

LAMP[®]

SELF-CLOSING SLIDING DOOR SYSTEM (W/O COVER)

LM-80G Installation Manual

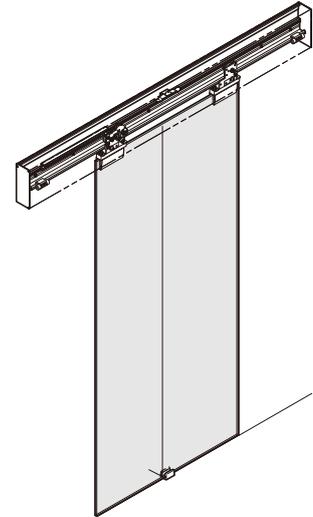
Thank you for selecting our product.

Before starting installation, please read this manual thoroughly to ensure correct installation.

Please keep this manual at hand for future reference.

■ About the product

- This hardware makes door self-close and can for example be used for entrances to washrooms, examination rooms etc.
- The braking device (damper) of the one-way clutch mechanism (damper) will close the door softly.
- The door can close automatically without using a motor due to the system's tilted rail.
- Equipped with a catch function which will hold the door fully open.
- By re-combining the included parts it is possible to use the door for both left and right handed openings.



For your safety work and operation

	This symbol denotes prohibited actions.
	This symbol denotes what must be done.



Warning

If these warnings are not followed, it may result in death or serious injury.

- ❗ It is necessary to manufacture the frame with sufficient strength so it endures the weight of the door and impact shocks upon opening/closing the door. Also make sure to only use the designated screws and to fasten them firmly. A frame with poor strength or loose screws might result in improper and slower movement of the door. In the worst case, the door might drop down and cause injury.
- ⊘ Do not try to use this product for any other purposes than originally intended for. Do not use the parts for applications that are out of specification.
- ⊘ Do not disassemble nor modify any parts other than those described in this document.



Caution

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

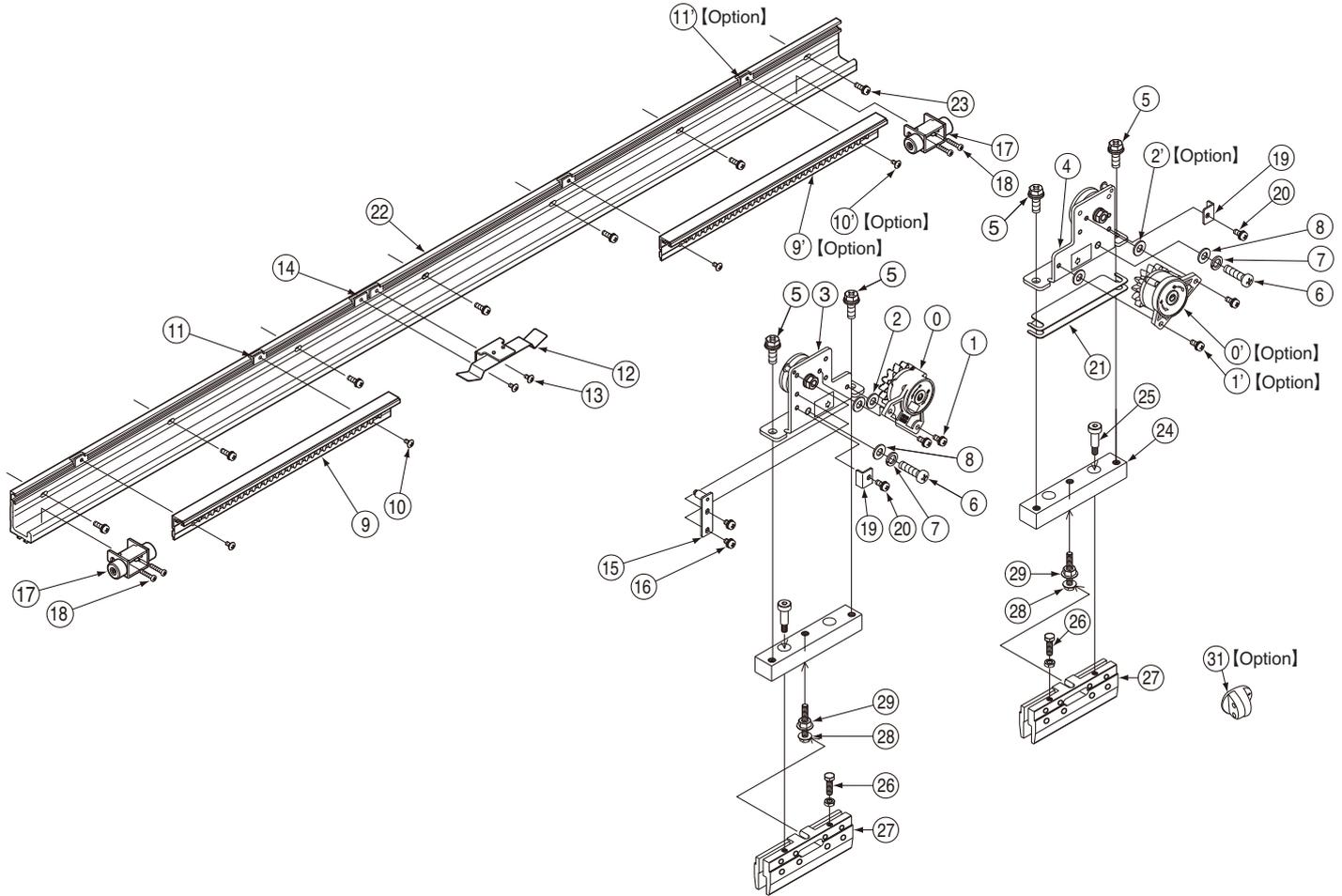
- ❗ This sliding door system should be installed by an experienced person who has correct knowledge. If the system is not installed correctly, the door will not operate smoothly, and or may cause injury.
- ❗ This is a part for sliding door system. After installation, make sure to test the finished product thoroughly to ensure that it is well-functioning and safe.
- ❗ Make sure to follow the designated measurements and specifications as well as horizontal and verticals angles. Make sure that frame and door are not warped nor bent, since it may affect the movement of the door.
- ❗ If cutting any parts, make sure to remove any burr before installation. Also check the upper rail for any left-over burr or scrap and remove these.
- ❗ 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).
- ❗ If the brake is damaged, there is a danger of injury when the door slams shut. If the brake does not work properly even after doing speed adjustment, replace the parts.
- ⊘ Do not use excessive force to open or close the door. Doing so may damage it.
- ❗ To prevent the door from falling, it is recommended to use the recessed mount type door together with a rail which has an embedded doorstep.
- ❗ For your safety work and to avoid unnecessary stress on the parts, carry out the installation by two people.

