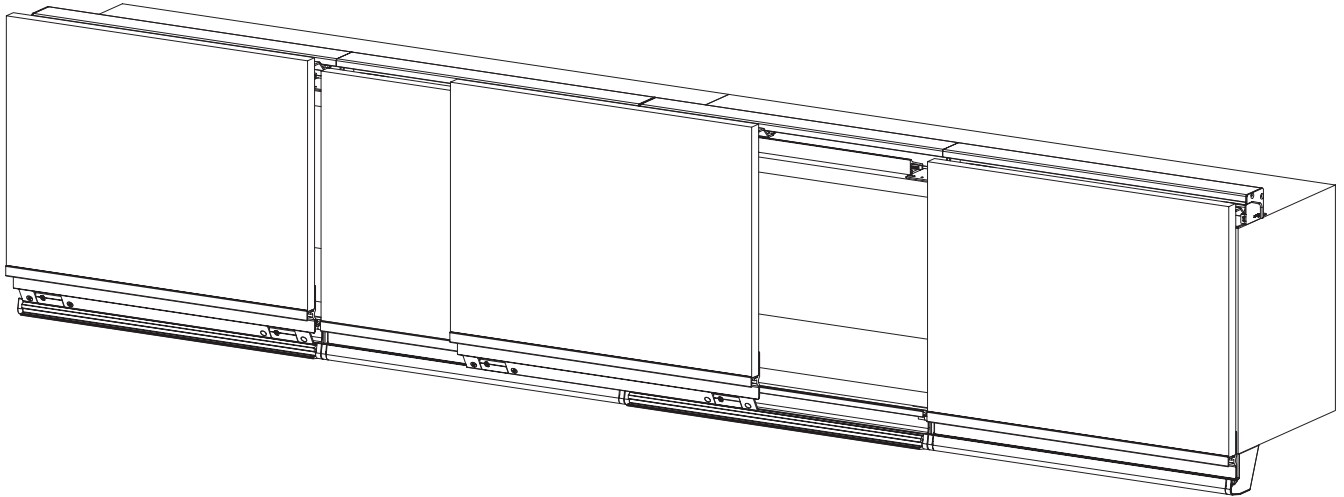


MultiMo FLAT™

Instruction Manual <for wood doors> PAT.



Thank you for purchasing this MultiMo Flat system for wood doors by SUGATSUNE. Before proceeding with the installation, please read this instruction manual carefully for the best possible end result and ensure your safety. Faulty installation may result in injury. Please keep this instruction manual at hand for future reference.

⚠ WARNING Failure to observe the following precautions may result in injury and/or lead to damage to surrounding cabinets or fittings.

WARRANTY:

- SUGATSUNE guarantees the quality of this product as for all its parts. It cannot however guarantee the assembly of the end product as a whole.
- This product was manufactured and delivered with our utmost care. Should you however find any defect, please contact your dealer immediately.
- SUGATSUNE warrants that this product to be free from defects for a period of one (1) year from the date of delivery. SUGATSUNE liability is limited to the replacement of this product by a similar one free from defect. SUGATSUNE liability does in no case extend to the replacement of the installation and/or cabinet as a whole.
- SUGATSUNE cannot be held liable for injury or trouble caused by a use different than the original purpose.

INSTALLATION PRECAUTIONS:

- Always clear the area before proceeding with the installation.
- Ensure that doors sizes, weights and material correspond to the specifications stated in this manual.
- We recommend that the installation be made by your local dealer or a professional hardware installer.
- Do not strike parts or throw them on the floor as it may impair the smooth operation of the system.
- Thoroughly clean rails and rollers.
- We recommend that the installation be carried out by two people, in order to ensure safety and avoid unnecessary stress on the parts.
- Use suitable screws to ensure a secure installation of the cabinet and doors.

OPERATION AND MAINTENANCE PRECAUTIONS:

- Periodically check for and tighten any loosened screw.
- Do not use excessive force when operation the system.
- Closing of the door can only be done when they are in front of their storage position as shown Page 11, Fig. 9-6.
- Never attempt to disassemble or modify the system.
- Some dimensions and specifications may be changed without notice for improvement or safety reasons. Please check specification details on actual product.
- For cleaning, use a dry soft cloth. When removing persistent stains, wipe them by using cloth impregnated with diluted mild detergent. Wipe clean with damp cloth and, finally, with dry one.
- Never use metal brush or polishing powder for cleaning as this may scratch or remove the protective finish on the surface.

■ Contents

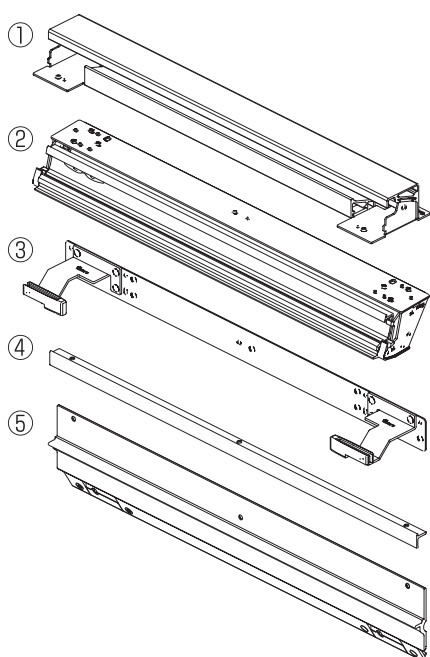
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■ Product specifications:

Cabinet width	Door width	Door height		Door thickness	Door weight					
					No.2 ^(*)	No.3 ^(*)	No.4 ^(*)	No.5 ^(*)	No.6 ^(*)	No.7 ^(*)
300 ⁺² ₋₀ mm	297 ⁺⁰ ₋₁ mm	300~600	Cabinet height +33 ^{±1.5} mm	15~23mm	1.5~2.4					
450 ⁺² ₋₀ mm	447 ⁺⁰ ₋₁ mm	300~900			1.4~2.3	2.4~3.3				
600 ⁺² ₋₀ mm	597 ⁺⁰ ₋₁ mm				2.2~3.1	3.2~4.1	4.2~5.1			
900 ⁺² ₋₀ mm	897 ⁺⁰ ₋₁ mm						3.9~4.8	4.9~5.8	5.9~6.8	

(*) The number indicated in table is the one figuring at the end of the product code (MFS-PN-W450/S3)

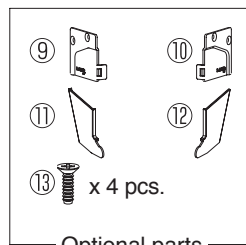
■ Parts list:



⑥ x 11 pcs. (*x12 pcs.)

⑦ x 13 pcs. (*x18 pcs.)

⑧ x 2 pc.



