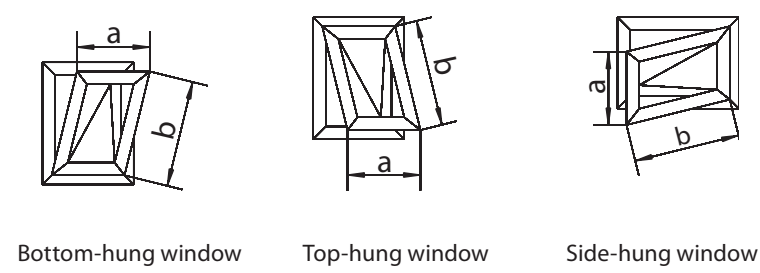


	RWA 100E Solo and Tandem OL 350EN Tandem	OL 350EN Solo
Spindle drive	E250 VdS 24 V DC	E350N 230 V AC
Strokes in mm	100, 150, 200, 300	100, 150, 200, 300
Length	Stroke +240 mm	Stroke +340 mm
Running time	approx. 20 s per 100 mm stroke	approx. 15 s per 100 mm stroke
Power consumption	20 W	35 W
Current consumption	m. 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 m; 3 × 0.75 mm <sup>2</sup>	2.5 m; 3 × 1.5 mm <sup>2</sup>
Versions	EV1 (silver); RAL 9016 (white); to RAL...	EV1 (silver); RAL 9016 (white); to RAL...
Wiring diagram	is enclosed with the drive	is enclosed with the drive

4.1 Installation conditions



a Casement width  
b Casement height  
O Overlap  
D Distance between casement top edge and rod centre

Installation condition	Dimension
Space required on locking side	≥32 mm
Space required on drive side	≥48 mm
Panel weight	≤30 kg/m <sup>2</sup>
Distance i	≤70 mm
Hinge distance	≤15 mm
Casement height b	≤1700 mm (≤1600 mm at OL 350EN)
Overlap height O	0-25 mm

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.

S Centre of gravity of casement  
i Distance (max. 70 mm)

h Hinge distance (max. 15 mm)

Further installation conditions  
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 1000 N.  
A limiter has to be applied installed additionally at plastic windows.

5 Overview of parts and requirements

5.1 Scope of delivery and completeness

Open all the packaging units. Check whether they are complete and familiarise yourself with the parts.

Designation	Stroke	ID No. / Colour	EV1 (silver)	RAL 9016 (white)	to RAL...
RWA 100E	100	19726	19745	19742	
	150	19725	19744	19741	
	200	19724	19743	19740	
	300	21291	21296	21295	
OL 350EN	100	87920	87923	87924	
	150	87925	87928	87929	
	200	87930	87933	87934	
	300	87935	87938	87939	

5.1.1 Overview of parts

Figure	Description
	Electrically operated drive E250 or E350N

RWA 100E accessories or OL 350EN accessories

Figure	Description
	Top-hung bracket (1) for RWA 100E

Figure	Description
	Top-hung bracket (1) for OL 350EN

Figure	Description
	Clamping piece (2)

Figure	Description
	Toe bracket (3)

Figure	Description
	Locking unit (4) and additional bracket (5)

Figure	Description
	Unlocking spring (6)

Figure	Description
	Corner transmission (7) with rod guide (8) and protective caps (9) for screws

Symbols and means of representation

In these instructions, warnings are used to warn against material damage and injuries.  
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
	DANGER	Danger for persons. Non-compliance will result in death or serious injuries.
	WARNING	Danger for persons. Non-compliance can result in death or serious injuries.
	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 information and technical notes are emphasised in order to illustrate the correct operation.

Symbol	Meaning
	Means "important note"

Symbol	Meaning
	Means "additional information"

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 his 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.

1 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 inwards.  
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 (exception: E250 AB). 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 announcement.  
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.  
For further information please contact our customer service.

2 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.
- Use a customer-accessible overload cut-out as the line-side disconnecting 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 Machine Directive 2006/42/EC, a danger analysis must be performed and the window system identified in accordance with CE Identification Directive 93/68/EEC before commissioning the window system.
- 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 BGI A1 "General regulations" and BGI A2 "Electrical systems and equipment"

2.1 Safety-conscious working

- Observe the safety instructions for electrical systems and in the wiring diagram.
- Secure 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, clothing, ...) when a drive is opened.
- Risk of injury by trapping, knocking, shearing and hair etc. being pulled in at unsecured points.
- Risk of injury through breakage of glass.
- 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.

3 Tools and fastening means

Tool	Size
Tape measure	-
Marking tools	-
Drilling pattern	-
Drilling tool	-
Drill bits	Diameter 4 mm (3 mm)
Allen key	Size 3, Size 4
2 open-ended spanners	Size 17
Screw driver	-
Saw	-
File	-

Window type	Fastening screws	Ø hole
Wooden	Countersunk wood screw 5x35 DIN 97 or 7997	3 mm
Light alloy	Countersunk head tapping screw 4.8x22 DIN 7972 or 7982 4 mm Countersunk screw M5x20 DIN 963 or 965	4 mm
Plastic	Countersunk head tapping screw 4.8xL DIN 7972 or 7982 4 mm Recommendation: Screw (length L) must pass through min. 2 mm profile cladding	4 mm

Fastening screws are not included in the scope of delivery.

Figure / Description	Designation	ID No.	Colour
	Cover profile 2000 mm	58771	EV1 RAL 9016 (white)
		18293	to RAL...
	3000 mm	58774	EV1 RAL 9016 (white)
		18294	to RAL...
	6000 mm	14259	EV1 RAL 9016 (white)
		58630	EV1 RAL 9016 (white)
	18251	to RAL...	
	13814	to RAL...	
	Rod Ø12 mm	2000 mm	53198
		3000 mm	53199
		6000 mm	53199
			54116

Cover profile mitted on both ends.

	Tandem disconnection E102 24 V DC	101323
	Tandem power pack E48	87776

For controlling Tandem RWA 100E or OL 350EN

	Rod guide	58653
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For Tandem operation of OL 350EN with 230 V AC

	Rod coupling	59729
	Corner transmission	58648

	Locking unit	63974	EV1 RAL 9016 (white) to RAL...
	Additional bracket for locking unit	13080	EV1 RAL 9016 (white) to RAL...
	Drilling pattern RWA 100E or OL 350EN	18257	

Use with or without end cap is the same.

	Additional bracket for locking unit	50727	EV1 RAL 9016 (white) to RAL...
	Drilling pattern RWA 100E or OL 350EN	15519	
	Setting device	13077	

For overlap heights up to 12 mm

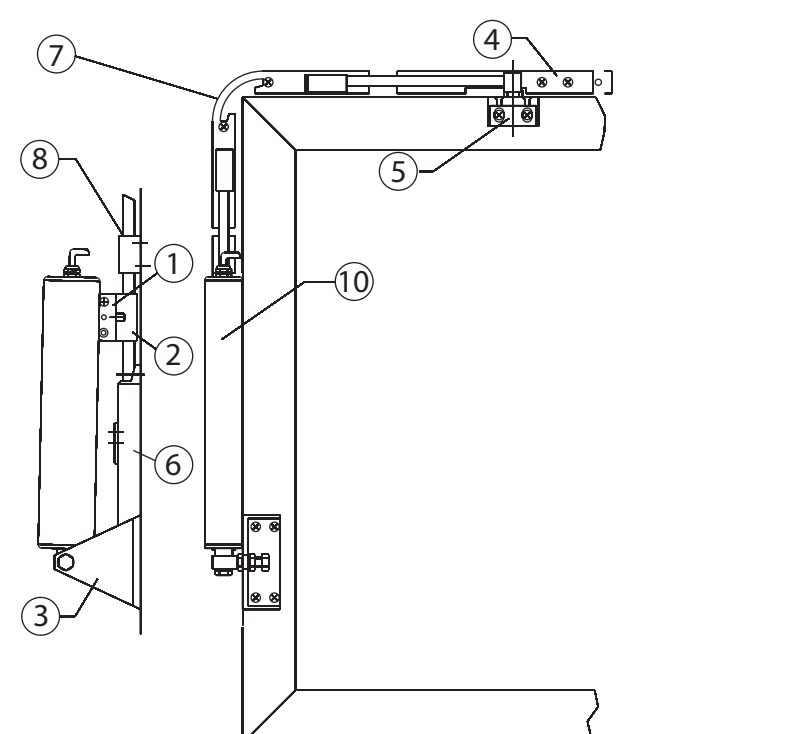
	Drilling pattern RWA 100E or OL 350EN	14740
	Setting device	02754
	Corner transmission	26762
	Setting device	230 V AC

