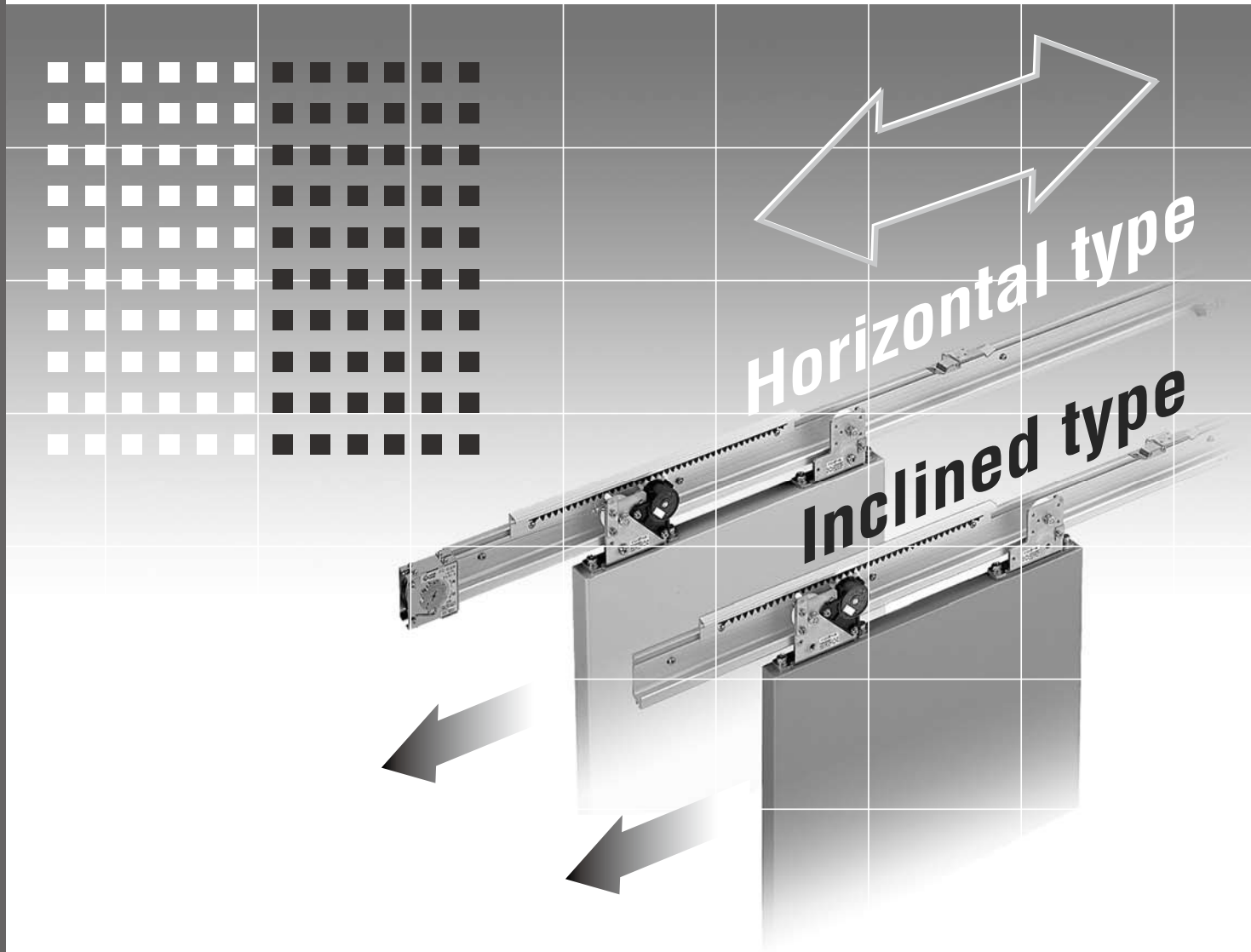


# ***NITTO KOHKI Sliding Closer*** ***Installation manual***



Horizontal type			Inclined type			Bath Type
NSC-C23	NSC-CW23	NSC-CW36	DSC-C03	DSC-CW03	DSC-CW08	NSC-CB23
NSC-C36		NSC-CW48	DSC-C08			NSC-CB36
NSC-C48						NSC-CB48



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NITTO KOHKI Co.,LTD.  
Headquarters/Research Center  
Nippori Office



QC99J1026  
SHIRAKAWA NITTO KOHKI Co.,LTD.