Optional parts

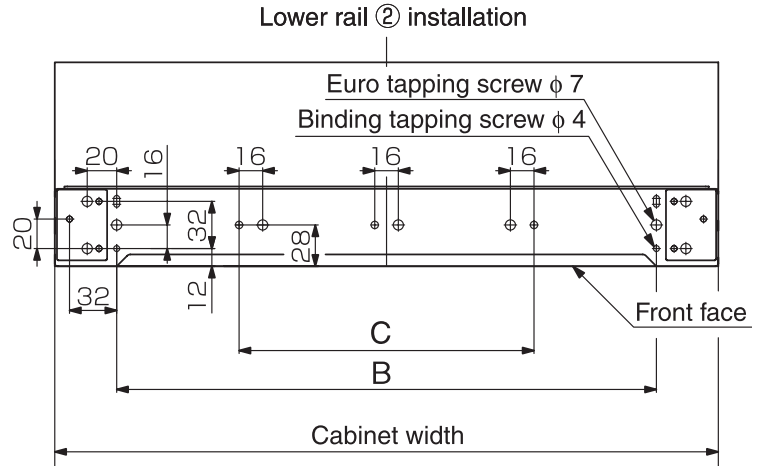
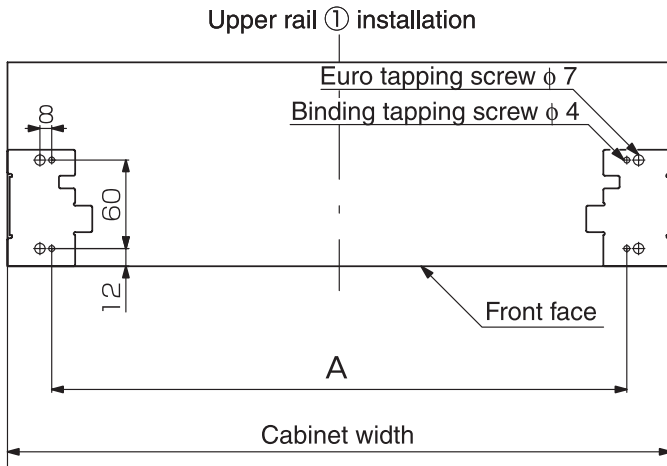
* Quantity for series
MFS-W600 and MFS-W900

- ① Upper rail
 - ② Lower rail
 - ③ Door bracket
 - ④ Handle
 - ⑤ Door rail
 - ⑥ Binding & tapping screw 3.5 x 15 (hereinafter: binding screws)
 - ⑦ Countersunk head tapping screw, I-class 3.5 x 14 (hereinafter: countersunk head screws)
 - ⑧ Connecting pin
 - ⑨ End cap L
 - ⑩ End cap R
 - ⑪ Lower rail cover L
 - ⑫ Lower rail cover R
 - ⑬ Countersunk head tapping screw, II-class 3.5 x 12 (hereinafter: countersunk head screws, II-class)
- * Parts ⑨~⑬ are optional. These parts shall be used on both ends of upper and lower rails regardless of the number of doors.
(Product model: MFS-ED; product code: 120968)

Installation:

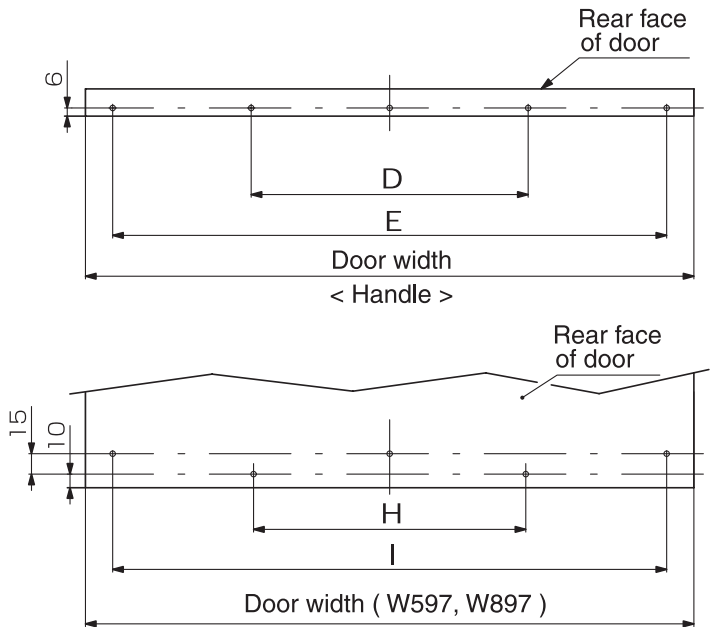
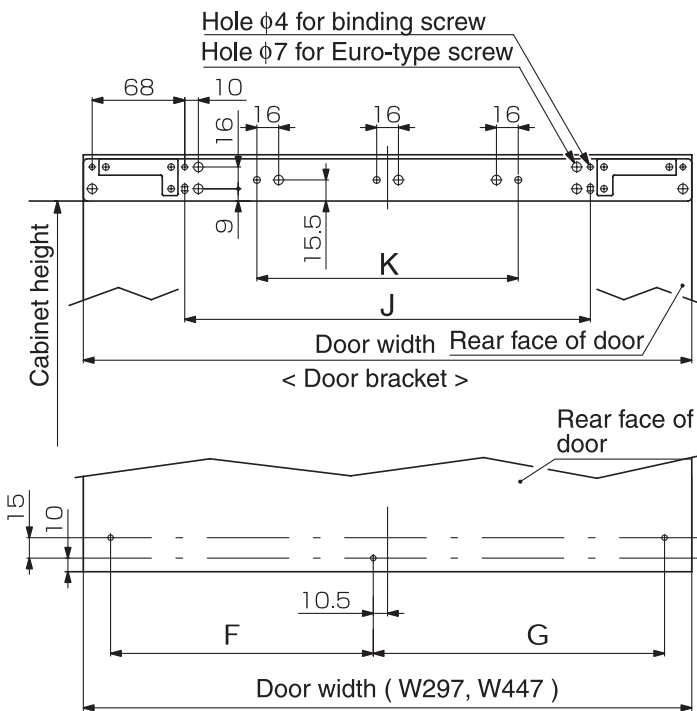
1. Dimensions

(1) Cabinet



Cabinet width (mm)	A	B	C
300 ⁺² ₋₀	240	216	—
450 ⁺² ₋₀	390	366	—
600 ⁺² ₋₀	540	516	200
900 ⁺² ₋₀	840	816	300

