusable pallet IV for long goods with frame and bar code Pallet size 800 x 4,200 mm



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



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



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

Glossary

Code

ADP.L.U Adapter, ruler, proPilot
 ADP.S.U Adapter, punch, proPilot
 ANS Mounting element
 ASS.AS.U Connecting rail, proPilot
 AS.T.U.9 Mini vent keep, proPilot, 9 mm groove position
 AS.T.U.13 Mini vent keep, proPilot, 13 mm groove position
 AS.U Corner drive

BK Balcony door catch

D Backset
 DL.K.U Turn hinge, PVC, proPilot

E.K.U Corner hinge for locking in tilt position
 E.U. Corner drive, proPilot
 EL.K.U Corner hinge, PVC, proPilot

FB.U Rebate sash hinge, proPilot
 FL.K.U Sash hinge, PVC, proPilot
 FLK Sash hinge cover
 FS.U.9 Fail-safe device, proPilot, 9 mm groove position
 FS.U.13 Fail-safe device, proPilot, 13 mm groove position

GK.U Drive rod, constant, proPilot
 GM.U Drive rod, central, proPilot
 GSK.U Constant double-sash connecting rod
 GSM.U Centre double-sash connecting rod
 GS.U Double-sash drive rod
 GVM.U Espagnolette, central, proPilot

K.ELK.U Cap, corner hinge, PVC, proPilot
 K.FL.K.U Cap, sash hinge, PVC, proPilot
 K.SL.K.U Cap, shear hinge, PVC, proPilot
 K.SK.U Cap, shear band, PVC, proPilot
 KR.U Flush bolt, pro Pilot
 KS.U Tilt keep, proPilot

LE.B Drilling jig
 LE.N Jig

M.U Interlocking rod, proPilot
 MK..U Interlocking rod, extendable, proPilot

OS..U Top rod, proPilot

S.U Tilt device, proPilot
 SL.K.U Shear hinge, PVC, proPilot
 SK.U Shear, PVC, proPilot
 SB.U Keep, proPilot
 S.FL.K.U.SL Plug, sash hinge, proPilot, silver
 SP.U Faceplate, proPilot
 SNH Faceplate fastener, proPilot

VS.U Extension rod, proPilot

ZV.FT Pull-in device, sash part
 ZV.RT Pull-in device, frame part
 ...ZN Material: Zinc diecast

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)

General product **1**
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 Corner hinges

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 Mounting accessories

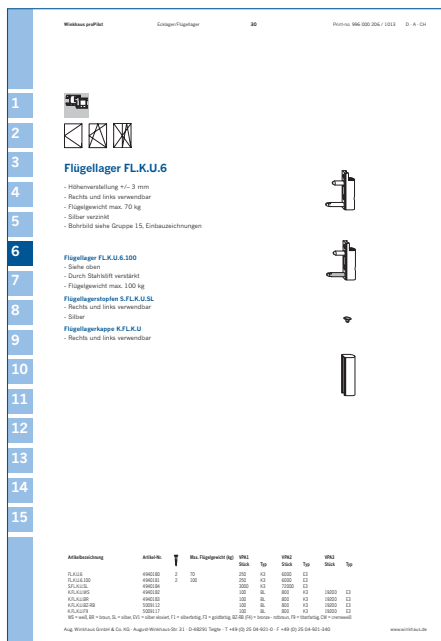
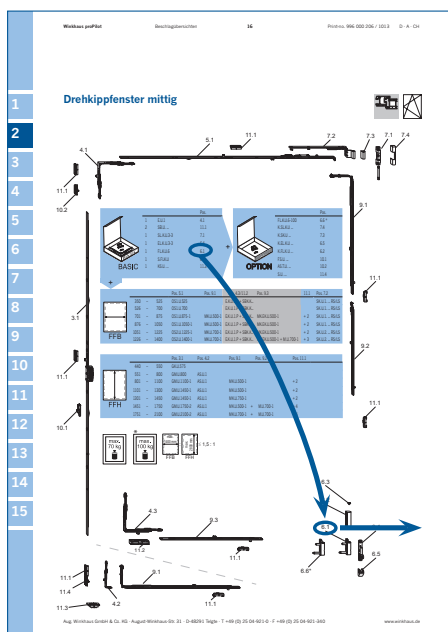
13
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 Adjustment/
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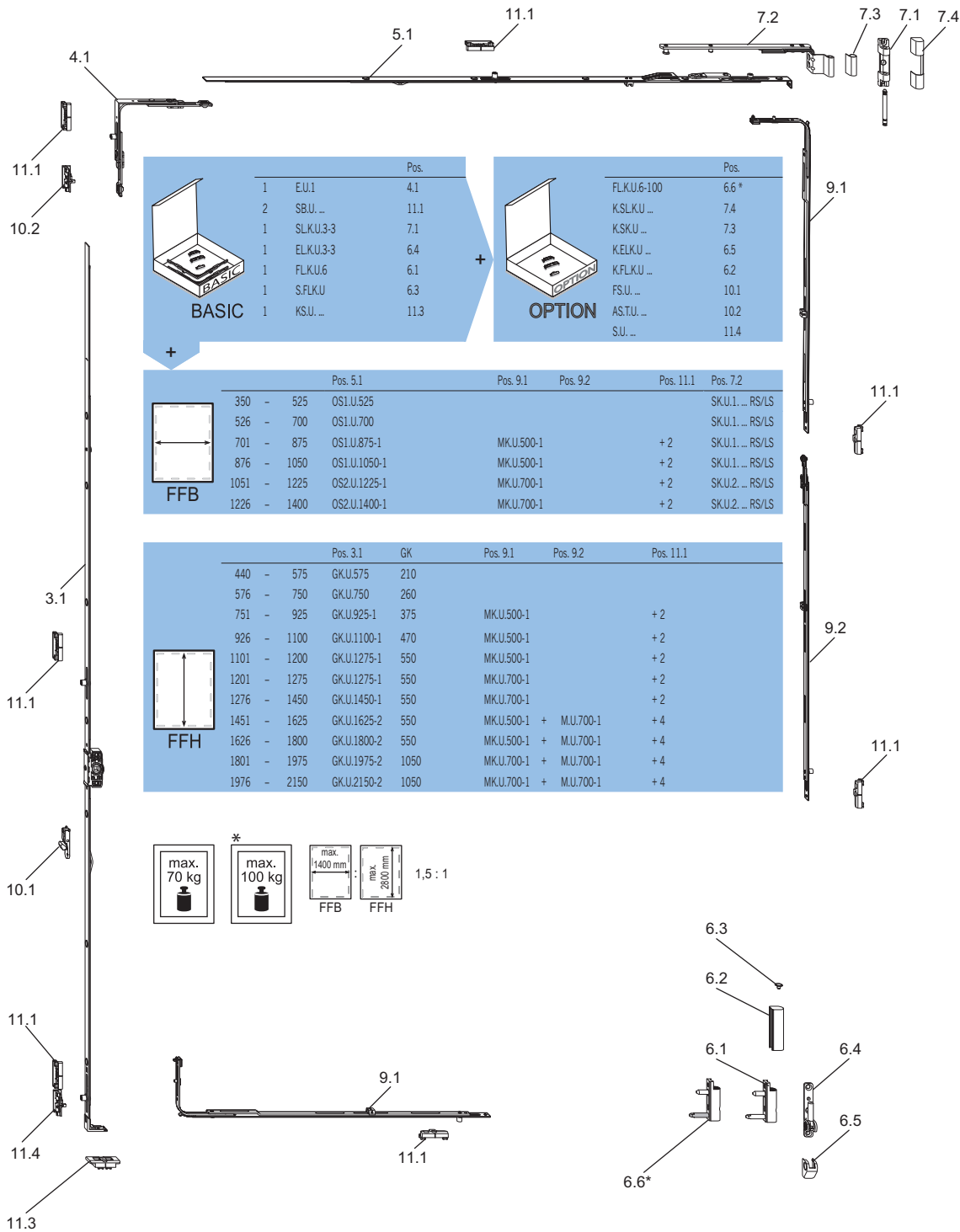
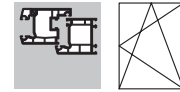
15
 Installation drawings

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.



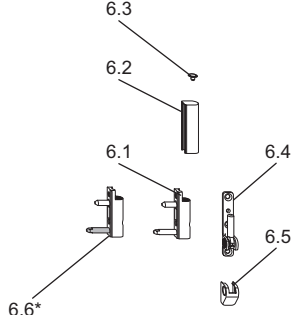
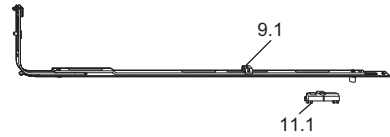
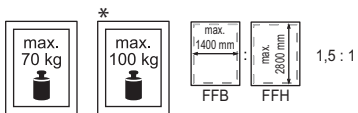
Turn-tilt fittings, constant handle position



BASIC			OPTION		
		Pos.			Pos.
1	EU.1	4.1	FL.KU.6-100		6.6*
2	SB.U. ...	11.1	K.SL.KU. ...		7.4
1	SL.KU.3-3	7.1	K.SK.U. ...		7.3
1	EL.KU.3-3	6.4	K.EL.KU. ...		6.5
1	FL.KU.6	6.1	K.FL.KU. ...		6.2
1	S.FL.KU	6.3	FS.U. ...		10.1
1	K.S.U. ...	11.3	AS.T.U. ...		10.2
			S.U. ...		11.4

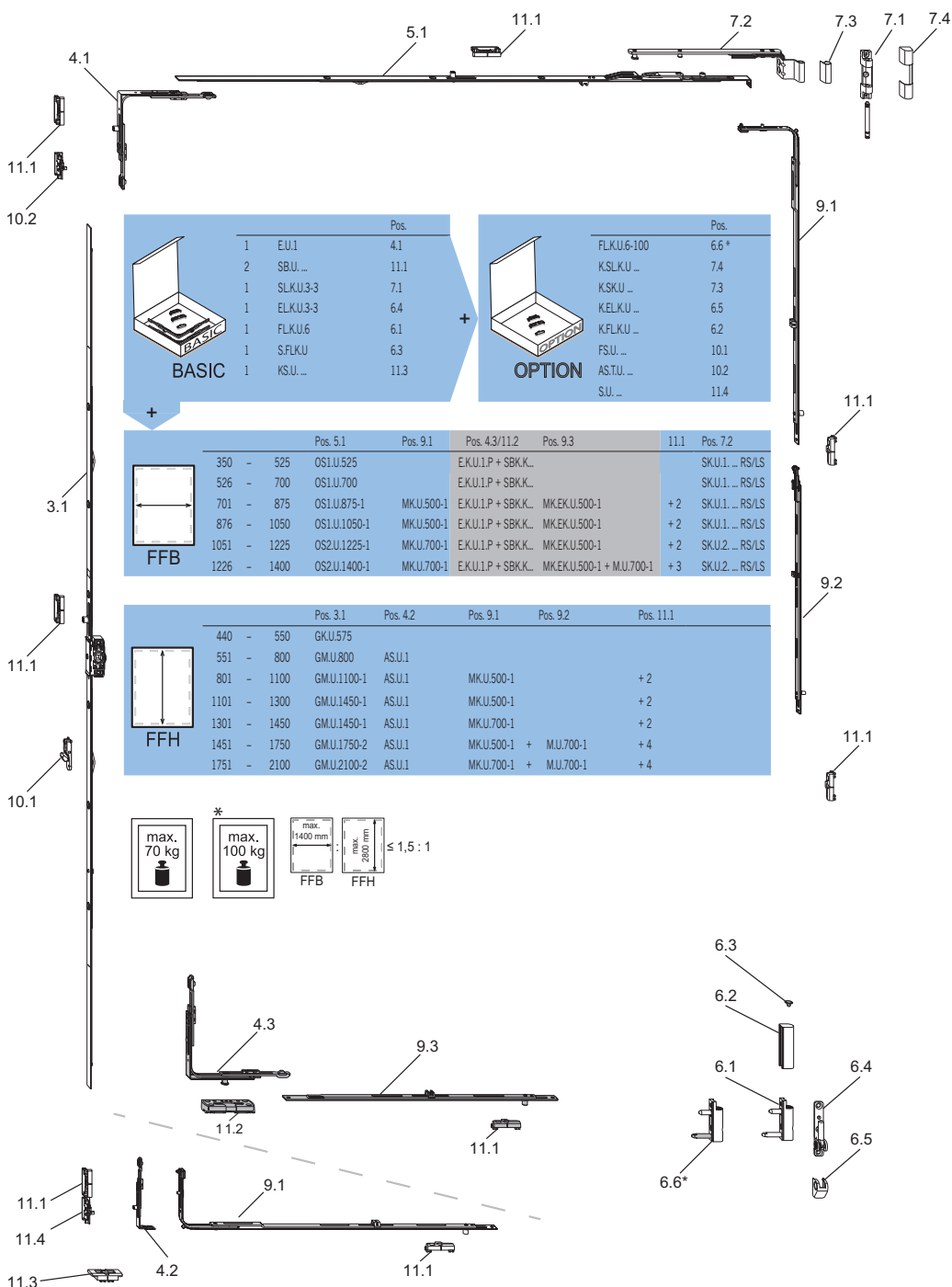
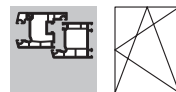
		Pos. 5.1	Pos. 9.1	Pos. 9.2	Pos. 11.1	Pos. 7.2
350	-	525	OS1.U.525			SK.U.1... RS/LS
526	-	700	OS1.U.700			SK.U.1... RS/LS
701	-	875	OS1.U.875-1			SK.U.1... RS/LS
876	-	1050	OS1.U.1050-1			SK.U.1... RS/LS
1051	-	1225	OS2.U.1225-1			SK.U.2... RS/LS
1226	-	1400	OS2.U.1400-1			SK.U.2... RS/LS

		Pos. 3.1	GK	Pos. 9.1	Pos. 9.2	Pos. 11.1
440	-	575	GK.U.575	210		
576	-	750	GK.U.750	260		
751	-	925	GK.U.925-1	375		
					MK.U.500-1	+2
926	-	1100	GK.U.1100-1	470		
					MK.U.500-1	+2
1101	-	1200	GK.U.1275-1	550		
					MK.U.500-1	+2
1201	-	1275	GK.U.1275-1	550		
					MK.U.700-1	+2
1276	-	1450	GK.U.1450-1	550		
					MK.U.700-1	+2
1451	-	1625	GK.U.1625-2	550		
					MK.U.500-1 + M.U.700-1	+4
1626	-	1800	GK.U.1800-2	550		
					MK.U.500-1 + M.U.700-1	+4
1801	-	1975	GK.U.1975-2	1050		
					MK.U.700-1 + M.U.700-1	+4
1976	-	2150	GK.U.2150-2	1050		
					MK.U.700-1 + M.U.700-1	+4



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Turn-tilt fittings, central handle position



