

**SERVO-DRIVE**

by Blum

**BLUMOTION**

by Blum



## **SERVO-DRIVE**

Installation instructions

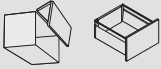
[www.blum.com](http://www.blum.com)

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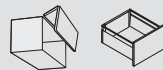


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## Warning signs and danger symbols

<b>⚠ WARNING</b>	WARNING indicates a danger that could lead to death or serious injury if not heeded.
NOTE	The NOTE sign indicates information that should be followed.

## Using the installation instructions

Please read the installation instructions and safety information before SERVO-DRIVE installation.

We recommend that you use the orientation diagram for easier identification of the parts being described.

These installation instructions apply to the SERVO-DRIVE electrical motion support system for:

- the lift systems AVENTOS HF, AVENTOS HS, AVENTOS HL and AVENTOS HK
- the box systems LEGRABOX and TANDEMBOX as well as the runner systems MOVENTO and TANDEM

However, only AVENTOS HF is used as an example in the illustrations.

Please see the special AVENTOS installation instructions for the assembly steps for the mechanical AVENTOS HF, HS, HL and HK lift systems without SERVO-DRIVE.

## Safety

SERVO-DRIVE complies with current safety standards.

Nevertheless, there are certain risk factors if these installation instructions are not followed. Please be aware that Julius Blum GmbH is not responsible for incidental or consequential damages that may arise due to non-compliance with these installation instructions.

- All national standards must be followed for SERVO-DRIVE assembly. This includes, in particular, those related to the mechanical safety of moving parts and electrical cabling.
- Only qualified technicians may install/replace Blum components, modify the position of the Blum transformer or modify any cabling.
- The device may only be connected to a power supply that corresponds to the type and frequency listed on the serial tag (see Blum



transformer).

- The outlet must be freely accessible.
- Only 1 Blum transformer can be connected to each distribution cable.
- Maintain safety distances to the Blum transformer listed in the installation instructions.
- Make sure that moisture cannot penetrate the Blum transformer and drive unit.
- Before starting repair or maintenance work, unplug the Blum transformer to disconnect the power.
- The drive unit, Blum transformer and SERVO-DRIVE switch should only be cleaned with a moist cloth because penetrating moisture and aggressive cleaning materials can damage the electronics.
- Do not touch the area around the lever during the opening and closing motion.
- No damaged parts should be used.
- Sharp edges may damage the cable.
- Neither the Blum transformer nor any cabling should come into contact with moving parts.
- Never take apart a drive unit or a SERVO-DRIVE switch.

## Intended use

SERVO-DRIVE supports the opening and closing of lift systems and/or the opening of pull-out elements, and may only be used under the following conditions:

- In dry, enclosed rooms.
- In combination with AVENTOS lift systems and/or pull-out systems from Julius Blum GmbH within permitted technical specifications.
- In combination with a Blum transformer.



## ⚠ WARNING

### Danger of electric shock

- Never open a Blum transformer. There is a danger of electric shock.
- Before starting repair or maintenance work, unplug the Blum transformer to disconnect the power.

## ⚠ WARNING

### There is a danger of injury if the lever springs upward.



There is a danger of injury from the lever springing upwards when the front is removed.

- Do not push down on lever arm, instead, remove the arm if it is in the way (not possible on HK variant).
- Do not connect the transformer to the power supply while the fronts are unattached.

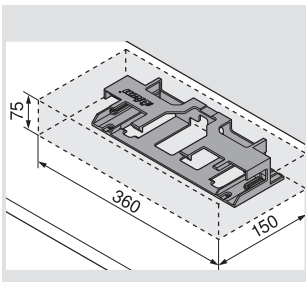
## Blum transformer safety distance

### NOTE

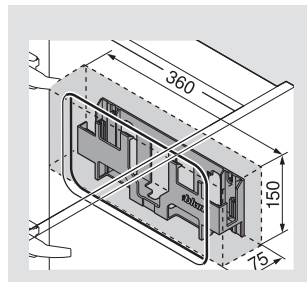
A safety distance of 30 mm must be maintained for air circulation; otherwise, there is a risk that the Blum transformer could overheat.

- The dimensions in the drawing take into account the safety distance.

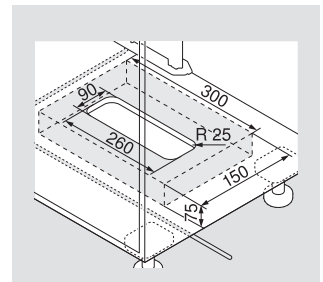
Assembly on the top panel

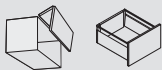


Panel fixing



Base fixing





## Troubleshooting

For troubleshooting information, please go to:  
[www.blum.com/sd/troubleshooting](http://www.blum.com/sd/troubleshooting)

## Info regarding the Machine Directive 2006/42/EC

Furniture with SERVO-DRIVE for AVENTOS, as long as it is intended for domestic use, is not subject to the provisions of the Machine Directive 2006/42/EC. This is valid for items for office and professional use and for putting a machine on the market within the Euro. Economic Area (EEA + Switzerland + Turkey).

The standards and/or guidelines of other countries are covered with our TÜV certification.

For detailed information regarding the Machine Directive, please go to: [www.blum.com/sd/guideline](http://www.blum.com/sd/guideline)

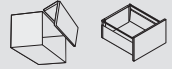
## Structural changes and spare parts

Structural changes and replacement parts not approved by the manufacturer affect the safety and functionality of SERVO-DRIVE and are, therefore, not allowed.

