

091890-04

#### Symbols and means of representation

- In these instructions, warnings are used to warn against material damage
- ► Always read and observe these warnings.
- ▶ Observe all the measures that are marked with the warning symbol and warning word.

Warning symbol	Warning word	Meaning

symbo		
$\triangle$	DANGER	Danger for persons. Non-compliance will result in death or serious injuries.
$\triangle$	WARNING	Danger for persons. Non-compliance can result in death or serious injuries.
$\triangle$	CAUTION	Danger for persons. Non-compliance can result in minor injuries.
_	CAUTION	Information on avoiding material damage, understanding a concept or optimising the processes.
	Important inform	ation and technical notes are emphasised in order to il-

# means "important note"

means "additional information"

lustrate the correct operation.

Symbol for an action: Here you have to do something. ▶ Observe the sequence if there are several action steps.

#### Product liability

In accordance with the liability of the manufacturer for their products as defined in the German "Produkthaftungsgesetz" (Product Liability Act), the information contained in this brochure (product information and proper use, misuse, product performance, product maintenance, obligations to provide information and instructions) is to be observed. Non-compliance releases the manufacturer from his statutory liability.

## General information

#### 1.1 Product description

The window unit is a drive system for opening and closing vertically installed bottom-hung, top-hung and side-hung windows that are opened Depending on the application, 1 system (Solo) or 2 systems (Tandem) are

mounted next to the window. Available for 24 V DC or for 230 V AC.

#### 1.2 Intended use

The drive is designed solely for use in dry rooms, with the exception of E250

Use only cables specified in the cable plan. Insulated wire end ferrules must always be used for wire-end ferrules. Any other use than the proper use as well as all changes to the product are impermissible.

## 1.3 Limitation of liability

GEZE GmbH does not accept any liability for direct or indirect damage resulting from the non-observance of the specifications in these instructions of this window unit.

Technical modifications that serve the improvement or further development of the product can be introduced at any time without any particular

GEZE shall not be liable for injuries or damage resulting from unauthorised modification of the system.

GEZE shall not be liable if products from other manufacturers are used with GEZE equipment. Only original GEZE parts may be used for repair and maintenance work as well.

Please do not hesitate to contact our customer service for further informa-

# Safety instructions

- The prescribed mounting, maintenance and repair work must be performed by properly trained personnel authorised by GEZE.
- Connection to the mains voltage (230 V AC or 24 V DC) and any work on electrical items must be carried out by a qualified electrician in accordance with the respective wiring diagram. • The mains connection and safety earth conductor test must be carried
- out in accordance VDE 0100 or in accordance with National Standards for countries other than Germany. Use a customer-accessible 10-A overload cut-out as the line-side discon-
- necting device in accordance with the permissible current carrying capacity of the cable.
- The country-specific laws and regulations are to be observed during safety-related tests. In accordance with Machinery Directive 2006/42/EC, a safety analysis
- (risk analysis) must be performed and the window unit identified in accordance with CE Identification Directive 93/68/EEC before commissioning the window unit. Observe the latest versions of guidelines, standards and country-specific regulations, in particular:
- BGR 232 "Guidelines for power-operated windows, doors and gates"
- DIN 18650 "Building hardware Powered pedestrian doors" VDE 0100; Part 610 "Erection of low-voltage installations"
- VDE 0700, Part 238 "Safety of electrical devices for home use and similar purposes, drives for windows, doors, gates and similar systems" Accident-prevention regulations, especially BGV A1 "General regula-
- tions" and BGV A2 "Electrical systems and equipment"

# 2.1 Safety-conscious working

▶ Observe the safety instructions for electrical systems and in the wiring

 Protect the workplace against unauthorised entry. Take care to allow sufficient space for the movement of long components in the system.

 Before working on the electrical system interrupt the power supply and verify the safe isolation from supply. Note that the system will still be supplied with power, despite the fact that the power supply is disconnected, if an uninterruptible power supply (UPS) is used. Risk of injury by sharp edges and moving parts (drawing in of hair, cloth-

ing, ...) when a drive is opened. Risk of injury by unsecured crushing, impact, shearing and drawing-in

Risk of injury through breakage of glass.

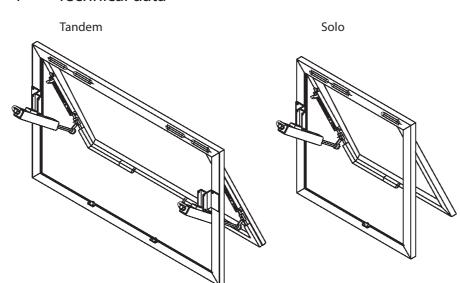
 During the setup control the drive only in inching mode. Touching the window unit can result in injuries during operation.

