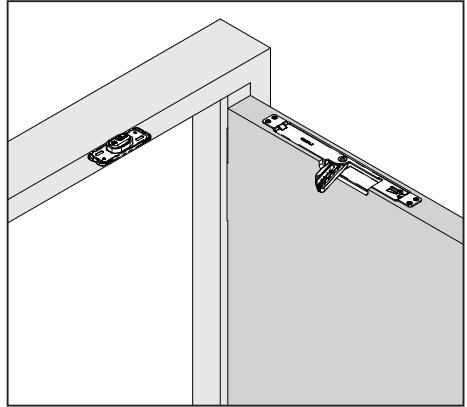


Thank you for selecting our product. Before starting installation, please read this manual thoroughly to ensure correct installation.



Product introduction

- Recessed type door damper completely concealed when the door is closed.
- When installed together with our concealed hinges, all the hardware is hidden for clean appearance.
- Damper unit will pull and close the door smoothly and firmly right before closing (within about 10°) and prevents slamming.

Specifications

Maximum door width	900mm
Door thickness	40 - 60mm
Door weight range	40 - 100kg

- Operating temperature is 0 to 40°C.

Hinge (sold separately)	HES3D-H120-36, HES3D-E190
	HES2S-140-A125, HES3D-W190
	HES3D-E160, HGS3D-S160SH
	Butt hinge, Pivot hinge*

*Center hung pivot hinge unusable.

	Left-hand opening	Right-hand opening
Type		
Item No.	LDD-V100-L	LDD-V100-R

FOR YOUR SAFE WORK AND CORRECT INSTALLATION

Meaning of symbols

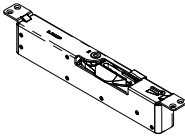
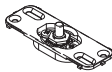




Warning Caution
Prohibited
Required

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

- ⊘ This product is for indoor use only. Do not use outdoors where the item is exposed to the weather.
- ⊘ Do not use in a windy place as strong wind decreases the damper function.
- ⊘ Do not close the door with excessive force. It may cause damage or defect to soft close mechanism.
- ! Make sure to follow the designated measurements and specifications as well as horizontal and vertical angles. Make sure that the frame is not warped since it may affect the movement of the door.
- ! Make sure that the door and frame have enough durability to withstand the opening and closing force after fabrication.
- ! 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).

Parts List

[The following list indicate the right hand hinge for right side door hang.
For left side door hang, a mirror image.]

No.	①	②	③	④	⑤	⑥
Product name	Door damper main unit	Counter plate	Counter plate cover	Body installation screws (nominal 3.5×20)	Attachment jig	Cutout template (door side, frame side)
Parts						
Quantity	1	1	1	8	1	1

Required Tool



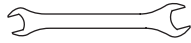
Phillips screwdriver



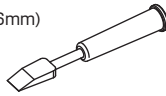
Woodworking drill (φ25 - φ26mm)



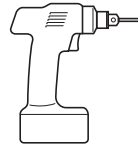
Socket wrench (14mm)



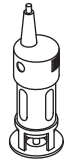
Open-end wrench (8mm, 14mm)



Chisel



Electric drill

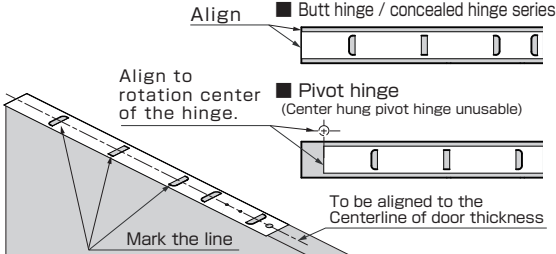


Router · Trimmer

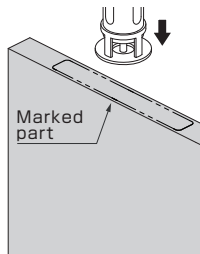
Processing and Installation

[In case not using cutout template, please see P. 7 "Reference : Door and Frame Preparation". The following procedure indicates the right hand hinge. For left side door hang, a mirror image.]