(2) Doors

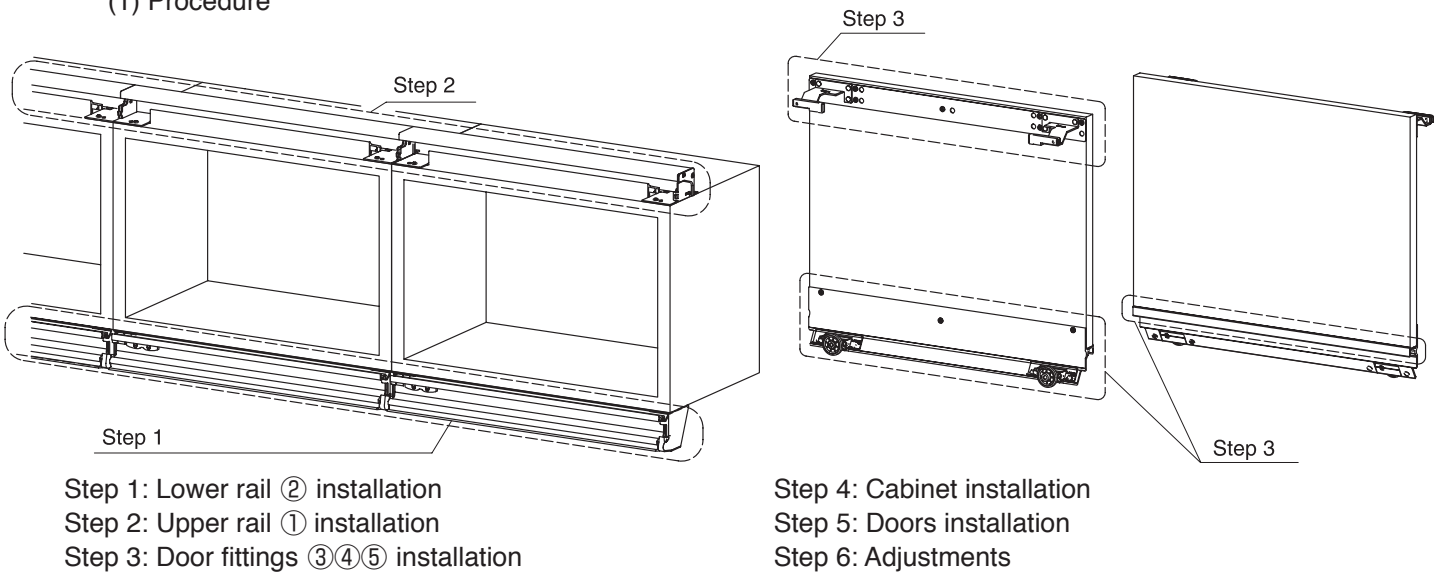


< Door sliding profile >

Door width (mm)	D	E	F	G	H	I	J	K
297 ⁺⁰ ₋₁	—	257	118	139	—	—	148	—
447 ⁺⁰ ₋₁	—	407	193	214	—	—	298	—
597 ⁺⁰ ₋₁	278.5	557	—	—	300	557	448	200
897 ⁺⁰ ₋₁	428.5	857	—	—	400	857	748	300

2. Overview

(1) Procedure



(2) Cabinet and doors requirements

◇ Doors:

Doors must meet height, width and weight requirements shown in the “Product specifications” on page 2 of this manual.

Doors should not warp more than 2mm both vertically and horizontally (Fig. 1-1).

Doors should be strictly rectangular (Fig. 1-2)

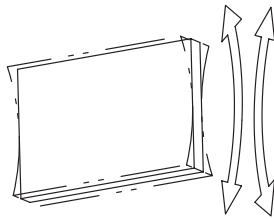


Fig.1-1

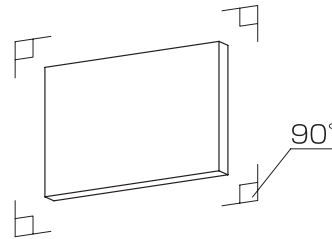


Fig.1-2

◇ Cabinets:

Cabinet modules should not warp (Fig.1-3).

Cabinet modules should be rectangular (Fig. 1-4)

Assembly of the cabinet modules should be straight and level (Fig. 1-5)

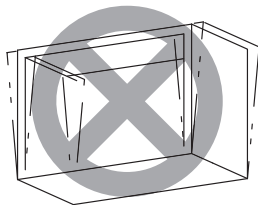


Fig.1-3

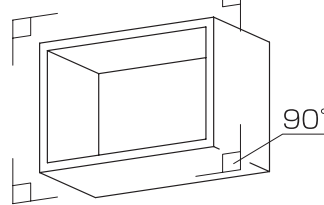


Fig.1-4

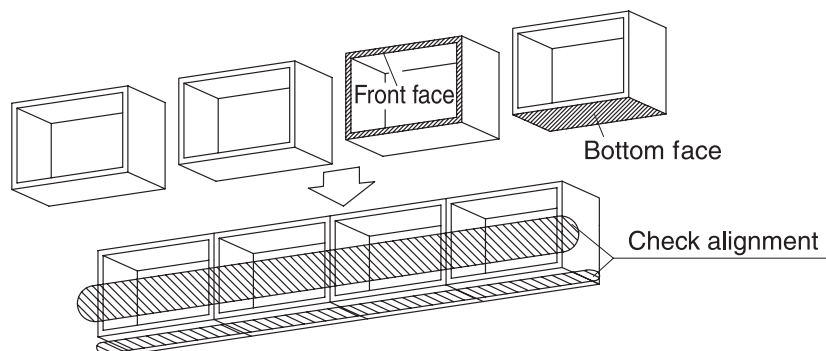
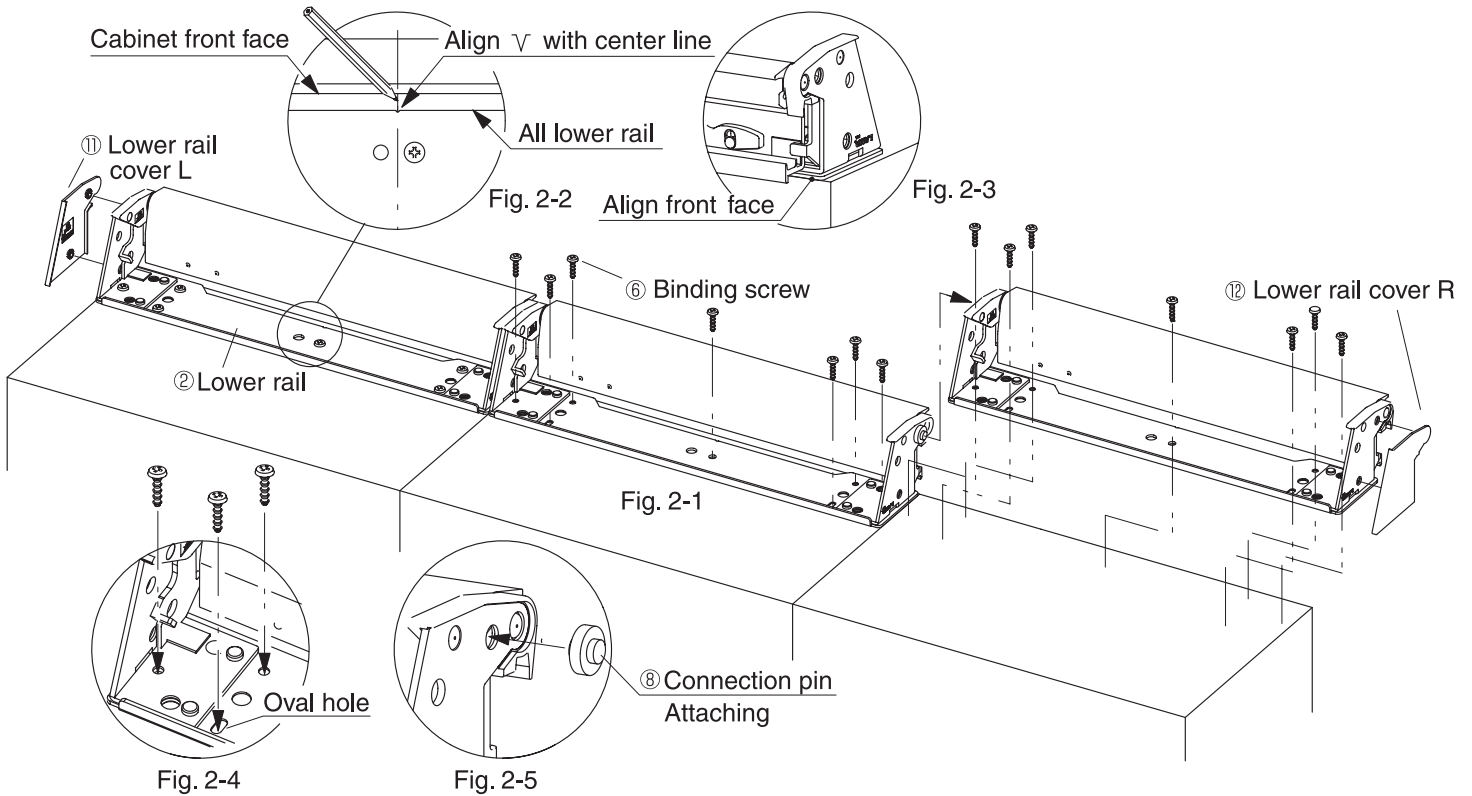


