

# AVENTOS

Lift Systems

[blum.com](https://blum.com)

 **blum**<sup>®</sup>



## Lifting Cabinet Doors Up and Out of the Way

AVENTOS lift systems are the premium functional hardware for upper cabinets. Doors easily lift up and out of the way, thanks to low opening forces. This allows complete access to the interior of the cabinet while not interfering with work in the kitchen. When you are done, the integrated BLUMOTION ensures AVENTOS lift system doors glide to a soft close.



## Contents

### AVENTOS

<b>7</b>	Overview
<b>8</b>	AVENTOS HF – Bi-fold Door
<b>20</b>	AVENTOS HS – Up and Over Door
<b>32</b>	AVENTOS HL – Lift Up Door
<b>44</b>	AVENTOS HK-S – Stay Lift Door
<b>58</b>	AVENTOS HK-XS – Small Stay Lift
<b>72</b>	Inset Applications
<b>74</b>	Accessories
<b>75</b>	Face Frame Mounting Brackets
<b>80</b>	SERVO-DRIVE for AVENTOS
<b>99</b>	Assembly Aids
<b>102</b>	Part Number Index





### **Effortless Opening**

A light touch on the front using your hand or elbow is all that's required to open doors with SERVODRIVE for AVENTOS. Even large and heavy doors open effortlessly. For the user, this means easy access to the cabinet interior.



### **Open with a Simple Touch**

TIP-ON is an excellent solution for opening handleless doors. The mechanical opening feature allows you to simply push on the door front to open it. It's that easy.



### **Smooth and Silent**

With AVENTOS, even heavy doors open with just a light pull of the handle and stay in any position, up and out of the way. BLUMOTION soft close is available with every AVENTOS lift system for an amazingly quiet close every time.





## Optimal Access

AVENTOS lift systems for upper cabinet doors provides optimal access to the contents of the cabinet and moves the door completely out of the way when opened. AVENTOS also keeps the handle within arms reach in any position, even on tall wall cabinets.



### There Are Many Good Reasons Why AVENTOS Lift Systems Are An Excellent Choice For Wall Cabinets.

Since the cabinet doors open upwards, AVENTOS provides an excellent view into the cabinet interior enabling comfortable and ergonomic access to storage items.

The AVENTOS program opens up a whole new world of design possibilities for kitchen and office spaces. Even the widest and heaviest doors can be accommodated. Wide base cabinet designs can now be mirrored in the wall cabinets above to create a more uniform look.



#### Online Resource for Planning

##### Easy Planning

Blum offers many online tools to help you with your kitchen planning and ordering. Online Product Configurator (OPC) offers a parts list and planning information based on your specifications. Once complete, your results can then be exported to a shareable document.

OPC is easily accessible on our website at [blum.com/configurator](https://blum.com/configurator)



AVENTOS HF		Frameless and face frame cabinet		
	<b>Bi-fold door</b> Height range <b>479</b> (18-7/8") – <b>1067</b> (42") Width range <b>381</b> (15") – <b>1828</b> (72")	Wood or wide aluminum frame door	Narrow aluminum frame door	SERVO-DRIVE
	Ordering information	page 10	page 14	
	Cabinet preparation	page 12	page 16	page 100

AVENTOS HS		Frameless and face frame cabinet		
	<b>Up-and-over door</b> Height range <b>350</b> (13-3/4") – <b>800</b> (31-1/2") Width range <b>381</b> (15") – <b>1828</b> (72")	Wood or wide aluminum frame door	Narrow aluminum frame door	SERVO-DRIVE
	Ordering information	page 22	page 26	
	Cabinet preparation	page 24	page 28	page 101

AVENTOS HL		Frameless and face frame cabinet		
	<b>Lift up door</b> Height range <b>300</b> (11-13/16") – <b>580</b> (22-13/16") Width range <b>381</b> (15") – <b>1828</b> (72")	Wood or wide aluminum frame door	Narrow aluminum frame door	SERVO-DRIVE
	Ordering information	page 34	page 38	
	Cabinet preparation	page 36	page 40	page 102

AVENTOS HK-S		Frameless and face frame cabinet		
	<b>Stay lift door</b> Height range <b>186</b> (7-3/8") – <b>610</b> (24") Width range <b>381</b> (15") – <b>1828</b> (72")	Wood or wide aluminum frame door	Narrow aluminum frame door	TIP-ON for AVENTOS
	Ordering information	page 46	page 50	page 54
	Cabinet preparation	page 48	page 52	page 55

AVENTOS HK-XS		Frameless and face frame cabinet		
	<b>Stay lift door</b> Height range <b>238</b> (9-3/8") – <b>610</b> (24") Width range <b>381</b> (15") – <b>1828</b> (72")	Wood or wide aluminum frame door	Narrow aluminum frame door	TIP-ON for AVENTOS
	Ordering information	page 60	page 64	page 68
	Cabinet preparation	page 62	page 66	page 69

**NOTE:** For inset applications see page 72-73



# AVENTOS HF

## Up and Out of The Way

AVENTOS HF has a two part front that folds together in the center when opening. The bi-fold lift system is ideal for taller wall cabinets with large fronts because the handle remains within reach.



### Includes a Finger Safety Feature

The CLIP top bottom door hinge has an innovative "release" feature that ensures finger safety.



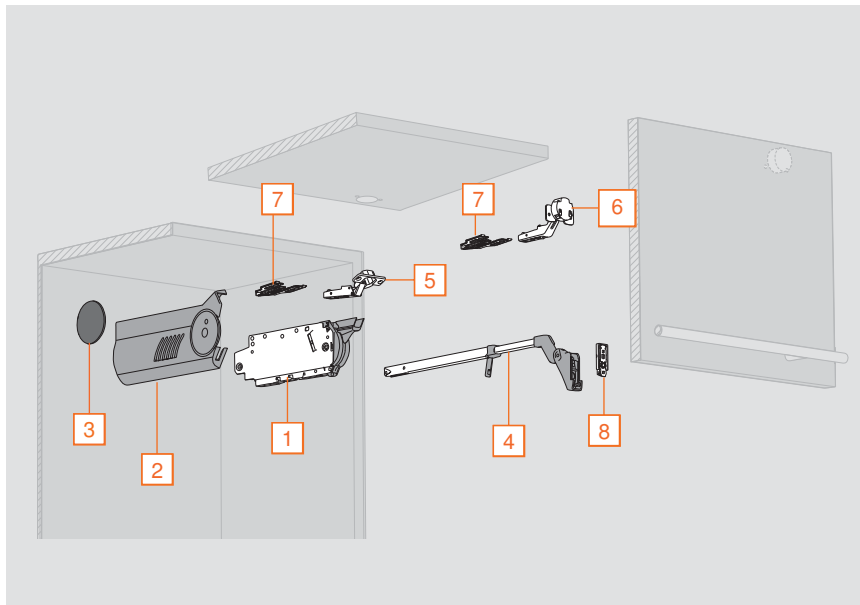
#### Easy Installation and Adjustment

The three-dimensional adjustment feature enables doors to be precisely aligned during installation and tolerances to be maintained with ease.



#### The Motion Inside

The amount of technology and components placed into each lift mechanism are what provide the unparalleled smooth operation of AVENTOS.

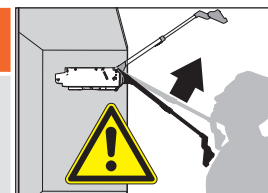


- Well suited for large cabinets
- For both frameless and face frame applications
- Cabinet height from **479** (18-7/8") to **1067** (42")
- Cabinet width from **381** (15") to **1828** (72")
- Interior depth minimum **278** (10-15/16")
- Center hinge with finger safety feature
- Three-dimensional front adjustment of both fronts
- Closes silently and effortlessly with BLUMOTION
- Variable stop
- Optional: SERVO-DRIVE for AVENTOS



**Warning: Risk of injury by spring-loaded lever arm!**

- Do not push lever arm down
- Secure lever arm before installing cabinet



### Step 1 – Determine the Power Factor for the Application



Power factor = cabinet height (inch) x combined door weight\* (lb)

#### Determine power factor

To select the correct lift mechanism for a given application, the power factor must first be calculated by using the formula below. Use the table at the bottom of the page to convert ounces into decimal form for easy calculation.

Power factor = cabinet height multiplied by combined door weight\*

#### Example:

Cabinet height: 30" (within possible range)

Combined door weight = 23 lb 14 oz (14 oz = .9 lb see chart below)

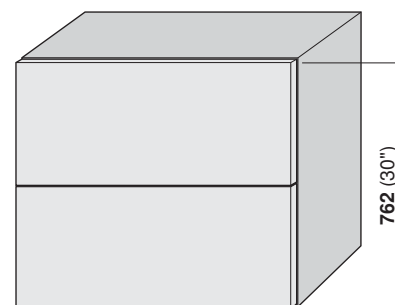
Power factor = 30 x 23.9

Power factor = 717

A power factor of 717 requires lift mechanism 20F2500.N5

\*Including handle weight

**NOTE:** AVENTOS planning tools available at [blum.com/configurator](http://blum.com/configurator)



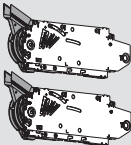
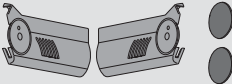
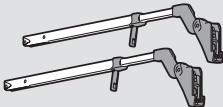
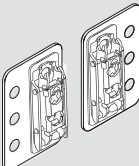
Combined door weight\* = 23 lb 14 oz

Weight conversion chart

oz	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
lb	.1	.1	.2	.3	.3	.4	.4	.5	.6	.6	.7	.8	.8	.9	.9



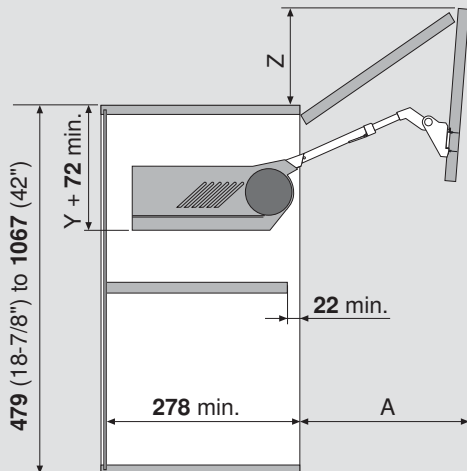
## Step 2 – Select the Required Components

Lift mechanism set														
	<p><b>Set includes:</b></p> <ul style="list-style-type: none"><li>1 Lift mechanism (qty 2)</li><li>#7 x 35 (1-3/8") wood screw (qty 8)</li></ul>	<p><b>NOTE:</b> It is recommended to use the more powerful lift mechanism for overlapping areas</p> <table><tr><th>Power factor range</th><th>Part no.</th></tr><tr><td>85 – 230 (one lift mechanism required)</td><td>20F2200.N5</td></tr><tr><td>231 – 470</td><td>20F2200.N5</td></tr><tr><td>471 – 880</td><td>20F2500.N5</td></tr><tr><td>881 – 1440</td><td>20F2800.N5</td></tr><tr><td>1441 – 2300 (three lift mechanisms required)</td><td>20F2800.N5</td></tr></table>	Power factor range	Part no.	85 – 230 (one lift mechanism required)	20F2200.N5	231 – 470	20F2200.N5	471 – 880	20F2500.N5	881 – 1440	20F2800.N5	1441 – 2300 (three lift mechanisms required)	20F2800.N5
Power factor range	Part no.													
85 – 230 (one lift mechanism required)	20F2200.N5													
231 – 470	20F2200.N5													
471 – 880	20F2500.N5													
881 – 1440	20F2800.N5													
1441 – 2300 (three lift mechanisms required)	20F2800.N5													
Cover set														
	<p><b>Set includes:</b></p> <ul style="list-style-type: none"><li>2 Right and left cover plate</li><li>3 Non-handed cover cap (qty 2)</li></ul>	<p><b>NOTE:</b> Light Gray and Dark Gray options available</p> <div><div></div>Light Gray (HGIG)</div> <div><div></div>Dark Gray (TGIG)</div> <table><tr><th>Part no.</th></tr><tr><td>Cover set</td></tr><tr><td>20F8000.NA</td></tr></table>	Part no.	Cover set	20F8000.NA									
Part no.														
Cover set														
20F8000.NA														
Telescopic arm set														
	<p><b>Set includes:</b></p> <ul style="list-style-type: none"><li>4 Telescopic arm (qty 2)</li></ul>	<p><b>NOTE:</b> One telescopic arm is required per lift mechanism</p> <table><tr><th>Cabinet height range</th><th>Part no.</th></tr><tr><td>479 (18-7/8") – 558 (22")</td><td>20F3200.01</td></tr><tr><td>558 (22") – 686 (27")</td><td>20F3500.01</td></tr><tr><td>686 (27") – 889 (35")</td><td>20F3800.01</td></tr><tr><td>889 (35") – 1067 (42")</td><td>20F3900.01</td></tr></table>	Cabinet height range	Part no.	479 (18-7/8") – 558 (22")	20F3200.01	558 (22") – 686 (27")	20F3500.01	686 (27") – 889 (35")	20F3800.01	889 (35") – 1067 (42")	20F3900.01		
Cabinet height range	Part no.													
479 (18-7/8") – 558 (22")	20F3200.01													
558 (22") – 686 (27")	20F3500.01													
686 (27") – 889 (35")	20F3800.01													
889 (35") – 1067 (42")	20F3900.01													
Wood or wide aluminum door hardware set														
<p><b>Set includes:</b></p> <ul style="list-style-type: none"><li>5 70T5580.TL – CLIP top 120° free swing hinge (qty 2)</li><li>5 32.4630 – COMPACT 33 free swing hinge (qty 2)</li><li>6 78Z5530T – CLIP top bottom door hinge (qty 2)</li><li>7 130.1130.02 – COMPACT mounting plate, 1-1/4" Overlay (qty 2)</li><li>7 175H6000 – Face frame adapter (qty 4)</li><li>8 175H3100 – Telescopic arm mounting plate (qty 2)</li></ul>		<p><b>NOTE:</b> Three hinges and mounting plates are required for cabinet widths over 1219 (48") or combined door weight of 26.5 lb</p> <table><tr><th>Part no.</th></tr><tr><td>Wood or wide aluminum hardware set</td></tr><tr><td>78Z5530TA8</td></tr><tr><td>Installation screw for wood doors</td></tr><tr><td>606N or 606P</td></tr><tr><td>Installation screw for wide aluminum doors</td></tr><tr><td>7072A</td></tr></table>	Part no.	Wood or wide aluminum hardware set	78Z5530TA8	Installation screw for wood doors	606N or 606P	Installation screw for wide aluminum doors	7072A					
Part no.														
Wood or wide aluminum hardware set														
78Z5530TA8														
Installation screw for wood doors														
606N or 606P														
Installation screw for wide aluminum doors														
7072A														
Mounting plate with bracket set														
	<p><b>Set includes:</b></p> <ul style="list-style-type: none"><li>Right and left mounting plate with bracket</li></ul>	<p>For use with large overlay five-piece doors</p> <table><tr><th>Part no.</th></tr><tr><td>Mounting plate with bracket set</td></tr><tr><td>175H3F00</td></tr></table>	Part no.	Mounting plate with bracket set	175H3F00									
Part no.														
Mounting plate with bracket set														
175H3F00														

SERVO-DRIVE for AVENTOS available, see page 82 for more information

### Frameless Application

#### Door and hardware clearance



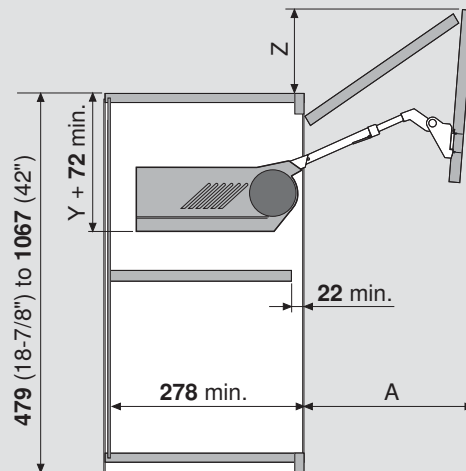
Y = See table below

Z = Top door height x .44 + 38

A = Top door height x .9 + (1.5 x bottom door thickness)

### Face Frame Application

#### Door and hardware clearance



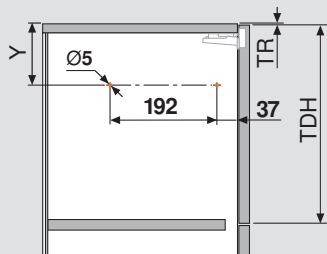
Y = See table below

Z = Top door height x .44 + 38

A = Top door height x .9 + (1.5 x bottom door thickness)

#### Bore for the locating pins

TR = Top reveal  
TDH = Top door height



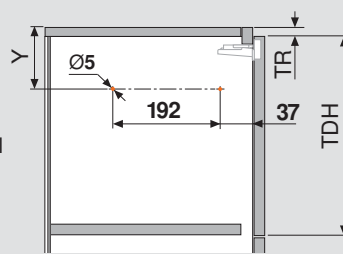
**NOTE:** Locating pin holes shown in orange

TDH	Y
231 – 271	TDH x .6 minus 28 + TR
272 – 531	TDH x .6 minus 57 + TR

#### Bore for the locating pins

TR = Top reveal  
TDH = Top door height

See page 89 for optional face frame mounting bracket or block-out side flush with frame.

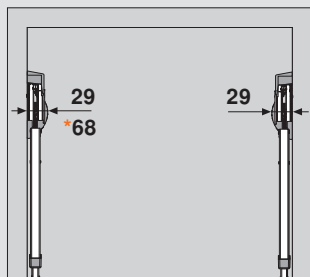


**NOTE:** Locating pin holes shown in orange

TDH	Y
231 – 271	TDH x .6 minus 28 + TR
272 – 531	TDH x .6 minus 57 + TR

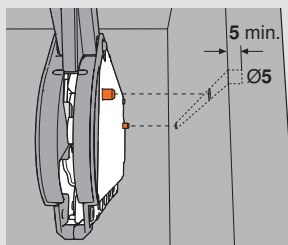
#### Lift mechanism clearance

\*Clearance required for SERVO-DRIVE

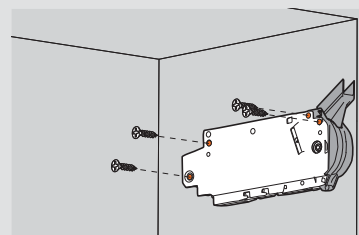


#### Lift mechanism positioning

Two locating pins fit into Ø5 x 5 holes bored in the side of cabinet for proper positioning.

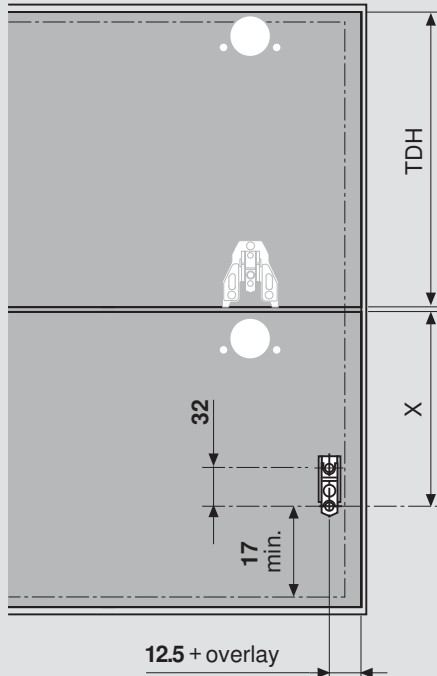


The included #7 x 35 (1-3/8") wood screws are required in the four holes marked in orange.



Refer to page 74 for angle restriction clip options

## Telescopic arm mounting plate location



TDH = Top door height

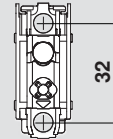
**NOTE:** Dimensions same for frameless and face frame applications

TDH	X
231 – 271	TDH x .5 + 70
272 – 531	TDH x .5 + 47

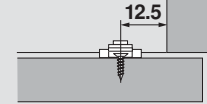
**NOTE:** Three hinges are required for cabinet widths over 1219 (48") or 26.5 lb combined door weight

## Telescopic arm mounting plate choices

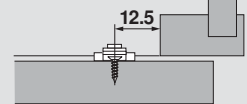
### Mounting plate



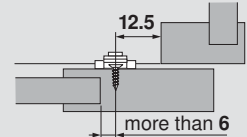
### Slab door for frameless



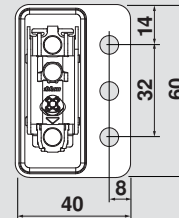
### Slab door for face frame



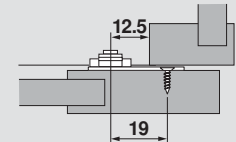
### Five-piece door



### Mounting plate with bracket for large overlay five-piece doors



### Five-piece door

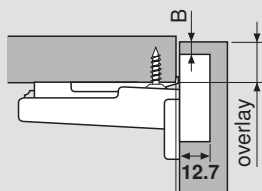


**NOTE:** Hole locations offset by 19 (example: 12.5 + overlay - 19 = hole location from side)

## Frameless Application

### CLIP top hinge

#### Top door hinge



\*Bore at 3 then adjust 1

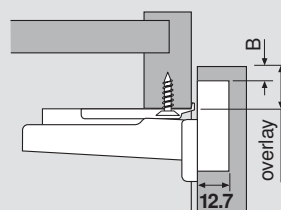
Overlay				
13*	14	15	16	17
3	3	4	5	6

B = Bore distance

## Face Frame Application

### CLIP top hinge

#### Top door hinge – small overlay

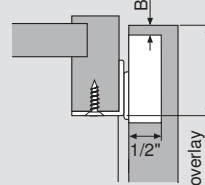


\*Bore at 3 then adjust 1

Overlay				
13*	14	15	16	17
3	3	4	5	6

B = Bore distance

#### Top door hinge – large overlay

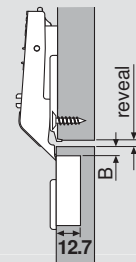


Overlay				
32 (1-1/4")				
3 (1/8")				

B = Bore distance

### CLIP top hinge

#### Bottom door hinge



Reveal			
6	5	4	3
3	4	5	6

B = Bore distance

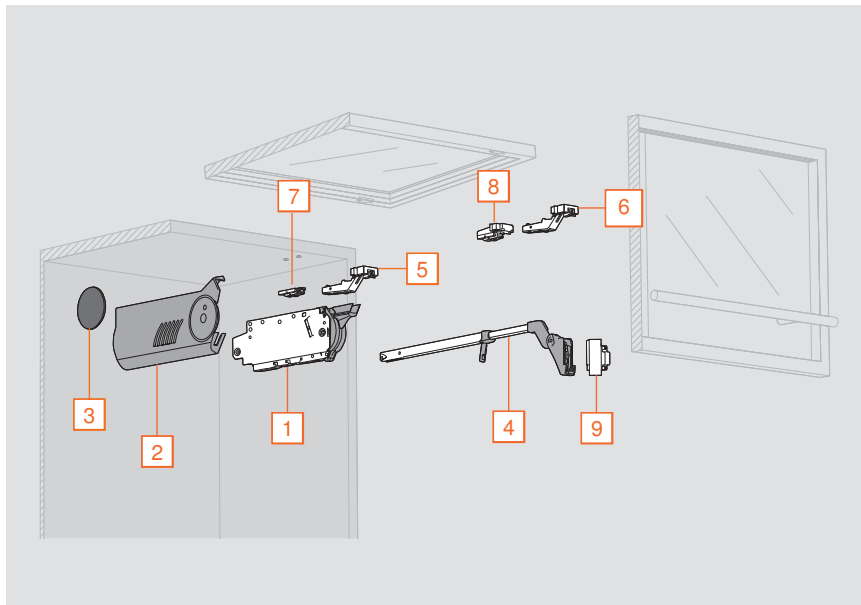
Follow the assembly instructions on page 18



# AVENTOS



## AVENTOS HF Ordering Information for Narrow Aluminum

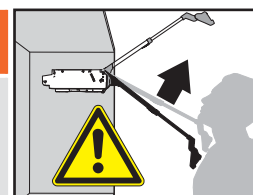


- Well suited for large cabinets
- For narrow aluminum door hardware
- Cabinet height from **479** (18-7/8") to **1067** (42")
- Cabinet width from **381** (15") to **1828** (72")
- Interior depth minimum **278** (10-15/16")
- Center hinge with finger safety feature
- Three-dimensional front adjustment of both fronts
- Closes silently and effortlessly with BLUMOTION
- Optional: SERVO-DRIVE for AVENTOS



**Warning: Risk of injury by spring-loaded lever arm!**

- Do not push lever arm down
- Secure lever arm before installing cabinet



### Step 1 – Determine the Power Factor for the Application



**Power factor = cabinet height (inch) x combined door weight\* (lb)**

#### Determine power factor

To select the correct lift mechanism for a given application, the power factor must first be calculated by using the formula below. Use the table at the bottom of the page to convert ounces into decimal form for easy calculation.

Power factor = cabinet height multiplied by combined door weight\*

#### Example:

Cabinet height: 30" (within possible range)

Combined door weight = 23 lb 14 oz (14 oz = .9 lb see chart below)

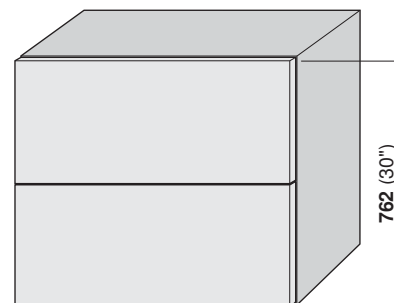
Power factor = 30 x 23.9

Power factor = 717

A power factor of 717 requires lift mechanism 20F2500.N5

\*Including handle weight

**NOTE:** AVENTOS planning tools available at [blum.com/configurator](http://blum.com/configurator)



Combined door weight\* = 23 lb 14 oz

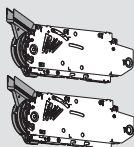
Weight conversion chart

oz	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
lb	.1	.1	.2	.3	.3	.4	.4	.5	.6	.6	.7	.8	.8	.9	.9



## Step 2 – Select the Required Components

### Lift mechanism set



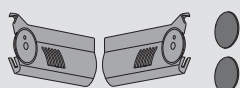
**Set includes:**

- 1 Lift mechanism (qty 2)  
#7 x **35** (1-3/8") wood screw (qty 8)

**NOTE:** It is recommended to use the more powerful lift mechanism for overlapping areas

Power factor range	Part no.
85 – 230 (one lift mechanism required)	20F2200.N5
231 – 470	20F2200.N5
471 – 880	20F2500.N5
881 – 1440	20F2800.N5
1441 – 2300 (three lift mechanisms required)	20F2800.N5

### Cover set



**Set includes:**

- 2 Right and left cover plate
- 3 Non-handed cover cap (qty 2)

**NOTE:** Light Gray and Dark Gray options available

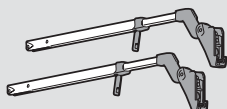
Light Gray (HGIG)

Dark Gray (TGIG)

Part no.

Cover set	20F8000.NA
-----------	------------

### Telescopic arm set



**Set includes:**

- 4 Telescopic arm (qty 2)

**NOTE:** One telescopic arm is required per lift mechanism

Cabinet height range	Part no.
479 (18-7/8") – 558 (22")	20F3200.01
558 (22") – 686 (27")	20F3500.01
686 (27") – 889 (35")	20F3800.01
889 (35") – 1067 (42")	20F3900.01

### Narrow aluminum door hardware set

**Set includes:**

- 5 72T550A.TL – CLIP top free swing narrow alum. top door hinge (qty 2)
- 6 78Z550AT – CLIP top narrow aluminum bottom door hinge (qty 2)
- 7 175H3100 – Top door mounting plate (qty 2)
- 8 175H5A00 – Bottom door mounting plate (qty 2)
- 9 175H5B00 – Telescopic arm mounting plate (qty 2)
- #699.110 – Aluminum screw for the bottom door mounting plate, bottom hinge, top hinge and telescopic arm mounting plate (qty 18)

**NOTE:** Three hinges and mounting plates are required for cabinet widths over **1219 (48")** or combined door weight of 26.5 lb

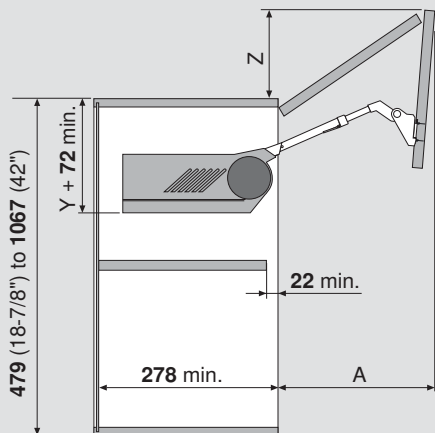
Part no.

Narrow aluminum hardware set	78Z550ATA6
Installation screw for top mounting plate	606N or 606P

SERVO-DRIVE for AVENTOS available, see page 82 for more information

### Frameless Application

#### Door and hardware clearance

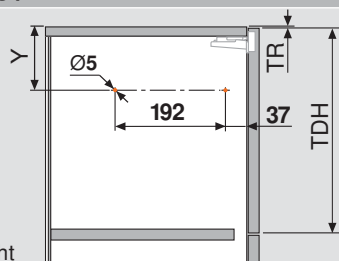


Y = See table below

Z = Top door height x .44 + 38

A = Top door height x .9 + (1.5 x bottom door thickness)

#### Bore for the locating pins



TR = Top reveal

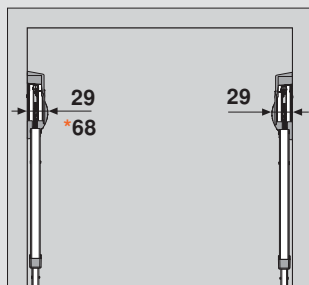
TDH = Top door height

**NOTE:** Locating pin holes shown in orange

TDH	Y
231 – 271	TDH x .6 minus 28 + TR
272 – 531	TDH x .6 minus 57 + TR

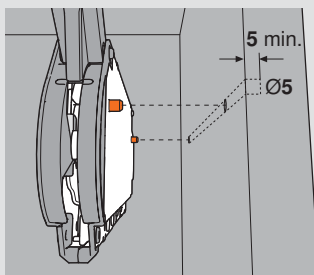
#### Lift mechanism clearance

\*Clearance required for SERVO-DRIVE

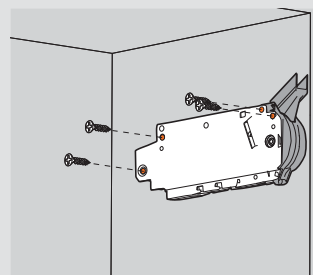


#### Lift mechanism positioning

Two locating pins fit into Ø5 x 5 holes bored in the side of cabinet for proper positioning.



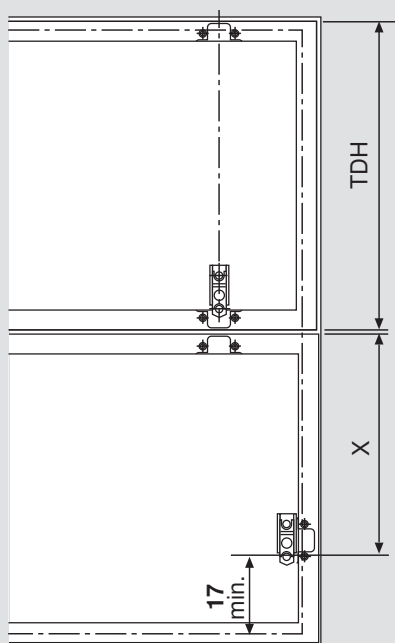
The included #7 x 35 (1-3/8") wood screws are required in the four holes marked in orange.



Refer to page 74 for angle restriction clip options



## Telescopic arm mounting plate location

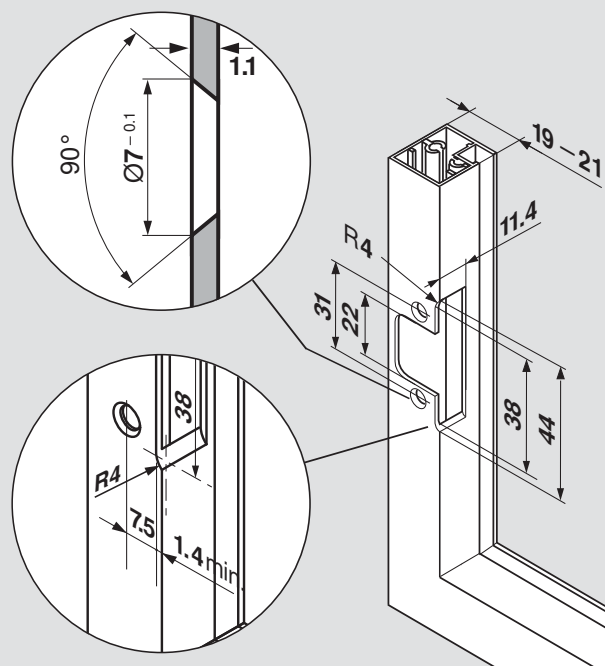


TDH = Top door height

TDH	X
231 – 271	$TDH \times .5 + 70$
272 – 531	$TDH \times .5 + 47$

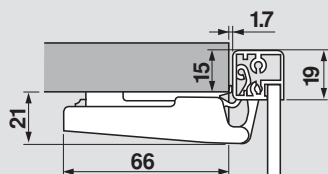
**NOTE:** Three hinges are required for cabinet widths over 1219 (48") or 26.5 lb combined door weight

## Hinge and mounting plate attachment



## CLIP top aluminum door hinge

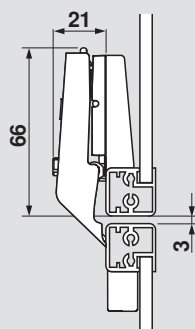
### Top door hinge



**NOTE:** Fixed 4 reveal

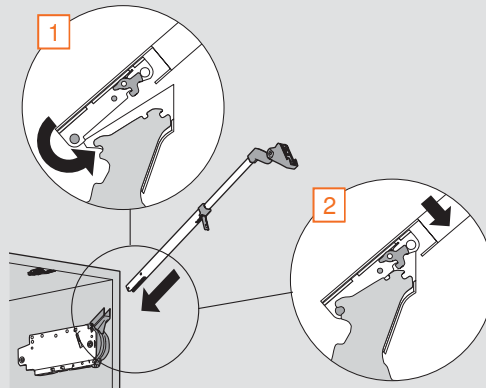
## CLIP top hinge

### Bottom door hinge

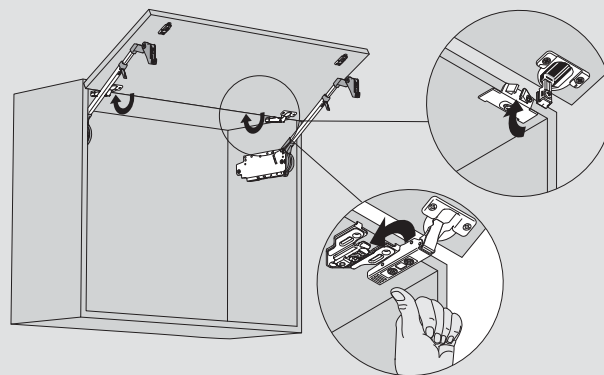


Follow the assembly instructions on page 18

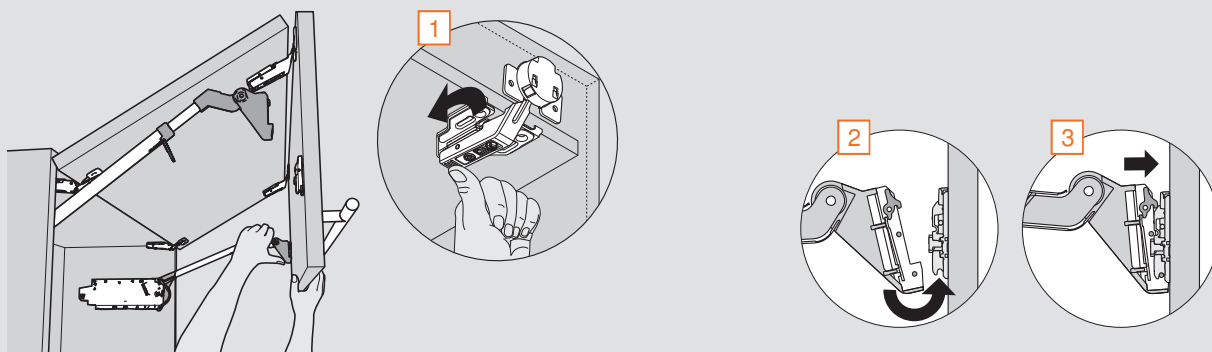
Attaching the telescopic arms



Attaching the top door to the cabinet

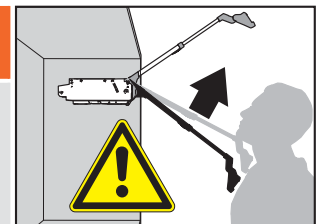


Attaching the bottom door to the cabinet



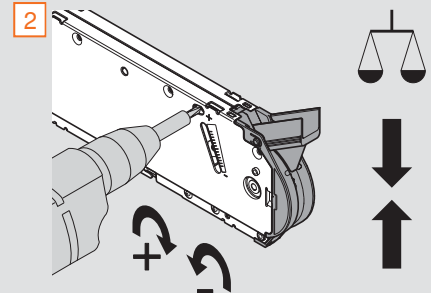
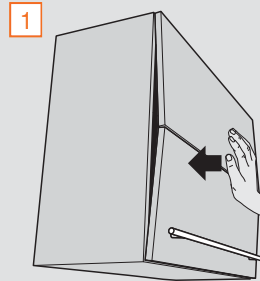
**Warning: Risk of injury by spring-loaded telescopic arm!**

- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet



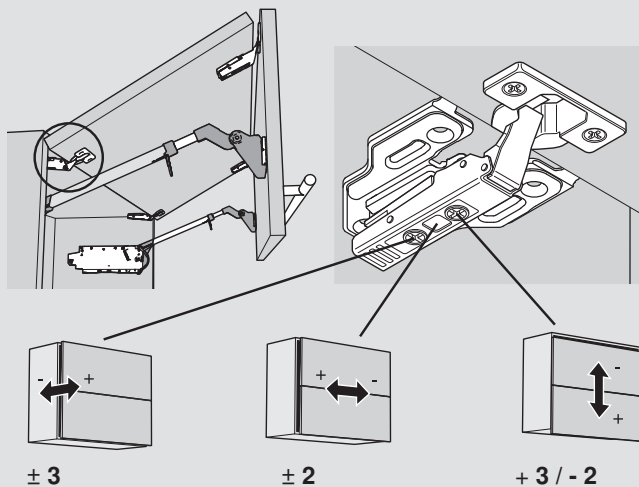
## Lift mechanism tension adjustment

- 1 Close and flush doors to cabinet. Open and close door to test closing force.
- 2 Use a screw gun and a #2x2 POZI driver bit to adjust the lift mechanism to the desired tension. Test door again and repeat until desired function is achieved. Tension adjustment should be the same on both lift mechanisms.

