



AVENTOS HF

Bi-fold lift system

AVENTOS HF

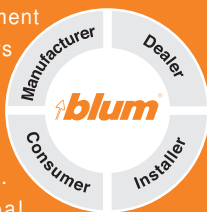


Blum, Inc. is a leading manufacturer of functional hardware for the kitchen cabinet and commercial casegoods industries specializing in lift systems, concealed hinges and drawer runner systems. Virtually all of the hardware needed to assemble and make cabinets functional are available within the wide range of quality Blum products.

Blum's manufacturing and distribution complex in Stanley, North Carolina supplies the North American markets through a network of more than 150 dependable distributors. Wholly owned by the Blum family, the company was formed in 1952 by Julius Blum and is headquartered in Hoechst, Austria.

Global customer benefits

Product development at Blum considers all of the various customers who will come in contact with our products.



With this "Global Customer Benefits" philosophy we strive to create advantages for all users from the cabinetmaker to the end consumer.



Blum, Inc. is ISO 9001 certified which means that you are assured of consistent quality in every

Blum product. What's more they exceed the requirements of ANSI/BHMA standards for cycle life, static load and self-closing performance. Contact your local Blum representative for more details.

Table of contents

	Page
Overview	2 - 4
Features	5 - 6
Using this catalog	7 - 8
Wood or wide frame aluminum door - face frame application	9 - 10
Wood or wide frame aluminum door - panel application	11 - 12
Narrow frame aluminum door application	13 - 14
Accessories	15
Assembly aids	16
Assembly	17 - 18
Removal	19 - 20
The AVENTOS line	21



Opening action – easier than everything that has come before

Until now, bi-fold lift systems have mainly been used as a design element. Blum has made it much more with the introduction of AVENTOS HF.

AVENTOS HF is an exceptionally easy-opening bi-fold lift system. Even heavy doors feel weightless and can be easily opened or will remain in position when left at any height.



Silent and effortless closing – integrated BLUMOTION

You will instantly appreciate our latest innovation for a quiet and effortless bi-fold lift system.

Whether you are using wood doors or aluminium frames – all close silently and effortlessly. With BLUMOTION, just closing your lift system becomes an experience:



AVENTOS HF has BLUMOTION integrated into the mechanism – the result is something that will both surprise and inspire your customers.

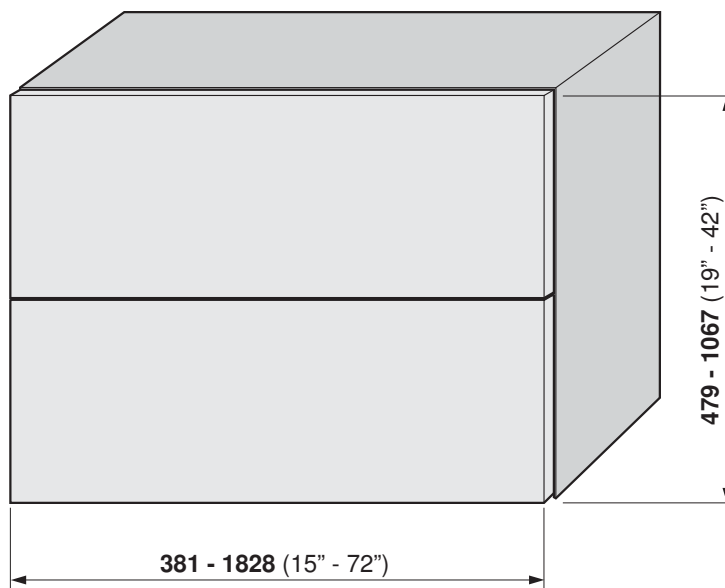
- ▶▶ Doors closed with force ...
- ▶ ... are brought to a gentle halt and ...
- ... close softly and quietly.



Few parts – many applications

The AVENTOS HF covers all common door widths and heights. This is made possible by using different combinations of the 3 lift mechanisms and 4 telescopic arms.

The simplified program range doesn't just make ordering easier. It also simplifies construction and storage.



One, two or three AVENTOS HF lift mechanisms and their associated telescopic arms are required, depending on the width of the cabinet and the combined weight of the doors, including the handle.

Quick assembly and removal

An experienced cabinet installer will typically remove cabinet doors for installation. This protects valuable surfaces and makes the cabinet lighter and makes cabinet installation easier and quicker and most importantly, safer.

AVENTOS HF and CLIP top make this process a breeze. Once the cabinet is installed the doors can be attached without the need for tools.



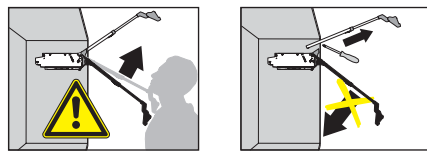
1. The telescopic arms are attached to the lift mechanism using CLIP technology.

2. The upper door is placed on the telescopic arm and CLIP top hinges are attached.

3. CLIP top bottom hinges connect to both doors.

4. The telescopic arm and lower door are connected to each other via the CLIP mechanism.

WARNING



Telescopic arms can spring up and cause injury without door attached

- Do not push telescopic arms down
- Remove telescopic arms before installing or removing cabinet
- For questions call 1-800-438-6788 or go to www.blum.com

Fast and precise adjustment

Both bi-fold doors can be adjusted in all 3 dimensions. The proven CLIP top technology makes this quick and easy.

depending on the weights of the doors being used. A marked tension scale allows precise and repeatable adjustments.

The tension adjustment of AVENTOS HF is used to make fine adjustments to the opening and closing power. The settings vary



Precise reveal adjustment (including the bottom hinge) – CLIP top makes it simple.

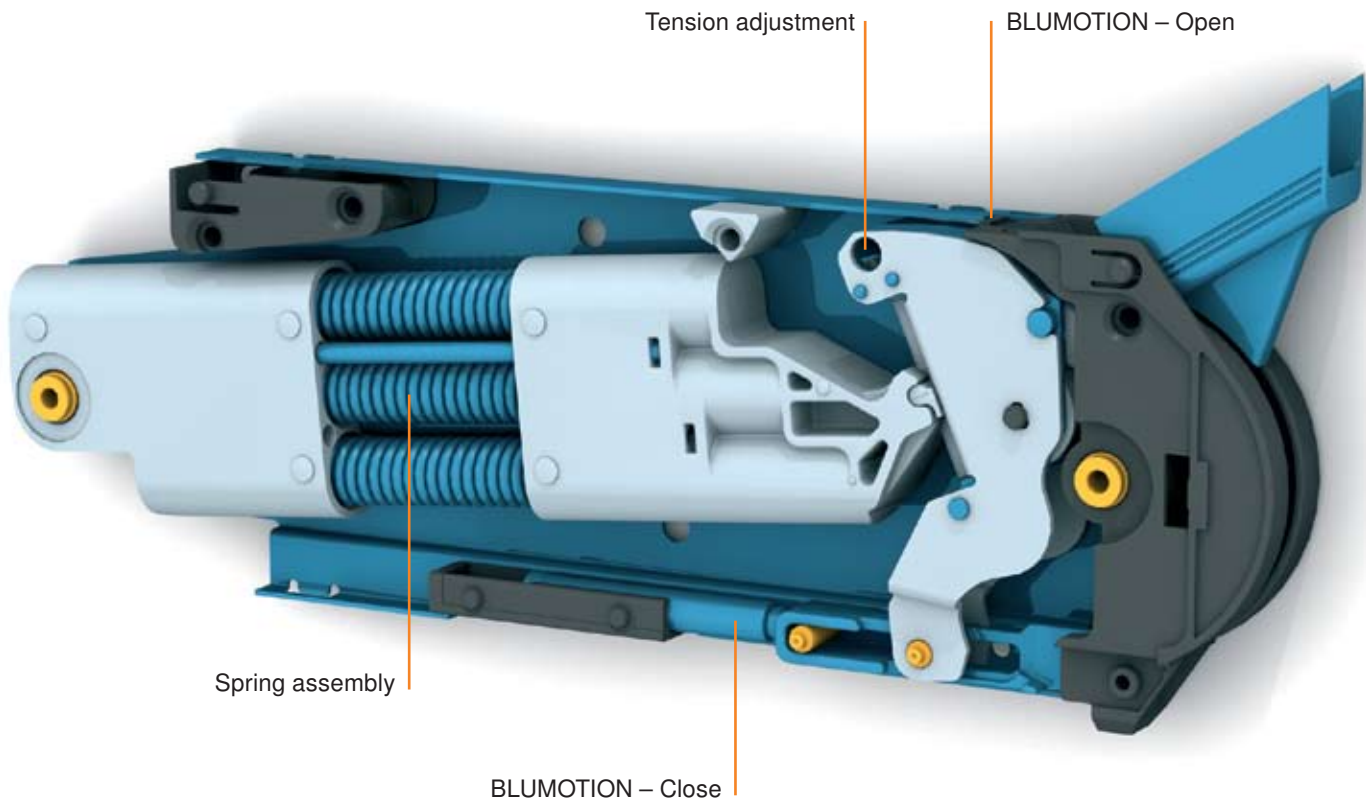
The telescopic arms self-adjust to the cabinet height and only need to be locked in place.