5.2 Material required for 1 window

ID No.	required number per window			
	RWA 100E RWA 100E Solo	OL 350EN OL 350EN Tandem	Solo	Tandem
RWA 100E 24 V DC	see Section 5.1	2	-	-
OL 350EN 230 V AC	see Section 5.1	-	1	2
Tandem disconnection E102 24 V DC	101323	-	1	1
Tandem power pack E48	87776	-	-	1
Rods, cover profiles, rod guide	see Section 5.1.2	adapt as required, see Section 6.7.2 and 6.7.7		
Locking unit (casement area ≥1.2 m <sup>2</sup> )	63974	1	-	1
	13080	-	-	-
	18257	-	-	-
Additional bracket (overlap height up to 12 mm)	50727	1	-	1
	13007	-	-	-
	15519	-	-	-
Corner transmission (at side mounting)	58648	1	-	1

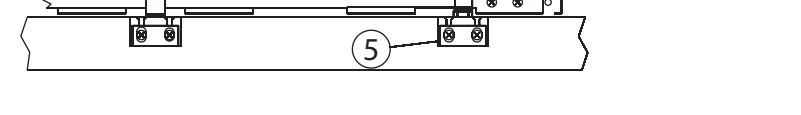
5.3 Location and overview of parts at the window

5.3.1 RWA 100E Solo

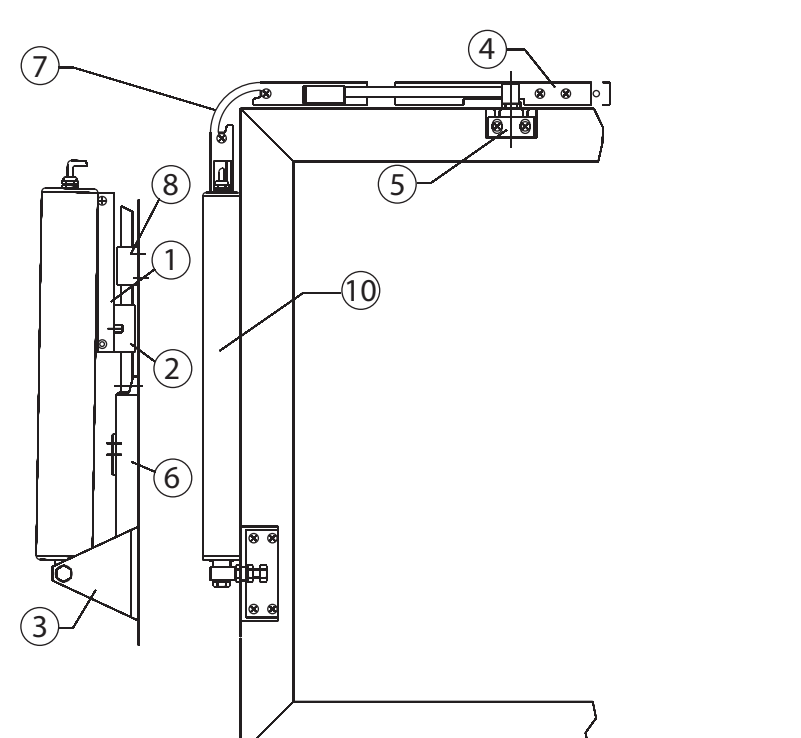


1	Top-hung bracket	6	Unlocking spring
2	Clamping piece	7	Corner transmission
3	Toe bracket	8	Rod guide
4	Locking unit	9	-
5	Additional bracket	10	Spindle drive E 250

With 2 locking units:

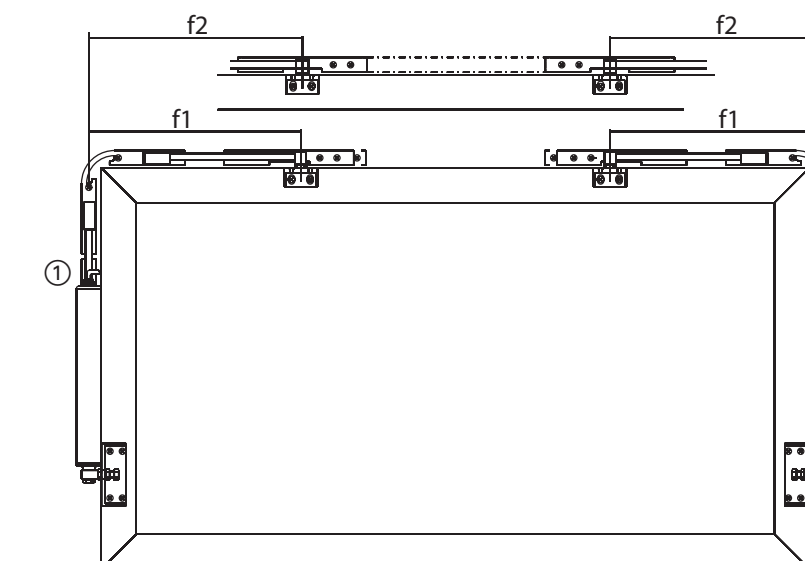
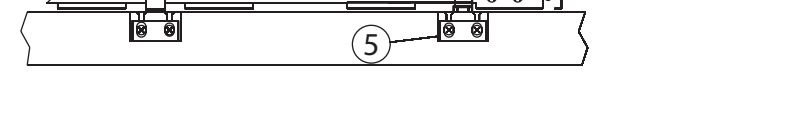


5.3.2 OL 350EN Solo



1	Top-hung bracket	6	Unlocking spring
2	Clamping piece	7	Corner transmission
3	Toe bracket	8	Rod guide
4	Locking unit	9	-
5	Additional bracket	10	Spindle drive E 350 N

With 2 locking units:



1 RWA 100E / OL 350EN  
f1 = min. 285 mm  
f2 = min. 265 mm (mounting dimension at mounting with continuous cover profile)

For RWA 100E Tandem: Tandem disconnection E102

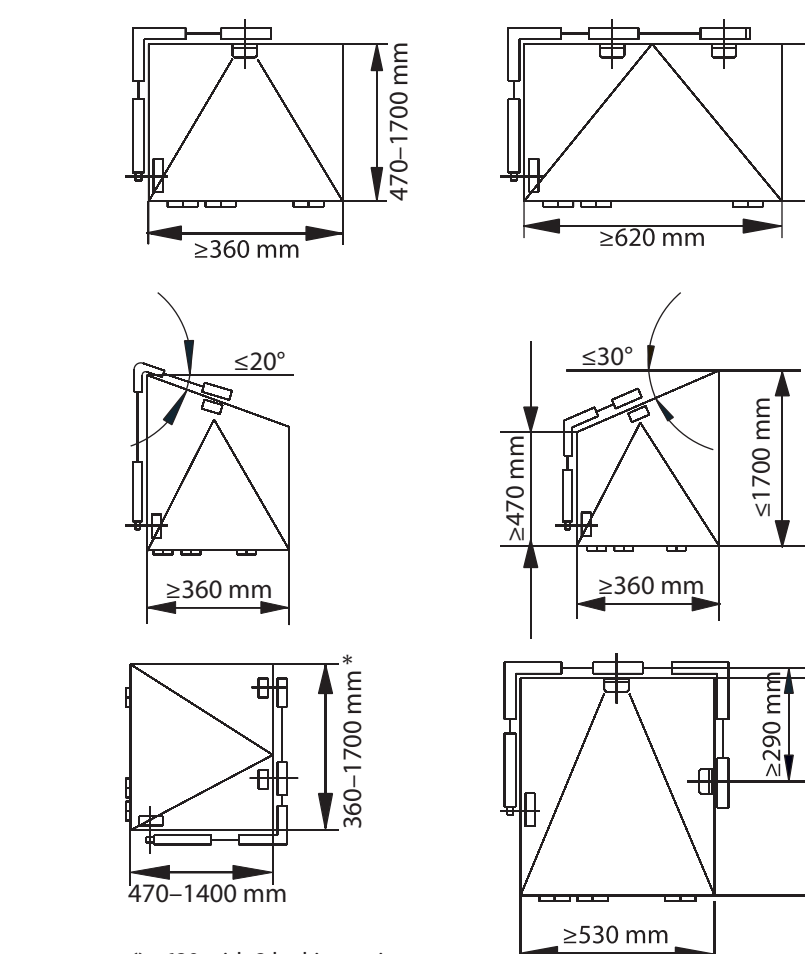
For OL 350EN Tandem: Tandem disconnection E102 and tandem power pack E48