BASIC			OPTION		
		Pos.			Pos.
1	E.U.1	4.1	FL.KU.6-100		6.6*
2	SB.U. ...	11.1	K.SL.K.U. ...		7.4
1	SL.KU.3-3	7.1	K.SK.U. ...		7.3
1	EL.KU.3-3	6.4	K.EL.K.U. ...		6.5
1	FL.KU.6	6.1	K.FL.K.U. ...		6.2
1	S.FLK.U.	6.3	FS.U. ...		10.1
1	KS.U. ...	11.3	AST.U. ...		10.2
			SU. ...		11.4

		Pos. 5.1	Pos. 9.1	Pos. 4.3/11.2	Pos. 9.3	11.1	Pos. 7.2
FFB	350 - 525	OS1.U.525		E.KU.1.P + SBK.K.L.		SK.U.1... RS/LS	
	526 - 700	OS1.U.700		E.KU.1.P + SBK.K.L.		SK.U.1... RS/LS	
	701 - 875	OS1.U.875-1	MKU.500-1	E.KU.1.P + SBK.K.L.	MKEKU.500-1	+2	SK.U.1... RS/LS
	876 - 1050	OS1.U.1050-1	MKU.500-1	E.KU.1.P + SBK.K.L.	MKEKU.500-1	+2	SK.U.1... RS/LS
	1051 - 1225	OS2.U.1225-1	MKU.700-1	E.KU.1.P + SBK.K.L.	MKEKU.500-1	+2	SK.U.2... RS/LS
	1226 - 1400	OS2.U.1400-1	MKU.700-1	E.KU.1.P + SBK.K.L.	MKEKU.500-1 + MU.700-1	+3	SK.U.2... RS/LS

		Pos. 3.1	Pos. 4.2	Pos. 9.1	Pos. 9.2	Pos. 11.1
FFH	440 - 550	GKU.575				
	551 - 800	GMU.800	AS.U.1			
	801 - 1100	GMU.1100-1	AS.U.1	MKU.500-1		+2
	1101 - 1300	GMU.1450-1	AS.U.1	MKU.500-1		+2
	1301 - 1450	GMU.1450-1	AS.U.1	MKU.700-1		+2
	1451 - 1750	GMU.1750-2	AS.U.1	MKU.500-1 + MU.700-1		+4
1751 - 2100	GMU.2100-2	AS.U.1	MKU.700-1 + MU.700-1		+4	

* max. 70 kg

max. 100 kg

max. 1400 mm

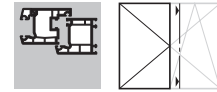
max. 2800 mm

FFB

FFH

≤ 1,5 : 1

Turn double sash fittings, constant handle position



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4 Corner drives/Connecting rails

5 Top rods

6 Sash hinges/Corner hinges

7 Shears/Shear hinges

8 Turn hinges

9 Extension rods

10 Accessories

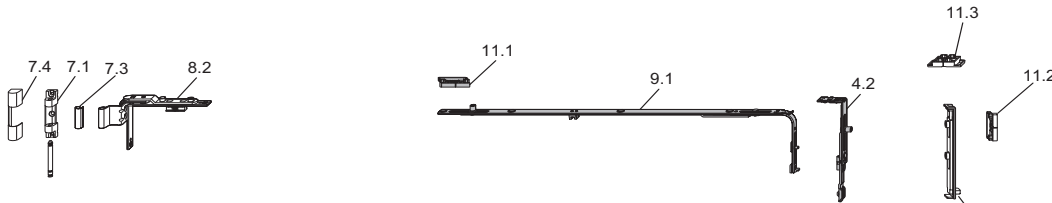
11 Frame parts

12 Mounting accessories

13 Mounting Instructions

14 Adjustment/maintenance

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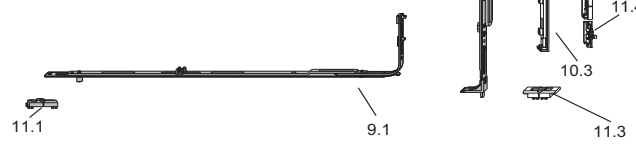
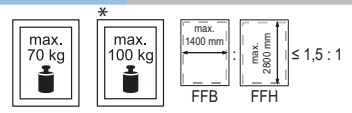
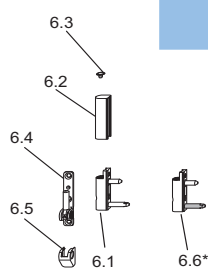


BASIC		Pos.	OPTION		Pos.
1	FLKU.6	6.1	FLKU.6-100	6.6 *	
1	S.FLKU	6.3	K.SLKU ...	7.4	
1	ELKU.3-3	6.4	K.SKU ...	7.3	
1	SLKU.3-3	7.1	K.ELKU ...	6.5	
1	DLKU...RS/LS	8.2	K.FLKU ...	6.2	
2	SBU.21Z	11.2	S.U.21Z	11.4	
2	KSU...	11.3			

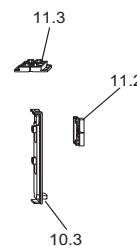
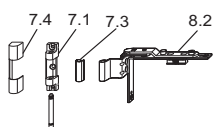
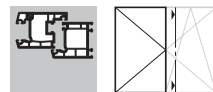
	Pos. 9.1	Pos. 11.1
200 - 700		
701 - 1000	2 x MKU.300-1	2 x SB...
1001 - 1200	2 x MKU.500-1	2 x SB...
1201 - 1400	2 x MKU.700-1	2 x SB...

	Pos. 10.4	Pos. 11.2	Pos. 10.5	Pos. 10.6	Pos. 10.3
440 - 750					2x KR.U
751 - 1450	1 x UF BK WS	1 x SBU.21Z	1 x ZV-FT	1 x ZV-RT	2x KR.U
1451 - 2150	2 x UF BK WS	2 x SBU.21Z	2 x ZV-FT	2 x ZV-RT	2x KR.U

	Pos. 3.3	Pos. 3.2	Pos. 4.2	Pos. 11.5	Pos. 10.5	Pos. 10.6
576 - 750	G.SU	GSK.U.750	AS.U.1			
751 - 925	G.SU	GSK.U.925-1	AS.U.1	1 x SBU.21Z	1 x ZV-FT	1 x ZV-RT
926 - 1100	G.SU	GSK.U.1100-1	AS.U.1	1 x SBU.21Z	1 x ZV-FT	1 x ZV-RT
1101 - 1275	G.SU	GSK.U.1275-1	AS.U.1	1 x SBU.21Z	1 x ZV-FT	1 x ZV-RT
1276 - 1450	G.SU	GSK.U.1450-1	AS.U.1	1 x SBU.21Z	1 x ZV-FT	1 x ZV-RT
1451 - 1625	G.SU	GSK.U.1625-2	AS.U.1	2 x SBU.21Z	2 x ZV-FT	2 x ZV-RT
1626 - 1800	G.SU	GSK.U.1800-2	AS.U.1	2 x SBU.21Z	2 x ZV-FT	2 x ZV-RT
1801 - 1975	G.SU	GSK.U.1975-2	AS.U.1	2 x SBU.21Z	2 x ZV-FT	2 x ZV-RT
1976 - 2150	G.SU	GSK.U.2150-2	AS.U.1	2 x SBU.21Z	2 x ZV-FT	2 x ZV-RT



Turn double sash fittings, central handle position

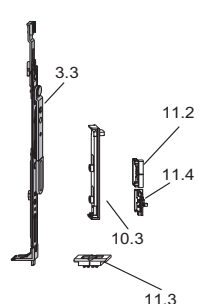
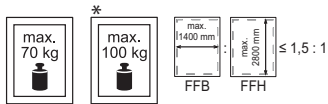
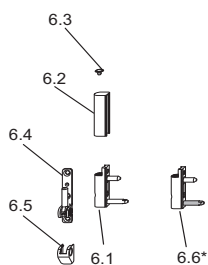
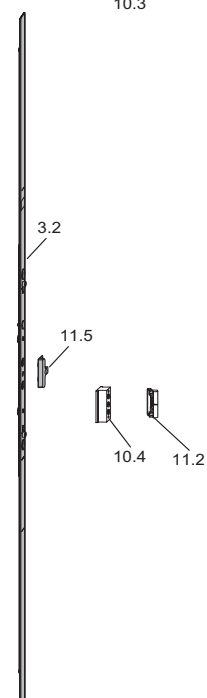


BASIC			OPTION		
1	FLKU6	Pos. 6.1	FLKU6-100	Pos. 6.6*	
1	S.FLKU	Pos. 6.3	K.SLKU...	Pos. 7.4	
1	ELKU3-3	Pos. 6.4	K.SKU...	Pos. 7.3	
1	SLKU3-3	Pos. 7.1	K.ELKU...	Pos. 6.5	
1	DLKU...RS/LS	Pos. 8.2	K.FLKU...	Pos. 6.2	
2	SB.U21Z	Pos. 11.2	S.U21Z	Pos. 11.4	
2	KS.U...	Pos. 11.3			

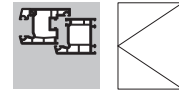
	Pos. 9.1	Pos. 11.1
200 - 700		
701 - 1000	2 x MKUJ300-1	2 x SB...
1001 - 1200	2 x MKUJ500-1	2 x SB...
1201 - 1400	2 x MKUJ700-1	2 x SB...

	Pos. 10.4	Pos. 11.2	Pos. 10.5	Pos. 10.6	Pos. 10.3
440 - 750					2x KRJ
751 - 1450	1 x UF BK WS	1 x SB.U21Z	1 x ZV-FT	1 x ZV-RT	2x KRJ
1451 - 2150	2 x UF BK WS	2 x SB.U21Z	2 x ZV-FT	2 x ZV-RT	2x KRJ

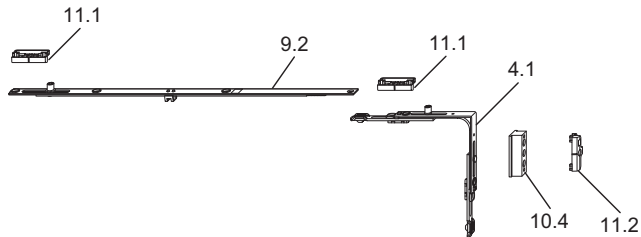
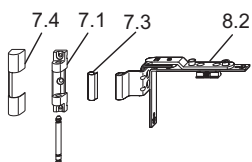
	Pos. 3.3	Pos. 3.2	Pos. 4.2	Pos. 11.5	Pos. 10.5	Pos. 10.6
576 - 750	GS.U	GSK.U.750	AS.U.1			
751 - 1100	GS.U	GSM.U.1100-1	AS.U.1	1 x SB.U21Z	1 x ZV-FT	1 x ZV-RT
1101 - 1450	GS.U	GSM.U.1450-1	AS.U.1	1 x SB.U21Z	1 x ZV-FT	1 x ZV-RT
1451 - 1750	GS.U	GSM.U.1750-2	AS.U.1	2 x SB.U21Z	1 x ZV-FT	1 x ZV-RT
1751 - 2100	GS.U	GSM.U.2100-2	AS.U.1	2 x SB.U21Z	1 x ZV-FT	1 x ZV-RT



Turn double sash fittings, central handle position, with GM.U



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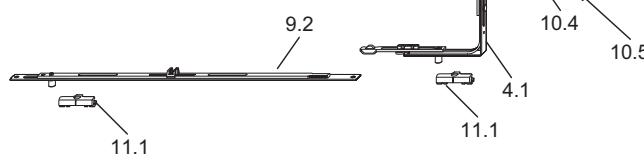
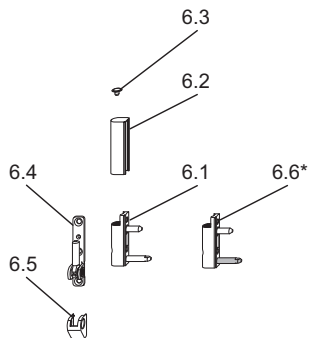
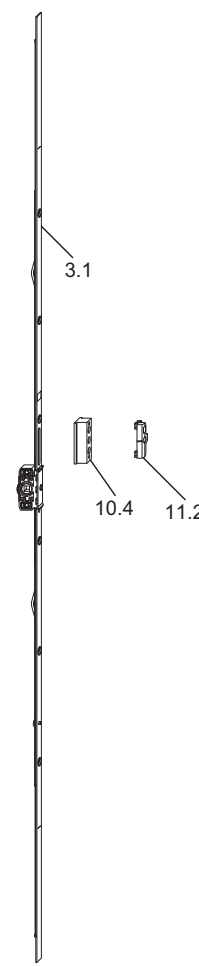
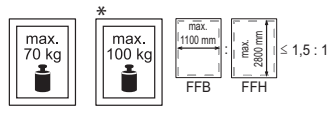
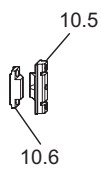


BASIC			OPTION		
		Pos.			Pos.
2	EU.1	4.1	FLKU.6-100		6.6*
1	DLKU...RS/LS	8.2	K.SLKU...		7.4
1	SLKU.3-3	7.1	K.SKU...		7.3
1	ELKU.3-3	6.4	K.ELKU...		6.5
1	FLKU.6	6.1	K.FLKU...		6.2
1	S.FLKU	6.3	SU.21.Z		11.4
2	SB.U...	11.1			
2	SB.U.21.Z	11.2			
2	UF BK WS	10.4			

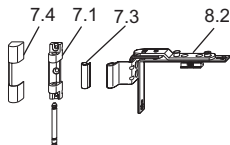
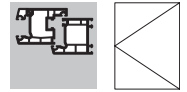
	Pos. 9.2	Pos. 11.1
200 - 800		
800 - 1300	2 x MKEKU.500-1	2 x SB.U...