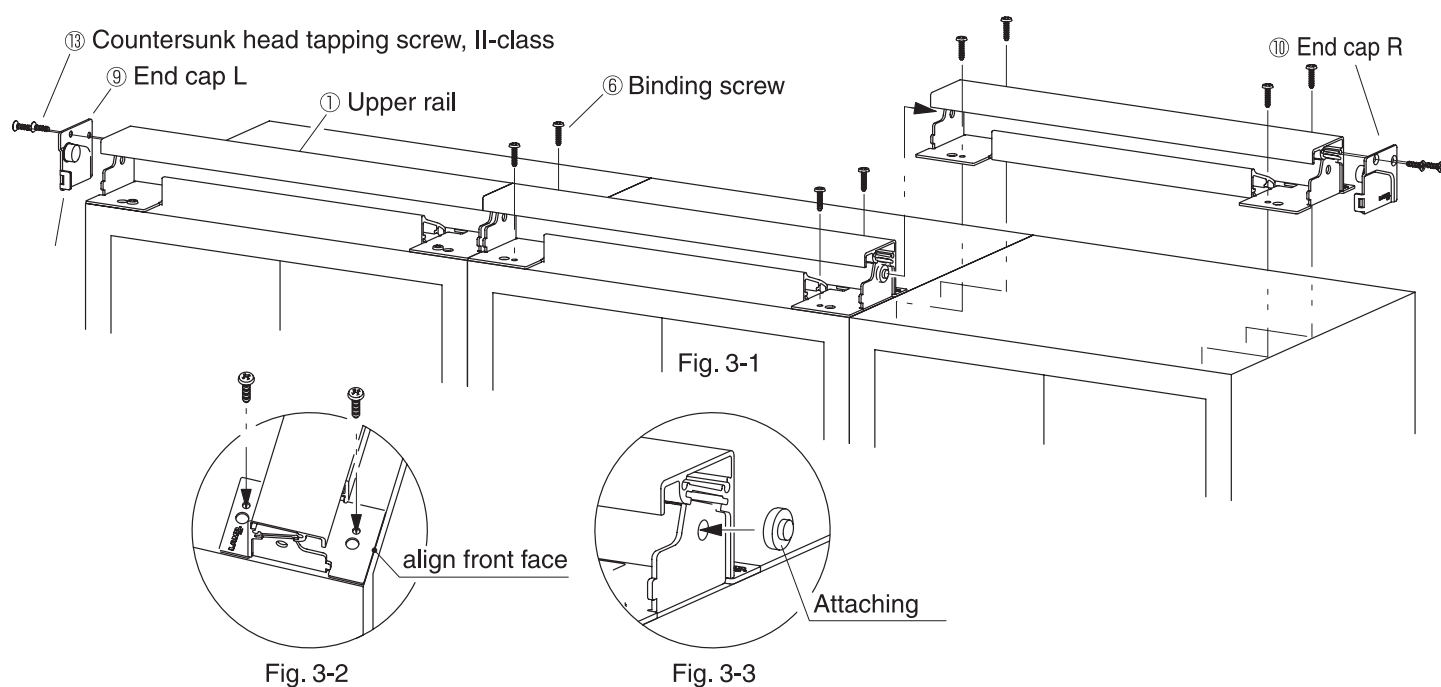
Fig.1-5

STEP 1: Lower rail installation



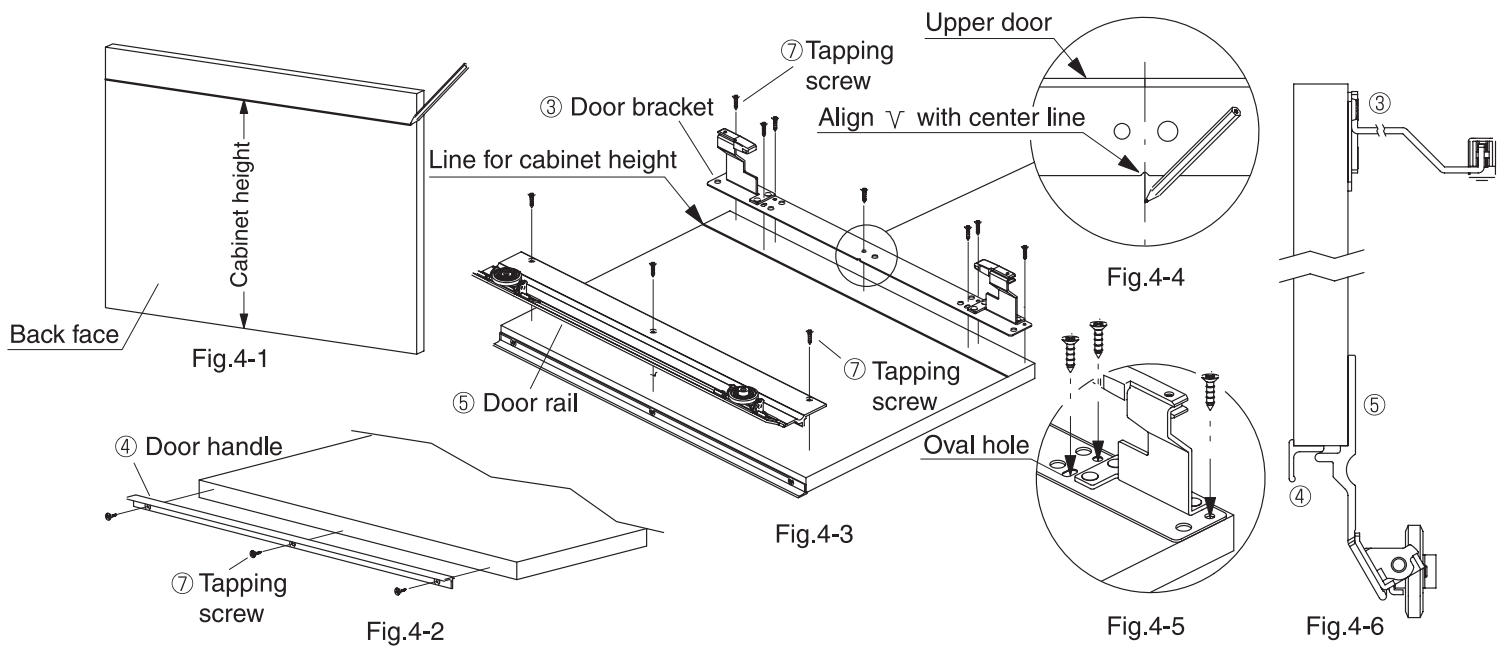
- [1.] Turn cabinet upside down and draw the width cabinet centerline on the bottom of the left-most cabinet module
- [2.] Line up the V-shaped cut-out at the center of the lower rail ② with the center line drawn in step [1], and hold the rail in position by lightly driving screws through the elongated holes (Fig.2-2, Fig.2-4)
- [3.] Line up the front edge of the lower rail ② with that of the cabinet and fasten the rail securely by driving all remaining screws (Fig. 2-3, Fig. 2-4)
 - * **Important: Make sure that the lower rail ② is firmly fixed and that it can rotate 90 degrees.**
 - * **Note: larger screw holes ($\phi 7\text{mm}$) are for Euro screws.**
- [4.] Insert connecting pin ⑧ in the hole on the side of lower rail ② (Fig. 2-5).
- [5.] Proceed with installation of the lower rail immediately adjacent to the one installed in [3], by matching the pin ⑧ inserted in [4] with the hole of the new lower rail and repeat steps [3] and [4].
- [6.] Repeat operations [4] and [5] until all lower rails are installed
 - * **Important: Do not insert any connecting pin ⑧ at either end assembled line of lower rails.**
- [7.] Firmly fix lower end caps L ⑪ and R ⑫ at the appropriate end of the lower rail assembly (Fig. 2-1).

