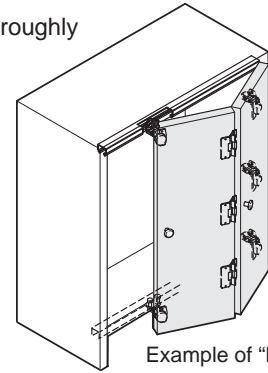


Thank you for selecting our product. Before starting installation, please read this manual thoroughly to ensure correct installation. Please keep this manual at hand for future reference.

ABOUT THIS PRODUCT

- This product is parts set for installation of folding door system for cabinets.
- The rails can be hidden by the overlay door panels.

FOR YOUR SAFE WORK AND CORRECT INSTALLATION



Example of "Lower - Roller - S"



This symbol denotes prohibited actions.

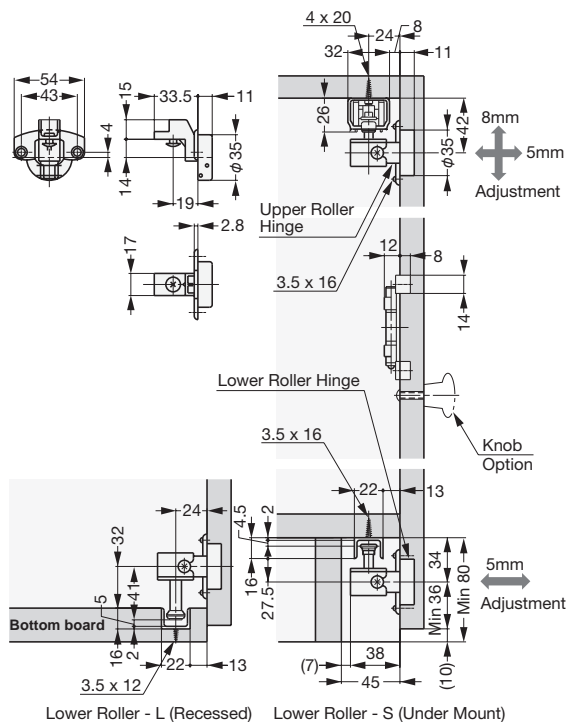


This symbol denotes what must be done.

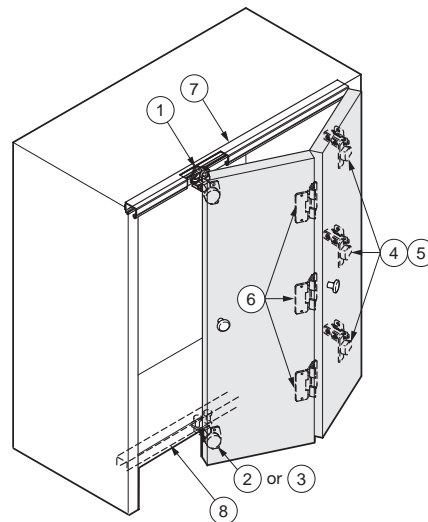
Caution If these cautions are not followed, it may result in injury or damage.

- ⊘ It is necessary to manufacture the cabinet with sufficient strength so it endures the weight of the door and impact shocks upon opening/closing the door. A frame with poor strength might result in improper and slower movement of the door. In the worst case, the door might drop down and cause injury.
- ⊘ Do not disassemble nor modify any parts than those described in this document.
- ❗ Make sure to follow the designated measurements and specifications as well as horizontal and verticals angles. Make sure that the cabinet is not warped, since it may affect the movement of the door.
- ❗ This (furniture fittings system) is a part for furniture fittings. After installation, make sure to test the finished product thoroughly to ensure that it is well-functioning and safe.
- ❗ Make sure to test the screws for slack at regular intervals (one month from first usage, half year and then one time every year is recommended).