FFB

	Pos. 3.1	Pos. 10.4	Pos. 11.2	Pos. 10.5	Pos. 10.6
551 - 800	GM.U.800				
801 - 1100	GM.U.1100-0	1 x UF BK WS	1 x SB.U.21.Z	1 x ZV-FT	1 x ZV-RT
1101 - 1450	GM.U.1450-0	1 x UF BK WS	1 x SB.U.21.Z	1 x ZV-FT	1 x ZV-RT
1451 - 1750	GM.U.1750-0	2 x UF BK WS	2 x SB.U.21.Z	2 x ZV-FT	2 x ZV-RT
1751 - 2100	GM.U.2100-0	2 x UF BK WS	2 x SB.U.21.Z	2 x ZV-FT	2 x ZV-RT

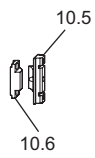


Turn window, central handle position, with GVM.U

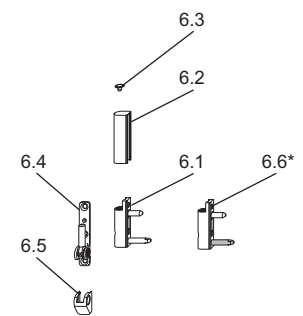
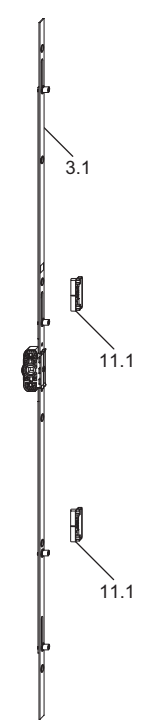


BASIC			OPTION		
		Pos.			Pos.
1	FL.KU.6	6.1	FL.KU.6-100		6.6 *
1	S.FLKU	6.3	K.SLKU ...		7.4
1	EL.KU.3-3	6.4	K.SKU ...		7.3
1	SL.KU.3-3	7.1	K.ELKU ...		6.5
1	DL.KU. ... RS/LS	8.2	K.FLKU ...		6.2
			S.U.21Z		11.4

FFB		FFH			
200 - 700		Pos. 3.1	Pos. 11.1	Pos. 10.5	Pos. 10.6
400 - 600	GVM.U.400-2	2 x SB.U. ...			
600 - 800	GVM.U.600-2	2 x SB.U. ...			
800 - 1000	GVM.U.800-2	2 x SB.U. ...		1 x ZV-FT	1 x ZV-RT
1000 - 1200	GVM.U.1000-3	3 x SB.U. ...		1 x ZV-FT	1 x ZV-RT
1200 - 1400	GVM.U.1200-3	3 x SB.U. ...		2 x ZV-FT	2 x ZV-RT
1400 - 1600	GVM.U.1400-3	3 x SB.U. ...		2 x ZV-FT	2 x ZV-RT
1600 - 1800	GVM.U.1600-3	3 x SB.U. ...		2 x ZV-FT	2 x ZV-RT
1800 - 2000	GVM.U.1800-4	4 x SB.U. ...		2 x ZV-FT	2 x ZV-RT
2000 - 2200	GVM.U.2000-4	4 x SB.U. ...		2 x ZV-FT	2 x ZV-RT



max. 70 kg	max. 100 kg	max. 1100 mm	max. 2000 mm	≤ 1,5 : 1
		FFB	FFH	



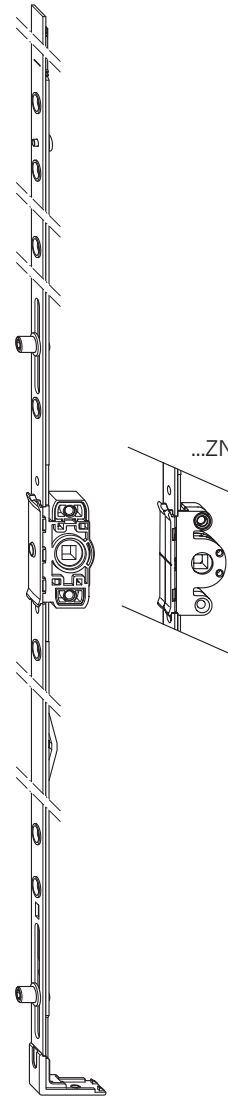


Drive rod GK.U

- Constant handle position GK
- Backset 15.5 mm
- Fail-safe device FS.U can be retrofitted
- 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
- Useable left and right hand
- Locking point with pressure adjustment ± 0.8 mm
- 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 GK.U...ZN

- Same construction as above, but gear case is made of zinc diecast



Item description	Item No.	Scope of application	🔧	Dimension GK	VPA1		VPA2	
					Qty.	Type	Qty.	Type
GKU.575	4939611	FFH 440 - 575	2	210	10	BD	500	E3
GKU.750	4939612	FFH 576 - 750	3	260	10	BD	500	E3
GKU.925-1	4939614	FFH 751 - 925	5	375	10	BD	400	E3
GKU.1100-1	4939616	FFH 926 - 1100	6	470	10	BD	400	E3
GKU.1275-1	4939617	FFH 1101 - 1275	6	550	10	BD	400	L6
GKU.1450-1	4939619	FFH 1276 - 1450	7	550	10	BD	400	L6
GKU.1625-2	4939630	FFH 1451 - 1625	8	550	10	BD	400	L6
GKU.1800-2	4939631	FFH 1626 - 1800	9	550	10	BD	400	L6
GKU.1975-2	4939632	FFH 1801 - 1975	10	1050	10	BD	400	L7
GKU.2150-2	4939633	FFH 1976 - 2150	11	1050	10	BD	400	L7
GKU.575.ZN	4988177	FFH 440 - 575	2	210	10	BD	500	E3
GKU.750.ZN	4988178	FFH 576 - 750	3	260	10	BD	500	E3
GKU.925-1.ZN	4988179	FFH 751 - 925	5	375	10	BD	400	E3
GKU.1100-1.ZN	4988181	FFH 926 - 1100	6	470	10	BD	400	E3
GKU.1275-1.ZN	4988182	FFH 1101 - 1275	6	550	10	BD	400	L6
GKU.1450-1.ZN	4988183	FFH 1276 - 1450	7	550	10	BD	400	L6
GKU.1625-2.ZN	4988184	FFH 1451 - 1625	8	550	10	BD	400	L6
GKU.1800-2.ZN	4988185	FFH 1626 - 1800	9	550	10	BD	400	L6
GKU.1975-2.ZN	4988186	FFH 1801 - 1975	10	1050	10	BD	400	L7
GKU.2150-2.ZN	4988187	FFH 1976 - 2150	11	1050	10	BD	400	L7

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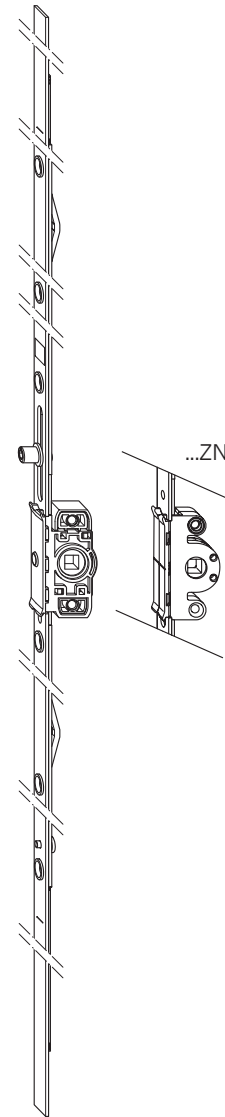
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Drive rod GM.U


- Central handle position
- Backset 15.5 mm
- Fail-safe device FS.U can be retrofitted
- For drilling and milling instructions see group 15, installation drawings
- Useable left and right hand
- Locking point with pressure adjustment ± 0.8 mm
- 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

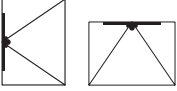
Drive rod GM.U 0

- See above
- No locking point
- Suitable for double-sash windows with a second handle, fitting concealed behind a front profile

Drive rod GM.U...ZN

- Same construction as above, but gear case is made of zinc diecast

Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
GM.U.800	4939634	FFH 550 - 800	2	10	BD	400	E3
GM.U.1100-1	4939635	FFH 750 - 1100	4	10	BD	360	E3
GM.U.1450-1	4939636	FFH 1100 - 1450	6	10	BD	360	L6
GM.U.1750-2	4939637	FFH 1400 - 1750	8	10	BD	400	L6
GM.U.2100-2	4939639	FFH 1750 - 2100	10	10	BD	360	L7
GM.U.1100-0	4949516	FFH 750 - 1100	4	10	BD	360	E3
GM.U.1450-0	4949517	FFH 1100 - 1450	6	10	BD	360	L6
GM.U.1750-0	4949518	FFH 1400 - 1750	8	10	BD	360	L6
GM.U.2100-0	4949519	FFH 1750 - 2100	10	10	BD	400	L7
GM.U.800.ZN	4987358	FFH 550 - 800	2	10	BD	400	E3
GM.U.1100-1.ZN	4987359	FFH 750 - 1100	4	10	BD	360	E3
GM.U.1450-1.ZN	4987410	FFH 1100 - 1450	6	10	BD	360	L6
GM.U.1750-2.ZN	4987411	FFH 1400 - 1750	8	10	BD	400	L6
GM.U.2100-2.ZN	4987412	FFH 1750 - 2100	10	10	BD	360	L7
GM.U.1100-0.ZN	4988241	FFH 750 - 1100	4	10	BD	400	E3
GM.U.1450-0.ZN	4988242	FFH 1100 - 1450	6	10	BD	400	L6
GM.U.1750-0.ZN	4988243	FFH 1400 - 1750	8	10	BD	400	L6
GM.U.2100-0.ZN	4988244	FFH 1750 - 2100	10	10	BD	400	L7

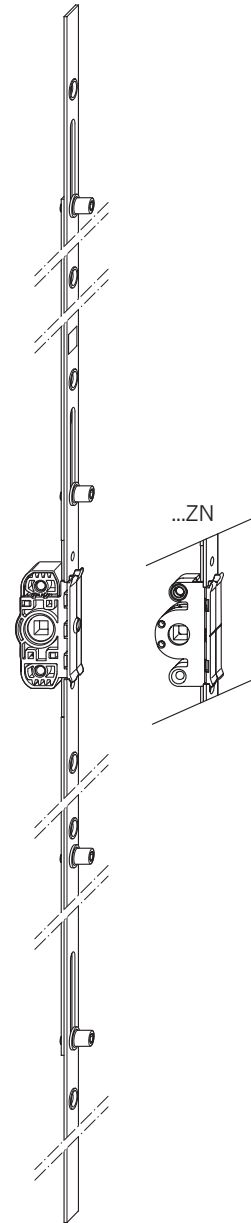



Locking drive GVM.U

- 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
- Useable left and right hand
- Locking point with pressure adjustment ± 0.8 mm
- Fasten the window handle attachment with M5 x ..., DIN 965, 43 mm screw centres
- Central fastening as standard
- Turn position is the factory default
- Faceplate width 16 mm

Locking drive GVM.U...ZN

- Same construction as above, but gear case is made of zinc diecast



Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
GVM.U.400-2	4942870	FFH 400 - 600	4	10	BD	800	E3
GVM.U.600-2	4942871	FFH 600 - 800	4	10	BD	800	E3
GVM.U.800-2	4942872	FFH 800 - 1000	6	10	BD	400	E3
GVM.U.1000-3	4942873	FFH 1000 - 1200	6	10	BD	400	E3
GVM.U.1200-3	4942874	FFH 1200 - 1400	8	10	BD	400	L6
GVM.U.1400-3	4942875	FFH 1400 - 1600	9	10	BD	400	L6
GVM.U.1600-3	4942877	FFH 1600 - 1800	10	10	BD	400	L6
GVM.U.1800-4	4942879	FFH 1800 - 2000	12	10	BD	400	L7
GVM.U.2000-4	4942880	FFH 2000 - 2200	13	10	BD	400	L7
GVM.U.400-2.ZN	4988169	FFH 400 - 600	4	10	BD	800	E3
GVM.U.600-2.ZN	4988220	FFH 600 - 800	4	10	BD	800	E3
GVM.U.800-2.ZN	4988221	FFH 800 - 1000	6	10	BD	400	E3
GVM.U.1000-3.ZN	4988222	FFH 1000 - 1200	6	10	BD	400	E3
GVM.U.1200-3.ZN	4988223	FFH 1200 - 1400	8	10	BD	400	L6
GVM.U.1400-3.ZN	4988224	FFH 1400 - 1600	9	10	BD	400	L6
GVM.U.1600-3.ZN	4988225	FFH 1600 - 1800	10	10	BD	400	L6
GVM.U.1800-4.ZN	4988226	FFH 1800 - 2000	12	10	BD	400	L7
GVM.U.2000-4.ZN	4988227	FFH 2000 - 2200	13	10	BD	400	L7

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Double-sash drive rod GS.U

- Operating lever for double-sash connecting rods
- Useable left and right hand
- Only one double-sash drive rod for central and constant handle position
- Used on the inactive sash with opposite fitting groove
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates

Double-sash connecting rod GSM.U...

- For drive rods with central handle position
- Can be cut on both sides
- Combined with double-sash drive rod GS.U
- SB.U.21 Z keep can be fitted onto the double-sash connecting rod

Double-sash connecting rod GSK.U...

- For drive rods with constant handle position
- Can be cut on one side
- Combined with double-sash drive rod GS.U
- SB.U.21 Z keep can be fitted onto the double-sash connecting rod

GS.U



GSM.U



GSK.U



Item description	Item No.	Scope of application	🔩	VPA1		VPA2	
				Qty.	Type	Qty.	Type
GS.U	5002639	FFH 576 - 2150	4	10	BD	1000	E3
GSM.U.1100-1	5002781	FFH 750 - 1100	2	10	BD	600	E3
GSM.U.1450-1	5002782	FFH 1101 - 1450	4	10	BD	600	L6
GSM.U.1750-2	5002783	FFH 1401 - 1750	4	10	BD	600	L6
GSM.U.2100-2	5002784	FFH 1751 - 2100	6	10	BD	600	L7
GSK.U.750	5002785	FFH 575 - 750	1	10	BD	600	E3
GSK.U.925-1	5002786	FFH 751 - 925	2	10	BD	600	E3
GSK.U.1100-1	5002787	FFH 926 - 1100	2	10	BD	600	E3
GSK.U.1275-1	5002788	FFH 1101 - 1275	4	10	BD	600	E3
GSK.U.1450-1	5002789	FFH 1276 - 1450	5	10	BD	600	E3
GSK.U.1625-2	5002790	FFH 1451 - 1625	5	10	BD	600	L6
GSK.U.1800-2	5002791	FFH 1626 - 1800	6	10	BD	600	L6
GSK.U.1975-2	5002792	FFH 1801 - 1975	8	10	BD	600	L6
GSK.U.2150-2	5002793	FFH 1976 - 2150	8	10	BD	600	L7



Corner drive E.U.1

- Faceplate length 101,5 mm
- Useable left and right hand
- Locking point with pressure adjustment ± 0.8 mm
- Smooth operation due to stainless spring steel hinges
- Faceplate width 16 mm
- Central fastening as standard
- Turn position is the factory default
- Overlapping system linkage without connecting plates

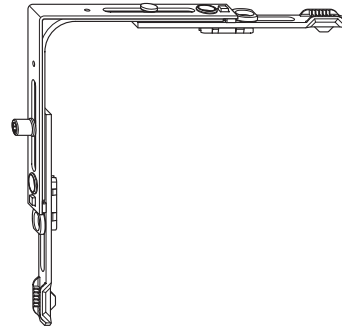
Corner drive E.K.U.1

- Design as described above, but with an additional mushroom-head bolt for locking in the tilt position
- Pressure cannot be adjusted on mushroom-head bolt
- Tilt keeps used are those from the activPilot range.