 In order to avoid injuries the enclosed protective caps are to be screwed onto projecting threads of the fastening screws.

Tools and fastening means

	1001		SIZE	
	Tape measur	e	-	
	Marking tool	S	-	
	Drilling patte	ern	-	
	Drilling tool		-	
	Drill bits		Diameter 4 mm (or 3 mm)	
	Allen key		Size 3, Size 4	
	Open-ended	spanner	Size 17	
	Ring spanner	r	Size 17	
	Screw driver		-	
	Saw		-	
	File		-	
	Window type	Fastening screws		Ø hole
	Wooden	Countersunk wood screv	vs 5×35 DIN 97 or 7997	3 mm
	Light alloy	Tapping screws with cou DIN 7972 or 7982	ntersunk head 4.8×22*	4 mm
		Tapping screws with cou DIN 963 or 965 with rivet	ntersunk head M5x20 nut, e.g. RIV-TI NO. 338 551	
	Plastic	Tapping screws with cou DIN 7972 or 7982	ntersunk head 4.8×L*	4 mm
	* L=S	crew must pass through n	nin. 2 mm profile cladding.	
0	Fastening scr	ews are not included in t	he scope of delivery.	

#### Technical data



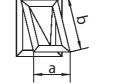
	RWA 110E Solo and Tandem			
	OL 360EN Tandem	OL 360EN Solo		
Spindle drive	E250 VdS 24 V DC	E350N 230 V AC		
Strokes in mm	150, 200, 300	150, 200, 300		
Length	Stroke +240 mm	Stroke +340 mm		
Running time	approx. 20 s per 100 mm stroke	approx. 15 s per 100 mm stroke		
Power consumption	20 W	35 W		
Current consumption	max. 0.8 A	0.15 A		
Enclosure rating	IP 65	IP 65		
Motor force	750 N	750 N		
VdS nominal force	500 N	-		
Ambient temp.	-5 °C to +75 °C	–20 °C to +70 °C		
Supply voltage	24 V DC	230 V AC, 50 Hz		
Flex. connecting cable	$2 \text{ m}; 3 \times 0.75 \text{ mm}^2$	$2.5 \text{ m}; 3 \times 1.5 \text{ mm}^2$		
Versions	EV1 (silver);	EV1 (silver);		
	RAL9016 (white);	RAL9016 (white);		
	to RAL	to RAL		

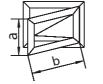
#### 4.1 Installation conditions

Wiring diagram

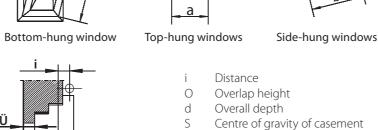


is enclosed with the drive





is enclosed with the drive



S	
Installation condition	Dimension
Space required on masking frame	≥45 mm
Space required on casement frame	≥33 mm
Panel weight	≤30 kg/m²m (top-hung/side-hung window) ≤25 kg/m²m (bottom-hung window)
Distance i	≤70 mm
Overall depth d	≤85 mm
Hinge distance	≤15 mm
Casement height b	≤1600 mm

0-25 mm

	Dracket)
Casement widths a (main closi	ng edge, clear inner frame dimensions):
Material	Dimension (max.)
Wooden/Aluminium Solo	1200 mm
Wooden/Aluminium Tandem	2400 mm
Plastic Solo	800 mm
Plastic Tandem	1600 mm

# Only plastic window with steel reinforcement are approved.

# **Further installation conditions**

Overlap height O

- 2 hinges (B1 and B2) have to be installed on the motor side.
- The window bearings and their fixings have to withstand a static load of

(up to 12 mm: mounting with additional

- A limiter has to be applied installed additionally at plastic windows.

# Overview of parts and requirements

# Scope of delivery and completeness

300

▶ Open all the packaging units. Check whether they are complete and

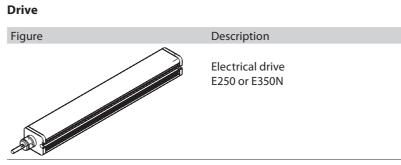
88067

familiarise yourself with the parts.					
Designation	Stroke	ID No. / Colour			
		EV1 (silver)	RAL9016 (white)	to RAL	
RWA 110E	150	20559	20567	20564	
	200	20552	20558	20556	
	300	21303	21311	21310	
OL 360EN	150	88055	88058	88059	
	200	88060	88064	88065	