# NITTO KOHKI Sliding Closer

	Model						
	Horizontal type			Inclined type			Bath Type
	NSC-C23 NSC-C36 NSC-C48	NSC-CW23	NSC-CW36 NSC-CW48	DSC-C03 DSC-C08	DSC-CW03	DSC-CW08	NSC-CB23 NSC-CB36 NSC-CB48
<b>Control device</b>	1	1	1	1	1	1	1
<b>Hanger</b> (Front and Rear)	1set	1set	1set	1set	1set	1set	1set
<b>Pull spring</b> (with furniture)	1set	1set	1set	—	—	—	1set
<b>Control rack</b> (Noise suppression rubber ,Rack retainer)	1set	1set	1set	1set	1set	1set	1set
<b>Height adjusting plate</b>	t = 1.0	—	—	1set	1set	1set	1set
	t = 0.5	—	—	1set	1set	1set	—
<b>Screw for Rail</b> ( 5 x 30, M5 x 16)	1set	1set	1set	1set	1set	1set	1set
<b>Door stopper</b>	1set	1set	1set	1set	1set	1set	1set
<b>Stop device</b>	1set	1set	1set	1set	1set	1set	1set
<b>Screw</b>	1set	1set	1set	1set	1set	1set	1set
<b>Pan head screw M5x12</b> (for control device)	[2]	[2]	[2]	[2]	[2]	[2]	[2]
<b>Bolt M8x25</b> (for hanger)	[4]	—	[4]	[2]	—	[2]	[4]
<b>Bolt M8x30</b> (for hanger)	—	—	—	[2]	—	[2]	—
<b>Coach screw 8x50</b> (for hanger)	—	[4]	—	—	[4]	—	—
<b>Pan head screw M8x30</b> (Prevention for wheel come off)	[2]	[2]	[2]	[2]	[2]	[2]	[2]
<b>Wooden door plate</b> (Tapping screw 5x30)	—	—	1set	—	—	1set	—
<b>Guide rail</b> (Tapping screw 4x16)	—	1set	1set	—	1set	1set	—
<b>Guide roller</b> (Ø16, 25, 30, 35)	—	1 (Ø16)	1 (Ø16)	—	1 (Ø16)	1 (Ø16)	—

**Page**   **P9~P10**   **P5~P6**   **P5~P6**   **P7~P8**   **P3~P4**   **P3~P4**   **P9~P10**

Horizontal type



Inclined type

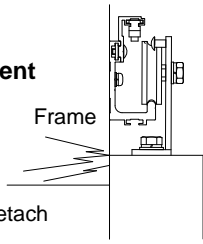
# Sliding Closer

## Q&A on Troubleshooting

**Q:** The door will not close fully.

**A:** The door, hanger, or other component does not contact the top cover or door pocket.

Action: Check the contact, then either reposition the hanger and/or guide roller in a different position or detach it and reinstall it in another position.



**A:** The guide roller contacts the top surface of the roller groove at the bottom of the door.

Action: Reinstall the door at the top. Slide the rail and/or other component.



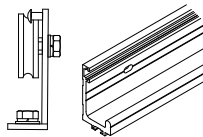
**A:** The door is not installed vertically.

Action: Reinstall the hanger or guide roller in another position.



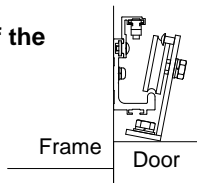
**A:** The door rollers of the hanger and the rail runway are scratched and dirty.

Action: Clean or replace the door rollers of the hanger and the rail.



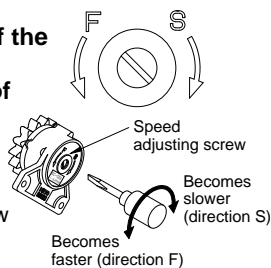
**A:** The door rollers (front and back) of the hanger are not installed in parallel with the rail.

Action: Reinstall them in different positions to make them parallel.

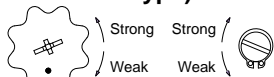


**A:** The speed adjusting screw of the control device is overturned in the direction of slow (direction S indicated). (An excessive controlling force is applied.)

