LAMP® MonoFlat FAD®

FAD-44, FAD-44L
Instruction Manual
Wooden Frame Type

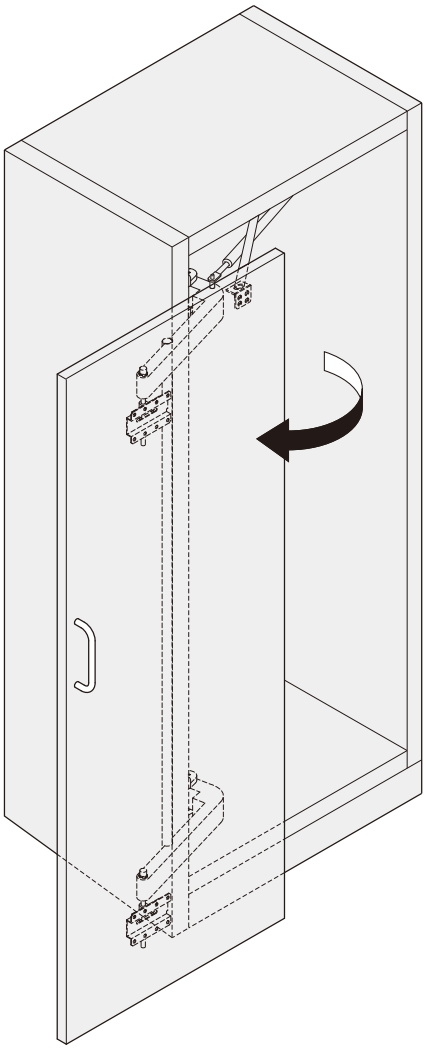
PAT

Thank you very much for purchasing our flat door hardware FAD-44 or FAD-44L.
To assemble this product correctly and safely, read this manual thoroughly.

Safety Cautions

For your safety, be sure to read the following safety cautions first.

Read the “Safety Cautions” and “Notes on works” thoroughly to ensure that the hardware is installed properly. This manual explains how to mount a left-hand door as shown on the cover page. A right-hand door should be installed symmetrically.



Please follow these instructions carefully for proper use.

⚠ WARNING Indicates a matter which, if neglected, may cause serious injuries.

⚠ CAUTION Indicates a matter which, if neglected, may cause injuries or property damage.

In addition,the following pictographs are used to indicate the types of warnings(cautions).

⊘	Indicates an act which you must not do. It is followed by specific content of the act.
!	Indicates an instruction which you must follow. It is followed by specific content of the instruction.

! If you need to install this product, ask the dealer that you purchased our product or technicians who are skilled in the installation work of the product. Improper installation may lead to a fall of the product during usage, causing an extreme danger.

Notes on works

Handling of product

- The door is not supplied.
- After unpacking the product, check for damages on the parts.
- DO NOT modify the product. Otherwise, its strength may be decreased.
- Ask the technicians who are skilled in the installation work of the product for assembly or installation of the product.
- When working on the product, be sure to observe the instructions in this manual.

SUGATSUNE KOGYO CO., LTD.

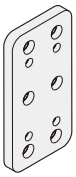
●Specifications

Cabinet inside measurement	From 750 mm to 800 mm* * If the overlay distance on both sides of side plate is 25 mm, the door width should be 800 to 850 mm.	Door thickness	From 24 to 38 mm
		Door weight	Max. 35 kg
Door height	Max. 2380 mm [2980 mm]	Side plate thickness	Min. 25 mm

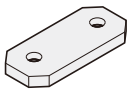
Note:Check that the cabinet side plate is constructed and assembled in the vertical direction. The size in [ ] applies to the FAD-44L.

●Description of parts

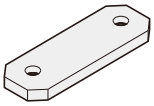
1



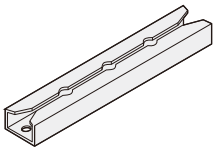
Hinge base x 2



Support arm square nut x 1



Gas spring square nut x 1



Channel rail x 1

■Supplied Screw

Screw		Q'ty
Countersunk self-tapping screw 4x20		5
Countersunk self-tapping screw 4.5x30		12

2

Support arm x 1

Upper arm (w/ stopper) x 1

Lower arm x 1

Clear cushion rubber x1 + 1 (spare)

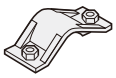
■Supplied (for assembling arm)

Screw		Q'ty
Hexagon socket head cap screw M6x12		2
Spring washer		2
Cross-recessed bind self-tapping screw 4.5 x 20		4

3

Pipe length=1990 [2600]

Arm connecting pipe x 1

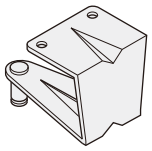


Pipe clamp x 1

■Supplied Screw

Screw		Q'ty
Hexagon socket head cap screw M6x35		4
Flat washer		4

4



Gas spring holder x 1

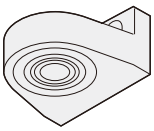
Screw pin x 1

Conical spring washer x 1

■Supplied Screw

Screw		Q'ty
Hexagon socket head cap screw M6x12		2
Spring washer		2
Flat washer		2
E-ring		2