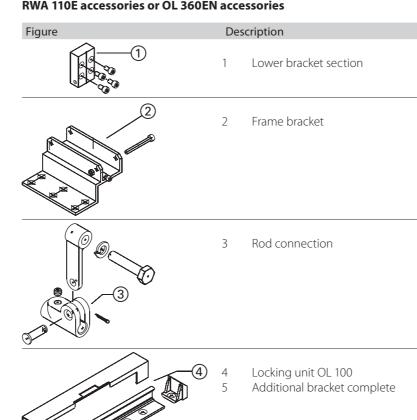
88070

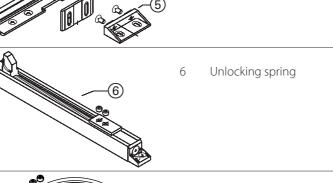
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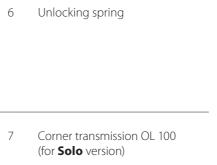
# 5.1.1 Overview of parts

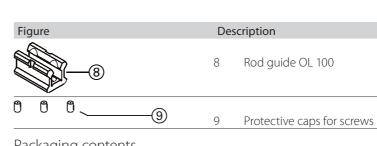


# RWA 110E accessories or OL 360EN accessories







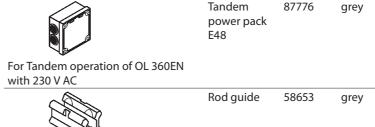


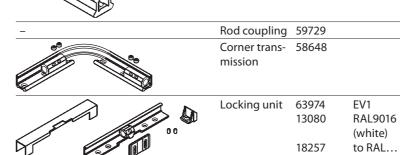
#### 5.1.2

Packaging contents			
Figure / Description	Designation	ID No.	Colour
	Cover profile		
	2000 mm*	58771 18293	EV1 RAL9016 (white)
		14258	to RAL
	3000 mm*	58774	EV1
		18294	RAL9016 (white)
$\backslash \mathcal{N}$		14259	to RAL
7	6000 mm	58630	EV1
* Cover profile mitred on both ends.		18251	RAL9016 (white)
		13814	to RAL
	Rod Ø12 mm		

	13814	to KAL
Rod Ø12 mm	1	
2000 mm	53198	
3000 mm	53199	
6000 mm	54116	
Tandem disconnection E102 24 V DC		grey

#### For controlling **Tandem** RWA 110E or OL 360EN





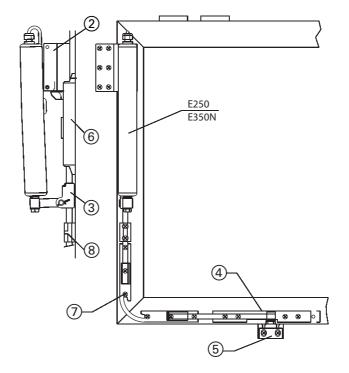
Use with or without end cap	Additional	50727	FV1
0	bracket for	15519	RAL9016
	locking unit	13317	(white)
For overlap heights up to 12 mm		13077	to RAL
_	Setting devic	e 02754	
	12/24 V DC		
_	Setting devic	e 26762	
	230 V AC		

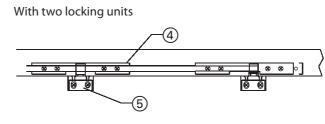
#### Material required for 1 window

		requirea n	iumber per	window	
	ID No.	RWA 110E Solo	RWA 110E Tandem	OL 360EN Solo	OL 360E Tandem
RWA 110E 24 V DC	see Section 5.1	1	2	-	-
OL 360EN 230 V AC	see Section 5.1	-	-	1	2
Tandem disconnec- tion E102 24 V DC	101323	-	1	-	1
Tandem power pack E48	87776	-	-	-	1
Rods, cover profiles, rod guide	see Section 5.1.2	•	equired, n 6.5.2 and	6.5.7	
Locking unit OL 100 (additionally at case- ment area ≥1.2 m²)	see Section 5.1.2	1	-	1	-
Additional bracket (overlap height up to ≤12 mm)	see Section 5.1.2	1	-	1	-
Corner transmission OL 100 Ifor side mounting of the locking unit	58648	1	-	1	-

## Location and overview of parts at the window

## 5.3.1 RWA 110E **Solo** and OL 360EN **Solo**





- Additional bracket compl. Frame bracket Unlocking spring Corner transmission OL100 Rod connection
- 5.3.2 RWA 110E Tandem and OL 360EN Tandem