6 Mounting

6.1 Mounting possibilities

6.1.1 RWA 100E Solo

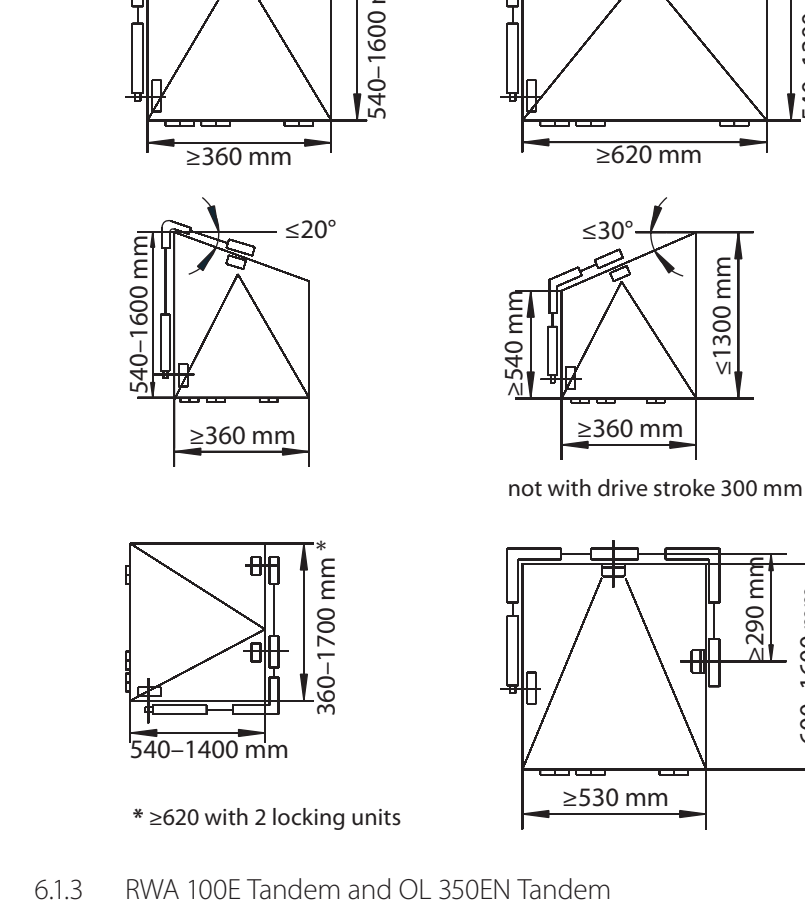
The motor can be mounted on the left or right. Above 1.2 m<sup>2</sup> window surface 2 locking units have to be mounted. The second locking unit is placed depending on the height and width.



\* ≥620 with 2 locking units

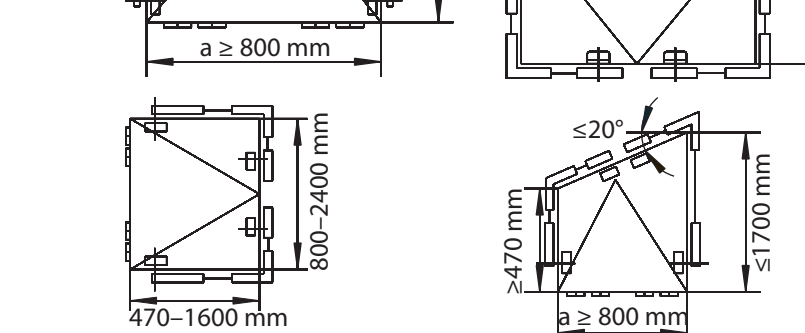
6.1.2 OL 350EN Solo

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 depending on the height and width.



\* ≥620 with 2 locking units

6.1.3 RWA 100E Tandem and OL 350EN Tandem

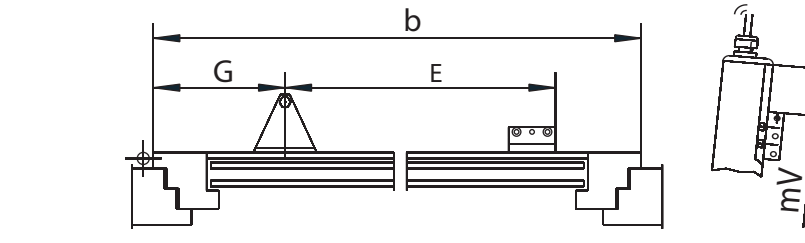


\* ≥620 with 2 locking units

6.2 Mounting dimensions depending on opening width and drive stroke

6.2.1 RWA 100E Solo, RWA 100E Tandem and OL 350EN 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.



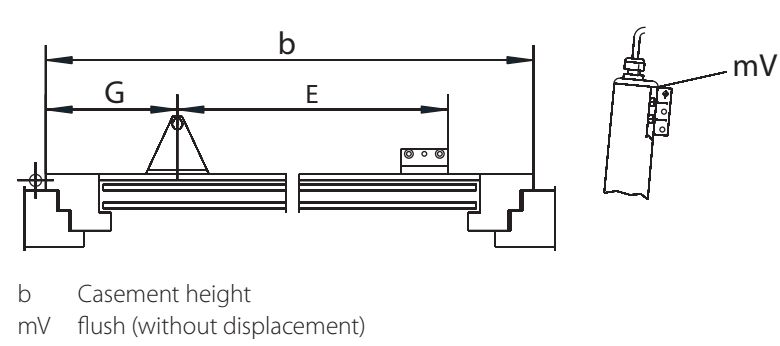
b Casement height  
mV with displacement of 50 mm or flush (see following table)

Casement height b [mm]	Dimension G [mm]	Dimension E [mm]	Opening angle [°]	Opening width [mm]
<b>Stroke 100</b>				
470-520 *	65	315	approx. 36°	approx. 320
520-600 **	65	315	approx. 36°	approx. 350
600-700	85	365	approx. 34°	approx. 380
700-800	125	365	approx. 30°	approx. 380
800-850	145	365	approx. 28°	approx. 400
<b>Stroke 150</b>				
560-630 *	100	365	approx. 51°	approx. 520
630-700 **	125	365	approx. 46°	approx. 520
700-800 **	195	365	approx. 37°	approx. 490
800-900	245	415	approx. 35°	approx. 490
900-1000	345	415	approx. 27°	approx. 450
<b>Stroke 200</b>				
700-800 *	195	415	approx. 50°	approx. 640
800-900 **	245	415	approx. 44°	approx.