Corner drive E.K.U.1.P

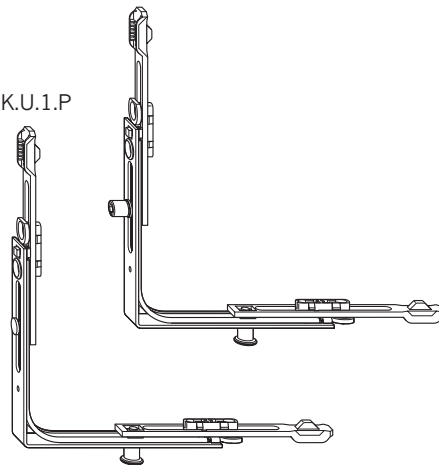
- Design as described above, but with only one mushroom-head bolt for locking in the tilt position
- Mushroom-head bolt with pressure adjustment ± 0.8 mm
- Tilt keeps used are those from the activPilot range.


E.U.1



E.K.U.1

E.K.U.1.P



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
E.U.1	4937771	4	150	K3	3600	E3
E.K.U.1	4987427	4	150	K3	3600	E3
E.K.U.1.P	5005010	4	150	K3	3600	E3

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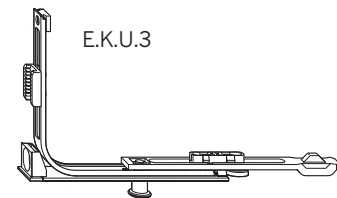
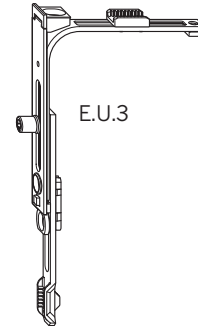



Corner hinge E.U.3

- Faceplate length 101,5 mm
- Useable left and right hand
- Locking point with pressure adjustment ± 0.8 mm
- Smooth operation due to stainless spring steel hinges
- Faceplate width 16 mm
- Central fastening as standard
- Turn position is the factory default
- Overlapping system linkage without connecting plates
- Screw for connecting the adjoining faceplate with the corner drive is included in the scope of delivery

Corner drive E.K.U.3

- Design as described above, but with 1 mushroom-head bolt for locking in the tilt position

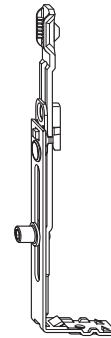


Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
E.U.3	4941717	3	150	K3	3600	E3
E.K.U.3	5001150	3	150	K3	3600	E3



Connecting rail ASS.AS.U

- Faceplate length 101,5 mm
- Tilt locking by means of shootbolt
- Useable left and right hand
- Locking point with pressure adjustment ± 0.8 mm
- Faceplate width 16 mm
- Overlapping system linkage without connecting plates
- Turn position is the factory default
- Central fastening as standard



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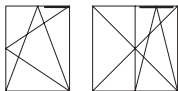
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Item description	Item No.		VPA1		VPA2	
			Qty.	Type	Qty.	Type
ASS.AS.U	4938613	2	300	K3	7200	E3




Top rod OS1.U

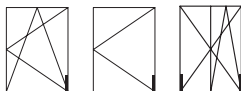


- OS1.U. ... can be used up to a sash rebate width of 1,050 mm
- In combination with SK.U.1 shear for PVC-U windows
- Useable left and right hand
- Integrated anti-slam block in tilt position as standard
- Locking point with pressure adjustment ± 0.8 mm
- Central fastening as standard
- Turn position is the factory default
- Overlapping system linkage without connecting plates
- After assembly the top rod and the shear are firmly attached to one another

Top rod OS2.U

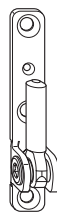
- See above
- Application range from 1,050 to 1,400 mm
- In combination with SK.U.2 shear for PVC-U windows

Item description	Item No.	Scope of application		VPA1 Qty.	Type	VPA2 Qty.	Type
OS1.U.525	4937982	FFB 350 - 525	2	150	K4	1800	E3
OS1.U.700	4937983	FFB 526 - 700	3	10	BD	480	E3
OS1.U.875-1	4937984	FFB 701 - 875	4	10	BD	640	E3
OS1.U.1050-1	4937985	FFB 876 - 1050	5	10	BD	500	E3
OS2.U.1225-1	4937986	FFB 1051 - 1225	8	10	BD	500	L6
OS2.U.1400-1	4937987	FFB 1226 - 1400	9	10	BD	500	L6



Corner hinge EL.K.U.3-3


- Corner drive EL.K.U.3-3 with symmetrical drilling pattern, corresponding to shear hinge SL.K.U.3-3
- Side adjustment ± 2 mm
- Useable left and right hand
- Sash weight max. 100 kg
- For drilling instructions see group 15, installation drawings
- Galvanised silver



Corner hinge cap K.ELK.U. ...

- Useable left and right hand
- Colours: available in white and brown



Item description	Item No.		Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
EL.K.U.3-3	4937788	3	100	600	K3	14400	E3		
K.EL.K.U.WS	4937789			100	BL	2500	K3	60000	E3
K.EL.K.U.BR	4937791			100	BL	2500	K3	20000	E3
K.EL.K.U.BZ-RB	5009113			100	BL	2500	K3	60000	E3
K.EL.K.U.F9	5009118			100	BL	2500	K3	60000	E3

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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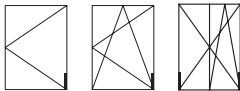
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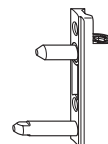
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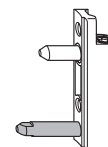
Sash hinge FL.K.U.6

- Height adjustment +/- 3 mm
- Useable left and right hand
- Sash weight max. 70 kg
- Galvanised silver
- For drilling instructions see group 15, installation drawings



Sash hinge FL.K.U.6.100

- See above
- Reinforced by steel pin
- Sash weight max. 100 kg



Sash hinge plug S.FL.K.U.SL

- Useable left and right hand
- Silver



Sash hinge cap K.FL.K.U

- Useable left and right hand



Item description	Item No.	Item No.	Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
FL.K.U.6	4940180	2	70	250	K3	6000	E3		
FL.K.U.6.100	4940181	2	100	250	K3	6000	E3		
S.FL.K.U.SL	4940184			1	E3	3000	BL	30000	K3
K.FL.K.U.WS	4940182			100	BL	800	K3	19200	E3
K.FL.K.U.BR	4940183			100	BL	800	K3	19200	E3
K.FL.K.U.BZ-RB	5009112			100	BL	800	K3	19200	E3
K.FL.K.U.F9	5009117			100	BL	800	K3	19200	E3

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

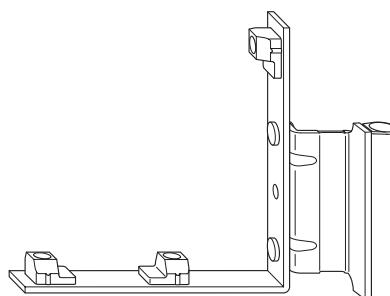


Rebate sash hinge FB.U. 20 ...

- Height adjustment +/- 3 mm
- Sash hinge made completely of steel
- Sash weight max. 100 kg
- Visible parts in silver

Sash hinge cover FLK FWV

- Colours: available in white and brown



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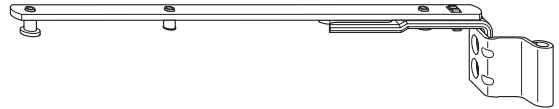
Item description	Item No.		Overlap	Groove centre position	Max. sash weight (kg)	VPA1		VPA2		VPA3	
						Qty.	Type	Qty.	Type	Qty.	Type
FB.U.20-13.RS	4952501	4	20	13	100	100	K3	2400	E3		
FB.U.20-13.LS	4952502	4	20	13	100	100	K3	2400	E3		
FLK FWV RS WS	2301616					100	BL	300	KK	2400	EK
FLK FWV LS WS	2301624					100	BL	300	KK	2400	EK
FLK FWV RS BR	2301595					100	BL	300	KK	2400	EK
FLK FWV LS BR	2301608					100	BL	300	KK	2400	EK

WS = white, BR = brown, SL = silver
RS = right, LS = left



Shear SK.U.1.20-...

- Shear SK.U.1. ..., application range 350 to 1,050 mm
- For 20 mm overlap
- For 9 or 13 mm groove centre position
- Only two shear sizes
- Angle hinge shear
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Visible parts in silver
- Sash weight max. 100 kg
- After assembly the top rod and the shear are firmly attached to one another
- Pressure adjustment ± 0.8 mm to the top rod's locking bolt



Shear SK.U.2.20-...

- See above
- Shear SK.U.2. ..., application range 1,050 to 1,400 mm

Shear hinge cap K.SK.U

- Useable left and right hand

Item description	Item No.	Max. sash weight (kg)	Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
SK.U.1.20-9.RS	4992358	100	20	9	10	BD	60	K3	1440	E3
SK.U.1.20-9.LS	4992359	100	20	9	10	BD	60	K3	1440	E3
SK.U.2.20-9.RS	4992366	100	20	9	10	BD	80	K4	960	E3
SK.U.2.20-9.LS	4992367	100	20	9	10	BD	80	K4	960	E3
SK.U.1.20-13.RS	4992360	100	20	13	10	BD	60	K3	1440	E3
SK.U.1.20-13.LS	4992361	100	20	13	10	BD	60	K3	1440	E3
SK.U.2.20-13.RS	4992368	100	20	13	10	BD	80	K4	960	E3
SK.U.2.20-13.LS	4992369	100	20	13	10	BD	80	K4	960	E3
K.SK.U.WS	4938515				100	BL	2000	K3	48000	E3
K.SK.U.BR	4938516				100	BL	2000	K3	48000	E3
K.SK.U.BZ-RB	5009114				100	BL	2000	K3	48000	E3
K.SK.U.F9	5009119				100	BL	2000	K3	48000	E3

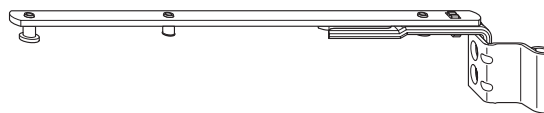
RS = right, LS = left

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



Shear SK.U.1....-13

- Shear SK.U.1. ..., application range 350 to 1,050 mm
- For 21 mm or 22 mm overlap
- For 13 mm eurogroove position
- Only two shear sizes
- Angle hinge shear
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Visible parts in silver
- Sash weight max. 100 kg
- After assembly the top rod and the shear are firmly attached to one another
- Pressure adjustment ± 0.8 mm to the top rod's locking bolt



Shear SK.U.2...-13

- See above
- Shear SK.U.2. ..., application range 1,050 to 1,400 mm

Shear hinge cap K.SK.U

- Useable left and right hand
- Colours: available in white and brown

Item description	Item No.	Max. sash weight (kg)	Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
SK.U.1.21-13.LS	4992363	100	21	13	10	BD	60	K3	1440	E3
SK.U.1.21-13.RS	4992362	100	21	13	10	BD	60	K3	1440	E3
SK.U.2.21-13.LS	4992371	100	21	13	10	BD	80	K4	960	E3
SK.U.2.21-13.RS	4992370	100	21	13	10	BD	80	K4	960	E3
SK.U.1.22-13.RS	4992364	100	22	13	10	BD	60	K3	1440	E3
SK.U.1.22-13.LS	4992365	100	22	13	10	BD	60	K3	1440	E3
SK.U.2.22-13.RS	4992372	100	22	13	10	BD	80	K4	960	E3
SK.U.2.22-13.LS	4992373	100	22	13	10	BD	80	K4	960	E3
K.SK.U.WS	4938515				100	BL	2000	K3	48000	E3
K.SK.U.BR	4938516				100	BL	2000	K3	48000	E3
K.SK.U.BZ-RB	5009114				100	BL	2000	K3	48000	E3
K.SK.U.F9	5009119				100	BL	2000	K3	48000	E3

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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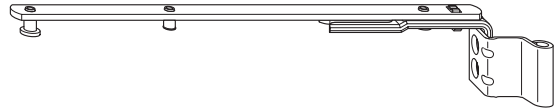
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Shear SK.U.1.20-14

- Shear SK.U.1. ..., application range 350 to 1,050 mm
- For 20 mm overlap and 14 mm groove position
- Only two shear sizes
- Angle hinge shear
- Tilt opening width approx. 135 to 140 mm (depending on profile)
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Visible parts in silver
- Sash weight max. 100 kg
- After assembly the top rod and the shear are firmly attached to one another
- Pressure adjustment ± 0.8 mm to the top rod's locking bolt



Shear SK.U.2.20-14

- See above
- Shear SK.U.2. ..., application range 1,050 to 1,400 mm

Shear hinge cap K.SK.U

- Useable left and right hand
- Colours: available in white and brown

Item description	Item No.	Max. sash weight (kg)	Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
SK.U.1.20-14.LS	4995905	100	20	14	10	BD	60	K3	1440	E3
SK.U.1.20-14.RS	4995904	100	20	14	10	BD	60	K3	1440	E3
SK.U.2.20-14.LS	4995907	100	20	14	10	BD	80	K4	960	E3
SK.U.2.20-14.RS	4995906	100	20	14	10	BD	80	K4	960	E3
K.SK.U.WS	4938515				100	BL	2000	K3	48000	E3
K.SK.U.BR	4938516				100	BL	2000	K3	48000	E3
K.SK.U.BZ-RB	5009114				100	BL	2000	K3	48000	E3
K.SK.U.F9	5009119				100	BL	2000	K3	48000	E3

RS = right, LS = left

WS = white, BR = brown, SL = silver



Shear hinge SL.K.U.3-3

- Shear hinge SL.K.U.3-3 with symmetrical drilling pattern, corresponding to corner hinge EL.K.U.3-3
- Shear hinge with integrated pin fixing device
- For drilling instructions see group 15, installation drawings
- For sash weights up to 100 kg
- Shear hinge/corner hinge drilling possible on unwelded profile pieces
- Galvanised silver

Shear hinge cover K.SL.K.U

- Useable left and right hand



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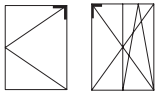
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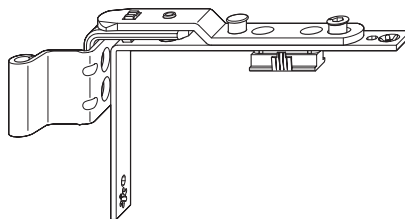
Item description	Item No.		Max. sash weight (kg)	VPA1		VPA2		VPA3	
				Qty.	Type	Qty.	Type	Qty.	Type
SL.K.U.3-3	4938517	3	100	400	K3	9600	E3		
K.SL.K.U.WS	4938513			100	BL	600	K3	14400	E3
K.SL.K.U.BR	4938514			100	BL	600	K3	14400	E3
K.SL.K.U.BZ-RB	5009115			100	BL	600	K3	14400	E3
K.SL.K.U.F9	5009120			100	BL	600	K3	14400	E3

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 hinge DL.K.U.20-9

- For 20 mm overlap and 9 mm groove centre position
- Adjustment for lifting and lowering the sash (+3.5/-2.0 mm)
- Pressure adjustment in top hinge ± 0.8 mm
- Galvanised silver