Adjusting the proper setting for the opening and closing power is quick and precise.

Features

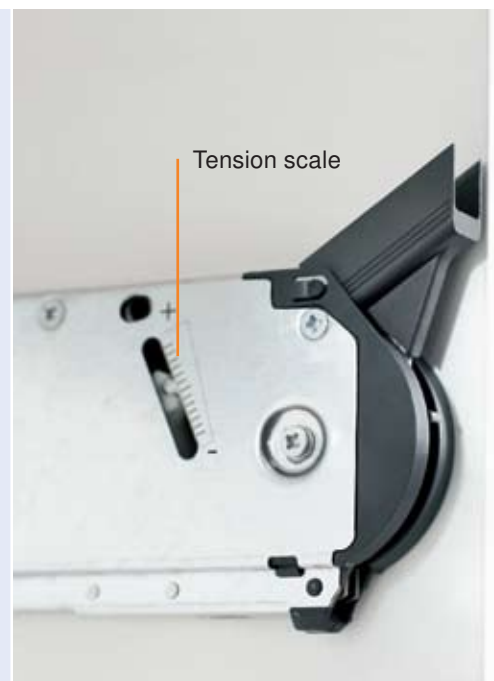
Extremely durable

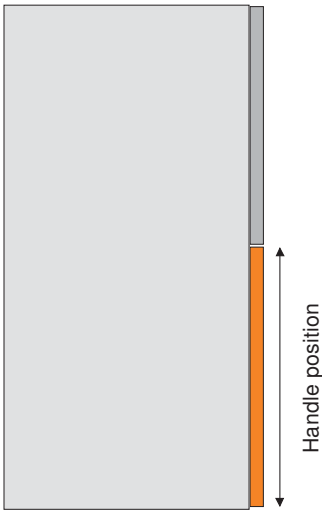
Like all Blum products, AVENTOS HF has quality and durability built in. The core element of the lift mechanism is a spring assembly. In short, peace of mind for the life of the cabinet.



No protruding parts

Because of the removable telescopic arm, there are no protruding parts that can interfere with transportation. This is also an advantage during installation.





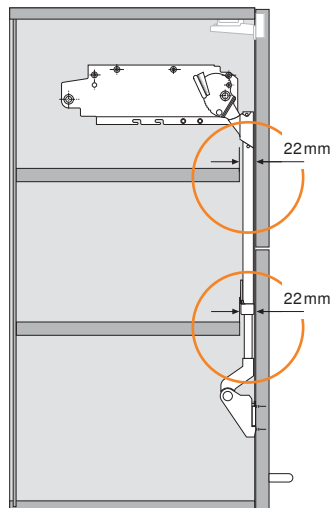
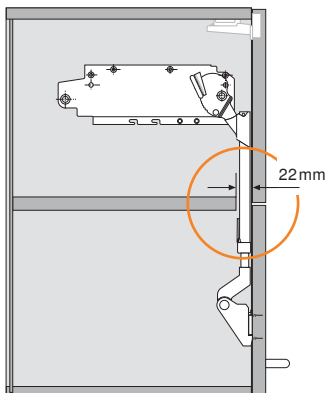
Free handle positioning

Handles of all kinds can be attached anywhere on the bottom door. The optimal position is near the lower edge so that the handle can be easily reached when open.

AVENTOS HF can also be used with cabinets without visible door hardware which utilize over-extending doors.

Finger safety feature

The new CLIP top bottom door hinge proves itself not only through its attractive design, but also through its innovative finger safety feature.



Similar shelves

With AVENTOS HF, storage space is optimized in upper cabinets. Depending on the height of the cabinet, two similar shelves can be used starting at a recess of only 22 mm. This makes the storage area of all shelves identical.

Using this catalog

Step 1: Determine your application

Go to the page for your application: face frame page 9, panel page 11, or narrow frame aluminum door page 13.

Step 2: Calculate the power factor

Determining the Power factor (PF) is important for choosing the lift mechanism that works best with your cabinet and doors. It is calculated by multiplying the cabinet height in inches by the exact combined door weight (including handle) in pounds.

$$\text{Power factor (PF)} = \text{cabinet height [inch]} \times \text{combined door weight* [lb]}$$

* For calculations, use the conversion chart below to determine combined door weight in decimal form.

Example:

Cabinet height: **30 inches**

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

Weight converted to decimal is **23.9 lb**

Power factor (PF) = **30 x 23.9**

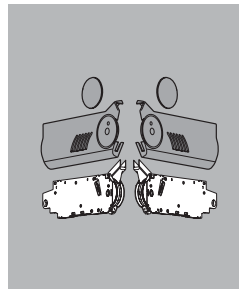
Power factor (PF) = **717**

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 3: Select proper Lift mechanism set based on power factor

Use the calculated Power factor (PF) to select the proper Lift mechanism needed.

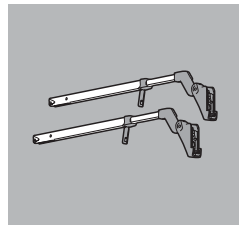


Power factor (PF)	Part no.
85 - 230	20F2200.NA
231 - 470	20F2200.NA
471 - 880	20F2500.NA
780 - 1400	20F2800.NA
1401 - 2300	20F2800.NA

NOTE: 3 lift mechanisms are required for Power factors of 1401 to 2300

Step 4: Select proper Telescopic arm set

Use the cabinet height in inches to select the proper length Telescopic arm needed.



Cabinet height	Part no.
479 - 558 (19" - 22")	20F3200
558 - 686 (22" - 27")	20F3500
686 - 889 (27" - 35")	20F3800
889 - 1067 (35" - 42")	20F3900



Step 5: Select the proper Hardware set

Select the proper Hardware set based on the intended application.

Wood/wide aluminum door application

Hardware set **78Z5530TA4** Part no.

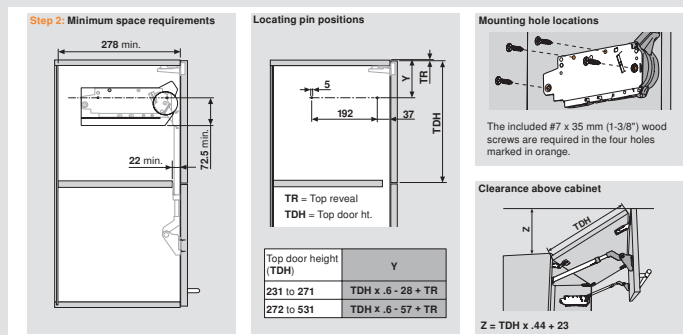
Narrow aluminum door application

Hardware set **78Z550ATA3** Part no.

Step 6: Determine mounting location for Lift mechanism

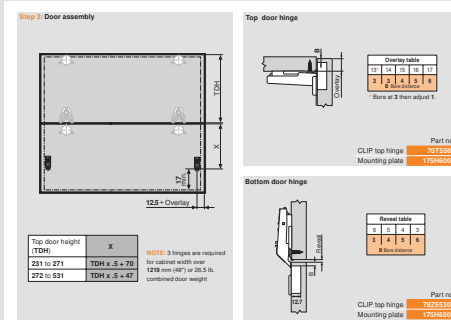
Use the chart and diagram to determine Lift mechanism locating hole positions and pre-bore them in the cabinet sides.

For face frame applications, cabinet sides must be blocked out.