INSTALLATION DRAWING (EXAMPLE)



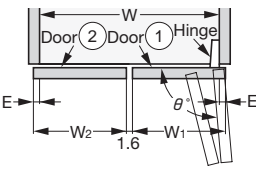
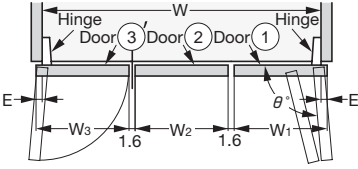
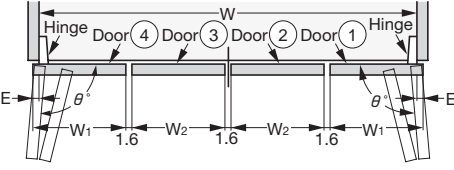
Door Width	Max. 450 mm per door
Door Height	Max. 2400 mm
Door Thickness	15-22 mm
Door Weight	Max. 10 kg per door
Coverage	Max. 19 mm (with Sugatsune 230 hinge)



COMPONENT PARTS

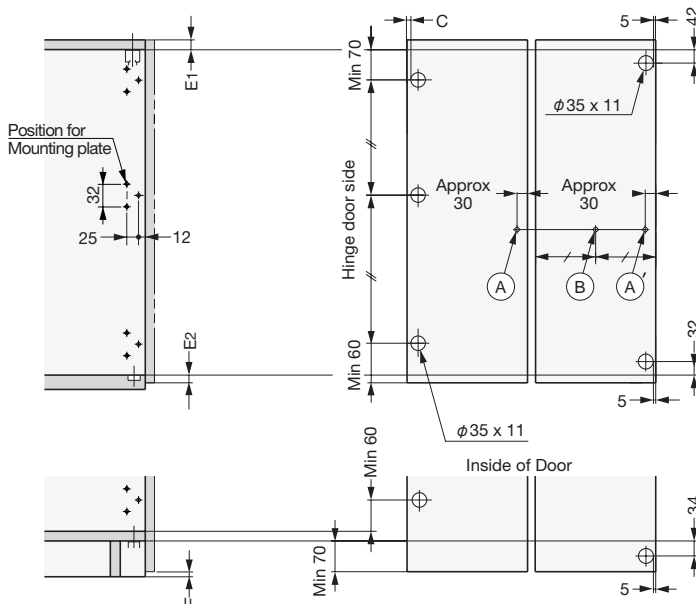
<p>① Upper roller FD111-TRA</p> <p>Hinge part</p> <p>Main body</p>	<p>② Lower roller - S FD111-BRS</p> <p>Hinge part</p> <p>Main body</p>	<p>③ Lower roller - L FD111-BRL</p> <p>Hinge part</p> <p>Main body</p>	<p>④ Concealed hinge 230-26/19T</p>
<p>⑤ Mounting plate 230-P4W-32T</p>	<p>⑥ Center hinge CH-75</p>	<p>⑦ Upper rail</p>	<p>⑧ Lower rail</p>

CABINET / DOOR WIDTH DIMENSIONS

Application	Hinged door at 90° open	Hinged door at 95° open	Other door at 87° open
2 Doors folding  <p> W = Width of inside cabinet W_1 = Width of door ① and ④ W_2 = Width of door ② and ③ W_3 = Width of door ③' E = Coverage θ° = Opening angle at hinged door </p>	$W_1 = \frac{W + 2E - 4.8}{2}$ $W_2 = W_1 + 3.2$	$W_1 = \frac{W + 2E - 7.8}{2}$ $W_2 = W_1 + 6.2$	$W_1 = \frac{W + 2E - 1.6}{2}$ $W_2 = W_1$
2 Doors folding and 1 swing open 	$W_3 = W_1$ $W_1 = \frac{W + 2E - 6.4}{3}$ $W_2 = W_1 + 3.2$	$W_3 = W_1$ $W_1 = \frac{W + 2E - 9.4}{3}$ $W_2 = W_1 + 6.2$	$W_1 = \frac{W + 2E - 3.2}{3}$ $W_1 = W_2 = W_3$
2 Doors folding and 2 Doors folding 	$W_1 = \frac{W + 2E - 11.2}{4}$ $W_2 = W_1 + 3.2$	$W_1 = \frac{W + 2E - 17.2}{4}$ $W_2 = W_1 + 6.2$	$W_1 = \frac{W + 2E - 4.8}{4}$ $W_1 = W_2$

DOOR PROCESS DIMENSION

The drawing describes the right handed opening type.
The left-handed opening type is a mirror image.



E_1 = Coverage (top)

E_2 = Coverage (bottom)

F = Gap between door bottom and floor (10mm)

Required Parts

Door Height	Concealed hinge ^④ Mounting plate ^⑤ (pcs)	Center hinge ^⑥ (pcs)
900 mm	2	2
1600 mm	3	2
2000 mm	4	3
2400 mm	5	4

Coverage at hinge door side	C - Dimension
19 mm	5 mm
18 mm	4(5) mm
17 mm	3(4) mm

() Showing adjustable range

Knob Installation (Sold separately)

Recommended knob mounting position (A) for opening & (A') for closing the door.