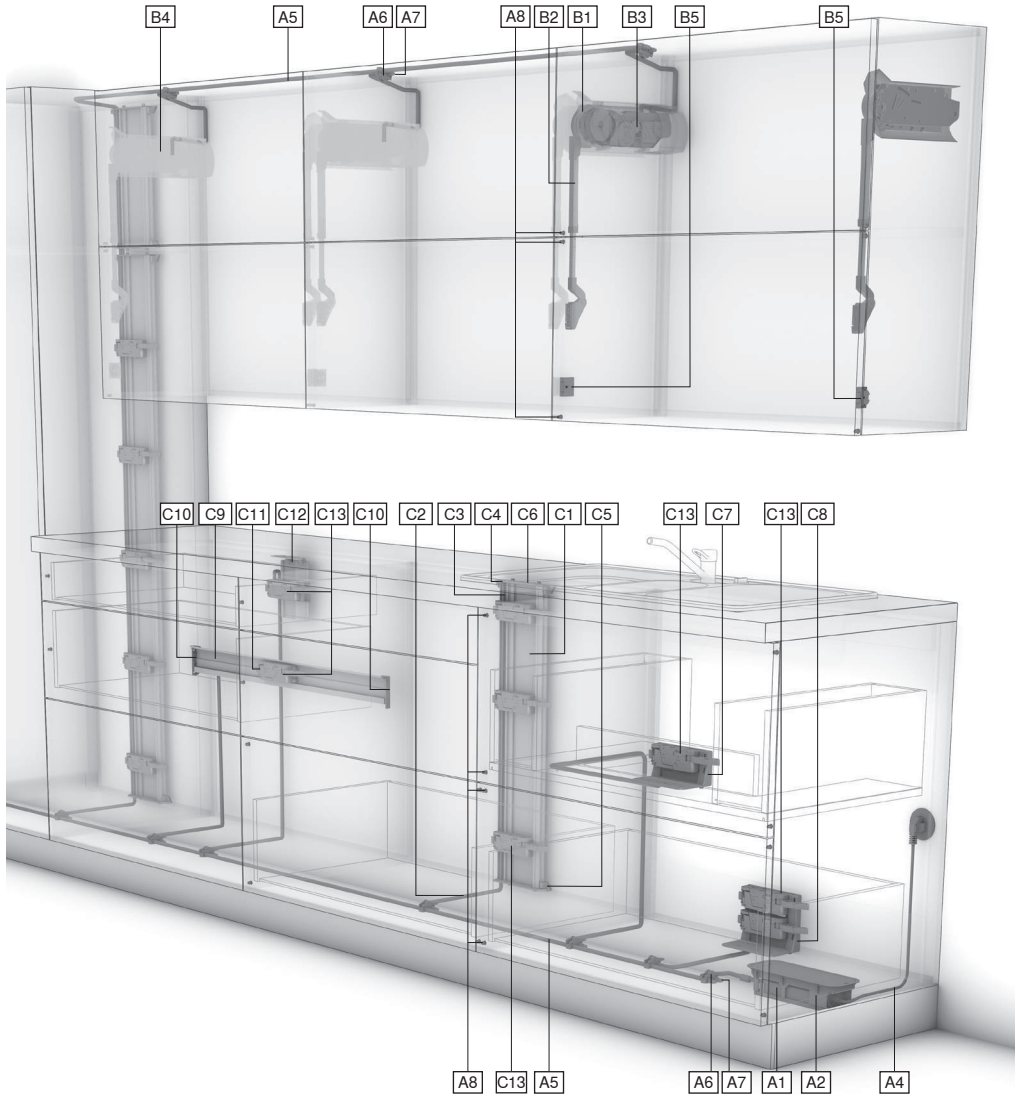
- Only use original replacement parts from Julius Blum GmbH.
- Blum components are the only devices that should be connected to the Blum transformer.

## Disposal

- All SERVO-DRIVE electronic components, including the battery, should be disposed of in a separate collection for electrical appliances as per local regulations.



### SERVO-DRIVE overview drawing





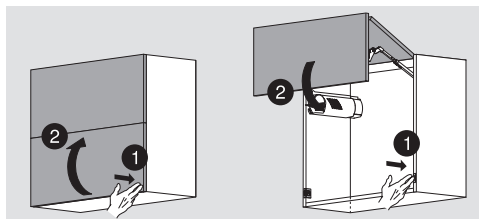


A1	Blum transformer with LED display
A2	Transformer unit housing for base fixing
A3	Transformer unit housing for panel fixing
A4	Flex
A5	Distribution cable for cutting to size
A6	Connecting node
A7	Cable end protector
A8	Blum distance bumper
B1	Lift mechanism
B2	Telescopic arm or lever arm
B3	Drive unit with LED display
B4	Cover cap
B5	SERVO-DRIVE switch with battery display
C1	Bracket profile vertical
C2	Bracket profile cable (for power supply)
C3	Communication cable
C4	Upper/Back bracket profile attachment
C5	Lower bracket profile attachment
C6	Bracket profile cover cap
C7	Attachment bracket 1 tier
C8	Attachment bracket 2 tier
C9	Bracket profile horizontal
C10	Bracket profile attachment left/right
C11	Adapter for drive unit
C12	Upper attachment bracket with adapter for drive unit
C13	Drive unit

## AVENTOS function

### Electrical motion support system

The SERVO-DRIVE switch triggers the automatic opening and closing action of SERVO-DRIVE for AVENTOS.



Press on the front

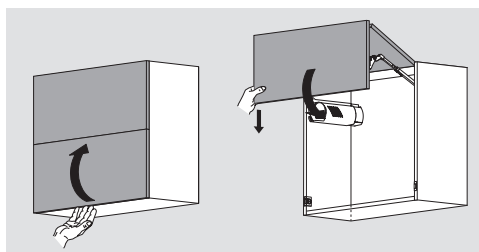
- The lift system opens automatically

Press on the SERVO-DRIVE switch

- The lift system closes automatically

### Manual operation

The lift system can be opened or closed manually without restrictions without damaging SERVO-DRIVE for AVENTOS.

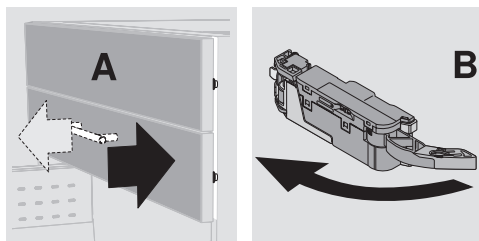


- Manual opening of the lift system by moving it upwards
- Manual closing of the lift system by moving it downwards

## LEGRABOX/TANDEMBOX/MOVENTO/TANDEM function

### Electrical motion support system

When the front and/or handle of the drawer (A) is pulled or pressed, the eject lever of the drive unit (B) swivels forward and opens the pull-out element a short distance.