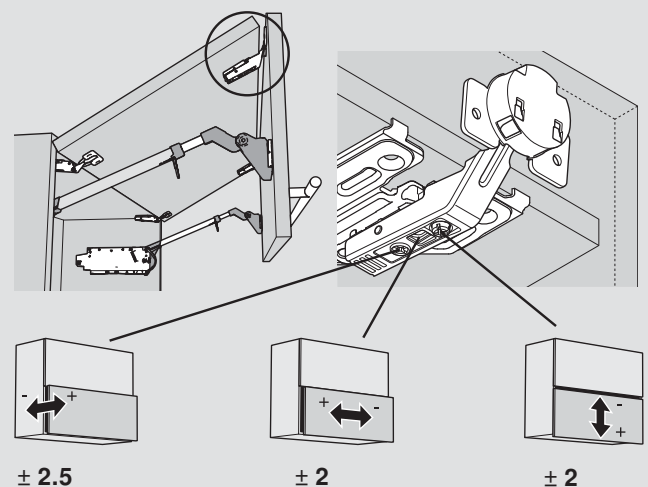


## AVENTOS HF door adjustments

- 1 Adjust each top door hinge and mounting plate to properly align the top door to the cabinet.



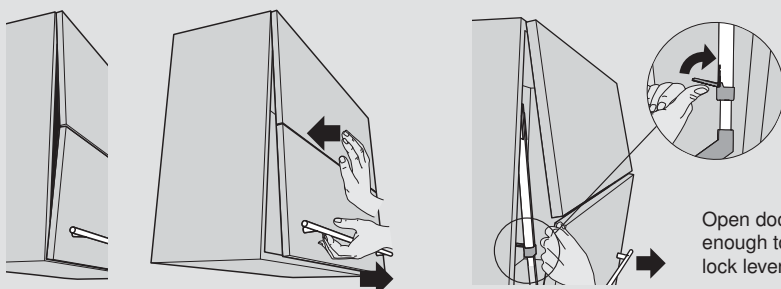
- 2 Adjust each bottom door hinge and mounting plate to properly align doors to the cabinet and to the top door.



**NOTE:** Although not illustrated here, telescopic arm mounting plates can also be adjusted horizontally  $\pm 2$  if needed

## Adjust and lock telescopic arms

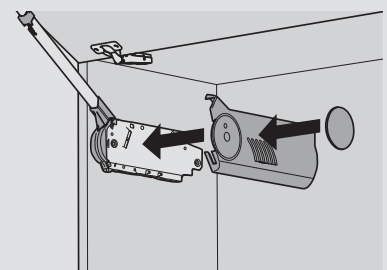
- 1 Close and flush doors to cabinet. While pressing on the top door, pull the bottom door open approximately one inch.
- 2 Slightly open door and lock the telescopic arms into position using the levers as shown.



Open door enough to lock levers

## Attaching cover caps

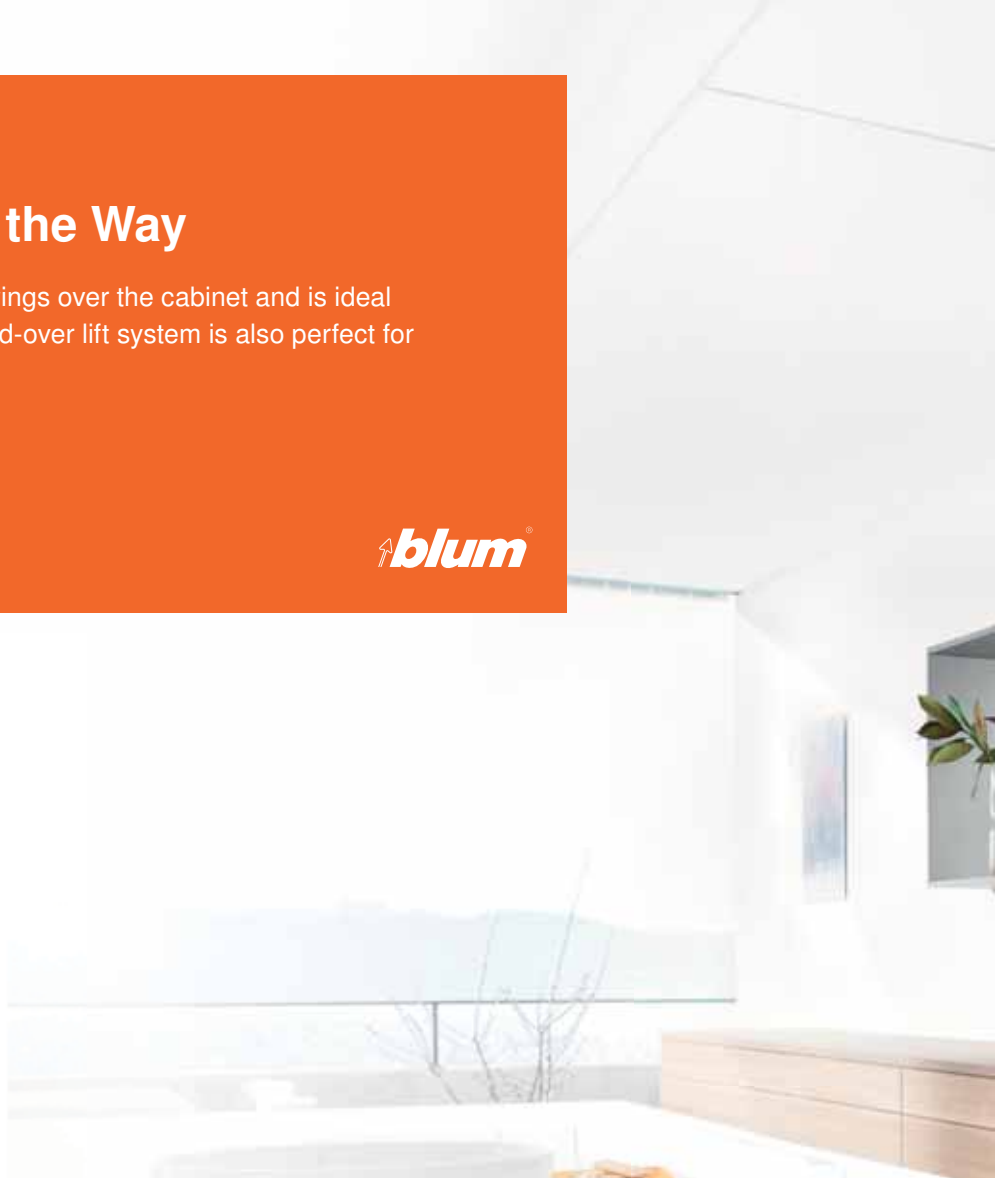
Place the left and right cover plates over the appropriate lift mechanisms and snap them in place.



# AVENTOS HS

## Up, Over and Out of the Way

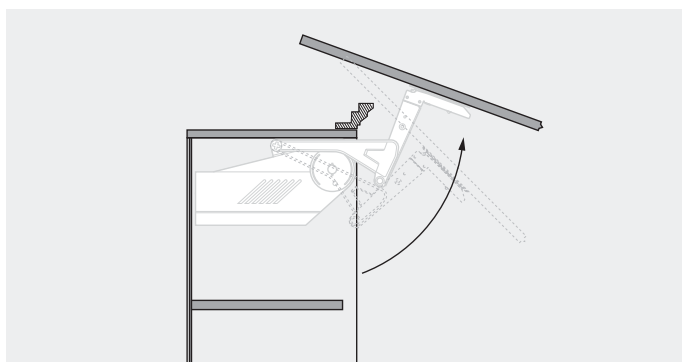
With AVENTOS HS, the single front swings over the cabinet and is ideal for large-area, single fronts. The up-and-over lift system is also perfect for cabinets with crown molding.



### Easy Installation and Adjustment

The three-dimensional adjustment feature enables doors to be precisely aligned during installation and tolerances to be maintained with ease.





### Crown Molding Clearance

When developing the AVENTOS HS up-and-over lift mechanism, we also took into account cabinets with decorative molding.



### The Motion Inside

The amount of technology and components placed into each lift mechanism are what provide the unparalleled smooth operation of AVENTOS.

### Step 1 – Select the Required Lift Mechanism Set

#### Using the charts

Each chart covers three different lift mechanisms (nine total). To select the required lift mechanism set, find the cabinet height on the left side of the chart, then go across to the range that contains the weight of your door in pounds and ounces. Follow that column to the top orange box to get the part number for the lift mechanism set required for your application.

**NOTE:** Part numbers in **ORANGE**, pounds and millimeters are **bold**

Cabinet height		Door weight – lb/oz		
inch	mm	20S2A00.N5	20S2B00.N5	20S2C00.N5
14	<b>349 – 359</b>	4/6 – 10/5	10/6 – 20/11	20/12 – 23/2
	<b>360 – 364</b>	4/6 – 10/5	10/6 – 20/11	20/12 – 23/10
	<b>365 – 374</b>	4/6 – 10/5	10/6 – 20/3	20/4 – 23/3
15	<b>375 – 384</b>	4/6 – 10/5	10/6 – 20/3	20/4 – 24/11
	<b>385 – 389</b>	4/6 – 10/5	10/6 – 20/3	20/4 – 24/5
	<b>390 – 394</b>	4/6 – 10/5	10/6 – 19/10	19/11 – 25/5
16	<b>395 – 399</b>	4/6 – 10/5	10/6 – 19/10	19/11 – 25/13
	<b>400 – 409</b>	5/0 – 9/11	9/12 – 19/10	19/11 – 26/7
	<b>410 – 414</b>	5/0 – 9/11	9/12 – 19/10	19/11 – 26/15
17	<b>415 – 424</b>	5/0 – 9/11	9/12 – 19/2	19/3 – 27/8
	<b>425 – 434</b>	5/0 – 9/11	9/12 – 19/2	19/3 – 28/0
	<b>435 – 439</b>	5/0 – 9/11	9/12 – 19/2	19/3 – 28/10
18	<b>440 – 444</b>	5/0 – 9/11	9/12 – 18/8	18/9 – 28/10
	<b>445 – 449</b>	5/0 – 9/11	9/12 – 18/8	18/9 – 29/2
	<b>450 – 459</b>	5/0 – 9/3	9/4 – 18/8	18/9 – 29/11
19	<b>460 – 464</b>	5/0 – 9/3	9/4 – 18/0	18/1 – 30/3
	<b>465 – 469</b>	5/8 – 9/3	9/4 – 18/0	18/1 – 30/3
	<b>470 – 474</b>	5/8 – 9/3	9/4 – 18/0	18/1 – 30/13
20	<b>475 – 479</b>	5/8 – 9/0	9/1 – 17/7	17/8 – 30/13
	<b>480 – 489</b>	5/8 – 9/0	9/1 – 17/7	17/8 – 31/5
	<b>490 – 494</b>	5/8 – 9/0	9/1 – 17/7	17/8 – 31/15
21	<b>495 – 499</b>	5/8 – 9/0	9/1 – 16/15	17/0 – 31/15
	<b>500 – 514</b>	5/8 – 8/8	8/9 – 16/15	17/0 – 32/7
	<b>515 – 519</b>	5/8 – 8/8	8/9 – 16/5	16/6 – 32/7
22	<b>520 – 525</b>	5/8 – 8/8	8/9 – 16/5	16/6 – 33/0

Cabinet height		Door weight – lb/oz		
inch	mm	20S2D00.N5	20S2E00.N5	20S2F00.N5
21	<b>526 – 539</b>	6/9 – 14/8	14/9 – 27/7	27/8 – 36/13
	<b>540 – 544</b>	6/9 – 14/0	14/1 – 27/7	27/8 – 37/7
	<b>545 – 554</b>	6/9 – 14/0	14/1 – 26/15	27/0 – 27/15
22	<b>555 – 559</b>	6/9 – 14/0	14/1 – 26/15	27/0 – 38/8
	<b>560 – 564</b>	6/9 – 14/0	14/1 – 26/5	26/6 – 38/8
	<b>565 – 574</b>	6/9 – 13/7	13/8 – 26/5	26/6 – 39/0
23	<b>575 – 584</b>	6/9 – 13/7	13/8 – 25/13	25/14 – 39/10
	<b>585 – 589</b>	6/9 – 13/7	13/8 – 25/11	25/12 – 40/2
	<b>590 – 594</b>	6/9 – 12/15	13/0 – 25/11	25/12 – 40/2
24	<b>595 – 614</b>	6/9 – 12/15	13/0 – 25/2	25/3 – 40/11
	<b>615 – 634</b>	6/9 – 12/8	12/9 – 24/10	24/11 – 41/3
	<b>635 – 639</b>	6/9 – 11/15	12/0 – 24/10	24/11 – 41/3
25	<b>640 – 649</b>	6/9 – 11/15	12/0 – 24/0	24/1 – 41/3
	<b>650 – 664</b>	6/9 – 11/15	12/0 – 24/0	24/1 – 41/13
	<b>665 – 675</b>	6/9 – 11/7	11/8 – 23/8	23/9 – 41/13

Cabinet height		Door weight – lb/oz		
inch	mm	20S2G00.N5	20S2H00.N5	20S2I00.N5
26	<b>676 – 684</b>	7/11 – 17/0	17/1 – 29/7	29/8 – 47/5
	<b>685 – 689</b>	7/11 – 17/0	17/1 – 28/13	28/14 – 47/5
	<b>690 – 694</b>	7/11 – 16/7	16/8 – 28/13	28/14 – 47/5
27	<b>695 – 704</b>	7/11 – 16/7	16/8 – 28/11	28/12 – 47/5
	<b>705 – 709</b>	7/11 – 16/7	16/8 – 28/8	28/9 – 47/5
	<b>710 – 714</b>	7/11 – 16/7	16/8 – 28/8	28/9 – 46/11
28	<b>715 – 724</b>	7/11 – 16/0	16/1 – 28/0	28/1 – 46/11
	<b>725 – 729</b>	7/11 – 16/0	16/1 – 28/0	28/1 – 46/3
	<b>730 – 734</b>	7/11 – 16/0	16/1 – 27/15	28/0 – 46/3
29	<b>735 – 739</b>	7/11 – 15/15	16/0 – 27/15	28/0 – 45/10
	<b>740 – 744</b>	7/11 – 15/8	15/9 – 27/7	27/8 – 45/10
	<b>745 – 749</b>	7/11 – 15/8	15/9 – 27/5	27/6 – 45/2
30	<b>750 – 754</b>	8/4 – 15/8	15/9 – 27/5	27/6 – 45/2
	<b>755 – 759</b>	8/4 – 15/8	15/9 – 27/3	27/4 – 45/2
	<b>760 – 764</b>	8/4 – 15/8	15/9 – 27/0	27/1 – 44/8
31	<b>765 – 769</b>	8/4 – 15/8	15/9 – 26/10	27/11 – 44/8
	<b>770 – 774</b>	8/4 – 14/15	15/0 – 26/10	26/11 – 44/8
	<b>775 – 779</b>	8/12 – 14/15	15/0 – 26/10	26/11 – 44/8
32	<b>780 – 784</b>	8/12 – 14/15	15/0 – 26/8	26/9 – 44/8
	<b>785 – 789</b>	8/12 – 14/15	15/0 – 26/8	26/9 – 44/8
	<b>790 – 800</b>	8/12 – 14/13	14/14 – 25/15	26/0 – 44/0

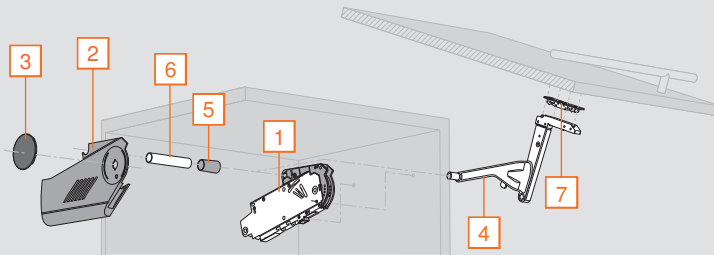


**Warning: Risk of injury  
by arm assembly!**

- Do not push assembly down
- Remove arm assembly from mechanism before installing cabinet

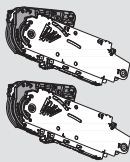


## Required components



## Step 2 – Select the Required Components

### Lift mechanism set



#### Set includes:

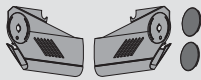
- 1** Lift mechanism (qty 2)
- #7 x 35 (1-3/8") wood screw (qty 10)

**NOTE:** For correct ordering of lift mechanism set, use the charts on the previous page

20S2A00.N5	20S2B00.N5	20S2C00.N5
20S2D00.N5	20S2E00.N5	20S2F00.N5
20S2G00.N5	20S2H00.N5	20S2I00.N5

Part no.

### Cover set



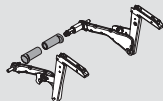
#### Set includes:

- 2** Right and left cover plate
- 3** Non-handed cover cap (qty 2)

**NOTE:** Light Gray and Dark Gray options available

Part no.	
Cover set	20S8000.NA

### Arm assembly set



#### Set includes:

- 4** Right and left arm assembly
- 5** Stabilizer rod cover cap (qty 2)

Part no.	
Arm assembly set	20S3500.06

### Round stabilizer rod



- 6** Round stabilizer rod

**NOTE:** Cabinets wider internally than 46.5" require a stabilizer rod connector set, see page 78

- Aluminum rod length **1061** (41-3/4"), cut to size
- Length = inside cabinet width minus **129** (5-1/16") for SERVO-DRIVE minus **164** (6-7/16")

Part no.	
Round stabilizer rod	20Q1061UN

### Wood or wide aluminum door hardware set



#### Set includes:

- 7** Arm assembly mounting plate (qty 2)

Part no.	
Wood or wide aluminum hardware set	20S4200
Installation screw for wood doors	606N or 606P
Installation screw for wide aluminum doors	7072A

### Mounting plate with bracket set



#### Set includes:

- Mounting plate with bracket (qty 2)

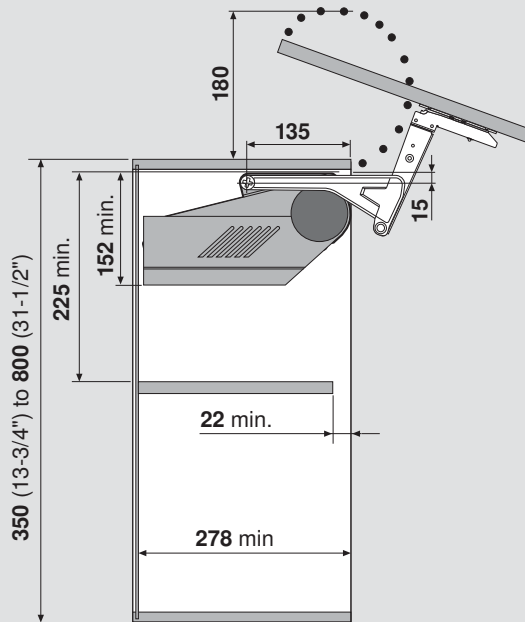
For use with large overlay five-piece doors

Part no.	
Mounting plate with bracket set	20S4F01

SERVO-DRIVE for AVENTOS available, see page 82 for more information

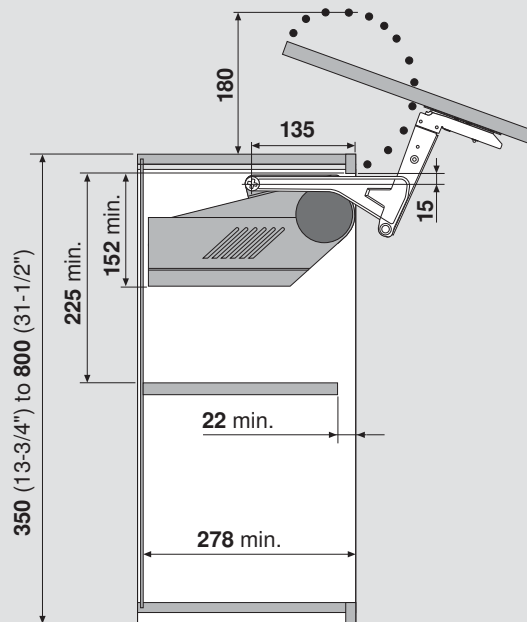
**Frameless Application**

**Door and hardware clearance**

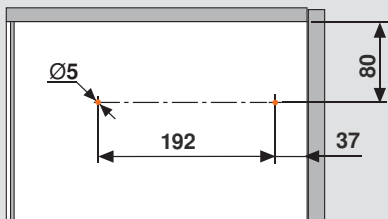


**Face Frame Application**

**Door and hardware clearance**

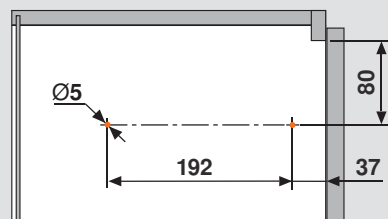


**Bore for the locating pins**



**NOTE:** Locating pin holes shown in orange

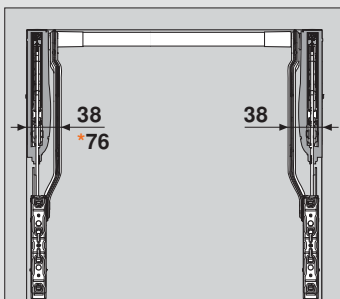
**Bore for the locating pins**



**NOTE:** Locating pin holes shown in orange

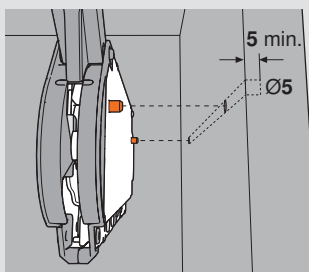
**Lift mechanism clearance**

\*Clearance required for SERVO-DRIVE

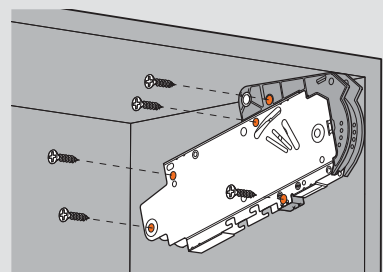


**Lift mechanism positioning**

Two locating pins fit into Ø5 x 5 holes bored in the side of cabinet for proper positioning.

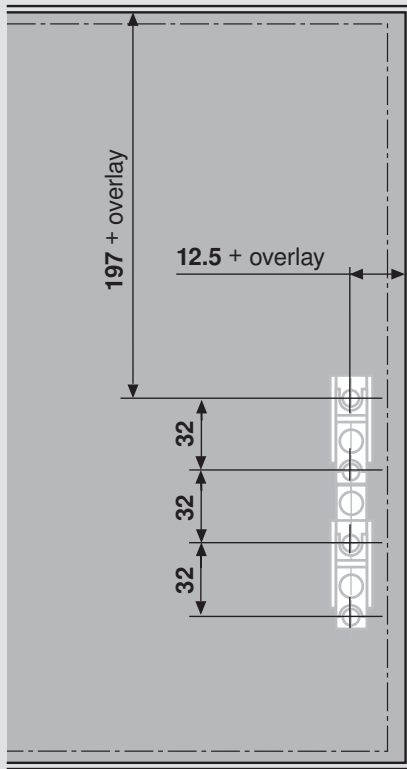


The included #7 x 35 (1-3/8") wood screws are required in the five holes marked in orange.



**NOTE:** Face frame cabinets must be blocked-out on the sides flush with the frame

## Arm assembly mounting plate location

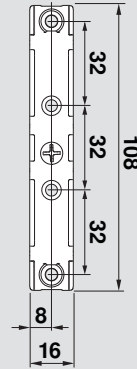


Minimum 5 side reveal when adjacent to wall

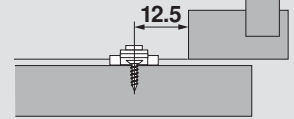
**NOTE:** Attach mounting plate with four 606N or 606P wood screws for wood doors or 7072A for wide aluminum doors

## Arm assembly mounting plate choices

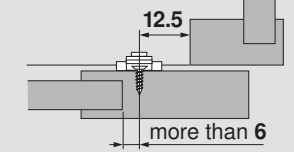
### Mounting plate



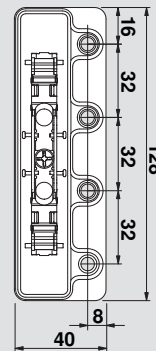
### Slab door



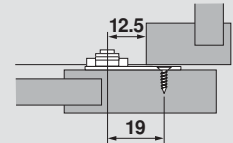
### Five-piece door



### Mounting plate with bracket for large overlay five-piece doors



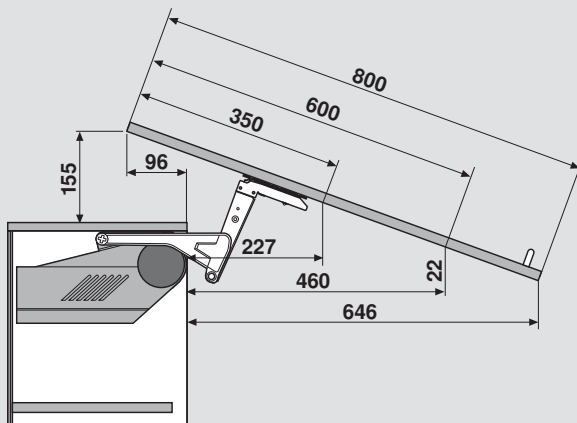
### Five-piece door



**NOTE:** Hole locations offset by 19 (example: 12.5 + overlay - 19 = hole location from side)

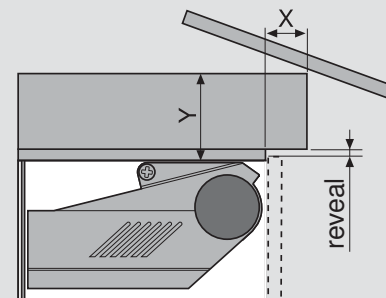
## Door and Hardware Clearance

### Door protrusion for common cabinet heights



**NOTE:** Based on 19 panel thickness and panel overlay

### Crown molding clearance



Reveal	Maximum X	Maximum Y
3 (1/8")	35 (1-3/8")	101 (4")
2 (1/16")	31 (1-1/4")	101 (4")
1.5 (1/16")	28 (1-1/8")	101 (4")

Follow the assembly instructions on page 30



### Step 1 – Select the Required Lift Mechanism Set

#### Using the charts

Each chart covers three different lift mechanisms (nine total). To select the required lift mechanism set, find the cabinet height on the left side of the chart, then go across to the range that contains the weight of your door in pounds and ounces. Follow that column to the top orange box to get the part number for the lift mechanism set required for your application.

**NOTE:** Part numbers in **ORANGE**, pounds and millimeters are **bold**

Cabinet height		Door weight – lb/oz		
inch	mm	20S2A00.N5	20S2B00.N5	20S2C00.N5
14	349 – 359	4/6 – 10/5	10/6 – 20/11	20/12 – 23/2
	360 – 364	4/6 – 10/5	10/6 – 20/11	20/12 – 23/10
	365 – 374	4/6 – 10/5	10/6 – 20/3	20/4 – 23/3
15	375 – 384	4/6 – 10/5	10/6 – 20/3	20/4 – 24/11
	385 – 389	4/6 – 10/5	10/6 – 20/3	20/4 – 24/5
	390 – 394	4/6 – 10/5	10/6 – 19/10	19/11 – 25/5
16	395 – 399	4/6 – 10/5	10/6 – 19/10	19/11 – 25/13
	400 – 409	5/0 – 9/11	9/12 – 19/10	19/11 – 26/7
	410 – 414	5/0 – 9/11	9/12 – 19/10	19/11 – 26/15
17	415 – 424	5/0 – 9/11	9/12 – 19/2	19/3 – 27/8
	425 – 434	5/0 – 9/11	9/12 – 19/2	19/3 – 28/0
	435 – 439	5/0 – 9/11	9/12 – 19/2	19/3 – 28/10
18	440 – 444	5/0 – 9/11	9/12 – 18/8	18/9 – 28/10
	445 – 449	5/0 – 9/11	9/12 – 18/8	18/9 – 29/2
	450 – 459	5/0 – 9/3	9/4 – 18/8	18/9 – 29/11
19	460 – 464	5/0 – 9/3	9/4 – 18/0	18/1 – 30/3
	465 – 469	5/8 – 9/3	9/4 – 18/0	18/1 – 30/3
	470 – 474	5/8 – 9/3	9/4 – 18/0	18/1 – 30/13
20	475 – 479	5/8 – 9/0	9/1 – 17/7	17/8 – 30/13
	480 – 489	5/8 – 9/0	9/1 – 17/7	17/8 – 31/5
	490 – 494	5/8 – 9/0	9/1 – 17/7	17/8 – 31/15
21	495 – 499	5/8 – 9/0	9/1 – 16/15	17/0 – 31/15
	500 – 514	5/8 – 8/8	8/9 – 16/15	17/0 – 32/7
	515 – 519	5/8 – 8/8	8/9 – 16/5	16/6 – 32/7
22	520 – 525	5/8 – 8/8	8/9 – 16/5	16/6 – 33/0

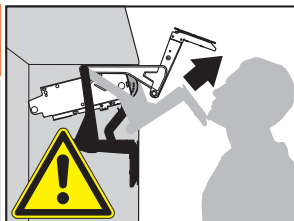
Cabinet height		Door weight – lb/oz		
inch	mm	20S2D00.N5	20S2E00.N5	20S2F00.N5
21	526 – 539	6/9 – 14/8	14/9 – 27/7	27/8 – 36/13
	540 – 544	6/9 – 14/0	14/1 – 27/7	27/8 – 37/7
	545 – 554	6/9 – 14/0	14/1 – 26/15	27/0 – 27/15
22	555 – 559	6/9 – 14/0	14/1 – 26/15	27/0 – 38/8
	560 – 564	6/9 – 14/0	14/1 – 26/5	26/6 – 38/8
	565 – 574	6/9 – 13/7	13/8 – 26/5	26/6 – 39/0
23	575 – 584	6/9 – 13/7	13/8 – 25/13	25/14 – 39/10
	585 – 589	6/9 – 13/7	13/8 – 25/11	25/12 – 40/2
	590 – 594	6/9 – 12/15	13/0 – 25/11	25/12 – 40/2
24	595 – 614	6/9 – 12/15	13/0 – 25/2	25/3 – 40/11
	615 – 634	6/9 – 12/8	12/9 – 24/10	24/11 – 41/3
25	635 – 639	6/9 – 11/15	12/0 – 24/10	24/11 – 41/3
	640 – 649	6/9 – 11/15	12/0 – 24/0	24/1 – 41/3
26	650 – 664	6/9 – 11/15	12/0 – 24/0	24/1 – 41/13
	665 – 675	6/9 – 11/7	11/8 – 23/8	23/9 – 41/13

Cabinet height		Door weight – lb/oz		
inch	mm	20S2G00.N5	20S2H00.N5	20S2I00.N5
27	676 – 684	7/11 – 17/0	17/1 – 29/7	29/8 – 47/5
	685 – 689	7/11 – 17/0	17/1 – 28/13	28/14 – 47/5
	690 – 694	7/11 – 16/7	16/8 – 28/13	28/14 – 47/5
28	695 – 704	7/11 – 16/7	16/8 – 28/11	28/12 – 47/5
	705 – 709	7/11 – 16/7	16/8 – 28/8	28/9 – 47/5
	710 – 714	7/11 – 16/7	16/8 – 28/8	28/9 – 46/11
29	715 – 724	7/11 – 16/0	16/1 – 28/0	28/1 – 46/11
	725 – 729	7/11 – 16/0	16/1 – 28/0	28/1 – 46/3
	730 – 734	7/11 – 16/0	16/1 – 27/15	28/0 – 46/3
30	735 – 739	7/11 – 15/15	16/0 – 27/15	28/0 – 45/10
	740 – 744	7/11 – 15/8	15/9 – 27/7	27/8 – 45/10
	745 – 749	7/11 – 15/8	15/9 – 27/5	27/6 – 45/2
31	750 – 754	8/4 – 15/8	15/9 – 27/5	27/6 – 45/2
	755 – 759	8/4 – 15/8	15/9 – 27/3	27/4 – 45/2
	760 – 764	8/4 – 15/8	15/9 – 27/0	27/1 – 44/8
32	765 – 769	8/4 – 15/8	15/9 – 26/10	27/11 – 44/8
	770 – 774	8/4 – 14/15	15/0 – 26/10	26/11 – 44/8
	775 – 779	8/12 – 14/15	15/0 – 26/10	26/11 – 44/8
33	780 – 784	8/12 – 14/15	15/0 – 26/8	26/9 – 44/8
	785 – 789	8/12 – 14/15	15/0 – 26/8	26/9 – 44/8
	790 – 800	8/12 – 14/13	14/14 – 25/15	26/0 – 44/0

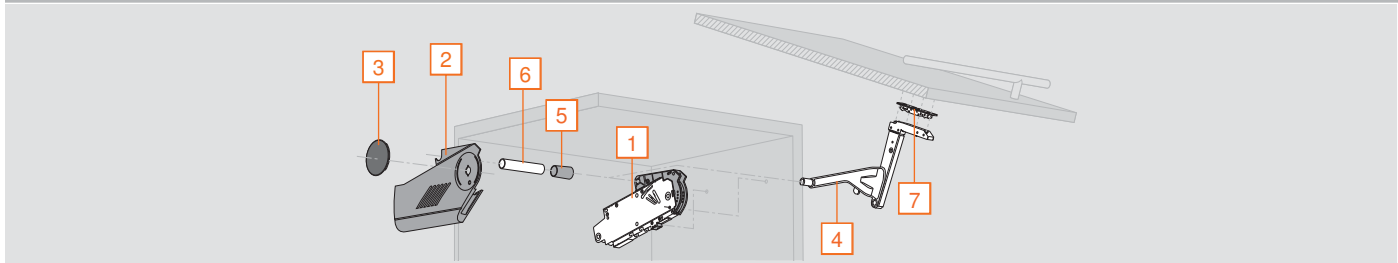


**Warning: Risk of injury  
by arm assembly!**

- Do not push assembly down
- Remove arm assembly from mechanism before installing cabinet

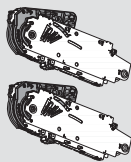


## Required components



## Step 2 – Select the Required Components

### Lift mechanism set



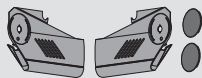
#### Set includes:

- 1** Lift mechanism (qty 2)
- #7 x 35 (1-3/8") wood screw (qty 10)

**NOTE:** For correct ordering of lift mechanism set, use the charts on the previous page

20S2A00.N5	20S2B00.N5	20S2C00.N5
20S2D00.N5	20S2E00.N5	20S2F00.N5
20S2G00.N5	20S2H00.N5	20S2I00.N5

### Cover set



#### Set includes:

- 2** Right and left cover plate
- 3** Non-handed cover cap (qty 2)

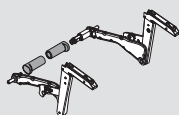
**NOTE:** Light Gray and Dark Gray options available

Light Gray (HGIG) Dark Gray (TGIG)

Part no.