Turn hinge DL.K.U.20-13

- See above
- For 20 mm overlap and 13 mm groove centre position

Turn hinge DL.K.U.21-13

- See above
- For 21 mm overlap and 13 mm groove centre position

Turn hinge DL.K.U.22-13


- See above
- For 22 mm overlap and 13 mm groove position

Turn hinge DL.K.U.20-14

- For 20 mm overlap and 14 mm groove position

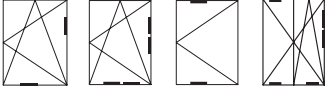
Shear hinge cap K.SK.U

- Useable left and right hand
- Colours: available in white and brown

Item description	Item No.		Max. sash weight (kg)	Overlap	Groove centre position	VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
DL.K.U.20-9.RS	4938559	4	100	20	9	100	K3	2400	E3		
DL.K.U.20-9.LS	4938560	4	100	20	9	100	K3	2400	E3		
DL.K.U.20-13.RS	4938562	4	100	20	13	100	K3	2400	E3		
DL.K.U.20-13.LS	4938566	4	100	20	13	100	K3	2400	E3		
DL.K.U.21-13.RS	4964294	4	100	21	13	100	K3	2400	E3		
DL.K.U.21-13.LS	4964295	4	100	21	13	100	K3	2400	E3		
DL.K.U.22-13.RS	4964296	4	100	22	13	100	K3	2400	E3		
DL.K.U.22-13.LS	4964297	4	100	22	13	100	K3	2400	E3		
DL.K.U.20-14.RS	4995908	4	100	20	14	100	K3	2400	E3		
DL.K.U.20-14.LS	4995909	4	100	20	14	100	K3	2400	E3		
K.SK.U.WS	4938515					100	BL	2000	K3	48000	E3
K.SK.U.BR	4938516					100	BL	2000	K3	48000	E3
K.SK.U.BZ-RB	5009114					100	BL	2000	K3	48000	E3
K.SK.U.F9	5009119					100	BL	2000	K3	48000	E3

RS = right, LS = left

WS = white, BR = brown, SL = silver



Interlocking rod MK.U

- Extendable with interlocking rod M.U.700
- Interlocking rod clicks into the top rod / connecting rail
- Centred attachment loosens automatically when it is inserted into the fitting groove
- Functional both vertically and horizontally
- Locking point with pressure adjustment ± 0.8 mm
- Useable left and right hand
- Faceplate width 16 mm

Interlocking rod M.U

- Interlocking rod used as an extension for interlocking rod MK.U
- Is connected to MK.U by pin

Extension rod VS.U.360-1

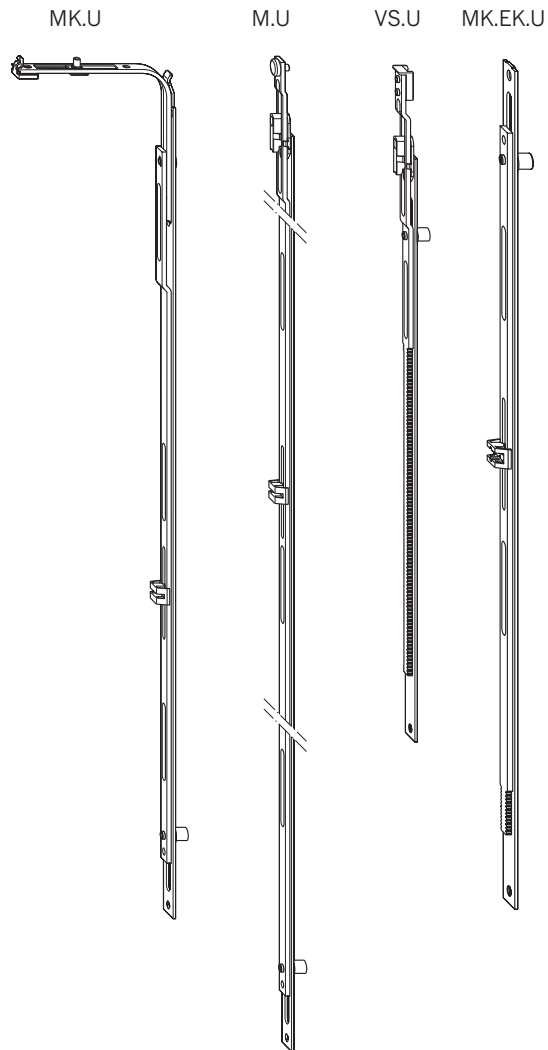
- Cuttable extension for drive rods
- Can also be connected to corner drive E.U.1 directly
- Cutting area: 175 mm
- Locking point with pressure adjustment ± 0.8 mm


Extension rod VS.U.360-0

- See above
- No locking point

Interlocking rod MK.EK.U...

- Interlocking rod for insertion into the teeth of the corner drive



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
MK.U.300-1	4965551	2	10	BD	500	E3		
MK.U.500-1	4938708	4	10	BD	400	E3		
MK.U.500-2	4965388	4	10	BD	400	E3		
MK.U.700-1	4938709	5	10	BD	500	E3		
MK.U.700-2	4965389	5	10	BD	500	E3		
M.U.700-1	4938720	5	10	BD	500	E3		
VS.U.360-1	5031622	3	125	K4	1500	E3		
VS.U.360-0	5031623	3	125	K4	1500	E3		
MK.EK.U.500-1	5005020	3	20	BD	160	K4	1920	E3

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Mini vent keep AS.T.U.9/13

- Positioned directly beneath the keep (upper handle side)
- Mini ventilation at 135° handle position
- For 9 or 13 mm groove centre position
- Useable left and right hand
- 1 piece
- No further sash components required
- Profile attribution see keep overview

AS.T.U.9/13



Faceplate SP.U

- To connect a corner drive to a cuttable element (e.g. drive rod, top rod)
- Use only in case of repair, as a positive and non-positive fit is no longer guaranteed
- Please note: When inserting the top rod OS1.U.525, the faceplate must not be connected to the corner drive.
- The element to be shortened can be cut straight
- Please note: If the faceplate SP.U is used as a connecting element between a corner drive E.U.1 and a top rod OS1.525, to which an interlocking rod is connected, the faceplate fastener SNH must be installed.

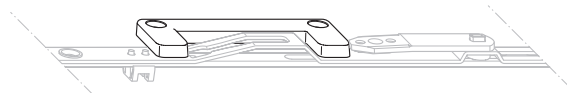
SP.U



Faceplate fastener SNH.AGR

- To additionally secure the top rod OS1.525
- Colour: similar to RAL 7016

SNH



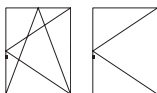
Mounting element ANS

- To block the tilt position on turn-tilt windows
- Useable left and right hand
- Is clipped into the elongated slot of corner hinge E.U.1
- Colour: similar to RAL 7035
- (without figure)

ANS



Item description	Item No.	T	VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
AS.T.U.9	4940414	2	800	K3	19200	E3		
AS.T.U.13	4940413	2	800	K3	19200	E3		
SP.U.SL	4940716	1	100	BL	1000	K3	24000	E3
SNH.AGR	4938874	2	400	KK	9600	EK		
ANS LGR	1217895	0	100	BL	5000	KK	40000	EK



Fail-safe device FS.U.9/13

- Prevents an actuation of the handle when the sash is open
- Useable for 9 mm and 13 mm groove centre position
- No separate frame part required
- Useable left and right hand

Balcony door catch BK SL

- For glazed doors with 12 mm air gap
- Light latching force when closing the door
- Material: Zinc diecast
- Profile dependent
- Improved retaining force
- Bolt included

Balcony door catch BK BN SL

- See above
- Utilisation for double-sash windows with opposing euro-groove



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Item description	Item No.		VPA1		VPA2	
			Qty.	Type	Qty.	Type
FS.U.9	4941932	1	800	K3	19200	E3
FS.U.13	4941933	1	800	K3	19200	E3
BK 52 SL	1919545	2	100	KK	800	EK
BK 60 SL	1919553	2	100	KK	800	EK
BK 61 RC SL	5026717	2	200	KK	1600	EK
BK 121 SL	1848396	2	100	KK	800	EK
BK 134 SL	2103935	2	100	KK	800	EK
BK 192 SL	1919609	2	100	KK	800	EK
BK 552 RC SL	2522321	2	100	KK	800	EK
BK BN SL	1848353	2	100	KK	800	EK
BK SL KT	2893519	3	100	K3	2400	E1

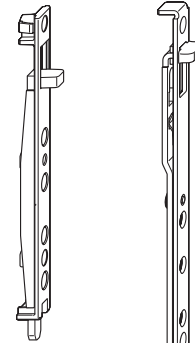
SL = silver



KR.U.SGR KR.U.16/200

Flush bolt KR.U.SGR

- For locking an inactive sash with opposing Eurogroove in double-sash windows
- Lockable to the tilt keep KS.U
- Hole pattern to hold keep SB.U.21.Z
- Can be inserted on top and bottom
- Material: plastic, grey



Shootbolt KR.U.16/200

- See above
- Material: Steel



Packer BK WS

- For packing the keep SB.U.21.Z in inactive sashes with opposing Eurogroove
- Shade: white

Keep SB.U.21.Z

- For locking turn-tilt sashes to the inactive sash



Item description	Item No.	🔩	VPA1		VPA2		VPA3	
			Qty.	Type	Qty.	Type	Qty.	Type
KR.U.SGR	4941012	2	300	K3	7200	E3		
KR.U.16/200	4965602	2	300	K3	2400	E3		
UF BK WS	1477943	2	100	BL	500	KK	4000	EK
SB.U.21.Z	4997593	2	1000	K3	24000	E3		



Keep SB.U. ...

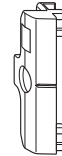
- Useable left and right hand
- Keeps for 13 mm groove position made of PVC
- Screwed in the prechamber
- For profile allocation see group 15, installation drawings
- You can also use the SBA.K. ... frame parts from the activPilot range.


Keep SB.U.21 Z

- To screw onto the double-sash rods GSM.U... / GSK.U...
- (without figure)

Keep SB.U.21 ZU

- To screw on double-sash drive rod GS.U
- Positioning at bottom side



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
SB.U.60	4990362	1	1000	K3	24000	E3
SB.U.73	4965495	1	1000	K3	24000	E3
SB.U.76	4940078	1	1000	K3	24000	E3
SB.U.105	4940079	1	1000	K3	24000	E3
SB.U.105+1	4984288	1	1000	K3	24000	E3
SB.U.162	4940072	1	1000	K3	24000	E3
SB.U.205	4994951	1	1000	K3	24000	E3
SB.U.21.Z	4997593	2	1000	K3	24000	E3
SB.U.21 ZU	5002832	1	1000	K3	24000	E3

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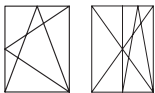
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Tilt device S.U. ...


- Positioned directly beneath the keep (lower handle side)
- For glazed doors, optionally for windows
- Useable left and right hand
- Screwed in the prechamber
- For profile allocation see group 15, installation drawings
- Useable for 9 mm and 13 mm groove centre position

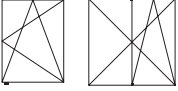


Tilt device S.U.GS

- Positioning on double-sash drive rod GS.U
- For glazed doors, optionally for windows
- Useable left and right hand
- Useable for 9 mm and 13 mm groove centre position

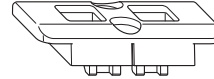



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
S.U.9-4	4965387	2	1000	K3	24000	E3
S.U.13-5	4965386	2	1000	K3	24000	E3
S.U.21Z	4965546	2	1000	K3	24000	E3
S.U.13-4	4965385	2	1000	K3	24000	E3
S.U.GS	5010487	2	1000	K3	24000	E3



Tilt keep KS.U

- Keeps the sash in tilt position in turn-tilt windows and locks the inactive sash of double-sash windows.
- Adjustable by turning the tilt keep by 180° (-1 mm)
- Integrated sash lifter
- Screwed in the prechamber
- Useable left and right hand



Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type
KS.U.60	4940409	1	800	K3	19200	E3
KS.U.63	4990395	1	800	K3	19200	E3
KS.U.72	4977741	1	800	K3	19200	E3
KS.U.73	4965498	1	800	K3	19200	E3
KS.U.76	4940411	1	800	K3	19200	E3
KS.U.105	4940412	1	800	K3	19200	E3
KS.U.162	4940408	1	800	K3	19200	E3
KS.U.162.P5	4994650	1	800	K3	19200	E3
KS.U.205	4940410	1	800	K3	19200	E3
KS.U.76.WIN	4994818	1	800	K3	19200	E3

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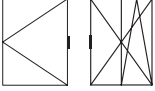
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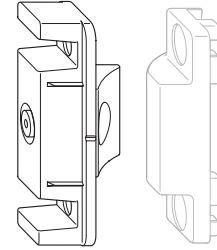
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Centre lock and keep



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

Keep ZV-RT SL

- Frame part
- Central locking device for turn-only windows
- Installation in frame
- For rebate clearance of 11 to 14 mm
- Concealed in the rebate
- Profile-dependent, see group 15, installation drawings

Item description	Item No.		VPA1 Qty.	Type	VPA2 Qty.	Type	VPA3 Qty.	Type
ZV-FTP SL	4965238	2	50	BL	500	KK	12000	EK
ZV-RT 162 SL	2088350	2	500	KK	4000	EK		
ZV-RT 60 RC SL	2312155	2	500	KK	4000	EK		
ZV-RT 452/13 SL	2074732	2	500	KK	4000	EK		
ZV-RT 169 RC SL	5033656	2	500	KK	4000	EK		
ZV-RT 61 RC SL	1213944	2	400	KK	3200	EK		
ZV-RT 105 SL	1975344	2	500	KK	4000	EK		
ZV-RT 452/9 SL	2074741	2	500	KK	4000	EK		
ZV-RT 144 SL14	2020081	2	100	BL	500	KK	4000	EK
ZV-RT 160	4933117	2	500	KK	4000	EK		
ZV-RT 62 SL	2094258	2	500	KK	4000	EK		
ZV-RT 161 RC SL	1213945	2	400	KK	3200	EK		

SL = silver



Mounting jig for sash hinge

LE.B.FL.K.U

- For 20 – 22 mm overlap
- One jig for 13 mm groove centre position
- One jig for 9 mm groove centre position

Drill jig for corner hinge / shear hinge LE.B.EL.SL.U20

- Only for 20 mm overlap
- For different overlaps, the jig must be adjusted.

Mounting jig LE.N.T.U

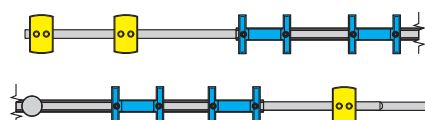
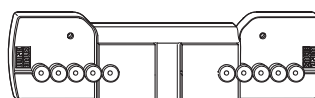
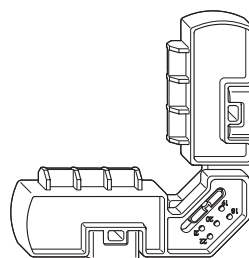
- Jig for inserting the keeps
- For drive rods with central handle position
- Two sizes

Mounting jig LE.N.K.U

- For top rods and interlocking rods
- Jig for inserting the keeps
- For drive rods with constant handle position
- Four different sizes

Mounting jig LE.N.T.GVM.U...