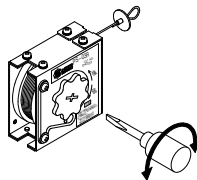
Action: Turn the speed adjusting screw counterclockwise (direction F indicated) to adjust the speed.



**A:** The pull spring is unadjusted (a horizontal type).

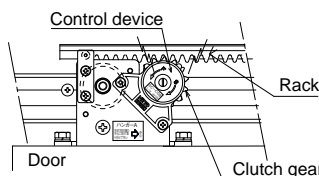


Right-handed opening type      Left-handed opening type



Action: Adjust the lead-in force of the pull spring.

**A:** The clutch gear of the control device is too strongly engaged with the control rack of the rail.

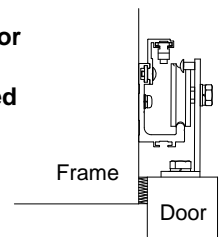


Action: Reinstall the hanger or guide roller at different positions.

**Q:** The door will not close fully or will not close stably.

**A:** The airtight rubber, mohair, or other material between the door and frame gets into contact, resulting in resistance imposed to the closing of the door.

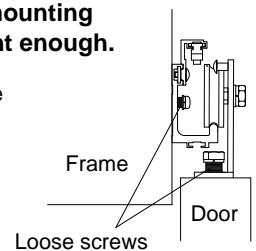
Action: Alleviate the contact.  
Example: Cut the rubber or take another appropriate action.



**Q:** The door rattles.

**A:** Check that the screws for mounting the components remain tight enough.

Action: Further tighten or retighten the mounting screws.



### Precautions for preventing accidents

1. Do not use the product for unspecified door dimensions or door weight.
2. If the control device of the product becomes ineffective, the door will close vigorously, possibly catching one of your fingers or getting into contact or turning over. Should an oil leak occur, component damage or incidents will result in ineffective control, despite speed adjustment, replace the product promptly.
3. Do not disassemble or remodel the product. Should you do so, we will not guarantee the subsequent performance of the product.
4. Securely tighten the screws that mount the product. Failure to observe this precaution may cause product damage or accident.
5. Be sure to install the door-retaining screws. Failure to observe this instruction may derail or turn the door over.
6. Be sure to install the door stopper on the door back end.
7. Do not drop or strike any of the components. Failure to follow this precaution may cause a breakdown.
8. The closer incorporated in the product causes the door to close on its own. Therefore do not close the door fast with force. Any such practice may cause the door to close vigorously, resulting in an unexpected accident.
9. Take care not to let a child play by hanging on the door.

### Precautions to be taken to ensure a long service life

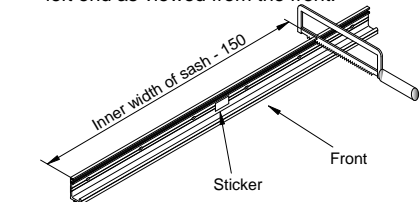
1. Wipe off dust and dirt from the rail and door rollers.
2. Conduct periodic checks for loose screws and other anomalies.

# Installation Procedure for **DSC-CW** (The diagrams shown represent a right-handed opening type. The left-handed opening type is symmetrical with the type represented in these diagrams.)

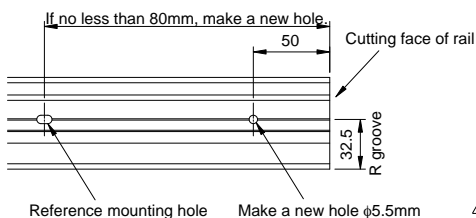
## 1 Installing a rail

### 1) Cutting the rail, making a new mounting hole

- Cut the rail to the inner width of the sash less 150mm.
- Cut off the correct end according to the instructions given on the sticker as follows:
  - For the right-handed opening type, cut off the right end as viewed from the front.
  - For the left-handed opening type, cut off the left end as viewed from the front.

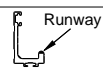


- If the distance between the cutting face of the rail and the reference mounting hole is no less than 80mm, make a new hole  $\phi 5.5\text{mm}$  for installing the rail at the position 50mm from the end.