Cover set	20S8000.NA
-----------	------------

### Arm assembly set



#### Set includes:

- 4** Right and left arm assembly
- 5** Stabilizer rod cover cap (qty 2)

Part no.

Arm assembly set	20S3500.06
------------------	------------

### Round stabilizer rod



- 6** Round stabilizer rod

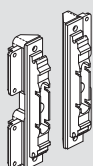
**NOTE:** Cabinets wider internally than 46.5" require a stabilizer rod connector set, see page 78

- Aluminum rod length **1061** (41-3/4"), cut to size
- Length = inside cabinet width minus **129** (5-1/16") for SERVO-DRIVE minus **164** (6-7/6")

Part no.

Round stabilizer rod	20Q1061UN
----------------------	-----------

### Narrow aluminum door hardware set



#### Set includes:

- 7** Narrow aluminum arm assembly mounting plate (qty 2)
- 699.110 – Aluminum screw for narrow aluminum lever arm mounting plate (qty 8)

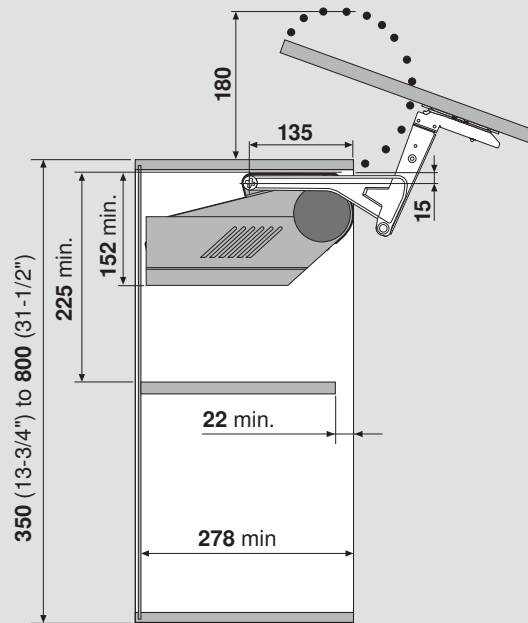
Part no.

Narrow aluminum hardware set	20S4200A
------------------------------	----------

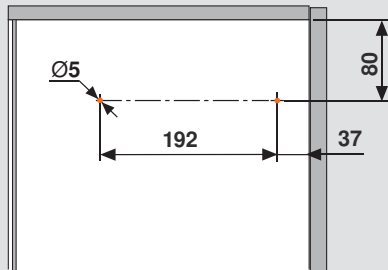
SERVO-DRIVE for AVENTOS available, see page 82 for more information

### Frameless Application

#### Door and hardware clearance



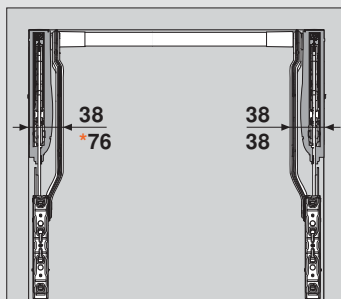
#### Bore for the locating pins



**NOTE:** Locating pin holes shown in orange

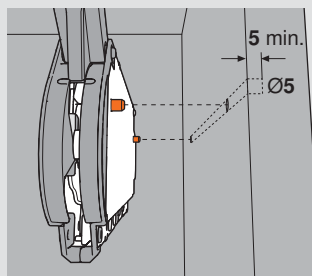
#### Lift mechanism clearance

\*Clearance required for SERVO-DRIVE

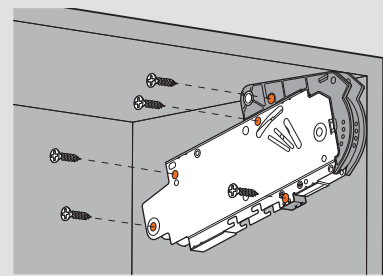


#### Lift mechanism positioning

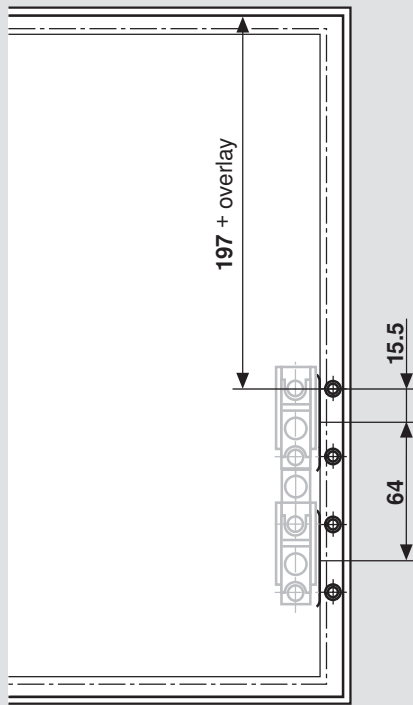
Two locating pins fit into Ø5 x 5 holes bored in the side of cabinet for proper positioning.



The included #7 x 35 (1-3/8") wood screws are required in the five holes marked in orange.



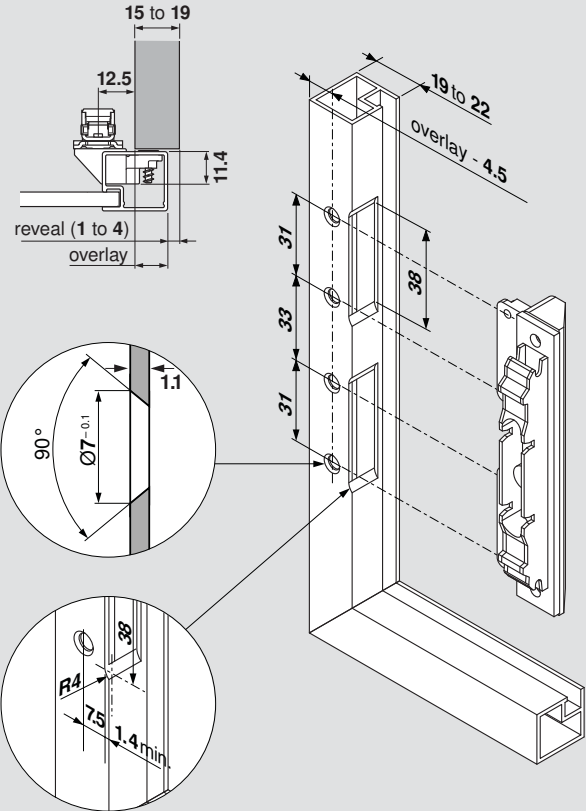
## Arm assembly mounting plate location



Minimum 5 side reveal when adjacent to wall

**NOTE:** Attach mounting plate with four 699.110 screws provided

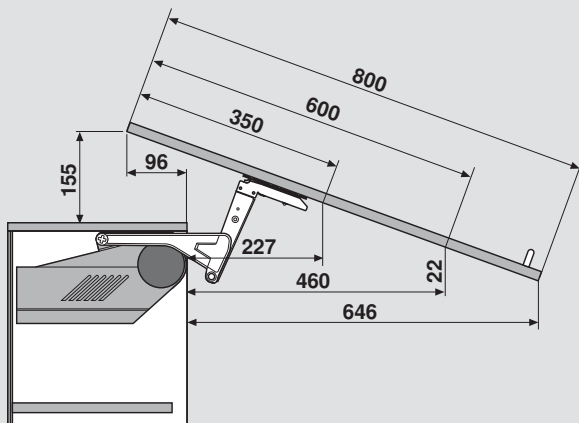
## Arm assembly mounting plate



**NOTE:** When changing material thickness, adjust assembly dimensions accordingly

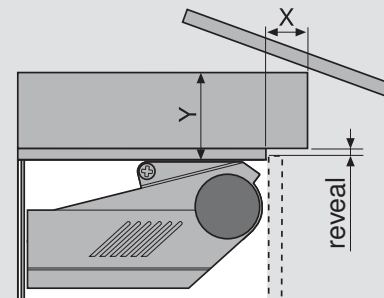
## Door and Hardware Clearance

### Door protrusion for common cabinet heights



**NOTE:** Based on 19 panel thickness and panel overlay

### Crown molding clearance



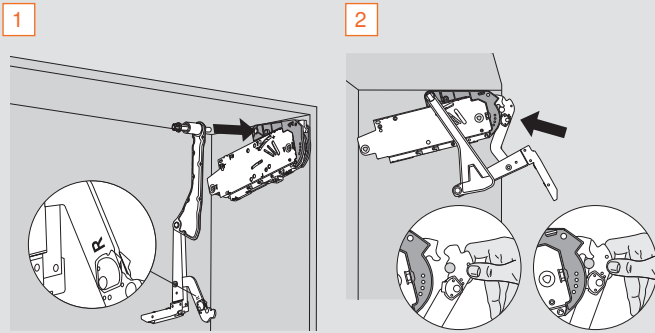
Reveal	Maximum X	Maximum Y
3 (1/8")	35 (1-3/8")	101 (4")
2 (1/16")	31 (1-1/4")	101 (4")
1.5 (1/16")	28 (1-1/8")	101 (4")

Follow the assembly instructions on page 30

### Attaching the arm assembly

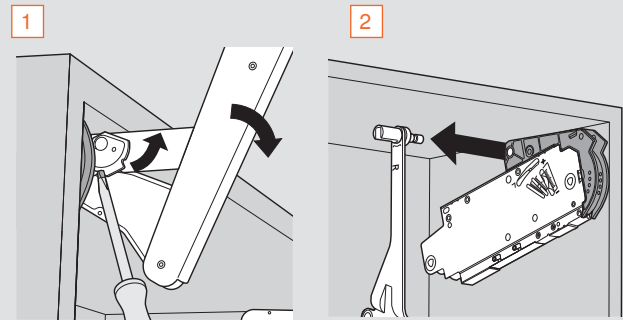
Find the right and left arm assemblies and match them to the correct side of the cabinet.

- 1 Attach the arm assembly to the lift mechanism as shown
- 2 Lift up on the arm assembly to lock into place



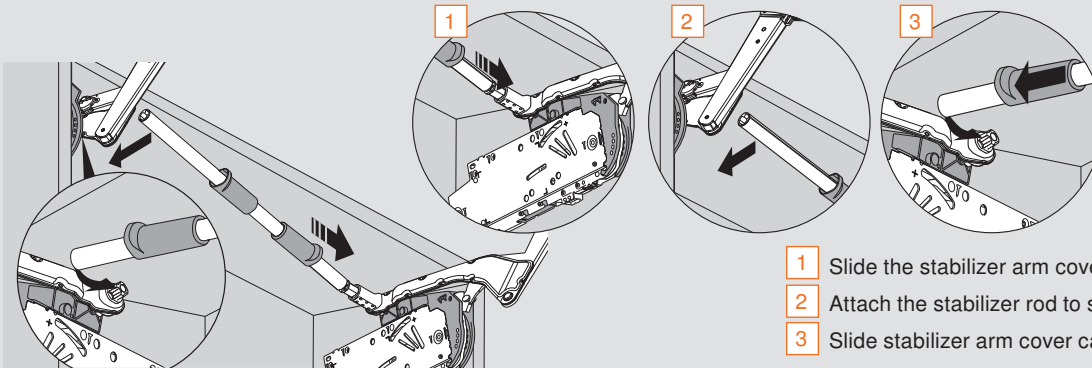
### Removing the arm assembly

- 1 Insert screw driver behind notch in locking cam and pry outward
- 2 Remove arm assembly as shown



### Attaching the stabilizer rod

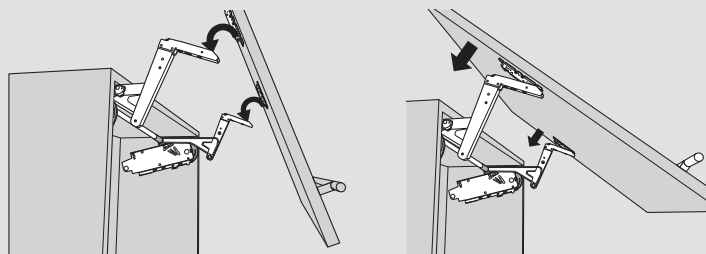
Cut the stabilizer rod to fit the cabinet. Length = interior cabinet width minus **129** (5-1/16")  
After cutting the rod to size follow steps 1, 2, and 3 below.



- 1 Slide the stabilizer arm cover caps onto the rod
- 2 Attach the stabilizer rod to spring loaded arm assembly
- 3 Slide stabilizer arm cover caps over rod on each end

### Attaching the doors

Attach the door using the CLIP mechanism to the arm assembly



**Warning: Risk of injury by arm assembly!**

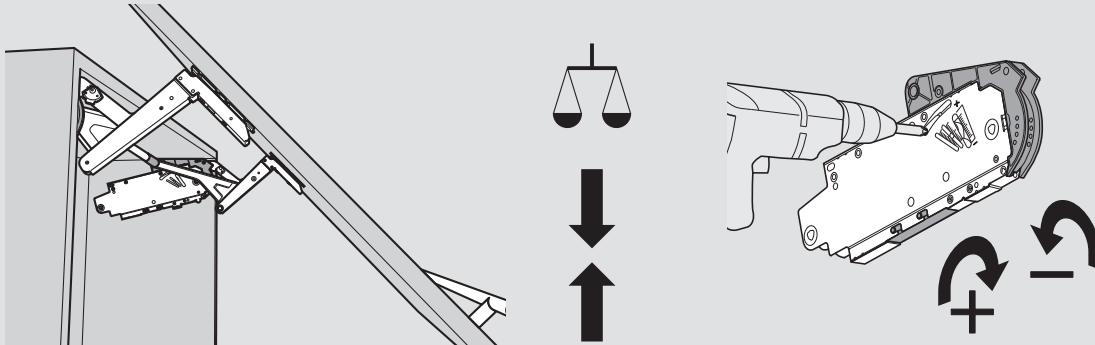
- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet





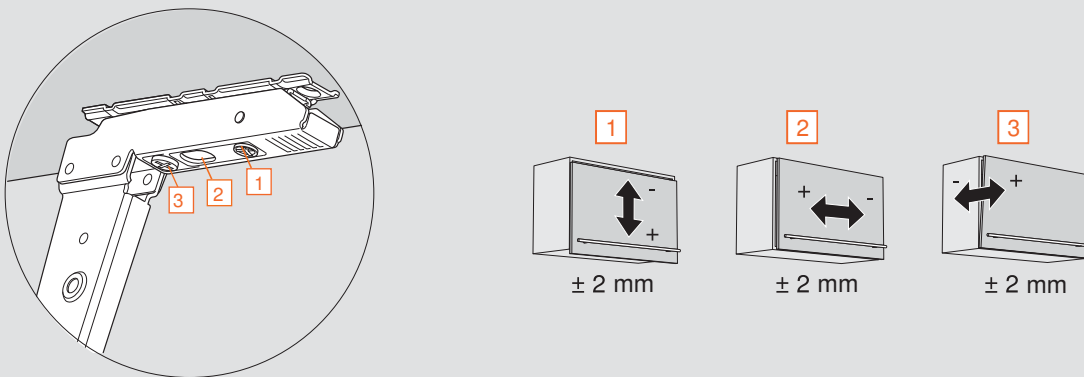
## Adjusting the lift mechanism

Use a screw gun and a #2 x 2 POZI driver bit to adjust the lift mechanism to the desired tension (door weight balanced).



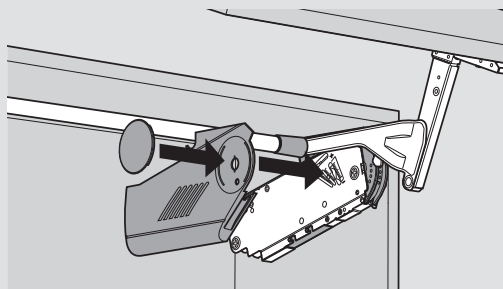
## AVENTOS HS door adjustments

Use a POZI screwdriver to adjust cam adjustments for each of the three-dimensional door adjustments.



## Attaching cover caps

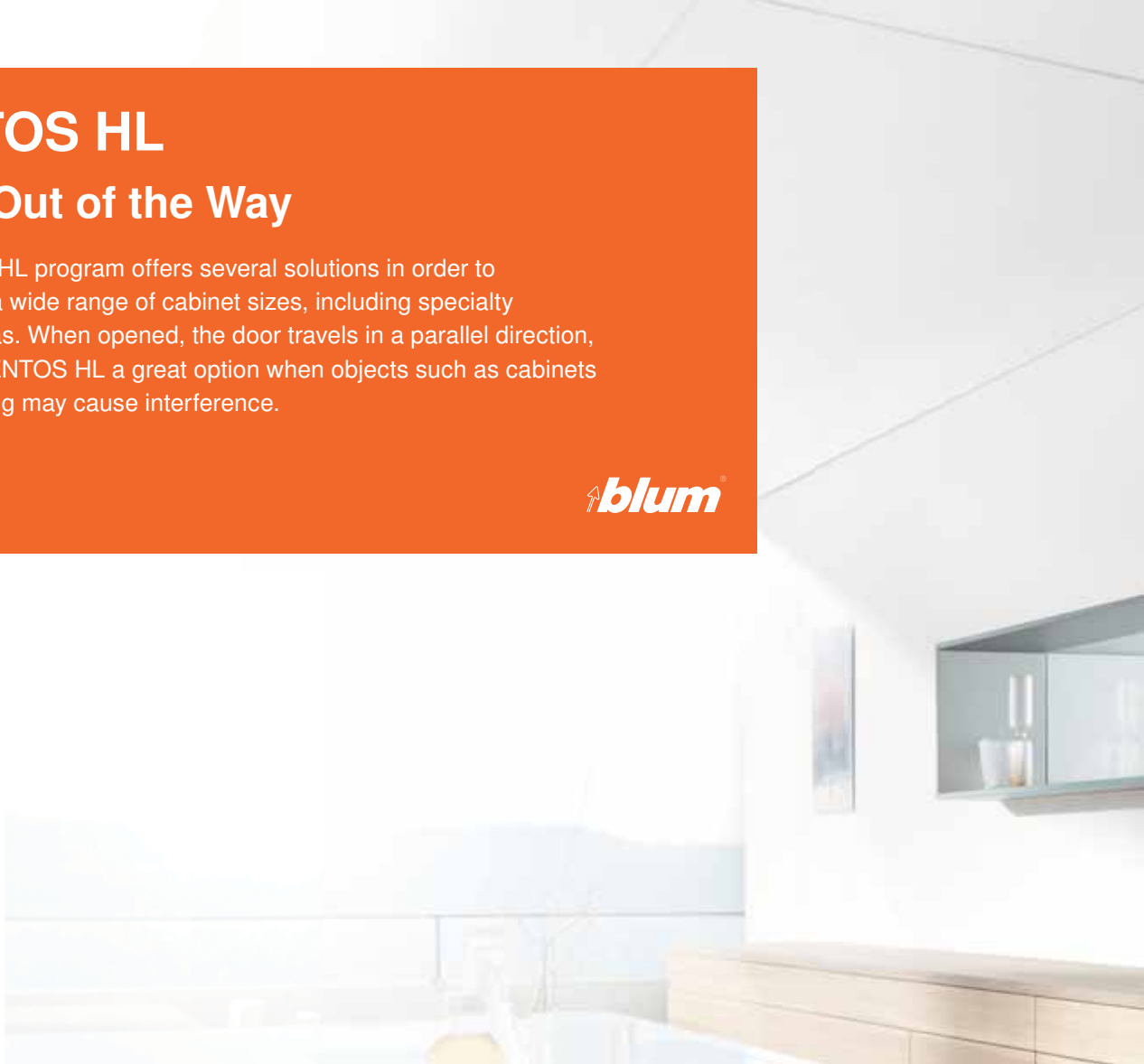
Place the left and right cover plates over the appropriate lift mechanisms and snap them in place.



# AVENTOS HL

## Up and Out of the Way

The AVENTOS HL program offers several solutions in order to accommodate a wide range of cabinet sizes, including specialty application areas. When opened, the door travels in a parallel direction, making the AVENTOS HL a great option when objects such as cabinets or crown molding may cause interference.



### Numerous Design Options

AVENTOS HL is perfect for use in wall cabinets, a pantry, or below another AVENTOS cabinet. On the countertop it can be used for an appliance garage.



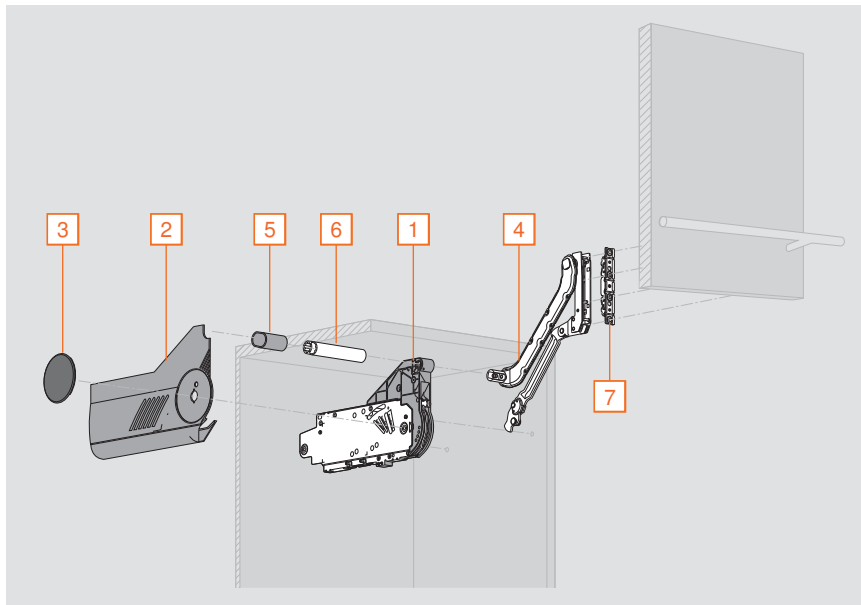
#### Easy Installation and Adjustment

The three-dimensional adjustment feature enables doors to be precisely aligned during installation and tolerances to be maintained with ease.



#### The Motion Inside

The amount of technology and components placed into each lift mechanism are what provide the unparalleled smooth operation of AVENTOS.



- Suited for wall cabinets and/or as an appliance garage application
- For both frameless and face frame applications
- Cabinet height from **300** (11-13/16") to **580** (22-13/16")
- Cabinet width from **381** (15") to **1828** (72")
- Interior cabinet depth minimum of **278** (10-15/16")
- Closes silently and effortlessly with BLUMOTION
- Simple, virtually tool-free assembly and easy adjustment
- Optional: SERVO-DRIVE for AVENTOS



**Warning: Risk of injury by spring-loaded lever arm!**

- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet



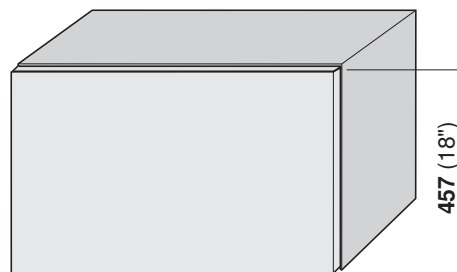
### Step 1 – Determine the Required Hardware Based on Application

Find the required cabinet height in the first column. This will give you the required arm assembly. Continue right in that row to find the mechanism that works for the weight of your door.

#### Example:

Cabinet height of **457** (18") = arm assembly 20L3800.06

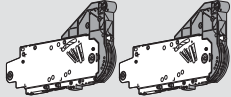

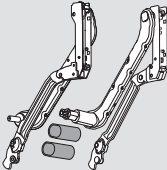

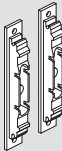
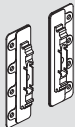
Door weight of **10 lb 5 oz** = lift mechanism 20L2500.N5



Door weight including handle = **10 lb 5 oz**

Cabinet height	Min. opening required	Arm assembly	Lift mechanism (door weight – lb/oz)				
			20L2100.N5	20L2300.N5	20L2500.N5	20L2700.N5	20L2900.N5
11-13/16" – 13-3/4"	<b>262</b> (10-5/16")	<b>20L3200.06</b>	2 /12 – 8 /7	8 /8 – 13 /7	13 /8 – 25 /4	25 /5 – 44 /0	–
13-13/16" – 15-11/16"	<b>312</b> (12-5/16")	<b>20L3500.06</b>	2 /12 – 4 /10	4 /11 – 10 /2	10 /3 – 18 /10	18 /11 – 28 /4	28 /5 – 44 /0
15-3/4" – 21-5/8"	<b>362</b> (14-1/4")	<b>20L3800.06</b>	–	3 /13 – 6 /13	6 /14 – 13 /11	13 /12 – 24 /7	24 /8 – 44 /0
17-11/16" – 22-13/16"	<b>412</b> (16-1/4")	<b>20L3900.06</b>	–	2 /3 – 3 /4	3 /5 – 10 /6	10 /7 – 19 /3	19 /4 – 36 /5

## Step 2 – Select the Required Components

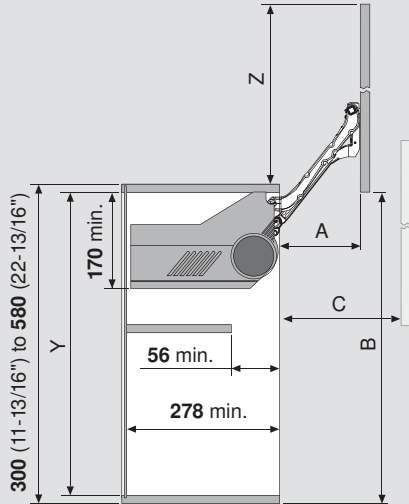
Lift mechanism set			
	<b>Set includes:</b> <div><div>1</div>Lift mechanism (qty 2)</div> <div><div>■</div>#7 x 35 (1-3/8") wood screw (qty 10)</div>	<b>NOTE:</b> It is recommended to use the more powerful lift mechanism for overlapping areas	Part no.
			20L2100.N5
			20L2300.N5
			20L2500.N5
			20L2700.N5
			20L2900.N5
Cover set			
	<b>Set includes:</b> <div><div>2</div>Right and left cover plate</div> <div><div>3</div>Non-handed cover cap (qty 2)</div>	<b>NOTE:</b> Light Gray and Dark Gray options available <div><div></div>Light Gray (HGIG)</div> <div><div></div>Dark Gray (TGIG)</div>	Part no.
		Cover set	20L8000.N1
Arm assembly set			
	<b>Set includes:</b> <div><div>4</div>Right and left arm assembly</div> <div><div>5</div>Stabilizer rod cover cap (qty 2)</div>	<b>Cabinet height range</b>	Part no.
		300 (11-13/16") – 349 (13-3/4")	20L3200.06
		350 (13-13/16") – 399 (15-13/16")	20L3500.06
		400 (15-3/4") – 550 (21-5/8")	20L3800.06
		450 (17-11/16") – 580 (22-13/16")	20L3900.06
Oval stabilizer rod			
	<div><div>6</div>Oval stabilizer rod</div> <b>NOTE:</b> Cabinets wider internally than 46.5" require an stabilizer rod connector set, see page 78	<div><div>■</div>Aluminum rod length 1061 (41-3/4"), cut to size</div> <div><div>■</div>Length = inside cabinet width minus 129 (5-1/16") for SERVO-DRIVE minus 164 (6-7/16")</div>	Part no.
		Oval stabilizer rod	20Q1061UA
Wood or wide aluminum door hardware set			
	<b>Set includes:</b> <div><div>7</div>Arm assembly mounting plate (qty 2)</div>		Part no.
		Wood or wide aluminum hardware set	20S4200
		Installation screw for wood doors	606N or 606P
		Installation screw for wide aluminum doors	7072A
Mounting plate with bracket set			
	<b>Set includes:</b> <div><div>■</div>Right and left mounting plate with bracket</div>	For use with large overlay five-piece doors	Part no.
		Mounting plate with bracket set	20S4F01

SERVO-DRIVE for AVENTOS available, see page 82 for more information



### Frameless Application

#### Door and hardware clearance

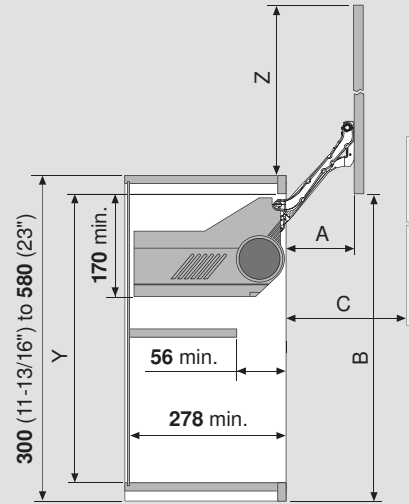


Arm assembly	Cabinet height range	Minimum Y	A	B	C	Z
20L3200.06	300 (11-13/16") – 349 (13-3/4")	262	114	257*	159	264*
20L3500.06	350 (13-13/16") – 399 (15-13/16")	312	146	345*	209	352*
20L3800.06	400 (15-3/4") – 550 (21-5/8")	362	178	433*	259	440*
20L3900.06	450 (17-11/16") – 580 (22-13/16")	412	210	522*	310	529*

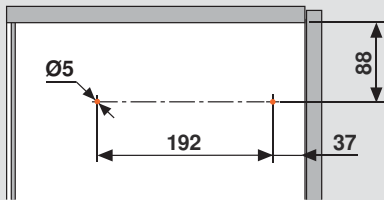
\*Based on top and bottom reveals of 0 – B and Z dimensions can be  $\pm 15$  due to range of adjustment, overpush and accuracy of installation

### Face Frame Application

#### Door and hardware clearance



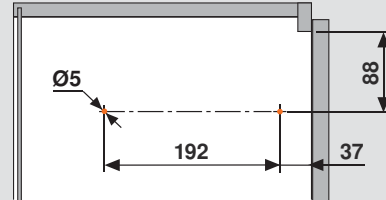
#### Bore for the locating pins



**NOTE:** Locating pin holes shown in orange

#### Bore for the locating pins

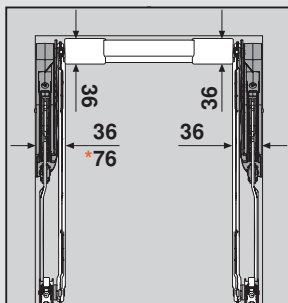
See page 89 for optional face frame mounting bracket or block-out side flush with frame.



**NOTE:** Locating pin holes shown in orange

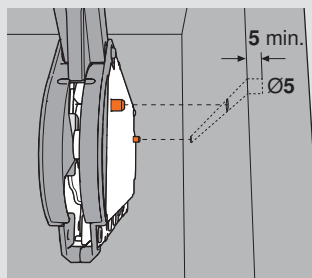
#### Lift mechanism clearance

\*Clearance required for SERVO-DRIVE

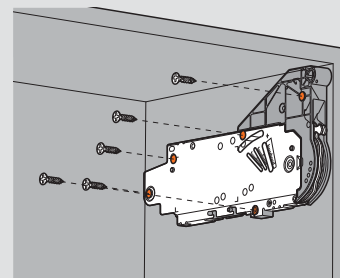


#### Lift mechanism positioning

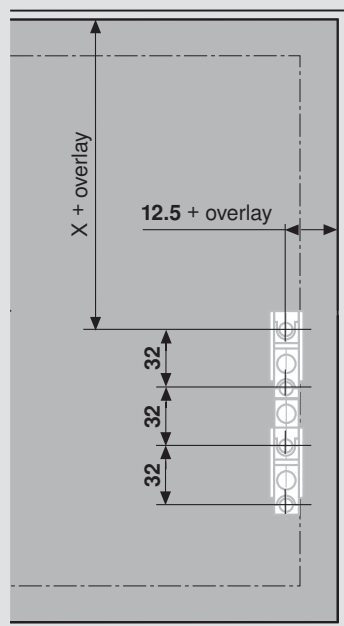
Two locating pins fit into  $\text{Ø}5 \times 5$  holes bored in the side of cabinet for proper positioning.



The included #7 x  $35$  (1-3/8") wood screws are required in the five holes marked in orange.



## Arm assembly mounting plate location



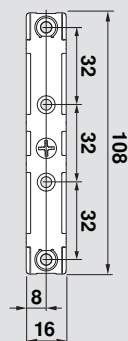
Minimum 5 side reveal when adjacent to wall

**NOTE:** Dimensions remain the same for frameless and face frame applications. Attach mounting plate with four 606N or 606P wood screw for wood doors or 7072A for wide aluminum doors

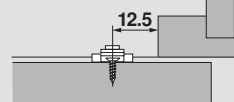
Arm assembly	X
20L3200.06	153
20L3500.06	203
20L3800.06	253
20L3900.06	303

## Arm assembly mounting plate choices

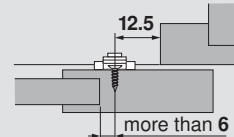
### Mounting plate



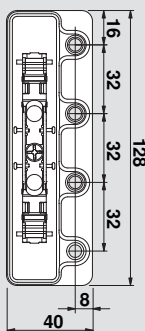
### Slab door



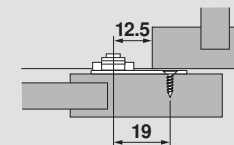
### Five-piece door



### Mounting plate with bracket for large overlay five-piece doors



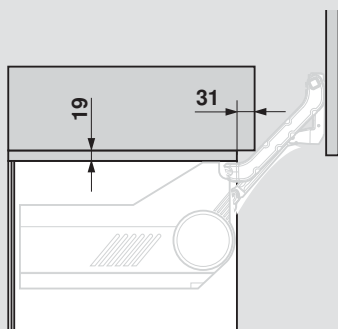
### Five-piece door



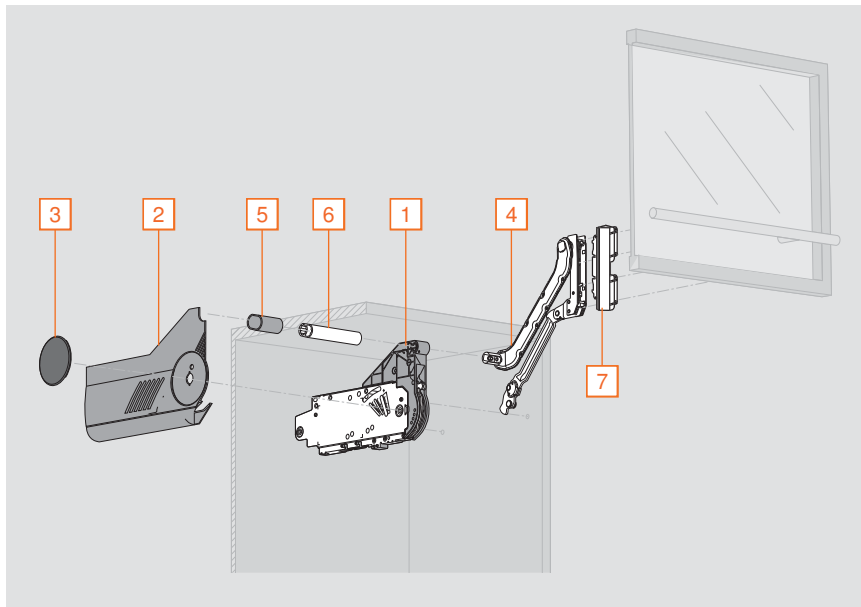
**NOTE:** Hole locations offset by 19 (example: 12.5 + overlay - 19 = hole location from side)

## Door and Hardware Clearance

### Decorative molding clearance



Follow the assembly instructions on page 42

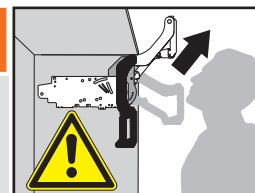


- Suited for wall cabinets and/or as an appliance garage application
- For both frameless and face frame applications
- Cabinet height from **300** (11-13/16") to **580** (22-13/16")
- Cabinet width from **381** (15") to **1828** (72")
- Interior cabinet depth minimum of **278** (10-15/16")
- Closes silently and effortlessly with BLUMOTION
- Simple, virtually tool-free assembly and easy adjustment
- Optional: SERVO-DRIVE for AVENTOS



**Warning: Risk of injury by spring-loaded lever arm!**

- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet



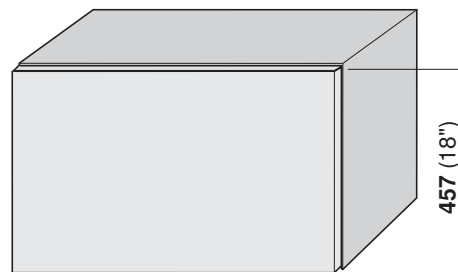
### Step 1 – Determine the Required Hardware Based on Application

Find the required cabinet height in the first column. This will give you the required arm assembly. Continue right in that row to find the mechanism that works for the weight of your door.