Step 7: Determine mounting locations for hinges, mounting plates and telescopic arm plate

Use the chart and diagrams to determine mounting locations for hinges and telescopic arm mounting plates.

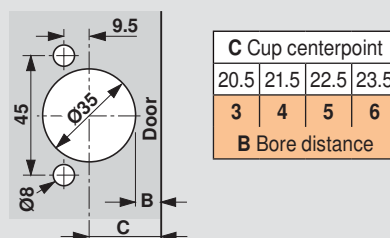


Step 8: Bore doors for hinges

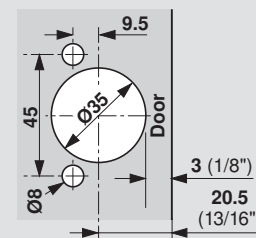
Pre-bore doors according to the specifications found in Step 4. Blum suggests using one of our MINIDRILL or MINIPRESS machines or an ECODRILL for easy, more accurate installation..

Now move to the Assembly instructions on page 17.

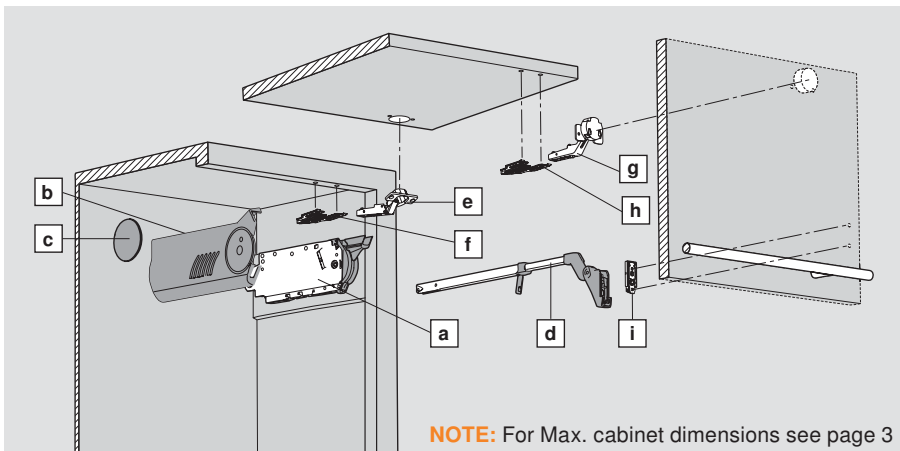
CLIP top



COMPACT



Wood or wide aluminum door for face frame applications



Determine required parts

By determining Power factor the required lift mechanism set for any application can be determined. The power factor depends on the weight of the two doors (including handle) and cabinet height.

Cabinet height also determines the telescopic arm set required (see step 1b).

NOTE: Face frame cabinets must be blocked out on the sides flush with the frame to mount the AVENTOS HF lift mechanisms.

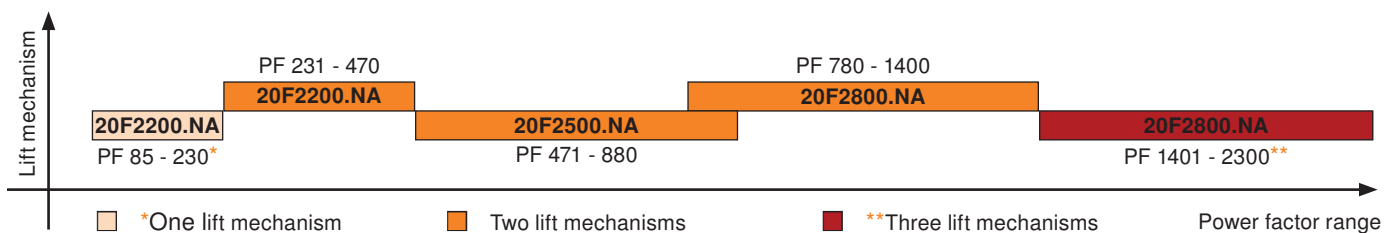
Using this catalog
Installation and removal

pages 7 - 8
pages 17 - 20

$$\text{Power factor (PF)} = \text{cabinet height [inch]} \times \text{combined door weight* [lb]}$$

* Door weight in decimal - see page 7 for conversion chart.

Determining lift mechanism



Trial application recommended when the required power factor is in a borderline area of lift mechanisms.

Step 1a



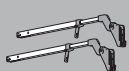
a b & c Lift mechanism set

Set includes two lift mechanisms, left and right cover plates, two symmetrical cover caps and ten #7 x 35mm (1-3/8") wood screws

Power factor (PF)	Part no.
85 - 230*	20F2200.NA
231 - 470	20F2200.NA
471 - 880	20F2500.NA
780 - 1400	20F2800.NA
1401 - 2300**	20F2800.NA

NOTE: 3 lift mechanisms are required for Power factors of 1401 to 2300

Step 1b



d Telescopic arm set

Set includes two telescopic arms

Cabinet height	Part no.
479 - 558 (19" - 22")	20F3200
558 - 686 (22" - 27")	20F3500
686 - 889 (27" - 35")	20F3800
889 - 1067 (35" - 42")	20F3900

Step 1c: Wood/wide aluminum door hardware set

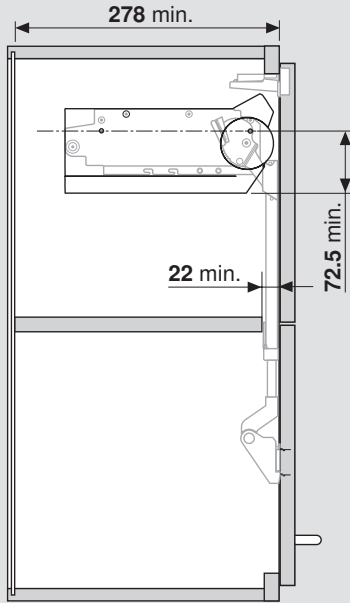
Set includes:

- e** 2 x 70T5580 top door hinge - 120° free swing
- f** 2 x 175H6000 top door mounting plate
- e** 2 x 32.4630 top door hinge - 120° free swing
- f** 2 x 130.1130.02 (1-1/4") top door mounting plate
- g** 2 x 78Z5530T bottom door hinge
- h** 2 x 175H6000 bottom door mounting plate
- i** 2 x 175H5100.05 Telescopic arm plate
- i** 2 x 175H5F00 Telescopic arm plate with bracket
- 1 x #2x2 POZI bit
- 22 x 606P wood screw for 175H6000
- 6 x 629.170 wood screw for 175H5100.05
- 18 x 7072A aluminum door screw for hinge and plate
- 6 x 606.080 aluminum door screw for 175H5100.05

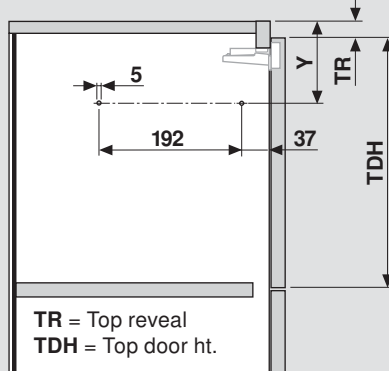
Part no.
Hardware set **78Z5530TA4**

Installation

Step 2: Minimum space requirements

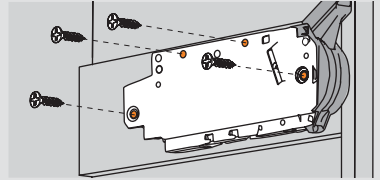


Locating pin positions



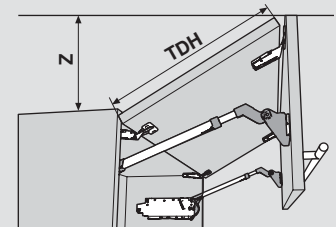
Top door height (TDH)	Y
231 to 271	$TDH \times .6 - 28 + TR$
272 to 531	$TDH \times .6 - 57 + TR$

Mounting hole locations



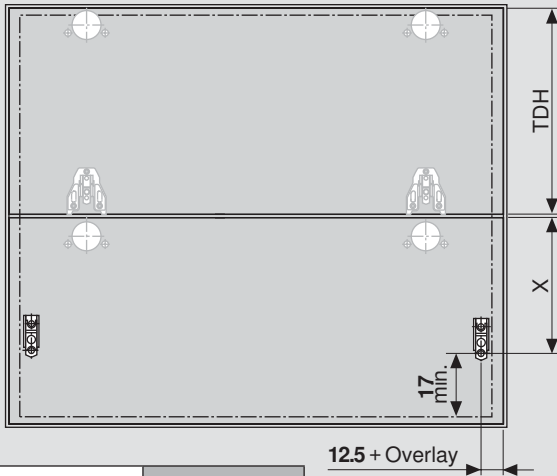
The included #7 x 35 mm (1-3/8") wood screws are required in the four holes marked in orange.