5

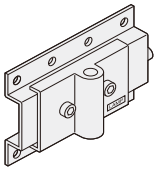


Bearing housing x 4

■Supplied Screw

Screw		Q'ty
Hexagon socket head cap screw M6x12		8
Spring washer		8

6



Positioning unit x 2

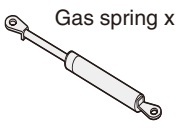
■Supplied Screw

Screw		Q'ty
Cross-recessed bind self-tapping screw 4.5 x 20		16

7

■Supplied Screw

Screw		Q'ty
Hexagon head bolt M10x150		2
Hexagon nut M10		2
Flat washer 10		2



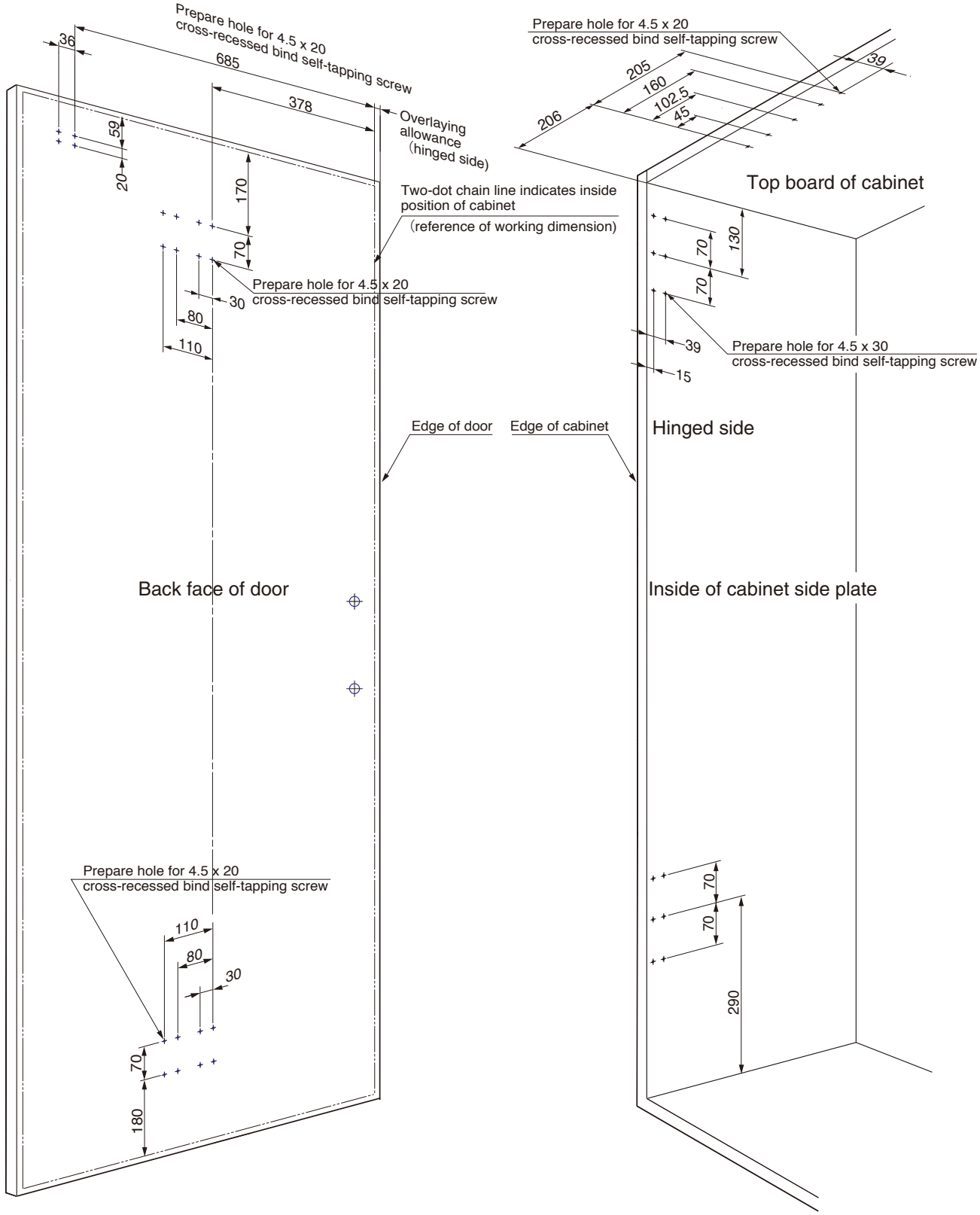
Gas spring x 1

Pile seal x 1
FAD-44: (5000)x1
FAD-44L: (6000)x1

■Tools used
- Phillips screwdriver No. 2
- Hexagonal wrench key 5
- Wrench 10, 16
- E-type retaining ring mounter

1 Working in Door and Cabinet

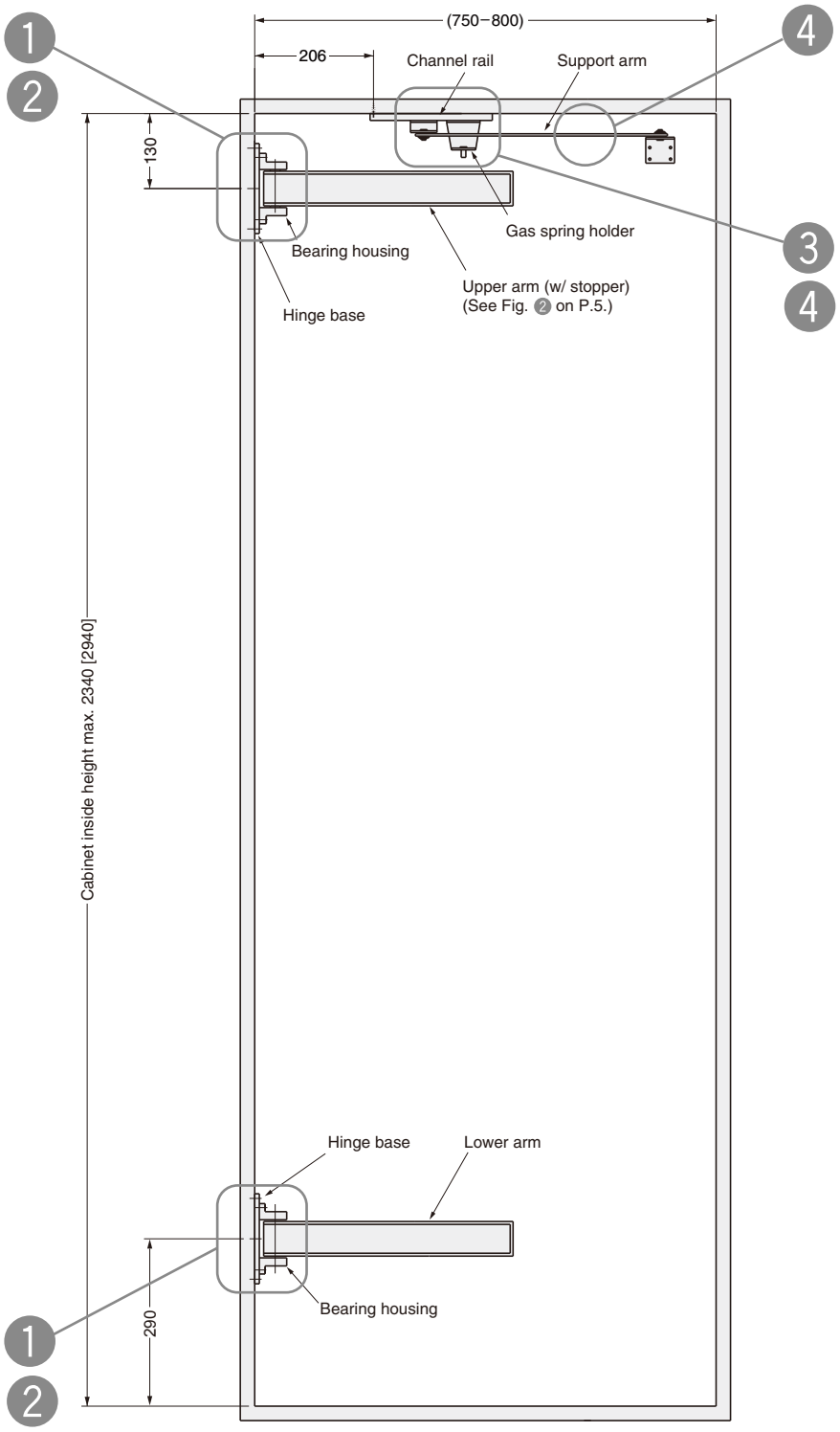
Have a fixing screw pilot hole drilled in the cabinet or have that position marked precisely beforehand. Set core material of which strength is enough for secure fixing to this part.



Left side hinged plan

Right side hinged plan can be symmetrical.

2 Installing Parts to Cabinet



Symbols from ❶ to ❹ shown in the figure indicate the locations described below.