STEP 2: Upper rail installation



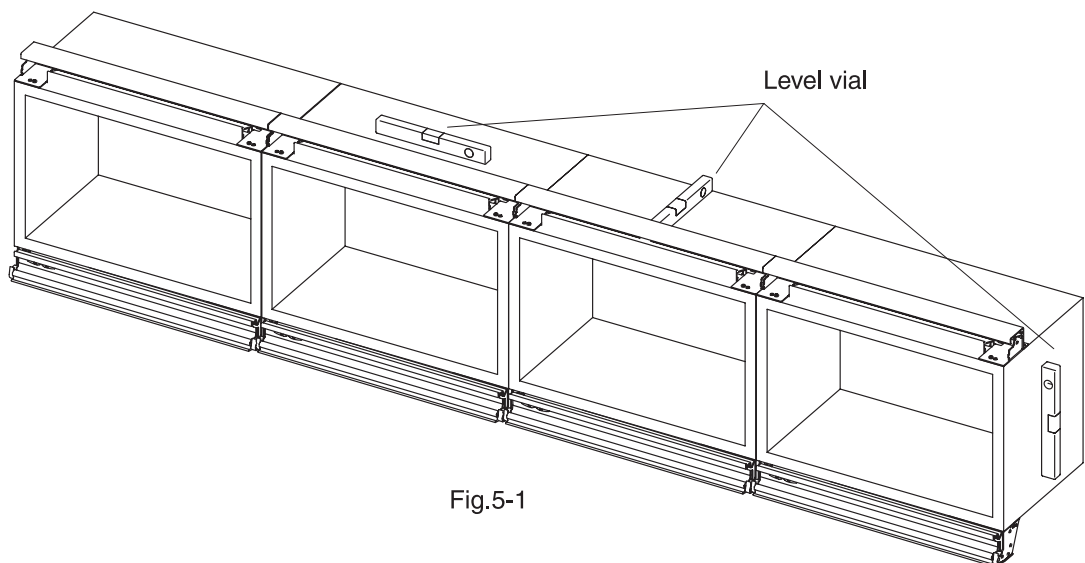
- [1.] Turn the cabinet back in its upright position and draw the width cabinet centerline on the top of the right-most cabinet module.
- [2.] Line up the front and side edges of the upper rail ① with that of the cabinet and fasten the rail securely by driving all screws (Fig. 3-1, Fig. 3-2).
 - * **Important: Make sure that the upper rail ① is firmly fixed.**
 - * **Note: larger screw holes ($\phi 7\text{mm}$) are for Euro screws.**
- [3.] Insert connecting pin ⑧ in the hole on the side of upper rail ① (Fig. 3-3).
- [4.] Proceed with installation of the upper rail ① immediately adjacent to the one installed in [2], by matching the pin ⑧ inserted in [3] with the hole of the new upper rail ① and repeat steps [2] and [3].
- [5.] Repeat operations [3] and [4] until all lower rails are installed.
 - * **Important: Do not insert any connecting pin ⑧ at either end assembled line of upper rail ①.**
- [6.] Firmly fix upper end caps L ⑨ and R ⑩ at the appropriate end of the upper rail assembly (Fig. 3-1).
 - * **Important: End caps must be securely fastened, as they will prevent doors from sliding out of the assembly.**

STEP 3: Door fittings installation



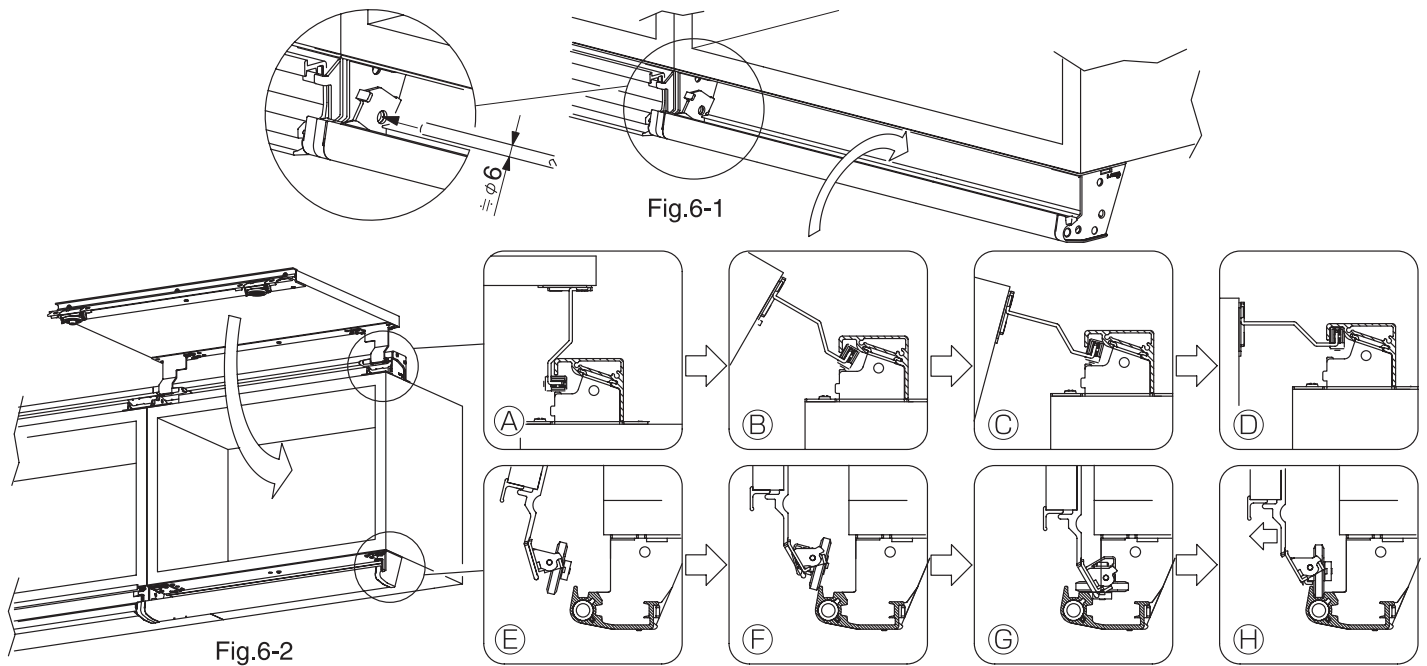
- [1.] On the backside of each door, draw one line matching the cabinet height (approx. 33mm from the top of the door and another one marking the width door centerline). (Fig.4-1, Fig.4-4)
 - [2.] Use screws ⑦ to fasten handle ④ at the bottom of the door facing towards the outside (Fig.4-2, Fig.4-6)
 - [3.] Use screws ⑦ to fasten door rail on the backside of the door. (Fig.4-3, Fig.4-6)
 - [4.] Line up bottom edge of the door bracket ③ with the cabinet line height and the V-shaped cutout of the bracket with the door width centerline. Fasten bracket ③ with screws ⑦.
- * **Important: Make sure that the door bracket ③ is firmly fastened.**
- * **Note: larger screw holes (ϕ 7mm) are for Euro screws.**