Clearance above cabinet



$$Z = TDH \times .44 + 23$$

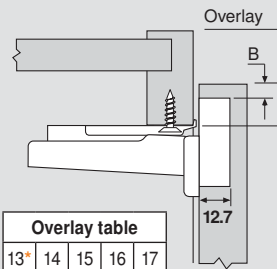
Step 3: Door assembly



Top door height (TDH)	X
231 to 271	$TDH \times .5 + 70$
272 to 531	$TDH \times .5 + 47$

NOTE: 3 hinges are required for cabinet width over 1219 mm (48") or 26.5 lb. combined door weight

Small overlay top door hinge



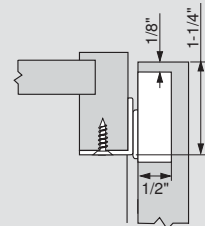
Overlay table				
13*	14	15	16	17
3	3	4	5	6

B Bore distance

* Bore at 3 then adjust 1.

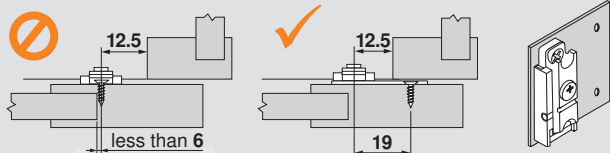
	Part no.
CLIP top hinge	70T5580
Mounting plate	175H6000

Large overlay top door hinge



	Part no.
COMPACT hinge	32.4630
Mounting plate	130.1130.02

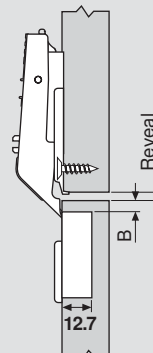
Telescopic arm plate with bracket



In-line plate with bracket is required when in-line plate center line is less than 6mm from the center panel.

Part no.
175H5F00

Bottom door hinge

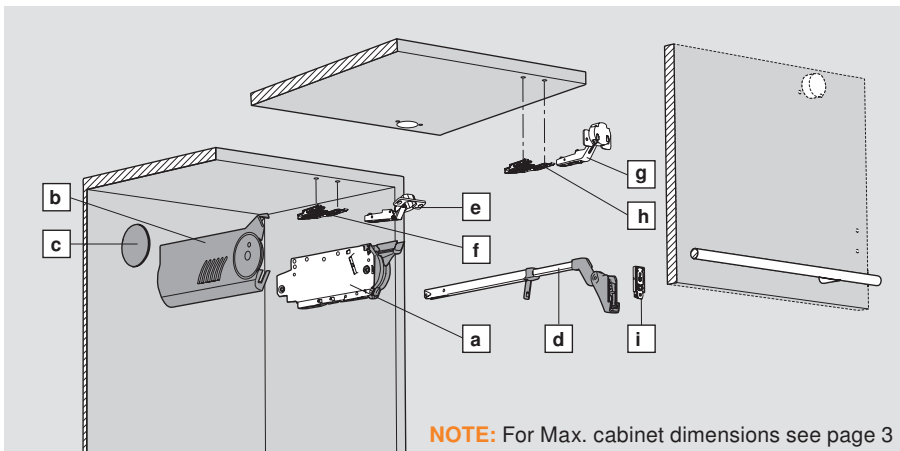


Reveal table			
6	5	4	3
3	4	5	6

B Bore distance

	Part no.
CLIP top hinge	78Z5530T
Mounting plate	175H6000

Wood or wide aluminum door for panel applications



NOTE: For Max. cabinet dimensions see page 3

Determine required parts

By determining Power factor the required lift mechanism set for any application can be determined. The power factor depends on the weight of the two doors (including handle) and cabinet height.

Cabinet height also determines the telescopic arm set required (see step 1b).

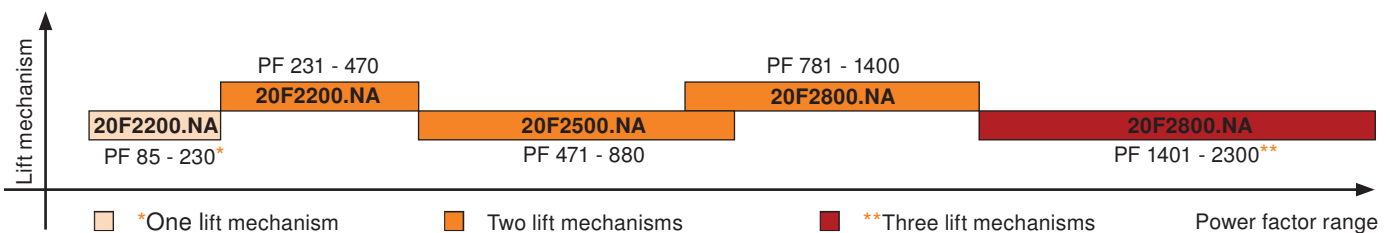
Using this catalog
Installation and removal

pages 7 - 8
pages 17 - 20

$$\text{Power factor (PF)} = \text{cabinet height [inch]} \times \text{combined door weight* [lb]}$$

* Door weight in decimal - see page 7 for conversion chart.

Determining lift mechanism



Trial application recommended when the required power factor is in a borderline area of lift mechanisms.

Step 1a



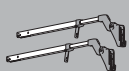
a b & c Lift mechanism set

Set includes two lift mechanisms, left and right cover plates, two symmetrical cover caps and ten #7 x 35mm (1-3/8") wood screws

Power factor (PF)	Part no.
85 - 230*	20F2200.NA
231 - 470	20F2200.NA
471 - 880	20F2500.NA
780 - 1400	20F2800.NA
1401 - 2300**	20F2800.NA

NOTE: 3 lift mechanisms are required for Power factors of 1401 to 2300

Step 1b



d Telescopic arm set

Set includes two telescopic arms

Cabinet height	Part no.
479 - 558 (19" - 22")	20F3200
558 - 686 (22" - 27")	20F3500
686 - 889 (27" - 35")	20F3800
889 - 1067 (35" - 42")	20F3900

Step 1c: Wood/wide aluminum door hardware set

Set includes:

- e** 2 x 70T5580 top door hinge
- f** 2 x 175H6000 top door mounting plate
- 2 x 32.4630 top door hinge
- 2 x 130.1130.02 (1-1/4") top door mounting plate

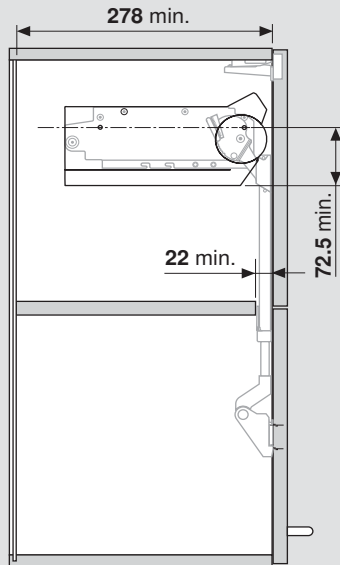
- g** 2 x 78Z5530T bottom door hinge
- h** 2 x 175H6000 bottom door mounting plate

- i** 2 x 175H5100.05 Telescopic arm plate
- 2 x 175H5F00 Telescopic arm plate with bracket
- 1 x #2x2 POZI bit
- 22 x 606P wood screw for 175H6000
- 6 x 629.170 wood screw for 175H5100.05
- 18 x 7072A aluminum door screw for hinge and plate
- 6 x 606.080 aluminum door screw for 175H5100.05

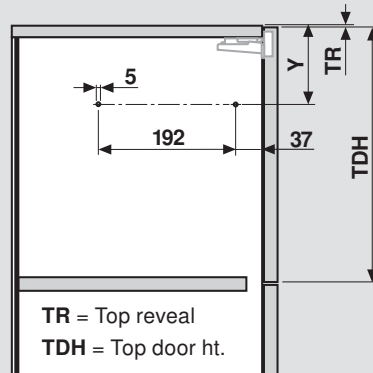
Part no.
Hardware set **78Z5530TA4**

Installation

Step 2: Minimum space requirements



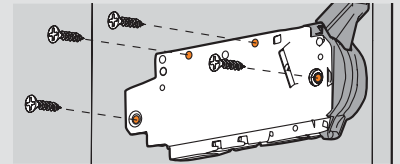
Locating pin positions



TR = Top reveal
TDH = Top door ht.