Install one knob at (B) position is also applicable for both opening & closing.

INSTALLATION PROCEDURE

1 Cutting rails

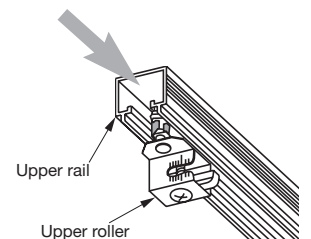
Cut Upper rail & Lower rail to the required length.

$$\text{Length} = W - 1.5$$

❗ Remove any dirt or aluminum chips from the rail as they would cause noise during operation.

2 Installing upper rail

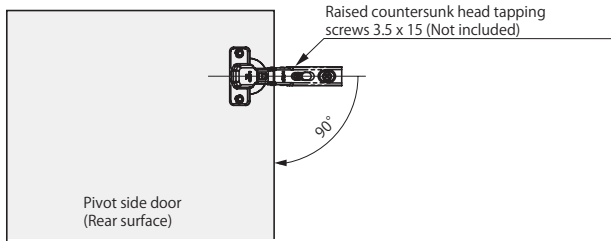
Insert Upper roller to Upper rail before mounting.



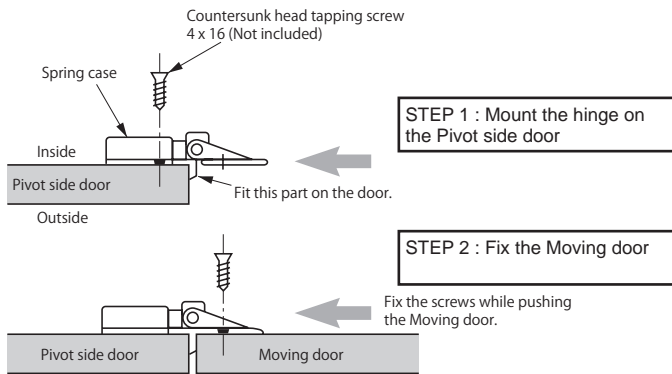
❗ When installing the rails, ensure that upper rail and lower rail are parallel.

3 Installing concealed hinges, upper roller

Install Concealed hinge for Pivot side door.
Install the hinge of Sliding guide for moving door.



4 Installing center hinges

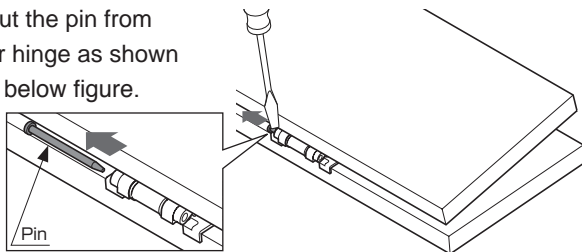


5 Installing knob

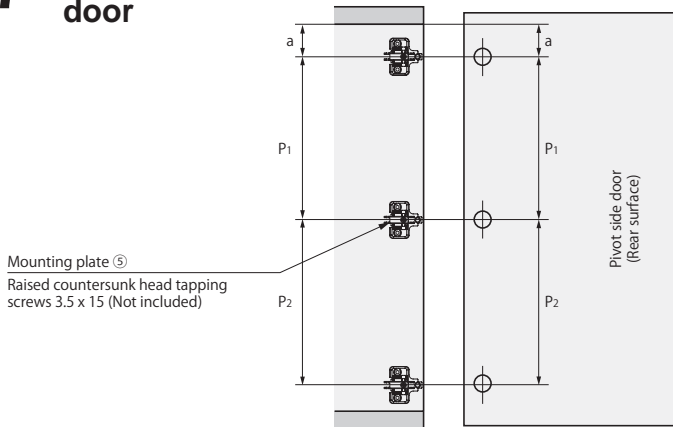
As for the position of the knob, please refer to "Door Process Dimensions" on page 2 and "How to operate the knob" on page 4.

6 Separating door panels

Pull out the pin from center hinge as shown in the below figure.