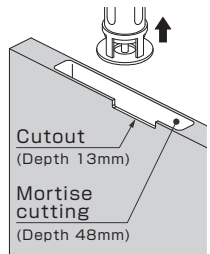
- 1** Place the template to the specified position and mark the line



- 2** Process the door according to the line

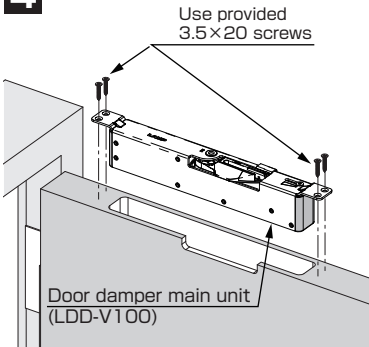


- 3** Process the notch part

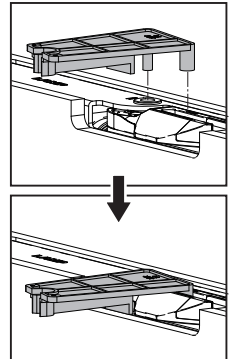
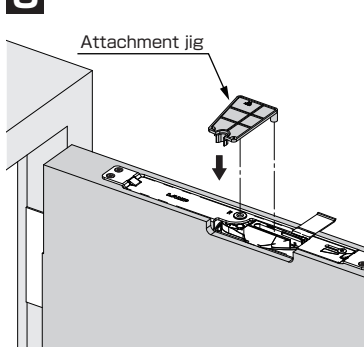


The following procedure should be carried out AFTER the adjustment of hinge and case lock is completed.

- 4** Install the Door Damper

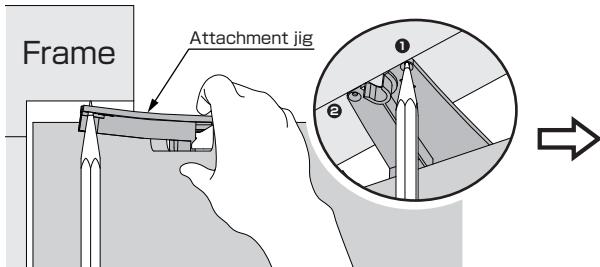


- 5** Fit the jig to the damper unit

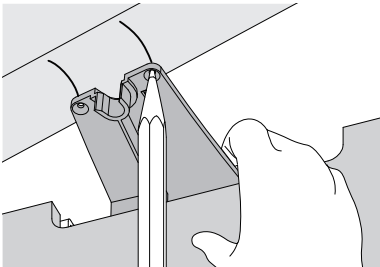


6 Mark the lines to the upper frame using the attachment jig

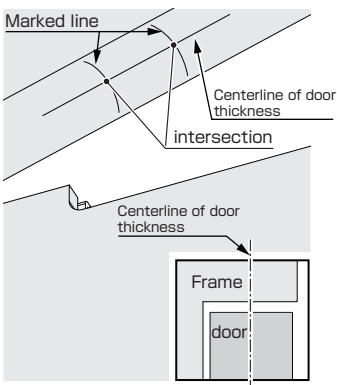
· Insert a pencil to the holes, holding the jig firmly



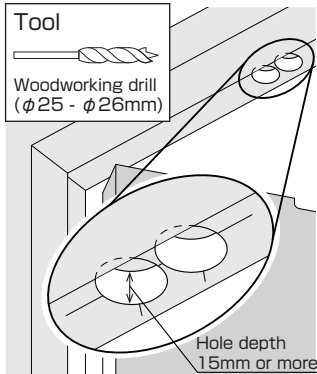
· Move the door and mark the lines.



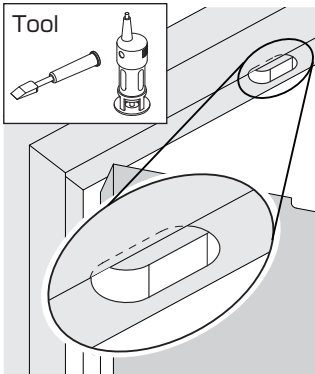
7 Mark the centerline of door thickness



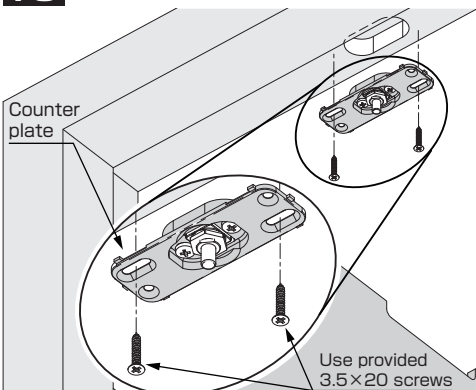
8 Drill 2 holes in the intersection



9 Connect the 2 holes into 1 hole

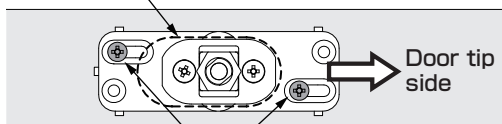


10 Installing the Counter Plate



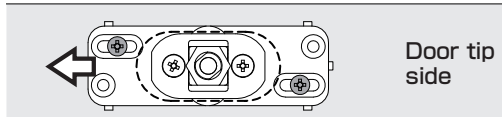
- 1 Pull the Counter Plate over to the door tip side.
- 2 Put the screws through the hinge side of the oval hole.