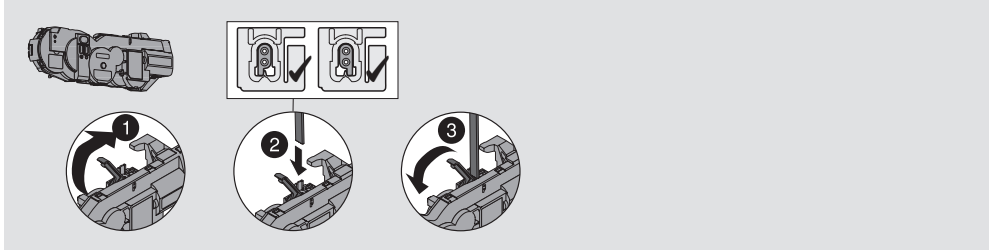




## SERVO-DRIVE for AVENTOS

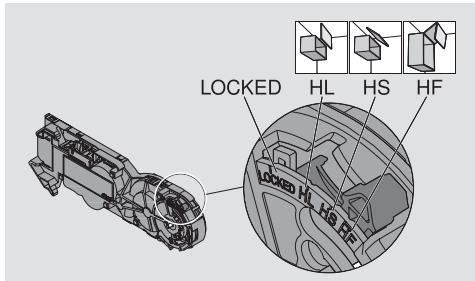
### Distribution cable installation

AVENTOS HF / -HS / -HL / -HK

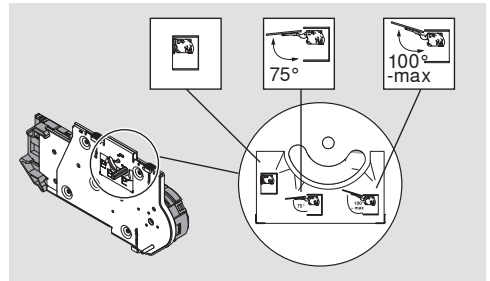


### Drive unit adjustment

AVENTOS HF / -HS / -HL

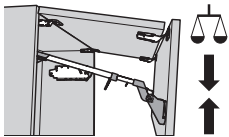


AVENTOS HK



### Drive unit assembly

#### NOTE

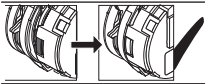


- Before SERVO-DRIVE for AVENTOS assembly, the lift mechanisms must be set so that the front remains open in different positions.
- The telescopic arm and/or lever arm must be in the completely open position for drive unit installation.
- If required, attach the opening angle stop only after drive unit installation and before the reference run.

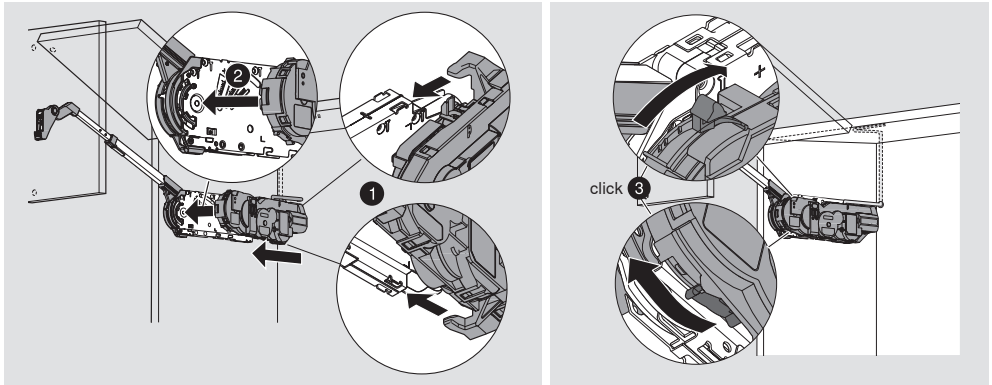


## AVENTOS HF / -HS / -HL

### NOTE



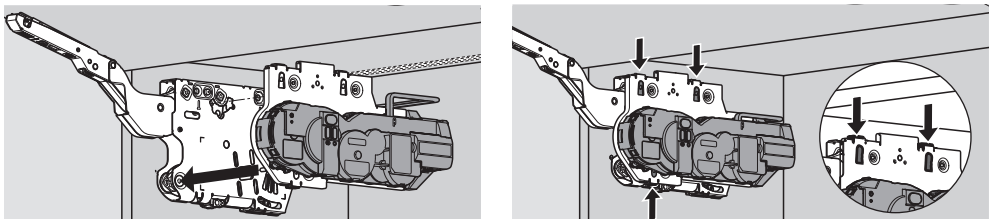
➤ The drive unit can be locked when the orange slide is no longer visible in the view window.



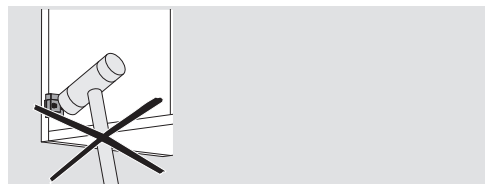
## AVENTOS HK

### NOTE

The drive unit can only be locked when the drive unit is inserted completely into the lift mechanism.



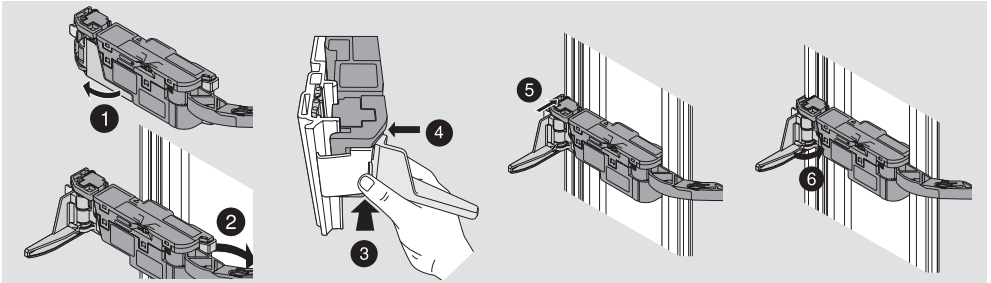
## SERVO-DRIVE switch installation



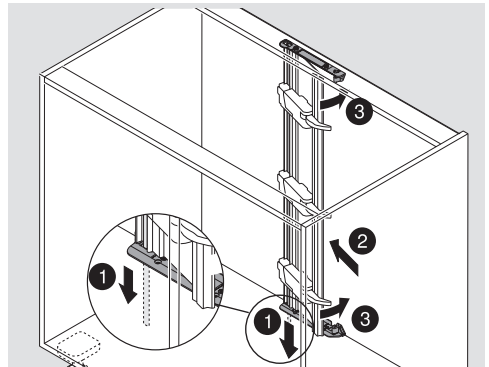
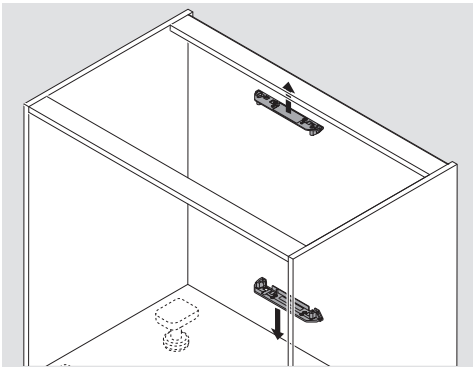


## SERVO-DRIVE for LEGRABOX/TANDEMBOX/MOVENTO/TANDEM

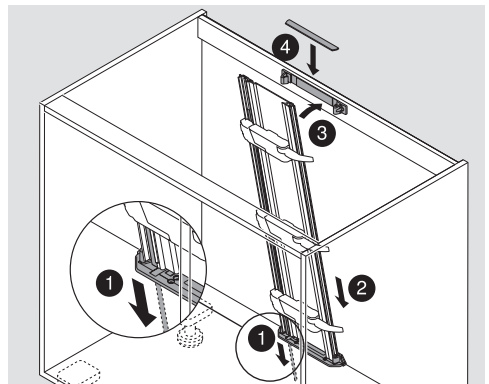
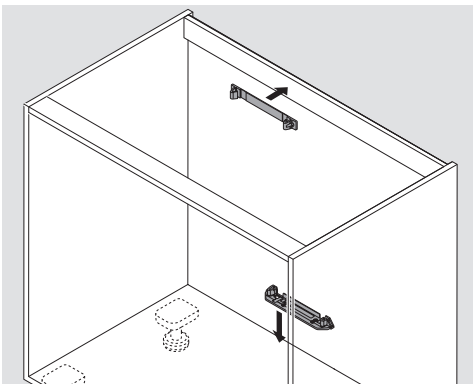
### Drive unit assembly



