

SERVO-DRIVE for AVENTOS

Installation instructions – Original

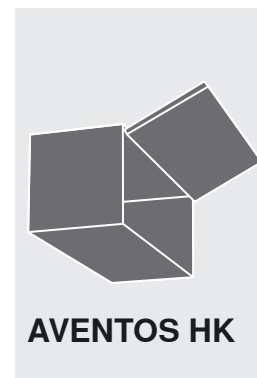
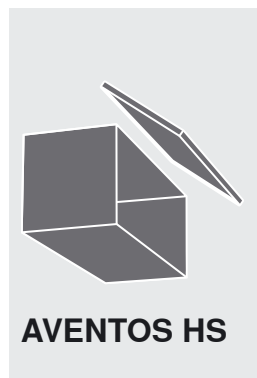


Table of contents		
	Using the installation instructions	3
	Safety	3
	Intended use	3
	Warning signs and danger symbols	3
	Safety information	4
	Structural changes and spare parts	5
	Disposal	5
	Function	5
	Planning information	6
	Orientation diagram	8
	Assembly	
	Blum distance bumper	8
	Distribution cable	8
	Drive unit	9
	Orientation diagram	
	Blum transformer and accessories	10
	Assembly	
	Blum transformer and accessories	11
	SERVO-DRIVE switch	11
	Functions	
	SERVO-DRIVE for AVENTOS	13
	Start-up	
	SERVO-DRIVE for AVENTOS	14
	Deactivation	
	SERVO-DRIVE for AVENTOS	16
	LED signals	
	LED displays	16
	Assembly	
	Cover cap	17
	Replacement	
	SERVO-DRIVE switch battery	17
	Removal	
	Drive unit	18
	Distribution cable	18
	Blum transformer and accessories	18
	Troubleshooting	19

Using the installation instructions

- ⇒ Please read the installation instructions and safety information before SERVO-DRIVE for AVENTOS start-up.
- ⇒ We recommend that you use the orientation diagram for easier identification of the parts being described.
- ⇒ These installation instructions are for the AVENTOS HF, AVENTOS HS, AVENTOS HL and AVENTOS HK lift systems.
However, only AVENTOS HF is used as an example in the illustrations.
- ⇒ Please see the special AVENTOS installation instructions for the assembly steps of the mechanical AVENTOS HF, HS, HL and HK lift systems without SERVO-DRIVE.

Safety

Principle




SERVO-DRIVE for AVENTOS 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.

Intended use

SERVO-DRIVE for AVENTOS supports the opening and closing of lift systems in furniture and may only be used under the following conditions:

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

Warning signs and danger symbols

 DANGER	<p>Danger: The DANGER sign indicates important safety information that must be followed. If this information is not followed, this could lead to serious injury or death.</p>
 WARNING	<p>Warning: The WARNING sign indicates important safety information that must be followed. If this information is not followed, this could lead to injury or property damage.</p>
CAUTION	<p>Caution: The CAUTION sign indicates information that if not followed may lead to property damage or premature wear.</p>
 NOTICE	<p>NOTICE: The NOTICE sign indicates information that should be followed.</p>

Safety information

- ⇒ All national standards must be followed for SERVO-DRIVE for AVENTOS 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.
- ⇒ To ensure that lift elements cannot be activated unintentionally, we recommended connecting the Blum transformer to a switched outlet.
- ⇒ Only 1 Blum transformer may be used per distribution cable.
- ⇒ Maintain safety distances to the Blum transformer unit 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 of the drive unit, Blum transformer and SERVO-DRIVE switch.
- ⇒ Do not touch the area around the lever during the opening and closing motion.



DANGER

Danger of electric shock

- ⇒ Never open a Blum transformer. There is a danger of electric shock.

-
- ⇒ Never take apart a drive unit or a SERVO-DRIVE switch.
 - ⇒ Damaged parts should not be used.
 - ⇒ Sharp edges may damage the cable.
 - ⇒ Neither the Blum transformer nor any cabling should come into contact with moving parts.



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, remove it instead.
 - ⇒ Do not connect the transformer to the power supply while the fronts are unattached.
-

Structural changes and spare parts

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

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

Disposal

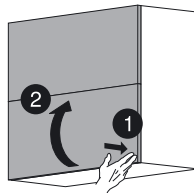
- ⇒ All SERVO-DRIVE for AVENTOS electronic components, including the battery, should be disposed of in a separate collection for electrical appliances as per local regulations.

Function

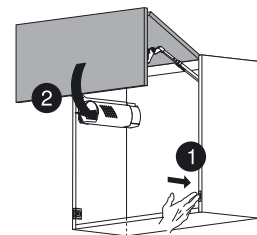
SERVO-DRIVE for AVENTOS supports the opening and closing of lift systems in furniture.

Electrical motion support system

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



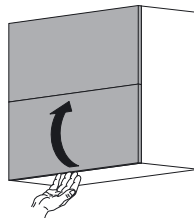
- ⇒ Press on the front
- ↳ The lift system opens automatically



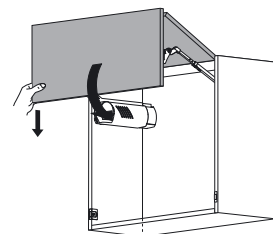
- ⇒ Press on the SERVO-DRIVE switch
- ↳ The lift system closes automatically

Manual use

The lift system can be opened or closed manually without restrictions due to the integrated free movement without damaging SERVO-DRIVE for AVENTOS.