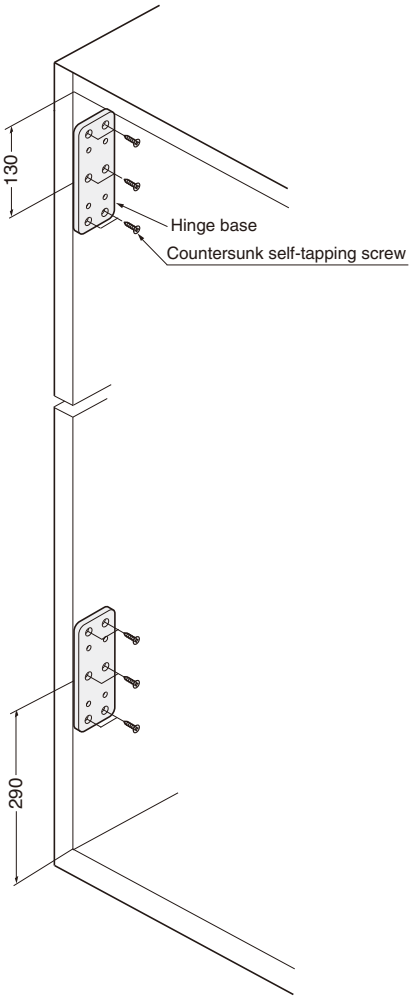
❶Installing hinge base

Fix the “Hinge base” to the cabinet (wooden frame).

(1) Fix each hinge base to the cabinet side plate by inserting and tightening fixing screws through the six holes in the hinge base to penetrate the prepared holes in the side plate.
Be careful not to overtighten the fixing screws to allow for the later work of aligning the upper and lower hinge bases with each other.

(2) Align the upper and lower hinge bases with each other.

(3) When the alignment is achieved, retighten the hinge base fixing screws with care to prevent the hinge bases from being misaligned.
[1] Tighten the fixing screws to keep bending force from acting upon the hinge base. Tightening the screws little by little in a diagonal direction is recommended.
[2] Make sure that the upper and lower hinge bases are aligned with each other; if not, correct their positions.



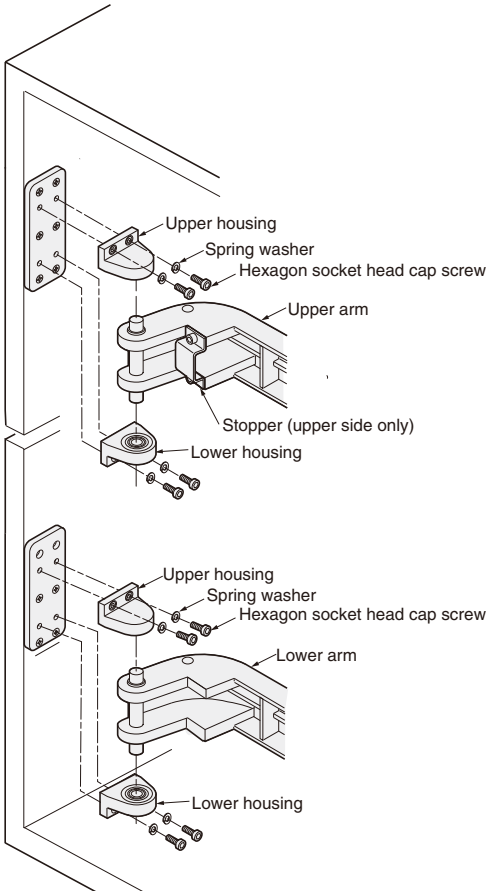
❷Installing upper and lower arms

Fix the "Upper and Lower arms" to the side plate of cabinet.
Part name of "Beraring housing" are shown in the figure on the right.

(1) Install the bearing housings as shown to the right.
Bolt each housing to the hinge base with bolts.

(2) Assemble the upper arm into the cabinet.
[1] The upper arm is furnished with a stopper, which identifies it from the lower arm.
[2] Insert the shaft of the upper arm into the hole in the lower housing.
[3] Insert the shaft of the upper arm into the hole in the upper housing.
[4] Bolt the upper housing.

(3) Assemble the lower arm into the cabinet the same way as the upper arm has been assembled.
Align the shaft centers of the upper and lower arms.

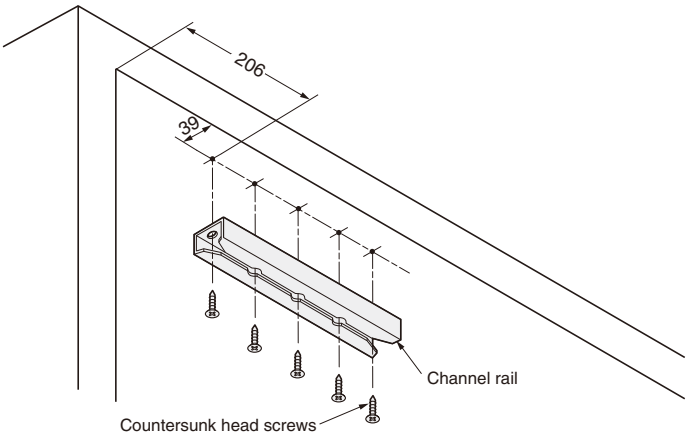


3 Installing channel rail

As shown in the figure, fix the “Channel rail” to the bottom of the roof with the supplied countersunk head screws.

(1) Fix the channel rail to the roof by inserting and tightening fixing screws through the five holes in the rail to penetrate the prepared holes in the roof.

(2) When tightening screws, do not tighten screws arranged in a row in sequence but try to tighten remote screws in that row in sequence. This method will add to the efficiency with which the screws are tightened.



4 Installing support arm bracket

Insert the “Support arm square nut” into the “Channel rail”, and temporarily fix the “Support arm crank bracket” with the supplied screws as shown in the figure shown on the right side.

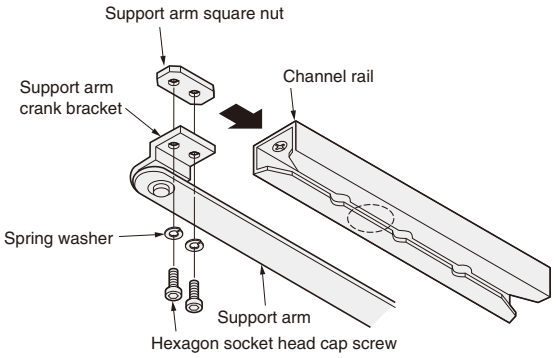
(1) With the hole in the support bracket and the screw hole in the support arm square nut aligned with each other, screw bolts from the crank bracket side into position with the intervening washers.
[1] Do not tighten the bolts fully but with a clearance of about 5 mm.
[2] The cramp bracket and other components assembled into position here are collectively called the “support arm assembly.”

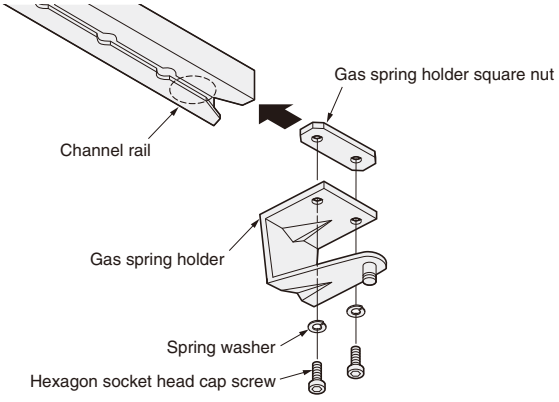
(2) With the hole in the gas spring holder and the screw hole in the gas spring holder square nut aligned with each other, screw bolts from the gas spring holder side bracket into position with the intervening washers.
The gas spring holder and other components assembled into position here are collectively called the “holder assembly.”
[1] Do not tighten the bolts fully but with a clearance of about 5 mm.
[2] The gas spring holder and other components assembled into position here are collectively called the “holder assembly.”