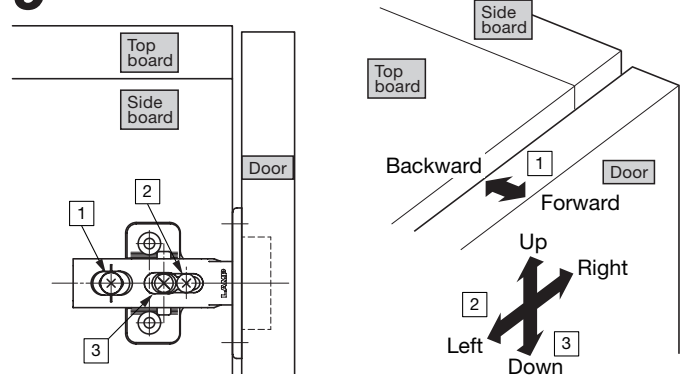
7 Fixing the mounting plates for Pivot side door



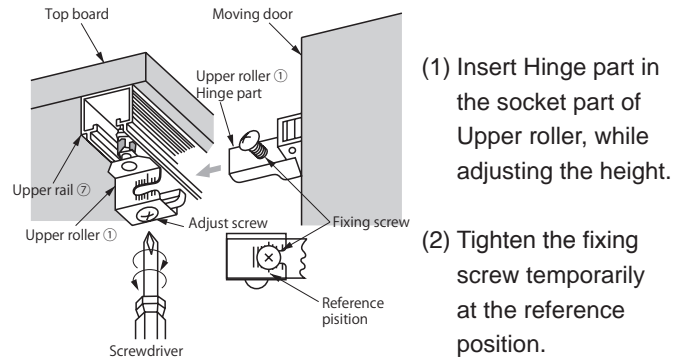
8 Hanging the doors

Put a support of suitable height under the doors, clip on the hinges on the door to the mounting plates on the cabinet.

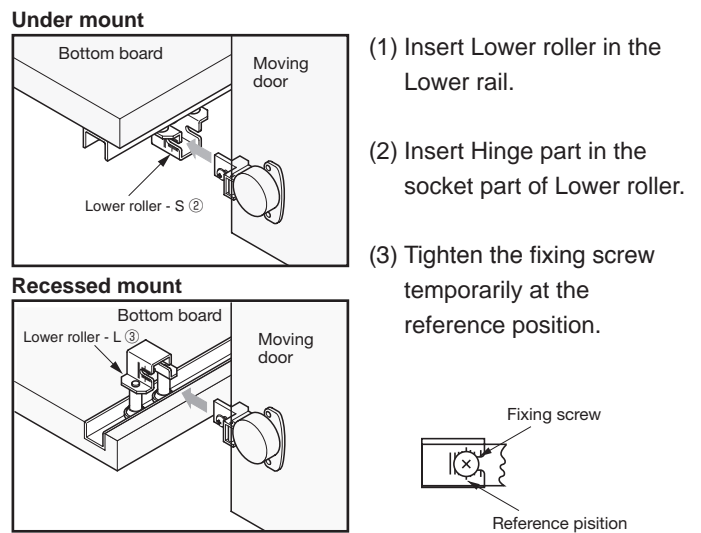
9 Door adjustment



10 Installing Upper roller

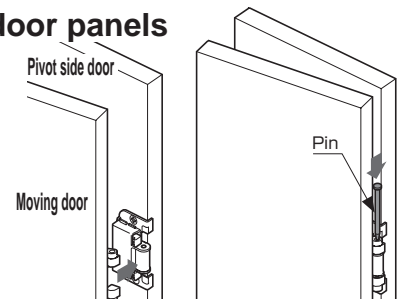


11 Installing Lower roller



12 Assembling door panels

Couple the hinge parts as shown in the right figure, then insert the hinge pin from above.



13 Checking the door movement

Open and close the door for several time and check if the door moves smoothly. Then re-tighten the fixing screws of all parts.



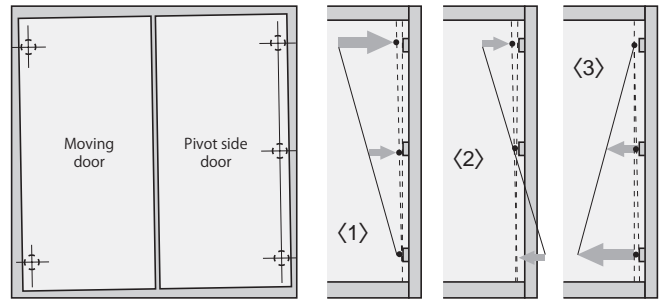
Periodically check if all of the screws are not loose. If the looseness is found, tighten it.