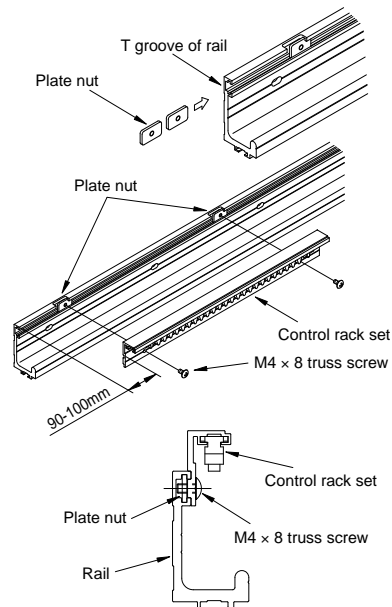
#### Caution

- When making any change in the rail, take care not to scratch the runway.



### 2) Installing a control rack set

- Insert 2 plate nuts in the T groove in the rail.
- Match the plate nuts to the mounting holes in the control rack set, then install the control rack set with screws (M4 x 8 truss screws) furnished with the product.

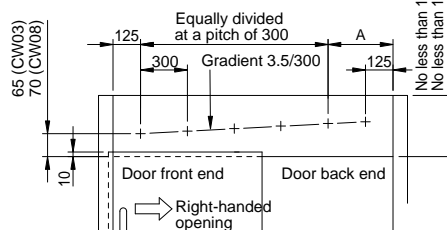


#### Caution

- Be sure to use specified screws furnished with the product. Using any unspecified screw may cause it to interfere with the clutch gear of the control device.
- Tighten the screws securely. Otherwise an abnormal noise or imperfect control may result.

### 3) Setting rail mounting holes

- Tap a hole (M5, pitch 0.8) at the position specified below, as the reference hole.
  - Dimension from the inside of the sash on the door front end = 125mm
  - Dimension from the bottom of the top frame = 65mm (CW03) = 70mm (CW08)
 (When the cover between the top frame and the door is 10mm)
- Tap subsequent holes (M5, pitch 0.8) with a level difference of 3.5mm at pitch intervals of 300.
- If the dimension A in the diagram below (the dimension from the final hole at a pitch of 300 to the inside of the frame on the door back end) is no less than 140 (CW03) or no less than 145 (CW08)



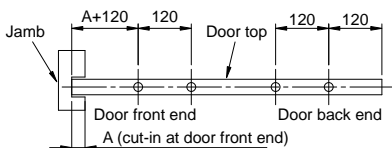
# of holes from reference hole (except for reference hole)	Horizontal distance (mm) from reference hole	Level difference (mm) from reference hole
1	300	3.5
2	600	7.0
3	900	10.5
4	1200	14.0
5	1500	17.5
6	1800	21.0
7	2100	24.5
8	2400	28.0
9	2700	31.5
10	3000	35.0

## 2 Installing the hanger

### 1) Making holes in the top of the door

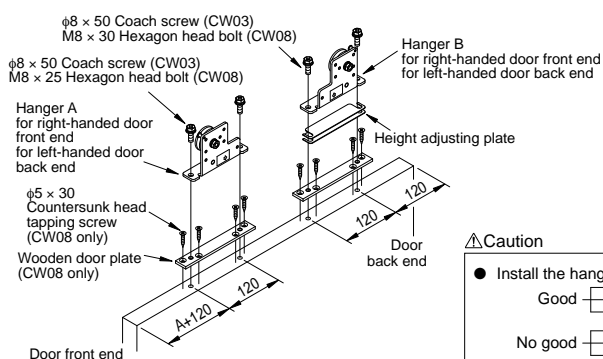
- Make holes in the top of the door at the positions shown in the diagram below, as specified below.

Model	Hole	Depth	Remark
CW03	$\phi 5.5-6$	35mm and over	Coach screw
CW08	$\phi 9$	20mm and over	Wooden door plate



#### Caution

- For the bottom diameter of the coach screws, be sure to follow the specified dimension. If the bottom hole diameter is too large, the door may come off.