- Jig for positioning the keeps for GVM.U. drive rods



Item description	Item No.	Overlap	Groove centre position
LE.B.FL.K.U 20-13	4941353	20	13
LE.B.FL.K.U 21-13	4964986	21	13
LE.B.FL.K.U 22-13	4964987	22	13
LE.B.FL.FK-F.U.20-13	4988739	20	13
LE.B.FL.K.U 20-9	4952494	20	9
LE.B.EL.SL.U 20-13-20	4966353	20	13
LE.N.T.U 0750-1100	4941358		
LE.N.T.U 1101-2100	4941359		
LE.N.K.U 0440-0750	4941354		
LE.N.K.U 0751-1100	4941355		
LE.N.K.U 1101-1450	4941356		
LE.N.K.U 1451-2150	4941357		
LE.N.T.GVM.U.400-2	5002905		
LE.N.T.GVM.U.600-2	5002906		
LE.N.T.GVM.U.800-2	5002907		
LE.N.T.GVM.U.1000-3	5002908		
LE.N.T.GVM.U.1200-3	5002909		
LE.N.T.GVM.U.1400-3	5002950		
LE.N.T.GVM.U.1600-3	5002951		
LE.N.T.GVM.U.1800-4	5002952		
LE.N.T.GVM.U.2000-4	5002953		

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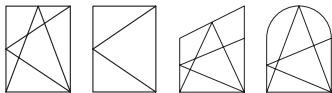
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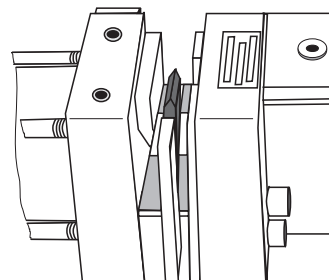
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Punch AP/FS

- Used to cut fitting elements
- Punch including footswitch
- Required operating pressure 6 bar
- In order to ensure a technically correct cutting result, the adapter ADP.S.U is required.

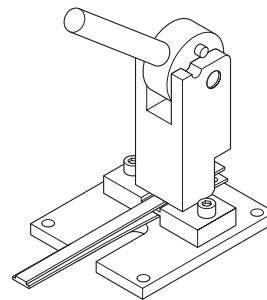
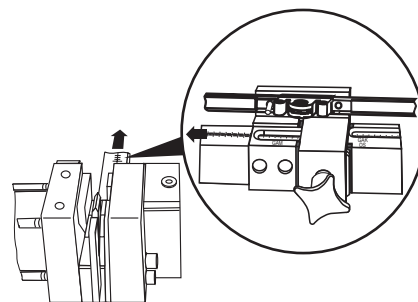


Ruler LIN AP/FS

- Used to adjust the sash rebate sizes
- Ruler including support

Fitting punch, lever AP.HH

- Used to cut fitting elements
- Without ruler

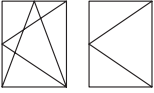


Item description

BST AP/FS
LIN AP/FS
AP.HH

Item No.

1466339
1466321
4970430



Adapter for proPilot punch

ADP.S.U

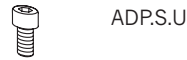
- The adapter must be mounted into the punch BST AP/FS in order to ensure a technically correct cutting result.

Adapter for proPilot ruler ADP.L.U

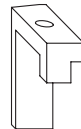
- The adapter must be mounted at the stop position of the LIN AP/FS ruler.

Ruler adapter proPilot for double sash ADP.L.GS.U

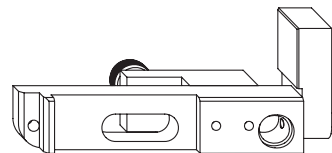
- The adapter has to be fixed to the ADP.L.U adapter.
- The adapter is used for cutting the double-sash connecting rods GSK.U and GSM.U.



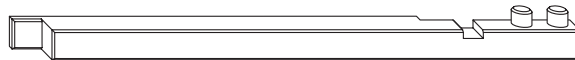
ADP.S.U



ADP.L.U



ADP.L.GS.U



Item description
ADP.S.U
ADP.L.U

Item No.
4952569
4952570

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1 proPilot mounting instructions

2 The mounting instructions are designed for mounting Winkhaus proPilot fittings for PVC-U windows and glazed doors only. Fittings are designed for the following sash rebate sizes and sash weights:

- 3 - Min. sash rebate width 350 mm
- 4 - Min. sash rebate width 250 mm with E.U.3/E.K.U.3
- 5 - Max. sash rebate width 1400 mm
- 6 - Min. sash rebate height 440 mm
- 7 - Min. sash rebate height 340 mm with E.U.3/E.K.U.3
- 8 - Max. sash rebate height 2,800 mm
- 9 - Max. sash size 2.5 m²
- 10 - Max. sash weight 70/100 kg
- 11 - Width-height ratio FFB:FFH ≤ 1.5

12 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.

9 proPilot application range

10 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.



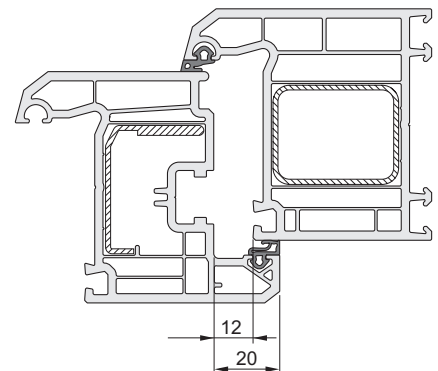
11 Attention! Winkhaus does not provide fastening screws for fittings assembly. Always use fastening screws suitable for the window type and window dimensions.

13 Standard profile dimensions

See figure: Standard profile dimensions

14 The fitting can only be used on the following conditions:

- 15 - PVC-U window with standard fitting groove
- Airgap 12 mm
- 20, 21 or 22 mm overlap
- For 9 and 13 mm groove position



Standard profile dimensions

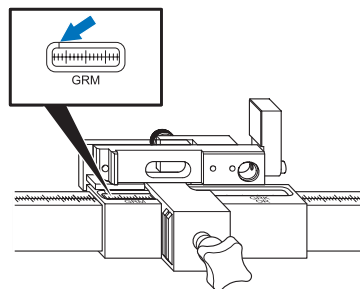


Before mounting all fitting parts should be selected using the list of fittings.

Shorten the drive rod GM.U (central handle position)

See figure: Marking GAM

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



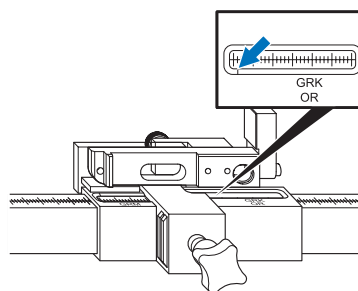
Marking GAM



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

See figure: Position for shortening drive rod

- Position the drive rod on the scale, fit the gear case to the adapter.
- Shorten the drive rod using the fitting punch.
- Turn the drive rod around, and fit onto the adapter (1), then trim the other side.

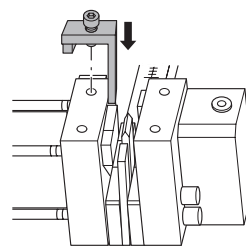


Position for shortening drive rod

Shorten the GK.U drive rod (const. handle position) and top rod OS.U

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

- Set the measuring value FFH (drive rod) or FFB (top rod) on the measuring installation to the GRK (OS) mark.
- Position the drive rod GK.U or the top rod OS.U (1) at the bolt.
- Cut the parts.



Position for shortening drive rod and/or top rod

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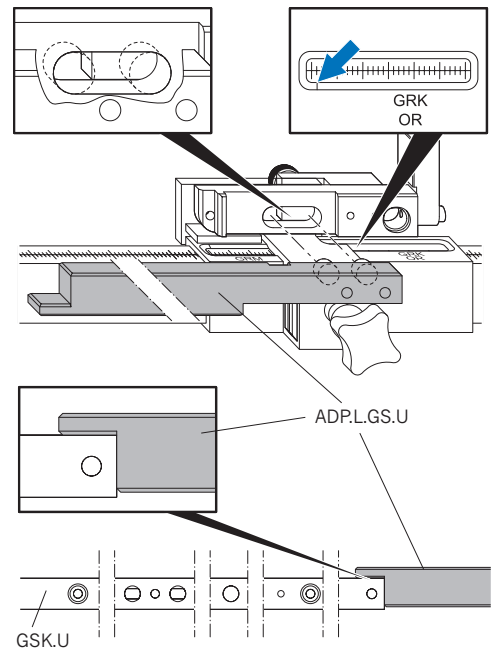
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Cutting of double-sash connecting rods GSK.U (constant handle position)

See figure: Ruler adapter, adapters ADPL.GS.U and GSK.U

- Insert the adapter ADPL.GS.U into the elongated hole of the ruler adapter.
- Adjust the measured value FFH (drive rod) to the GRK (OS) mark on the measuring device.
- Position the double-sash connecting rod GSK.U with the constant side against the stop of the adapter ADPL.GS.U
- Cut the double sash connecting rod.



Ruler adapter, adapters ADPL.GS.U and GSK.U

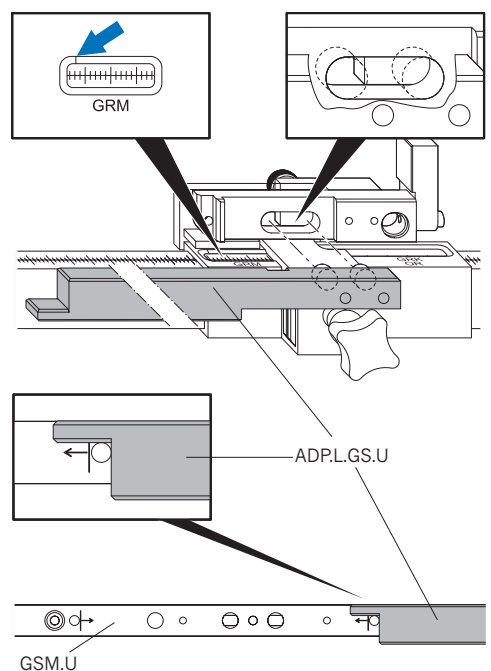
Cutting of double-sash connecting rod GSM.U (central handle position)

See figure: Ruler adapter, adapters ADPL.GS.U and GSM.U

- Insert the adapter ADPL.GS.U into the elongated hole of the ruler adapter.
- Set measuring value FFH on the measuring device to the GRM mark.
- Position the double-sash rod GSM.U with the pin against the stop of the ADPL.GS.U adapter. The indicating arrow has to point to the cutter.
- Cut the double sash connecting rod.
- Turn the double-sash connecting rod and repeat the cutting procedure.



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



Ruler adapter, adapters ADPL.GS.U and GSM.U

Mounting of fittings on sash

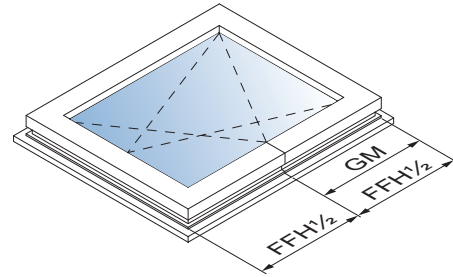
Turn-tilt window

- Determine the handle height:

Handle height for drive rod GM.U

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

If a drive rod with central handle position is used, dimension GM is half the sash rebate height FFH.

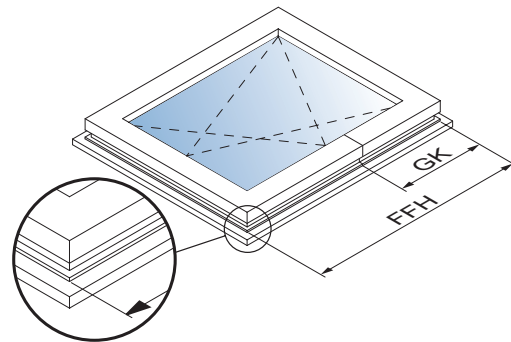


Sash rebate height FFH with central handle height GM

Handle height for drive rod GK.U

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

If you use a GK.U 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 adjacent table provides an overview of the handle heights (GK) with regard to the sash rebate height.

440 - 575	GK = 210
576 - 750	GK = 260
751 - 925	GK = 375
926 - 1100	GK = 470
1101 - 1275	GK = 550
1276 - 1450	GK = 550
1451 - 1625	GK = 550
1626 - 1800	GK = 550
1801 - 1975	GK = 1050
1976 - 2100	GK = 1050

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

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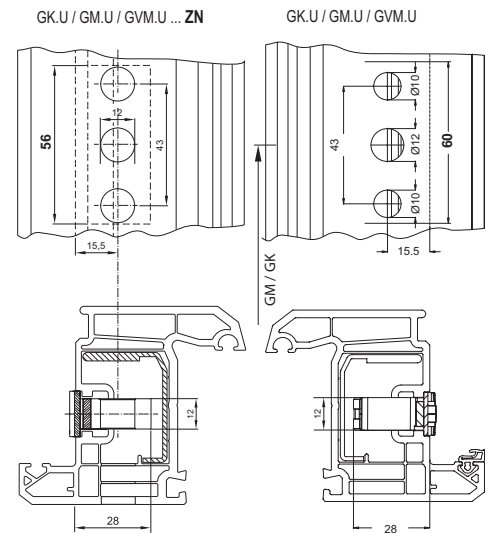
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See figure: Scale drawing "Gear lock"

- Drill holes for gear case as per scale drawing.
- Mill the gear housing from the rebate side.



Scale drawing "Gear lock"

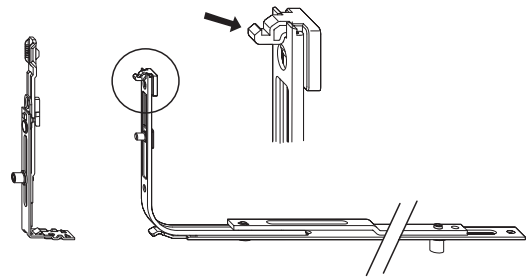
- Mount the corner drive at the top of the sash (handle side), the locking point being in vertical position.
- If a drive rod GK.U is used, cut the part according to the instructions.

- If necessary, fit the interlocking rod MK.U to the connecting rail AS.U or the drive rod GK.U.

See figure: Plastic clip



When fitting an interlocking rod MK.U to the connecting rail, the plastic clip must be removed.