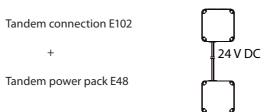
Locking unit OL100



# Mounting with continuous profile:

# For RWA 110E Tandem: Tandem disconnection E102





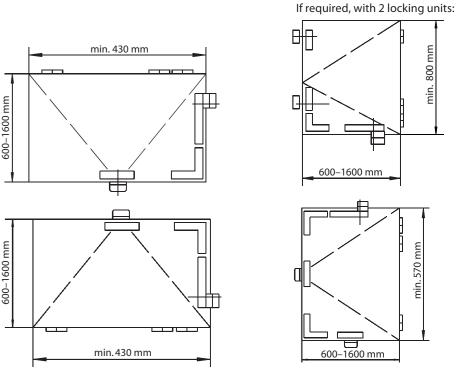
**₼** 230 V AC

#### Mounting

Mounting possibilities The specified dimensions are the clear inner frame dimensions.

#### 6.1.1 RWA 110E **Solo**

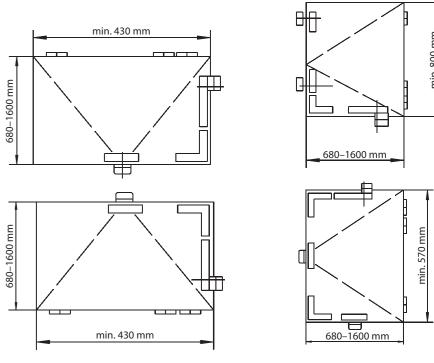
The motor can be mounted on the left or right. Above 1.2 m<sup>2</sup> window surface 2 locking units have to be mounted. The second locking unit is placed above or on the side depending on the height



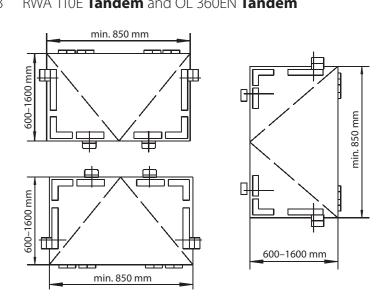
#### 6.1.2 OL 360EN **Solo**

The motor can be mounted on the left or right. Above 1.2 m<sup>2</sup> window surface 2 locking units have to be mounted. The second locking unit is placed above or on the side depending on the height and width.

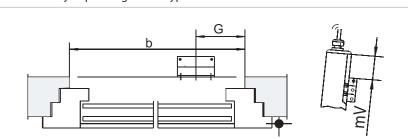
If required, with 2 locking units:



#### 6.1.3 RWA 110E **Tandem** and OL 360EN **Tandem**



- Mounting dimensions depending on opening width and drive
- 6.2.1 RWA 110E Solo, RWA 110E Tandem and OL 360EN Tandem
- These values apply for the 24-V versions (spindle drive E250 VdS 24 V DC). The specifications for opening angle and opening width are mean values and can vary depending on the type of installation.



# Casement height

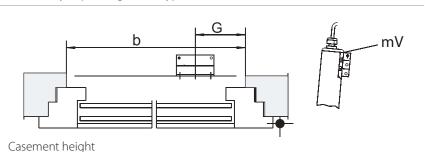
mV With displacement: mounting of lower bracket section (1) at the electrical drive (see following table)

Casement height b [mm]	Dimen- sion G [mm]	Opening angle	Opening width [mm]	Displacement mV [mm]
Stroke 150				
600-650 *	65	approx. 45°	approx. 510	32
650-700 *	80	approx. 44°	approx. 530	32
700-750	100	approx. 42°	approx. 540	32
750-800	125	approx. 39°	approx. 540	32
800-850	150	approx. 37°	approx. 540	32
Stroke 200				
650-700 *	110	approx. 55°	approx. 640	75
700–750 *	130	approx. 51°	approx. 650	45
750-800 *	155	approx. 48°	approx. 650	45
800-850	175	approx. 46°	approx. 670	45
850-900	200	approx. 43°	approx. 670	45
900-950	225	approx. 41°	approx. 670	45
950-1000	250	approx. 39°	approx. 670	45
Stroke 300				
900-920 *	260	approx. 56°	approx. 880	75
920-950*	280	approx. 54°	approx. 870	75
950-1000 *	310	approx. 51°	approx. 870	75
1000-1050 *	330	approx. 49°	approx. 880	45
1050-1100 *	360	approx. 47°	approx. 880	45
1100-1200 *	420	approx. 43°	approx. 860	45
1200-1300 *	500	approx. 39°	approx. 860	45
1300-1400	580	approx. 35°	approx. 830	45
1400-1500	630	approx. 33°	approx. 840	45
1500-1600	700	approx. 31°	approx. 840	45

\* Shorten the corner transmission by 50 mm.