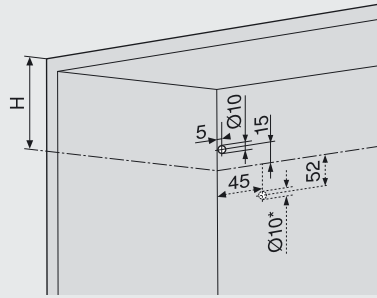


- ⇒ Manual opening of the lift system by moving it upwards



- ⇒ Manual closing of the lift system by moving it downwards

Planning information Preferred position for distribution cable (AVENTOS HF)¹⁾

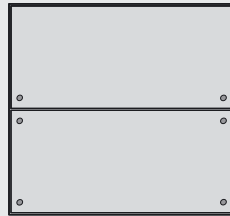


Cabinet height	H
480–549 mm	KH x 0.3 - 28 mm
550–1.040 mm	KH x 0.3 - 57 mm

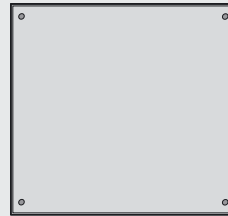
¹⁾	Only on the left side
*	Alternative drilling
KH	Cabinet height

Blum distance bumper

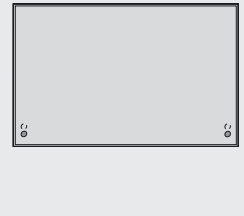
AVENTOS HF



AVENTOS HS / -HL

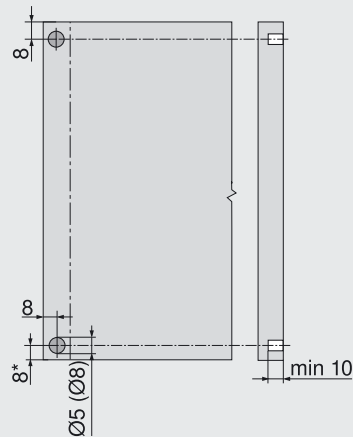


AVENTOS HK

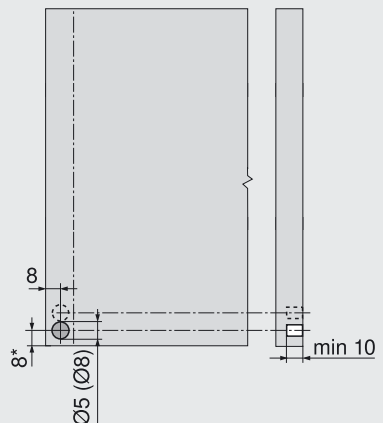


Blum distance bumper drilling position

AVENTOS HF / -HS / -HL



AVENTOS HK



For specific applications (low front with high weight) several bumpers are necessary.

Bumper must be installed near switch.
A trial application is recommended!

* From cabinet front edge for fronts that protrude below

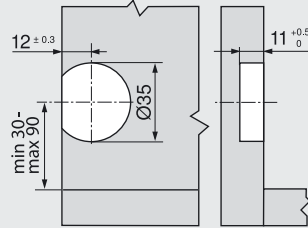
Recommendation for aluminium frames: Consider drilling Blum distance bumper into the cabinet side.

A trial application must be carried out when fixing the Blum distance bumper to the front.



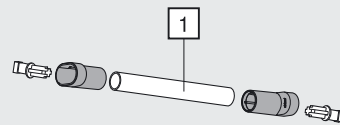
Do not glue the Blum distance bumper

Planning information **SERVO-DRIVE switch**

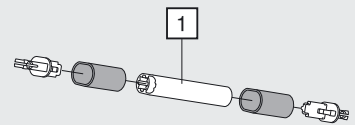


Cross stabiliser

AVENTOS HS



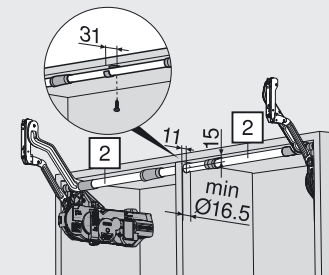
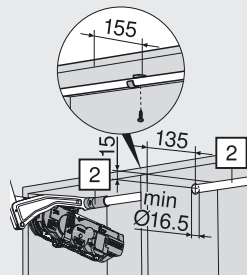
AVENTOS HL



Cut to size dimension:

[1] KB (KS 16-19 mm) -193 mm and/or inner width -155 mm

Connecting piece

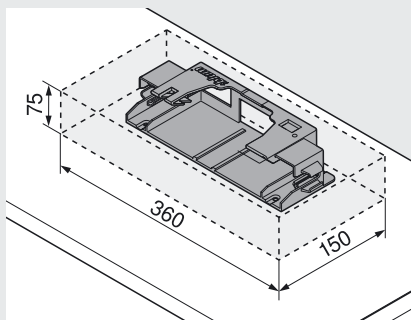


[2] half KB (KS 16-19mm) -193 mm

KB Cabinet width

KS Side panel thickness

Blum transformer safety distance

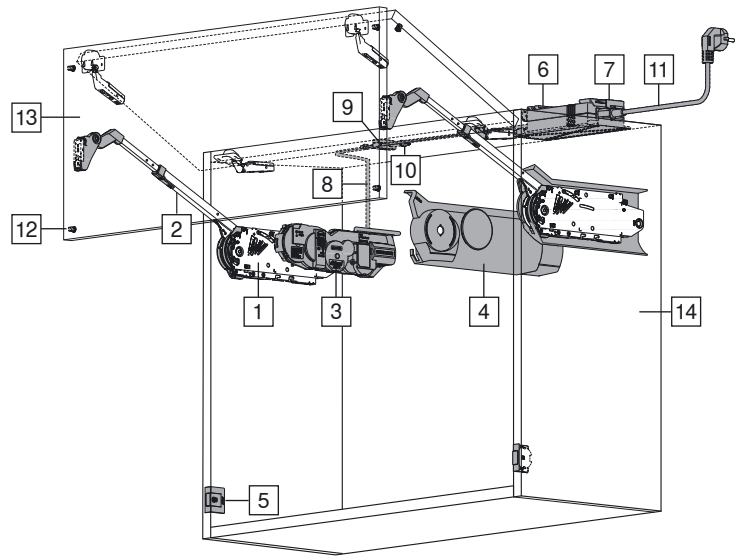


CAUTION

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.