Cutout Shape



Screw position

- 3 Adjust the Counter Plate so that the screw position comes to the center of the oval hole.



Do not open or close the door before adjusting the installed counter plate. Operating the door without counter plate adjustment may result in malfunction, causing damage to the damper, door or frame.

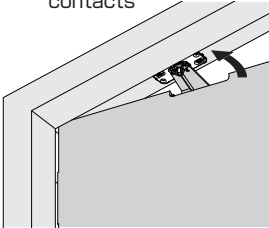
Adjustment Procedure

[Confirm to make horizontal/vertical/depth adjustment by following the procedure below.]

Horizontal adjustment

Horizontal adjustment range : $\pm 5\text{mm}$

1 Close the door until the shaft and the jig contacts

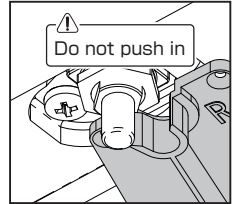
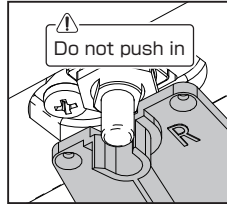
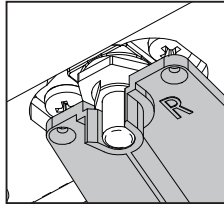


2 Position of the Shaft

○ No need to adjust

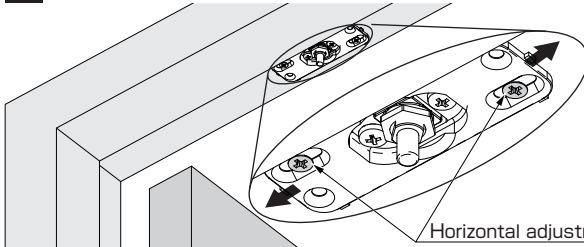
✗ Adjustment needed

✗ Adjustment needed

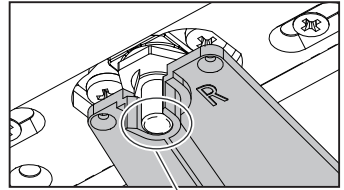


Adjustment method ←

3 Loosen the horizontal adjustment screws



4 Counter Plate adjustment



Adjust until the shaft fits the groove of the jig

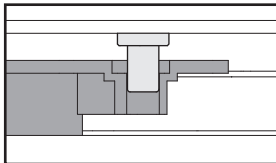
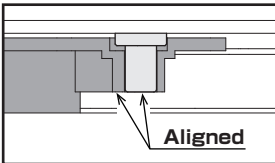
Vertical adjustment

Vertical adjustment range : $+0\text{mm}/-4\text{mm}$ (4mm Downward)