6.2.2 OL 350EN 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.



Casement height b [mm]	Dimension G [mm]	Dimension E [mm]	Opening angle [mm]	Opening width mV [mm]
<b>Stroke 100</b>				
540-650 *	65	367	approx. 37°	approx. 380
650-750	110	367	approx. 32°	approx. 380
750-850	150	367	approx. 28°	approx. 390
850-950	200	367	approx. 25°	approx. 390
<b>Stroke 150</b>				
660-700 *	125	417	approx. 47°	approx. 550
700-800 *	170	417	approx. 41°	approx. 530
800-900	230	417	approx. 36°	approx. 530
900-1000	280	417	approx. 32°	approx. 530
1000-1100	340	417	approx. 28°	approx. 530
<b>Stroke 200</b>				
850-900 *	250	468	approx. 45°	approx. 670
900-1000 *	310	468	approx. 40°	approx. 640
1000-1100	370	468	approx. 36°	approx. 640
1100-1200	440	468	approx. 32°	approx. 630
1200-1300	530	468	approx. 28°	approx. 610
<b>Stroke 300</b>				
1150-1200 *	470	568	approx. 43°	approx. 880
1200-1250 *	525	568	approx. 41°	approx. 880
1250-1300 *	575	568	approx. 38°	approx. 840
1300-1350 *	625	568	approx. 36°	approx. 820
1350-1400 *	675	568	approx. 34°	approx. 800
1400-1450 *	725	568	approx. 32°	approx. 790
1450-1500 *	775	568	approx. 30°	approx. 780
1500-1550 *	825	568	approx. 29°	approx. 780
1550-1600 *	875	568	approx. 28°	approx. 770

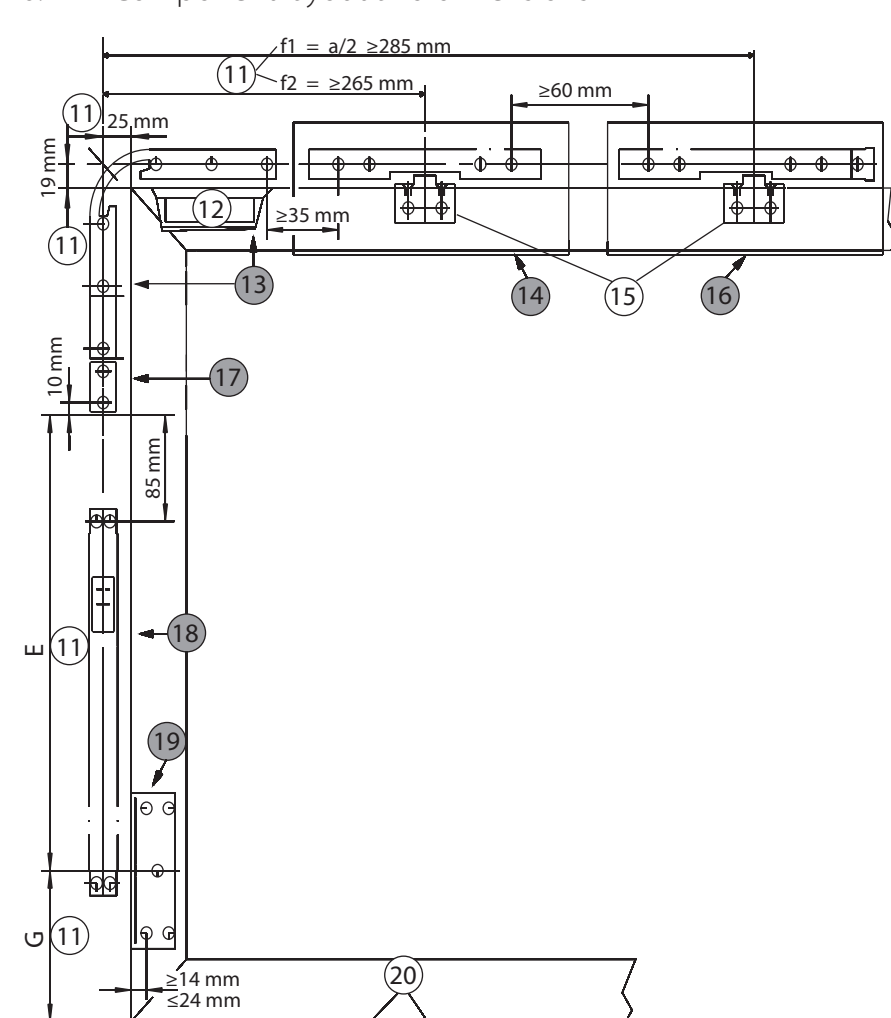
\* Shorten the corner transmission by 50 mm.

6.3 Preparation of installation

- 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.

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.

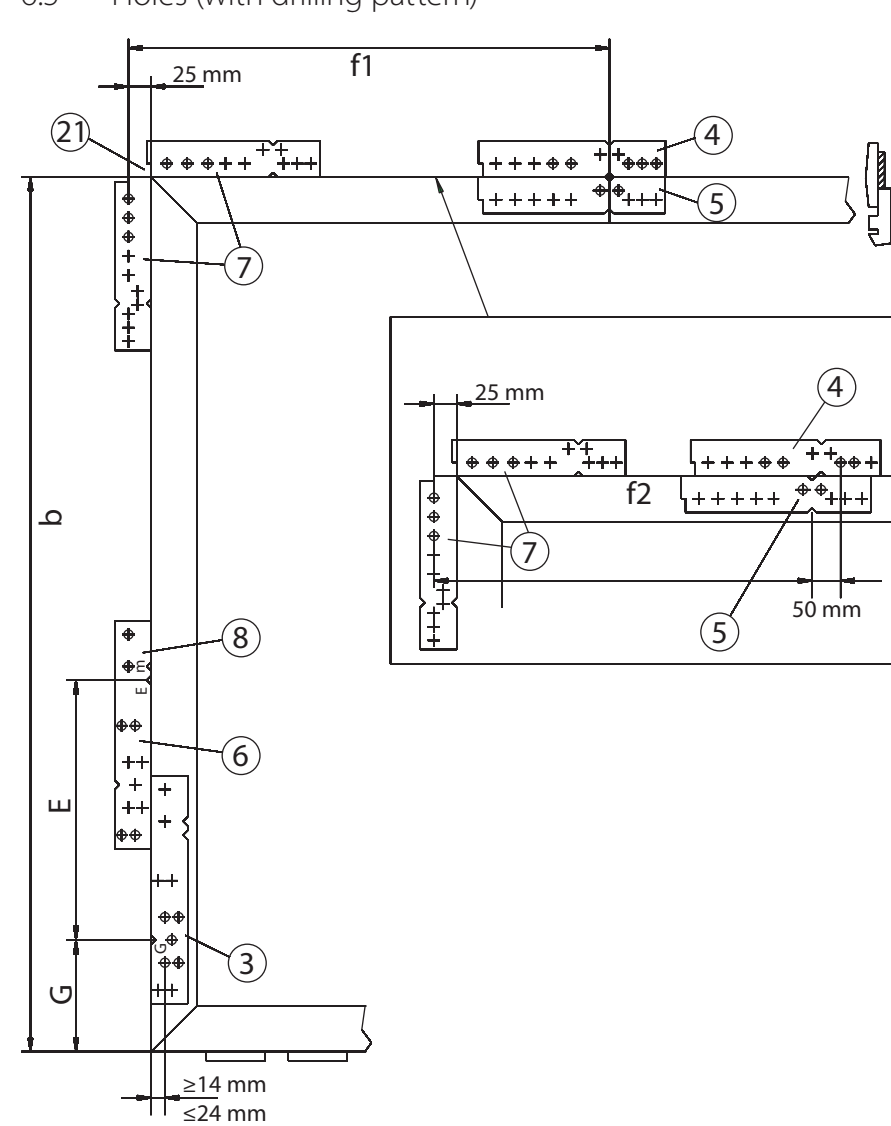
6.4 Component layout and dimensions



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

- f<sub>1</sub> ≥ 495 mm with 2 locking units
- 11 Mounting dimension
- 12 Limiter
- 13 Drilling template for corner transmission (see Section 6.6.1)
- 14 Drilling template for locking unit (see Section 6.6.2) between fittings (2nd locking unit)
- 15 Additional bracket required for O up to 12 mm
- 16 Drilling template for locking unit (see Section 6.6.2) with end cap
- 17 Drilling template for rod guide (see Section 6.6.3)
- 18 Drilling template for unlocking spring (see Section 6.6.3)
- 19 Drilling template for toe bracket (see Section 6.6.3)
- 20 2 hinges on electrically operated drive side