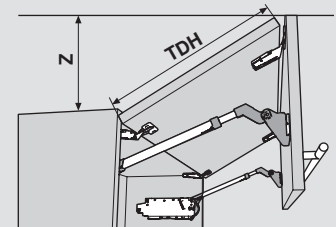
Top door height (TDH)	Y
231 to 271	$TDH \times .6 - 28 + TR$
272 to 531	$TDH \times .6 - 57 + TR$

Mounting hole locations



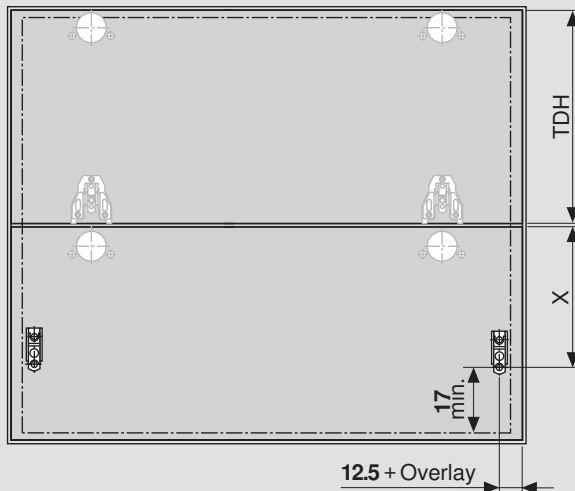
The included #7 x 35 mm (1-3/8") wood screws are required in the four holes marked in orange.

Clearance above cabinet



$$Z = TDH \times .44 + 23$$

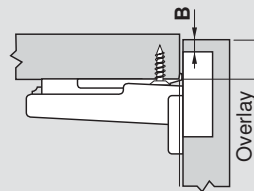
Step 3: Door assembly



Top door height (TDH)	X
231 to 271	$TDH \times .5 + 70$
272 to 531	$TDH \times .5 + 47$

NOTE: 3 hinges are required for cabinet width over 1219 mm (48") or 26.5 lb. combined door weight

Top door hinge

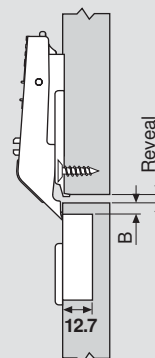


Overlay table				
13*	14	15	16	17
3	3	4	5	6
B Bore distance				

* Bore at 3 then adjust 1.

Part no.	
CLIP top hinge	70T5580
Mounting plate	175H6000

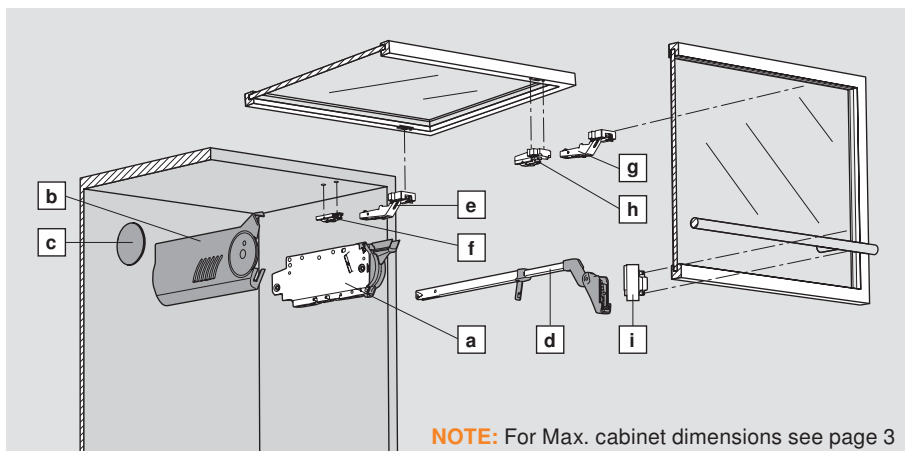
Bottom door hinge



Reveal table			
6	5	4	3
3	4	5	6
B Bore distance			

Part no.	
CLIP top hinge	78Z5530T
Mounting plate	175H6000

Narrow aluminum frame door application



Determine required parts

By determining Power factor the required lift mechanism set for any application can be determined. The power factor depends on the weight of the two doors (including handle) and cabinet height.

Cabinet height also determines the telescopic arm set required (see step 1b).

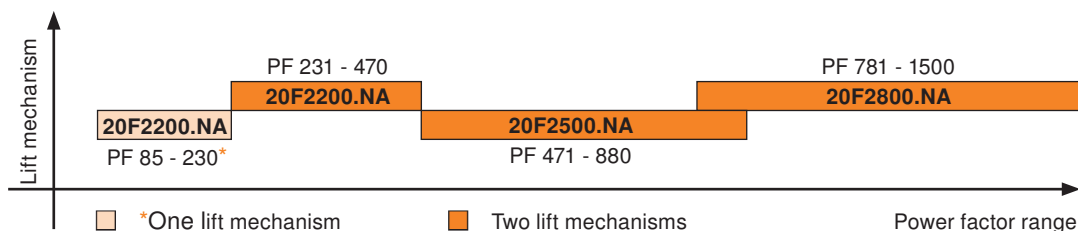
Using this catalog
Installation and removal

pages 7 - 8
pages 17 - 20

$$\text{Power factor (PF)} = \text{cabinet height [inch]} \times \text{combined door weight* [lb]}$$

* Door weight in decimal - see page 7 for conversion chart.

Determining lift mechanism



Trial application recommended when the required power factor is in a borderline area of lift mechanisms.

Step 1a

a b & c Lift mechanism set

Set includes two lift mechanisms, left and right cover plates, two symmetrical cover caps and ten #7 x 35mm (1-3/8") wood screws

Power factor (PF)	Part no.
85 - 230*	20F2200.NA
231 - 470	20F2200.NA
471 - 880	20F2500.NA
780 - 1500	20F2800.NA

Step 1b

d Telescopic arm set

Set includes two telescopic arms

Cabinet height	Part no.
479 - 558 (19" - 22")	20F3200
558 - 686 (22" - 27")	20F3500
686 - 889 (27" - 35")	20F3800
889 - 1067 (35" - 42")	20F3900

Step 1c: Narrow aluminum door hardware set

Set includes:

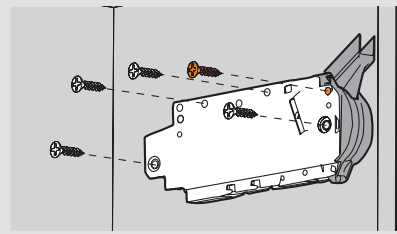
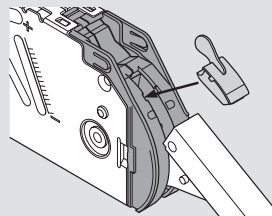
- e** 2 x 72T550A top door hinge
- f** 2 x 175H5100.05 top door mounting plate
- g** 2 x 78Z550AT bottom door hinge
- h** 2 x 175H5A00 bottom door mounting plate
- i** 2 x 175H5B00 Telescopic arm plate

1 x #2x2 POZI bit
4 x 629.170 wood screw for 175H5100.05
16 x 699.110 aluminum door screw for 175H5A/B00

Hardware set	Part no.
	78Z550ATA3

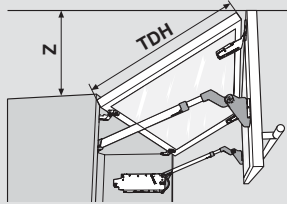


Angle restriction clip



This clip restricts the opening angle of the top hinges of an AVENTOS lift system to 104 degrees. This may be useful for cabinets with large crown moldings or installations with little clearance above the cabinet.

Clearance above cabinet



$$Z = TDH \times .24 + 19$$

Using the AVENTOS angle restriction clip requires the installation of an extra #7 x 35 mm (1-3/8") mounting screw on each of the lift mechanisms.