■ Specifications

Applicable door thickness	Applicable door weight	Applicable door width	Max. door travel	Closing drive system	Control type	Control time	Initial door opening force
8,10,12mm	30~80kg	700~1200 mm	1100 mm (when door width 1200 mm)	Rail inclination (3.5/300)	Fluid friction resistance type	7.0 to 11.0 sec (at a door opening distance of 900 mm)	5.4~12.5N

Parts description

The parts can be used for both right open and left open. This drawing shows the right open type.



Parts description

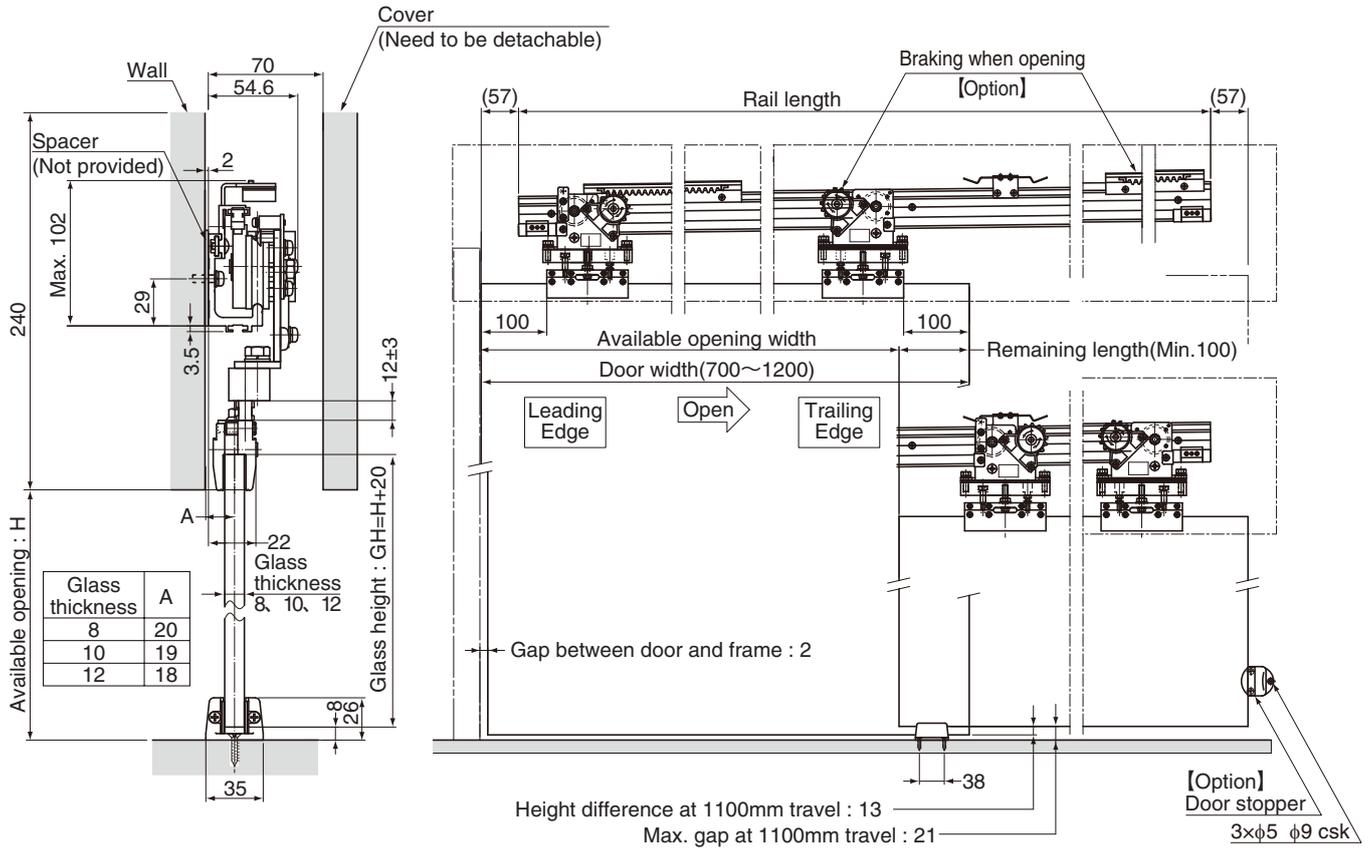
There are some parts which are not needed for the glass door application. See the last part of this manual for the detail.