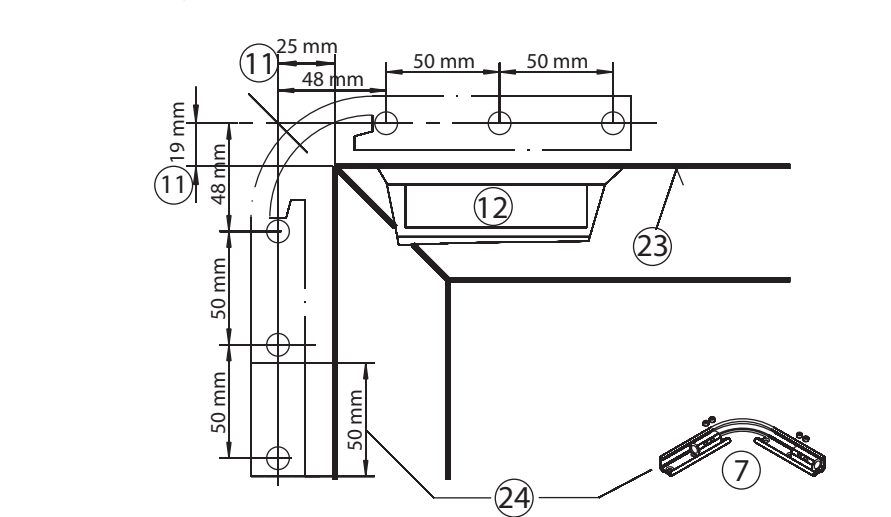
6.5 Holes (with drilling pattern)



- 21 flush with casement edge
- Select the drilling template for the corresponding fittings

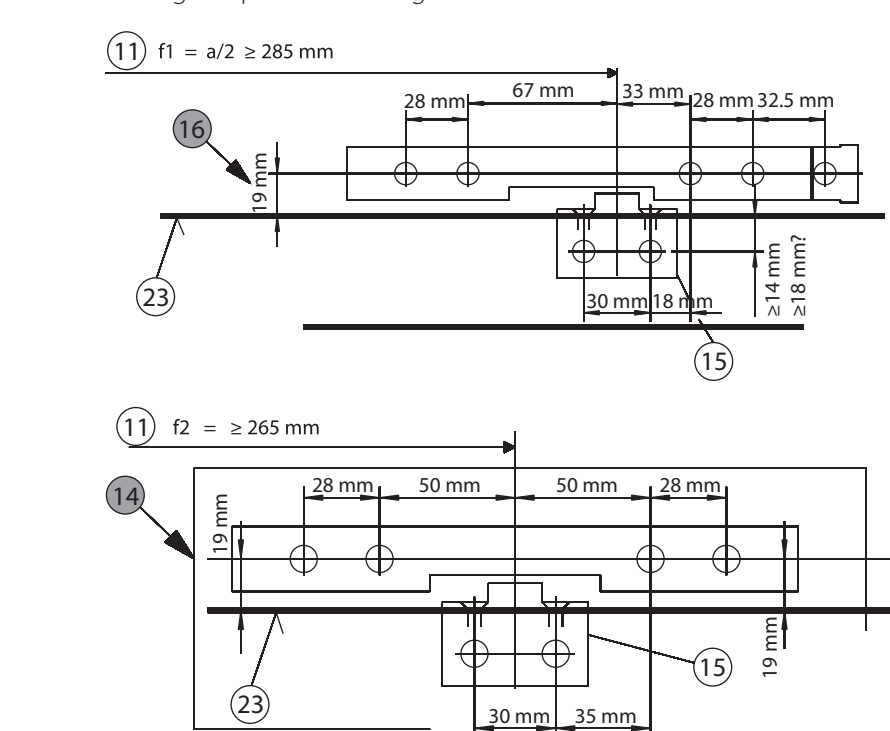
6.6 Holes (without drilling pattern)

6.6.1 Drilling template for corner transmission



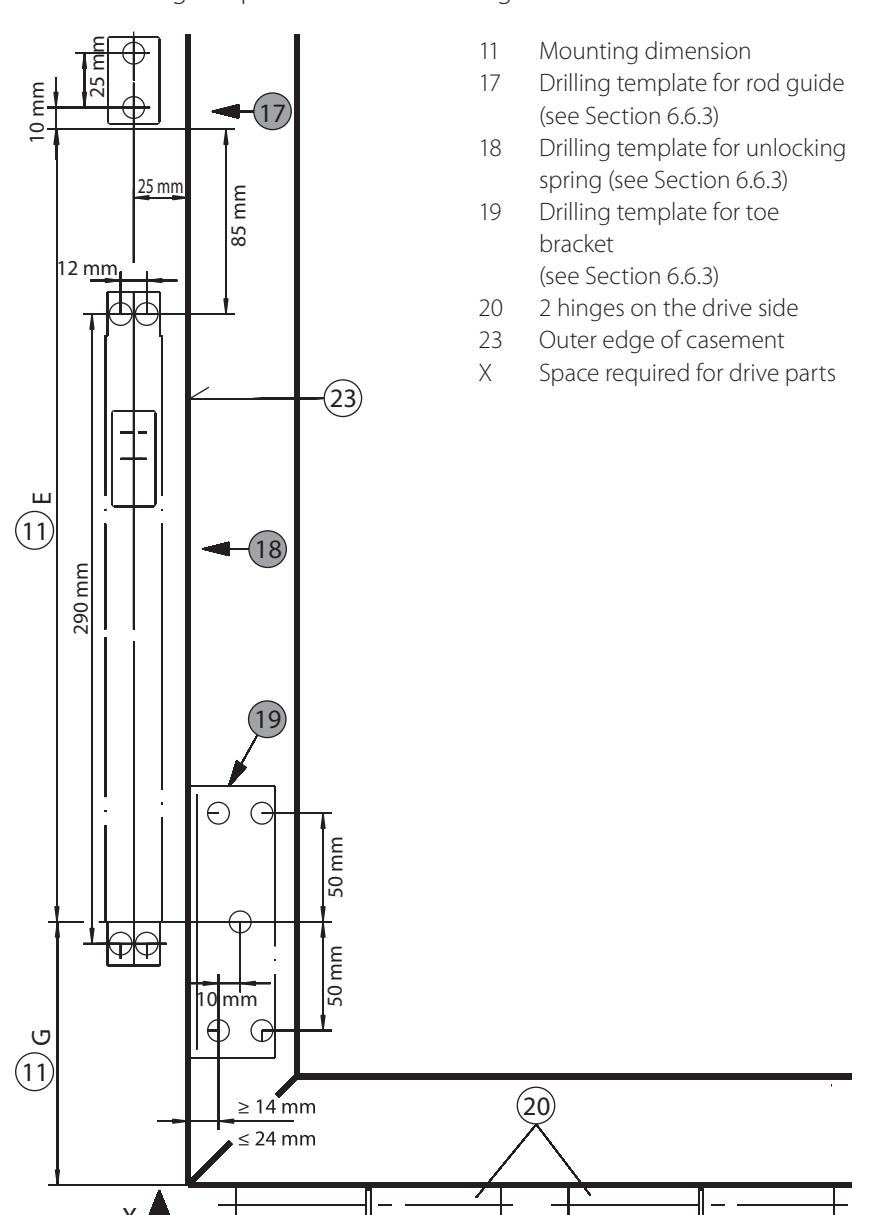
- 11 Mounting dimension
- 12 Limiter
- 23 Outer edge of casement
- 24 Shorten the corner transmission (7) by 50 mm, if appropriate.