#### Example:

Cabinet height of **457** (18") = arm assembly 20L3800.06

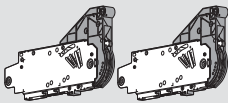
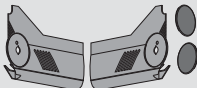
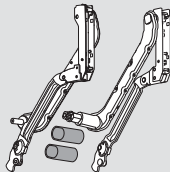

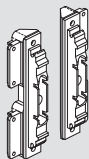
Door weight of **10 lb 5 oz** = lift mechanism 20L2500.N5



Door weight including handle = **10 lb 5 oz**

Cabinet height	Min. opening required	Arm assembly	Lift mechanism (door weight – lb/oz)				
			20L2100.N5	20L2300.N5	20L2500.N5	20L2700.N5	20L2900.N5
11-13/16" – 13-3/4"	10-5/16"	20L3200.06	2 / 12 – 8 / 7	8 / 8 – 13 / 7	13 / 8 – 25 / 4	25 / 5 – 44 / 0	–
13-13/16" – 15-11/16"	12-5/16"	20L3500.06	2 / 12 – 4 / 10	4 / 11 – 10 / 2	10 / 3 – 18 / 10	18 / 11 – 28 / 4	28 / 5 – 44 / 0
15-3/4" – 21-5/8"	14-1/4"	20L3800.06	–	3 / 13 – 6 / 13	6 / 14 – 13 / 11	13 / 12 – 24 / 7	24 / 8 – 44 / 0
17-11/16" – 22-13/16"	16-1/4"	20L3900.06	–	2 / 3 – 3 / 4	3 / 5 – 10 / 6	10 / 7 – 19 / 3	19 / 4 – 36 / 5

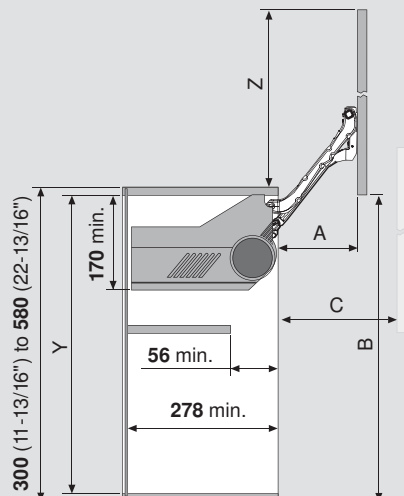
## Step 2 – Select the Required Components

Lift mechanism set			
	<b>Set includes:</b> <div>1</div> Lift mechanism (qty 2) <div>■</div> #7 x 35 (1-3/8") wood screw (qty 10)	<b>NOTE:</b> It is recommend to use the more powerful lift mechanism for overlapping areas	
			Part no.
			20L2100.N5
			20L2300.N5
			20L2500.N5
	20L2700.N5		
			20L2900.N5
Cover set			
	<b>Set includes:</b> <div>2</div> Right and left cover plate <div>3</div> Non-handed cover cap (qty 2)	<b>NOTE:</b> Light Gray and Dark Gray options available <div><div></div> Light Gray (HGIG)</div> <div><div></div> Dark Gray (TGIG)</div>	
			Part no.
		Cover set	20L8000.N1
Arm assembly set			
	<b>Set includes:</b> <div>4</div> Right and left arm assembly <div>5</div> Stabilizer rod cover cap (qty 2)	<b>Cabinet height range</b>	
			Part no.
		300 (11-13/16") – 349 (13-3/4")	20L3200.06
		350 (13-13/16") – 399 (15-13/16")	20L3500.06
		400 (15-3/4") – 550 (21-5/8")	20L3800.06
450 (17-11/16") – 580 (22-13/16")	20L3900.06		
Oval stabilizer rod			
	<div>6</div> Oval stabilizer rod  <b>NOTE:</b> Cabinets wider internally than 46.5" require a stabilizer rod connector set, see page 78	<div>■</div> Aluminum rod length <b>1061</b> (41-3/4"), cut to size	
		<div>■</div> Length = inside cabinet width minus 129 (5-1/16") for SERVO-DRIVE minus <b>164</b> (6-7/16")	
			Part no.
	Oval stabilizer rod		20Q1061UA
Narrow aluminum door hardware set			
	<b>Set includes:</b> <div>■</div> Narrow aluminum arm mounting plate (qty 2)  <div>7</div> 699.110 – Aluminum screw for narrow aluminum lever arm mounting plate (qty 8)		
			Part no.
		Narrow aluminum hardware set	20S4200A

SERVO-DRIVE for AVENTOS available, see page 82 for more information

### Frameless Application

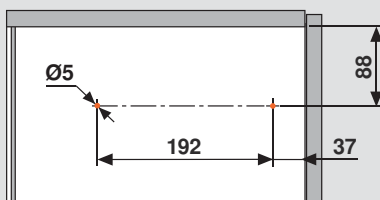
#### Door and hardware clearance



Arm assembly	Cabinet height range	Minimum Y	A	B	C	Z
20L3200.06	300 (11-13/16" ) – 349 (13-3/4")	262	114	257*	159	264*
20L3500.06	350 (13-13/16") – 399 (15-13/16")	312	146	345*	209	352*
20L3800.06	400 (15-3/4") – 550 (21-5/8")	362	178	433*	259	440*
20L3900.06	450 (17-11/16") – 580 (22-13/16")	412	210	522*	310	529*

\*Based on top and bottom reveals of 0 – B and Z dimensions can be  $\pm 15$  due to range of adjustment, overpush and accuracy of installation

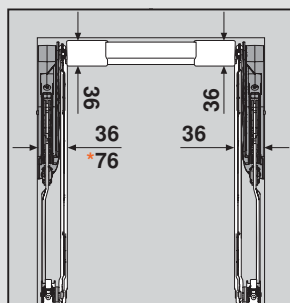
#### Bore for the locating pins



**NOTE:** Locating pin holes shown in orange

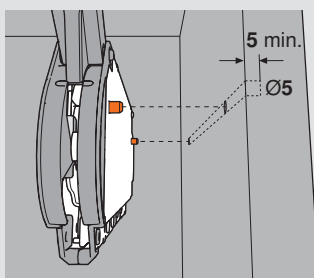
#### Lift mechanism clearance

\*Clearance required for SERVO-DRIVE

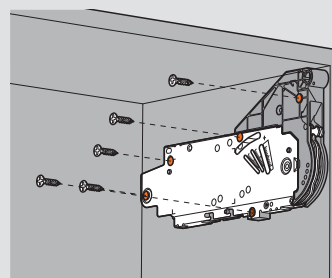


#### Lift mechanism positioning

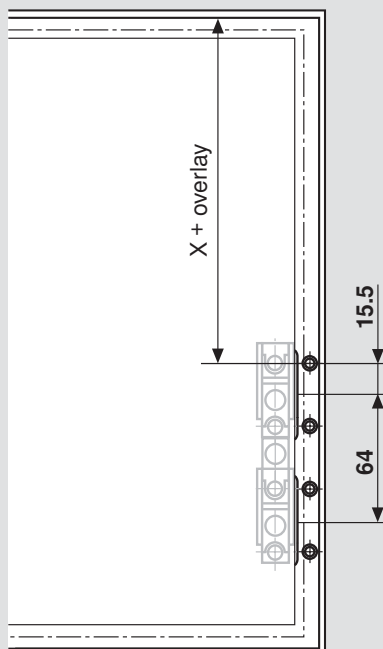
Two locating pins fit into Ø5 x 5 holes bored in the side of cabinet for proper positioning.



The included #7 x 35 (1-3/8") wood screws are required in the five holes marked in orange.



## Arm assembly mounting plate location

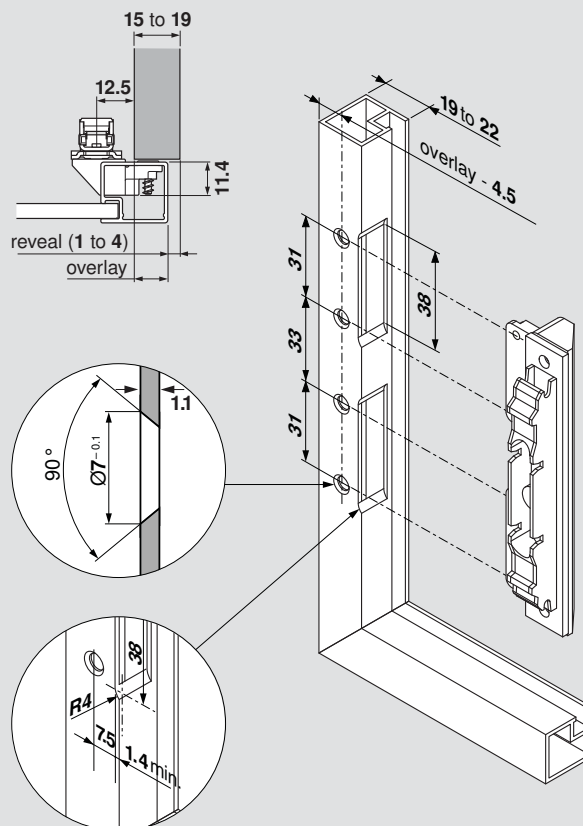


Minimum 5 side reveal when adjacent to wall

**NOTE:** Attach mounting plate with four 699.110 screws provided

Arm assembly	X
20L3200.06	153
20L3500.06	203
20L3800.06	253
20L3900.06	303

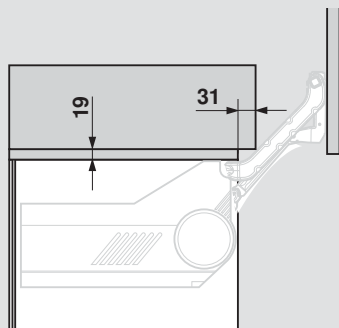
## Hinge and mounting plate attachment



**NOTE:** When changing material thickness, adjust assembly dimensions accordingly

## Door and Hardware Clearance

### Decorative molding clearance



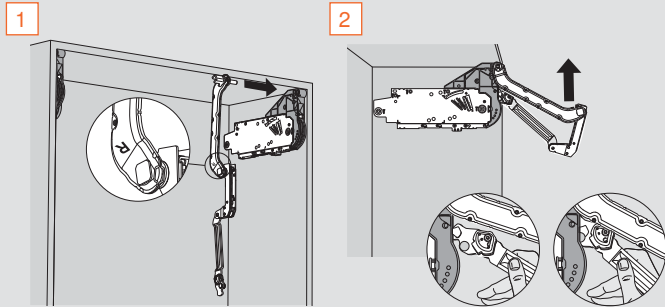
Follow the assembly instructions on page 42



### Attaching the arm assembly

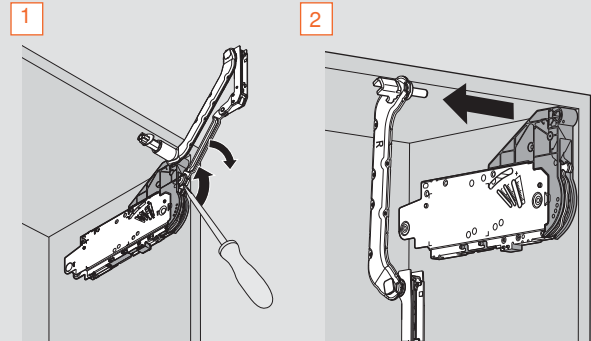
Find the right and left arm assemblies and match them to the correct side of the cabinet.

- 1 Attach the arm assembly to the lift mechanism as shown
- 2 Lift up on the arm assembly to lock into place



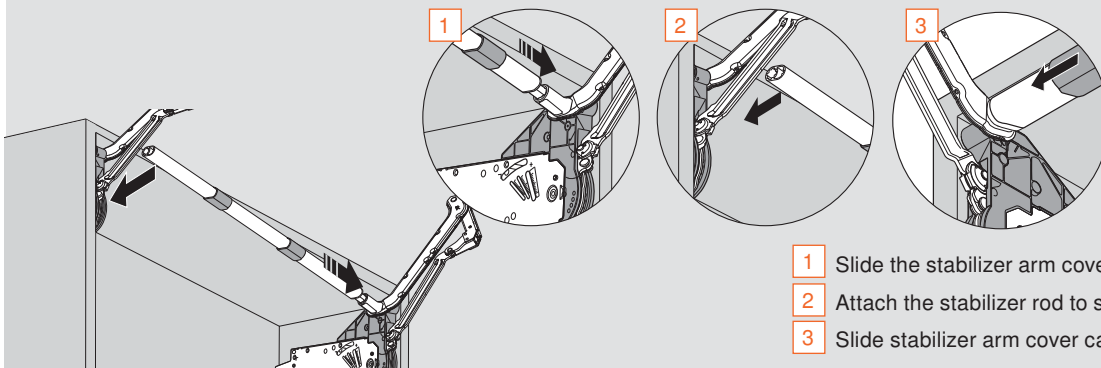
### Removing the arm assembly

- 1 Insert screw driver behind notch in locking cam and pry outward
- 2 Remove arm assembly as shown



### Attaching the stabilizer rod

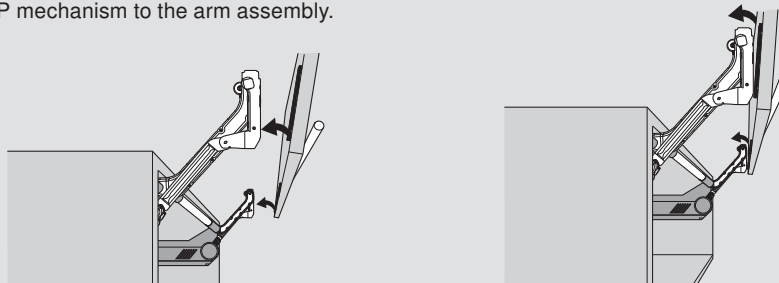
Cut the stabilizer rod to fit the cabinet. Length = interior cabinet width minus **129** (5-1/16"). After cutting the rod to size follow steps 1, 2, and 3 below.



- 1 Slide the stabilizer arm cover caps onto the rod
- 2 Attach the stabilizer rod to spring loaded arm assembly
- 3 Slide stabilizer arm cover caps over rod on each end

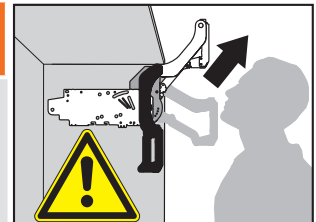
### Attaching AVENTOS HL doors

Attach the door using the CLIP mechanism to the arm assembly.



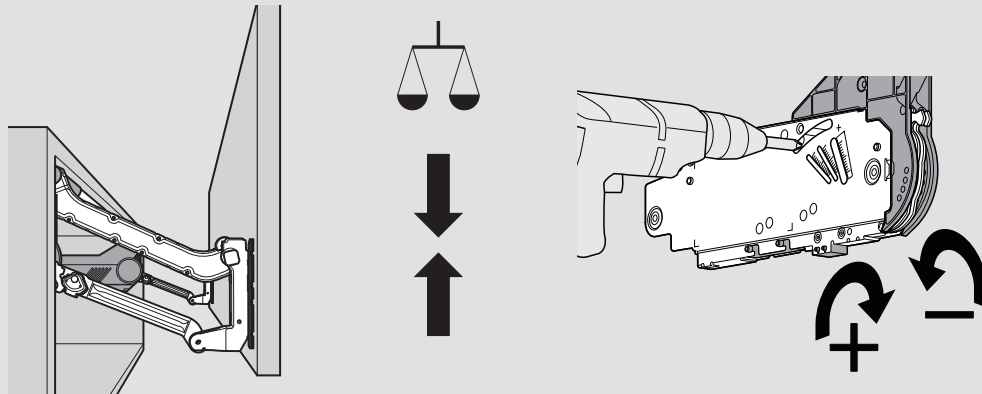
**Warning: Risk of injury by spring-loaded arm assembly!**

- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet



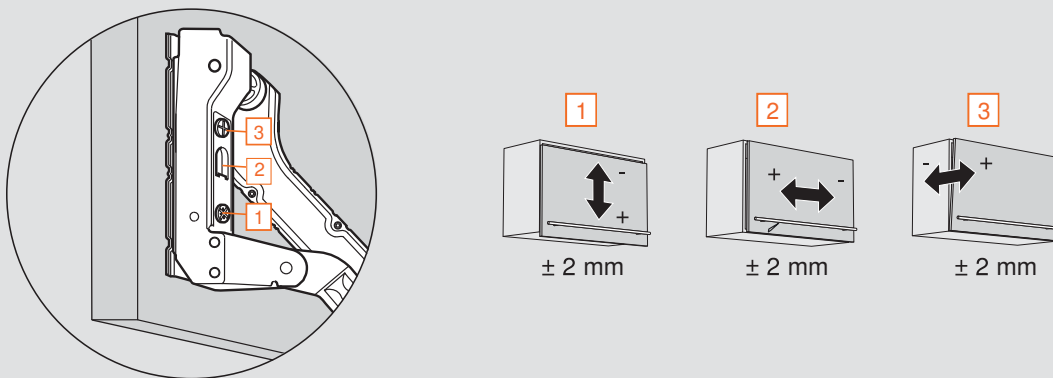
## Adjusting the lift mechanism

Use a screw gun and a #2 x 2 POZI driver bit to adjust the lift mechanism to the desired tension (door weight balanced).



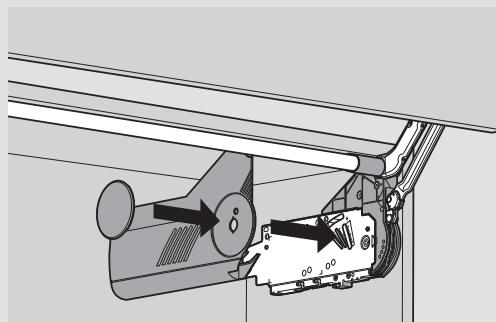
## AVENTOS HL door adjustments

Use a POZI screwdriver to adjust cam adjustments for each of the three-dimensional door adjustments.



## Attaching cover caps

Place the left and right cover plates over the appropriate lift mechanisms and snap them in place.



# AVENTOS HK-S

## Stay Lift for the Smallest of Cabinets

AVENTOS HK-S program has only three lift mechanisms and covers all common door widths and heights. This simplifies planning, ordering and warehousing.



### Numerous Design Options

AVENTOS HK-S can be used in small wall cabinets, above a refrigerator or in a pantry.



#### Easy Installation and Adjustment

The three-dimensional adjustment feature enables doors to be precisely aligned during installation and tolerances to be maintained with ease.



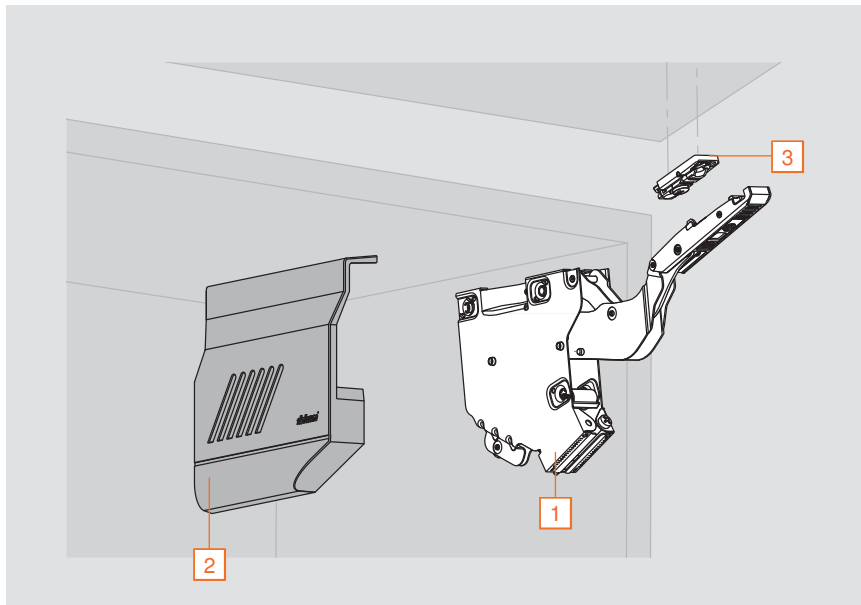
#### The Motion Inside

The amount of technology and components placed into each lift mechanism are what provide the unparalleled smooth operation of AVENTOS.

# AVENTOS



## AVENTOS HK-S Ordering Information for Frameless and Face Frame



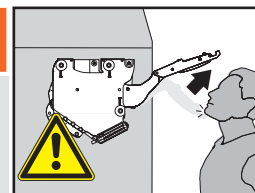
- Suited for wall cabinets and/or above a pantry or refrigerator
- For both frameless and face frame applications
- Cabinet height from **186 (7-3/8")** to **610 (24")**\*
- Cabinet width from **381 (15")** to **1828 (72")**\*
- Interior cabinet depth minimum of **165 (6-1/2")**
- Closes silently and effortlessly with BLUMOTION
- Simple, virtually tool-free assembly and easy adjustment
- No hinges required
- Optional: TIP-ON for AVENTOS

\*Dependent on power factor



### Warning: Risk of injury by spring-loaded lever arm!

- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet



## Step 1 – Determine the Power Factor for the Application



Power factor = cabinet height (inch) x door weight\* (lb)

### Determine power factor

To select the correct lift mechanism for a given application, the power factor must first be calculated by using the formula below. Use the table at the bottom of the page to convert ounces into decimal form for easy calculation.

Power factor = cabinet height multiplied by door weight\*

#### Example:

Cabinet height: 9" (within possible range)

Door weight including twice the handle weight = 5 lb 14 oz (14 oz = .9 lb see chart below)

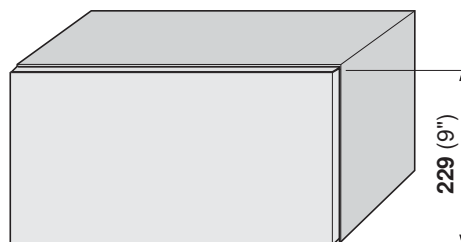
Power factor = 9 x 5.9

Power factor = 53.1

A power factor of 53.1 requires lift mechanism 20K2C00.N1

\*Including twice the handle weight

**NOTE:** AVENTOS planning tools available at [blum.com/configurator](http://blum.com/configurator)



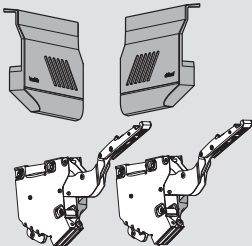
Door weight + twice handle weight = 5 lb 14 oz

Weight conversion chart

oz	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
lb	.1	.1	.2	.3	.3	.4	.4	.5	.6	.6	.7	.8	.8	.9	.9

## Step 2 – Select the Required Components

Lift mechanism set



Set includes:

1

Lift mechanism (qty 2)

2

Cover plate (left and right)

■

#7 x 35 (1-3/8") wood screw (qty 6)

NOTE:

It is recommended to use the more powerful lift mechanism for overlapping areas

NOTE:

Light Gray and Dark Gray options available

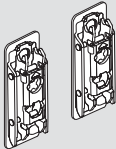
Light Gray (HGIG)

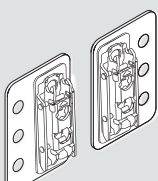
Dark Gray (TGIG)

Power factor range	Opening angle	Part no.
19 – 39	107°	20K2B00.N1
40 – 85	107°	20K2C00.N1
86 – 177	107°	20K2E00.N1

NOTE:

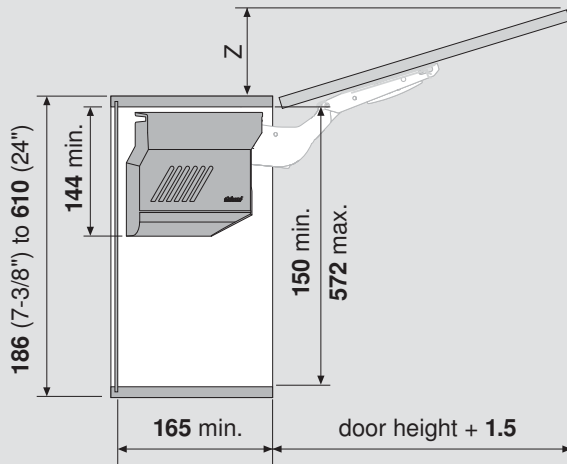
20K2B00.N1 unit contains 1x 20K2A00.N1 (unsprung - no tension adjustment) and 1x 20K2C00.N1

Wood or wide aluminum door mounting plate set		
	<b>Set Requires:</b>	
	<div>3</div> Wood or wide aluminum arm assembly mounting plate (qty 2)	
		Part no.
	Wood or wide aluminum mounting plate	175H3100
	Installation screw for wood doors	606N or 606P
	Installation screw for wide aluminum doors	7072A

Mounting plate with bracket set		
	<b>Set includes:</b> <ul style="list-style-type: none"><li>■ Right and left mounting plate with bracket</li></ul>	For use with large overlay five-piece doors
		Part no.
	Mounting plate with bracket set	175H3F00

**Frameless Application**

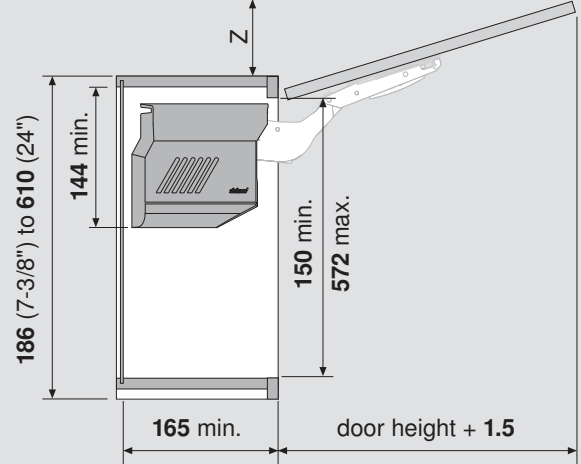
**Door and hardware clearance**



$Z = \text{door height} \times .29 \text{ minus } 15 + \text{door thickness}$

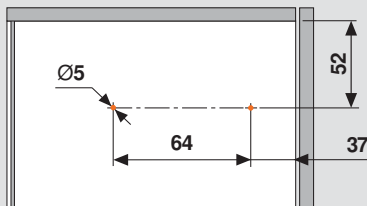
**Face Frame Application**

**Door and hardware clearance**



$Z = \text{door height} \times .29 \text{ minus } 15 + \text{door thickness}$

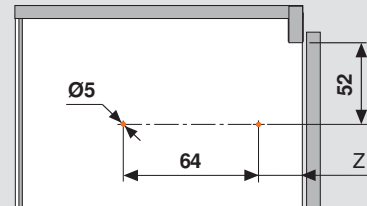
**Bore for the locating pins**



**NOTE:** Locating pin holes shown in orange

**Bore for the locating pins**

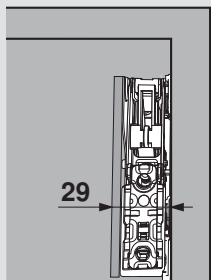
See **page 75** for optional face frame mounting bracket or block-out side flush with frame.



**NOTE:** Locating pin holes shown in orange

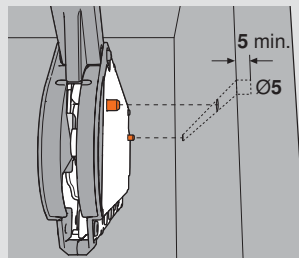
overlay	up to 20	24	26
Z	37	35.5	34.5

**Lift mechanism clearance**

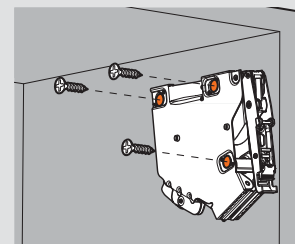


**Lift mechanism positioning**

Two locating pins fit into Ø5 x 5 holes bored in the side of cabinet for proper positioning.

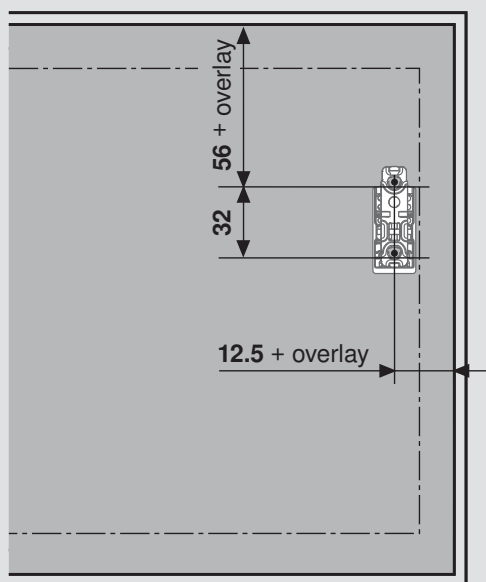


The included #7 x 35 (1-3/8") wood screws are required in the three holes marked in orange.





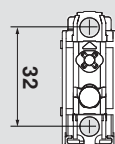
## Arm assembly mounting plate location



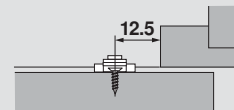
**NOTE:** Attach mounting plate with four 606N or 606P wood screw for wood doors or 7072A for wide aluminum doors

## Arm assembly mounting plate choices

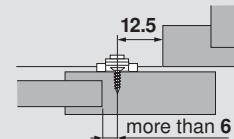
### Mounting plate



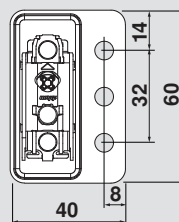
### Slab door



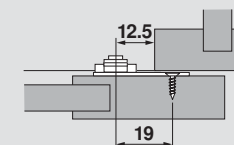
### Five-piece door



### Mounting plate with bracket for large overlay five-piece doors



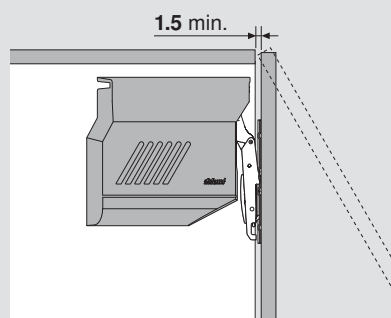
### Five-piece door



**NOTE:** Hole locations offset by 19 (example: 12.5 + overlay - 19 = hole location from side)

## Door and Hardware Clearance

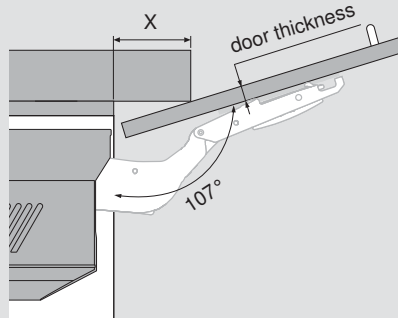
### Minimum gap



**NOTE:** Min gap assumes door radius of 1

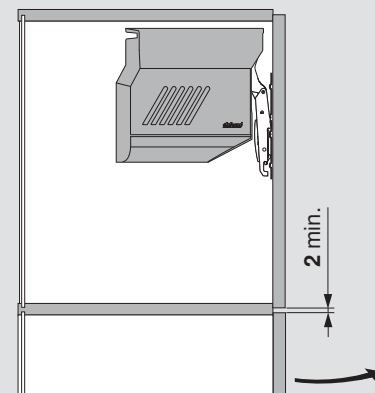
Overlay	up to 20	24	26
gap	1.5	2.5	4

### Decorative molding clearance

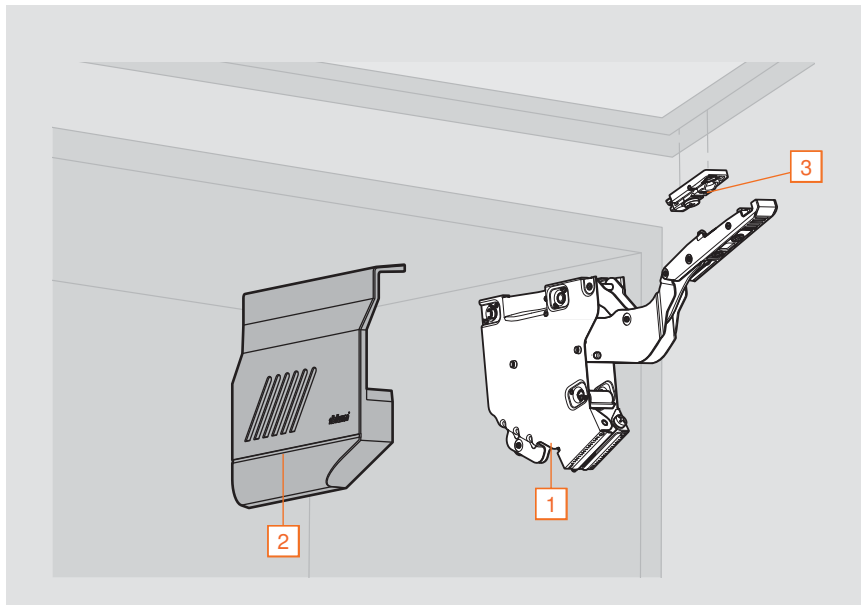


Door thickness	16	19	22	26
maximum X	70	59	49	35

### Minimum bottom reveal



Follow the assembly instructions on page 62



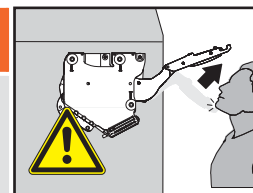
- Suited for wall cabinets and/or above a pantry or refrigerator
- For both frameless and face frame applications
- Cabinet height from **186** (7-3/8") to **610** (24")\*
- Cabinet width from **381** (15") to **1828** (72")\*
- Interior cabinet depth minimum of **165** (6-1/2")
- Closes silently and effortlessly with BLUMOTION
- Simple, virtually tool-free assembly and easy adjustment
- Optional: TIP-ON for AVENTOS

\*Dependent on power factor



### Warning: Risk of injury by spring-loaded lever arm!

- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet



## Step 1 – Determine the Power Factor for the Application



Power factor = cabinet height (inch) x door weight\* (lb)

### Determine power factor

To select the correct lift mechanism for a given application, the power factor must first be calculated by using the formula below. Use the table at the bottom of the page to convert ounces into decimal form for easy calculation.

Power factor = cabinet height multiplied by door weight\*

#### Example:

Cabinet height: 9" (within possible range)

Door weight including twice the handle weight = 5 lb 14 oz (14 oz = .9 lb see chart below)

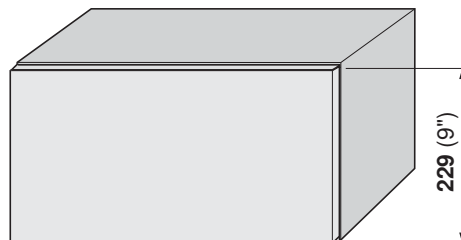
Power factor = 9 x 5.9

Power factor = 53.1

A power factor of 53.1 requires lift mechanism 20K2C00.N1

\*Including twice the handle weight

**NOTE:** AVENTOS planning tools available at [blum.com/configurator](http://blum.com/configurator)



Door weight + twice handle weight = 5 lb 14 oz

Weight conversion chart

oz	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
lb	.1	.1	.2	.3	.3	.4	.4	.5	.6	.6	.7	.8	.8	.9	.9

## Step 2 – Select the Required Components

**Set includes:**

- 1** Lift mechanism (qty 2)
- 2** Right and left cover plate
- #7 x **35** (1-3/8") wood screw (qty 6)

**NOTE:** It is recommended to use the more powerful lift mechanism for overlapping areas

**NOTE:** Light Gray and Dark Gray options available

- Light Gray (HGIG)
- Dark Gray (TGIG)

Power factor range	Opening angle	Part no.
19 – 39	107°	<b>20K2B00.N1</b>
40 – 85	107°	<b>20K2C00.N1</b>
86 – 177	107°	<b>20K2E00.N1</b>

**NOTE:** 20K2B00.N1 unit contains 1x 20K2A00.N1 (unsprung - no tension adjustment) and 1x 20K2C00.N1

**Set includes:**

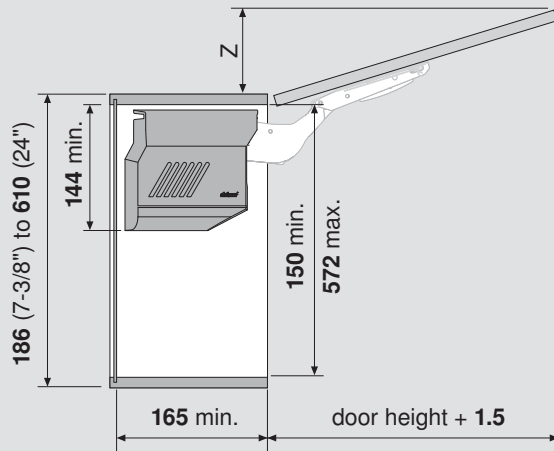
- 3** Narrow aluminum arm assembly mounting plate (qty 2)
- 699.110 – Aluminum screw for mounting plate attachment (qty 4)

Part no.