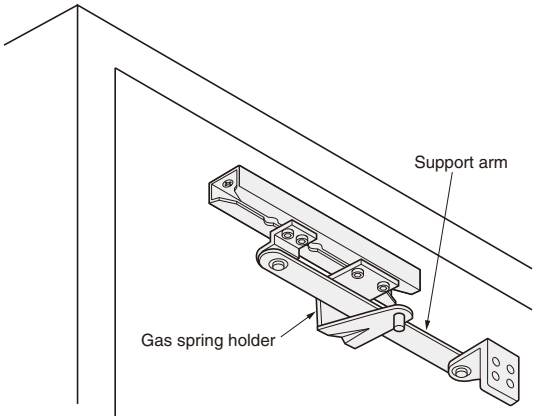
(3) Fix the holder to the channel rail.
[1] Insert the holder so that the hole in the holder assembly is centered in the dotted frame shown.
[2] Tighten the two bolts finger-tight.

(4) Assemble the support arm square nut of the support arm assembly and the crank bracket to enclose the channel rail.
[1] Assemble them in such direction that the support arm will be housed in the gas spring holder.
[2] Make sure that the support arm assembly is roughly centered in the dotted frame shown.
[3] Tighten the two bolts finger-tight.

(5) Tie the support arm and the gas spring holder together with string or the like to keep them in firm position.







3 Installing Arm Connecting Pipe

1 Length of arm connecting pipe

Calculate the length of the connecting pipe in the following manner:

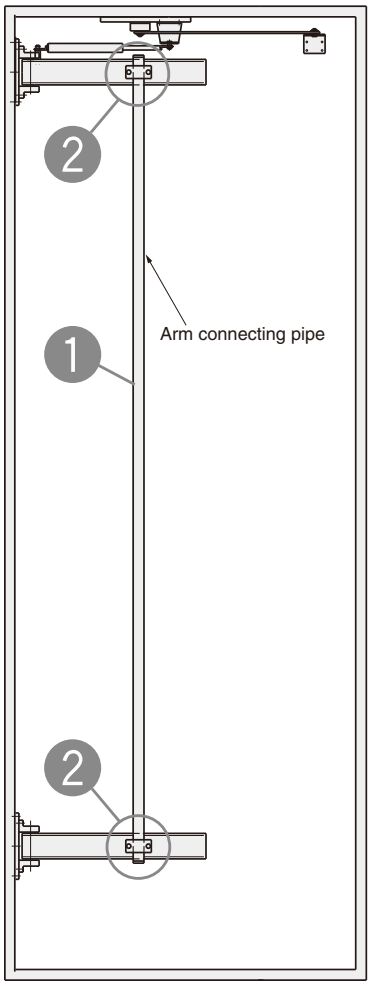
(1) The length of the connecting pipe mentioned here is exclusive of the resin caps at both ends.

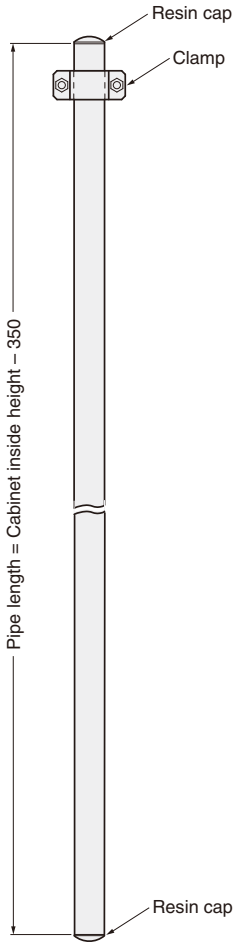
(2) The length of the connecting pipe as cut is (cabinet inside height – 350) mm.

(3) Cut the unclamped end of the pipe.

(4) Remove burs from the outside and inside of the cut surface to prevent injury to your hands and arms and to facilitate the fitting of a resin cap.

(5) Attach a resin cap to the cut end of the pipe.





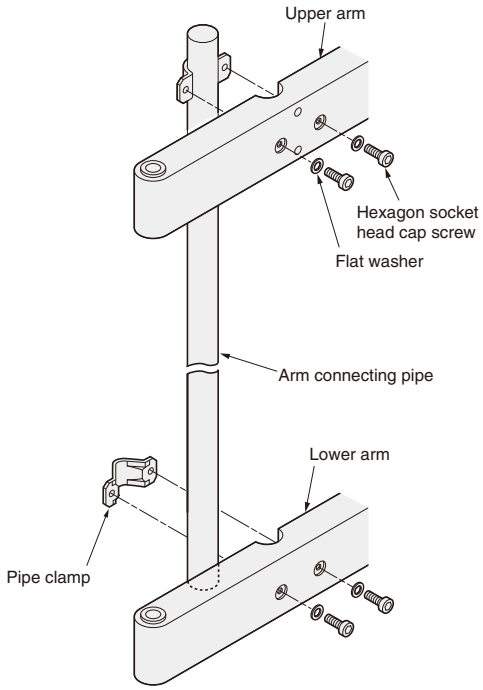
2 Installing arm connecting pipe

(1) Open the upper and lower arms to keep the door open.