STEP 4: Cabinet installation



- [1.] Secure the cabinet assembly to the wall after carefully checking that it is positioned correctly both horizontally and vertically.
- * **Important: Make sure that all lower rails ② can rotate 90 degrees.**

STEP 5: Doors installation



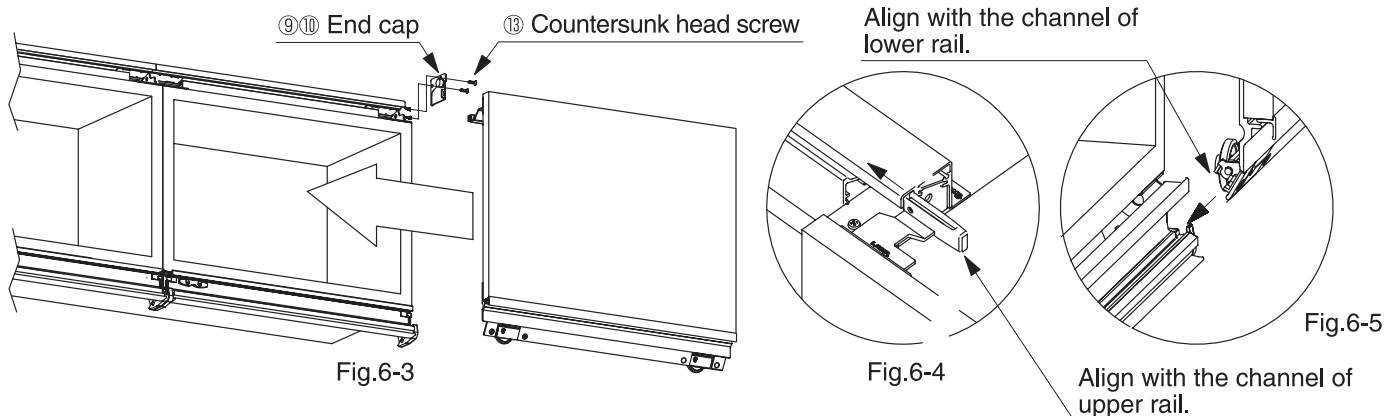
- [1.] Rotate lower rail ② 90 degrees to its closed position so that the hole on the side of the rail and the side brackets are lined up. To hold it in that position, insert a screwdriver or similar tool (ϕ 6mm) in the hole (Fig. 6-1)
- [2.] Hold the door horizontally and insert the door brackets ③ in the upper rail ① (Fig. 6-2A). Slowly bring the door down to its vertical position ((Fig. 6-2B to D).
- [3.] When bringing the door down, insert the rollers into the lower rail ② and then pull back the door slightly so that the rollers slide in the front channel (Fig. 6-2E to H).
- [4.] Slide the door to the furthest available module and close it.
*** Important: When closing the door immediately adjacent to the one where the doors are inserted, make sure that the screwdriver inserted in [1] does not obstruct the rotation of the lower rail.**
- [5.] Repeat steps [2] to [4] for all remaining doors. For the last door, slide it to the adjoining module and proceed to step [6].
- [6.] Remove the screwdriver or tool inserted in [1] and allow the lower rail ② to return to its original position. Slide the last door to that position and close the door.

⚠ Caution

1. When inserting the screwdriver in step [1], make sure not to use too big a tool as it may prove hard to remove and/or may damage the rail.
2. When lowering the doors in step [2], should you feel a resistance, make sure that the bracket ③ are well inserted in the upper rail ① and restart the operation. Never forcibly lower a door as this would bend the bracket or damage the rail.
3. Should the screwdriver holding the lower rail ② in step [1] fall at any time during the installation, immediately remove any doors that is not properly installed and start again.

In case there is enough space on one side of the cabinet, it is easier to simply remove both end cap and rail cover of that side and insert each door through the side of the cabinet (Fig. 6-3, Fig. 6-4 and Fig. 6-5).

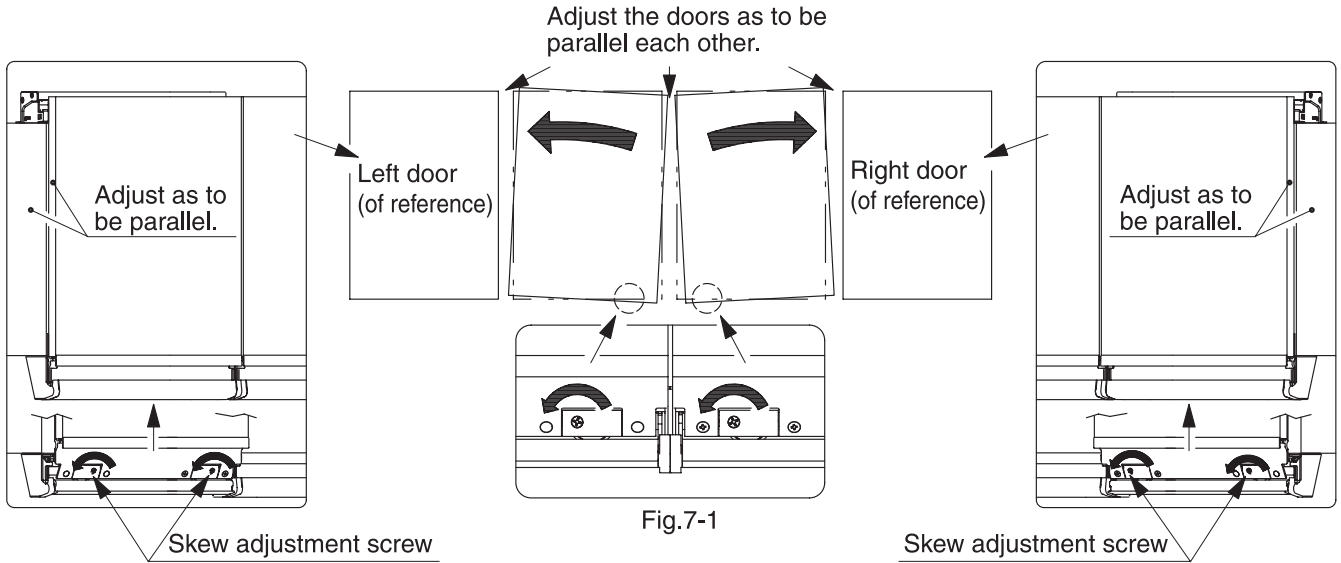
*** Important: Do not forget to replace and secure both the end cap and rail cover or doors may fall from the rail during operation.**