Narrow aluminum door mounting plate	<b>20K4A00A02</b>
-------------------------------------	-------------------

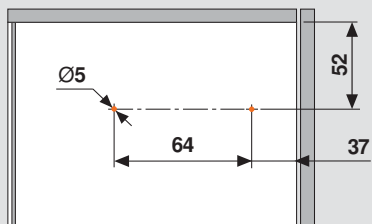
**Door and Hardware Clearance and Positioning**

**Door and hardware clearance**



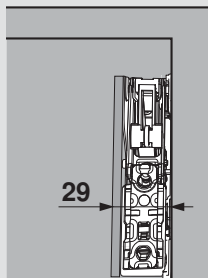
$Z = \text{door height} \times .29 \text{ minus } 15 + \text{door thickness}$

**Bore for the locating pins**



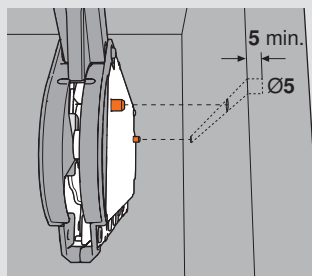
**NOTE:** Locating pin holes shown in orange

**Lift mechanism clearance**

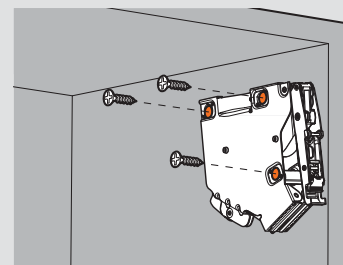


**Lift mechanism positioning**

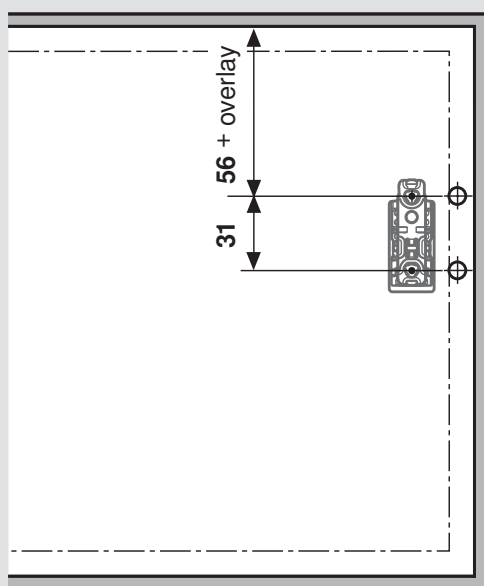
Two locating pins fit into Ø5 x 5 holes bored in the side of cabinet for proper positioning.



The included #7 x 35 (1-3/8") wood screws are required in the three holes marked in orange.

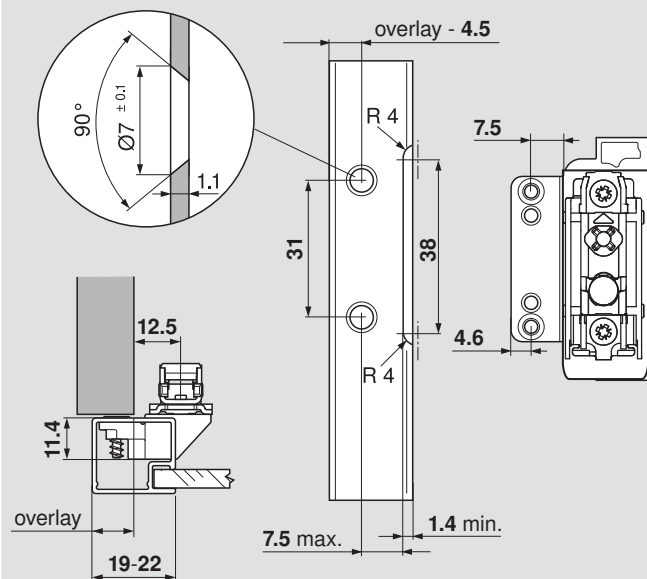


## Telescopic arm mounting plate location



**NOTE:** Attach mounting plate with two 699.110 aluminum screws

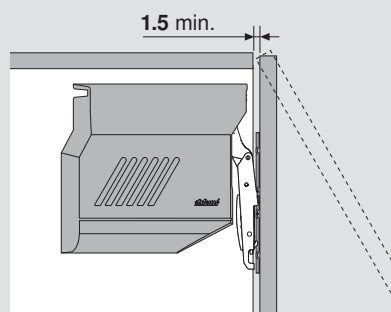
## Hinge and mounting plate attachment



**NOTE:** When changing material thickness, adjust assembly dimensions accordingly

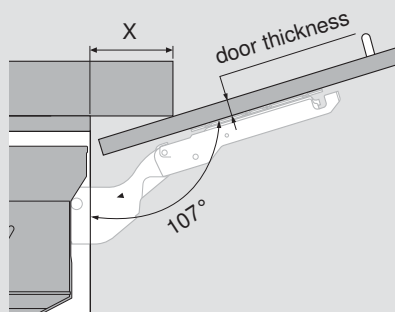
## Door and Hardware Clearance

### Minimum gap



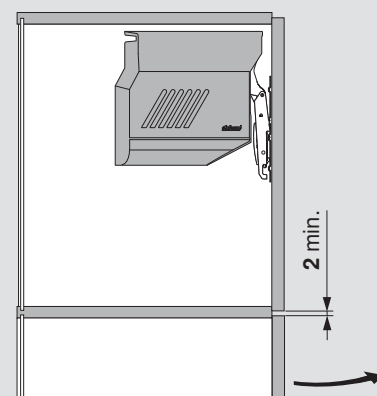
**NOTE:** Min gap assumes door radius of 1

### Decorative molding clearance



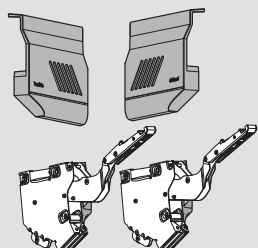
Door thickness	16	19	22	26
maximum X	70	59	49	35

### Minimum bottom reveal



Follow the assembly instructions on page 62

### Lift mechanism set



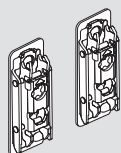
#### Set includes:

- Lift mechanism (qty 2)
- Right and left cover plate
- #7 x 35 mm (1-3/8") wood screw (qty 6)

Power factor	Opening angle	Part no.
19 – 39	107°	20K2B00TNA
40 – 85	107°	20K2C00TNA
86 – 177	107°	20K2E00TNA

**NOTE:** 20K2B00.N1 unit contains 1x 20K2A00.N1 (unsprung - no tension adjustment) and 1x 20K2C00.N1

### Wood or wide aluminum door hardware set



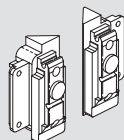
#### Set includes:

- Arm assembly mounting plate (qty 2)

	Part no.
Wood or wide aluminum hardware set	175H3100
Installation screw for wood doors	606N or 606P
Installation screw for wide aluminum doors	7072A

**NOTE:** Refer to page 48-49 for installation specifications

### Narrow aluminum door hardware set



#### Set includes:

- Arm assembly mounting plate (qty 2)
- 699.110 – Aluminum screw for mounting plate attachment (qty 4)

	Part no.
Narrow aluminum door hardware set	20K4A00A02

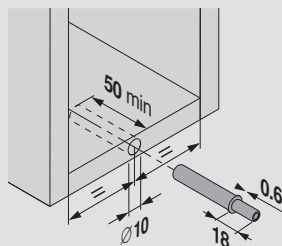
**NOTE:** Refer to page 52-53 for installation specifications

## TIP-ON set for standard doors



Gray  
Black

Use of screw-on catch plate required for all applications



- Nylon gray unit with magnet tip
- Adjustment range +4 mm to -1 mm
- For door heights up to **400** (15-3/4")
- Works for overlay and inset applications
- Can be bored into the panel or used with an adapter plate

### Set includes:

- TIP-ON unit
- Self-adhesive catch plate
- Screw-on catch plate
- Wood screw

Part no.

**NOTE:** Due to various door weights and sizes, trial application recommended

Standard door set

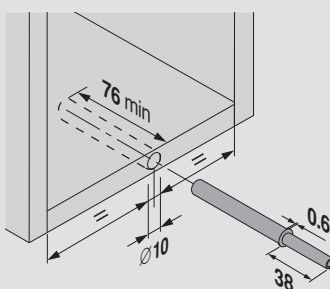
**956.1004**

## TIP-ON set for large doors



Gray  
Black

Use of screw-on catch plate required for all applications



- Nylon gray unit with magnet tip
- Adjustment range +4 mm to -1 mm
- For door heights greater than **400** (15-3/4")
- Works for overlay and inset applications
- Can be bored into the panel or used with an adapter plate

### Set includes:

- TIP-ON unit
- Self-adhesive catch plate
- Screw-on catch plate
- Wood screw

Part no.

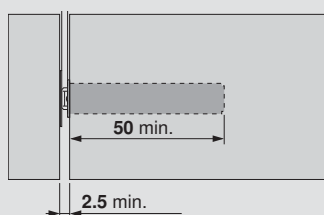
**NOTE:** Due to various door weights and sizes, trial application recommended

Large door set

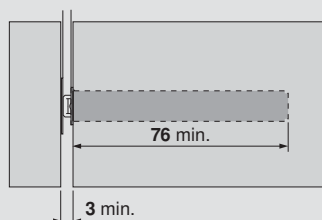
**956A1004**

## TIP-ON for AVENTOS specifications

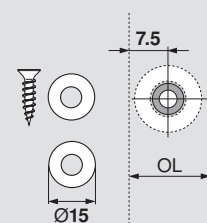
### Standard doors



### Large doors



## Screw-on catch plate specifications



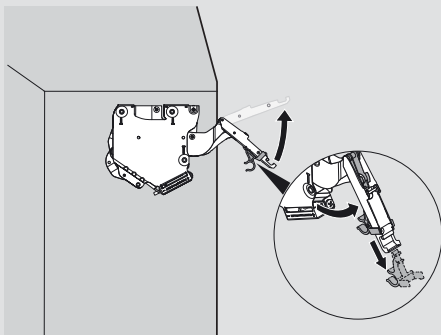
Pre-boring  $\varnothing 2.5$  countersunk pilot holes are required

For adapter plate mounting please refer to the Concealed hinges brochure

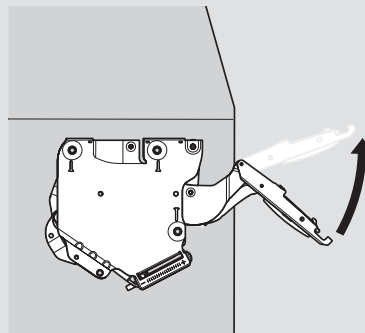


### Remove transport tab

1 Carefully remove the transport tab.



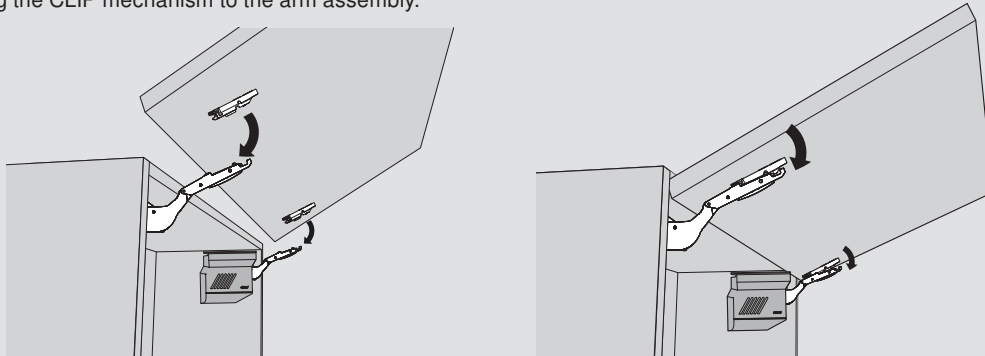
2 Slowly raise the arm to the upright position.



**NOTE:** Do not remove transport tab until just before attaching the door

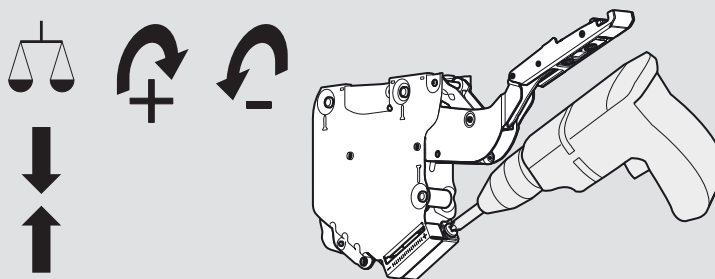
### Attaching AVENTOS HK-S doors

Attach the door using the CLIP mechanism to the arm assembly.



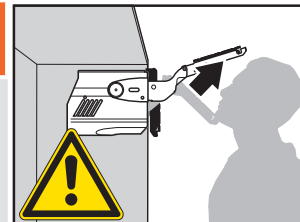
### Adjust the lift mechanism

Use a screw gun and a #2 x 2 POZI driver bit to adjust the lift mechanism to the desired tension (door weight balanced).



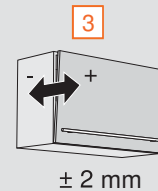
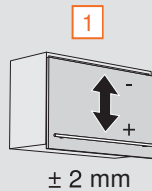
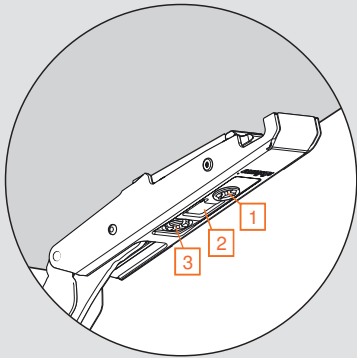
**Warning: Risk of injury by spring-loaded lever arm!**

- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet



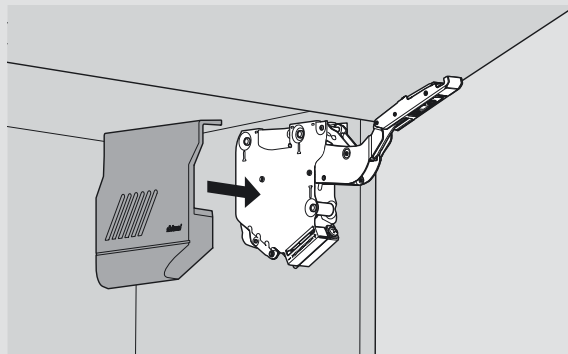
## AVENTOS HK-S door adjustments

Use a POZI screwdriver to adjust cam adjustments for each of the three-dimensional door adjustments.



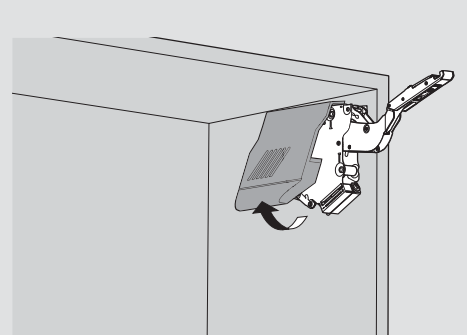
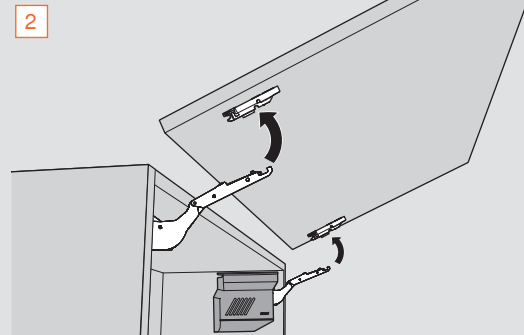
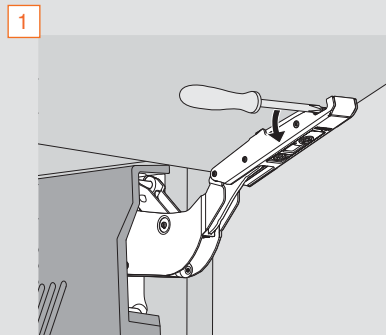
## Attaching cover caps

Place the left and right cover plates over the appropriate lift mechanisms and snap them in place.



## Removing the arm assembly

- 1 Insert screw driver behind notch in locking cam and pry outward
- 2 Remove arm assembly as shown



# AVENTOS HK-XS

## Smaller, Cost-Effective Lift System

The design of the AVENTOS HK-XS means that cabinets with small internal depths can be equipped easily. The symmetrical lift mechanism can be used on one or both sides, for the widest range of applications and design freedom.



### Numerous Design Options

For wider or heavier fronts, a lift mechanism should be added to both sides of the cabinet.



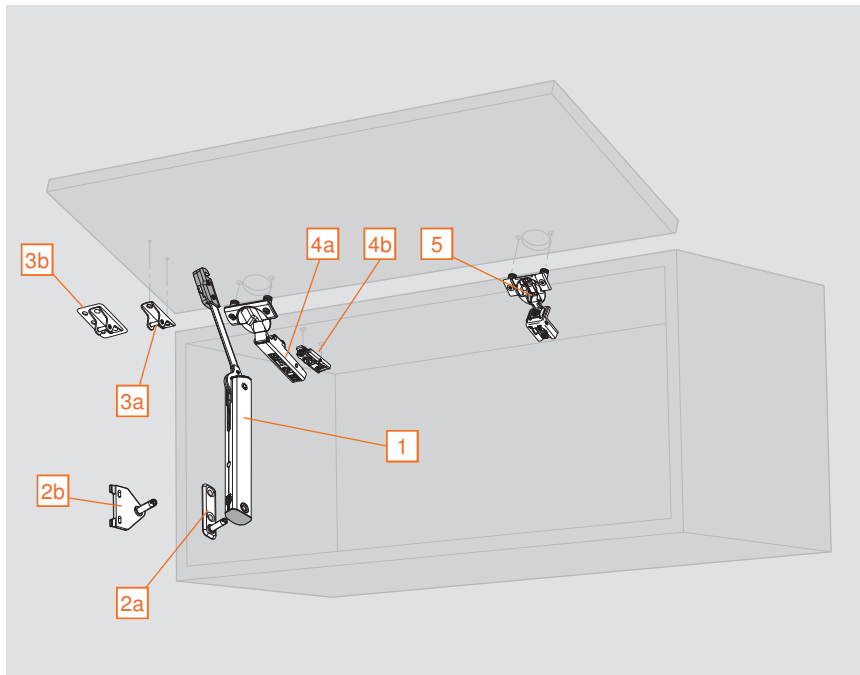
### Versatility

AVENTOS HK-XS allows you the design freedom for all areas of the home, whether it's the kitchen, living room or bathroom.



### The Motion Inside

The lift mechanism with a robust spring package is the core element of this design. This allows the AVENTOS HK-XS to provide a high level of stability and durability.



- Well suited for small wall cabinets
- Cabinet height from **238** (9-3/8") to **610** (24")
- Cabinet width up to **1828** (72")\*
- Interior cabinet depth minimum of **127** (5")
- Closes silently and effortlessly with CLIP top BLUMOTION or COMPACT BLUMOTION hinges
- Simple, virtually tool-free assembly and easy adjustment
- Symmetrical lift mechanism – can be used on one or both sides
- Designed for use with BLUMOTION hinges
- Optional: TIP-ON for AVENTOS

\*Dependent on power factor

### Step 1 – Determine the Power Factor for the Application



Power factor = cabinet height (inch) x door weight\* (lb)

#### Determine power factor

To select the correct lift mechanism for a given application, the power factor must first be calculated by using the formula below. Use the table at the bottom of the page to convert ounces into decimal form for easy calculation.

Power factor = cabinet height multiplied by door weight\*

#### Example:

Cabinet height: 15" (within possible range)

Door weight including twice the handle weight = 9 lb 14 oz (14 oz = .9 lb see chart below)

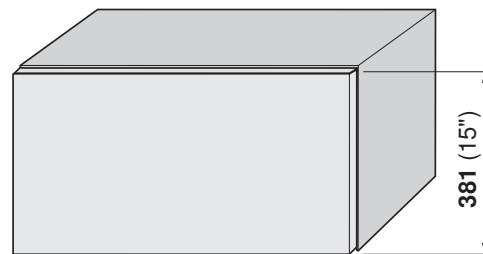
Power factor = 15 x 9.9

Power factor = 148.5

A power factor of 148.5 requires lift mechanism 20K1501

\*Including twice the handle weight

**NOTE:** AVENTOS planning tools available at [blum.com/configurator](http://blum.com/configurator)



Door weight + twice handle weight = 9 lb 14 oz

Weight conversion chart

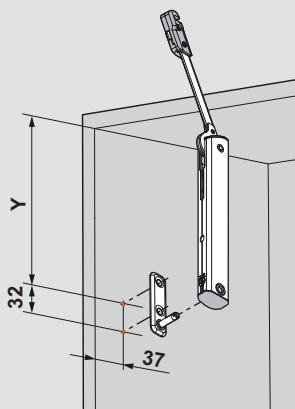
oz	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
lb	.1	.1	.2	.3	.3	.4	.4	.5	.6	.6	.7	.8	.8	.9	.9

## Step 2 – Select the Required Components

Lift mechanism			
<div>1</div>			
	<b>Power factor range (1 lift)</b>	<b>Power factor range (2 lifts)</b>	<b>Part no.</b>
	17 – 60	34 – 120	20K1101
	61 – 112	121 – 224	20K1301
	113 – 156	225 – 312	20K1501
Cabinet mounting plate			
<div>2a</div>	<b>Frameless</b>		<b>Part no.</b>
	Screw-on		20K5101
	EXPANDO (Ø5 dowel)		20K51E1
<div>2b</div>	<b>Face frame</b>		<b>Part no.</b>
	Screw-on		20K5501
Door mounting plate			
<div>3a</div>			<b>Part no.</b>
	Screw-on		20K4101
<div>3b</div>	<b>NOTE:</b> For use with large overlay five-piece doors		<b>Part no.</b>
	Screw-on		20K4501
Hinge recommendations			
<div>4a</div>	<b>CLIP top BLUMOTION 110°</b>		<b>Part no.</b>
	Press-in		71B3580
	<b>Hinge mounting plate</b>		<b>Part no.</b>
	EXPANDO (Ø5 dowel)		177H3100E
<div>4b</div>	<b>NOTE:</b> For other hinges and mounting plate options please refer to the Concealed hinges brochure		
<div>5</div>	<b>COMPACT BLUMOTION 39C</b>		<b>Part no.</b>
	32 (1-1/4") Overlay, Press-in		39C358B.20
	<b>COMPACT BLUMOTION 38N</b>		<b>Part no.</b>
	13 (1/2") Overlay, Press-in		38N358B.08

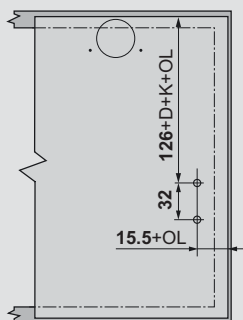
**CLIP top Frameless Application**

**Lift mechanism**



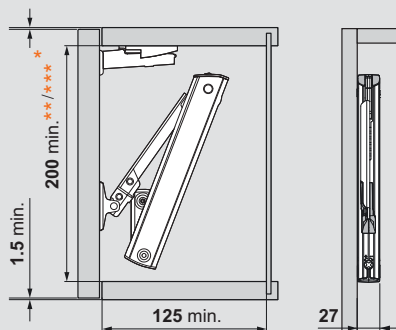
$$Y = 137 + D + K$$

**Door mounting plate**



Attach using #6 x 5/8" (606N/P) wood screw

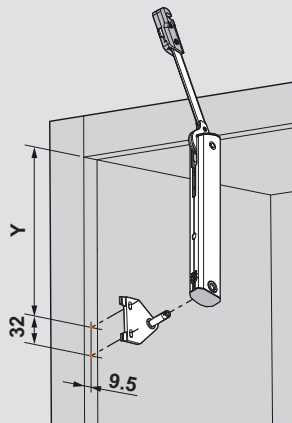
**Space requirements**



\* Minimum top reveal based on hinge used. Please see minimum reveal specs in Concealed hinges brochure

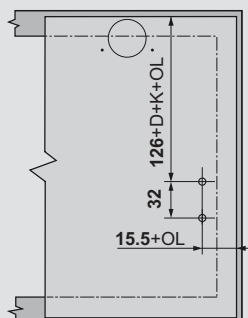
**CLIP top Face Frame Application**

**Lift mechanism**



$$Y = 169 + D + K$$

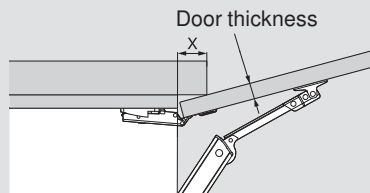
**Door mounting plate**



When using large overlay mounting plate (20K4501) hole location is offset by 19 (15.5 + OL - 19)

Attach using #6 x 5/8" (606N/P) wood screw

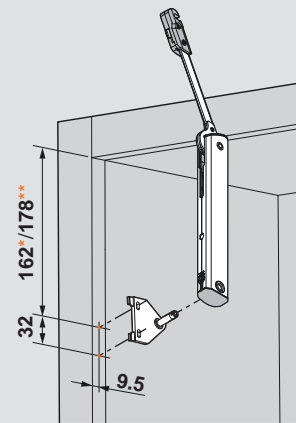
**Cornice and crown molding clearance**



Door thickness	16	19	22	24
X	45	34	23	15

**COMPACT Face Frame Application**

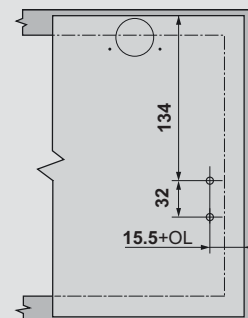
**Lift mechanism**



\* Location when using COMPACT 39/38C

\*\* Location when using COMPACT 38N

**Door mounting plate**



When using large overlay mounting plate (20K4501) hole location is offset by 19 (15.5 + OL - 19)

Attach using #6 x 5/8" (606N/P) wood screw

K = Hinge arm crank

Straight arm crank	=	0
Half-cranked arm	=	9.5
Full-cranked arm	=	18

**Abbreviations**

D	=	Mounting plate height
K	=	Hinge arm crank
OL	=	Overlay

\*\* Minimal internal height: 216 for 110° with 20K5501

\*\*\* Minimal internal height: 225 for COMPACT with 20K5501

**NOTE:** Designed to be used in a lift up application only



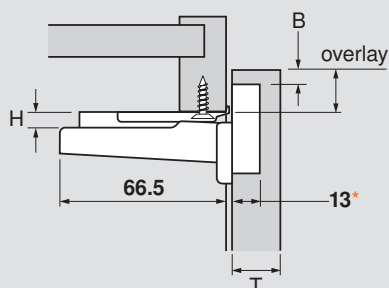
# AVENTOS HK-XS Planning Specifications

AVENTOS



## Face Frame Applications

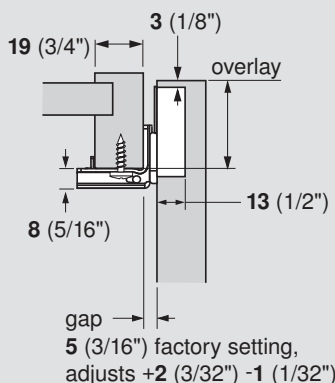
### CLIP top BLUMOTION 110°



\*All 35 and 8 holes must be a minimum of 13 deep

H	Overlay					P	S
0	14	15	16	17	18	12	21.5
3	11	12	13	14	15	15	24.5
4.5	9.5	10.5	11.5	12.5	13.5	16.5	26
6	8	9	10	11	12	18	27.5
	3	4	5	6	7	fixed distance = 11	
	B = boring distance						

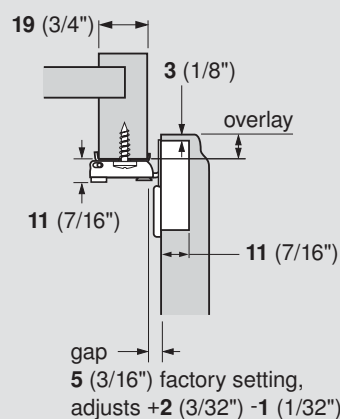
### COMPACT BLUMOTION 39C



**NOTE:** For other overlays see Concealed hinges brochure

Overlay
32 (1-1/4")
3 (1/8")
B = boring distance

### COMPACT BLUMOTION 38N

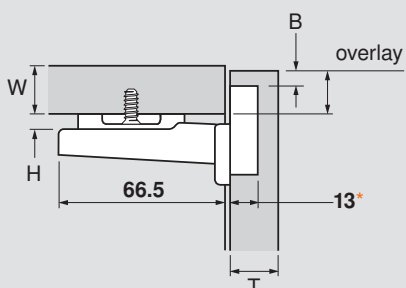


**NOTE:** For other overlays see Concealed hinges brochure

Overlay
13 (1/2")
3 (1/8")
B = boring distance

## Frameless Applications

### CLIP top BLUMOTION 110°



\*All 35 and 8 holes must be a minimum of 13 deep

H	Overlay					P	S
0	14	15	16	17	18	12	21.5
3	11	12	13	14	15	15	24.5
6	8	9	10	11	12	18	27.5
9	5	6	7	8	9	21	30.5
	3	4	5	6	7	fixed distance = 11	
	B = boring distance						

## Minimum Reveal Table

CLIP top BLUMOTION 110°						
3	0.5	1.0	1.8	2.7	4.3	
4	0.5	1.0	1.7	2.5	3.8	
5	0.5	0.9	1.7	2.4	3.4	
6	0.5	0.9	1.6	2.3	3.2	
7	0.5	0.9	1.6	2.2	3.0	
B = boring distance	16	19	22	24	26	
T = door thickness						

For thickness greater than 26 trial app. recommended

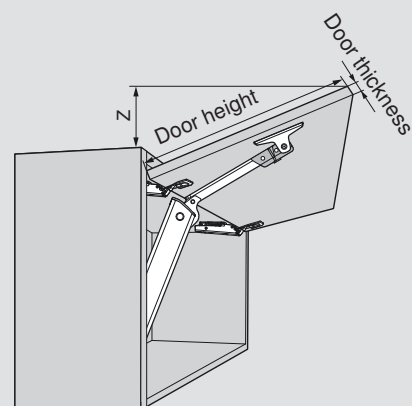
COMPACT BLUMOTION 39C	
3 (1/8")	5.5 (7/32")
B = boring distance	19 (3/4")
T = door thickness	

COMPACT BLUMOTION 38N	
3 (1/8")	7 (9/32")
B = boring distance	19 (3/4")
T = door thickness	

## Abbreviations

H	= Plate height
P	= Door protrusion
S	= Side arm protrusion
W	= Side panel width
T	= Door thickness

## Door protrusion

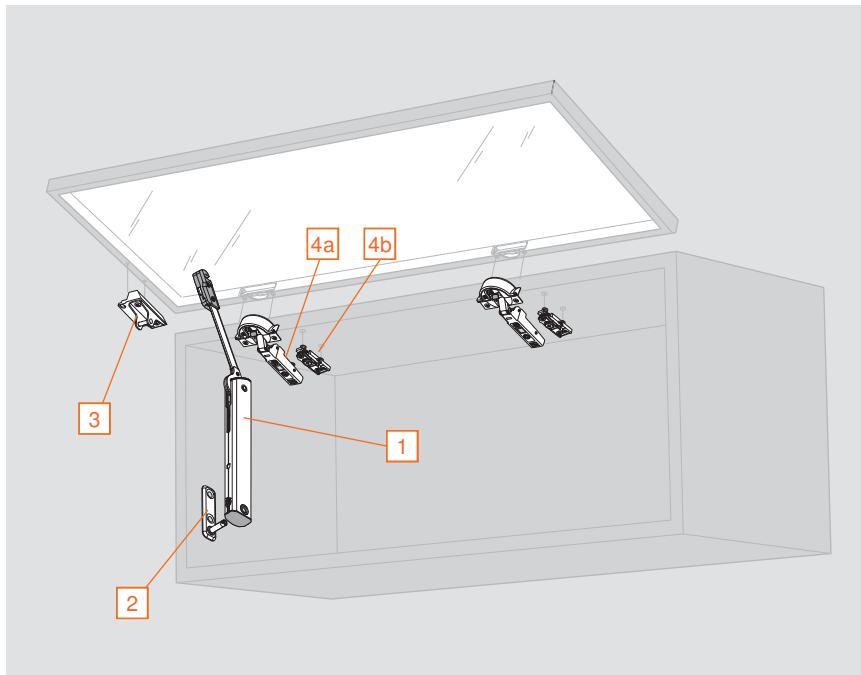


$$Z = (\text{Door height} - A) \times 0.3$$

Door thickness	16	19	22	24
A	45	34	23	15

**NOTE:** Use 3 hinges starting at cabinet width 914 (36") and/or power factor 156 and 4 hinges starting at cabinet width 1219 (48") and/or power factor 234

Follow the assembly instructions on page 70



- Well suited for small wall cabinets
- Cabinet height from **238** (9-3/8") to **610** (24")
- Cabinet widths up to **1828** (72")\*
- Interior depth minimum of **127** (5")
- Closes silently and effortlessly with CLIP top BLUMOTION
- Symmetrical lift mechanism – can be used on one or both sides
- Designed for use with BLUMOTION hinges
- Optional: TIP-ON for AVENTOS

\*Dependent on power factor

### Step 1 – Determine the Power Factor for the Application



Power factor = cabinet height (inch) x door weight\* (lb)

#### Determine power factor

To select the correct lift mechanism for a given application, the power factor must first be calculated by using the formula below. Use the table at the bottom of the page to convert ounces into decimal form for easy calculation.

Power factor = cabinet height multiplied by door weight\*

#### Example:

Cabinet height: 15" (within possible range)

Door weight including twice the handle weight = 9 lb 14 oz (14 oz = .9 lb see chart below)

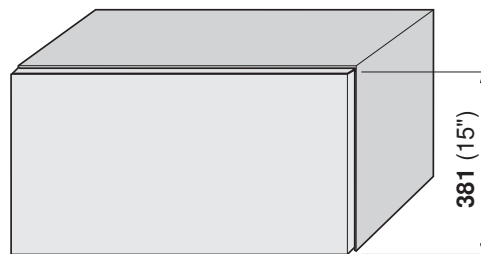
Power factor = 15 x 9.9

Power factor = 148.5

A power factor of 148.5 requires lift mechanism 20K1501

\*Including twice the handle weight

**NOTE:** AVENTOS planning tools available at [blum.com/configurator](http://blum.com/configurator)



Door weight + twice handle weight = 9 lb 14 oz

Weight conversion chart

oz	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
lb	.1	.1	.2	.3	.3	.4	.4	.5	.6	.6	.7	.8	.8	.9	.9

## Step 2 – Select the Required Components

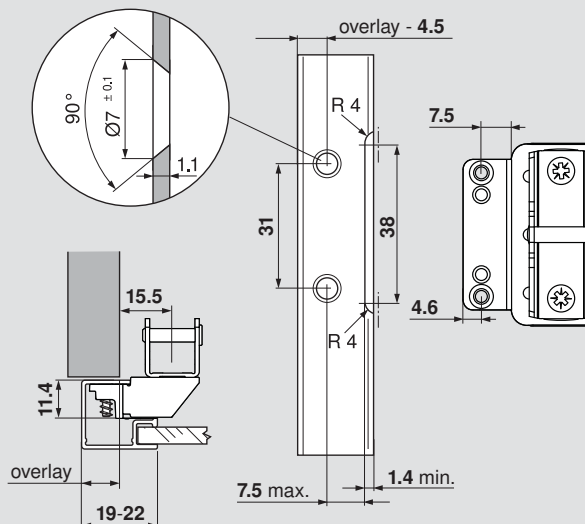
Lift mechanism			
<div>1</div>			Part no.
	Power factor range (1 lift)	Power factor range (2 lifts)	
	17 – 60	34 – 120	20K1101
	61 – 112	121 – 224	20K1301
	113 – 156	225 – 312	20K1501
Cabinet mounting plate			
<div>2</div>			Part no.
	Screw-on		20K5101
	EXPANDO (Ø5 dowel)		20K51E1
Door mounting plate			
<div>3</div>			Part no.
	Screw-on		20K4101A
Hinge recommendations			
<div>4a</div>	CLIP top BLUMOTION 95°		Part no.
	Press-in		71B950A
<div>4b</div>	Hinge mounting plate		Part no.
	EXPANDO (Ø5 dowel)		177H3100E
<b>NOTE:</b> For other mounting plate options please refer to the Concealed hinges brochure			

Technical drawing of the 3235 door hinge. The drawing shows the hinge installed on a door edge. Dimension **Y** indicates the height from the bottom edge of the door to the center of the hinge. Dimension **32** indicates the height from the bottom edge of the door to the top of the hinge body. Dimension **37** indicates the height from the bottom edge of the door to the bottom of the hinge body.

$$Y = 137 + D + K$$

A diagram of a rectangular structure, possibly a container or a piece of equipment, with dimensions labeled. The vertical dimension is labeled  $12S+D+K+OL$  and the horizontal dimension is labeled  $15.5+OL$ . The structure has a thick border and a smaller inner rectangle. A small rectangular component is attached to the right side of the inner rectangle.