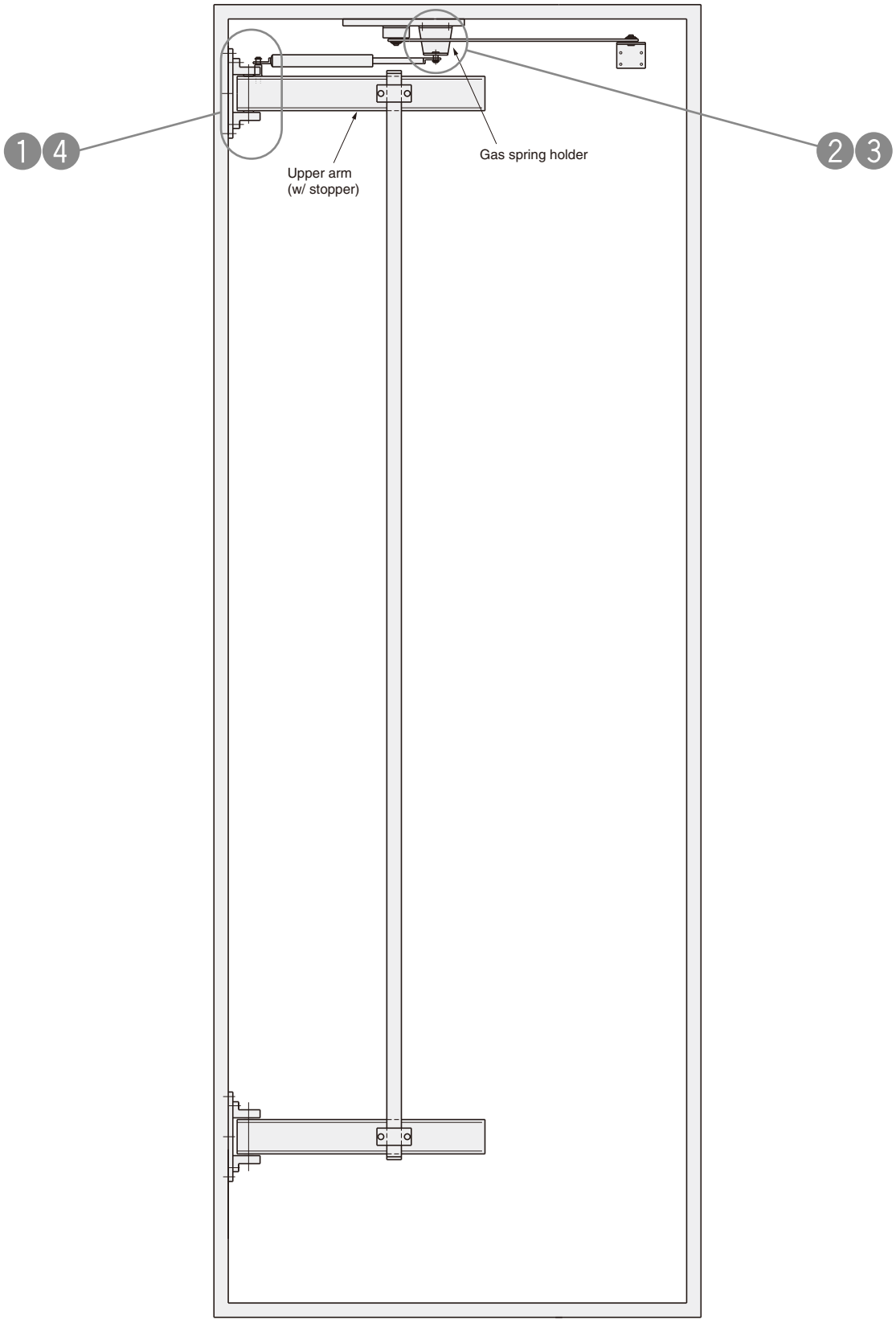
(2) With the hole in the clamp in the connecting pipe and the hole near the dent in the upper arm aligned with each other, insert bolts slightly to penetrate the holes.

(3) With the hole in the pipe clamp and the hole near the dent in the lower arm aligned with each other, insert bolts lightly from the opposite side of the lower arm to penetrate the holes with intervening washers.

(4) Tighten the four bolts to keep bending force from acting upon the upper and lower arms. Tightening the bolts little by little in a diagonal direction is recommended.



4 Installing Gas Spring

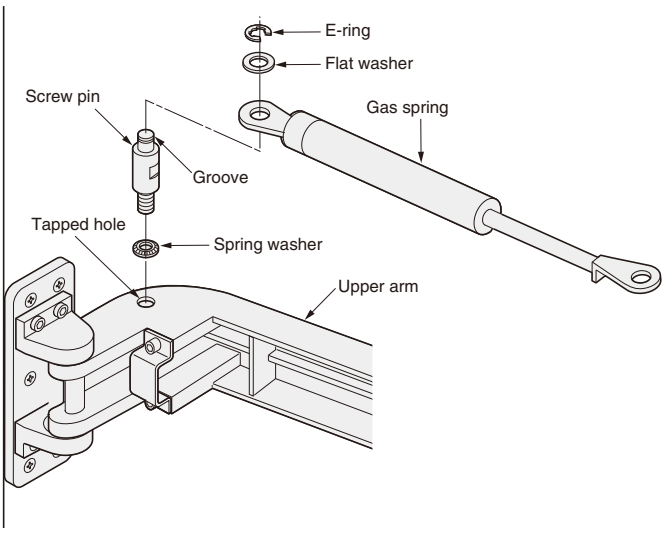


❶Installing the gas spring (arm side)

(1)Fully screw the “Screw pin” into the tapped hole on the top face of the “Upper arm”.

(2) Fit the hole in the thick end of the gas spring into the screw pin.

(3) Place a flat washer on top of the screw pin and fit an E-type retaining ring into the groove in the screw pin from the side.



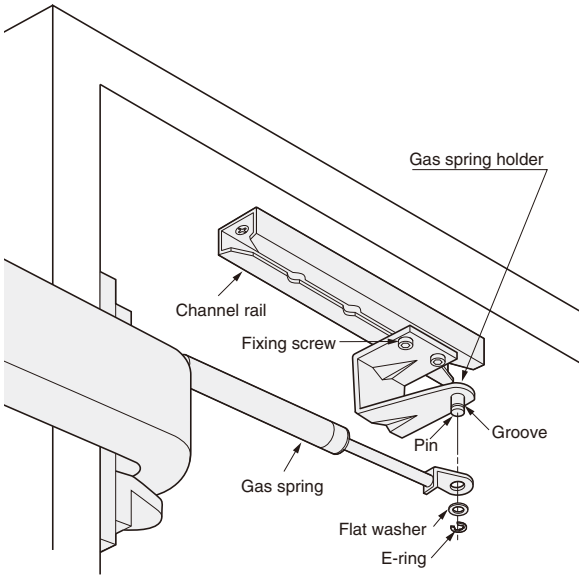
❷Installing the gas spring (roof side)

(1) Loosen the screw on “Gas spring holder” so that the holder can be moved.

(2) Move the arm to the stopper of “Upper arm” until it contacts with the end of cabinet (open position).

(3) Fit the hole at the other end of the gas spring into the pin in the holder assembly. Keep the bent inside of the bracket on the shaft of the gas spring facing down.

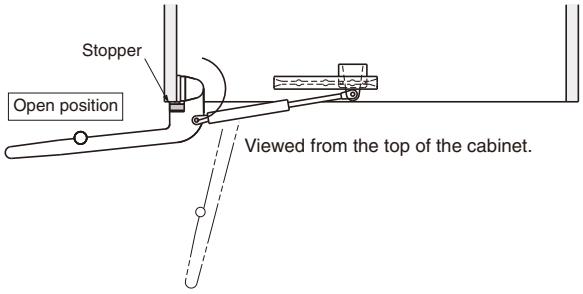
(4) Place a flat washer on top of the screw pin and fit an E-type retaining ring into the groove in the screw pin from the side.



The support arm is not shown in this figure.

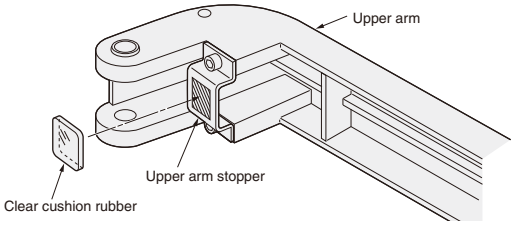
❸Tightening gas spring holder

Tighten the screw on gas spring holder while the stopper of the “Upper arm” is coming in contact with the end of cabinet.