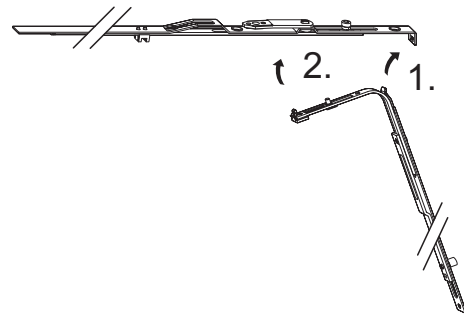


Plastic clip

- Mount the connecting rail or drive rod GK.U on the sash.
- If a drive rod GM.U is used, please cut, insert and screw the part according to the instructions.

See figure: Insert MK.U

- Cut the top rod according to the instructions and insert interlocking rod MK.U, if necessary.
- Insert the top rod and screw into position.



Insert MK.U

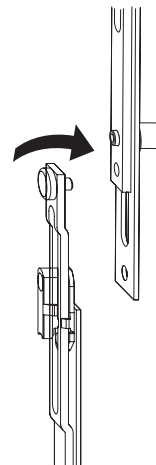
- Fit the shear to the top rod.



Attention! When fitting the shear into the support arm, you must perceive a clicking noise!

See figure: Connect MK.U to M.U

- When several locking points are required hinge side, the interlocking rod M.U.700 must be connected to the interlocking rod MK.U.



Connect MK.U to M.U

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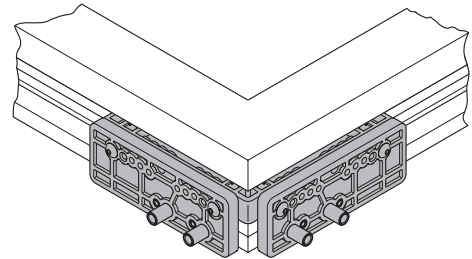
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See figure: Mounting jig for sash hinge

- Fitting the sash hinge:
 - Clamp the mounting jig into the fitting groove and drill 6 mm holes for the hinge plugs.
 - Drill 3 mm holes for screws through the first wall.
 - Insert the sash hinge and screw it in place.



Mounting jig for sash hinge

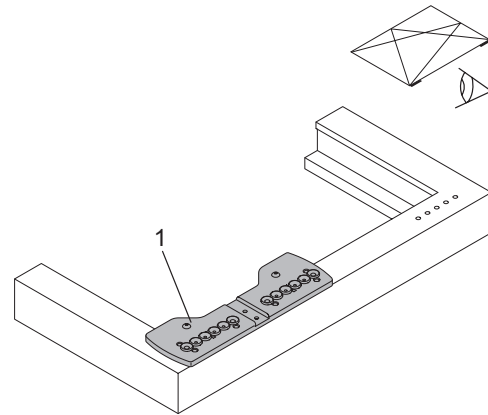
Turn double sash type

- Fit the flush bolt to the cover profile at top and bottom side.
 - Screw the keep SB.U.21.Z in place on the flush bolt.
 - If additional locking points are needed, a packer UF.BK must be positioned underneath the keep SB.U.21.Z.
-
- Insert the turn hinge and screw in place.
 - If required, use the pull-in device ZV-FT.

Mounting of fittings on the window frame

See figure: Mounting jig corner/shear hinge

- Predrill holes for the corner/shear hinge using the mounting jig.
- Corner hinges and shear hinges have the same distance between screws. For this reason the same mounting jig can be used.



Mounting jig corner/shear hinge



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

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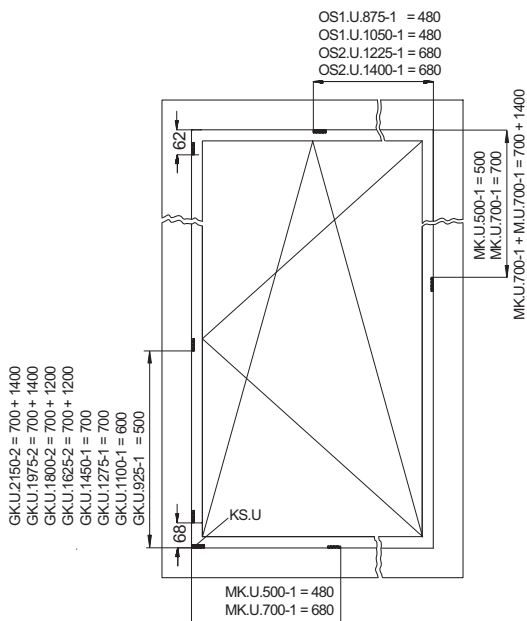
Adjustment/maintenance **14**

Installation drawings **15**

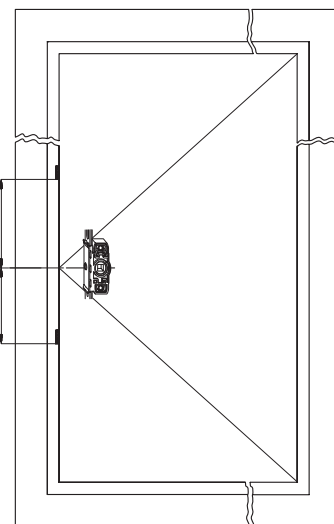
Keep positions GM.U

Keep positions

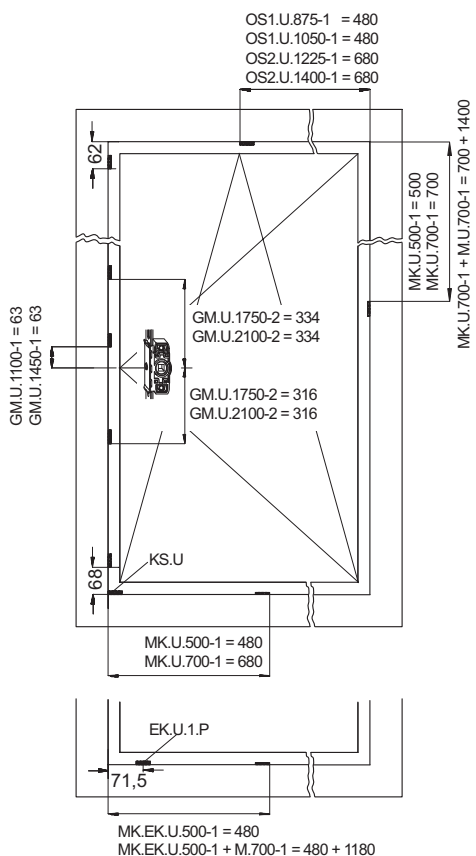
The figures show the keep position options. The number of keeps depends on the size of the window.



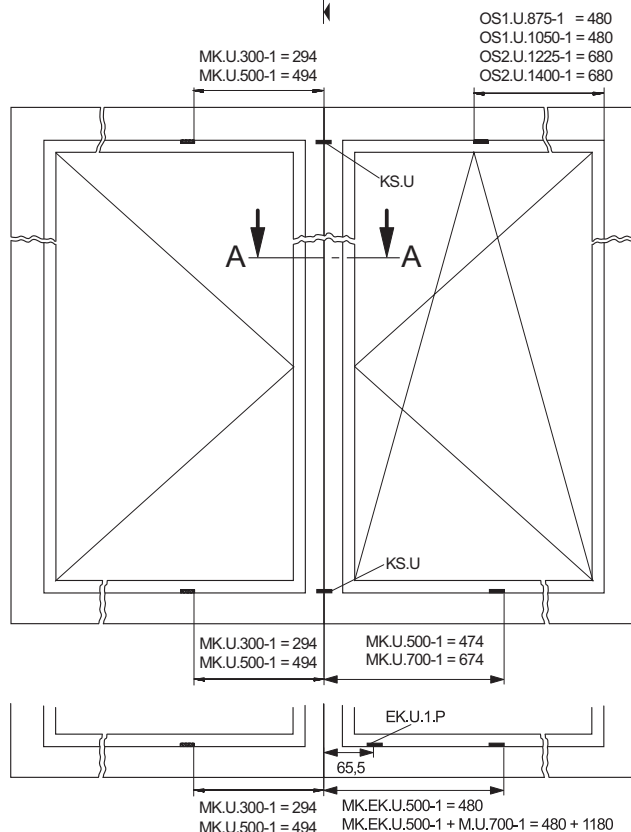
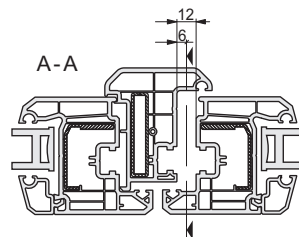
- GVM.U.400-2 = 109
 - GVM.U.600-2 = 209
 - GVM.U.800-2 = 309
 - GVM.U.1000-3 = 75 + 409
 - GVM.U.1200-3 = 75 + 509
 - GVM.U.1400-3 = 75 + 609
 - GVM.U.1600-3 = 75 + 709
 - GVM.U.1800-4 = 274 + 809
 - GVM.U.2000-4 = 274 + 909
- GVM.U.400-2 = 91
 - GVM.U.600-2 = 191
 - GVM.U.800-2 = 291
 - GVM.U.1000-3 = 391
 - GVM.U.1200-3 = 491
 - GVM.U.1400-3 = 591
 - GVM.U.1600-3 = 691
 - GVM.U.1800-4 = 791 + 256
 - GVM.U.2000-4 = 891 + 256



Keep positions GK.U



Keep positions GVM.U

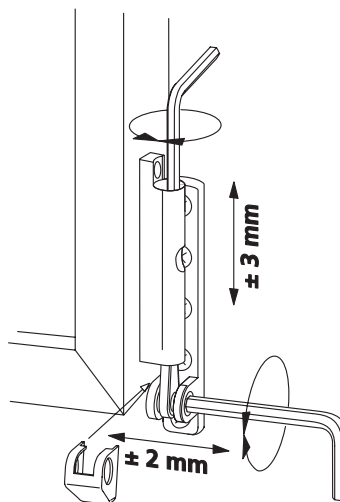


Keep positions double-sash window

Adjustment options

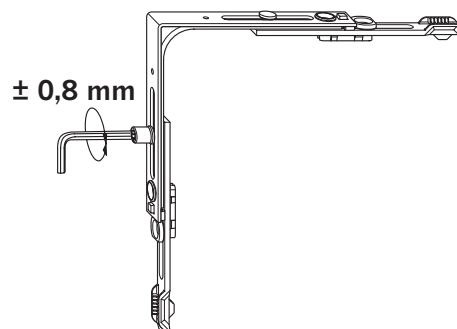
Corner hinge/sash hinge

Height adjustment (± 3 mm) and side adjustment (± 2 mm) of the corner hinge by using a 4 mm Allen key.



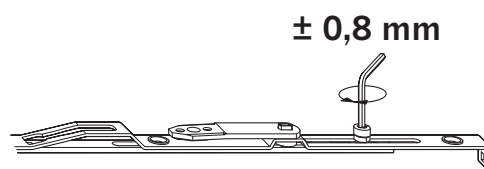
Locking bolt

Regulating the contact pressure between sash and frame (± 0.8 mm) by adjusting the locking bolt with an Allen key (size 4).



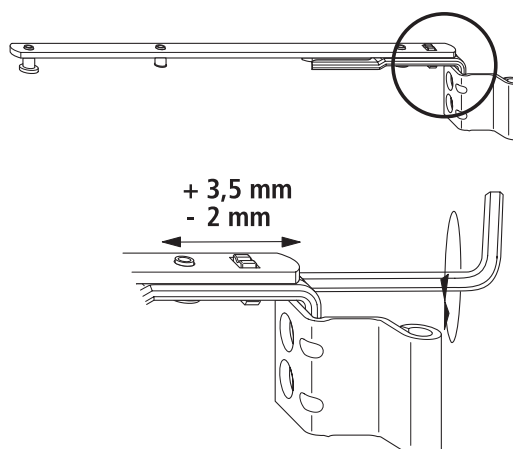
Top rods

Regulating the contact pressure between sash and frame (± 0.8 mm) by adjusting the locking bolt with an Allen key (size 4) or a 7 mm spanner



Shears

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



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Maintenance

Lubrication points

See figure: Overview of lubrication points

The figure shows the location of possible lubrication points which should be lubricated at least once a year.

Positions A, C, D = lubrication points relevant to function.

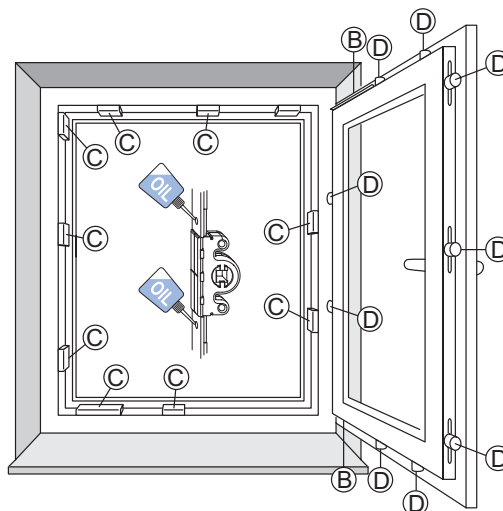
Position B = safety-relevant lubrication point



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

Shear Fig. 2:

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

Sprinkle a few drops of oil (resin and acid free) onto the lubricating positions.

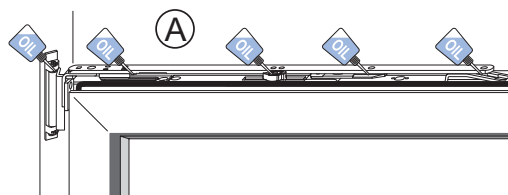


Fig. 2:Shears

Keeps Fig. 3, 4:

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.