Orientation diagram

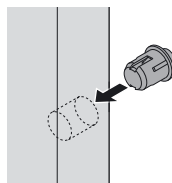


- | | | | |
|---|---|----|--|
| 1 | Lift mechanism | 8 | Distribution cable for cutting to size |
| 2 | Telescopic arm or lever arm | 9 | Connecting node |
| 3 | Drive unit with LED display | 10 | Cable end protector |
| 4 | Cover cap | 11 | Flex |
| 5 | SERVO-DRIVE switch with battery display | 12 | Blum distance bumper |
| 6 | Blum transformer with LED display | 13 | Front |
| 7 | Transformer unit housing | 14 | Cabinet |

Assembly

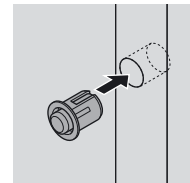
Blum distance bumper

Installation in the front



Aluminium frame:

Installation in the cabinet side

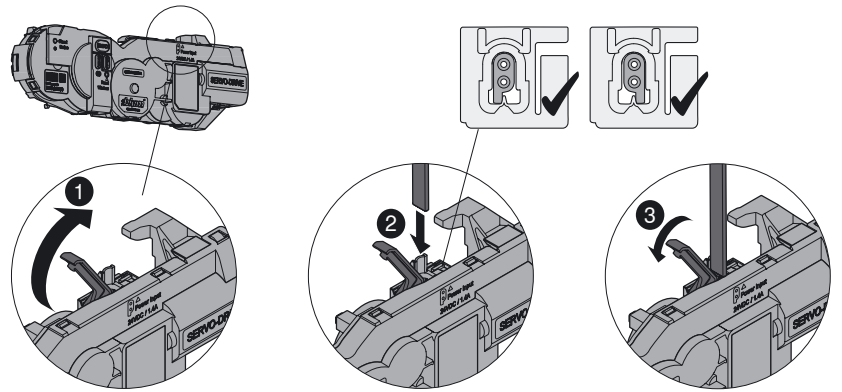


i Do not glue the Blum distance bumper

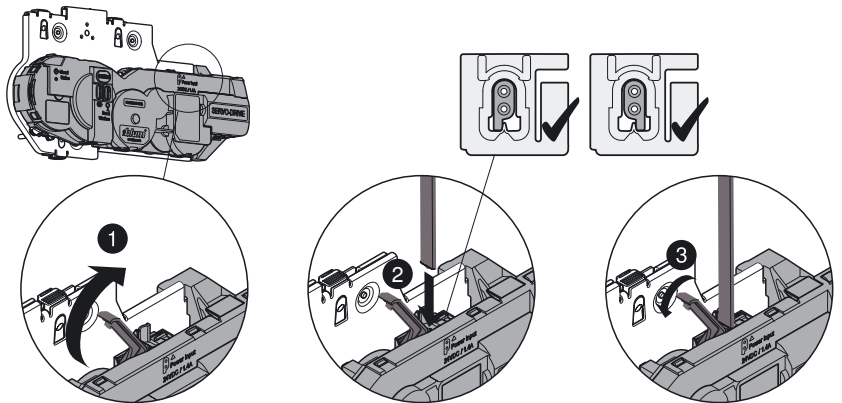
Assembly

Distribution cable

AVENTOS HF / -HS / -HL



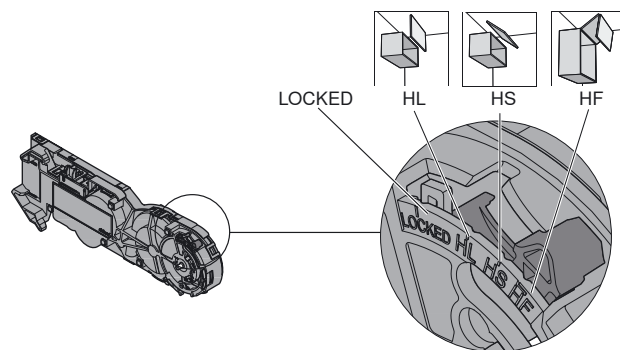
AVENTOS HK



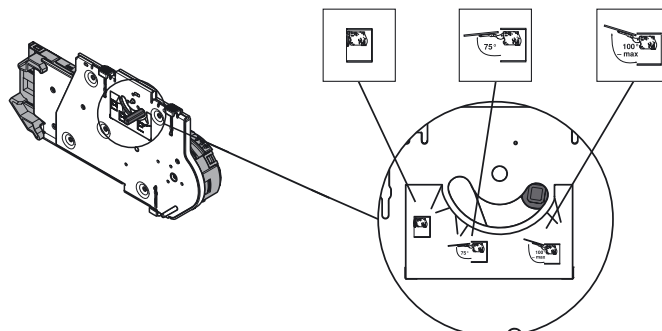
Adjustment

Drive unit

AVENTOS HF / -HS / -HL



AVENTOS HK

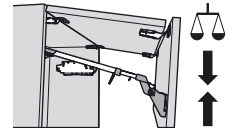


Assembly

Drive unit

**i
NOTICE**

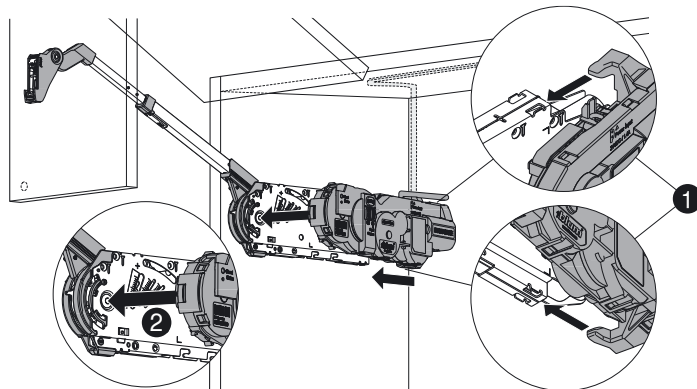
Before SERVO-DRIVE for AVENTOS assembly, the lift mechanisms must be set so that the front remains open in different positions.



The telescopic arm and/or lever arm must be in the completely open position for drive unit installation.

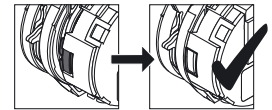
If required, attach the opening angle stop only after drive unit installation and before the reference run.