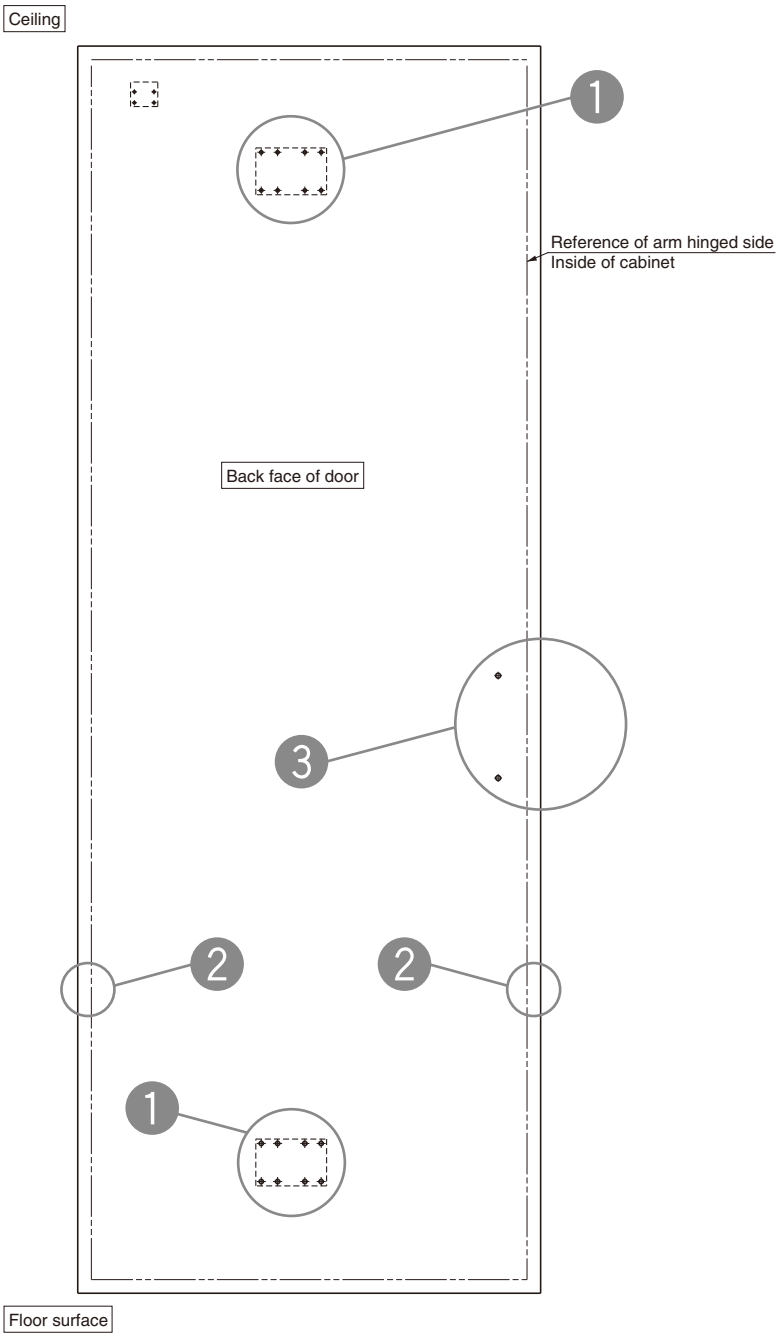


❹Attaching clear cushion rubber

Return the upper arm in close position, and attach the clear cushion rubber to the center of the “Stopper of upper arm” as the drawing.



5 Installing Parts to Door



Working dimensional drawing of door

⚠ CAUTION

Set core material of which strength is enough for secure tightening of self-tapping screws to the locations that parts are to be installed.

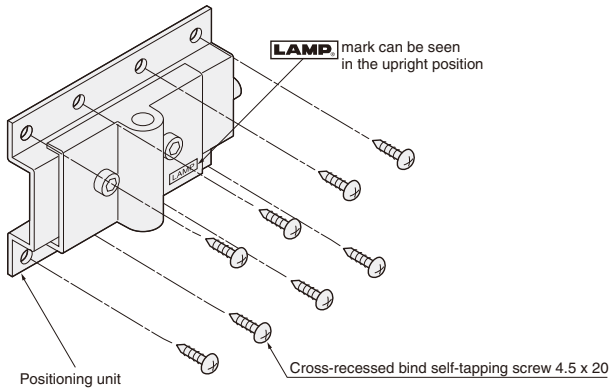
Dimensions in lateral direction are determined with the (width) of the cabinet (wooden frame) regarded as the reference position. If the door end face is regarded as the reference position, add the overlaying allowance.

1 Fixing positioning unit

Fix the “Positioning unit” to the back of the door with the supplied screws so that the LAMP® mark can be seen as below.

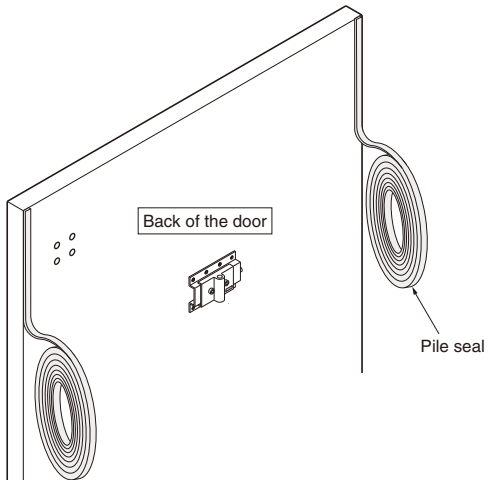
(1) Align all the eight holes in the positioning unit with the prepared holes in the door in such manner that the LAMP mark appears in the upright position.

(2) Align the upper and lower positioning units with each other to straighten their vertical shafts.



2 Attaching pile seal

(1) Attach pile seals vertically in the part of the back face of the door that touches the side plate of the cabinet, somewhat recessed from the edge of the door.