### Arm assembly mounting plate



Door thickness

X

Door thickness	16	19	22	24
X	45	34	23	15

K = Hinge arm crank	
Straight arm crank	= 0
Half-cranked arm	= 9.5
Full-cranked arm	= 18

D	= Mounting plate height
K	= Hinge arm crank
OL	= Overlay

**NOTE:** Designed to be used in a lift up application only

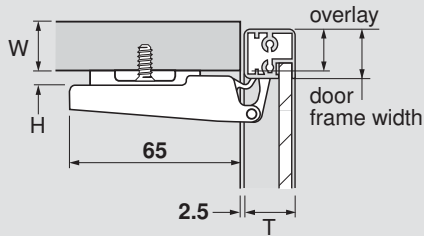
# AVENTOS HK-XS Planning Specifications

AVENTOS



## Frameless Applications

### CLIP top BLUMOTION 95°



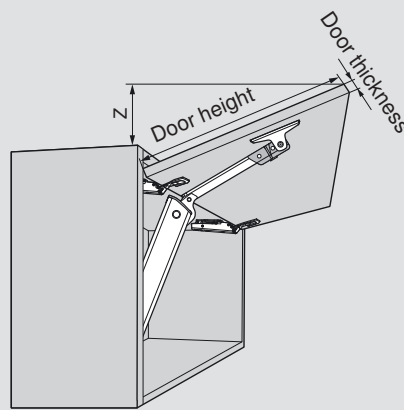
H	Overlay	P	S
0	16	13.5	22
3	13	16.5	25
6	10	19.5	28
9	7	22.5	31
B = fixed			

**NOTE:** Use 3 hinges starting at cabinet width **914** (36") and/or power factor 156 and 4 hinges starting at cabinet width **1219** (48") and/or power factor 234

### Abbreviations

H	=	Plate height
P	=	Door protrusion
S	=	Side arm protrusion
W	=	Side panel width
T	=	Door thickness

### Door protrusion



$$Z = (\text{Door height minus } A) \times 0.3$$

Door thickness	16	19	22	24
A	45	34	23	15

## Minimum Reveal Table

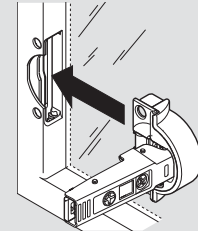
### CLIP top BLUMOTION 95°

	18	0.2	0.3	0.4	0.6	0.7
18	0.2	0.3	0.4	0.6	0.7	
19	0.2	0.3	0.4	0.5	0.7	
20	0.2	0.3	0.4	0.5	0.7	
21	0.2	0.3	0.4	0.5	0.7	
22	0.2	0.3	0.4	0.5	0.7	
door frame width	18	19	20	21	22	
T = door thickness						

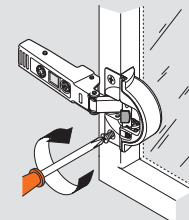
Thickness greater than **22** trial recommended

### Installation

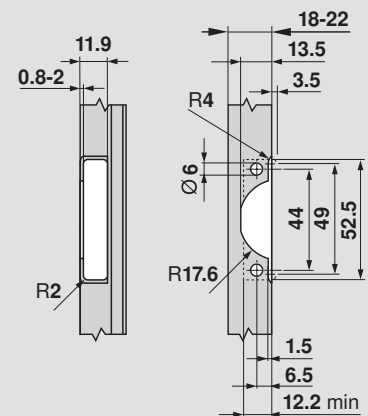
Attach cup adapter to the hinge and insert into machined openings



Attach using aluminum screws provided with hinges (699.110)



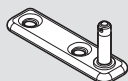
### Aluminum door preparation



Follow the assembly instructions on page 70

**Lift mechanism**

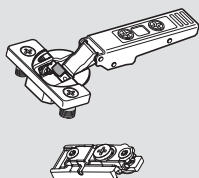

Power factor range (1 lift)	Power factor range (2 lifts)	Part no.
17 – 60	34 – 120	20K1101T
61 – 112	121 – 224	20K1301T
113 – 156	225 – 312	20K1501T

**Cabinet mounting plate**


	Part no.
Screw-on	20K5101
EXPANDO	20K51E1

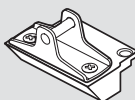
**Wood and wide aluminum door hardware**


	Part no.
Door mounting plate	20K4101

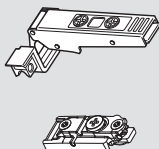


CLIP top 110°, free swing	Part no.
Press-in	70T3580.TL
Hinge mounting plate	Part no.
EXPANDO	177H3100E

**NOTE:** Refer to pages 62-63 for installation specifications

**Narrow aluminum door hardware**


	Part no.
Door mounting plate	20K4101A



CLIP top 120°, free swing	Part no.
Press-in	72T550A.TL
Hinge mounting plate	Part no.
EXPANDO	177H3100E

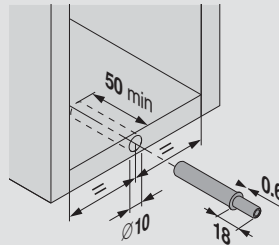
**NOTE:** Refer to pages 66-67 for installation specifications

## TIP-ON set for standard doors



Gray  
Black

Use of Screw-on catch plate required for all applications



- Nylon gray unit with magnet tip
- Adjustment range +4 mm to -1 mm
- For door heights up to **400** (15-3/4")
- Works for overlay and inset applications
- Can be bored into the panel or used with an adapter plate

### Set includes:

- TIP-ON unit
- Self-adhesive catch plate
- Screw-on catch plate
- Wood screw

Part no.

**NOTE:** Due to various door weights and sizes, trial application recommended

Standard door set

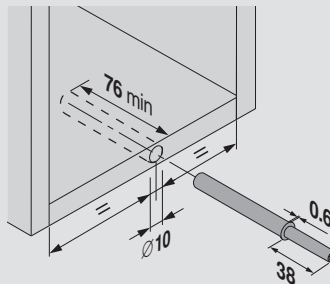
**956.1004**

## TIP-ON set for large doors



Gray  
Black

Use of Screw-on catch plate required for all applications



- Nylon gray unit with magnet tip
- Adjustment range +4 mm to -1 mm
- For door heights up to **400** (15-3/4")
- Works for overlay and inset applications
- Can be bored into the panel or used with an adapter plate

### Set includes:

- TIP-ON unit
- Self-adhesive catch plate
- Screw-on catch plate
- Wood screw

Part no.

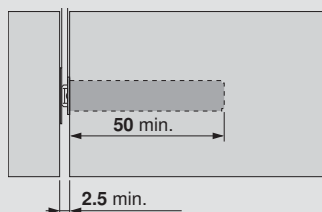
**NOTE:** Due to various door weights and sizes, trial application recommended

Large door set

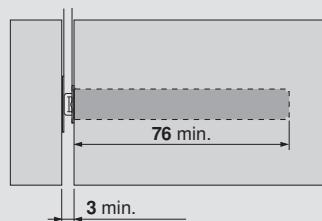
**956A1004**

## TIP-ON for AVENTOS specifications

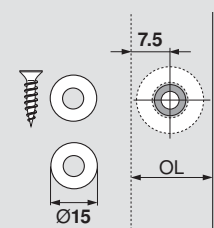
### Standard doors



### Large doors



## Screw-on catch plate specifications



Pre-boring Ø2.5 countersunk pilot holes are required

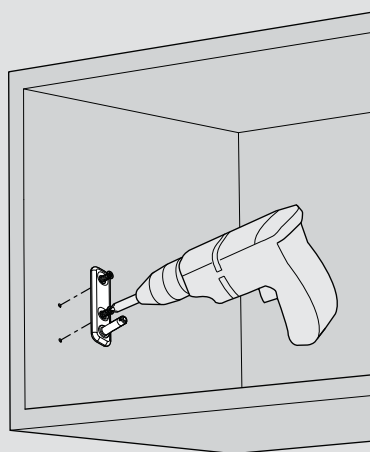
**NOTE:** For TIP-ON application, free swing hinge door drilling pattern is different. Please refer to the Concealed Hinge brochure

For adapter plate mounting please refer to the Concealed hinges brochure

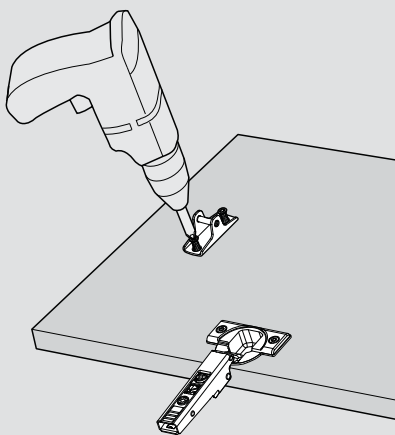


### Attaching AVENTOS HK-XS cabinet and door mounting plate

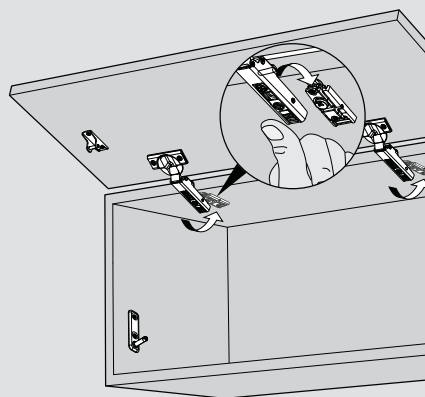
1 Attach cabinet mounting plate



2 Attach door mounting plate. Insert hinge.

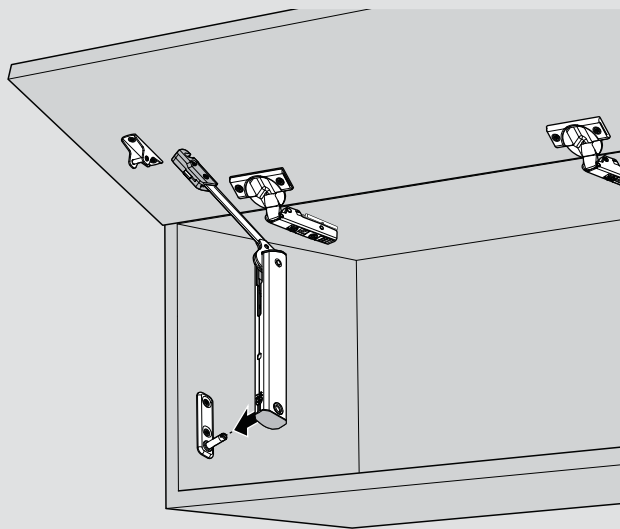


3 Attach door to the cabinet

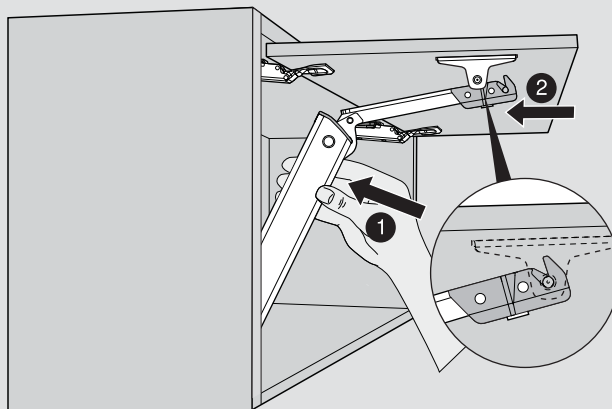


### Attaching AVENTOS HK-XS lift mechanism to cabinet

4 Attach the lift mechanism to cabinet mounting plate

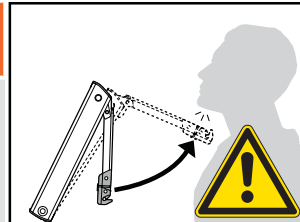


5 Attach lift mechanism to door mountin plate

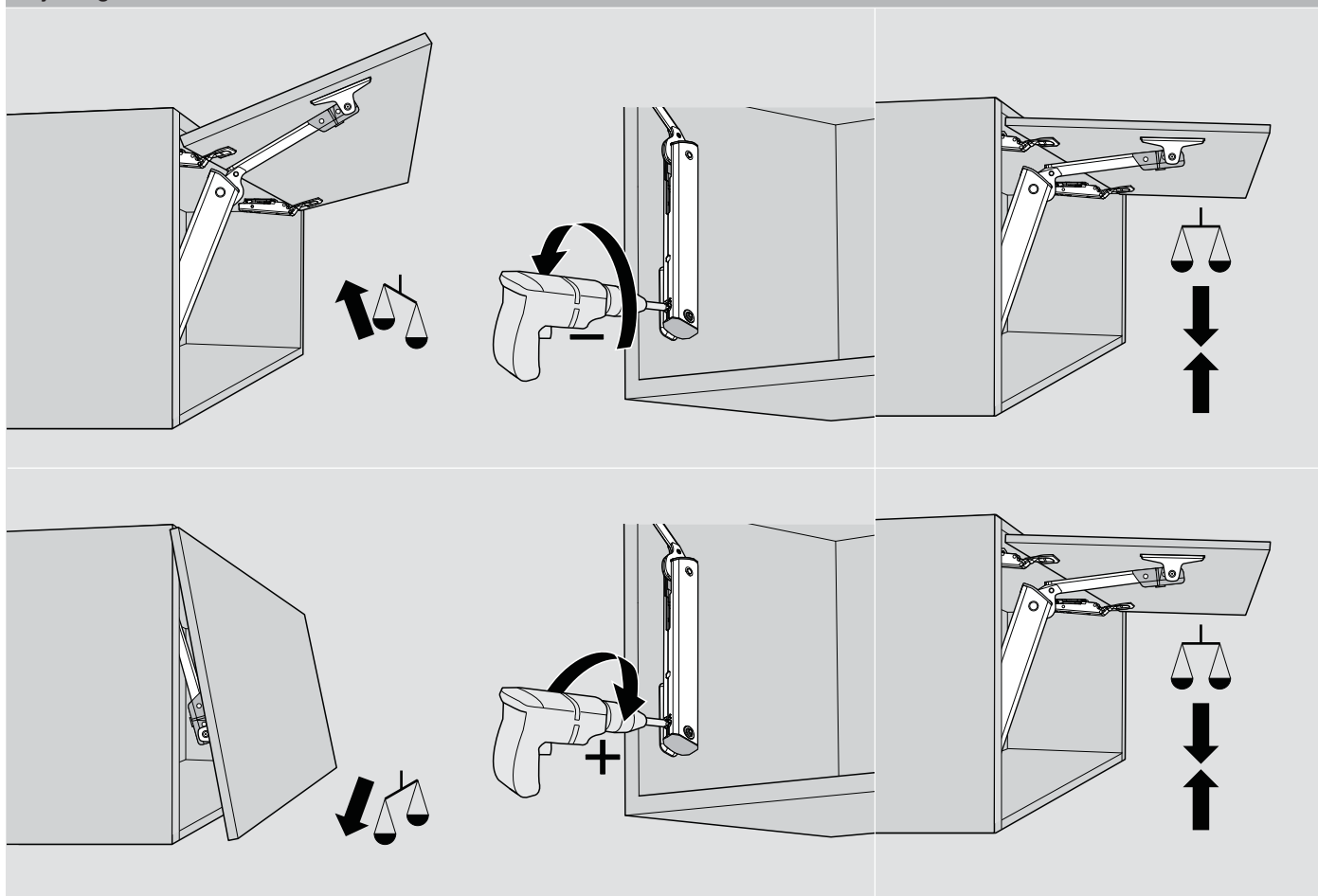


**Warning: Risk of injury by spring-loaded lever arm!**

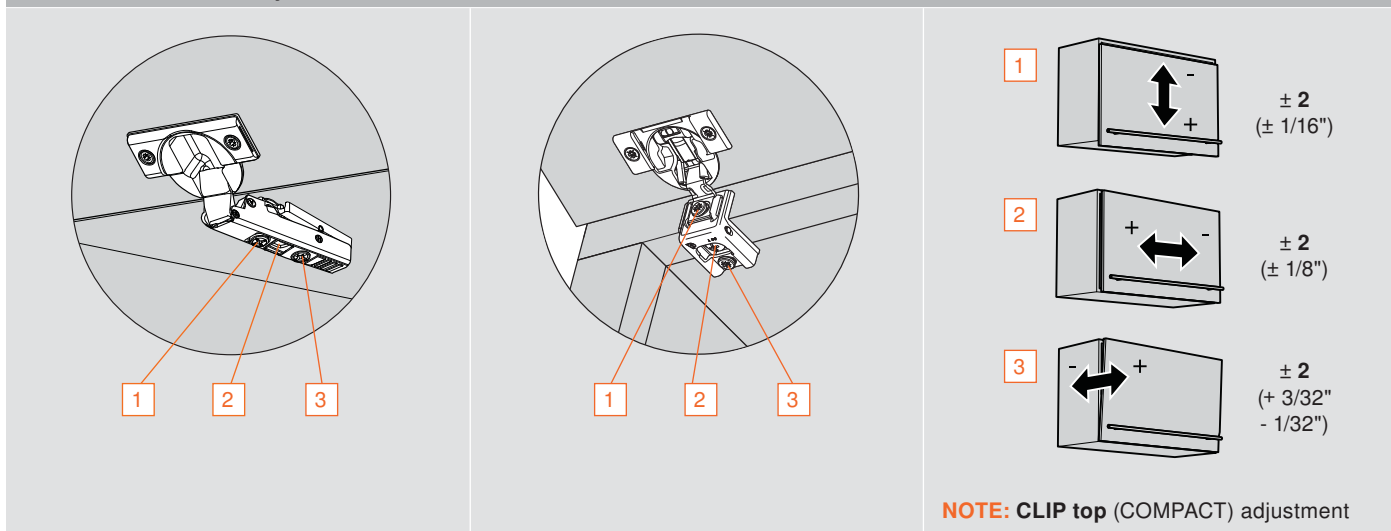
- Do not push telescopic arm down
- Remove telescopic arm from mechanism before installing cabinet

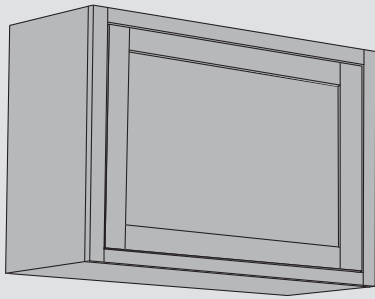


## Adjusting the lift mechanism



## AVENTOS HK-XS door adjustment





### Face frame inset application

When it comes to inset cabinets and AVENTOS, there are many ways to accomplish this application. Below is an option that can be used for both face frame and frameless cabinets alike.

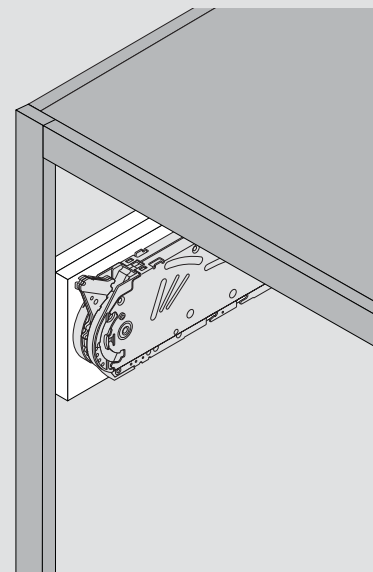
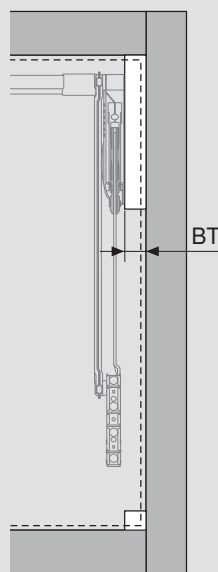
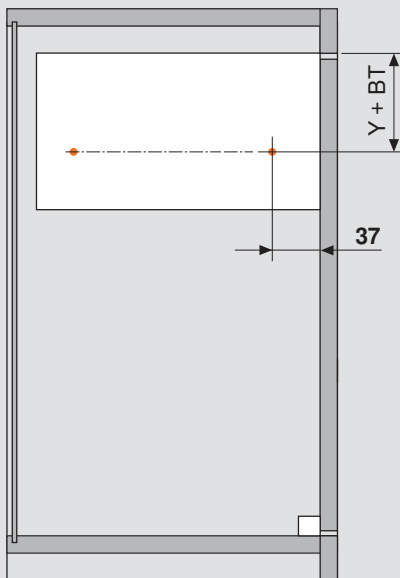
### Face Frame Application

The illustrations below show the idea of blocking-out the interior of a face frame cabinet to obtain the needed space required for AVENTOS. By blocking-out the interior of the cabinet to protrude into the cabinet opening, we have moved the AVENTOS lift mechanism far enough into the opening for the arm assembly to clear the frame of the cabinet.

#### Planning information for blocking-out

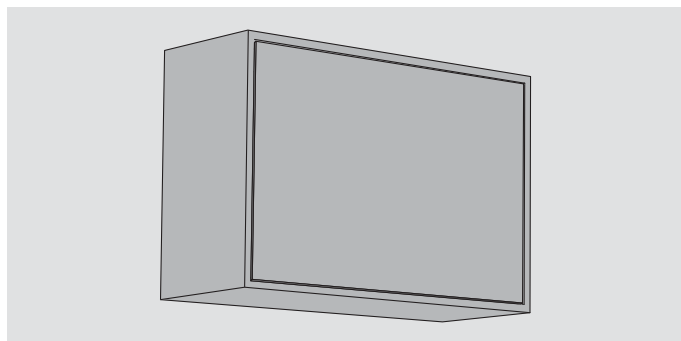
In this illustration the 37 setback for the Ø5 x 5 locating pin holes is measured from the back of the door (or back edge of face frame). The Y dimension is the locating pin position of the selected lift mechanism.

This illustration shows how the block-out provides the needed clearance for the lift mechanism and also provides a stopping point for the door.



**NOTE:** Mounting plate position varies based on block-out thickness used at top of cabinet

BT = block-out thickness



#### Frameless inset application

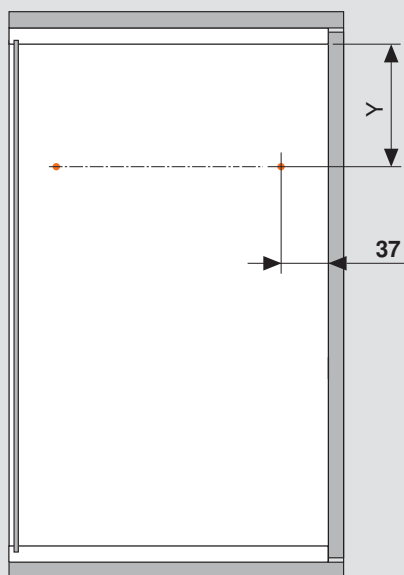
When it comes to inset cabinets and AVENTOS, there are many ways to accomplish this application. Below is an option that can be used for both face frame and frameless cabinets alike.

### Face Frame Application

The illustrations below show the idea of building a cabinet within a cabinet to obtain the needed space required for AVENTOS. By either building a smaller cabinet within or adding panels to the outside of a cabinet, you have made it possible to simulate the look of an inset cabinet.

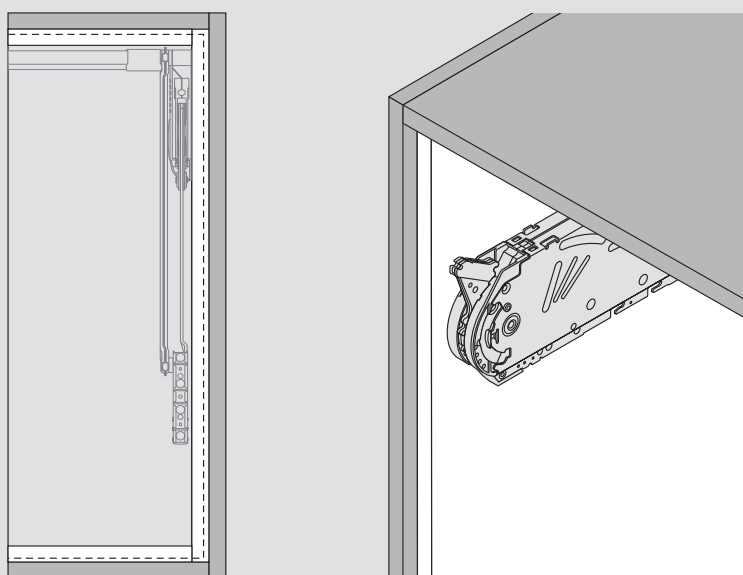
#### Planning information for cabinet-within-cabinet

In this illustration the 37 setback for the Ø5 x 5 locating pin holes is measured from the back of the door (or front edge of the interior cabinet). The Y dimension is determined by the selected AVENTOS lift system.



**NOTE:** Mounting plate position varies based on block-out thickness used at top of cabinet

This illustration shows how the interior cabinet is simply an overlay cabinet that is set back the thickness of the door front and bumper. This also provides a stopping point for the door.



**NOTE:** The top and bottom panels of the inner cabinet are optional, but their intended thicknesses are needed for calculating the Y dimension for the lift mechanism

### AVENTOS HF angle restriction clips



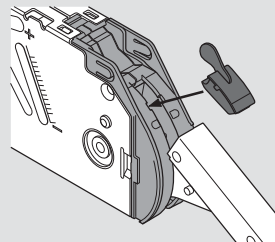
- Restricts opening angle of the door
- Prevents the door from hitting an object above or keeps the handle within reach on very high cabinets
- One required per lift mechanism
- Must be installed prior to the reference run in SERVO-DRIVE applications

Part no.

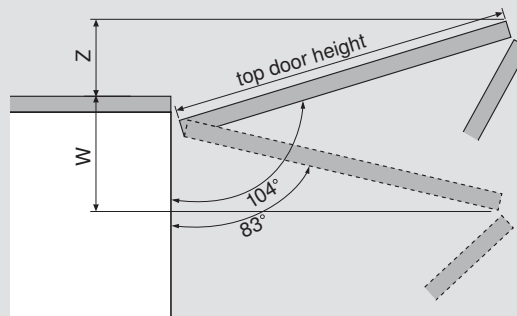
104° restriction clip **20F7051**

83° restriction clip **20F7011**

### Attachment



### Clearance above the cabinet



Using 104° clip  $Z = \text{top door height} \times .24 + 19$

Using 83° clip  $W = \text{top door height} \times .12 - 25$

### AVENTOS HK-S angle restriction clips



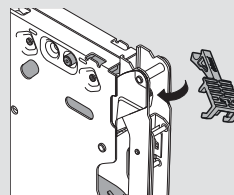
- Restricts opening angle of the door
- Prevents the door from hitting an object above or keeps the handle within reach on very high cabinets
- One required per lift mechanism
- Must be installed prior to the reference run in SERVO-DRIVE applications

Part no.

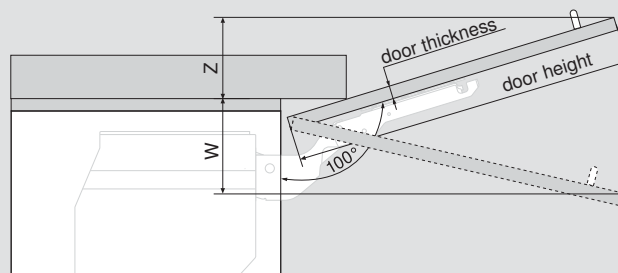
100° restriction clip **20K7A41**

75° restriction clip **20K7A11**

### HK-S attachment



### Clearance above the cabinet



Using 100° clip  $Z = \text{door height} \times .17 \text{ minus } 15 + \text{door thickness}$

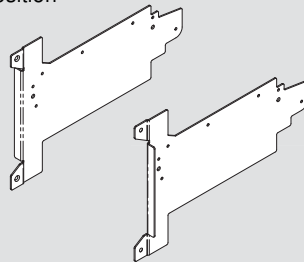
Using 75° clip  $W = \text{door height} \times .26 + 15$

AVENTOS face frame mounting brackets provide a fast and easy way to install AVENTOS in face frame cabinets without the need to block out. The brackets provide an accurate mounting location in the cabinet for the lift mechanism to simply mount to the bracket with the supplied mounting screws.



## AVENTOS HF face frame mounting bracket set

- Brackets for mounting AVENTOS HF in face frame cabinet
- Minimum recess of **12.5** (1/2")
- Provides accurate mounting position for lift mechanism



### Set includes:

- Right and left brackets
- M4 X 30 lift mounting screws (qty 12)

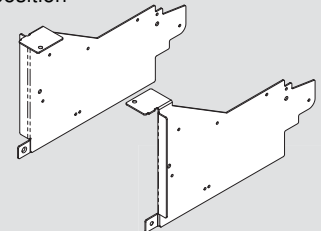
Part no.

HF frame mounting bracket set

**20F6001**

## AVENTOS HL face frame mounting bracket set

- Brackets for mounting AVENTOS HL in face frame cabinet
- Minimum recess of **15.5** (9/16")
- Provides accurate mounting position for lift mechanism



### Set includes:

- Right and left brackets
- M4 X 30 lift mounting screws (qty 12)

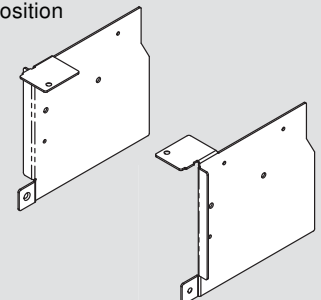
Part no.

HL frame mounting bracket set

**20L6001**

## AVENTOS HK-S face frame mounting bracket set

- Brackets for mounting AVENTOS HK in face frame cabinet
- Minimum recess of **12.5** (1/2")
- Provides accurate mounting position for lift mechanism



### Set includes:

- Right and left brackets
- M4 X 30 lift mounting screws (qty 12)

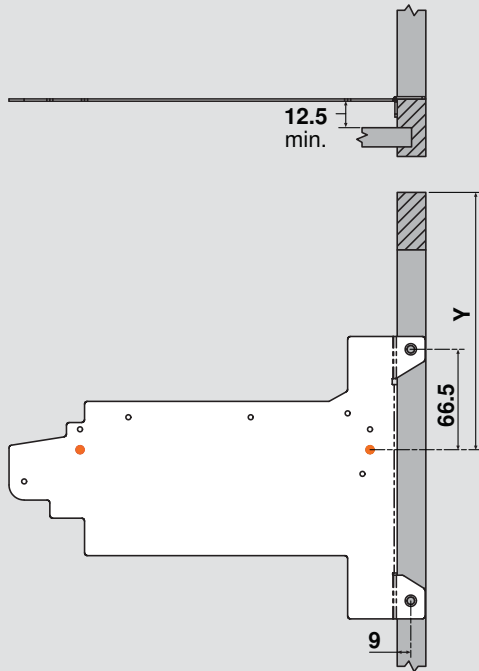
Part no.

HK-S frame mounting bracket set

**20K6A01**

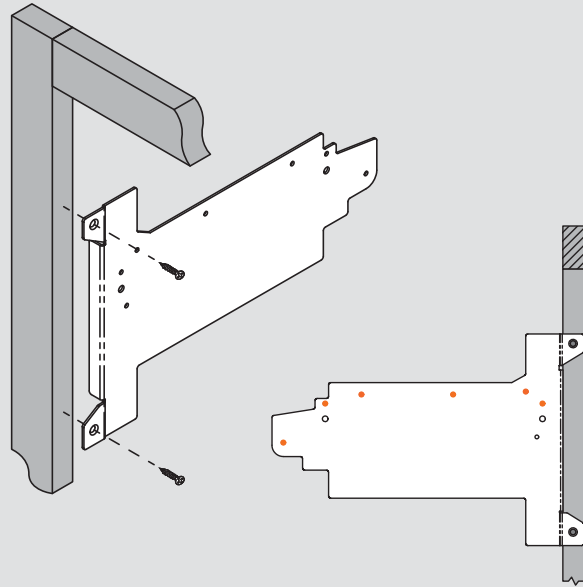
### AVENTOS HF face frame bracket mounting locations

The locating pin position (Y) still needs to be calculated to determine proper bracket mounting location. Please see page 12.



**NOTE:** Locating pin location marked in orange

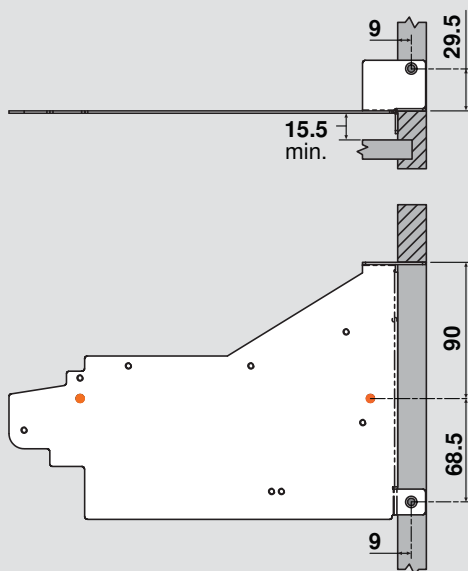
Attach bracket to face frame with two #7 x 3/4" (7074N) wood screws. Attach lift mechanism to bracket with six M4 x 30 machine screws (included).



**NOTE:** Machine screw mounting locations marked in orange

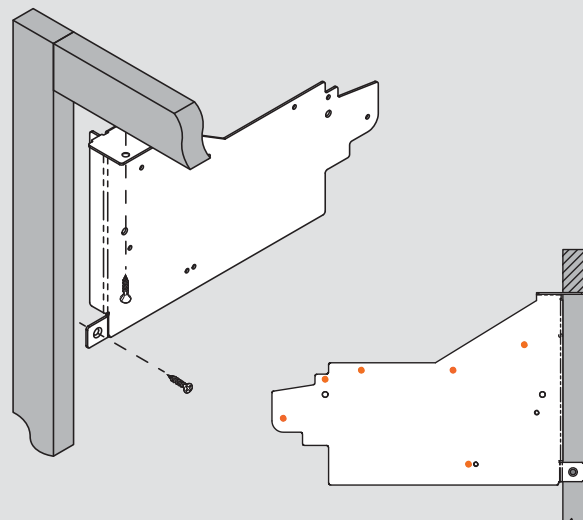
### AVENTOS HL face frame bracket mounting locations

Due to mounting bracket position, the door mounting plate will need to be moved 2 lower on the door to maintain proper mounting position.



**NOTE:** Locating pin location marked in orange

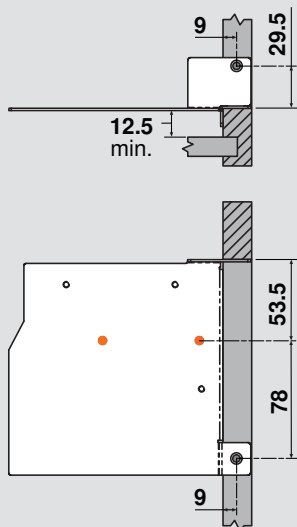
Attach bracket to face frame with two #7 x 3/4" (7074N) wood screws. Attach lift mechanism to bracket with six M4 x 30 machine screws (included).