STEP 6: Adjustments

*** Important: We recommend that both outside doors be adjusted first with regards to the sides of the cabinet. They will then serve as reference for other doors.**

[Skew adjustment]

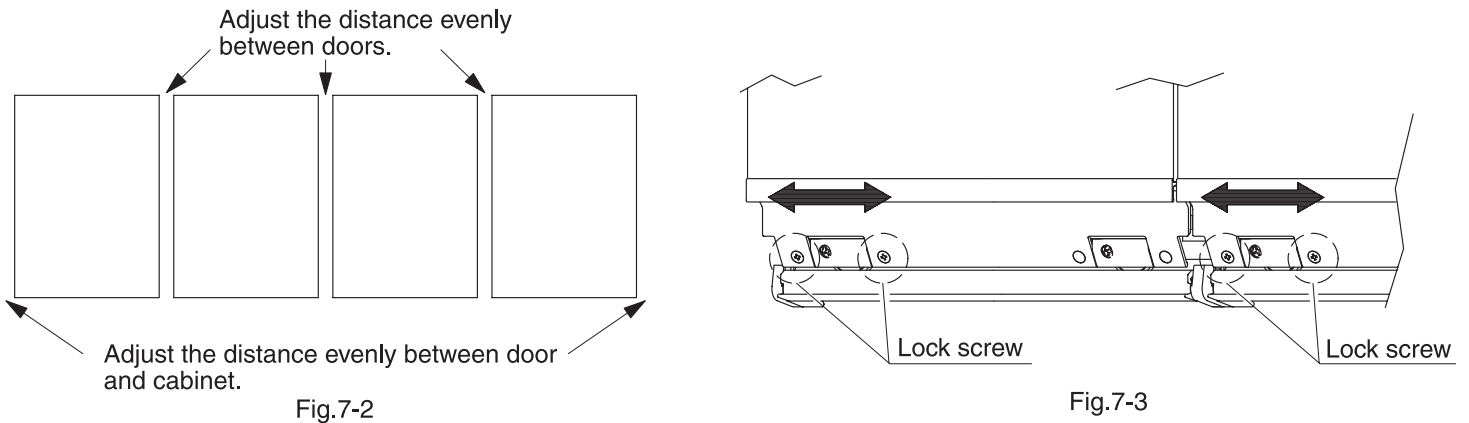


- [1.] Pull the door to its open position to show skew adjustment screws (Fig. 7-1).
- [2.] Turn either the right-hand or left-hand screw counter-clockwise, depending on the adjustment direction required (Fig. 7-1).
- [3.] Push the door back to its closed position.
- [4.] Repeat operations [1] to [3] with the door immediately next to the previous one and ensure that both doors are parallel.

⚠ Caution

The factory setting for the skew adjustment screws is fully turned clockwise. The maximum adjustment range is two turns counter-clockwise, corresponding to a height adjustment of 2mm. Do not attempt to turn screws clockwise when starting the adjustment and to not exceed the adjustment range as this may damage the assembly.

[Adjustment of the gap between doors]

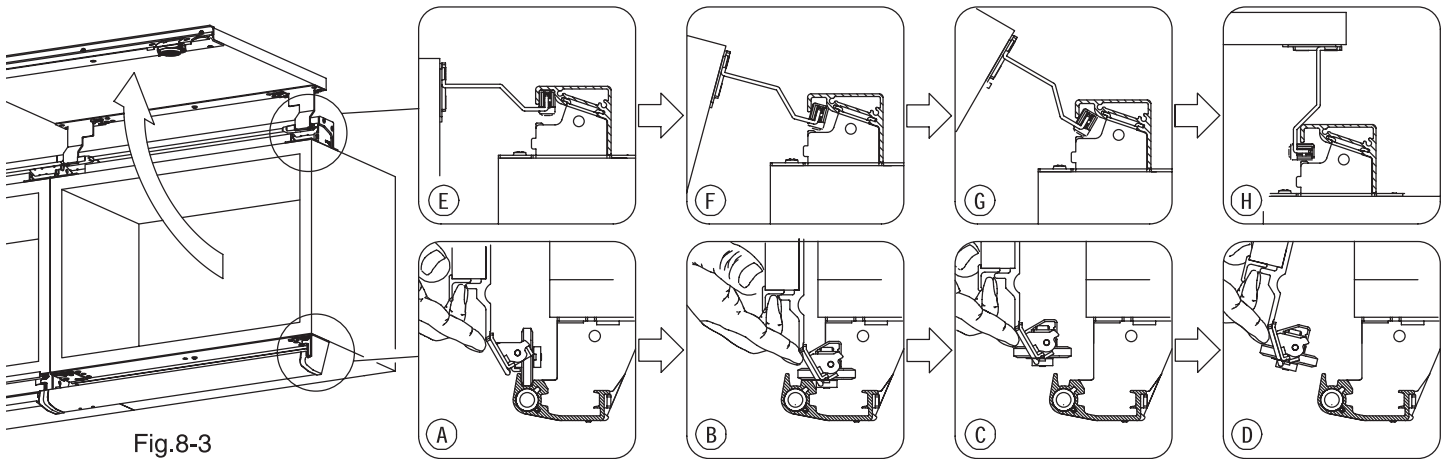
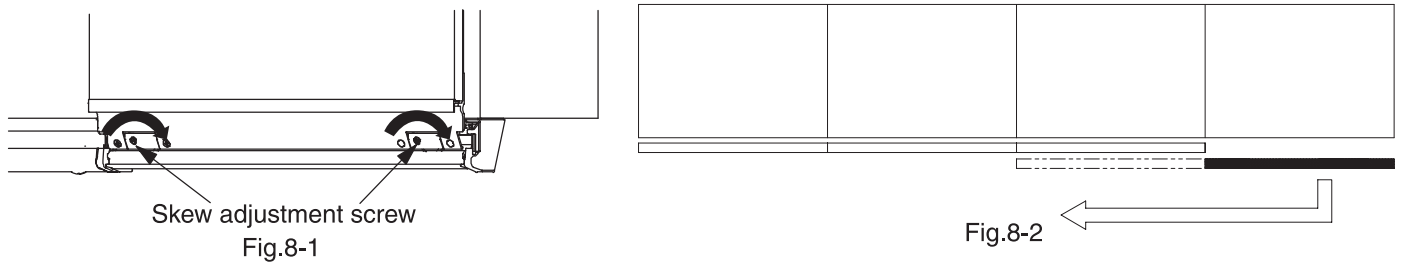


- [1.] Pull the door to its open position to show the locking screws (Fig. 7-3)
- [2.] Loosen both locking screws by turning them half a turn counter-clockwise.
- [3.] Slide the door manually to the correct position. Door position can be adjustment 2mm in both directions.
- [4.] Fasten locking screws.
- [5.] Repeat procedures [1] to [4] for all doors.