### Horizontal cross member assembly



### Vertical cross member assembly

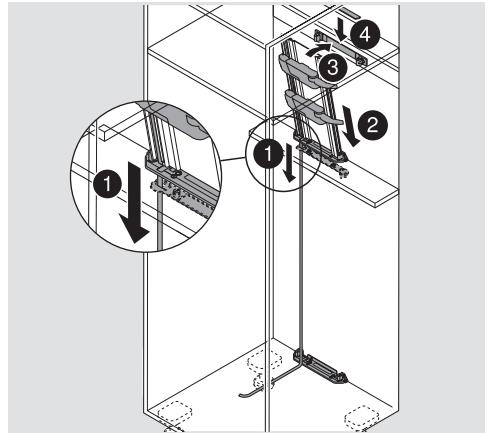
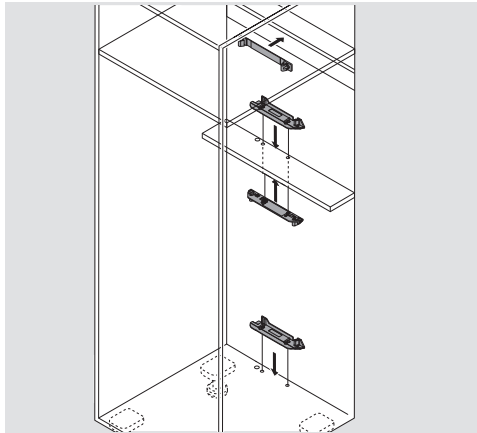
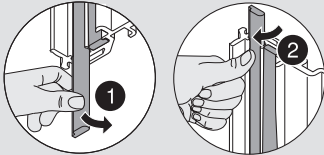




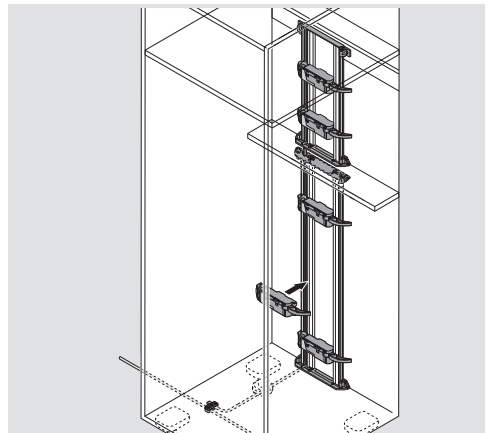
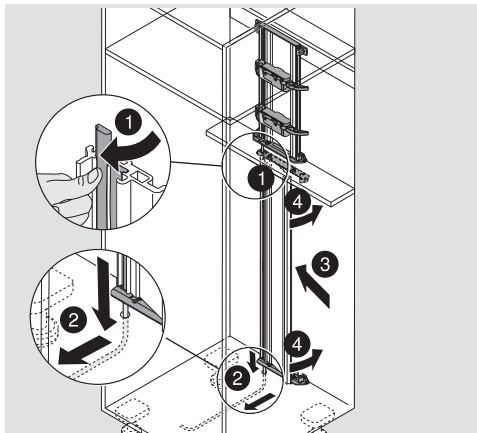
### Assembly of larder unit with horizontal and vertical cross members

Equip bracket profile with distribution cable.

Remove pre-mounted bracket profile cable from both bracket profiles and insert a new, long bracket profile cable in the upper bracket profile.

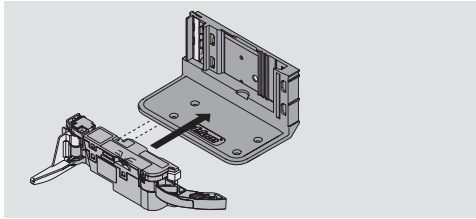


Insert long bracket profile cable into the lower bracket profile. Attach lower bracket profile.

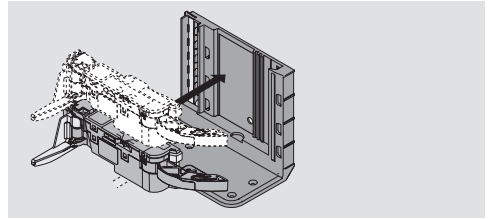




### Attachment bracket 1 tier / 2 tier



Attachment bracket 1 tier



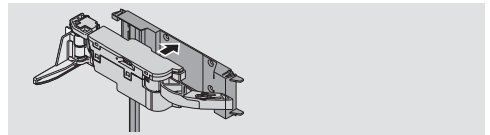
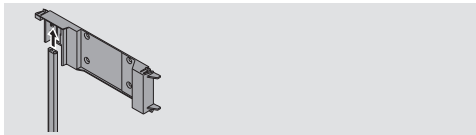
Attachment bracket 2 tier

A second drive unit can also be installed (optional).