AVENTOS HF / -HS / -HL

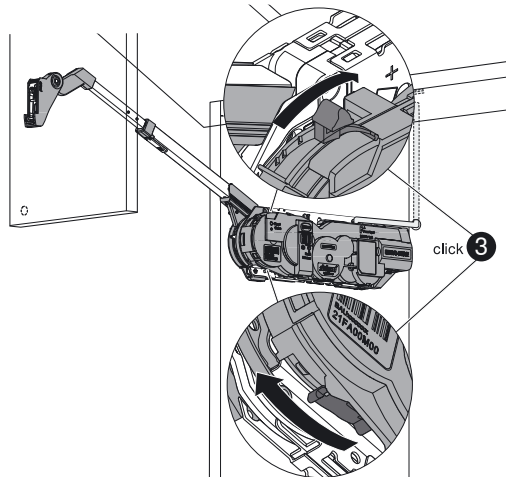


**i
NOTICE**

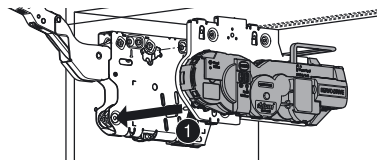
The drive unit can be locked when the orange slide is no longer visible in the view window.



AVENTOS HF / -HS / -HL



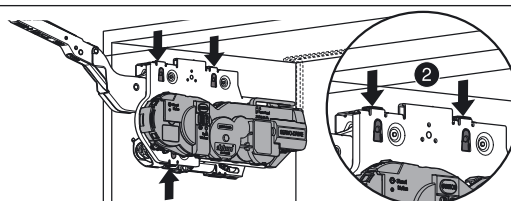
AVENTOS HK



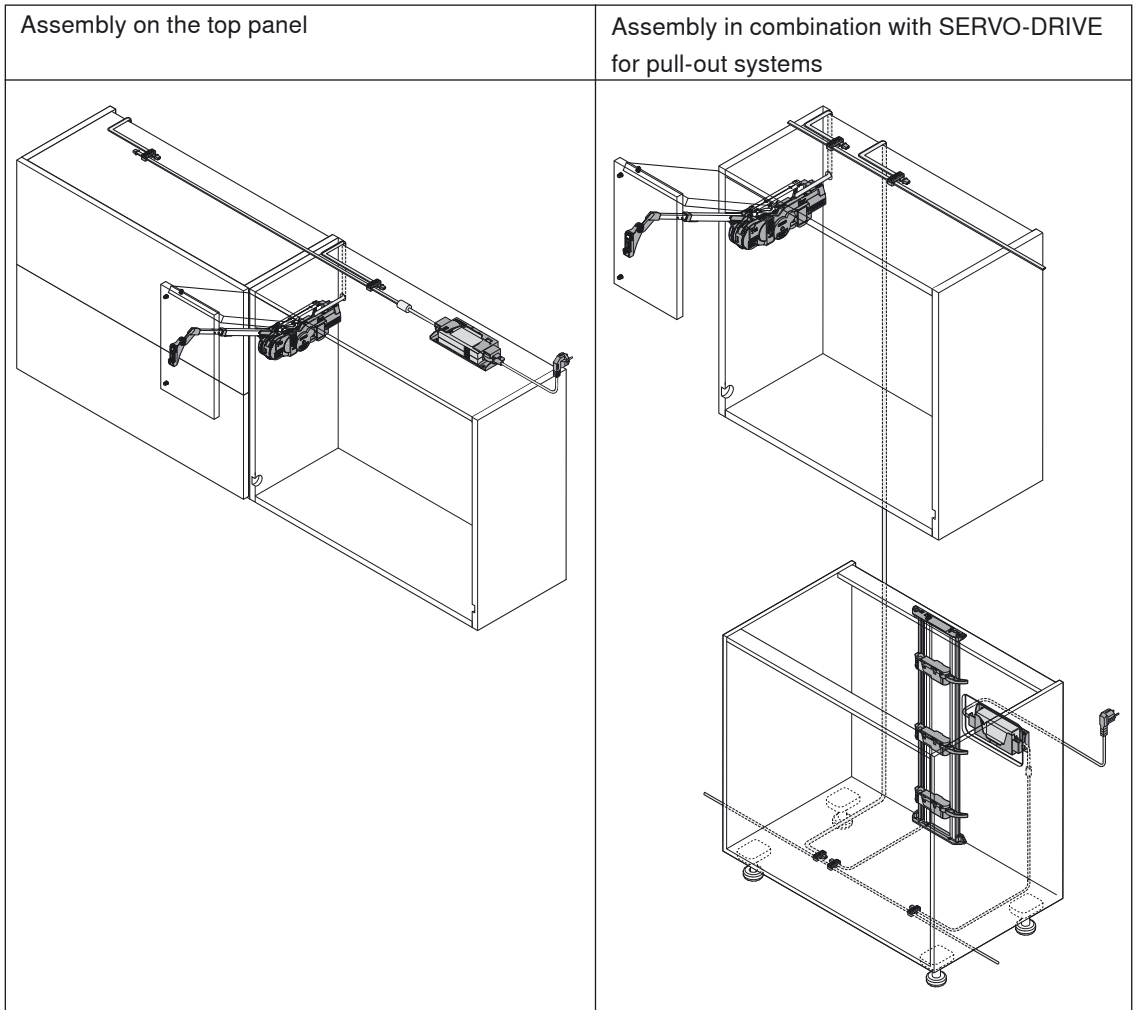
**i
NOTICE**

The drive unit can be locked once it is correctly located on the AVENTOS mechanism.

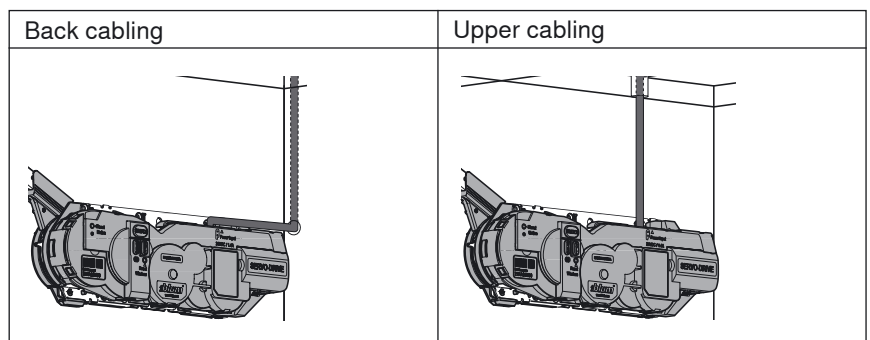
AVENTOS HK



Orientation diagram Blum transformer and accessories

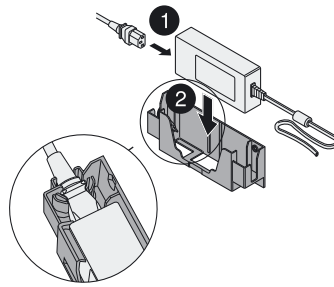


CAUTION Only 1 Blum transformer can be connected to each distribution cable.