TDH = Top Door Height

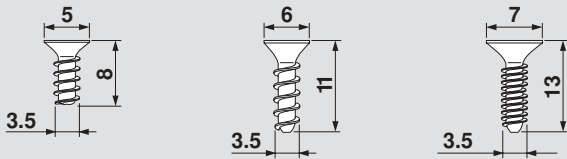
104° angle restriction clip

Part no.

20F7051

Screws

Aluminum door screws

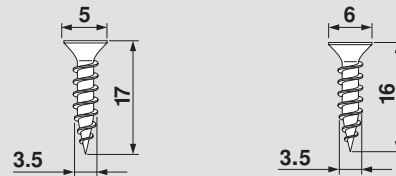


Use to attach hinges to doors (aluminum door applications)

Part no.

For aluminum door hinge attachment	606.080
For narrow aluminum door plate attachment	699.110
For wide aluminum door plate attachment	7072A

Deep thread wood screws



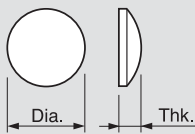
For in-line plate attachment

For wood door hinge and plate attachment

Part no.

For in-line plate attachment	629.170
For wood door hinge and plate attachment	606P

Bumpers

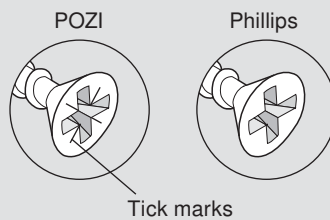
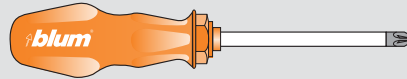


Cushions door closing
Self-adhesive back; clear

Part no.

Ø6(1/4") x 1.5(1/16")	FX4041
Ø10(3/8") x 3(1/8")	SJ5312

POZI DRIVER and bits

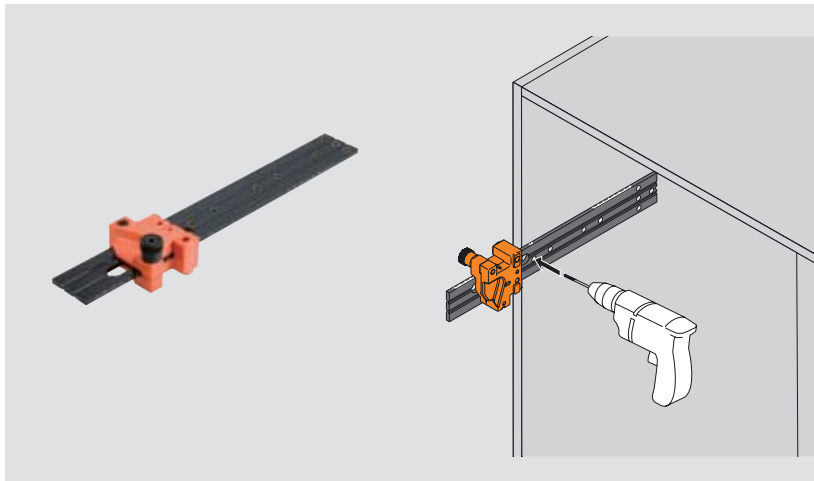


A POZI screwdriver (different from Phillips) is the most crucial tool you can use to assure that full torque is applied to all Blum mounting screws. POZI screws can be identified by the distinctive "tick" marks located in the center of the screw head recess.

Part no.

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

Universal individual template



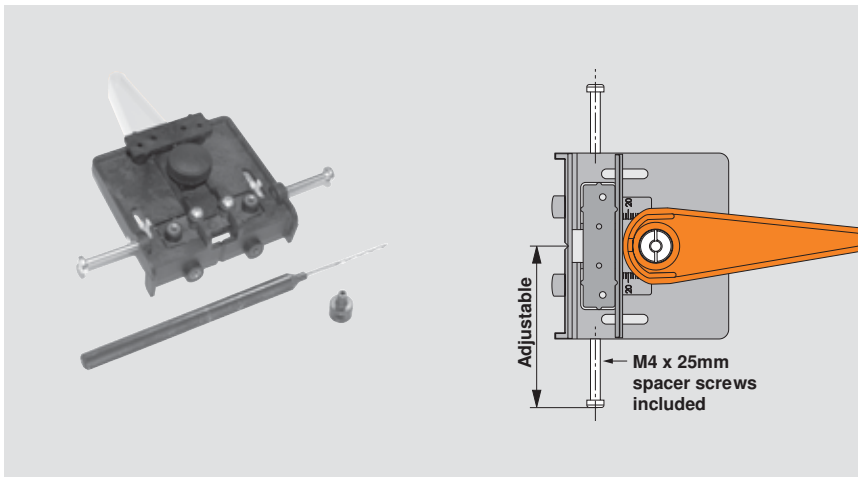
- Use to pre-bore for AVENTOS locating pins
- Also can be used for marking and preboring of mounting plates

Set includes:

- Template
- Ø2.5 mm stop collar
- Ø5 mm stop collar

	Part no.
Template	65.1051
Ø5mm drill bit	DB-5mm

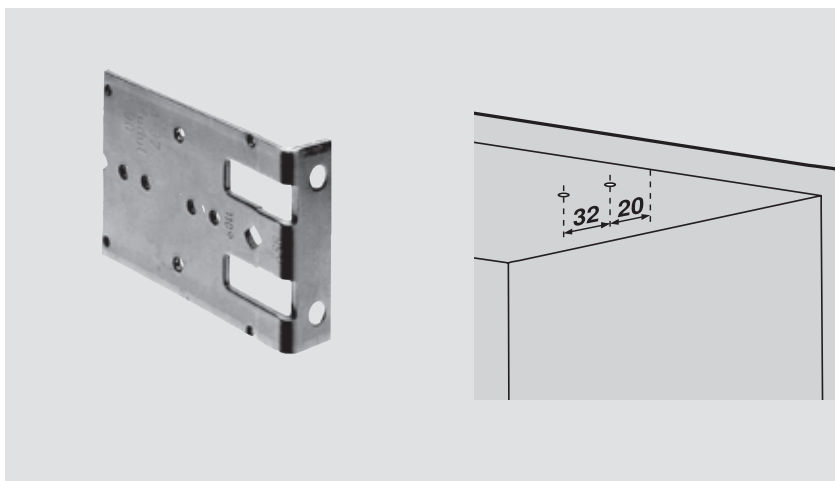
PlateMate



- For face frame adapter plates
- Frame thicknesses of 5/8" to 1"
- 9.5 mm or 12.5 mm setback
- Pilot bore Ø2 mm holes for wood screws

	Part no.
PlateMate	65.5030.01
Ø2mm drill bit	DB-2mm

Mounting plate template



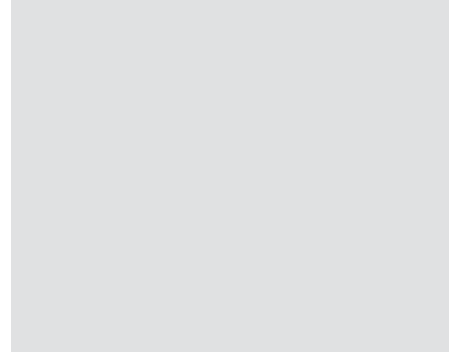
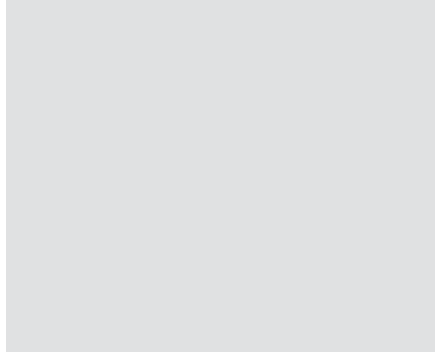
- Pre-bores for top hinge mounting plates in narrow aluminum door applications
- Pilot bore Ø2 mm holes for wood screws

	Part no.
Mounting plate template	65.5300
Ø2mm drill bit	DB-2mm

Assembly

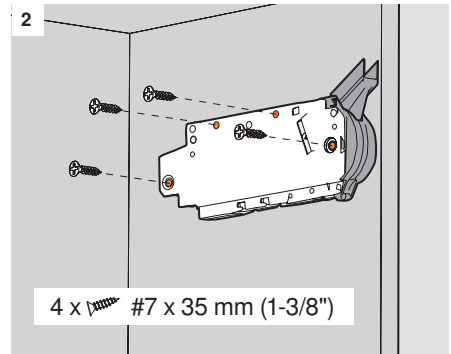
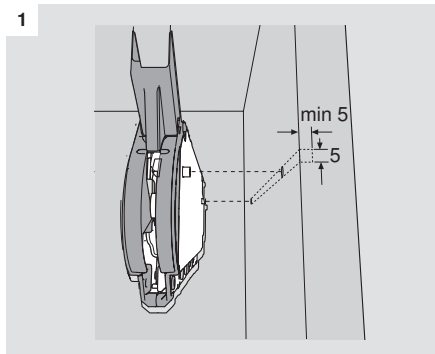
Step 1: Complete an AVENTOS planning worksheet

Go through the "Using this catalog" steps on pages 7 - 8 or complete an AVENTOS planning worksheet (available on www.blum.us). This will help you determine required hardware and necessary cabinet preparation.