No.	Part name	Q'ty	Description
0	Damper	1	Optional for soft open. To be install after hanging the door.
1	M5x14 cross recessed pan head screw	2	
2	Plain washer, 5 mm nominal	2	
3	Hanger A	1	
4	Hanger B	1	
5	M8x25 hex head bolt	2	For the leading edge
	M8x30 hex head bolt	2	For the trailing edge
6	M8x30 cross recessed pan head screw	2	Derail-protection screw
7	Spring lock washer, 8 mm nominal	2	For fall-prevention screws
8	Plain washer, 8 mm nominal	2	For fall-prevention screws
9	Gear rack set	1	Optional for soft open.
10	M4x8 cross recessed truss head screw	2	To be installed after hanging the door.
11	Plate nut	2	
12	Catch spring	1	
13	M4x8 cross recessed truss head screw	2	
14	Plate nut	2	
15	Catch roller	1	
16	M5x8 cross recessed pan head screw	2	
17	Door stopper fitting	2	
18	Nominal 5x16 cross recessed pan head tapping screw	4	For door stopper fixing and reinforcement
19	Angled plate	2	
20	M5x8 cross recessed pan head screw	2	

No.	Part name	Q'ty	Description
21	Height adjusting plate (t=1.0)	15	
	Height adjusting plate (t=0.5)	1	
22	Rail L = 2200	1	
23	M5x16 cross recessed pan head screw	8	Use either one.
	Nominal 5x30 cross recessed truss head tapping screw	8	
24	Hanging bracket	2	Parts set LM-80GB
25	Hexagon socket special screw	2	Parts set LM-80GB
26	Hexagon head screw M6x20	2	Parts set LM-80GB
27	Glass bracket	2	800-0012-031
28	Hanger bolt	2	M8x35
29	Nut	2	M8
30	Bottom guide	1	57-3030-071
31	Door stopper (Side mount)	1	[Option] In case vertical frame is not provided.

Installation Drawing (Example)