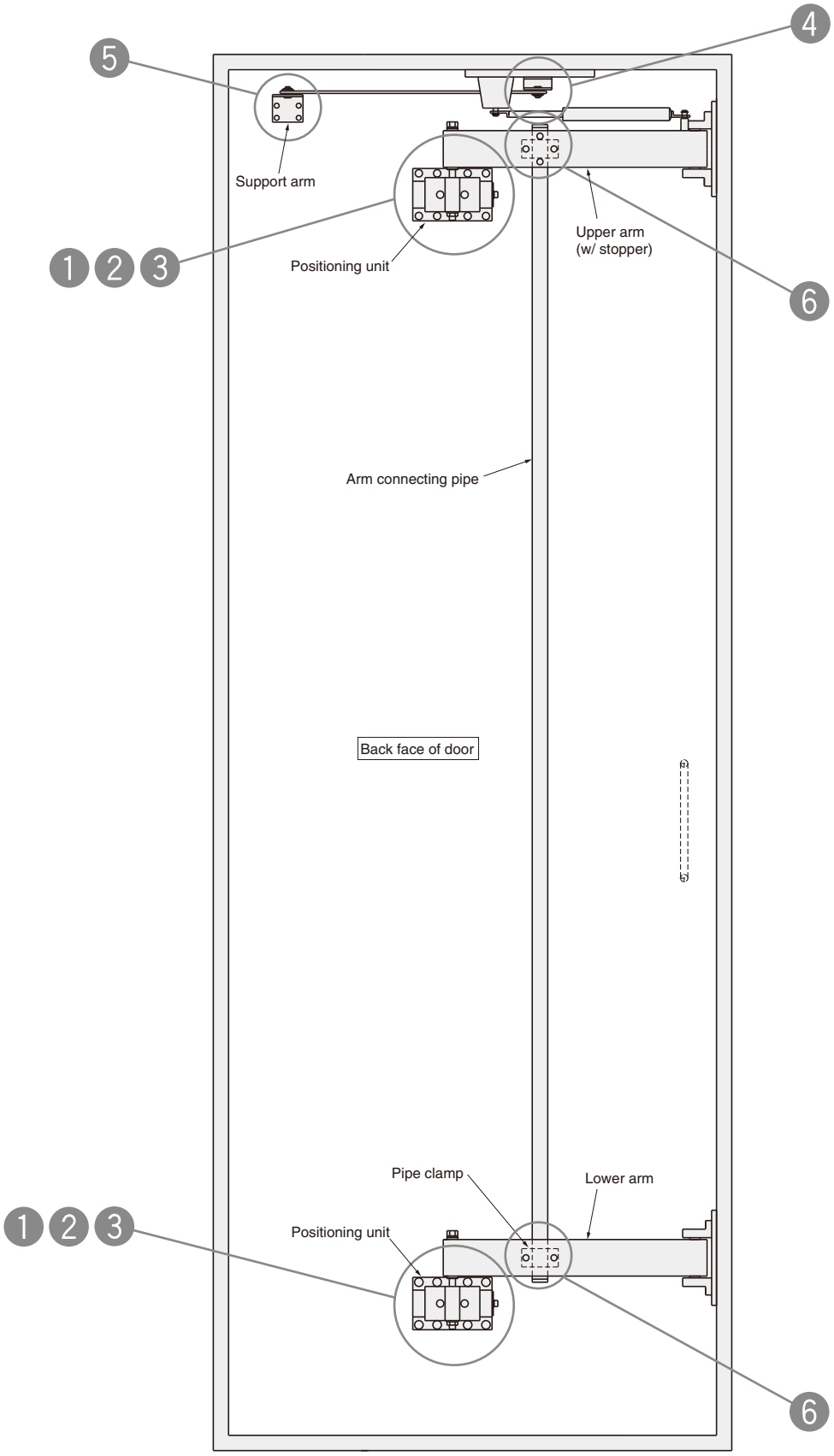
Attach “Pile seal” to the (edge of the door) shown as below.

3 Installing the handle

⚠ CAUTION

Be sure to install the handle to the location closer to the hinge than the center of the door.

6 Installing Door



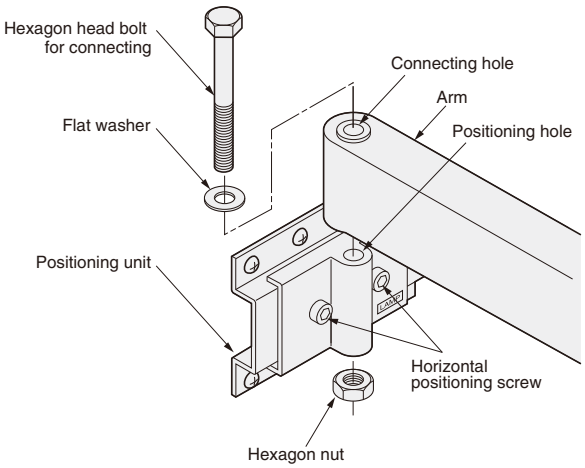
Back face of the door viewed from the inside of the cabinet

❶Installing the door

(1) Open the upper and lower arms with the door open.

(2) Place a liner beneath the door when hanging the door.
The liner serves to protect the door and roughly align the bottom surfaces of the upper and lower arms with the top surfaces of the positioning units on the door.

(3) Hang the door in the following manner:
[1] Tighten the horizontal positioning screws on the upper and lower positioning units.
[2] Align the top surfaces of the upper and lower positioning units on the door with the bottom surfaces of the upper and lower arms.
[3] Insert a hexagon head bolt into the connecting hole by way of a flat washer.
[4] Screw the hexagon head bolt into the positioning unit until its leading end protrudes by about 10 mm.
[5] Screw a hexagon nut into position until it touches the positioning unit.



2 Vertical positioning of door

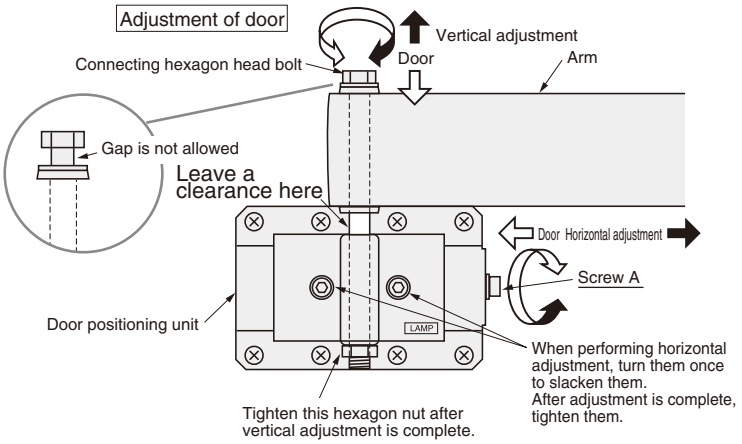
(1) Remove the liner and close the door gently.

(2) Measure the clearance between the top surface of the door and the roof.
[1] The difference between the planned size and the measurement value is the amount of correction required.
[2] If there is no gap to correct, proceed to "3 Horizontal positioning of door."
[3] Replace the liner in the original position and open the door again.

(3) To move the door position up and down, perform the following:
[1] Loosen the hexagon nuts on the upper and lower units slightly.
[2] Turn the hexagon nut on the upper arm clockwise to move the door up or counterclockwise to move the door down. Each turn of the nut raises the door by about 1.5 mm.
[3] When the door is found to have risen to the desired height, turn the hexagon nut on the lower arm clockwise.
[4] Close the door gently.

(4) Repeat (2) until the height is properly adjusted.

(5) Tighten the hexagon nuts when the correct height is established.



Check that the cabinet side plate is constructed and assembled in the vertical direction.
Horizontal adjusting: Turn the screw A of the "Door positioning unit" clockwise. Then, the door is moved leftward when it is seen from the back of the door. It is moved rightward when the screw A is turned counterclockwise.
Vertical adjusting: Turn the connecting hexagon head bolt clockwise. Then, the door is raised. It can be lowered when it is turned counterclockwise.

3 Horizontal positioning of door

(1) Measure the horizontal gap between the door and cabinet.
If there is any gap to correct, proceed to 4.

(2) Loosen the horizontal positioning screws on both the upper and lower positioning units.