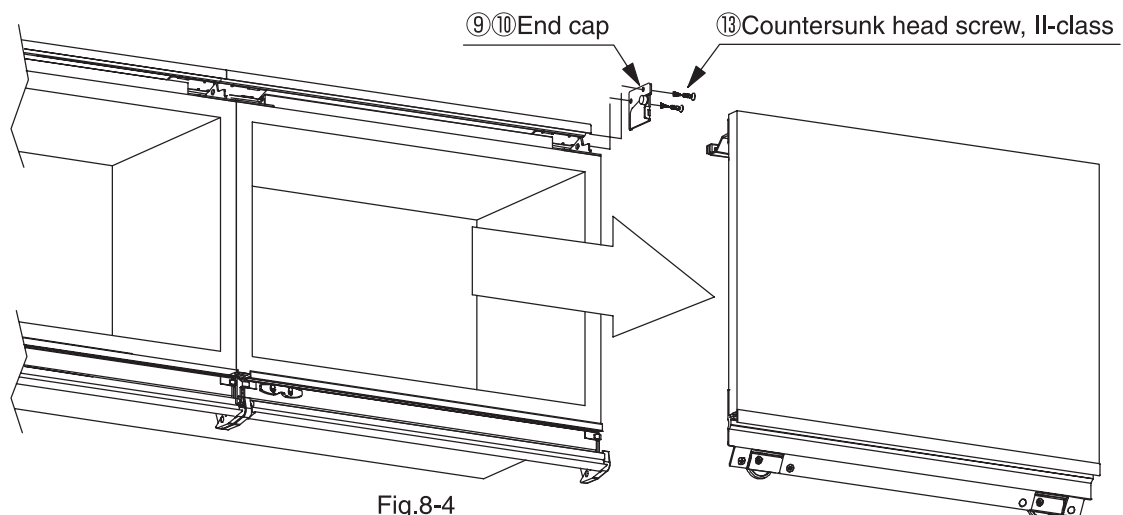
⚠ Caution

1. Do not loosen locking screws excessively for risk of disassembly of the sliding profile.
2. The recommended tightening torque for the locking screws is 1.5 ~ 2.0N·m

■ Removal procedure:



- [1.] Pull the door to its open position and turn both skew adjustment screws clockwise completely (Fig. 8-1).
- [2.] Slide the door sideways, and secure the lower rail ② in its closed position as shown on page 8 (Fig. 6-1)
- [3.] Slide the door back to its original position.
- [4.] While lifting the door slightly, push the bottom forward so that the rollers fold horizontally (Fig. 8-3 A-B).
- [5.] While keeping the rollers horizontal, pull the bottom of the door away from the rail (Fig. 8-3 C-D).
- [6.] Tilt the door all the way up so that it is perpendicular with the upper rail ① (Fig. 8-3 E to H).
- [7.] Remove the door completely by sliding the door brackets ③ out of the upper rail ① .
- [8.] Repeat procedures [4] to [7] for each door after sliding them to the position of the first door.



In case there is enough space on one side of the cabinet, it is easier to simply remove both end cap and rail cover of that side and slide each door out through the side of the cabinet (Fig. 8-4).

* **Important:** pull the doors as straight as possible in order to avoid excessive stress on the door brackets ③ .

■ Troubleshooting:

Case	Possible cause		Check	Solution	Page
Doors do not close or close incompletely	Bottom of cabinet is obstructing the rotation of lower rail ② .	⇒	Check the bottom of the cabinet for obvious sag.	Sag should be less than 2mm. Replace cabinet bottom if necessary.	
	Doors edges hit each other.	⇒	Check if door width is within the specifications.	Replace with appropriately sized door.	2
			Check the distance between the doors.	Adjust the gap between the doors.	9
	Washers on the door bracket ③ are obstructing the closing of the doors (Fig. 9-1).	⇒	Check position of both upper rail ① and lower rail ② .	Reinstall both rails in their proper position.	3,5,6
			Check rectangularity of the cabinet.	Replace cabinet module with a rectangular one.	4
			Check rectangularity of the doors.	Replace door with a rectangular one.	4
	Door comes into contact with the front of the cabinet.	⇒	Check position of both upper rail ① and lower rail ② .	Reinstall both rails in the proper position.	5,6
			Check if the door is in front of a storage position (Fig. 9-6).	Move the door to the proper position before attempting to close it.	-
			Check if door weight is within the specifications.	Replace with door of appropriate weight.	2
	Doors do not slide (or not smoothly)	Door bracket ③ hits the inside of the upper rail ① (Fig. 9-2)	⇒	Check that both upper rail ① and lower rail ② are tightly fastened.	Screw both rails tightly.
Check door warp.				Warp should be less than 2mm. Replace the door if necessary.	4
Friction between the door bracket ③ and the inner top of the upper rail ① (Fig. 9-3).		⇒	Check the fixing position of the door brackets ③ .	Reinstall door brackets in their proper position.	3,7
Door bracket ③ scratches the top of other doors (Fig. 9-4).		⇒	Check if door height is within the specifications.	Replace with door of appropriate height.	2
	Check the fixing position of the door brackets ③ .		Reinstall door brackets in their proper position.	3,7	
Sliding noise	Roller is not turning properly (Fig. 9-5).	⇒	Check to see if roller is dirty.	Remove any dirt from the roller.	-
			Check to see if any foreign matter is caught in the rail.	Clean up the rail.	-

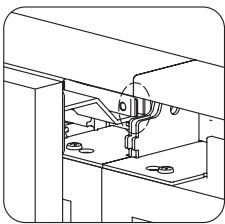


Fig.9-1

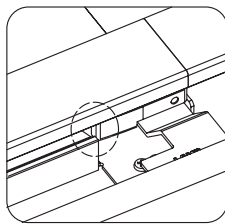


Fig.9-2

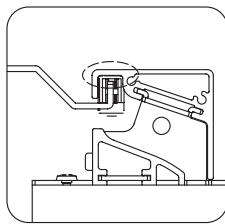


Fig.9-3

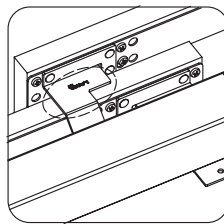


Fig.9-4

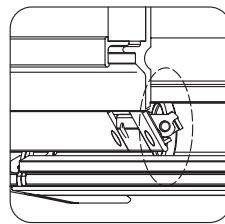


Fig.9-5

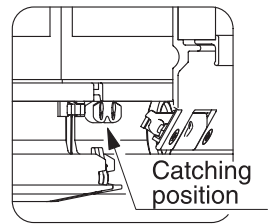


Fig.9-6

Dotted lines for writing.



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