This drawing shows the right open type

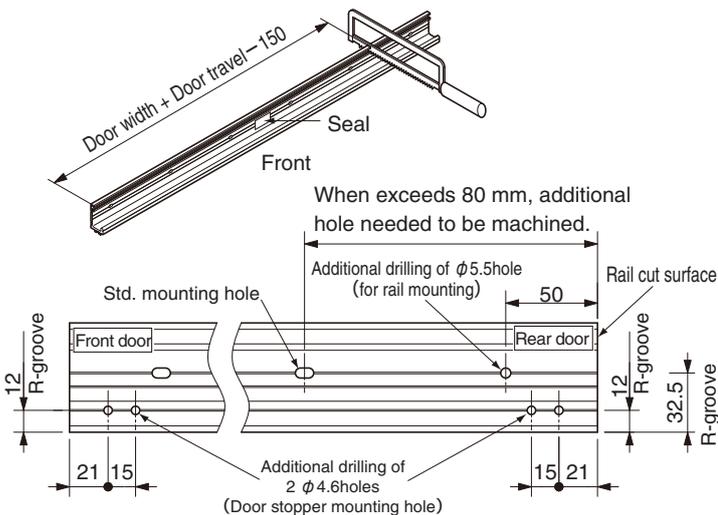


Installation Procedure

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

1 Installation of Rail and Mounting Plate for Rail cover

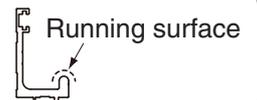
1 Cutting and Drilling the rail



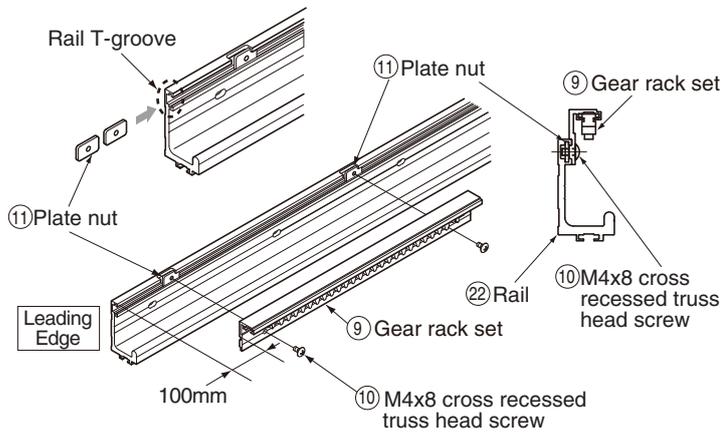
- Cut the rail to the required length shown in the left drawing.
- Cut in the direction indicated on the seal.
 - With the right opening door, cut the right side when viewed from the front
 - With the left opening door, cut the left side when viewed from the front.
- When the measure from the cut end to the existing hole on the rail is 80 mm or more, drill another mounting hole (5.5) at 50 mm from the cut end.
- Drill the holes (4.6) for stopper mounting, 50 mm from both ends as shown on the drawing.

⚠ Caution

Be careful not to damage the running surface of the rail, when processing the rail.



2 Mounting of the Gear Rack Set

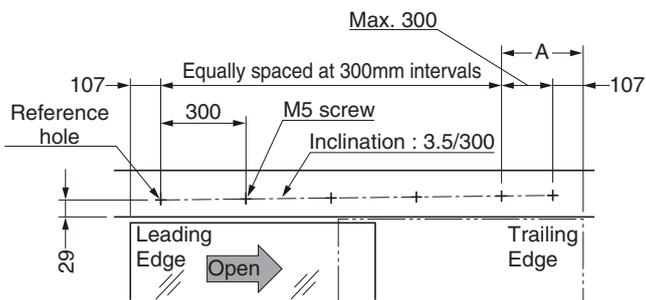


- Insert 2 plate nuts in the T-groove on the rail.
- Mount the gear rack set on the rail, using the provided screws ⑩ as shown.
- Install additional dampers on the trailing edge side for damping against opening force.

⚠ Caution

- Be sure to use the provided screws to prevent screws to hit the clutch gear of the damper.
- Firmly tighten the screws to prevent abnormal noise or malfunction of control.

3 Preparation of Mounting Holes on the Rail



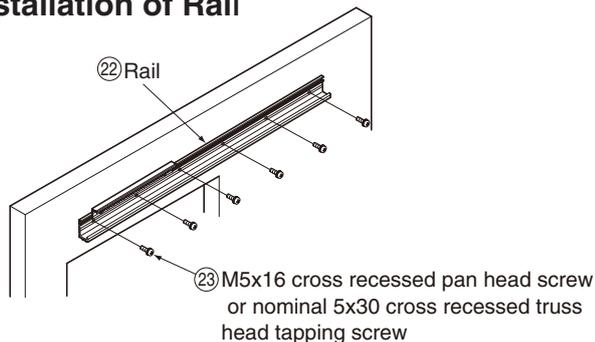
- Prepare the holes according to the left drawing and the table below.
- If measurement A in the illustration is 137 mm or more, drill another hole at 107 mm from the trailing edge when the door is fully opened.

⚠ Caution

Make sure that the fixing part is strong enough to endure the door weight and impact shocks upon opening/closing the door.

Required number of holes (except ref. hole)	Horizontal distance from ref. hole (mm)	Height difference with ref. hole (mm)
1	300	3.5
2	600	7.0
3	900	10.5
4	1200	14.0
5	1500	17.5
6	1800	21.0
7	2100	24.5

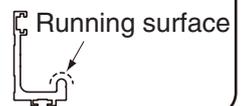
4 Installation of Rail



- Mount the rail with provided screws (23)

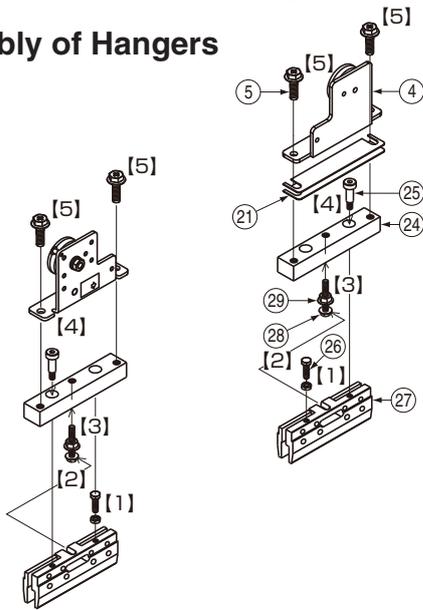
⚠ Caution

Take care not to damage or soil the running surface on the rail.