1 Position of the Shaft

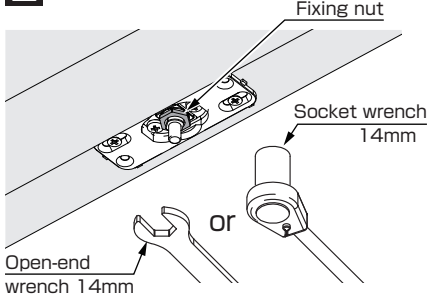
○ No need to adjust

✗ Adjustment needed



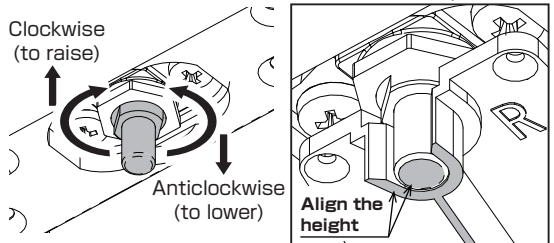
Adjustment method ←

2 Loosen the fixing nut of the shaft



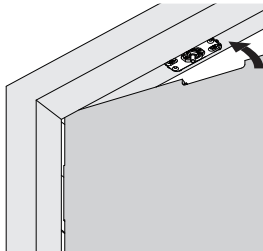
3 Counter Plate adjustment

Adjust to the position "○ No need to adjust" shown in Step 1



Depth adjustment | Depth adjustment range : $\pm 2\text{mm}$

1 Close the door

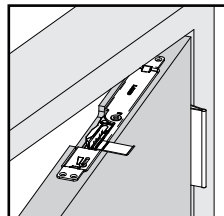
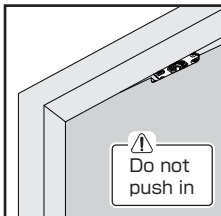
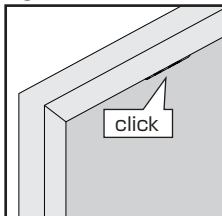


2 Position of the Shaft

○ No need to adjust

✗ Adjustment needed

✗ Adjustment needed

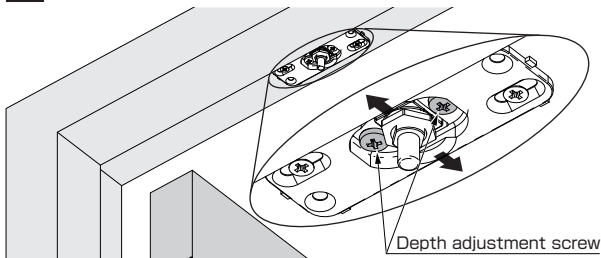


Door does not close

Arm remains folded when the door opened

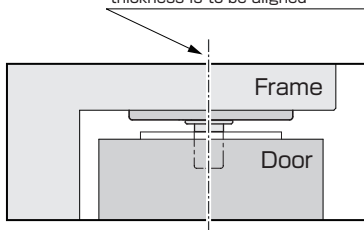
Adjustment method ←

3 Loosen the depth adjustment screws



4 Counter Plate adjustment

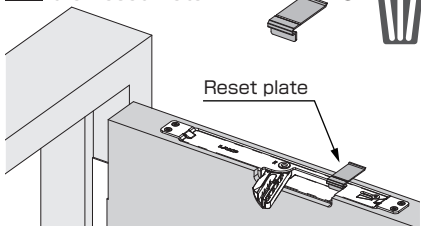
Centerline of counter plate and door thickness is to be aligned



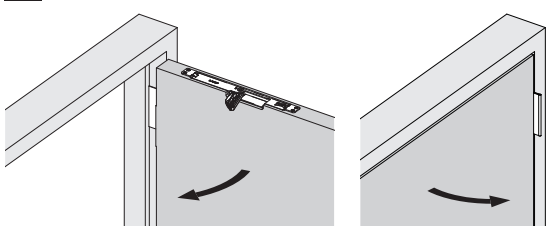
Working after adjustment completed

[The following procedure should be carried out AFTER the shaft adjustment (P.4-5) is completed.]

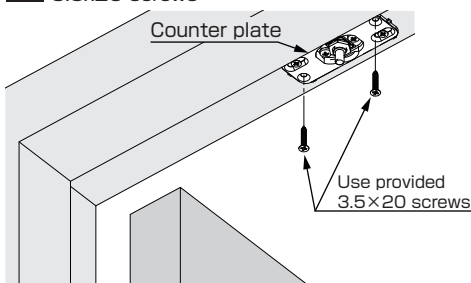
1 Remove and discard the Reset Plate



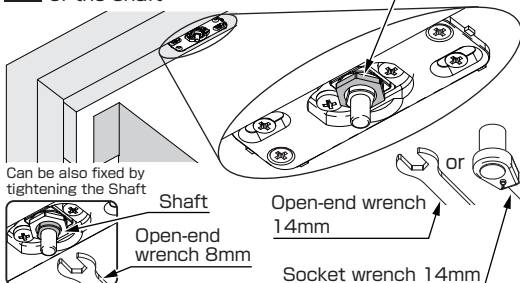
2 Open/Close the door and check the movement