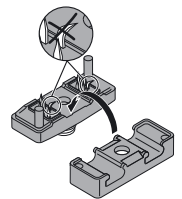
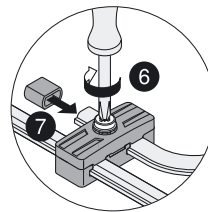
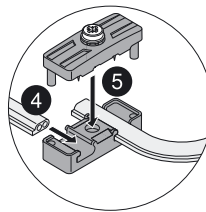
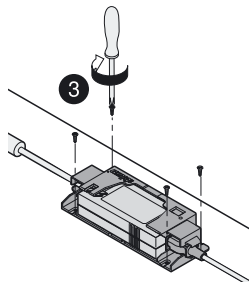


Assembly

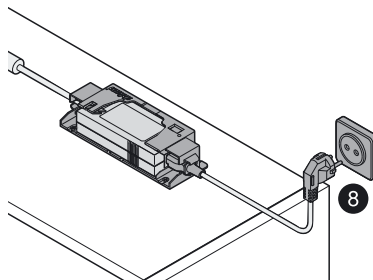
Blum transformer and accessories



Pull-out stop

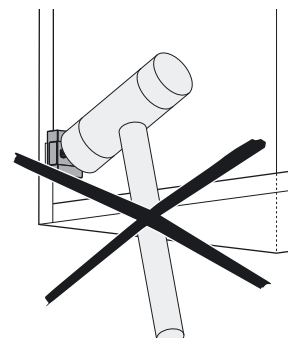
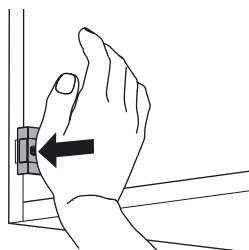


i Do not damage piercing pins.



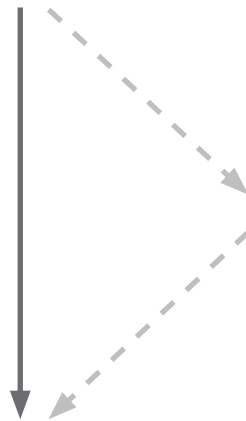
Assembly

SERVO-DRIVE switch



Start-up

A Activating the SERVO-DRIVE switch



Additional features

C Activating synchronisation

D Activating collision avoidance

Optional

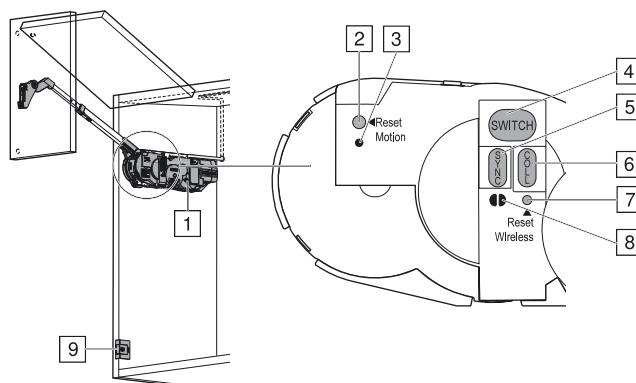
B Start reference run

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
SERVO-DRIVE for AVENTOS


Operation



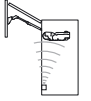
Lights up continuously



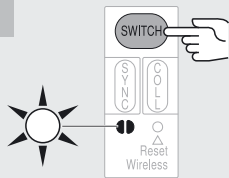
Flashes

A Activating the SERVO-DRIVE switch

Setting up the wireless connection between the SERVO-DRIVE switch and the drive unit.

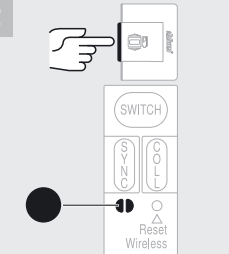


1



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.

i NOTICE

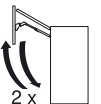
Additional features must be activated before the reference run.

C Activating synchronisation

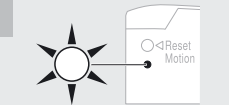
D Activating collision avoidance

B Start reference run

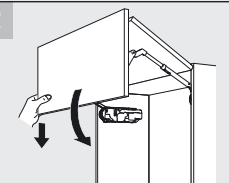
The drive unit recognises the required parameters using the reference run.



1


 Reference run is required:
LED flashes

2



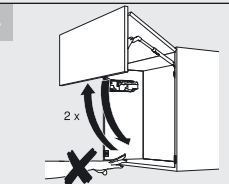
Close the front manually

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

 If there is an interruption, reset the reference run
→ see Reset Motion **E 1**. The reference run restarts.

Start-up
SERVO-DRIVE for AVENTOS additional features

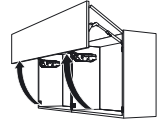
Operation

Lights up continuously

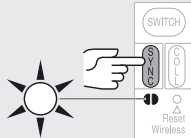
Flashes

C Activating synchronisation

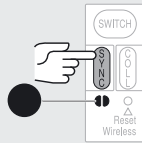
Up to three drive units can be synchronised allowing them to move simultaneously. This function is required for several cabinets with a uniform front.


1

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

2


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

3


Press the <SYNC> button on the second drive unit until the LEDs on both synchronised drive units light up green continuously

4

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

5

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

i

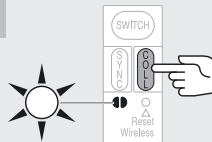
If there is an activation error, reset all drive units → see Reset Wireless **F 1**.
 Re-activate the SERVO-DRIVE switch, synchronisation and the reference run → see **A 1–3**, **C 2–4** and **B 1–4**.

D Activating collision avoidance

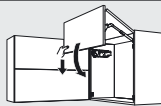
To avoid the collision of fronts, drive units (max. 6) are linked so that only one front can be opened at a time. A front is prevented from opening as long as a linked front remains open.