2 Installation of Hangers

1 Assembly of Hangers



- Assemble the parts in order of [1] to [5].

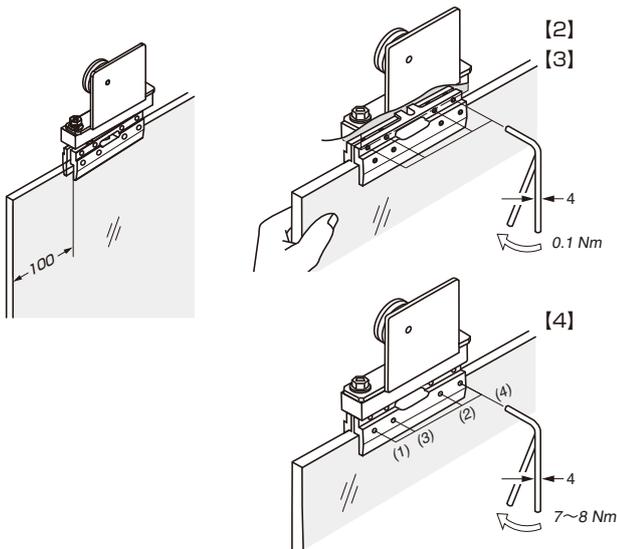
- The number of height adjusting plates varies according to the door width. See the following table.

Height adjusting plates

(For left opening, insert the plates under Hanger A.)

Door Width (mm)	Plates
700- 800 or less	6
800- 900 or less	7
900-1000 or less	8
1000-1100 or less	9
1100-1200 or less	10

2 Installation of Hangers



Attach the Glass bracket to the glass door.

- [1] Please wipe off the dirt with a clean, dry cloth from the Glass bracket mounting portion on top of the glass and the top surfaces of the inside of the Glass bracket (27).

- [2] To make sure that there is no gap between the glass door and each side of the inside of the Glass bracket (27), firmly hold the bracket with your hand while fixing the glass door to it.

* The distance of the end portion of the Glass bracket (27) and glass end face should be 100 mm (except in cases where there are design instructions).

- [3] In this state, lightly and uniformly tighten the hexagon socket head set screw at the top of the hexagon socket head cap until it touches the surface of the opposite side.

* At this point, please do not yet tighten it strongly.

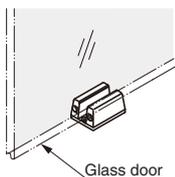
- [4] Please tighten the hexagon socket head cap screws with 7 ~ 8Nm tightening torque in order (1) - (4) as indicated on the left drawing.

* Do not tighten to the specified torque at once. Work on each screw little by little until the specified torque is reached.

* The tightening order may also be reversed (4) - (1).

- [5] Please tightened in the same manner as in step [4], where the hexagon socket head set screw was temporarily tightened.

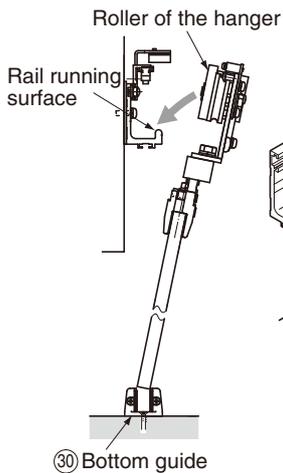
3 Installation of Bottom Guide



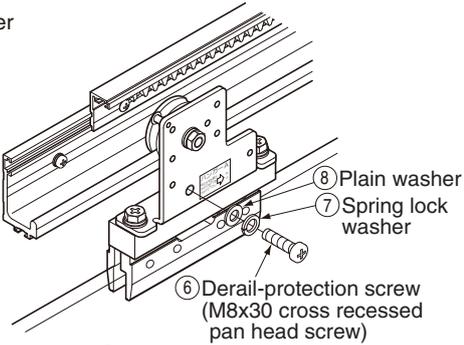
- Install on the part of "remaining length" of the door.
- It must be fixed to the position which let the door vertical.

4 Door Hanging

Door Hanging



Mounting of Derail-protection screw



⚠ Caution

Securely tighten the screws to prevent the door from falling off.