6.6.2 Drilling template for locking units



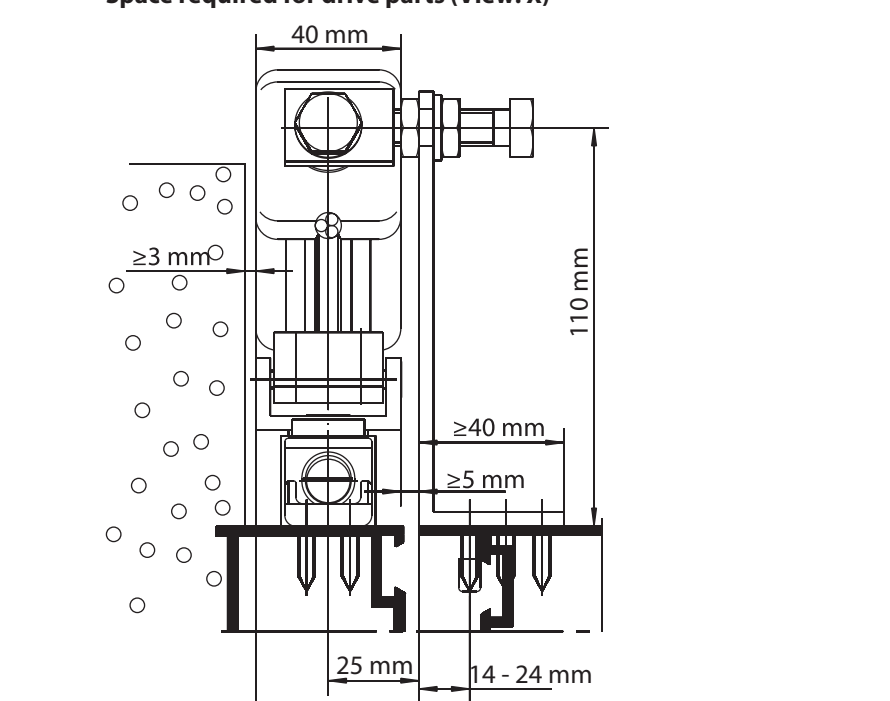
- f<sub>1</sub> ≥ 495 mm with 2 locking units
- 11 Mounting dimension
- 14 Drilling template for locking unit between fittings (2nd locking unit)
- 15 Additional bracket required for overlap heights O up to 12 mm
- 16 Drilling template for locking unit with end cap
- 23 Outer edge of casement

6.6.3 Drilling template for drive fastening



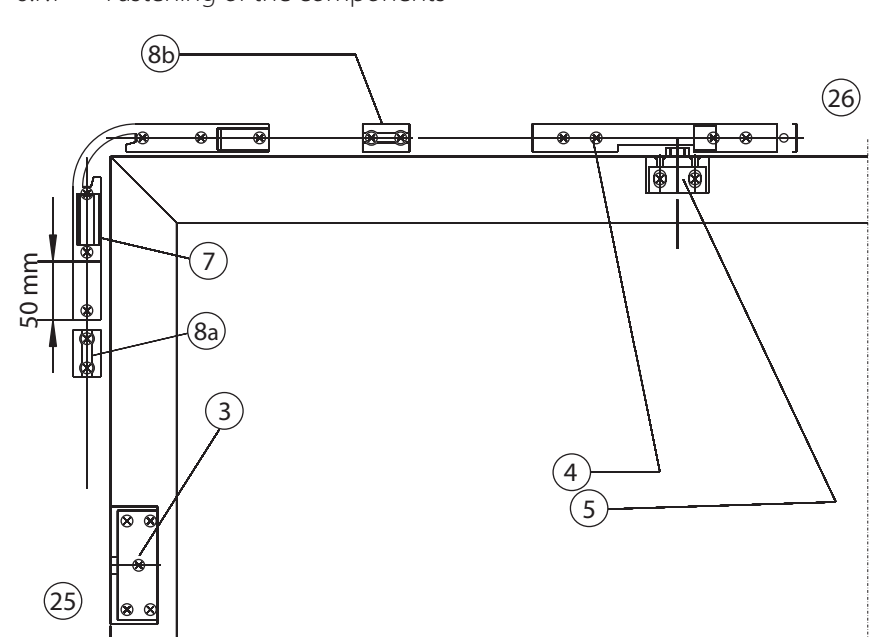
- 11 Mounting dimension
- 17 Drilling template for rod guide (see Section 6.6.3)
- 18 Drilling template for unlocking spring (see Section 6.6.3)
- 19 Drilling template for toe bracket (see Section 6.6.3)
- 20 2 hinges on the drive side
- 23 Outer edge of casement
- X Space required for drive parts

Space required for drive parts (View: X)



6.7 Mounting sequence

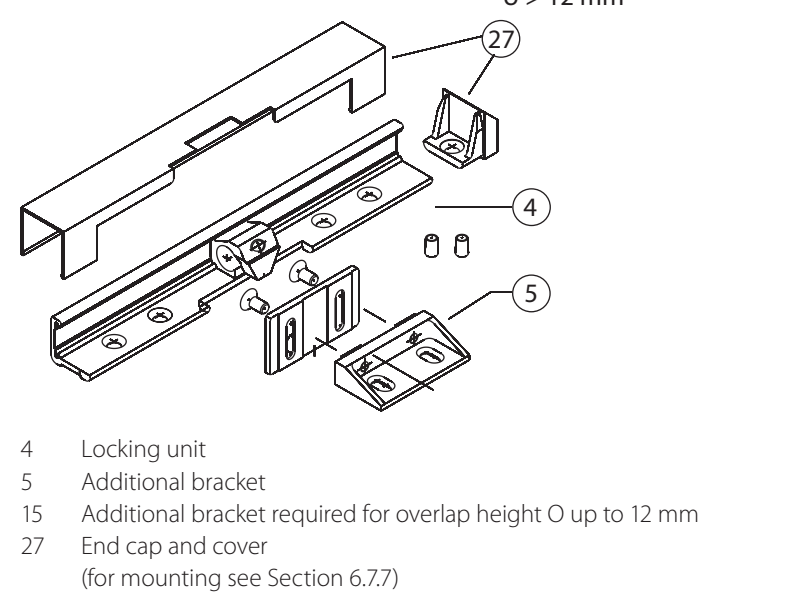
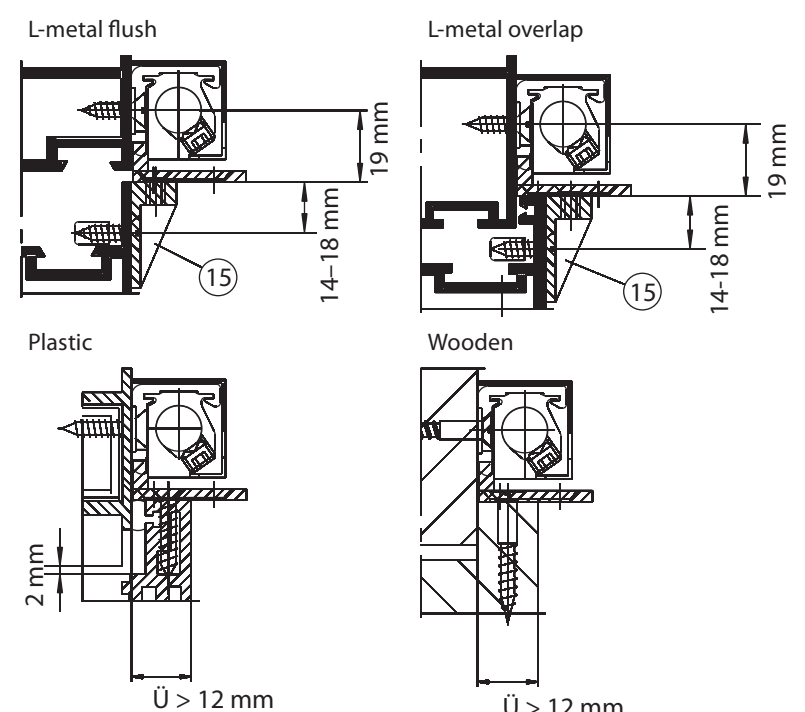
6.7.1 Fastening of the components