**NOTE:** Machine screw mounting locations marked in orange

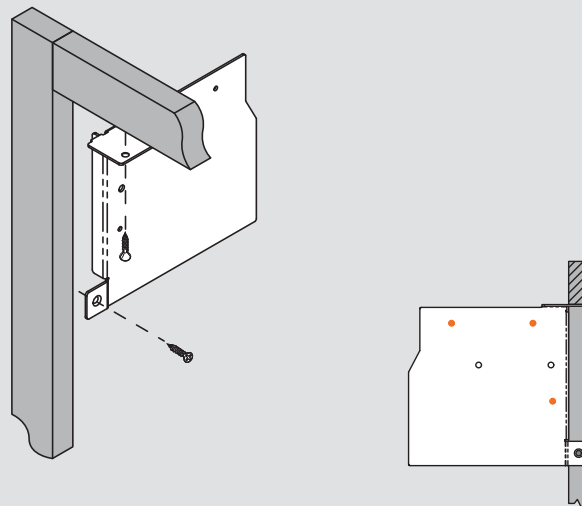
### AVENTOS HK-S face frame bracket mounting locations

Due to mounting bracket position, the door mounting plate will need to be moved **1.5** lower on the door to maintain proper mounting position. Locating pin position is set at **35** setback allowing for up to **20** top overlay.



**NOTE:** Locating pin location marked in orange

Attach bracket to face frame with two #7 x 3/4" (7074N) wood screws. Attach lift mechanism to bracket with three M4 x **30** machine screws (included).

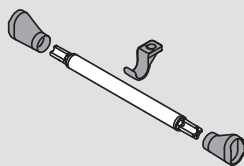


**NOTE:** Machine screw mounting locations marked in orange



### Components

#### AVENTOS HL set



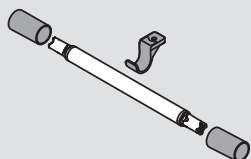
#### Set includes:

- Connector rod
- Oval cover cap (qty 2)
- Top mounting hook

#### Cut rods to:

Inside cabinet width divided by 2 minus  
**147** (5-13/16") for SERVO-DRIVE  
 minus **165** (6-1/2")

#### AVENTOS HS set



Part no.

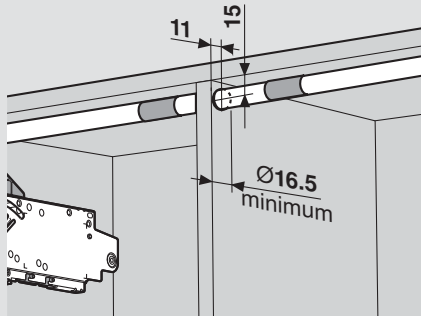
HL rod connector set	20Q153ZA
HS rod connector set	20Q153ZN
Installation screw	606N or 606P

**NOTE:** Cabinets wider than 46.5" internally require rod connector set.

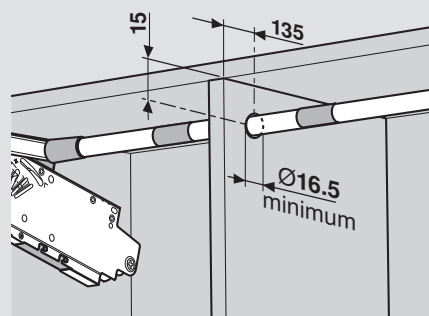
### Mounting through a center panel



#### AVENTOS HL



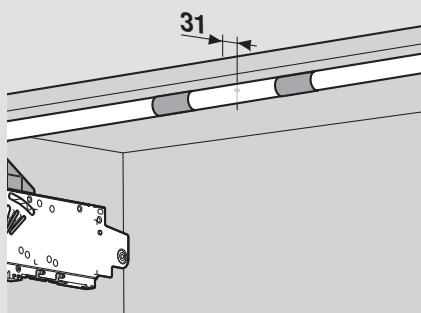
#### AVENTOS HS



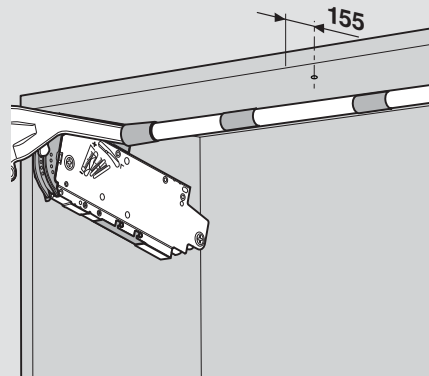
### Mounting without a center panel



#### AVENTOS HL



#### AVENTOS HS





# SERVO-DRIVE for AVENTOS

## Opens and Closes Automatically

SERVO-DRIVE equipped AVENTOS lift systems open with just a light touch – and then close again with the press of a button. The electrical opening support for lift systems is an inspiring feature that is certain to impress.


 **blum**





## Contents

### SERVO-DRIVE for AVENTOS

- 86** SERVO-DRIVE for AVENTOS HF
  - 87** SERVO-DRIVE for AVENTOS HS
  - 88** SERVO-DRIVE for AVENTOS HL
  - 90** Electrical Components
  - 92** Assembly for HF/HS/HL
  - 95** Activating SERVO-DRIVE
  - 96** Additional Features
  - 97** Deactivating SERVO-DRIVE
- 

## SERVO-DRIVE for AVENTOS



### Features

#### Effortless Opening and Closing



A light touch on the front using your hand or elbow is all that's required to open doors with SERVO-DRIVE for AVENTOS.

Even large and heavy doors open effortlessly. For the user, this means easy access to the cabinet interior.



#### Touch to close

Thanks to the easy-to-reach switch on the side of the cabinet, doors close ergonomically no matter the cabinet height.

While the proven soft-close technology, BLUMOTION, ensures doors close quietly and effortlessly.



## The Focus is on the User



### Safety is key – even when closing

Even when the switch has just been pressed for closing – the closing procedure is halted immediately if the user again reaches into the cabinet and/or an object is placed between the cabinet and the door.

### Always in control

Lift systems open and close automatically, although the motion can be interrupted at any time. In addition, lift systems with SERVO-DRIVE for AVENTOS can also be easily opened and closed manually at anytime, like when there is a power outage.



### Completely synchronized

Up to three drive units can be set for synchronized motion. Synchronization is ideal for multiple cabinets that share one wide door.



### Collision avoidance

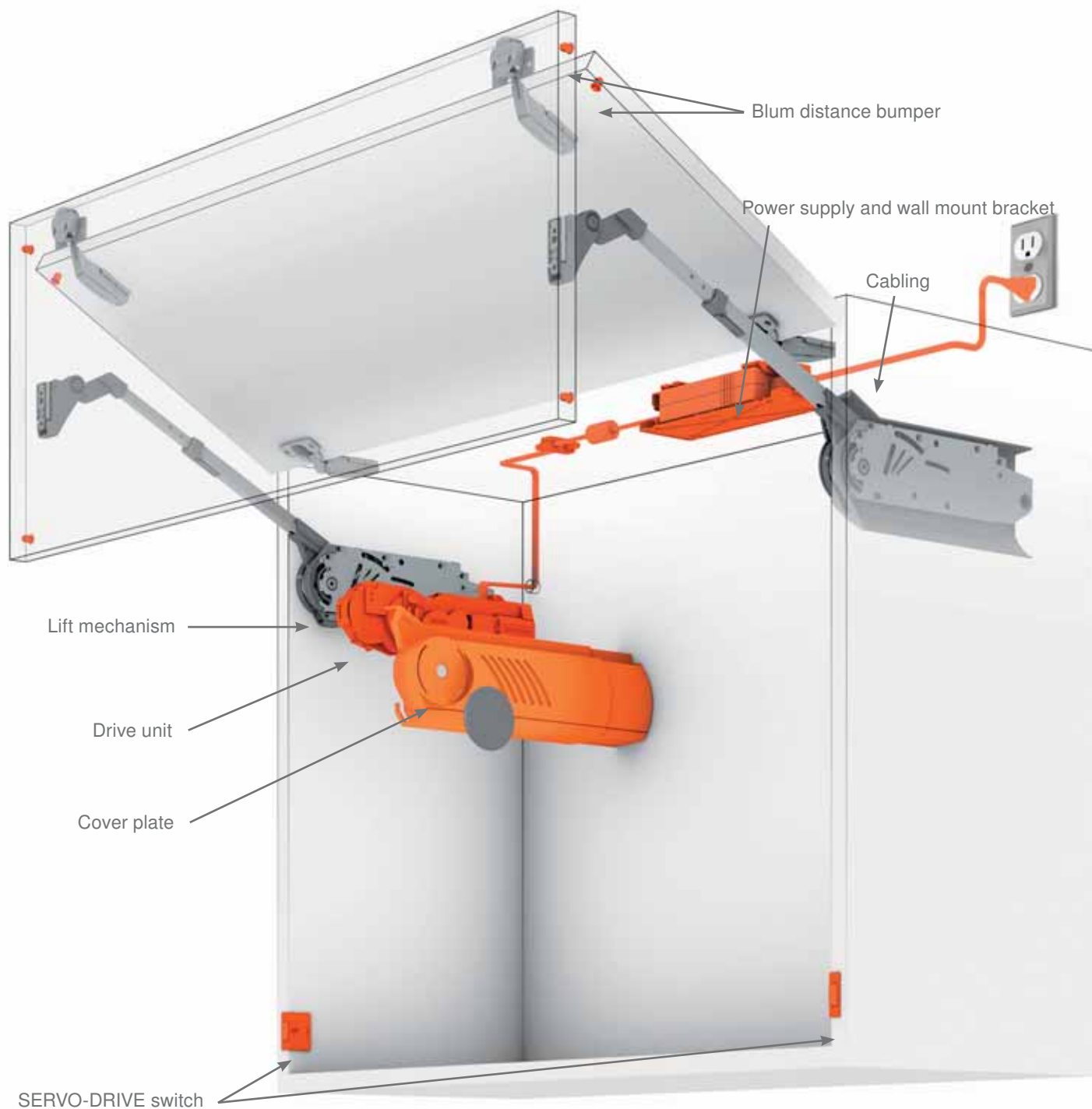
For corner applications, it is especially important that lift system fronts do not open simultaneously. Thanks to the collision avoidance function, you can set drive units so that only one front can be opened at a time.



## SERVO-DRIVE for AVENTOS



## Overview of Components



After lift mechanism installation and adjustment, SERVO-DRIVE components are attached to the lift mechanism and cabinet.

### Lift mechanism

- SERVO-DRIVE-compatible lift mechanisms with tool-free attachment of the drive unit. Please see AVENTOS, HF, HS, HL sections.

### Drive unit

- Attaches to the left lift mechanism
- Tool-free attachment
- Same drive unit used for AVENTOS lift mechanisms HF, HS and HL
- Additional features for synchronization and collision avoidance

### Cover plate

- Covers the lift mechanism and drive unit
- Extendable to an internal depth of 320 mm to cover the universal cable

### SERVO-DRIVE switch

- Attaches to both cabinet sides
- Wireless connection to the drive unit
- Frequency 2.4 GHz
- Certified for use worldwide

### Blum distance bumper

- Distance bumpers ensure the required trigger path of 2 mm
- Aluminum frame recommendation: consider drilling for the distance bumper in the cabinet side

### Cabling

- Proven cabling components such as the SERVO-DRIVE universal cable, cable connectors and cable end protectors
- Easy, practically tool-free cabling

### Power supply

- 24W SERVO-DRIVE power supply
- 12W SERVO-DRIVE power supply for single applications

### Wall mount bracket for power supply

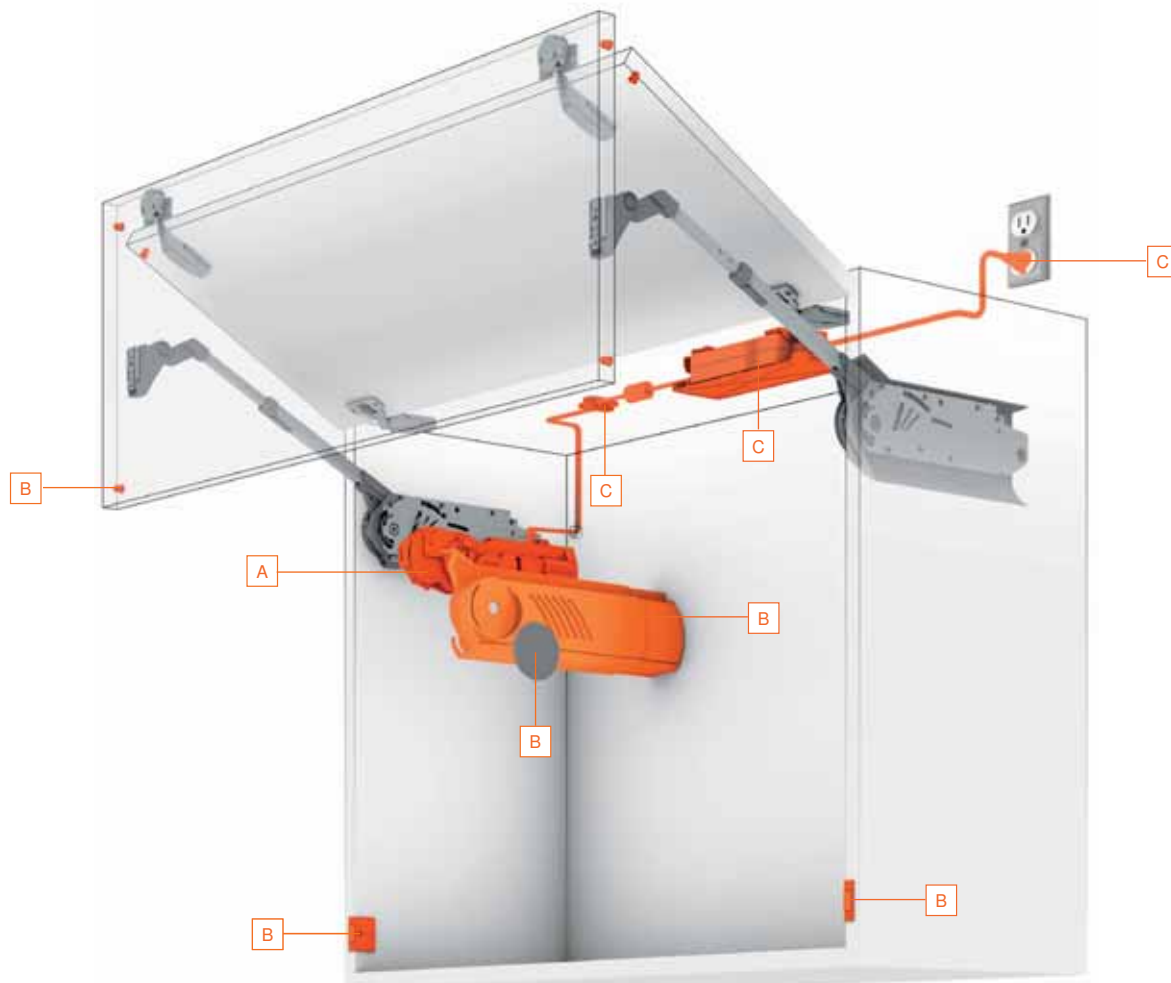
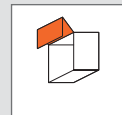
- For secure mounting



# SERVO-DRIVE for AVENTOS HF



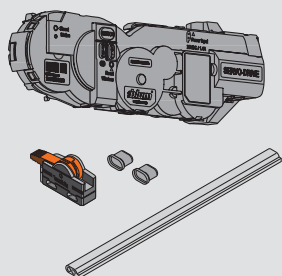
## Ordering Information



### SERVO-DRIVE set

#### A Set includes:

- Drive unit
- 60" universal cable
- Cable connector
- Cable end protector (qty 2)



Part no.

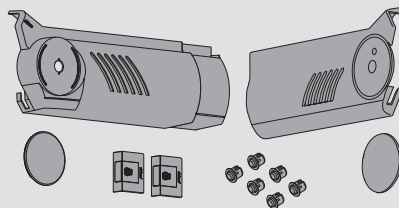
SERVO-DRIVE set

**21FA000**

### Cover set

#### B Set includes:

- SERVODRIVE cover plate (left)
- Cover plate (right)
- Non-handed cover cap (qty 2)
- SERVODRIVE switches (qty 2)
- Ø5 Blum distance bumper (qty 6)
- Colors: Light Gray and Dark Gray



Part no.

Cover set

**21F8000.NA**

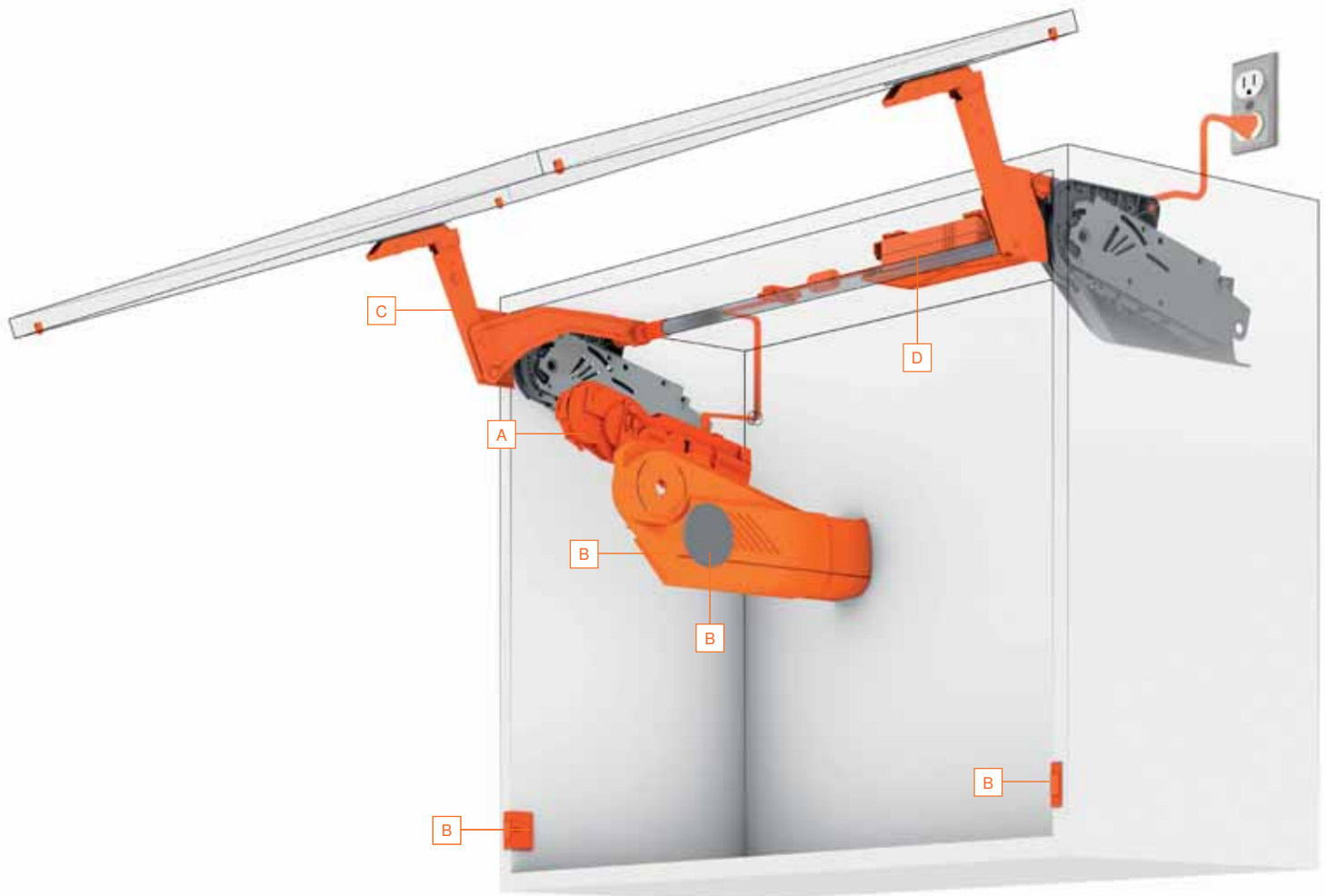
**NOTE:** For additional AVENTOS HF components and installation instructions, see pages 11-12

**C** Power supply options - see page 90



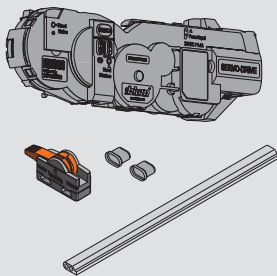
## Ordering Information

## SERVO-DRIVE for AVENTOS HS



### SERVO-DRIVE set

- A** Set includes:
- Drive unit
  - 60" universal cable
  - Cable connector
  - Cable end protector (qty 2)



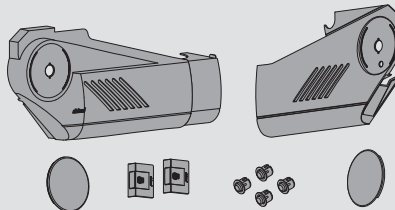
Part no.

SERVO-DRIVE set

**21FA000**

### Cover set

- B** Set includes:
- SERVO-DRIVE cover plate (left)
  - Cover plate (right)
  - Non-handed cover cap (qty 2)
  - SERVO-DRIVE switches (qty 2)
  - Ø5 Blum distance bumper (qty 6)
  - Colors: Light Gray and Dark Gray



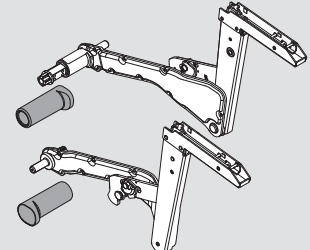
Part no.

Cover set

**21S8000.NA**

### Arm assembly set

- C** Set includes:
- SERVO-DRIVE arm assembly (left)
  - Standard arm assembly (right)
  - Stabilizer rod cover cap (qty 2)



**NOTE:** Stabilizer rod cutting dimension for SERVODRIVE application is length = interior cabinet width minus **164** (6-7/16")

Part no.

Arm assembly set

**21S3500.01**

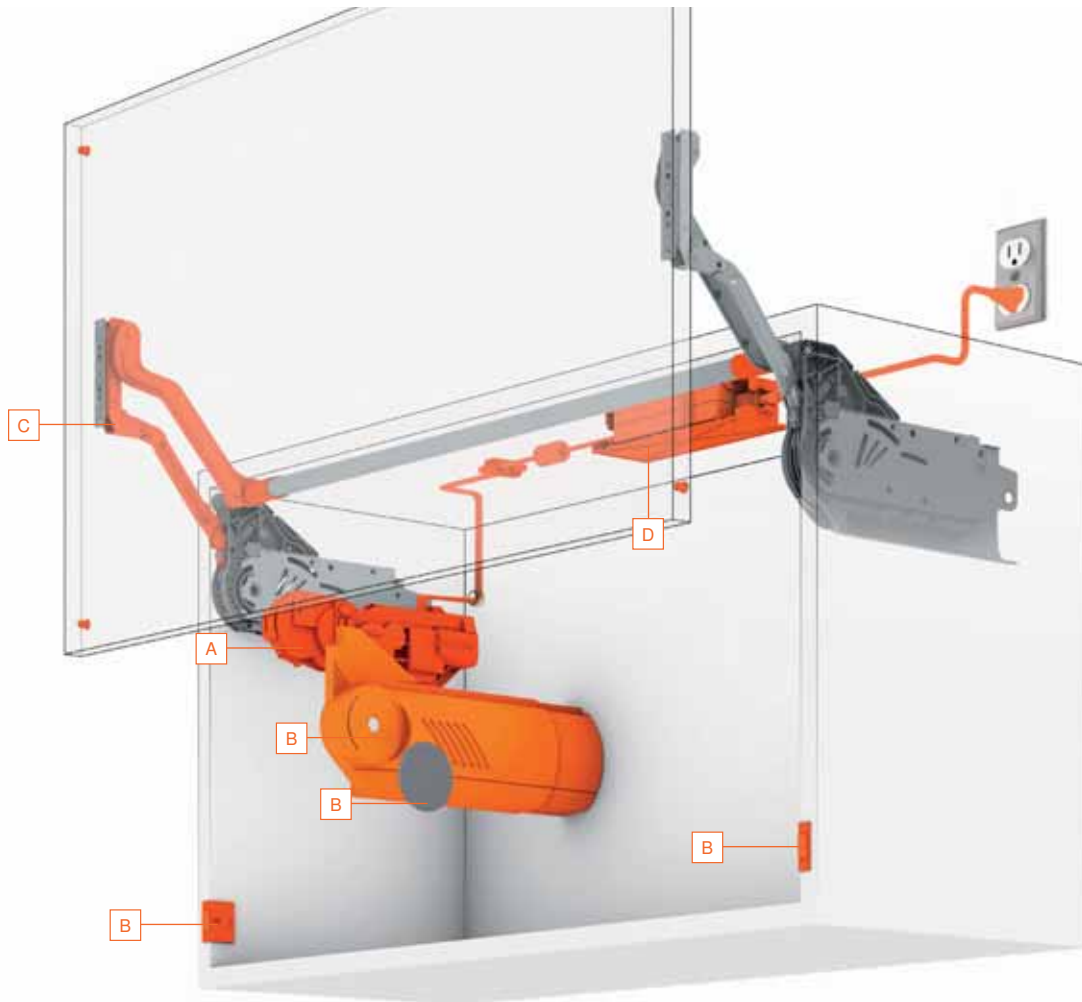
**NOTE:** For additional AVENTOS HS components and installation instructions, see pages 23-24

**D** Power supply options - see page 90

# SERVO-DRIVE for AVENTOS HL



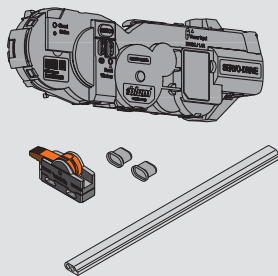
## Ordering Information



### SERVO-DRIVE set

#### A Set includes:

- Drive unit
- 60" universal cable
- Cable connector
- Cable end protector (qty 2)



Part no.

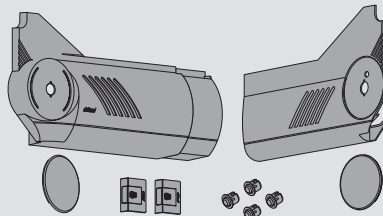
SERVO-DRIVE set

**21FA000**

### Cover set

#### B Set includes:

- SERVO-DRIVE cover plate (left)
- Cover plate (right)
- Non-handed cover cap (qty 2)
- SERVO-DRIVE switches (qty 2)
- Ø5 Blum distance bumpet (qty 6)
- Colors: Light Gray and Dark Gray



Part no.

Cover set

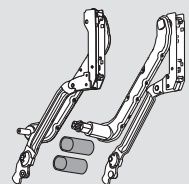
**21L8000.NA**

### Arm assembly set

#### C Set includes:

- SERVO-DRIVE arm assembly (left)
- Standard arm assembly (right)
- Stabilizer rod cover cap (qty 2)

**NOTE:** Stabilizer rod cutting dimension for SERVO-DRIVE application is length = interior cabinet width minus 164 (6-7/16")



Cabinet height

Part no.

300 to 349	<b>21L3200.01</b>
350 to 399	<b>21L3500.01</b>
400 to 550	<b>21L3800.01</b>
450 to 580	<b>21L3900.01</b>

**D** Power supply options - see page 90

**NOTE:** For additional AVENTOS HL components and installation instructions, see pages 35-36



## SERVO-DRIVE for AVENTOS

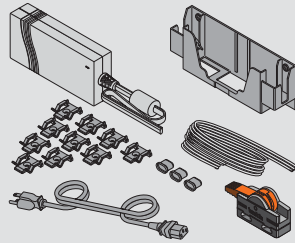


## Electrical Components

### Power supply set

#### Set includes:

- Power supply
- Wall mount bracket
- Three-prong power cord
- Cable connector
- Cable end protector (qty 3)
- Cable clips (qty 10)
- 19 feet universal cable



Part no.

Power supply set

**Z10NE03UG10**

### SERVO-DRIVE power supply components

Supplies power for up to 16 drive units

- Energy Star Level VI
- UL certified
- Connect to switched GFCI outlet
- Cable length is six feet



Part no.

**NOTE:** Three-prong power cord required

Power supply

**Z10NE030G**

Three-prong power cord

**Z10M200U**

### SERVO-DRIVE uno power supply

Supplies power to a single drive unit

- 44" power cord
- Extendable up to 6 feet using cable connectors (sold separately)



Part no.

Power supply set

**Z10NA30UGF**

### Output specifications

Output voltage	24 VDC
Output power	24 W continuous / 12 W continuous*
Minimum load	None
Over voltage protection	At 33 VDC
Overload protection	10.5 A hiccup trip and restart mode with auto recovery
Short circuit protection	Continuous

\*12 W Output power applies to SERVO-DRIVE uno only

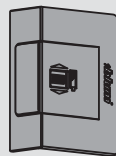
### Environmental information

Operating temperature	32° F–104° F
Storage temperature	-4° F to 185° F
Protection	IP40

### SERVO-DRIVE switch

For adding additional activation switches to a SERVO-DRIVE for AVENTOS application.

- Up to six switches can be added per drive unit
- Colors: Light Gray and Dark Gray



**NOTE:** A switch can only be synchronized to one drive unit

Part no.

SERVO-DRIVE switch

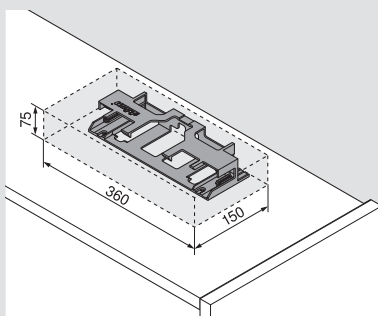
**21P5020**

### Input specifications

Input voltage	100-240 VAC
Input frequency	50-60 Hz
Input current	0.6 A
Inrush current	100 A maximum at 240 VAC
Protection class	Class I
Earth leakage current	3.5 mA maximum

### Space requirements and safety distance for power supply

A safety distance of 30 mm must be maintained for air circulation



### General specifications

Efficiency	≥ 87%
Switching frequency	65 kHz typical
No load loss (standby)	< 0.075 W
Energy Star	Level VI

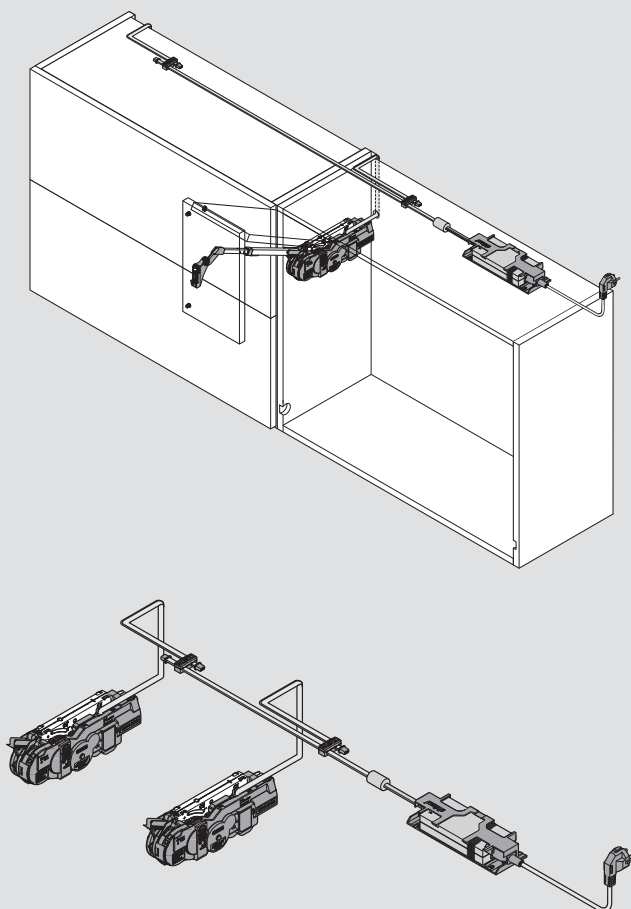
### Safety / Approvals

EN / IEC	60950, 60335-1
UL	60950-1

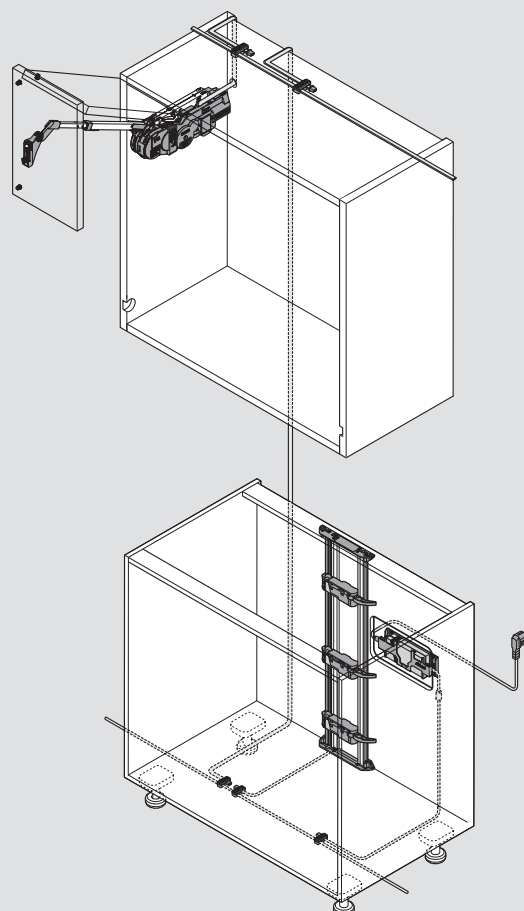


### Wiring options

For wall cabinets

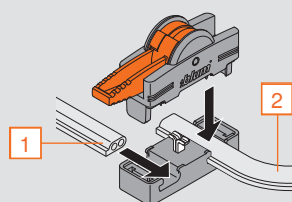


For SERVO-DRIVE in wall and base cabinets

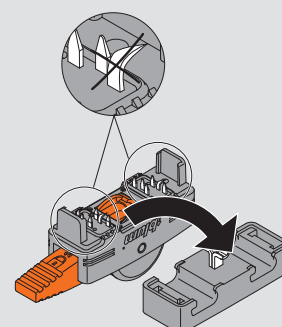
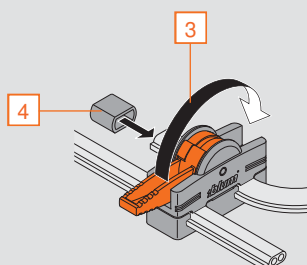


### Installing cable connector

- 1 Insert cable for distribution into open slot
- 2 Insert cable for power into open slot



- 3 Rotate orange lever to lock into place
- 4 Slide cable end protector over exposed cable



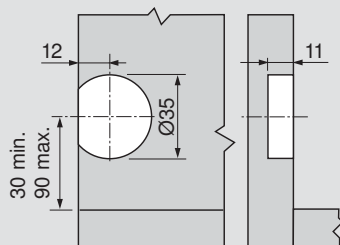
**NOTE:** Ensure piercing pins are not damaged

## SERVO-DRIVE for AVENTOS



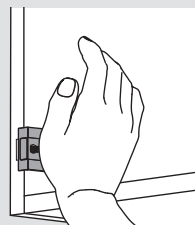
## Assembly for AVENTOS HF/HS/HL

### Installation of SERVO-DRIVE activation switch

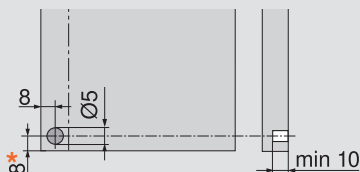


**NOTE:** Use of boring template (M31.2000) recommended, see page 99

The activation switch should be installed by pressing into the cabinet side with your hand. Do not use hammer to install.

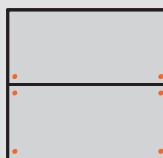


### Installation of Blum distance bumpers

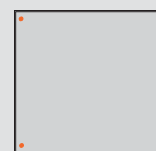


**NOTE:** The distance bumper should not touch the SERVO-DRIVE switch

For AVENTOS HF – install into door front. Use of six distance bumpers is recommended.



For AVENTOS HS/HL – install into door front. Use of four distance bumpers is recommended.

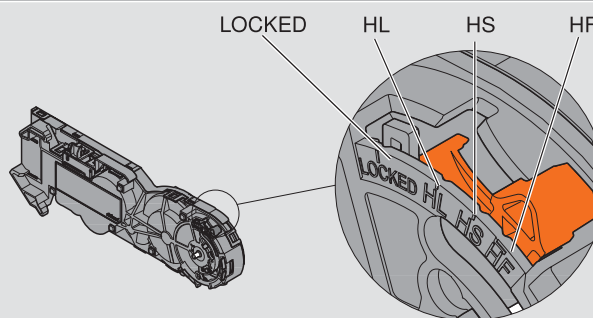


### Drive unit preparation

Before SERVO-DRIVE for AVENTOS installation, the lift mechanism tension adjustment should be made and door operation balanced.