# 6.2.2 OL 360EN **Solo**

These values apply for the 230-V versions (spindle drive E350N 230 V AC). The specifications for opening angle and opening width are mean values and can vary depending on the type of installation.



Dimen- Opening angle Opening width Displacement

mV With displacement: mounting of lower bracket section (1) at the electrical drive (see following table)

height b [mm]	sion G [mm]		[mm]	mV [mm]
Stroke 150				
680-700 *	80	approx. 44°	approx. 530	65
700-750 *	100	approx. 42°	approx. 540	75
750-800	125	approx. 39°	approx. 540	100
800-850	150	approx. 37°	approx. 540	132
Stroke 200				
730-750 *	130	approx. 51°	approx. 650	110
750-800 *	155	approx. 48°	approx. 650	145
800-850	175	approx. 46°	approx. 670	145
850-900	200	approx. 43°	approx. 670	145
900-950	225	approx. 41°	approx. 670	145
950-1000	250	approx. 39°	approx. 670	145
Stroke 300				
930-950 *	280	approx. 54°	approx. 870	175
950-1000 *	310	approx. 51°	approx. 870	175
1000-1050 *	330	approx. 49°	approx. 880	145
1050-1100 *	360	approx. 47°	approx. 880	145
1100-1200 *	420	approx. 43°	approx. 860	145
1200-1300 *	500	approx. 39°	approx. 860	145
1300-1400	580	approx. 35°	approx. 830	145
1400-1500	630	approx. 33°	approx. 840	145
1500–1600	700	approx. 31°	approx. 840	145

\* Shorten the corner transmission by 50 mm.

- Preparation of mounting
- ▶ Mount an additional hinge on the drive side to improve stability at all the window types.
  - ▶ Ensure that a limiter (not included) is used at the drive side for plastic windows with steel reinforcement.

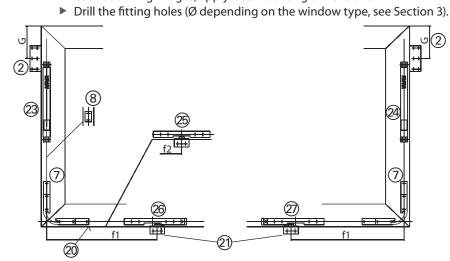
Mounting dimension: Dimension G (see table Section 6.2.1 and 6.2.2)

- The mounting dimensions specified in the following chapters apply for mounting on the left-hand side. ▶ Use the mounting dimensions for the right-hand side laterally reversed.
- 6.3.1 Component layout and dimensions on the window
  - Mounting dimensions on right mirrored Using the drilling templates (see Section 6.4)
- <del>-</del> 14 (11)f2

Item numbers with a grey background refer to drilling images (see legend and following sections)

①1 f1

- 10 2 hinges on the electrical drive side 17 Drilling image for locking unit OL100 Mounting dimension with end cap (s. Section 6.4.4)
- 12 Drilling image for frame bracket (see Section 6.4.5)
- 13 Drilling image for unlocking spring (see Section 6.4.5)
- 14 Drilling image for rod guide (see Section 6.4.3)
- Drilling image for corner transmis-
- (see Section 6.4.3)
- 16 Drilling image for locking unit OL100 f2 Min. 265 mm; max. a 150 mm; between fittings (s. Section 6.4.4)
- Drilling images
- 6.4.1 Using the drilling templates
  - The usage of the drilling templates is recommended. Otherwise see drilling images. Drilling templates are included in the packaging. ► Cut out drilling images, apply: see mounting dimensions.



- Frame bracket
- Corner transmission Rod guide
- Clear inner frame edge
- Additional bracket required for overlap heights up to 12 mm 23 Unlocking spring mounting left
- 24 Unlocking spring mounting right 25 Locking unit OL100 between fittings 26 Locking unit OL100 with end cap for

18 Select f2 for locking unit at continu-

19 Select f1 for locking unit with end

21 Additional bracket required for overlap heights up to 12 mm

Min. 285 mm; max. a – 150 mm;