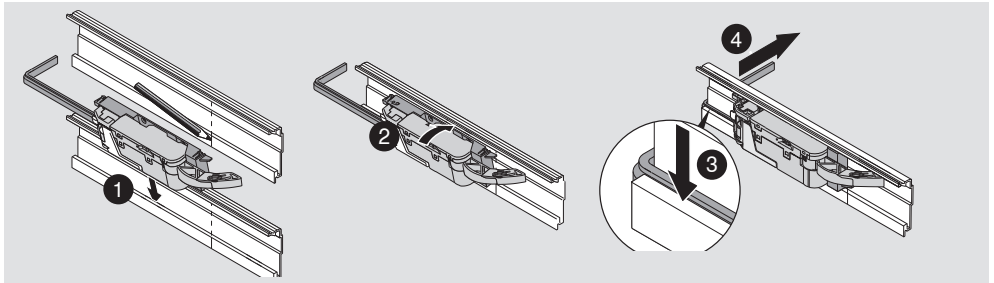
### Bracket profile horizontal

Equip drive unit adapter bracket profile cable

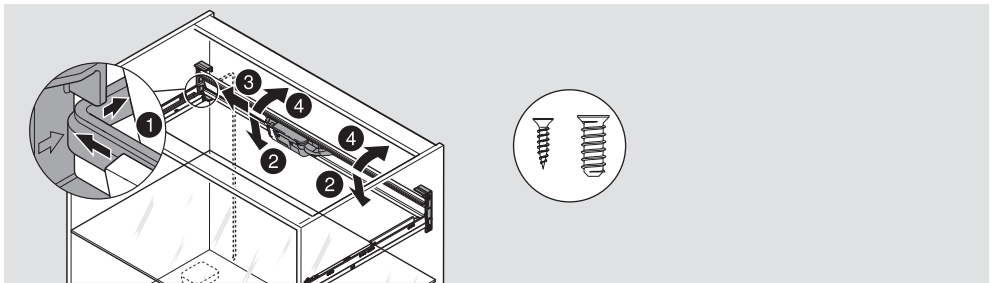
Attach drive unit to drive unit adapter



Install drive unit adapter to bracket profile horizontal



Install bracket profile horizontal in bracket profile attachment

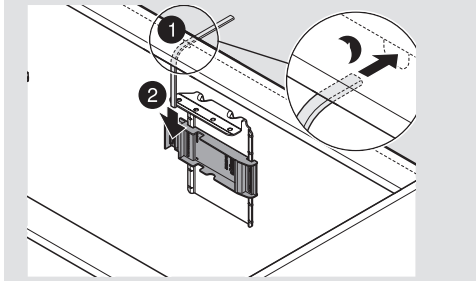




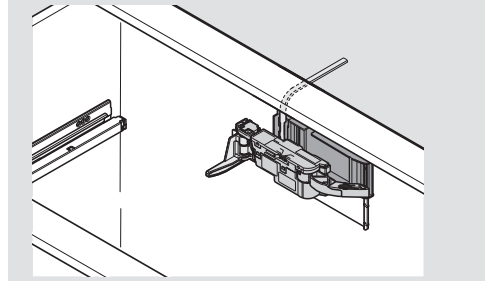
## Upper attachment bracket

The bracket plate must be connected to the cross bar to make it secure.

Insert bracket profile cable



Attaching drive unit to adapter



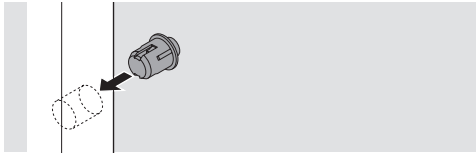




## Blum distance bumper

### NOTE

- Do not glue the Blum distance bumper

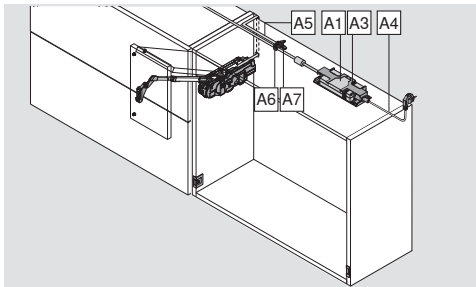


Installation in the front

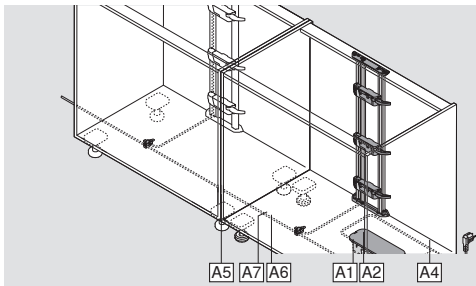
Aluminium frame: Installation in the cabinet side

## Cabling overview drawing

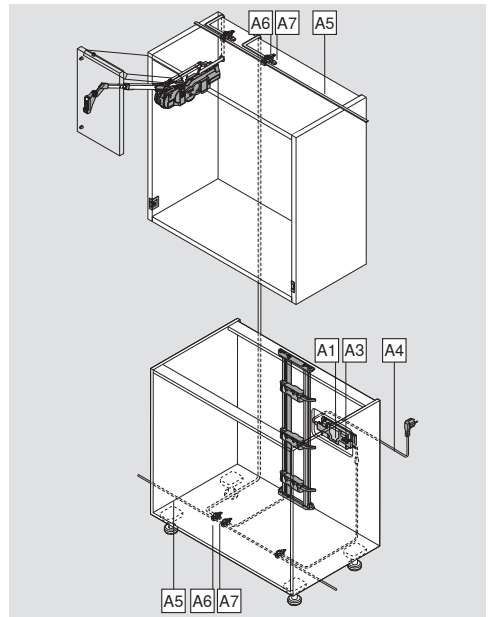
### Wall cabinet



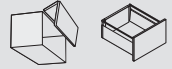
### Base cabinet



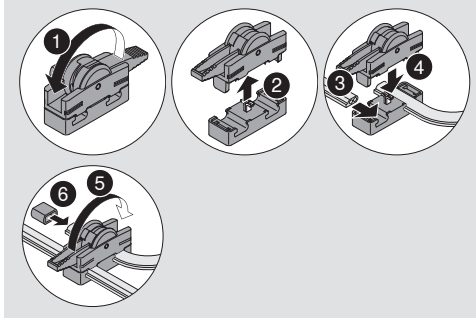
### Wall cabinet/Base cabinet combination



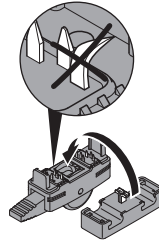
- A1** Blum transformer with LED display
- A2** Transformer unit housing for base fixing
- A3** Transformer unit housing for panel fixing
- A4** Flex
- A5** Distribution cable for cutting to size
- A6** Connecting node
- A7** Cable end protector



## Connecting node assembly



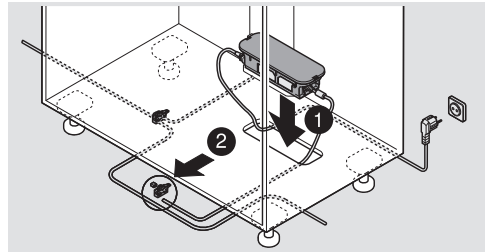
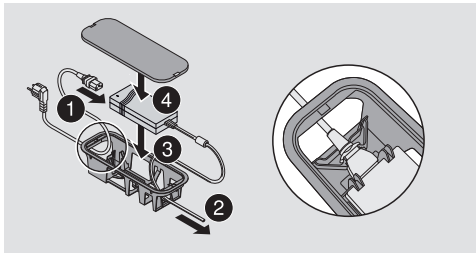
### NOTE



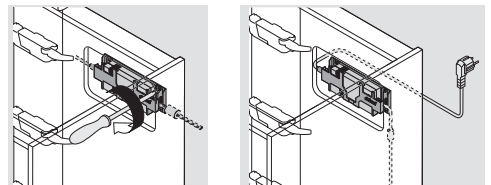
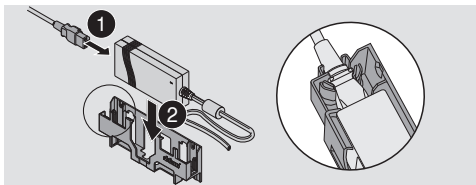
- Do not damage piercing pins.