1

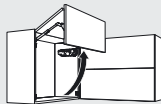
 Activating the SERVO-DRIVE switch → see **A 1–3**.

2


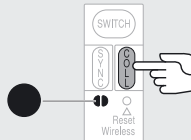
Press the <COLL> button on the first drive unit until the LED flashes green

3


Close the front manually

4


Open the second front manually

5


Press the <COLL> button on the second drive unit until the LED lights up green continuously

6

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

7

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

i

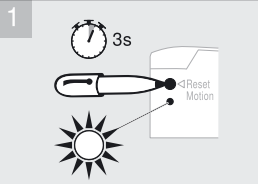
If there is an activation error, reset all drive units → see Reset Wireless **F 1**.
 Re-activate the SERVO-DRIVE switch, collision avoidance and the reference run → see **A 1–3**, **D 2–6** and **B 1–4**.

Deactivation
SERVO-DRIVE for AVENTOS

Flashes quickly

E Reset Motion

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

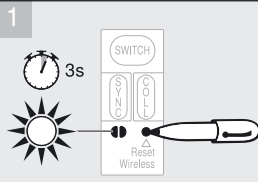


Press the <Reset Motion> button using a pen (at least 3 seconds) until the LED flashes quickly.

F Reset Wireless

Deactivates all functions.

All active SERVO-DRIVE switches, synchronisations and collision avoidance settings for the respective drive unit are deleted.



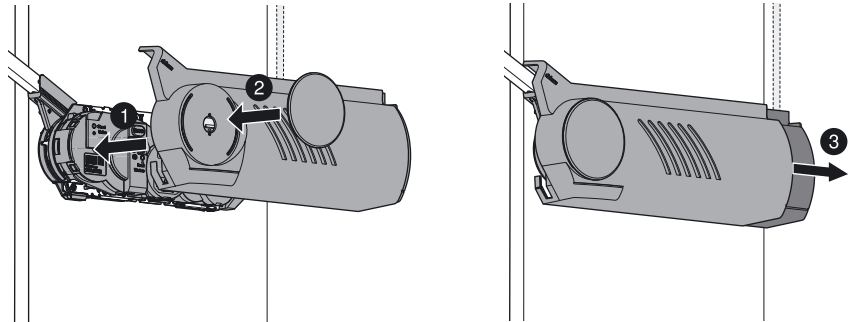
Press the <Reset Wireless> button using a pen (at least 3 seconds) until the LED flashes quickly.

Motion LED signals

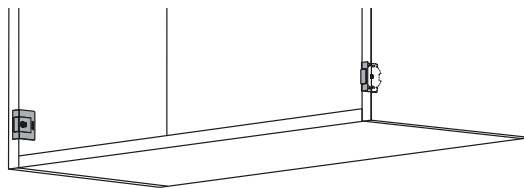
	Flashes orange	⇒ Reference run is required
	Lights orange continuously	⇒ Power available / Operating mode display / Reference run was completed successfully
	Flashes orange quickly	⇒ Reset Motion confirmation

Wireless LED signals

	Flashes green	⇒ Activation mode
	Lights up green continuously	⇒ Activation confirmation
	Flashes green quickly	⇒ Deactivation confirmation
	Lights red continuously	⇒ Last process was not completed successfully

Assembly
Cover cap

Replacement
SERVO-DRIVE switch battery
**i
NOTICE**

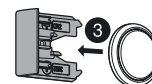
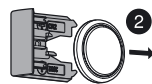
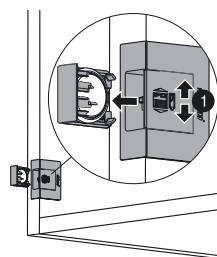
When battery power begins to weaken, the SERVO-DRIVE switch battery display flashes red.


**i
NOTICE**

- ⇒ Only use type CR2032 batteries from known manufacturers.
- ⇒ Make sure that the new battery is inserted correctly (note proper pole connections +/-).

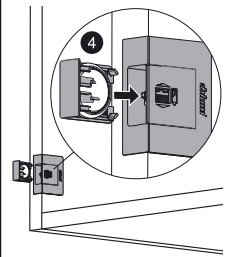
CAUTION

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



Insert new battery
Type: CR2032

i Please note
proper pole
connections
(+/-)


**i
NOTICE**

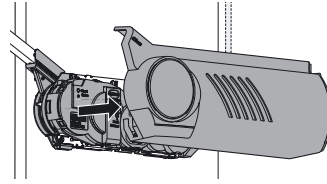
If the battery is inserted incorrectly, the SERVO-DRIVE switch battery display flashes red.

Removal

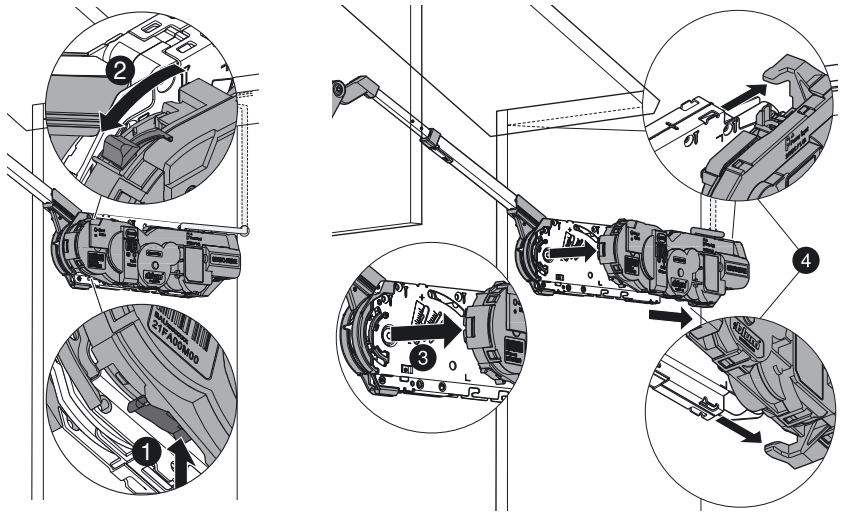
Drive unit



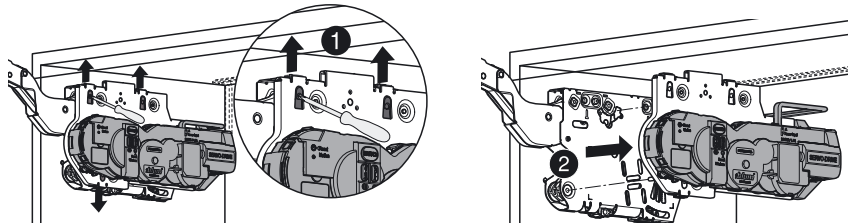
- ⇒ Before starting repair or maintenance work, unplug the Blum transformer to disconnect the power.
- ⇒ Never open a Blum transformer. There is a danger of electric shock.