for **Tandem** max. a/2 – 110 mm

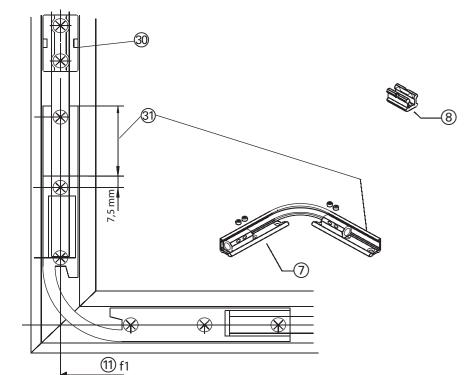
for **Tandem** max. a/2 – 110 mm

ous cover profile

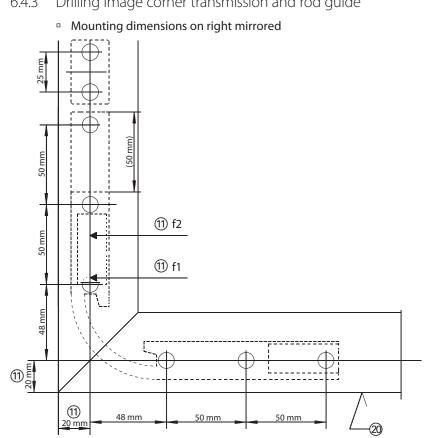
20 Clear inner frame edge

cap

- mounting left 27 Locking unit OL100 with end cap for mounting right
- 6.4.2 Adapting the corner transmission as required



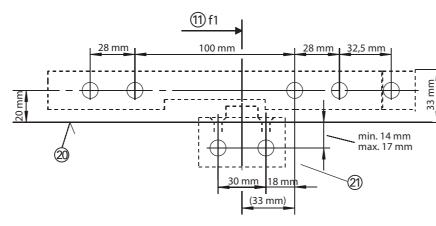
- Corner transmission
- Rod guide Mounting dimension
- 31 If necessary, shorten by 50 mm (see mounting dimensions Section
- 30 Rod guide can be dispensed of in case of insufficient space
- 6.2.1 and 6.2.2)
- 6.4.3 Drilling image corner transmission and rod guide



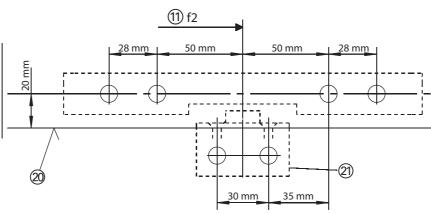
(see legend and following sections) 11 Mounting dimension 20 Clear inner frame edge

Item numbers with a grey background refer to drilling images

- 6.4.4 Drilling image for locking unit
  - Mounting dimension on right mirrored Drilling image for locking unit OL100 with end cap



#### Drilling image for locking unit OL100 between fittings



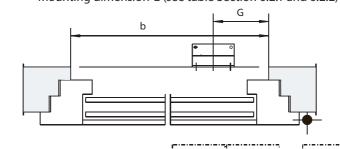
Clear inner frame edge

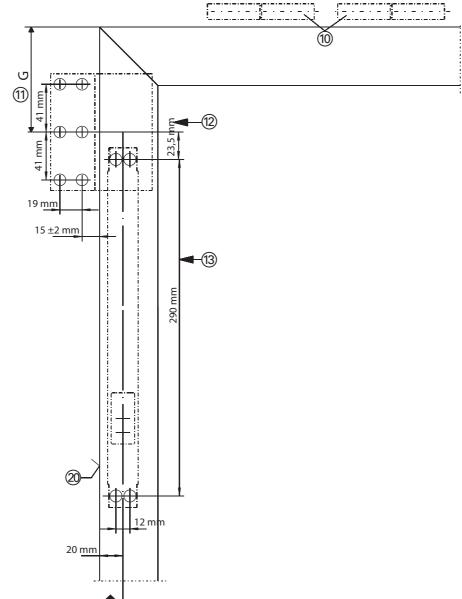
Mounting dimension

21 Additional bracket required for

overlap heights up to 12 mm

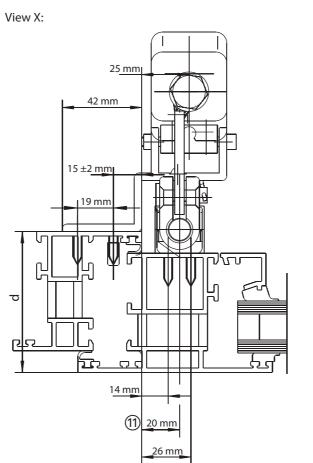
- 6.4.5 Drilling image drive fastening
  - Mounting dimension on right mirrored Mounting dimension G (see table Section 6.2.1 and 6.2.2)



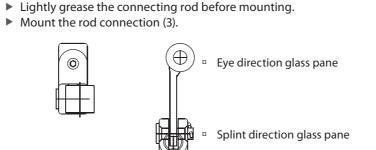


10 2 hinges on the drive side Mounting dimension Drilling image for frame bracket