## Transformer assembly

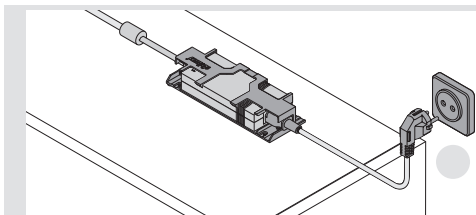
### Transformer unit housing for base fixing



### Transformer unit housing for panel fixing



### Transformer unit housing – Assembly on the top panel



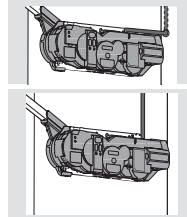
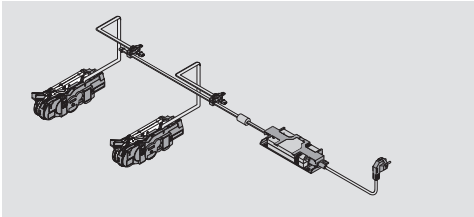


## Cable diagram

### NOTE

- Only 1 Blum transformer can be connected to each distribution cable.

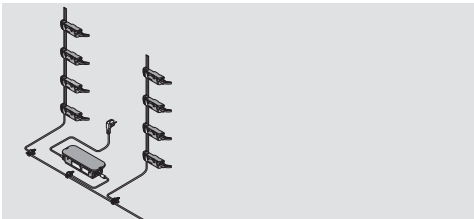
### SERVO-DRIVE for AVENTOS



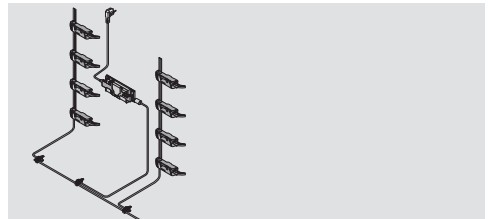
Back cabling

Upper cabling

### SERVO-DRIVE for LEGRABOX/TANDEMBOX/MOVENTO/TANDEM

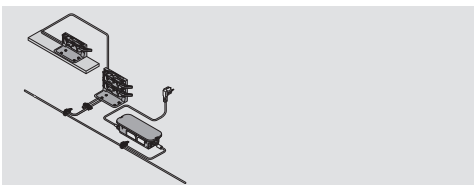


Transformer unit housing for base fixing

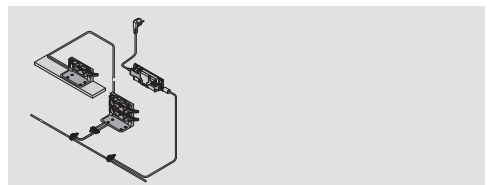


Transformer unit housing for panel fixing

### Sink cabinet

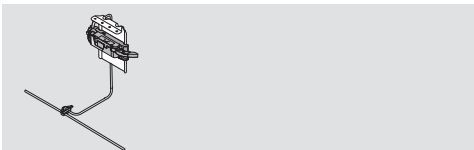


Transformer unit housing for base fixing

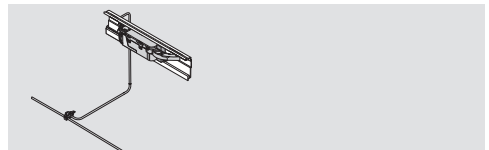


Transformer unit housing for panel fixing

### Upper attachment bracket



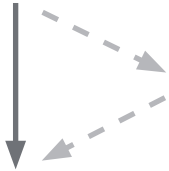
### Bracket profile horizontal





## SERVO-DRIVE for AVENTOS

### A Activating the SERVO-DRIVE switch



Optional

Additional features

**C** Synchronisation activation

**D** Collision avoidance activation

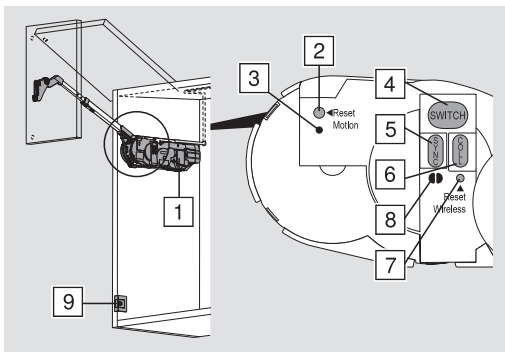
### B Starting reference run

Deactivation

**E** Reset motion

**F** Reset wireless

### Button layout



- |   |                         |
|---|-------------------------|
| 1 | Drive unit              |
| 2 | <Reset Motion> button   |
| 3 | Motion LED              |
| 4 | <SWITCH> button         |
| 5 | <SYNC> button           |
| 6 | <COLL> button           |
| 7 | <Reset Wireless> button |
| 8 | Wireless LED            |
| 9 | SERVO-DRIVE switch      |



## Start-up



Operation

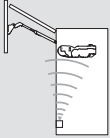


Lights up continuously



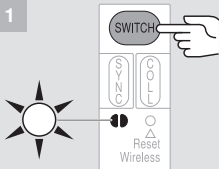
Flashes

### A Activating the SERVO-DRIVE switch



Setting up the wireless connection between the SERVO-DRIVE switch and the drive unit  
A switch can only be assigned to one drive unit.

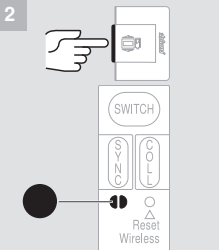
1



Press the <SWITCH> button

until the LED flashes green.

2



Press the SERVO-DRIVE switch

until the LED lights up green continuously.

3

Repeat procedure **A 1–2** for additional SERVO-DRIVE switches in the cabinet.



Operation

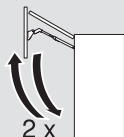


Lights up continuously



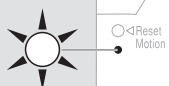
Flashes

## B Starting reference run



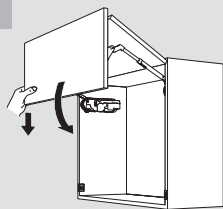
The drive unit recognises the required parameters using the reference run.

1



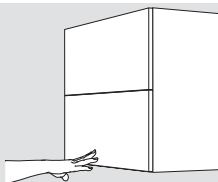
Reference run is required: LED flashes

2



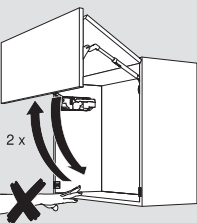
Close the front manually

3



Press on front: The reference run starts automatically

4



Front opens and closes 2x automatically: Under no circumstances should you try to manually interrupt or stop the process.

---

### NOTE

If the reference run is interrupted, it should be reset  
 → see Reset motion **E 1**. The reference run restarts.

---



Operation

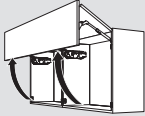


Lights up continuously



Flashes

C

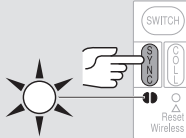
**Activating synchronisation**

Up to three drive units can be synchronised allowing them to move simultaneously. This function is required for several cabinets with a uniform front.

1

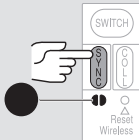
Activating the SERVO-DRIVE switch → see **A 1–3**.

2



Press the <SYNC> button for the first drive unit until the LED flashes green.