- 3 Toe bracket
- 4 Locking unit
- 5 Additional bracket
- 7 Corner transmission
- 8a Rod guide (can be left out in case of insufficient space)
- 8b Rod guide (required for rod length ≥ 600 mm)
- 25 Drive side
- 26 Locking side

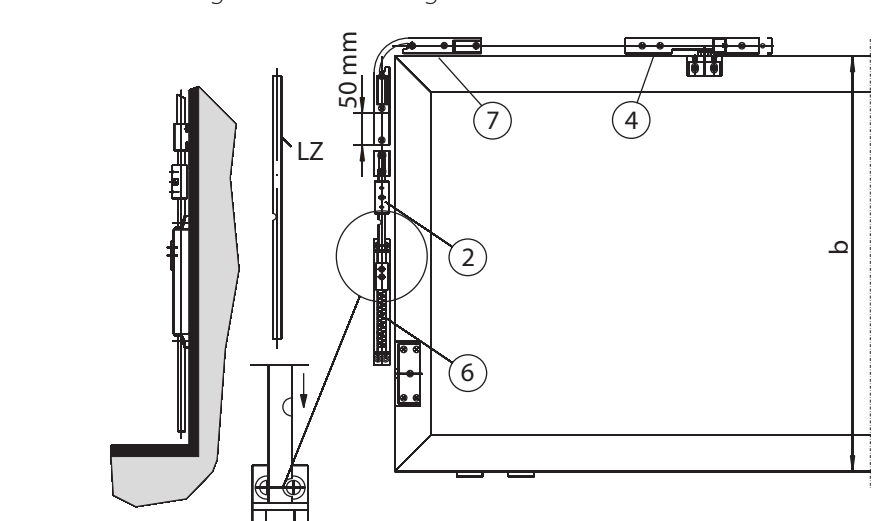
- Define the mounting dimensions:
  - Dimension G and E see Section 6.2
  - Dimension f<sub>1</sub> or f<sub>2</sub> see Section 6.6.2
- Drill the fitting holes (see Sections 6.4 to 6.6).
- Mount the corner transmission (7), rod guide (8), toe bracket (3) and locking units (4) without end cap.
  - Shorten the corner transmission (7) by 50 mm, if appropriate (see Sections 6.2 and 6.6.1).
- If necessary, screw the protective caps onto the ends of the fastening screws.
- Mount the additional bracket (5) at overlap heights up to 12 mm (15).

Sectional views of the locking unit



- 4 Locking unit
- 5 Additional bracket
- 15 Additional bracket required for overlap height O up to 12 mm
- 27 End cap and cover (for mounting see Section 6.7.7)

6.7.2 Mounting of the connecting rod



LZ Connecting rod length

- Shorten the connecting rod:
  - LZ = Connecting rod length [mm] = b - G - E + 335
- Lightly lubricate the connecting rod.

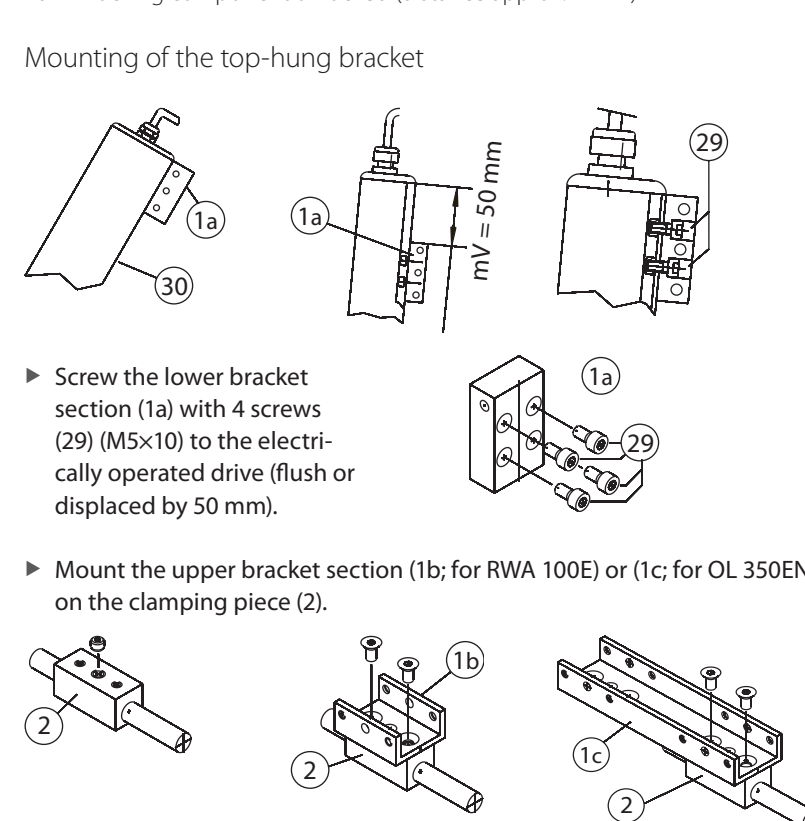
- If the space is insufficient (e.g. in soffits), introduce the connecting rod before mounting the unlocking spring. If necessary, cut a recess in the connecting rod so that the fastening screws can be reached with the screw driver.

- Mount the unlocking spring (6).
- Insert the connecting rod from below through the unlocking spring (6).
- Place the clamping piece (2) above the unlocking spring (6).
- Insert the connecting rod into the corner transmission (7) and clamp it tight.
- Clamp the connecting rod into unlocking spring (6).

6.7.3 Mounting the cross rod

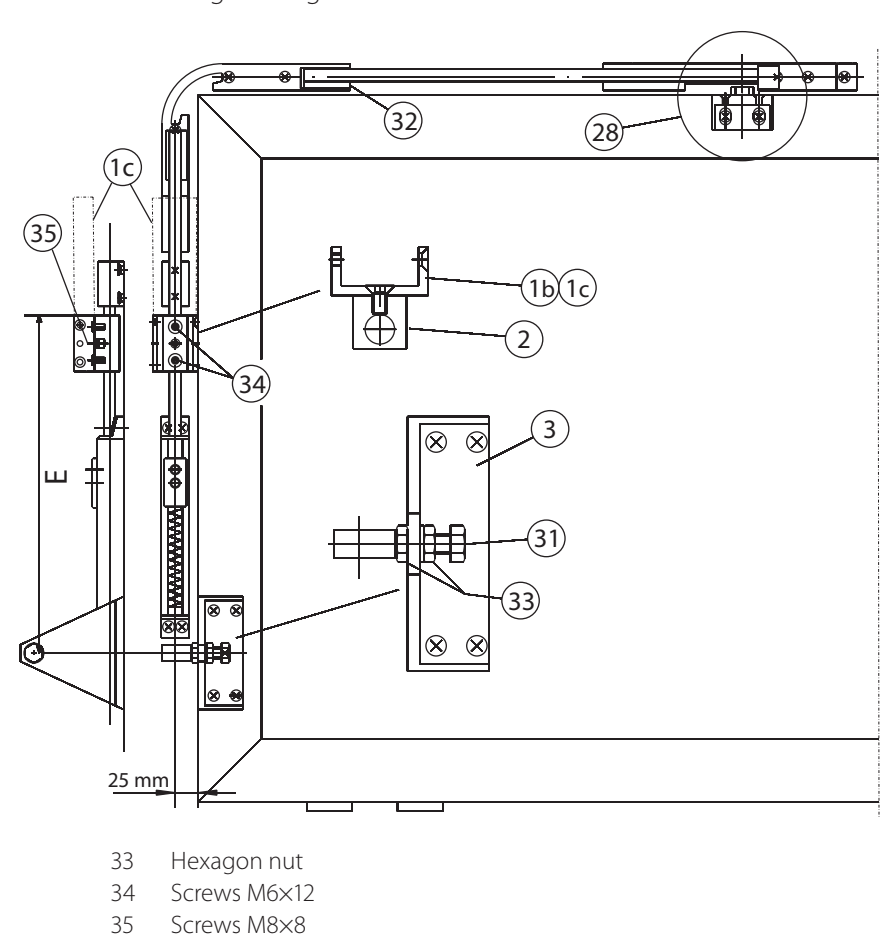
- Shorten the cross rod:
  - LQ = Cross rod length [mm] = f<sub>1</sub> - 77
- Lightly grease the cross rod and slide it in.
- Clamp the cross rod tight on the corner transmission (7) and locking unit (4).