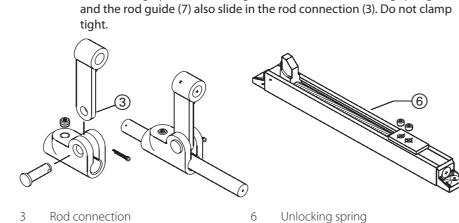
13 Drilling image for unlocking spring 20 Clear inner frame edge

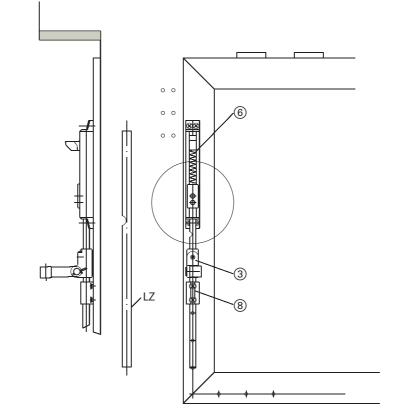


- 6.5 Mounting sequence
- 6.5.1 Fastening of the components
  - ▶ Define the mounting dimensions: Dimension G and E (see Section 6.2)
  - Dimension f1 or f2 (see Section 6.3.1) ▶ Drill the fitting holes (see Section 6.4).
- 6.5.2 Mounting of the connecting rod
- ► Shorten the connecting rod: LZ = Connecting rod length = b - G - 100 mm

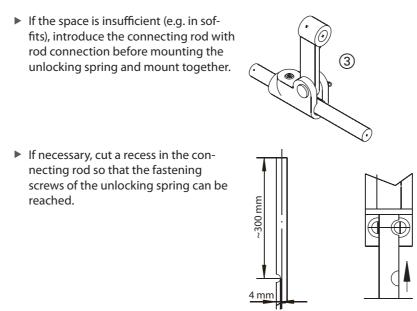


- ▶ Mount rod guide (8) and unlocking spring (6), if appropriate already with
- ▶ When sliding up the connecting rod between the unlocking spring (6)

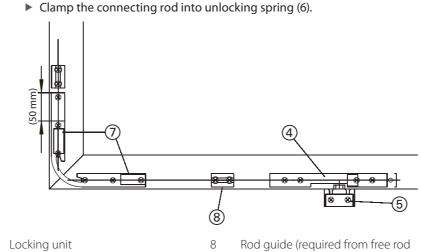




Rod guide Rod connection Unlocking spring (can be dispensed of in case of insufficient space)



- 6.5.3 Mounting of the corner transmission
  - ▶ Mount the corner transmission (7) and locking unit (4) without end cap and cover. Shorten the corner transmission by 50 mm, if necessary (see Section
  - 6.2 and 6.4.2). ▶ Introduce the connecting rod into the corner transmission (7) and clamp
  - it tight.

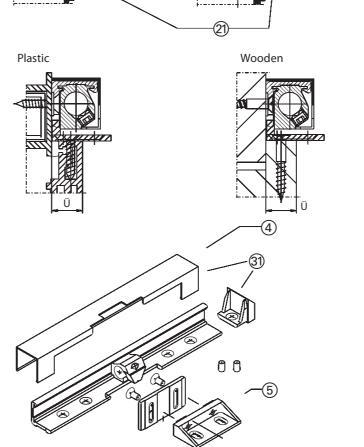


length of 600 mm)

Corner transmission

Additional bracket

# Sectional view of the locking unit L-metal flush L-metal overlap

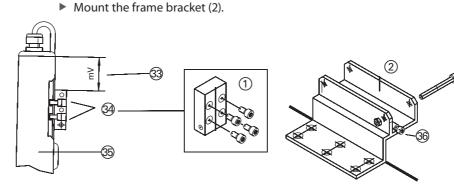


Locking unit Additional bracket

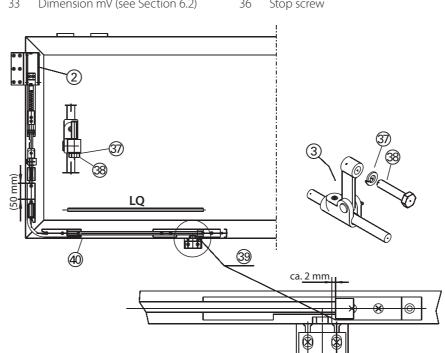
overlap heights up to 12 mm 31 End cap and cover

Additional bracket required for

- 6.5.4 Mounting the cross bar
  - ► Shorten the cross bar LQ: LQ = Cross bar length = f1-80
  - or LQ = f2 - 83
  - Slide in and tighten cross bar LQ.
- ▶ Mount the lower bracket section (1) on the drive. ▶ Lay the cable under the lower bracket section (1) to the electrical drive.