3



Press the <SYNC> button for the second drive unit until the LEDs of both synchronised drive units light up green.

4

Repeat procedure **C 2–3** for all additional drive units.

5

Carry out reference run → see **B 1–4**.

**NOTE**

If there is an activation error, reset all drive units → see Reset wireless **F 1**.

Re-activate the SERVO-DRIVE switch, synchronisation and the reference run → see **A 1–3**, **C 2–4** and **B 1–4**.



Operation

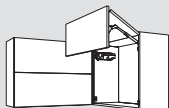


Lights up continuously



Flashes

## D Activating collision avoidance

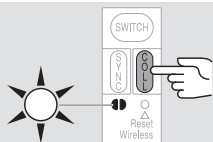


To avoid the collision of fronts, drive units (max. 6) can be linked so that only one front can be opened at a time. A front is prevented from opening as long as a linked front remains open.

1

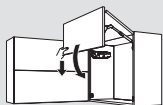
Activating the SERVO-DRIVE switch → see **A 1–3**.

2



Press the <COLL> button for the first drive unit until the LED flashes green.

3



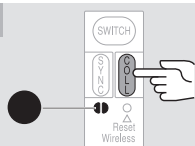
Close the front manually

4



Open the second front manually

5



Press the <COLL> button for the second drive unit until the LED lights up Green (this will happen simultaneously on the unit behind the close door).

6

Repeat procedure **D 2–5** for all additional cabinets.

7

Carry out reference run → see **B 1–4**.

---

### NOTE

If there is an activation error, reset all drive units → see Reset wireless **F 1**.

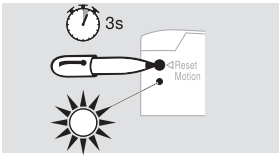
Re-activate the SERVO-DRIVE switch, collision avoidance and the reference run → see **A 1–3**, **D 2–6** and **B 1–4**.

---



**E Reset Motion**

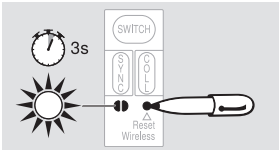
Resets the reference run and enables a new reference run to be started.



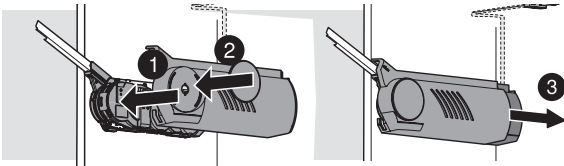
Press the <Reset Motion> button using a pen (at least 3 seconds) until the LED flashes quickly.

**F Reset Wireless**

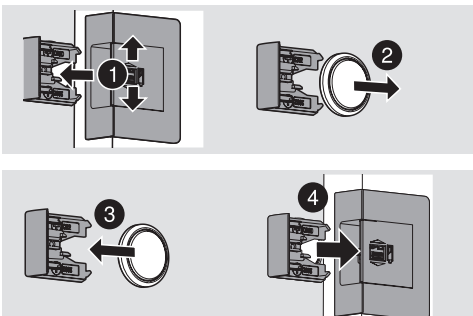
Deactivates all functions: All active SERVO-DRIVE switches for the respective drive unit are deleted.



Press the <Reset Wireless> button using a pen (at least 3 seconds) until the LED flashes quickly.

**Cover cap assembly****Replacing the SERVO-DRIVE switch battery**

When the battery power begins to weaken, the battery display (LED) begins to flash red



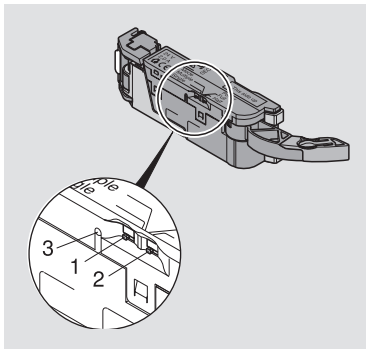
- Open the SERVO-DRIVE switch and remove the battery
- Insert the new battery (type CR2032) and close the SERVO-DRIVE switch – note correct polarity +/-

**NOTE**

- The SERVO-DRIVE switch battery must not be recharged or thrown into fire.

## SERVO-DRIVE for LEGRABOX/TANDEMBOX/MOVENTO/TANDEM – General information

### Drive unit selector switch



#### Selector switch Mode (1)

Single: Only one drive unit moves (standard setting)

Multiple: When set to "Multiple," drive units move simultaneously to any drive unit that is activated on same vertical bracket profile. This does not apply on horizontal bracket profile or any L brackets.

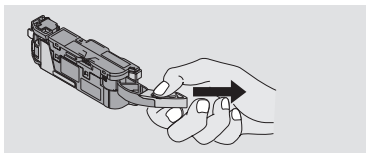
#### Selector switch Power (2)

Full: Standard setting

Half: For short nominal lengths (270–300 mm)

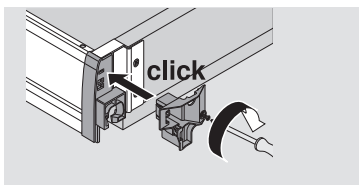
#### Operating mode display (LED) (3)

### Lever extension



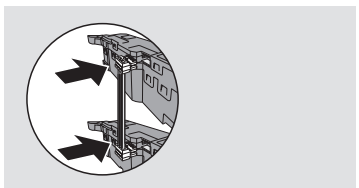
The lever extension must be removed for a cabinet width of 275-320 mm in combination with a steel back and for a cabinet width up to 300 mm in combination with a chipboard back.

### Trigger guidance



The lever guide must be attached and secured with screws for cabinet widths 275-320 mm if being used with chipboard backs.

### Synchronisation cable



Two drive units that are supposed to open simultaneously must be connected via the synchronisation cable.



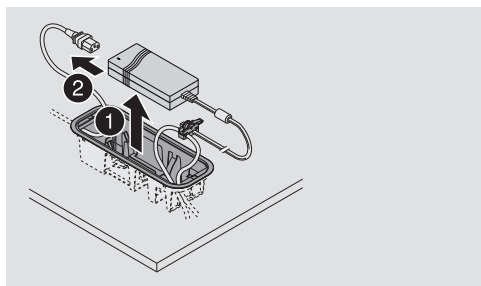
## Blum transformer removal

### **⚠ WARNING**

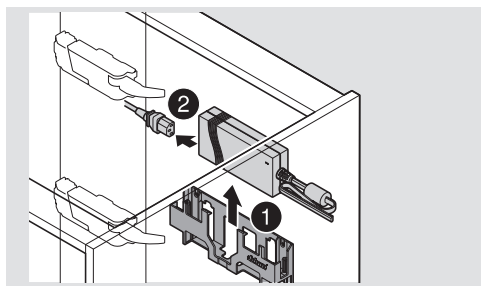
#### **Danger of electric shock**

- Never open a Blum transformer. There is a danger of electric shock.
- Before starting repair or maintenance work, unplug the Blum transformer to disconnect the power.