AVENTOS HF / -HS / -HL

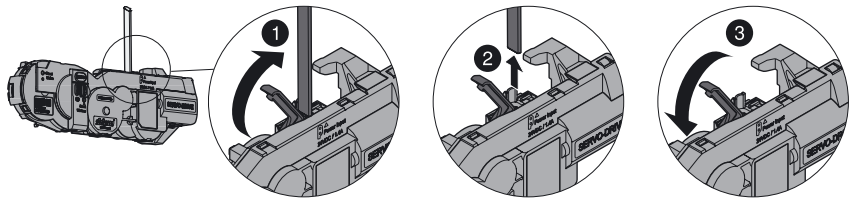


AVENTOS HK



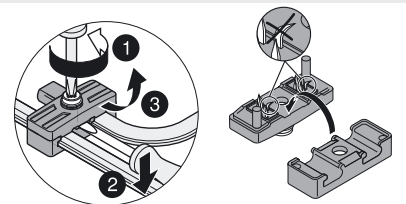
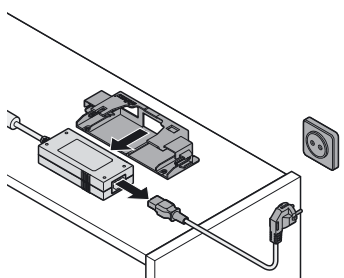
Removal

Distribution cable



Removal

Blum transformer and accessories



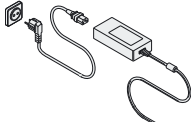

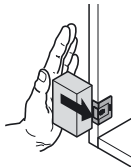
i Do not damage piercing pins.

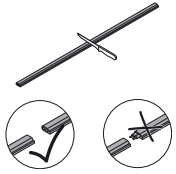
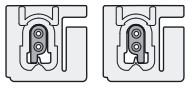
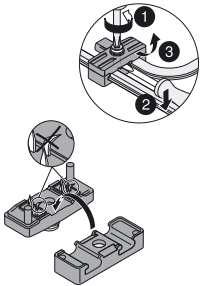
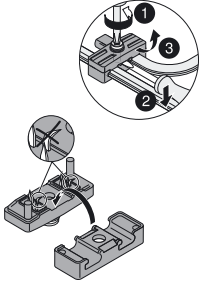
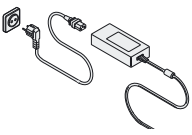
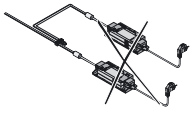
Troubleshooting

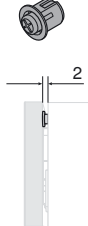
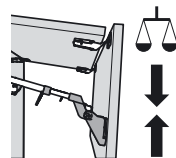
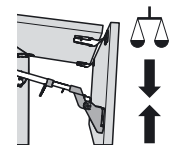
We recommend the following troubleshooting sequence.

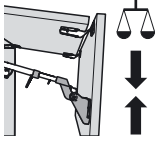
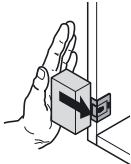

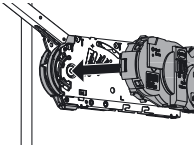
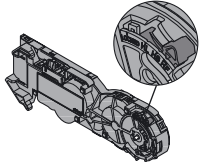
i
NOTICE

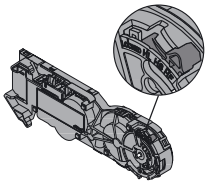
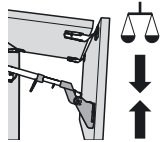
When using several SERVO-DRIVE switches in one cabinet, all SERVO-DRIVE switches must be checked individually.

Problem	Possible cause	Remedy	
1 Front does not move either by pressing on the front or pressing the SERVO-DRIVE switch	Front and/or SERVO-DRIVE switch was not pressed long enough	Make a deliberate effort to press the front and/or SERVO-DRIVE switch (to the full extent of travel)	
	Front and/or SERVO-DRIVE switch was pressed too long (leaning protection triggered)	Press the front and/or SERVO-DRIVE switch for a briefer time	
	Blum transformer is not connected to the power outlet	<ul style="list-style-type: none"> • Connect the flex to the Blum transformer and to the power outlet • Turn on the switched outlet 	
	Battery was inserted incorrectly into the SERVO-DRIVE switch ↳ Battery display on the SERVO-DRIVE switch lights red	Insert battery correctly	
	Drive unit is not attached properly to the lift mechanism	Correctly install drive unit	
	The SERVO-DRIVE switch is not activated	Activate the SERVO-DRIVE switch	
	Collision avoidance was activated in error ↳ A second front would be open if this scenario is correct	Deactivate collision avoidance	
	Battery is dead	Replace battery	
	SERVO-DRIVE switch is defective	Replace SERVO-DRIVE switch	
	Drive unit is defective	Replace drive unit	
Cabling or Blum transformer is defective	Replace cabling and/or Blum transformer		

Problem	Possible cause	Remedy	
2.1 The Motion LED on a drive unit does not light up	Cabling to drive unit was not performed correctly	Trim distribution cable and re-attach to drive unit	
	Distribution cable was connected incorrectly	Connect distribution cable correctly	
	Drive unit is defective	Replace drive unit	
	Connecting node is defective	Replace connecting node i Do not damage piercing pins.	
	Distribution cable is defective	Replace distribution cable	
2.2 The LED on the Blum transformer lights, the Motion LED on several drive units does not	Connecting node between distribution cable and Blum transformer is defective	Replace connecting node between distribution cable and Blum transformer i Do not damage piercing pins.	
	Distribution cable is defective	Replace distribution cable	
	2.3 The LED on the Blum transformer does not light	Switched outlet is turned off	Turn on switched outlet
Blum transformer is not connected to the power outlet		Connect the flex to the Blum transformer and to the power outlet	
Blum transformer is defective		Replace Blum transformer	
2.4 LED does not light on either the Blum transformers or the drive units	<ul style="list-style-type: none"> • Two Blum transformers are connected to one distribution cable • Both Blum transformers are defective 	Only 1 Blum transformer can be connected to each distribution cable Replace defective Blum transformers with 1 Blum transformer	