- Lower bracket section Frame bracket
  - 34 4x M5x10
- 35 Electrical drive

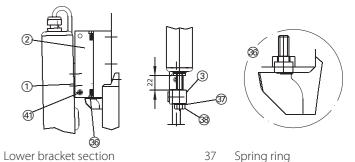


- Frame bracket
- Rod connection 37 Spring ring
- 38 Pretensioning screw
- 40 Corner transmission clamping piece in unlocked state flush here

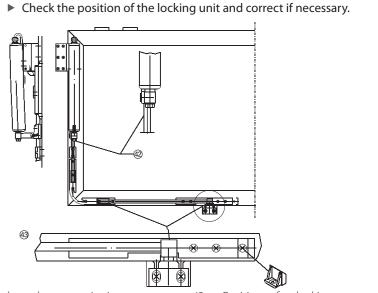
39 Locking component in unlocked

- 6.5.5 Mounting the electrical drive
  - ▶ If possible, use the setting device to extend the spindle by 22 mm, or observe the dimension of 22 mm at the pretensioning screw. ▶ Use the fillister head cap screw M4x45 to connect the lower bracket sec-
  - tion (1) and frame bracket (2). Lock the opposite end with the hexagon nut.
  - ▶ Insert the pretensioning screw M10x50 with spring ring in the rod guide

  - ► Turn the pretensioning screw into the electrical drive. Observe the dimension of 22 mm (to tension the unlocking spring later)
  - ▶ If necessary, regulate the stop screw M4 in the frame bracket (2) (must contact the unlocking spring lug firmly). ► Tighten all the clamping screws.



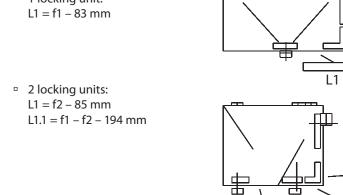
- Frame bracket Rod connection Stop screw
- 38 Pretensioning screw 41 Fillister head cap screw M5x45
- ▶ Lock the window by tightening the pretensioning screw or, if necessary, by retracting the drive (together always 22 mm).



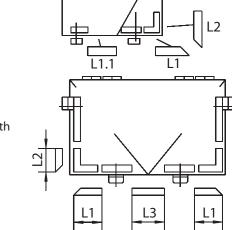
42 Tighten the pretensioning screw or 43 Positions after locking retract the spindle

#### 6.5.6 Mounting the covers

- ▶ Measure out L2 on site in an unlocked state.
- □ L2 (approx.) = b + mV G stroke 280(take into account when ordering) ► Shorten the cover profile: 1 locking unit:



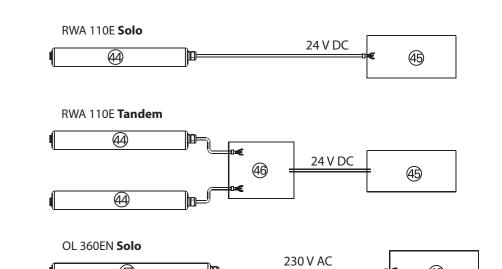
- 1 locking unit per side: L1 = f1 - 83 mm
- 1 locking unit per side with continuous cover profile: L1 = f2 - 85 mm $L3 = a - 2 \times f2 - 236 \text{ mm}$



▶ If necessary mount the end caps, clip in the locking covers and cover

## Electrical mounting

- ► Connect the system to the power supply (see wiring diagram, included with the electrical drive).
- ▶ Carry out a test run function check using the GEZE setting device (45 or 48) or the emergency power supply unit.
- It is imperative that the fixing screws of the electrical drive, bracket, frame bracket and unlocking spring be tightened.



OL 360EN Tandem 24 V DC 230 V AC **44**)

# 46 Tandem disconnection E102

8

44 Spindle drive E250

Setting device (ID No. 02754)

Final check ▶ Check measures for protecting and avoiding of crushing, impact, shear-

Spindle drive E350N

49 Tandem power pack E48

Setting device (ID No. 26762)

- ing and drawing-in spots. ▶ Ensure that the fixing screws of the electrical drive and the frame bracket
- Regular monitoring, maintenance

# Maintain the system at least once a year.

► Check the function. ▶ Check the state of the mechanical equipment and power cable.

- Disposal The window unit consists of materials that have to be recycled. ▶ Sort the individual components in accordance with the type of material:
- Aluminium (profiles) Iron (screws, etc.)
- Plastics Electronic components (motor, controller, transformer, relay, etc.)

The parts can be disposed of at the local recycling station or a scrap processing company.

GEZE GmbH

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GEZE Service GmbH

United Arab Emirates/GCC