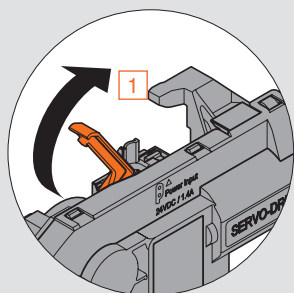
The AVENTOS arm assembly must be in the completely open position for drive unit installation. Attach the opening angle stop (if required) only **after** drive unit installation and **before** the reference run.

Use the lift mechanism selection switch to select the appropriate lift system application.

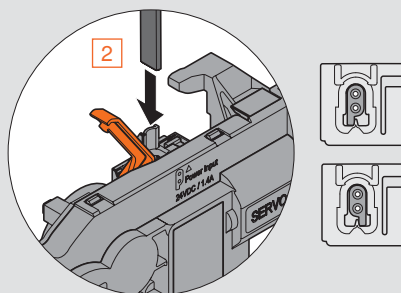


### Installation of universal cable

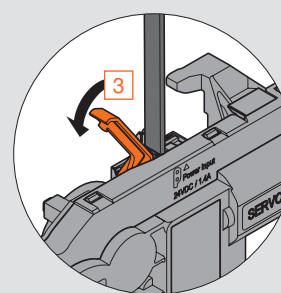
**1** Lift orange universal cable lock lever

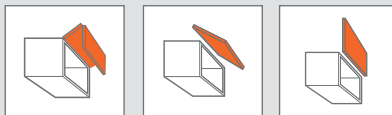


**2** Insert universal cable (either end of the cable can be used)



**3** Once cable is inserted, press down on universal cable lock lever





## SERVO-DRIVE for AVENTOS



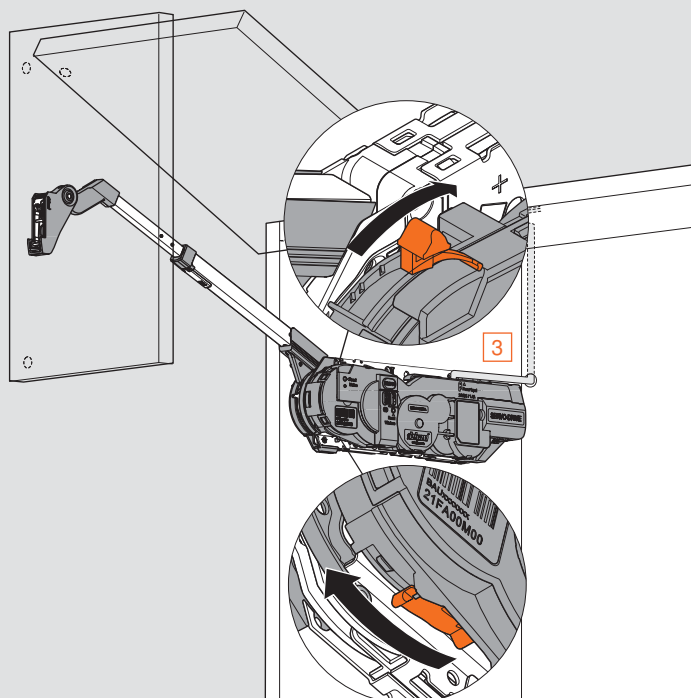
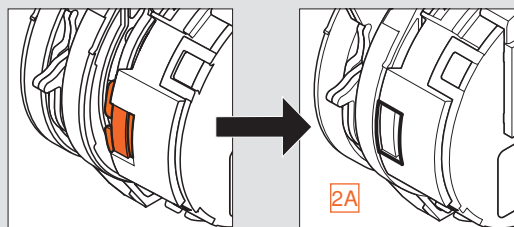
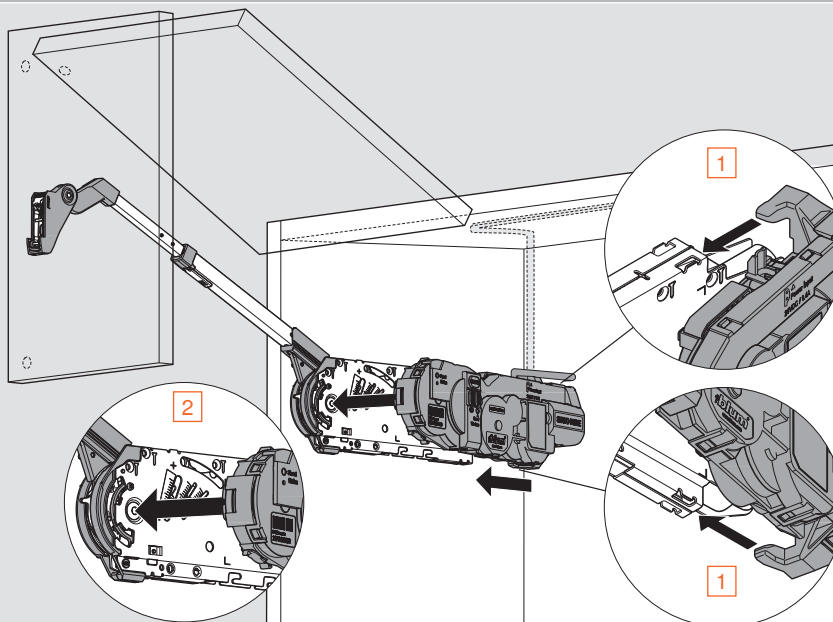
### Drive unit installation

- 1 Insert the drive unit into back of lift mechanism and slide forward

- 2 Position drive unit into front of lift mechanism with locator pin

- 2A The drive unit can be locked when the orange slide is no longer visible in the view window.

- 3 To lock drive unit to the lift mechanism, slide the lift mechanism selection switch to the locked position (reference noted positions on drive unit). There will be an audible click when locked.





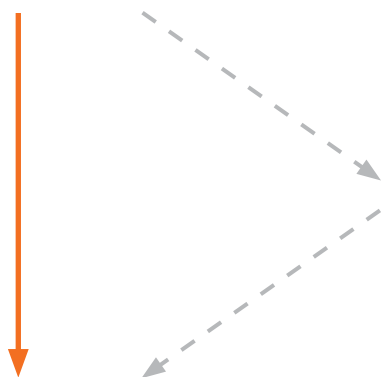
# SERVO-DRIVE for AVENTOS



## Overview of Functions

### Start-Up

**A** Activating the SERVO-DRIVE switch



### Additional Features

Optional

**C** Activating synchronization

**D** Activating collision avoidance

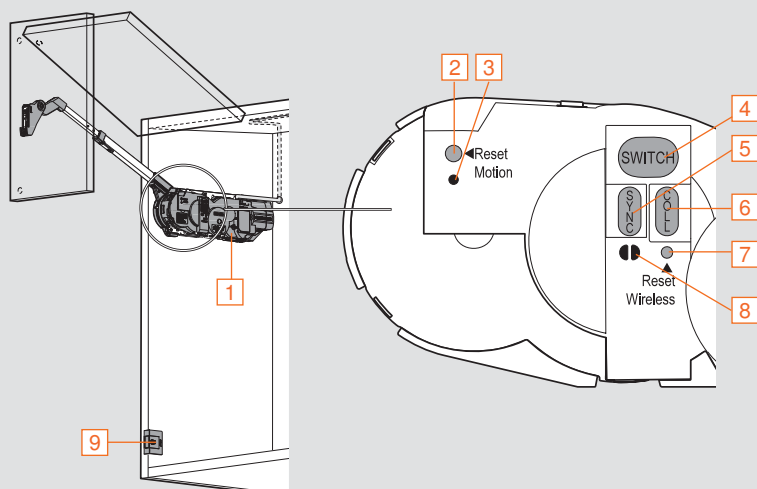
**B** Start reference run

### Deactivation

**E** Reset Motion

**F** Reset Wireless

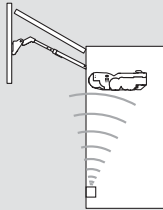
### Function buttons layout



- 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

### A Activating the SERVO-DRIVE switch



Operation



Lights up continuously

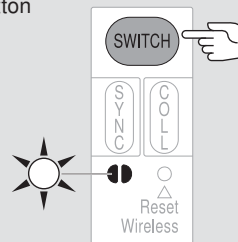


Flashes

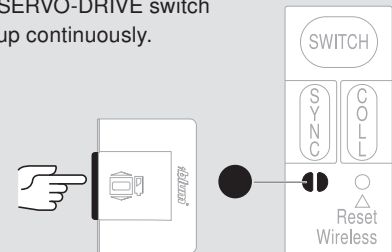
Set up the wireless connection between the SERVO-DRIVE switch and the drive unit. Each switch can only be assigned to one SERVO-DRIVE unit.

**NOTE:** Up to 6 switches can be programmed to a single drive unit

- 1 Press and hold the <SWITCH> button until the LED flashes



- 2 Press and hold the SERVO-DRIVE switch until the LED lights up continuously.



Repeat steps 1 and 2 for additional SERVO-DRIVE switches in the cabinet

## Additional Features

Optional

### C Activating synchronization

For instructions on activating synchronization, see page 96

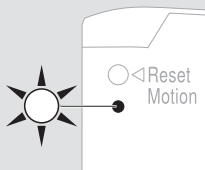
### D Activating collision avoidance

For instructions on activating collision avoidance, see page 96

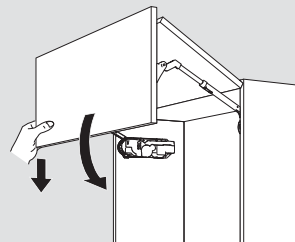
### B Start reference run

The drive unit recognizes the required parameters using the reference run, setting both upper and lower limits for the motion of the door. A new reference run is required if original parameters change (tension/hardware adjustment, angle restriction installed).

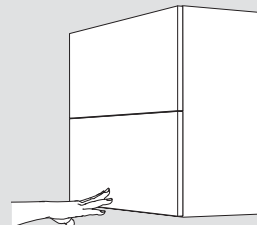
- 1 Reference run is required: LED flashes orange



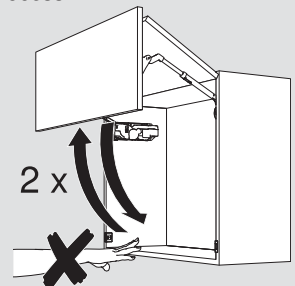
- 2 Close the front manually



- 3 Press on front: The reference run starts automatically



- 4 Front opens and closes two times automatically: under no circumstances should you try to manually interrupt or stop the process



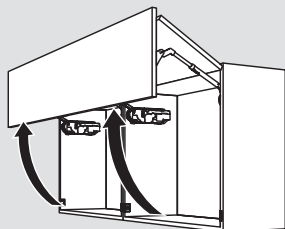
**NOTE:** If the reference run is interrupted, it should be reset. See reset motion on page 97 then restart reference run

## SERVO-DRIVE for AVENTOS



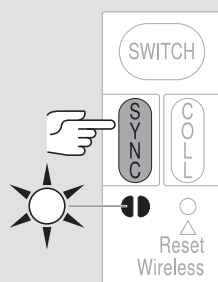
## Additional Features

### C Activating synchronization

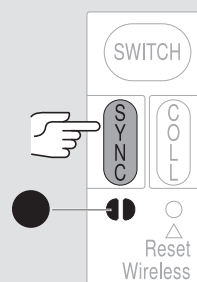


Up to three drive units can be synchronized allowing them to move simultaneously. This function is required for several cabinets with one wide front.

- 1 Press and hold the <SYNC> button on the 1st drive unit until the LED flashes

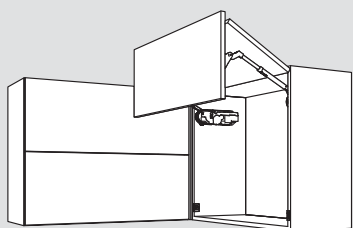


- 2 Press and hold <SYNC> on the 2nd drive unit until the LEDs on both synchronized drive units light up continuously



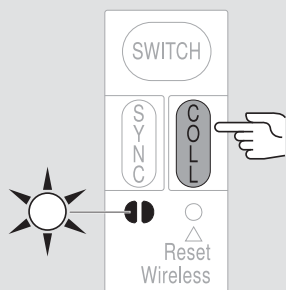
**NOTE:** Repeat steps 1 and 2 for all additional drive units

### D Activating collision avoidance

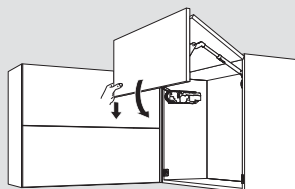


To avoid the collision of door fronts, drive units (six maximum) are linked so that only one door can be opened at a time. A door front is prevented from opening as long as a linked door front remains open.

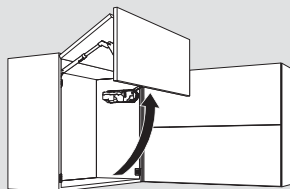
- 1 Press and hold the <COLL> button on the 1st drive unit until the LED flashes



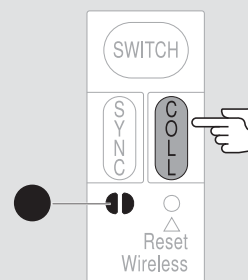
- 2 Close the door manually



- 3 Manually open the door of the unit to be linked



- 4 Press and hold <COLL> on the 2nd drive unit until the LED lights up continuously (the same will happen in the first cabinet)



**NOTE:** Repeat steps 1 through 4 for all additional cabinets

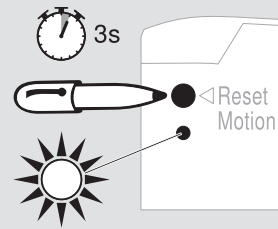
**E** Reset motion

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



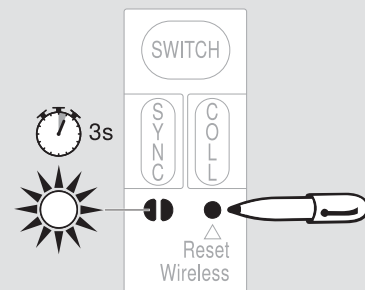
Flashes quickly




- 1 Press and hold 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, synchronization and collision avoidance settings for the respective drive unit are deleted.

- 1 Press and hold the <Reset Wireless> button using a pen (at least three seconds) until the LED flashes quickly

**Motion LED signals**

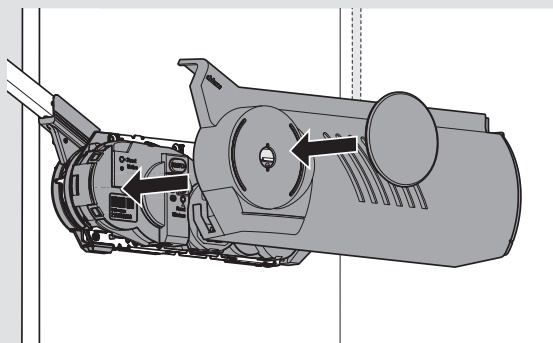
	Flashes orange	Reference run is required
	Lights orange continuously	Power available
		Operating mode display
		Reference run successfully completed
	Flashes orange quickly	Reset motion confirmation

**Wireless LED signals**

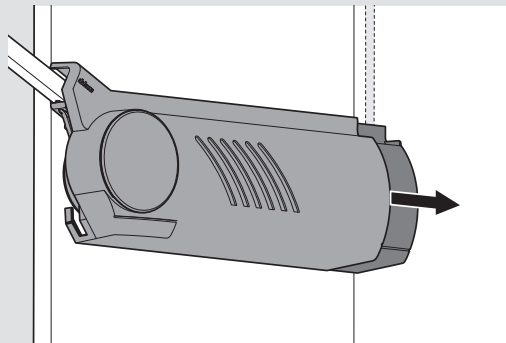
	Flashes green	Activation mode
	Lights up green continuously	Activation confirmation
	Flashes green quickly	Deactivation confirmation
	Lights up continuously red	Last process was not completed successfully

### Cover cap

1

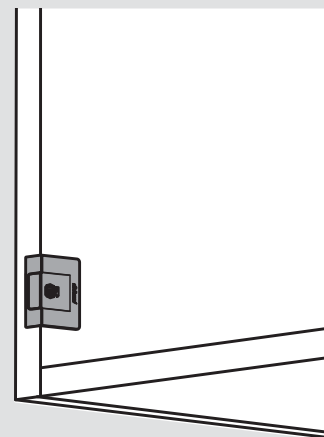


2

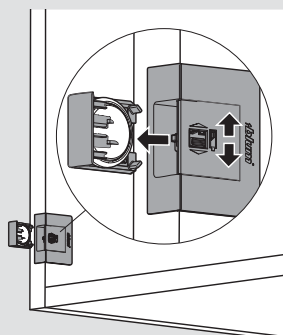


### Battery replacement

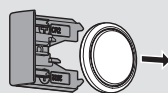
- When battery power begins to weaken, the SERVO-DRIVE switch battery display flashes red
- Only use type CR2032 batteries from known manufacturers
- Make sure that the new battery is inserted correctly (note proper pole connections +/-)
- The SERVO-DRIVE switch battery cannot be recharged
- If the battery is inserted incorrectly, the SERVO-DRIVE switch battery display will flash red



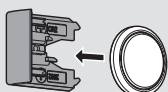
- 1 Remove battery carrier tray by pressing up or down on the battery display switch



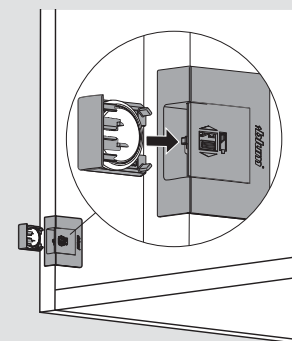
- 2 Remove dead battery



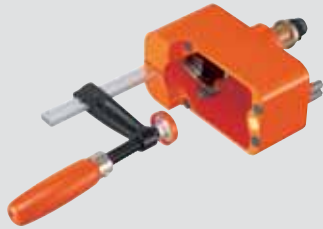
- 3 Insert new battery



- 4 Replace battery carrier tray into switch housing



### SERVO-DRIVE switch boring template



- For easy installation of SERVO-DRIVE for AVENTOS switch
- Clamp assembly for secure boring

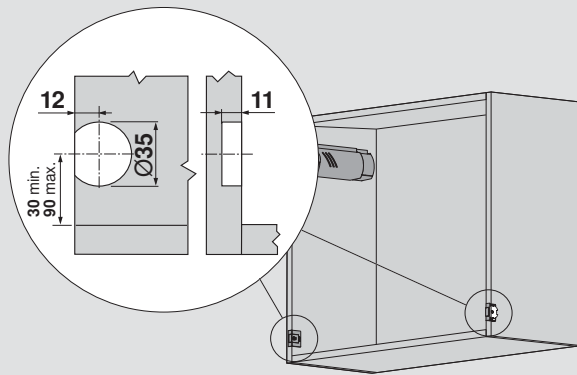
#### Set includes:

- Ø35 mm bit
- Torx driver bit (qty 2)

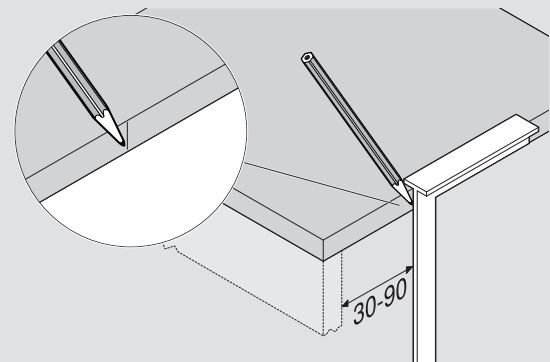
Part no.

SERVO-DRIVE switch boring template

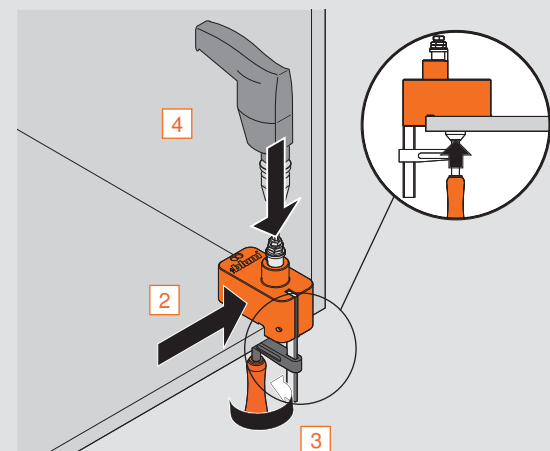
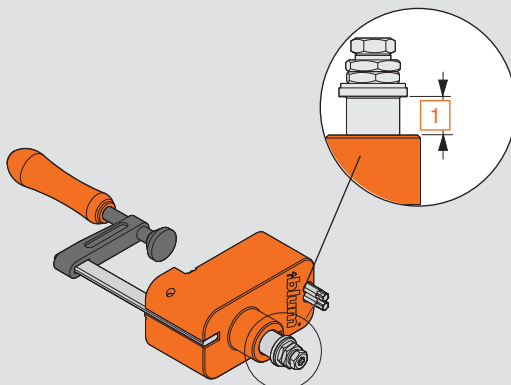
M31.2000



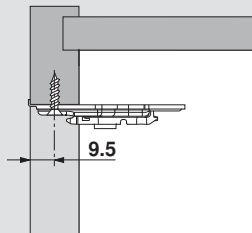
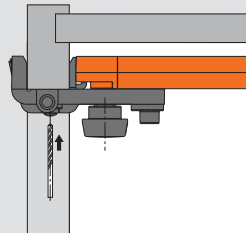
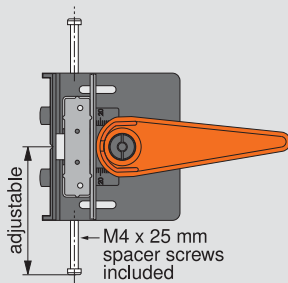
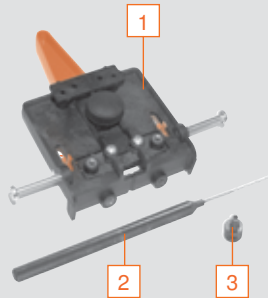
### Mark switch location



- Set drilling depth
- Align mark
- Secure template to cabinet panel with clamp
- Use provided Torx driver bit to bore hole



### PLATEMATE



- Boring template for all Blum face frame adapter plates
- Clamps to the frame with cam lever
- Adjustment knob accommodates face frame thickness of 5/8" to 1"
- Spacer screws allow quick use without measuring

#### Set includes:

- 1 PLATEMATE template
- 2 Ø.35 pilot bit and extension
- 3 Ø5 stop collar

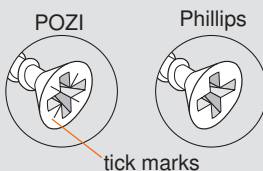
#### Also includes:

- Reversible bushing insert for 32 hole spacing for 175L6xxx
- Reversible bushing insert for 40 hold spacing for 175H6

Part no.

Platemate	65.5030.01
Ø2.5 drill bit	DB-2.5mm R

### POZI DRIVER and bits



A POZI screwdriver (different from Phillips) is the most crucial tool you can use to assure that full torque is applied to all Blum mounting screws. POZI screws can be identified by the distinctive "tick" marks located in the center of the screw head recess.

Part no.

#2 POZI DRIVER	POZI DRIVER
1/4" Magnetic bit holder	BIT HOLDER
#2 x 1" POZI bit insert	POZI BIT #2x1
#2 x 2" POZI bit insert	POZI BIT #2x2

### Vix bit

For use in handheld drills

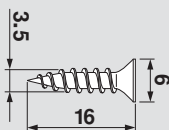


Part no.

Ø3 piloting bit	VPB-5
-----------------	-------

### Deep thread wood screw

Use to attach mounting plates to doors

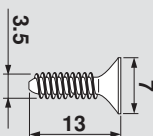


Part no.

#6 x 16, Phillips	606N
#6 x 16, Pozi	606P

### Fine thread aluminum screw

Use to attach mounting plates to wide frame aluminum doors

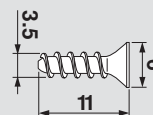


Part no.

#7 x 13 fine thread	7072A
---------------------	-------

### Deep thread aluminum screw

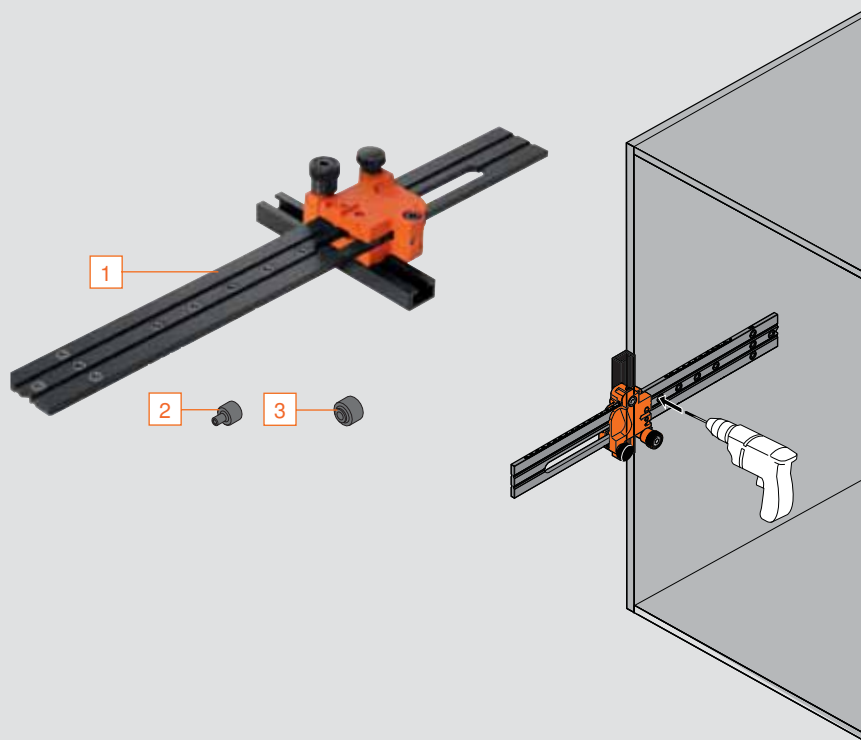
Use to attach mounting plates to narrow frame aluminum doors



Part no.

#6x11 deep thread	699.110
-------------------	---------

## Universal individual template



- Used to pre-bore for AVENTOS lift mechanism locating pins
- Also used for pre-boring for cabinet profiles and BLUMOTION for doors and TIP-ON for doors adapter plates
- Calibrated scale for accurate setting

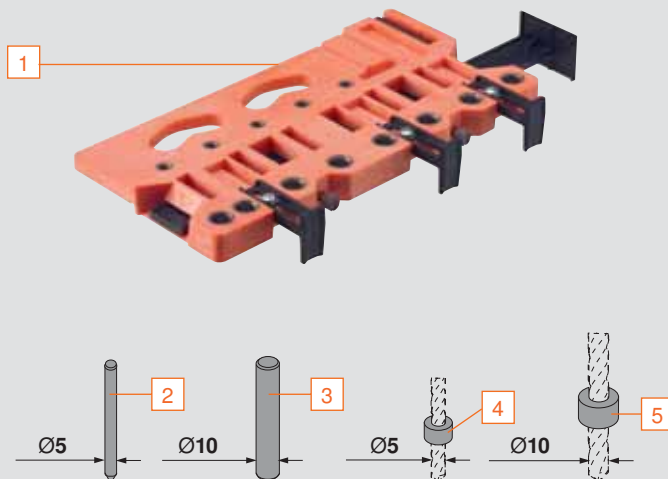
### Set includes:

- 1 Universal individual template
- 2 Ø2.5 stop collar
- 3 Ø5 stop collar

Part no.

Template	65.1051.02
Ø2.5 drill bit	DB-2.5mm R
Ø5 drill bit	DB-5mm R

## Universal boring template



- Used to pre-bore for AVENTOS telescopic arm and arm assembly mounting plates
- Can also be used to pre-bore for drawer fronts, bottoms and backs for METABOX, TANDEMBOX, and LEGRABOX drawer systems

### Set includes:

- 1 Template
- 2 Ø5 marking pin
- 3 Ø10 marking pin
- 4 Ø5 stop collar
- 5 Ø10 stop collar

Part no.

Universal template	ZML.0040.01
Ø5 drill bit	DB-5mm R



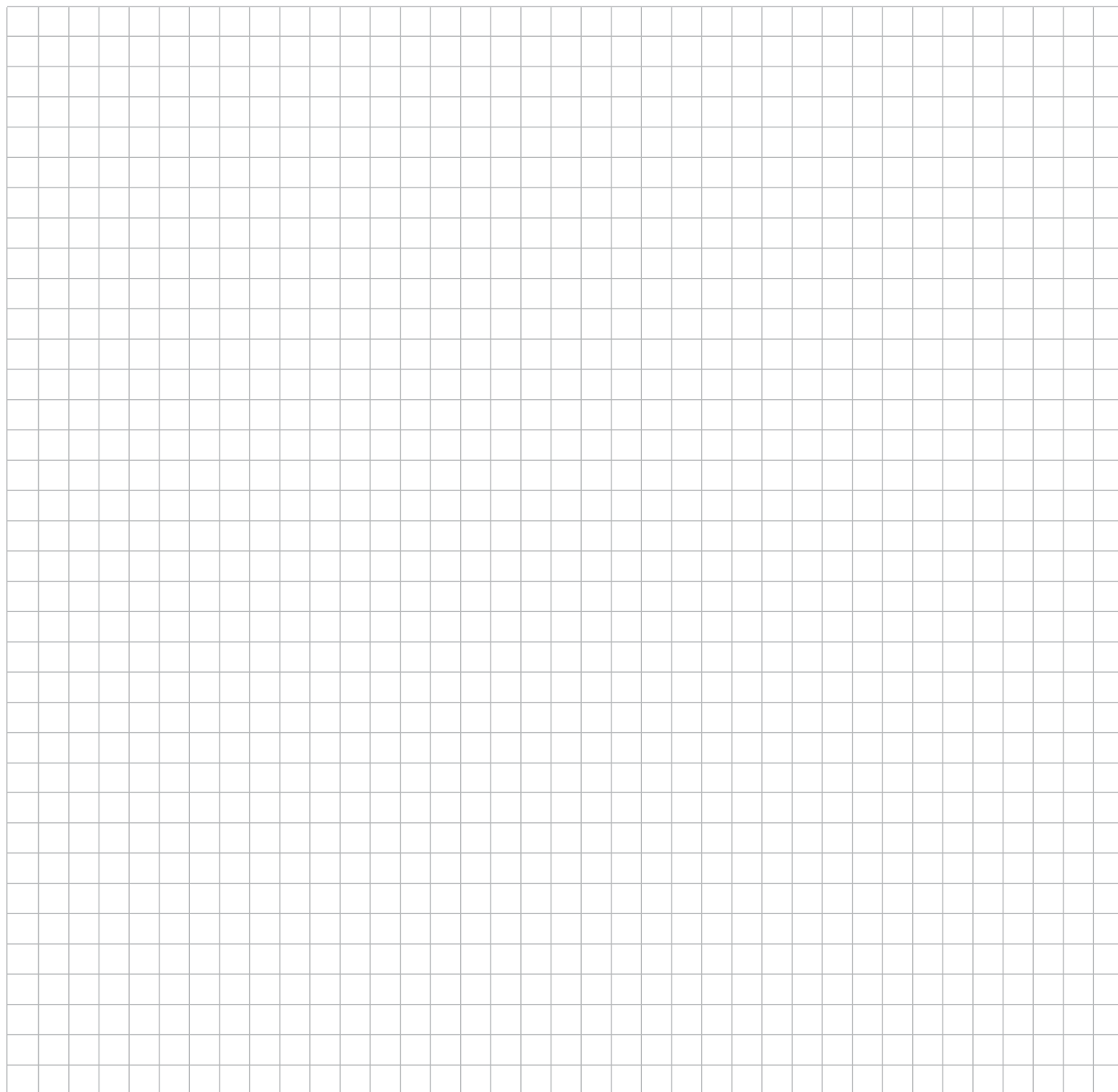
Part no.	Page no.
175H3100	11, 15, 47, 54
175H3F00	11, 47
177H3100E	61, 65, 68
20F2200.N5	11, 15
20F2500.N5	11, 15
20F2800.N5	11, 15
20F3200.01	11, 15
20F3500.01	11, 15
20F3800.01	11, 15
20F3900.01	11, 15
20F6001	75
20F7011	74
20F7051	74
20F8000.NA	11, 15
20K1101	61, 65, 68
20K1301	61, 65, 68
20K1501	61, 65, 68
20K2B00.N1	47, 51
20K2C00.N1	47, 51
20K2E00.N1	47, 51
20K4A00A02	51
20K4101	61, 68
20K4101A	65, 68
20K4501	61
20K51E1	61, 65, 68
20K5501	61
20K6A01	75
20K6001	75
20K7011	74
20K7041	74
20K7A11	74
20K7A41	74
20L6001	75
20L2100.N5	34, 35, 38 39
20L2300.N5	34, 35, 38 39
20L2500.N5	34, 35, 38 39
20L2700.N5	34, 35, 38 39
20L2900.N5	34, 35, 38 39
20L3200.06	34, 35, 36, 37, 38, 39, 40, 41
20L3500.06	34, 35, 36, 37, 38, 39, 40, 41
20L3800.06	34, 35, 36, 37, 38, 39, 40, 41
20L3900.06	34, 35, 36, 37, 38, 39, 40, 41
20L8000.N1	35, 39
20Q153ZA	78
20Q153ZN	78

Part no.	Page no.
20Q1061UN	23, 27
20Q1061UA	35, 39
20S2A00.N5	22, 23, 26, 27
20S2B00.N5	22, 23, 26, 27
20S2C00.N5	22, 23, 26, 27
20S2D00.N5	22, 23, 26, 27
20S2E00.N5	22, 23, 26, 27
20S2F00.N5	22, 23, 26, 27
20S2G00.N5	22, 23, 26, 27
20S2H00.N5	22, 23, 26, 27
20S2I00.N5	22, 23, 26, 27
20S3500.06	23, 27
20S4200	23, 35, 47
20S4200A	27, 39, 54
20S4F01	23, 35, 47
20S8000.NA	23, 27
38N358B.08	61
39C358B.20	61
606N	100
606P	100
65.1051.02	101
65.5030.01	100
699.110	100
7072A	100
71B3580	61
71B950A	65
78Z5530TA8	11
78Z550ATA6	15
BLUM BIT	100
DB-2.5mm R	100, 101
DB-5mm R	101
POZI BIT #2x1	100
POZI BIT #2x2	100
POZI DRIVER	100
VPB-5	100
ZML.0040.01	101



Part no.	Page no.
21L3200.01	88
21L3500.01	88
21L3800.01	88
21L3900.01	88
21L8000.NA	88
21FA000	86, 87, 88
21F8000.NA	86
21P5020	90
21S3500.01	87
M31.2000	99
Z10M200U	90
Z10NE030G	90
Z10NE03UG10	90





### Connect With Us on Social Media

Be sure to connect with us on social media for additional resources for information regarding tips on installation, maximizing storage space, new products and other news and events going on inside Blum.

Find us by searching "**Blum Inc**" in the search bar.







## Why Choose Blum



The Blum name stands for quality, innovation and great customer service. We manufacture hardware that makes working in the kitchen easier, no matter the age of the user, and we do this globally. We've been in the United States for more than 40 years, and we are committed to manufacturing for the American market. Blum supports the United States market with a network of distributors, knowledgeable Blum sales representatives and an experienced customer service department. Each of our products has been designed carefully, with the customer experience in mind. We have a deep commitment to research and believe anyone who manufactures, sells, installs or uses our products should benefit from our knowledge and experience. We specialize in engineering and manufacturing concealed hinges, drawer systems and systems for lift-up doors. From our touch-to-open technology, to the soft-closing door or drawer, our hardware helps modernize the kitchen experience.



To learn more about Blum, visit [blum.com/tour](https://blum.com/tour)



Blum, Inc. is ISO 9001 certified which means that you are assured of consistent quality in every Blum product. They exceed the requirements of ANSI/BHMA standards for cycle life, static load and self-closing performance.



Please visit [blum.com](http://blum.com) for information on other Blum products  
LIT-AVT1000.12.20 Ident. 26233150 © 2020 Blum, Inc.

Blum, Inc.  
7733 Old Plank Rd.  
Stanley, NC 28164  
800-438-6788  
[blum.com](http://blum.com)

FSC LOGO



**ISO 9001**  
Certified Quality  
System