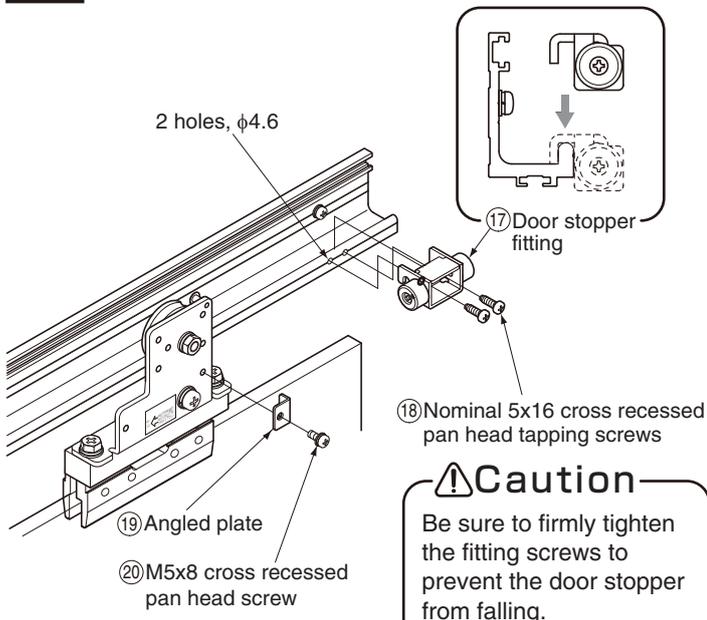
- Before hanging the door, wipe off the dirt on the running surface of the rail.
- Inserting the bottom of the door between the guide rollers, hang the rollers on the running surface of the rail.
- Make sure that the door moves smoothly.
- Adjust the height of the door by increasing or reducing height adjusting plates.

⚠ Caution

- When hanging the door, be careful not to damage the gear rack or running surface of the rail.
- Do not assemble the damper before hanging the door, since it may be damaged when hanging the door.

- Tighten the derail-protection screws (M8x30 cross recessed pan head screws) into the hangers A and B.

5 Installation of Door Stopper



⚠ Caution

Be sure to firmly tighten the fitting screws to prevent the door stopper from falling.

- Mount the angled plate with provided screws ①⑩ on the hangers, both leading edge side and trailing edge side of the door.
- Insert the door stopper fitting on the running surface of the rail. Adjust the hole of the stopper to the 4.6 hole, which was prepared in advance, and fix it using the provided screws ①⑧.
- As for the mounting position of the stopper, refer to ① - ① Cutting of rail, additional processing of mounting holes

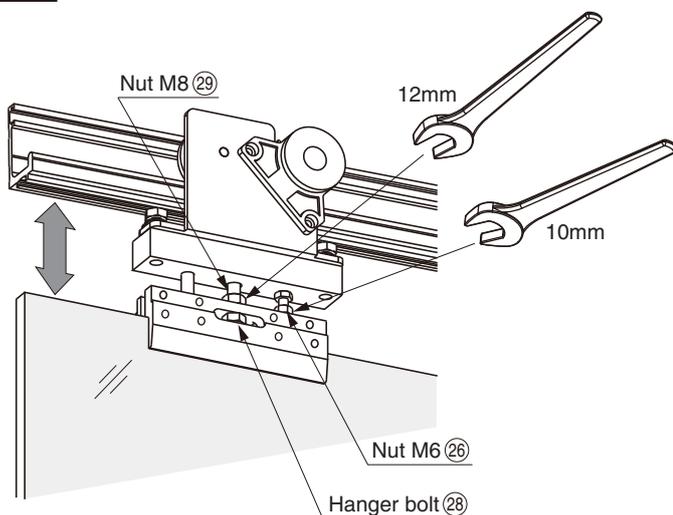
⚠ Caution

Install optional Door stopper (side mount ③⑤) if the vertical frame is not provided.



③⑤ Door stopper (Side mount) [Option]

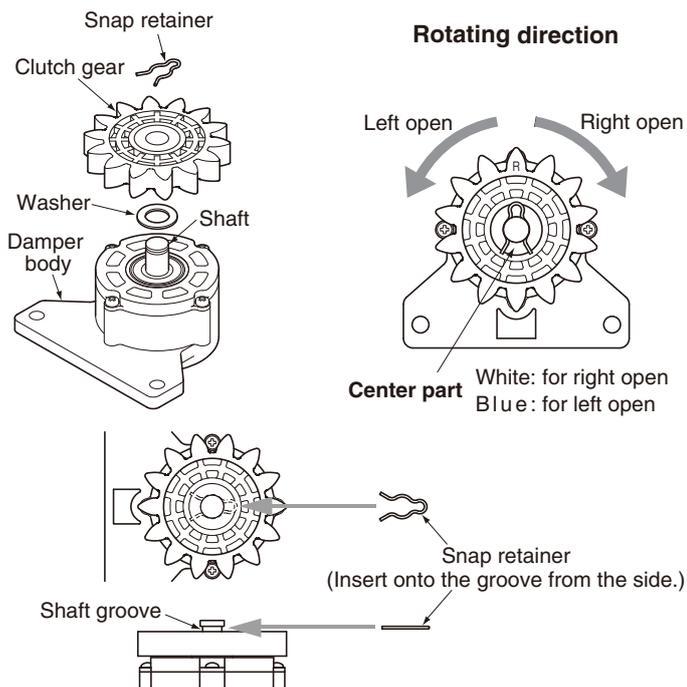
6 Adjustment of door height



- ① Loosen Nut M8 ②⑨, then loosen Nut M6 on Bolt ②⑥.
- ② Tighten Hanger bolt ②⑧ with spanner (12 mm).
 - The door goes up when tightening the Hanger bolt.
 - Adjust the gap between the door and floor to 8 mm at a closed position. (21 mm at a full opened position.)
- ③ Adjust the height the other Glass bracket so that the door is hanged horizontally, then tighten the Nut M8 ②⑨ on both brackets.
- ④ Adjust Bolt M6 ②⑥ so that its head goes into the hole of the Hanging bracket ②④, then tighten the Nut M6.