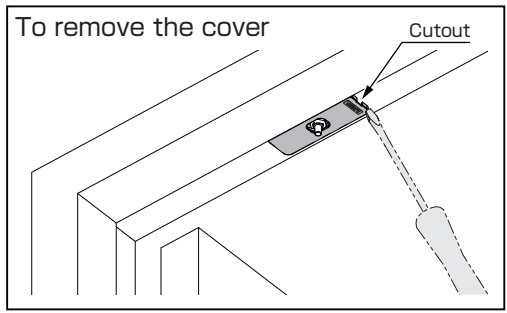
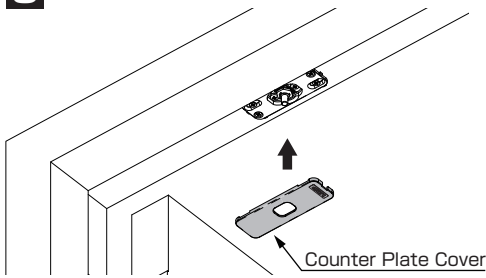
3 Fix the Counter plate firmly with provided 3.5x20 screws



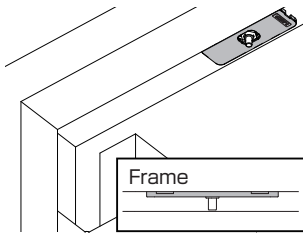
4 Retighten the fixing nut of the shaft



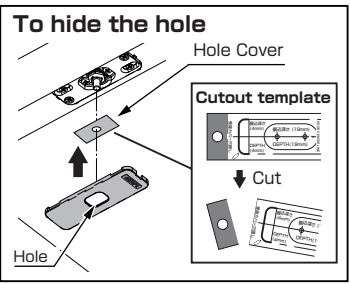
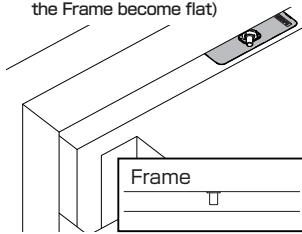
5 Installation of Counter Plate Cover



■ Normal Cut

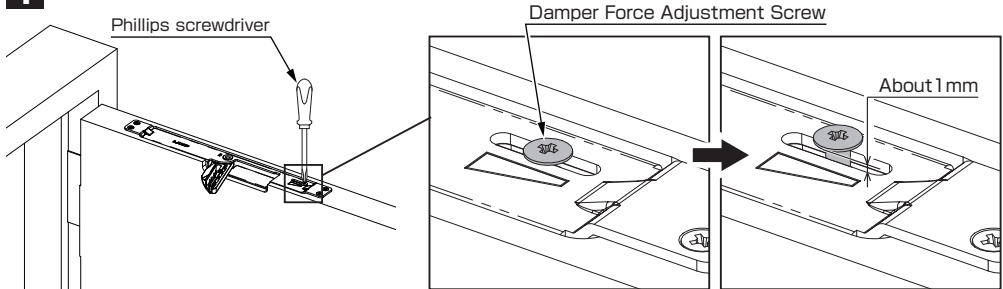


■ Stepped Cut (Counter Plate Cover and the Frame become flat)

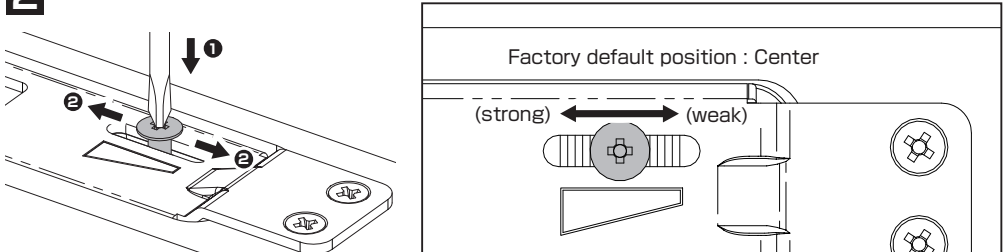


Setting of Damper Force

1 Loosen the Damper Force Adjustment Screw



2 Push the screw down and move



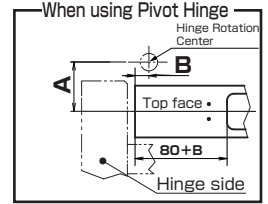
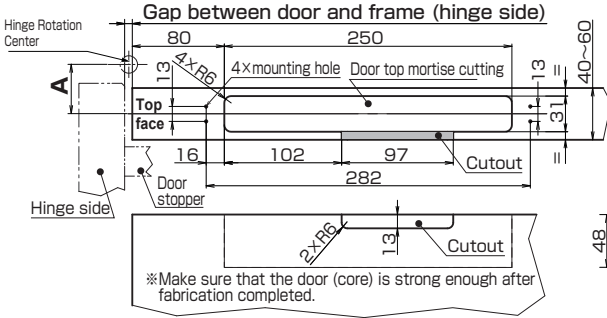
Firmly tighten the Damper Force Adjustment Screw after adjustment completed.