ADJUSTMENT OF THE INCLINED DOOR

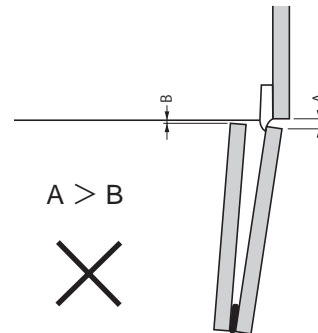
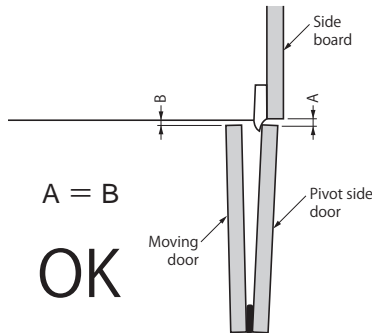
When the door is inclined a lot like the right illustration, adjust the door by the adjustment screws on the concealed hinges. Do not try to adjust it by the screws on the sliding guide.

There are three ways of adjustment as below..

- <1> Reduce the upper gap by the top and middle hinges.
- <2> Reduce the upper gap by the top hinge and increase the lower gap by the bottom hinge.
- <3> Increase the lower gap by the bottom hinge.



SUGGESTIONS FOR DOORS IN EQUAL WIDTH

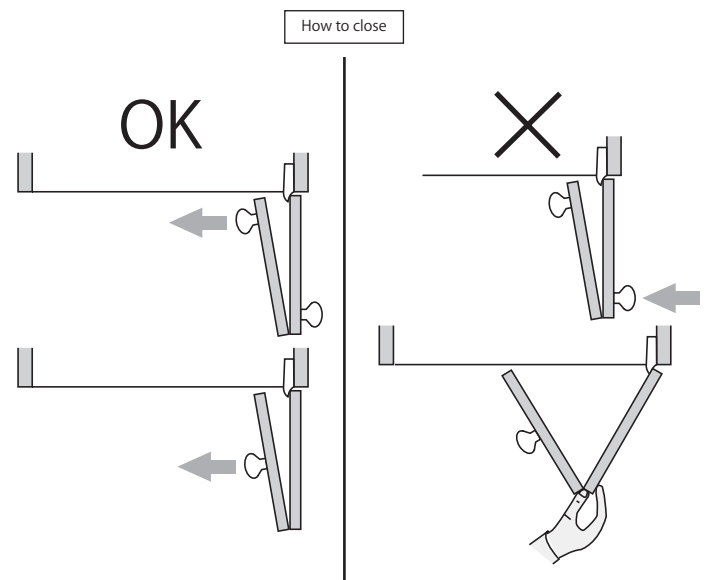
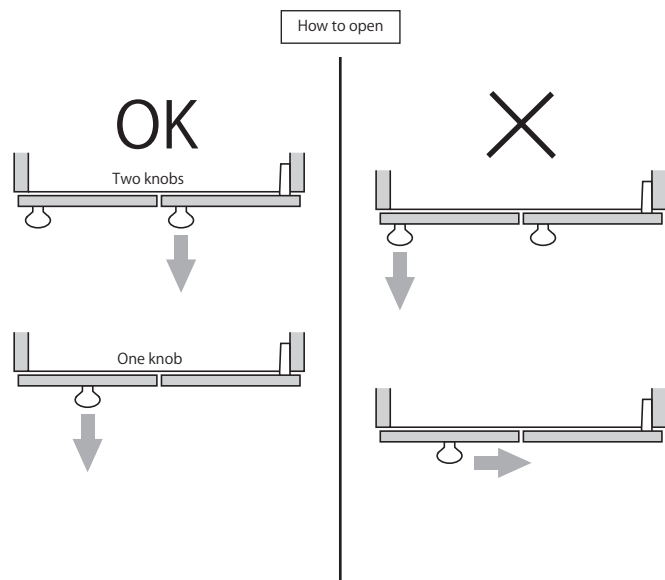


Adjust the fore-and-aft position of the concealed hinges so that the both A and B gaps are the same.

If "A" is bigger than "B", the closing action would not be smooth. Re-adjust the gaps as below.

1. Loosen all fore-and-aft-adjustment screws on the concealed hinges, and reduce the gap A, then re-tighten the screws.
2. If "A" is still bigger "B", increase the gap B by adjusting the screws on the sliding guides.

HOW TO OPERATE THE KNOB



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