7 Installation of the Damper

1 Installation and Removal of Clutch Gear



The braking device becomes non-handed by changing the direction of the clutch gear.

(1) Mounting of the clutch gear:

Please insert the clutch gear and washer to the shaft portion of the braking device body (see table below for direction).

	When installing, the color of the center portion of the clutch gear should be in the front.	
	Braking when closing	Braking when opening [option]
Right open	white	blue
Left open	blue	white

- One the groove on top of the shaft, set the snap retainer from the side.

(2) Removal of Clutch Gear

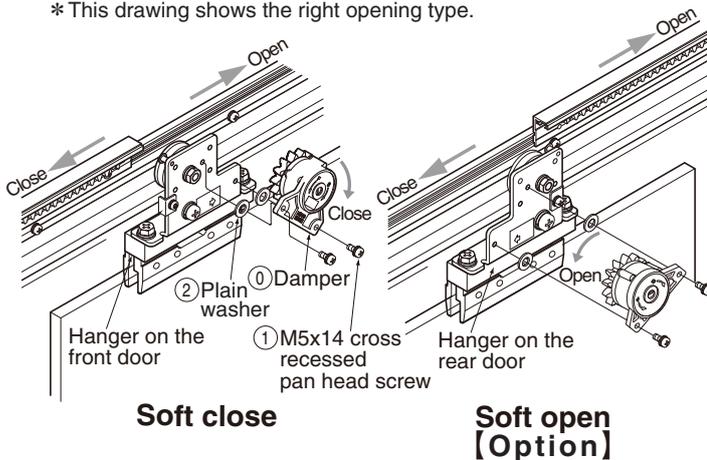
Detach the clutch gear according to the reverse procedure of installation. (Detach it by rotating in the same direction as the time of installation.)

⚠ Caution

Be sure to insert and detach the clutch gear with rotating it in the specified direction. Rotating by too much force or in reverse direction may damage the clutch gear.

2 Installation of the Damper

* This drawing shows the right opening type.



- Use the attached screws (1) to attach the braking device and the flat washer to the door end hanger.

Braking when closing

With the door opened more than 600 mm, attach the damper in a position that does not touch the rack set.

Braking when opening [option]

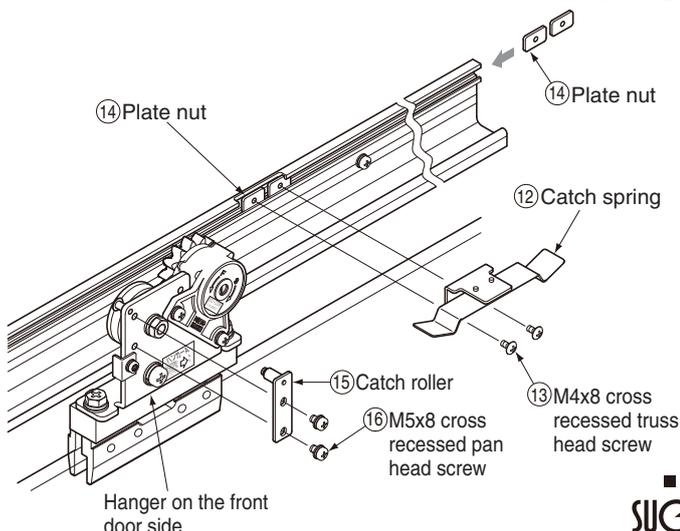
With the door closed, attach the damper in a position that does not touch the rack set.

⚠ Caution

- Make sure the damper is for right handed use or left handed use. If the damper is assembled in the reverse direction, the system doesn't work.
- Be careful not to damage it hitting against the rail.

8 Installation of Catch at opened position

1 Installation of Catch Roller and Catch Spring

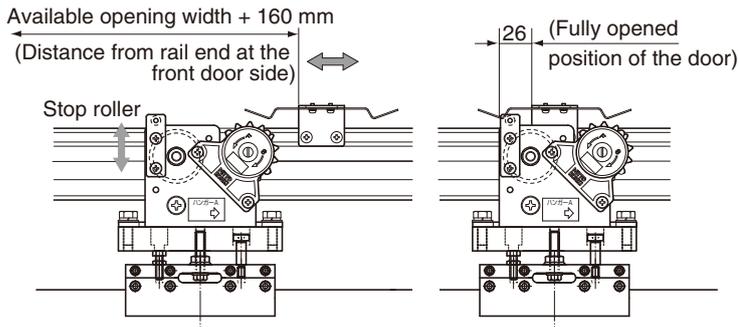


- Mount the catch roller (15) on the hanger of leading edge side with the provided screws (16).
- Insert the plate nuts into the T groove of the rail and mount the catch spring with provided screws (13).