Reference: Door and Frame Preparation

[The following dimensions and procedures indicate the right hand hinge for right side door hang. For left side door hang, a mirror image.]

Preparation for the door

mm

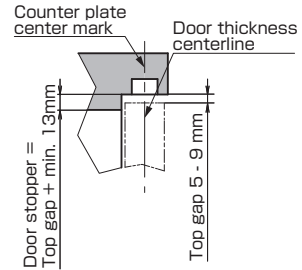
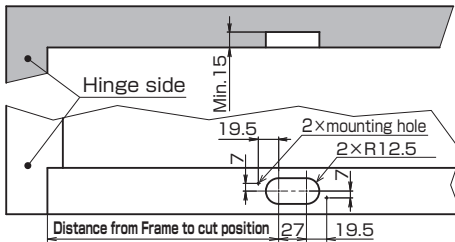


A=Distance from center of door thickness to hinge Rotation Center

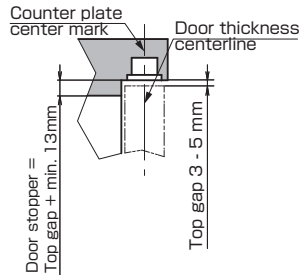
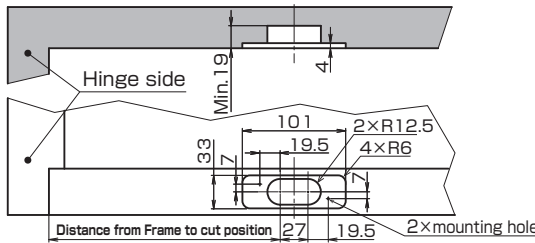
B=Distance from door end to Hinge Rotation Center

Preparation of frame

Normal Cut(Top gap : 5 - 9 mm)



Stepped Cut(Top gap : 3 - 5 mm)



Hinge	Gap between hinge side door and frame (mm)					
	1	2	3	4	5	
HES3D-H120-36	217	218	219	220	221	
HES2S-140-A125						
HES3D-E160						
HES3D-E190						
HES3D-W190						
HGS3D-S160SH	219	220	221	222	223	
Butt hinge	A=20~35	220	221	222	223	224
	A=35~50	223	224	225	226	227
Pivot hinge	A=20~35	220+B	221+B	222+B	223+B	224+B
	A=35~50	223+B	224+B	225+B	226+B	227+B

※ When the gap between hinge side door and frame is over 5mm, refer to the chart below.

(mm)

Hinge	Distance from Frame to cut position	
HES3D-H120-36	216+ gap size	
HES2S-140-A125		
HES3D-E160		
HES3D-E190		
HES3D-W190		
HGS3D-S160SH	218+ gap size	
Butt hinge	A=20~35	219+ gap size
	A=35~50	222+ gap size
Pivot hinge	A=20~35	219+B+ gap size
	A=35~50	222+B+ gap size

Trouble shooting

Problem	Cause	Solution
Unusual noise	Mounting position is not correct	Check the mounting position and make adjustments. See P. 7.
	Mortise measures are not correct	Check the mortise dimension and make adjustments. See P. 7.
	Incomplete adjustment	Re-adjust the Horizontal/Vertical /Depth/Damper Force. See P.4-6.
	Counter plate fixation or/and Shaft fixing nut loose	Final tighten the shaft fixing nut after adjustment completed. See P.5 and tighten the nut securely.
Shaft does not enter the groove of the Arm	Improper vertical adjustment (too low)	Vertical adjustment of Shaft is needed. Vertical adjustment range : +0mm/-4mm See P.4.
	Improper horizontal adjustment (one-sided)	Horizontal adjustment of Shaft is needed. Horizontal adjustment range : ±5mm See P.4.
Arm remains folded	Centerline of counter plate and door thickness is not aligned	Depth adjustment of Shaft is needed. Depth adjustment range : ±2mm See P.5.
	Improper depth adjustment	
Door will not close completely	Centerline of counter plate and door thickness is not aligned	
	Improper door size	Use a suitable door. See P. 1.

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