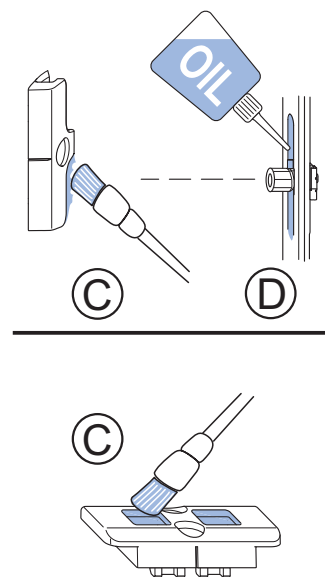
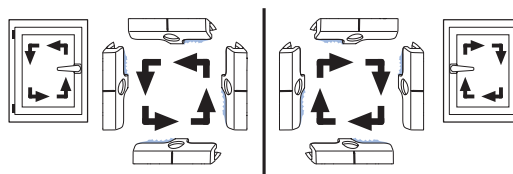


Fig. 3:Keeps

Ascertaining the run-in sides

See figure: Run-in sides

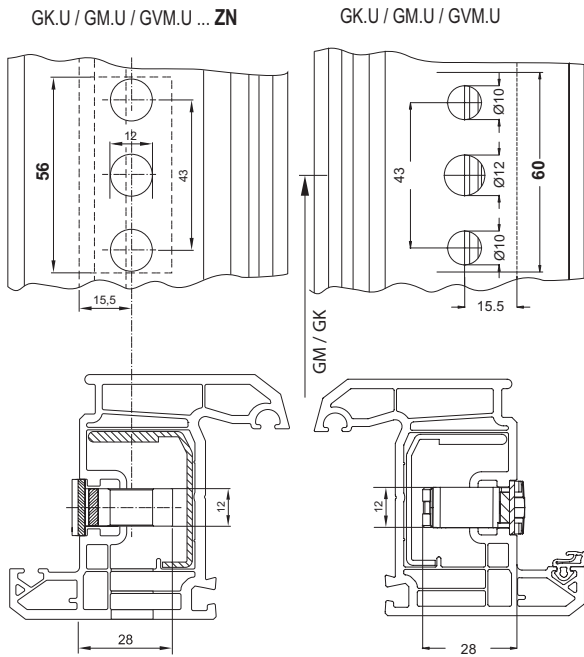
- Left-handed window; handle right
- Right-handed window; handle left



Run-in sides

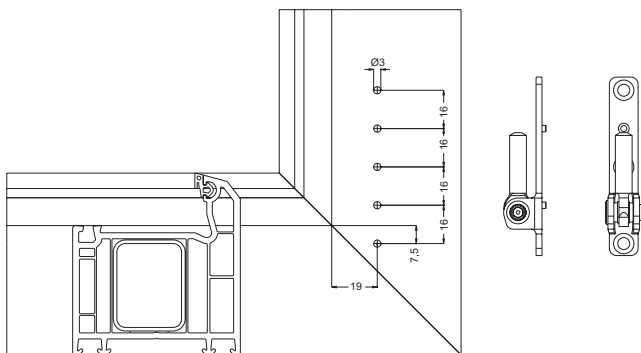
Installation drawings

Drive rods



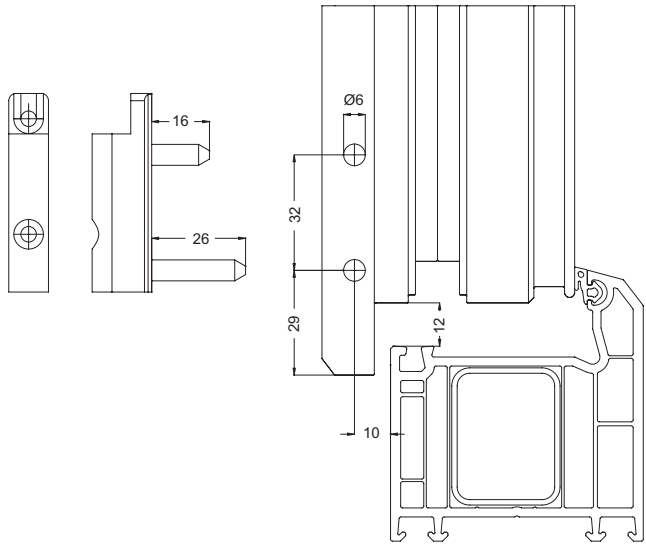
B-3-1: Boring and milling template gear case GK.U/GM.U/GVM.U

Corner hinge



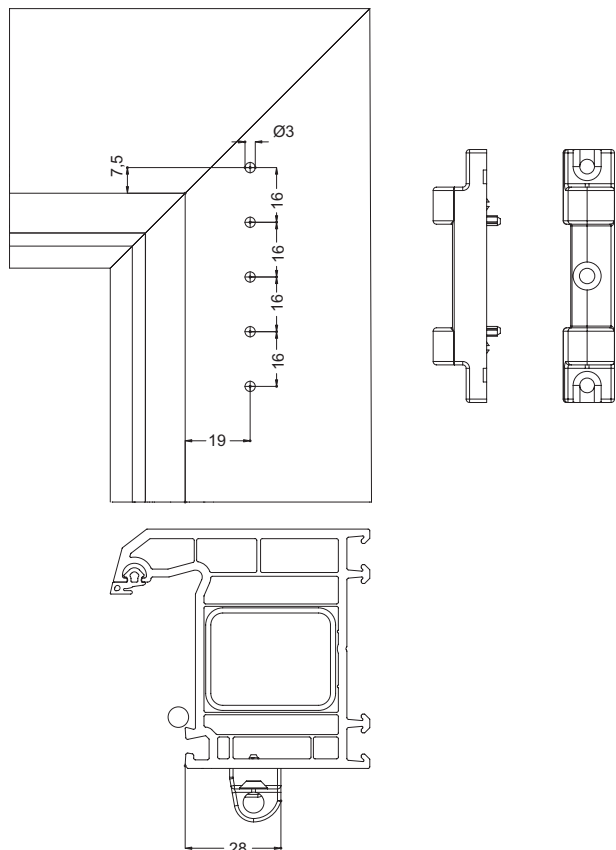
B-6-1: Boring and screw positions EL.K.U.3-3

Sash hinge



B-6-2: Boring and screw positions FL.K.U

Shear hinge



B-7-1: Boring and screw positions SL.K.U.3-3

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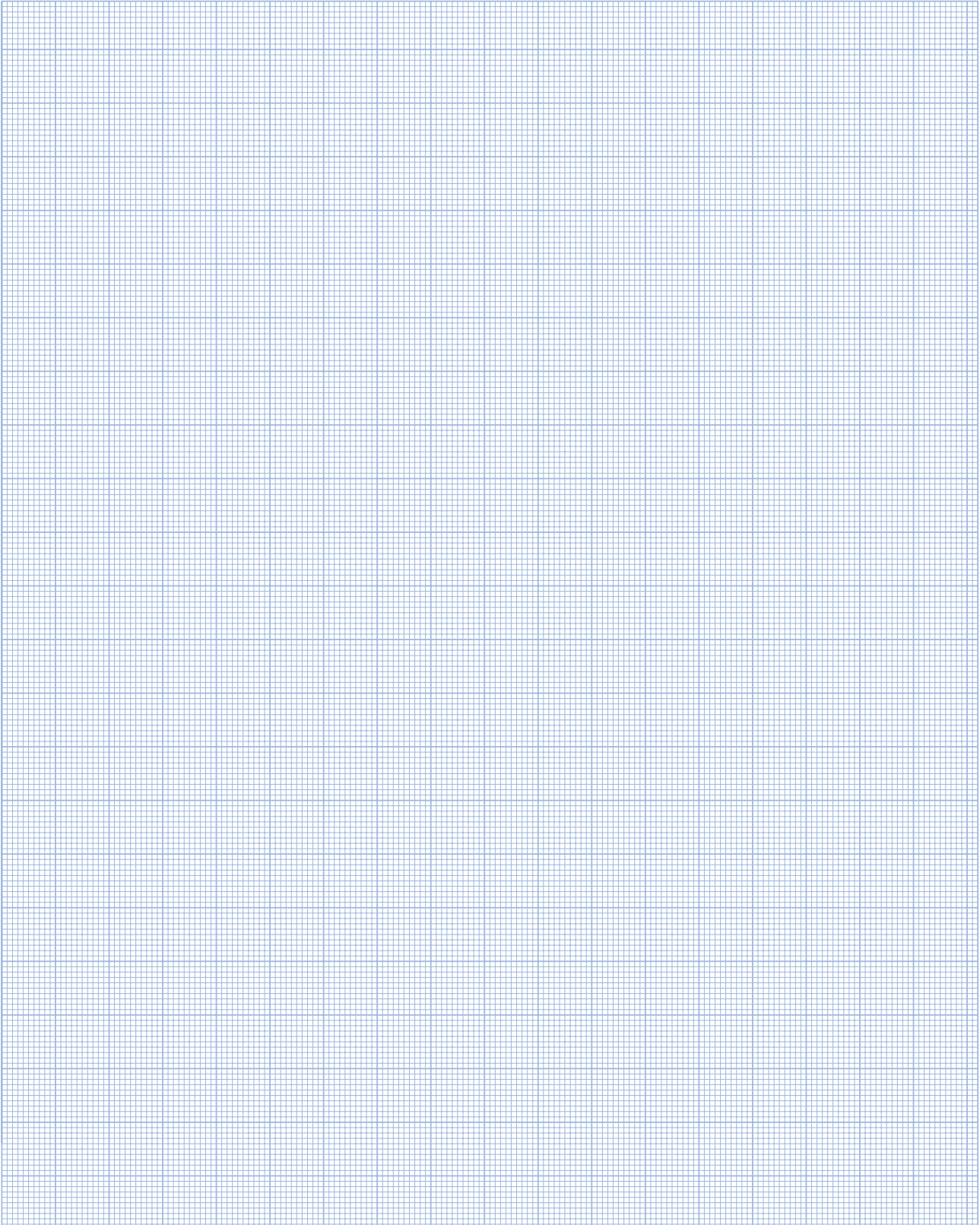
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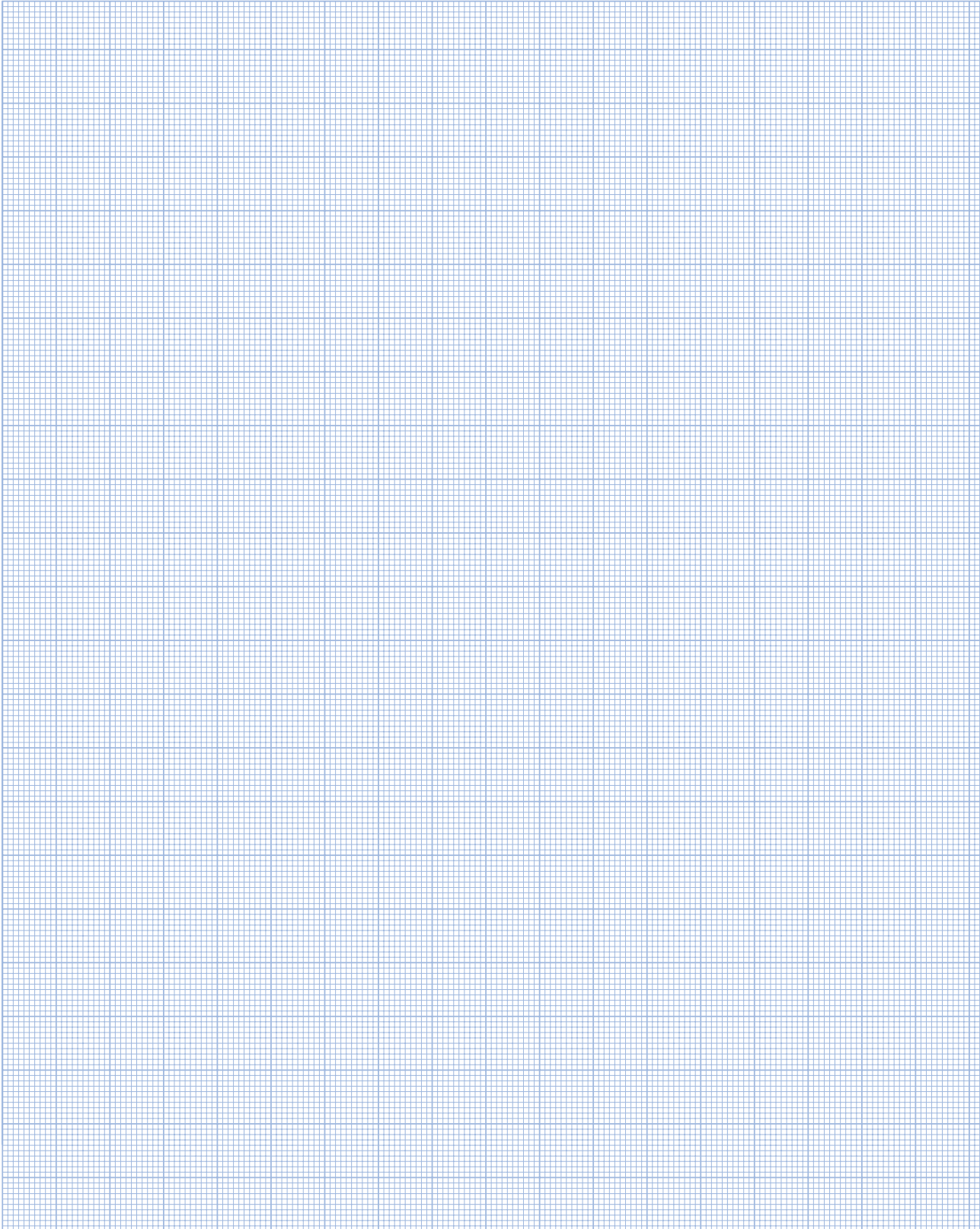
Overview of keeps

Profile	SB.U	KS.U	ZV-RT	BK	AS.T.U	S.U
Adopen	60	60	61		13/3	13-5
Aluplast 2000-3000	60	60	61		13/3	13-5
Aluplast 4000-8000	60	60	161		13/3	13-5
Aptek	76	76	60		13/3	13-5
Asaspen	105	105	105		9/3	9-4
Auss	105	105	105		9/3	9-4
Brokelmann	162	162	162		13/3	13-4
Brügmann	162	162	452/13		13/3	13-4
Brusbox	76	76	60		13/3	13-5
Decco	162	162	61		13/3	13-4
Deceuninck	162	162	169		13/3	13-4
Dimex	60	60	161		13/3	13-5
Exprof	105	105	105		9/3	9-4
Funke	162	162	162		13/3	13-4
Gealan S 3000	162	162	162		13/3	13-4
Gealan S7000/8000	162	162	162		13/3	13-4
Internova 6000	205	205	452/13		13/3	13-5
KBE	205	205	60		13/3	13-5
KBE 9er	105	105	105		9/3	9-4
KBM	105	105	105		9/3	9-4
Kömmerling	205	205	60		13/3	13-5
Krauss	105	105	105		9/3	9-4
LB.Profile	60	60	60		13/3	13-5
Next	60	60			13/3	13-5
Novotex	105	105	105		9/3	9-4
Openteck	205	205	60		13/3	15-5
Oras	76	76	60		13/3	15-5
Oras	105	105	105		9/3	9-4
Pimapen	76	76	61		13/3	13-5
Plafen	162	162	162		13/3	13-4
Plustec	76	76	60		13/3	13-5
Proplex	105	105	105		9/3	9-4
Ratex	105	105	105		9/3	9-4
Rehau	60	60	60	60	13/3	13-5
Rehau Geneo	60	60	60	60	13/3	13-5
Roplasto	SBA.K.211	205	205	60	13/3	13-5
Salamander	60	60	162		13/3	13-5
Schüco CT 60	60	60	161		13/3	13-5
Schüco CT 70	60	60	61	61	13/3	13-5
Sheffer	60	60	60		13/3	13-5
Thyssen	SBA.K.192	162	192	192	13/3	13-4
Trocal 2000 / 88+	SBA.K.126	milled version	26/9-13			8-4
Trocal A5 / M5	SBA.K.226	60	226	226	13/3	13-5
Veka	162	162	452/13	61	13/3	13-5
Waimar	162	162	60		13/3	13-4
WDS	76	76	452/13		13/3	13-5
Winbau	162	162	61		13/3	13-4
Wintech	76	76	60		13/3	13-5

Notes



Notes



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