Step 2: Install the lift mechanism

1. Pre-bore locating pin holes in the cabinet sides (use 65.5020 template). Attach lift mechanism to cabinet by placing it in position using the locating holes.
2. Attach four #7 x 35mm (1-3/8") wood screws in the holes marked in orange.



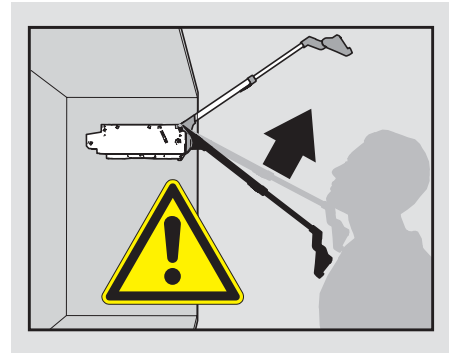
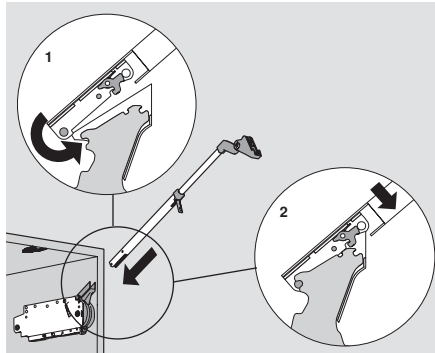
Step 3: Attach the telescopic arms

Attach telescopic arms by clipping them on in the fully upright position.



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

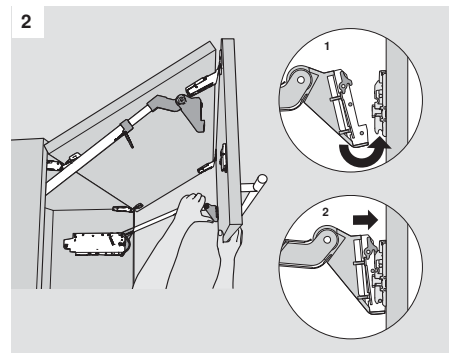
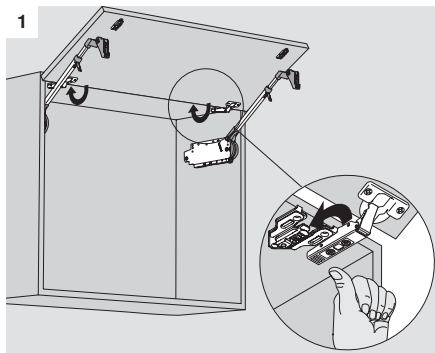
- Do not push telescopic arm down.
- Remove telescopic arm from mechanism before installing cabinet.



Step 4: Prepare and attach the doors

Determine the locations of mounting plates and hinges per instructions on page 9 and attach hardware to cabinet doors.

1. Attach top door to the cabinet.
2. Attach bottom door to the top door and the telescopic arms.

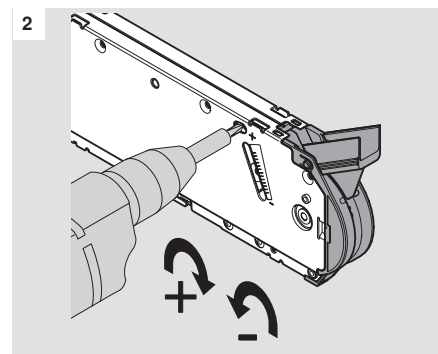
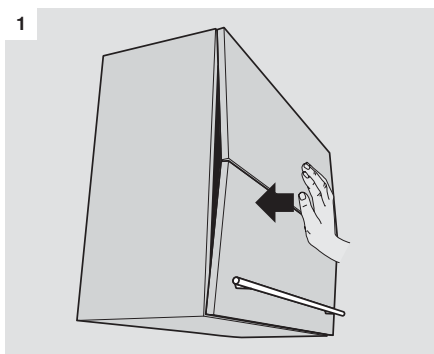




Step 5: Adjust tension of the lift mechanism

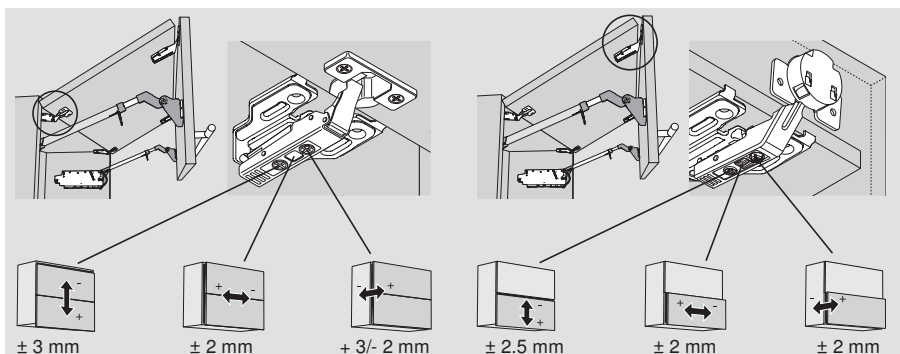
Close and flush doors to cabinet. Open and close door to test closing force. Open door and adjust tension screws on both lift mechanisms with a power drill. Test door again and repeat until desired function is achieved.

Tension adjustment should be the same on both lift mechanisms.



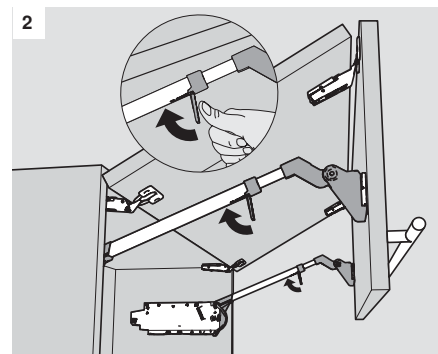
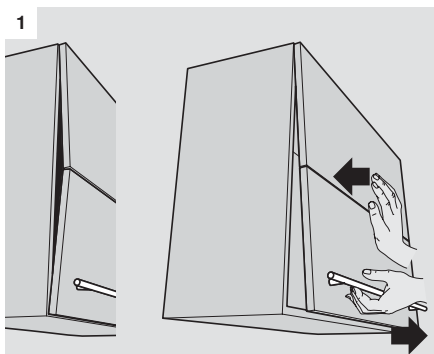
Step 6: Adjust the doors

Adjust each hinge and mounting plate to properly align doors to the cabinet and to each other.



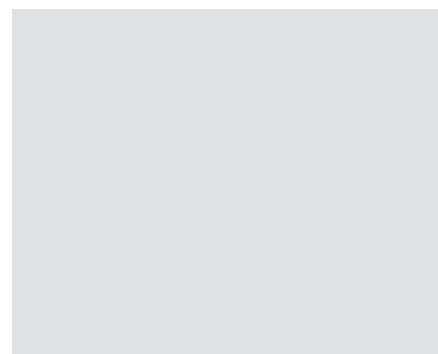
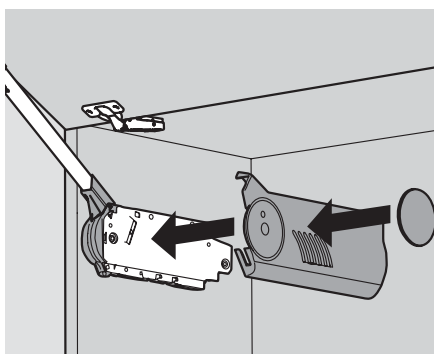
Step 7: Finalize the door and telescopic arm adjustments

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



Step 8: Attach cover caps

Attach the left and right cover plates to each lift mechanism then attach the symmetrical cover caps.