Problem	Possible cause	Remedy	
3 Front does not open when pressing on the front, but it does close when pressing the SERVO-DRIVE switch	No Blum distance bumper is installed ↳ There is no 2 mm bumper path	Install Blum distance bumper → see planning information	
	Contents are in the way	Remove contents	
	SERVO-DRIVE switch or Blum distance bumper are positioned incorrectly	Correct drilling positions → see planning information	
	Front is not balanced	<ul style="list-style-type: none"> • The lift mechanism must be set so that the front remains open in different positions • Start a new reference run 	
	Front is warped ↳ SERVO-DRIVE does not activate when pressing on the front	Replace front	
Front is warped and lies on the cabinet on one side ↳ Leaning protection is activated	Replace front		
4 Front does not open or close completely	Contents are in the way	Remove contents	
	Reference run was interrupted	Reset reference run (Reset Motion) and restart it	
	<ul style="list-style-type: none"> • Front is not balanced • Lift mechanism has shifted 	<ul style="list-style-type: none"> • Lift mechanisms must be set so that the front remains open in different positions • Start a new reference run 	
	Drive unit is defective	Replace drive unit	
Incorrect lift mechanism type used	Install the correct lift mechanism type		

Problem	Possible cause	Remedy		
5 Reference run for drive unit cannot be undertaken. ↳ Motion LED on the drive unit flashes orange	The SERVO-DRIVE switch is not activated	Activate the SERVO-DRIVE switch		
	Drive unit is not attached properly to the lift mechanism	Correctly install drive unit		
	Front is not balanced	<ul style="list-style-type: none"> • The lift mechanism must be set so that the front remains open in different positions • Start a new reference run 		
	Reference run was interrupted	Reset reference run (Reset Motion) and restart it		
	Battery was inserted incorrectly ↳ LED on the SERVO-DRIVE switch lights red	Insert battery correctly		
	Battery is dead	Replace battery		
	SERVO-DRIVE switch is defective	Replace SERVO-DRIVE switch		
	Drive unit is defective	Replace drive unit		
6.1	Drive unit has come loose from the lift mechanism	Drive unit was not locked completely	Lock the drive unit (until the locking mechanism snaps in)	
6.2	Drive unit cannot be attached to the lift mechanism	Drive bolt is not engaged	Engage drive bolt	
		Incorrect pre-set position was selected (HF, HS, HL)	Set the correct pre-set position	
		Incorrect lift mechanism was selected	Install a SERVO-DRIVE-compatible lift mechanism	

Problem		Possible cause	Remedy	
6.3	Drive unit pre-set position (HF, HS, HL) cannot be set and/or the drive unit cannot be attached to the lift mechanism	Drive bolt has been moved and blocked manually	<ul style="list-style-type: none"> • Disconnect the power for the following steps • Manually push the drive bolt into the correct pre-set position. 	
7	Front hits hard at the end stop (top or bottom)	Front is not balanced	<ul style="list-style-type: none"> • The lift mechanism must be set so that the front remains open in different positions • Start a new reference run 	
8	Gap forms between SERVO-DRIVE switch and cabinet side wall	There are chips in the drill hole	Remove chips	
		Incorrect drilling dimension used	Correct drilling dimension → see planning information	
9	Two or three fronts open or close in unison	Synchronisation was activated in error	Deactivate synchronisation	
10	Front does not close completely	Lift mechanism lever collides with the SERVO-DRIVE switch	Correctly set the connection to the front via the side adjustment	
11	The synchronisation of 2 drive units does not work ↳ <Wireless> LED lights red	Collision avoidance is activated	Deactivate collision avoidance	
12	Collision avoidance for 2 drive units does not work ↳ <Wireless> LED lights red	The synchronisation of 2 drive units is activated	Deactivate synchronisation	

i
NOTICE

⇒ If the SERVO-DRIVE for AVENTOS electrical motion support system does not work, lift systems can still be opened and closed manually – they will not be damaged in this way.

EC Declaration of Conformity

Julius Blum GmbH, Industriestr. 1, A-6973 Höchst herewith declare on our own responsibility that the product SERVO-DRIVE for AVENTOS (Z10NE050.xx, Z10NE010.xx, 21xA0x1.xx, 21P5020.xx, 21P0020.xx, 21.A00L33.xx, Z10ZE000.xx) to which this Declaration refers, complies with the following EU Directives:

EC Low Voltage Directive	2006/95/EC
EC EMV Directive	2004/108/EC
Directive for wireless systems and telecommunications equipment	1999/05/EC

The following harmonised European standards have been used to ensure proper implementation of the requirements in the EU Directives for the products Z10NE050.xx, Z10NE010.xx, 21xA0x1.xx, 21P5020.xx, 21P0020.xx, 21.A00L33.xx, Z10ZE000.xx:

EN 60335-1, EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-3,
EN 300440-2, EN 301489-1, EN 301489-3

The following standard has also been applied for the products Z10NE050.xx and Z10NE010.xx:

EN 60950

The above products have been tested by

TÜV Rheinland Product Safety GmbH
Prüfstelle für Produktsicherheit Dresden
Wilhelm-Franke-Straße 66
D-01219 Dresden
Certificate number: Q 60027127 0001

The CE marking was added in 09.

Before start-up, furniture conformity to Machine Directive 2006/42/EC must be confirmed.



Höchst, 22.12.2009
Dipl.-Ing. Herbert Blum,
Managing Director
www.blum.com

Julius Blum GmbH
Furniture Fittings Mfg.
6973 Höchst, Austria
Tel.: +43 5578 705-0
Fax: +43 5578 705-44
E-mail: info@blum.com
www.blum.com