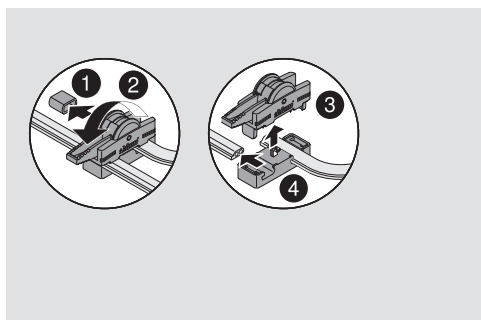
#### Transformer unit housing for base fixing



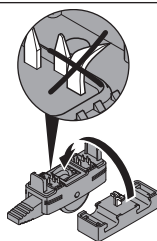
#### Transformer unit housing for panel fixing



## Connecting node removal



### NOTE



- Do not damage piercing pins.



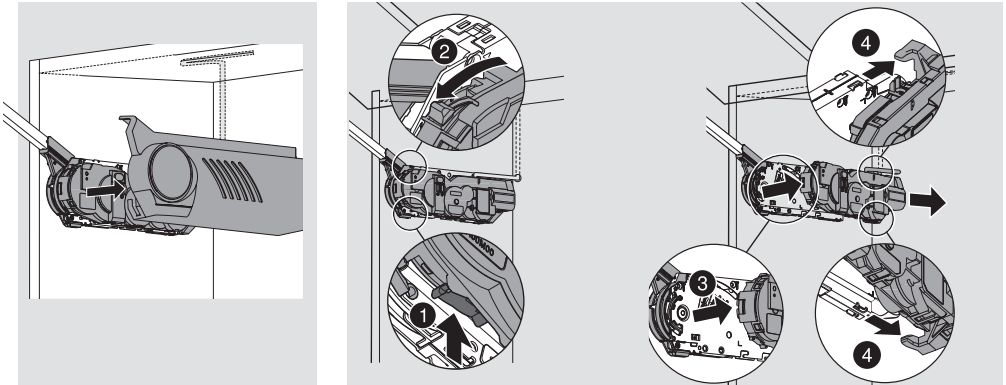
## SERVO-DRIVE for AVENTOS

### **⚠ WARNING**

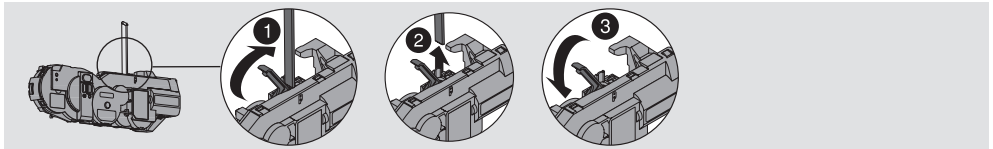
#### **Danger of electric shock**

- Never open a Blum transformer. There is a danger of electric shock.
- Before starting repair or maintenance work, unplug the Blum transformer to disconnect the power.

### Removal

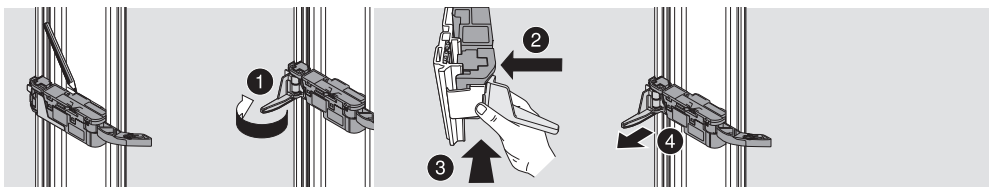


### Distribution cable



## LEGRABOX / TANDEMBOX / MOVENTO / TANDEM

### Drive unit removal





EN

## Declaration of Conformity



**Issuer's name:** Julius Blum GmbH  
**Issuer's address:** Industriestraße 1, 6973 HÖCHST, AUSTRIA  
**Object of the declaration:**  
Name / Brand: Blum  
Products: SERVO-DRIVE  
Types: Z10NE020, Z10NA200,  
Z10NE030, Z10NA300,  
Z10A3000.xx, Z10ZE000,  
Z10ZC000, Z1xA0x1,  
Z10C5000.xx, Z10C5007,  
Z1P5020, Z1.A00L33.xx

**The object of the declaration described above is in conformity with the requirements of the following documents:**

Document-Nr	Title	Date of issue
2014/35/EU	Low Voltage Directive (LVD)	2014-02-26
2014/30/EU	EMC-Directive	2014-02-26
2011/65/EU	RoHS-Directive	2011-06-08
2014/53/EU	Radio Equipment Directive (RED)	2014-04-16

### Additional information:

The following harmonized standards were consulted for the appropriate implementation of the directives requirements listed above for all the product types mentioned as object of the declaration:

Document-Nr	Title	Date of issue
EN 55014-1:2006 + A1:2009 + A2:2011	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission	2012-05-01
EN 55014-2:2015	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity - Product family standard	2016-01-01
EN 61000-3-2:2014	Electromagnetic compatibility (EMC) – Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A per phase)	2015-03-01
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) – Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection	2014-03-01

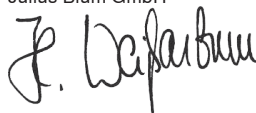
Document-Nr	Title	Date of issue
EN 60335-1:2012 +A11:2014	Household and similar electrical appliances – Safety – Part 1: General requirements	2012-10-01
EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances	2013-02-01
In addition the following standards for the product types Z10NA200, Z10NA300, Z10NE020 and Z10NE030 were used		
EN 60950-1: 2014-08	Information technology equipment - Safety – Part 1: General requirements	2014-08-01
In addition the following standards for the product type 21xA0x1 and modules 21P5020, 21.A00L33.xx plus Z10C5007 were used		
ETSI EN 300 440-2 V1.4.1	Electromagnetic compatibility and Radio spectrum Matters (ERM) - Short range devices - Radio equipment to be used in the 1 GHz to 40 GHz frequency range – Part 2: Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive	2010-12-29
EN 301 489-3 V1.6.1	Electromagnetic compatibility and Radio spectrum Matters (ERM) Electromagnetic compatibility (EMC) standard for radio equipment and services – Part 3: Specific conditions for Short-Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz	2013-10-12
EN 301 489-1 V1.9.2	Electromagnetic compatibility and Radio spectrum Matters (ERM) - Electromagnetic compatibility (EMC) standard for radio equipment and services – Part 1: Common technical requirements	2012-04-11

The CE marking was affixed in 09.

For the commercial use of SERVO-DRIVE for AVENTOS the conformity of the furniture with the Machinery Directive 2006/42/EU should be confirmed prior to commissioning.

**Signed for and on behalf of:**

Julius Blum GmbH



Hochst, 2016-04-26

Graduate engineer (FH) Hermann Weissenhorn, Head of Engineering  
<http://www.blum.com/compliance/>

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