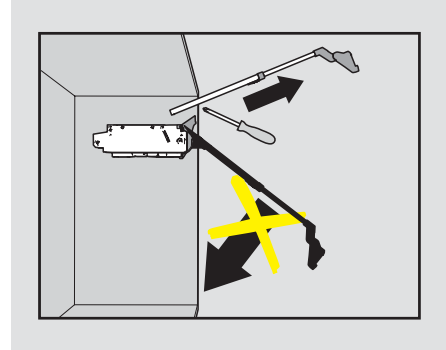
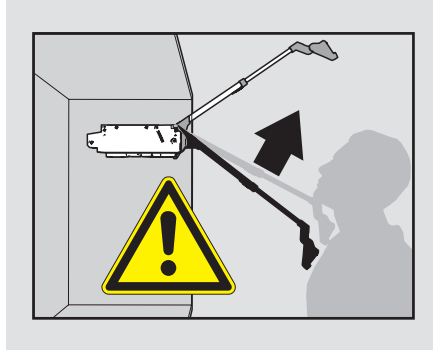
Removal

Step 1: Be aware



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

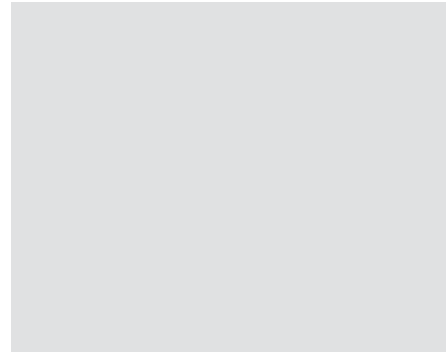
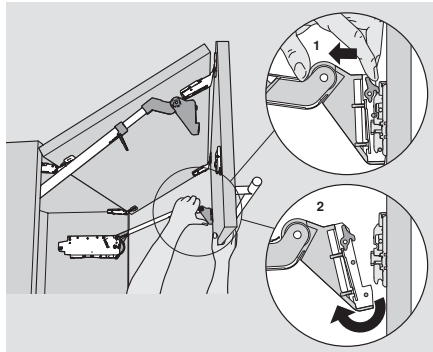
- Do not push telescopic arm down.
- Remove telescopic arm from mechanism before installing the cabinet.



Step 2: Release telescopic arms

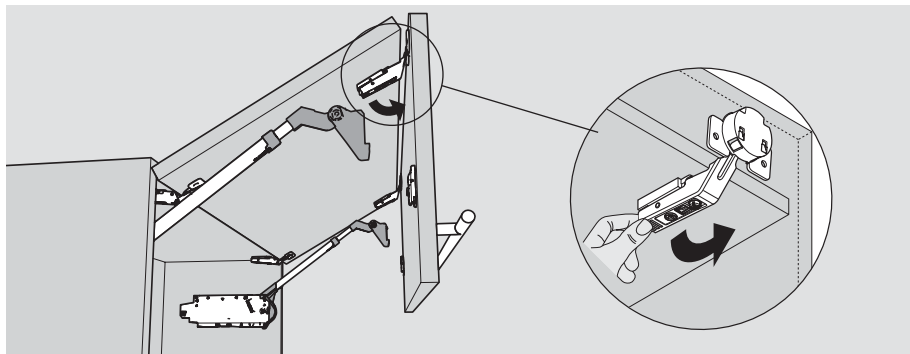
Warning: Maintain control of the telescopic arm while releasing the CLIP mechanism.

Release both arms and gently rest the top door on the loose arms. The tension will hold the doors up for the next step.



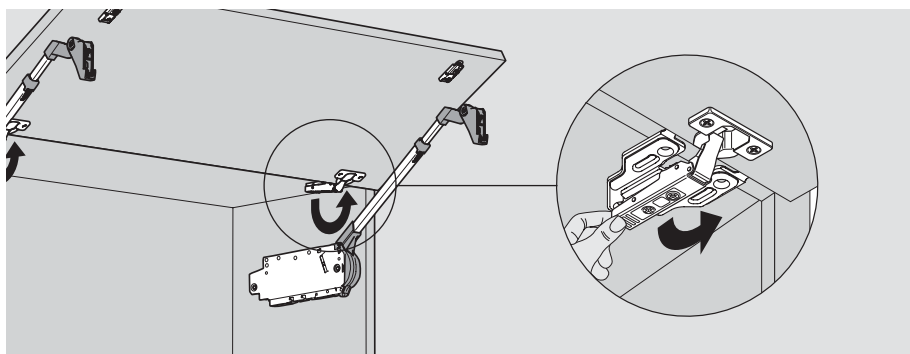
Step 3: Remove the bottom door

Hold the bottom door while unclipping the bottom hinges.



Step 4: Remove the top door

Hold the top door while detaching the top hinges. Simply unclip them if using the CLIP top hinges or unscrew them if using COMPACT.

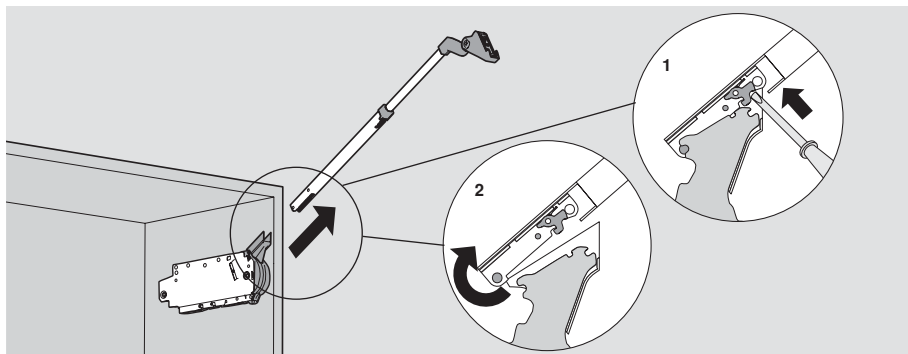




Step 5: Remove the telescopic arms

Using a screwdriver, depress the release tabs to remove telescopic arms.

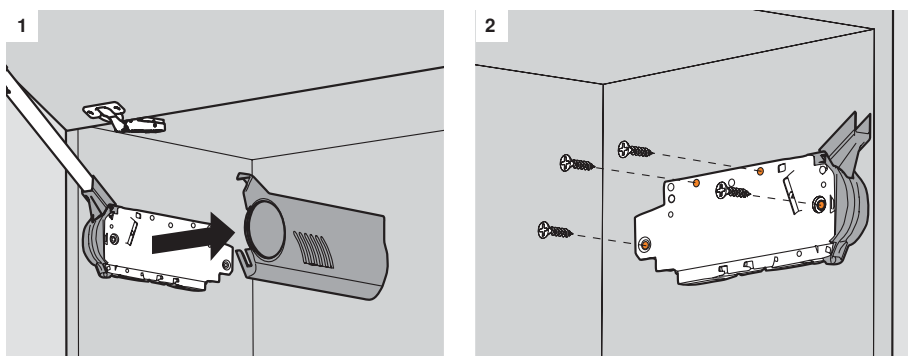
If transporting the cabinet to the jobsite, stop here. Lift mechanisms stay inside the cabinet for easy transport.



Step 6: Remove the lift mechanisms

1. Remove the symmetrical cover caps from right and left covers.

2. Remove the four mounting screws.



The AVENTOS line



AVENTOS HF bi-fold lift system

The doors fold in the middle when opening. This ensures easy access to the handle in any position for high wall cabinets.



AVENTOS HS up and over lift system

The door swings gently over the cabinet and makes storage space easily accessible. The space requirement over the cabinet is also kept to a minimum.



AVENTOS HK stay lift system

Optimal for low cabinet heights. Applications include above refrigerator, accent cabinets or wall cabinets.



AVENTOS HL lift up system

The door opens vertically. This is ideal for an appliance garage or wall cabinets.



Please visit www.blum.com for information on other Blum products.
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