⚠ Caution

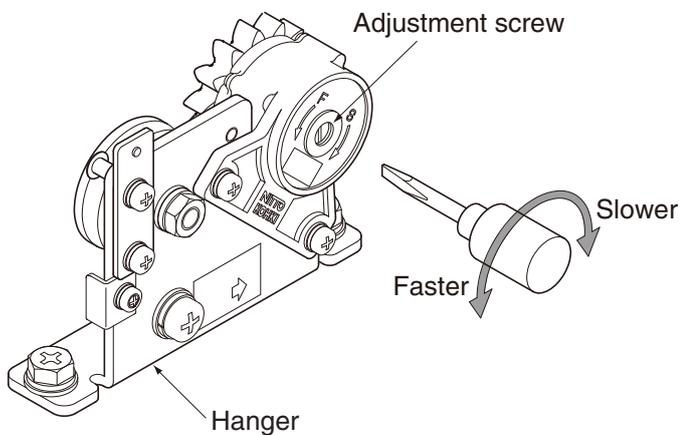
Be sure to use the provided screws to avoid interference with the other parts.

2 Adjustment of Catch Position and Catching Force



- Adjust the position of the catch spring so that the door stops at the fully opened position. Determine the position by marking on the rail according to the measurement in the illustration.
- Adjust the catching force by moving the position of the catch roller up and down.
 - To increase the catching force → raise the catch roller.
 - To reduce the catching force → lower the catch roller.

9 Adjustment of Closing (Opening) Speed



⚠ Caution

- Lightly turn the adjustment screw. When it is turned until the end, do not turn any more.
- The closing speed varies by ambient temperature. When the temperature is high, the door closes fast; when it is low, the door closes slowly.

● Adjustment of closing speed:

Let the door close automatically from a fully open position.

To make the closing speed slower

→ Rotate the adjustment screw to "S" direction as shown on the left drawing.

To make the closing speed faster

(Factory setting speed: the fastest condition)

→ shorten the control zone (move Gear rack set ⑨ toward the leading edge).

● Adjustment of Opening Speed (Option)

Same as above.

Check the following after installation

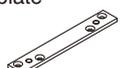
● Check the following after installation

- All of the screws and nuts are securely tightened.
- The Bottom guide is properly installed on the part of "remaining length" of the door.
- The door is hanged horizontally.
- The gap between the door and the floor at the closed position is correct.
- There is no dust on the rail or the rollers.
- The door moves smoothly without any trouble.
- The door closes slowly with the help of the damper.
- The door does not hit the doorframe.

Troubleshooting

	Trouble	Possible Cause	Check	Solution	See page
1	The door does not fully close.	The slope of the hanger.	Is there a gap between the upper surface of the M6 hex bolt ④ and the glass sliding door mounting bracket ②? Is the hanger tilted?	Please adjust the position to the extent that the top surface of the M6 hexagon bolt ④ is tightened lightly on the glass sliding door mounting bracket ②.	P.6 6
2	The door does not fully close. The closing speed is slow.	A screw is loose.	Is the hanger bolt ⑥ or the M8 nut ⑦ loose?	Please tighten hanger bolt ⑥ and the M8 nut ⑦.	—
3	The closing speed is fast (slow).	Adjustment of the braking system is needed.	Is the closing speed of the braking system adjusted?	Adjust the closing speed by turning the adjustment screw of the braking system.	P.7 7
		Door weight	Is the door weight (including the assembled parts) within the Maximum door weight?	Please use a door material capable of handling the weight.	P.1
4	The door is warped	The number of height adjustment plates in use.	Does the height adjustment plate fit the door with?	Level the door by inserting height adjustment plates that suit the width to the side of the door.	P.5 2
5	The door comes in contact with the floor surface.	Height adjustment of the door.	Is the door installed with the specified gap (in a closed state 8 mm) between the floor and the underside of the door?	In a closed state, adjust the height of the door so that the gap between the floor and the bottom of the door is the specified dimension (8 mm).	P.6 6
6	The door disconnects from the lower guide.	Height adjustment of the door.	In a fully opened state, is there a gap of max. 21 mm between the floor and the underside of the door?	Please adjust the height of the door.	P.1, P.6 6
		Distance between door side and lower guide.	Is there a distance of at least 100 mm between the door side and the lower guide?	Make sure that there is a distance of at least 100 mm between the door side and the lower guide.	P.5 3
7	Door hits the frame.	Clamping position of the door.	Is the door clamped at the specified position?	Re-clamp the door at the specified position.	P.5 2

Parts which are not needed for this application.

Guide roller(φ16)  1 pc	Hex tapping screw 5x25  2 pcs	Hex head bolt M5x12  2 pcs	6x30 Anchor plug  2 pcs
Wood door plate  2 pcs	Flat head tapping screw 5x30  8 pcs		

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