6.7.4 Mounting of the top-hung bracket



- Screw the lower bracket section (1a) with 4 screws (29) (M5x10) to the electrically operated drive (flush or displaced by 50 mm).
- Mount the upper bracket section (1b; for RWA 100E) or (1c; for OL 350EN) on the clamping piece (2).

6.7.5 Mounting the angle transmission



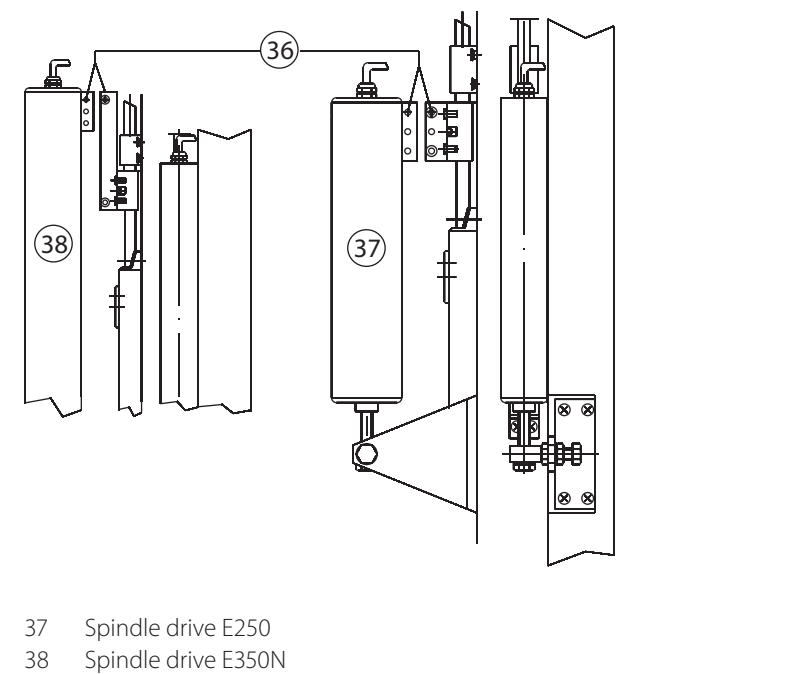
- Mount the angle transmission (3b) on the toe bracket (3a).
- Screw the adjustment screw (31) (M10x4; length 10 to 13 mm) into the angle transmission.

6.7.6 Mounting the electrically operated drive

- If possible, use the setting device to extend the spindle by 22 mm.
- The dimension of 22 mm is important in order to set the correct locking. It can either be set in advance using the setting device or be observed using the pretensioning screw.

- Connect the pretensioning screw (3c) with the angle transmission (3b) and electrically operated drive (30).
- Turn the pretensioning screw (3c) into the electrically operated drive:
  - Leave 22 mm space if the spindle has not been extended.
  - Or -
  - Tighten completely, if the spindle has been extended by 22 mm.

- Align the lower and upper bracket parts so that the countersunk screw (36) (M5x40) can be passed through.



- 37 Spindle drive E250
- 38 Spindle drive E350N

- Clamp the lower bracket section onto the rod.
- Connect the bracket sections with the countersunk screw (36).
- Tighten the pretensioning screw or retract the spindle (22 mm) and lock the window.

- Check the position of the locking parts (39) and, if necessary, adjust.

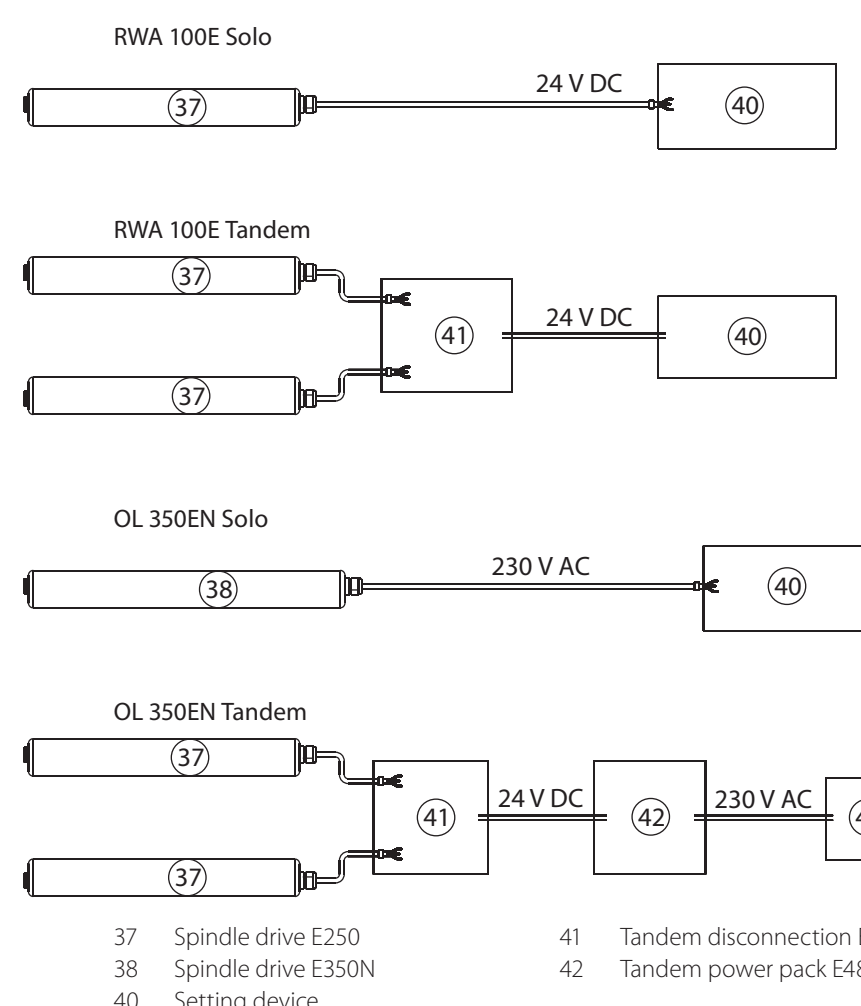
6.7.7 Mounting the covers

- Shorten the cover profile:
  - 1 locking unit:
    - L1 = f<sub>1</sub> - 83 mm
    - L2 = b - G - E + 22 mm
  - 2 locking units:
    - L1 = f<sub>1</sub> - 85 mm
    - L1.1 = f<sub>1</sub> - f<sub>2</sub> - 194 mm
    - L2 = b - G - E + 22 mm
  - 1 locking unit per side with continuous cover profile:
    - L1 = f<sub>1</sub> - 85 mm
    - L2 = b - G - E + 22 mm
    - L3 = a - 2 x f<sub>2</sub> - 146 mm

- If necessary, mount the end caps. Clip in the locking unit covers and cover profiles.

7 Electrical mounting

- Connect the system to the power supply (see wiring diagram that is included with the electrically operated drive).
- Carry out a test run function check using the GEZE setting device (40) or the emergency power supply unit.



- 37 Spindle drive E250
- 38 Spindle drive E350N
- 40 Setting device
- 41 Tandem disconnection E102
- 42 Tandem power pack E48

8 Final check

- Check measures for securing and avoiding due to trapping, knocking, shearing and hair etc. being drawn in.
- It is imperative that the fixing screws of the electrically operated drive and the frame bracket be tightened.

9 Periodic monitoring, maintenance

- Maintain the system at least once a year.

- Check the function.
- Check the state of the mechanical equipment and power cable.

10 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, control, transformer, relay, etc.)
  - Cables
- The parts can be disposed of at the local recycling station or a scrap processing company.