(3) Turn the horizontal positioning screws.
[1] Turn the screws clockwise to move the door to the left or counterclockwise to move the door to the right when the door is viewed from the front.
[2] Retighten the positioning screws when the horizontal position of the door is adjusted.

⚠ CAUTION

For both the upper and lower arms, gap should not be allowed between the head of the hexagon head bolt and the flat washer. If there is any gap, turn the hexagon head bolt clockwise to eliminate the gap so that the weight of the door is received by the upper and lower arms uniformly.

! When the door position is required to adjust, be sure to loosen the hexagon socket head cap screw M6x12 securing the crank bracket (See Fig. 4 on P.15.) first so that the bracket can be slide along the groove in the channel rail.
After adjustment is complete, retighten the hexagon socket head cap screw M6x12.

4 Fixing support arm

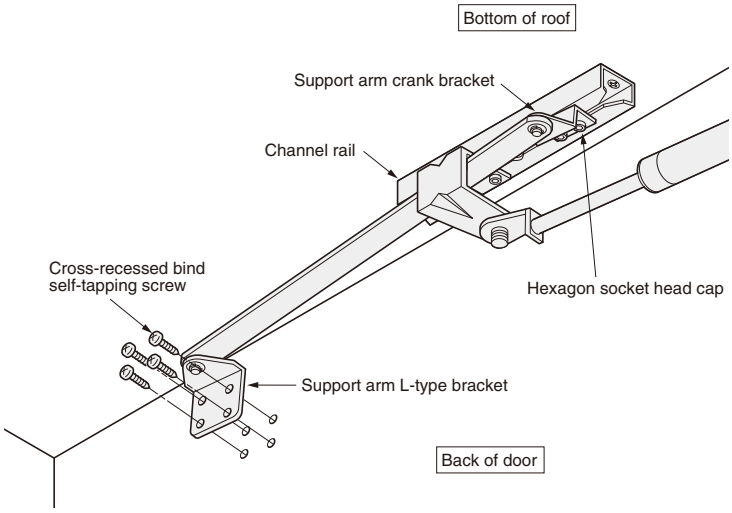
(1) Untie the string or the like used to tie the door.

(2) Loosen the hexagon socket head cap screw.

(3) With the four holes in the L-type bracket aligned with the prepared holes in the door, fix the L-type bracket by tightening the self-tapping screws.
Tightening the bolts little by little and in a diagonal direction is recommended.

(4) Open the door slowly and fully.

(5) Fix the crank bracket to the channel rail by tightening the hexagon socket head cap screw.

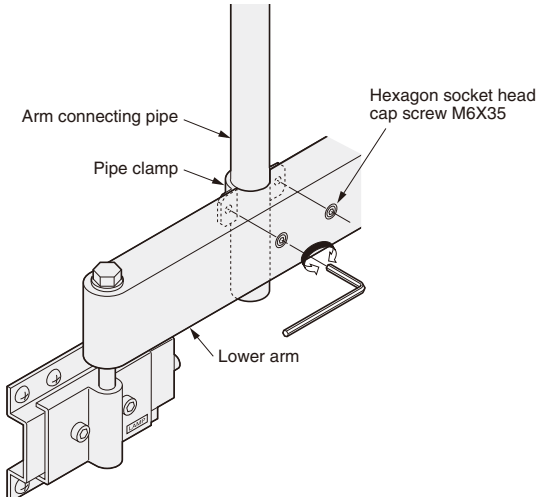


5 Fixing bracket

Tighten the hexagon socket head cap screw M6x12, and fix the "Support arm crank bracket".

❻ Adjusting the gap between cabinet (wooden frame) and door

While keeping the door closed with no gap between the door and cabinet (wooden frame), loosen the M6x35 fixing the “Pipe clamp” attached to the lower arm, and retighten them.
If there is any gap, adjust it by referring to the following instructions on the adjustment and figures on the right side.

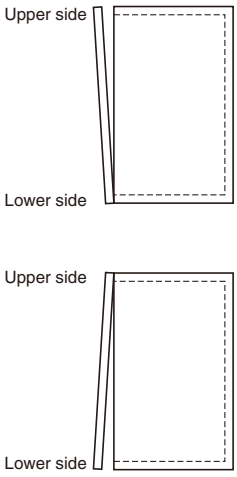


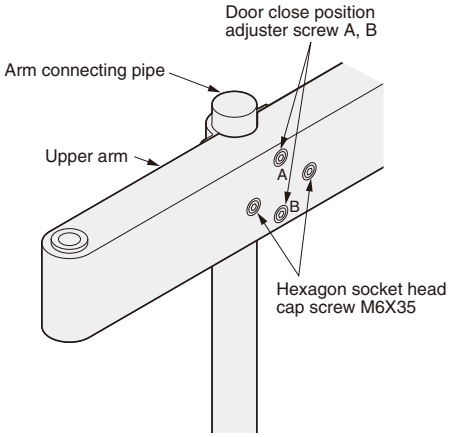
●If a gap exists between the "Cabinet" and the upper side of the door

Be sure to loosen the hexagon socket head cap screw M6x35 first, and tighten the "Door close position adjuster screw B" or loosen the "Door close position adjuster screw A".
After adjustment is complete, retighten the hexagon socket head cap screw M6x35.

●If a gap exists between the "Cabinet" and the lower side of the door

Be sure to loosen the hexagon socket head cap screw M6x35 first, and tighten the "Door close position adjuster screw A" or loosen the "Door close position adjuster screw B".
After adjustment is complete, retighten the hexagon socket head cap screw M6x35.



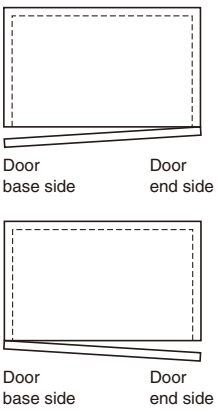


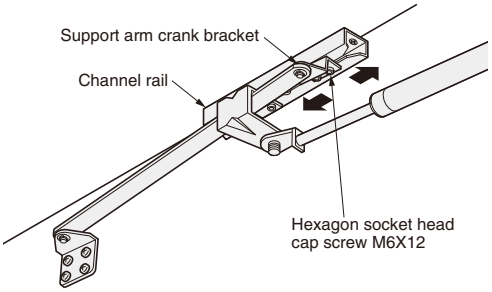
If a gap exists between the “Cabinet” and the door base

Loosen the hexagon socket head cap screw M6x12 securing the crank bracket in position and slide the crank bracket along the groove in the channel rail to the door end. With elimination of the gap, retighten the hexagon socket head cap screw M6x12.

If a gap exists between the “Cabinet” and the door end

Loosen the hexagon socket head cap screw M6x12 securing the crank bracket in position and slide the crank bracket along the groove in the channel rail to the door base. With elimination of the gap, retighten the hexagon socket head cap screw M6x12.





Troubleshooting

Symptom	Remedial action
The door is heavy to handle	Check the gap between the arm and the door positioning unit by referring to “ ❷ Vertical positioning of door” and “ ❸ Horizontal positioning of door” on P.14.
The door won’t close completely	Adjust the position of each individual part by referring to “ ❻ Adjusting the gap between cabinet (wooden frame) and door” on this page.

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