### 2) Installing the wooden door plate, the height adjusting plate, and the hanger

- As shown in the diagram, install the wooden door plate with screws ( $\phi 5\text{mm} \times 30$  pan head tapping screws) furnished with the product, with the M8 screw as the reference point. (The wooden door plate is installed on the CW08 only.)
- As shown in the diagram, install the hanger A, hanger B, and height adjusting plate.
- Install the hanger while orienting it as shown in the table below, according to the instructions given on the sticker attached to the hanger.

	Door front end	Door back end
Right-handed opening type	Hanger A side	Hanger B side
Left-handed opening type	Hanger B side	Hanger A side

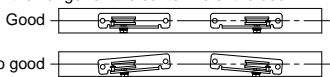
- The number of height adjusting plates varies with the door width. See the table below and install the appropriate number of them.

Number of height adjusting plates to be used (reference)

Door width (mm)	No. of plates used
700-800 or less	6 pcs
800-900 or less	7 pcs
900-1000 or less	8 pcs
1000-1100 or less	9 pcs
1100-1200 or less	10 pcs
1200-1300 or less	12 pcs
1300-1400 or less	13 pcs
1400-1500 or less	14 pcs
1500-1600 or less	15 pcs

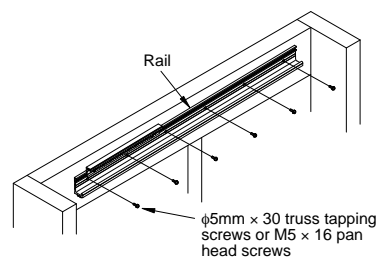
#### Caution

- Install the hanger on the centerline of the door.



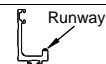
### 4) Installing the rail

- Install the rail with screws ( $\phi 5\text{mm} \times 30$  truss tapping screws or M5 x 16 pan head screws) furnished with the product.



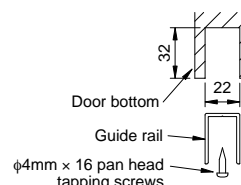
#### Caution

- After installing the rail, protect the rail runway from scratches and paint.



## 3 Installing the guide rail

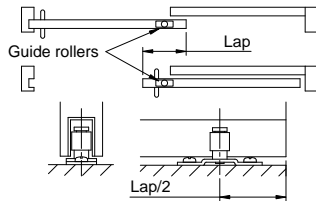
- Cut off the guide rail according to the door width.
- Carve the door bottom to the dimension shown in the dimension specified below, then install the guide rail with screws ( $\phi 4\text{mm} \times 16$  pan head tapping screws) furnished with the product.



# Installation Procedure for DSC-CW

## 4 Installing the guide rollers

- Install them in the middle of the door lap. (The product does not come with such mounting screws.)
- Install them so that the door become vertical with the floor area.)



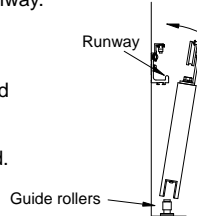
### ⚠ Caution

- Be sure to use the guide rollers.

## 5 Mounting the door

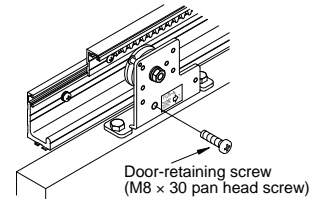
### 1) Mounting the door

- Before mounting the door, wipe off the dirt from the rail runway.
- Match the door bottom to the guide rollers, then suspend the door rollers and mount them onto the rail runway.
- Check that the door operates smoothly.
- Adjust the clearance between the door and jamb by varying the number of height adjusting plates used.



### 2) Installing the door-retaining screws

- Tighten the door-retaining screws (M8 x 30 pan head screws) in the hangers A and B.

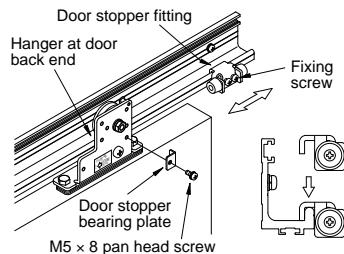


### ⚠ Caution

- Tighten the screws securely to prevent the door from coming off.

## 6 Installing the door stopper

- Install the door stopper bearing plate on the hanger on the door back end with screws (M5 x 8 pan head screws) furnished with the product.
- Insert the door stopper fittings in the rail runway. Slide the door stopper fittings, adjust the door-opening position, then tighten the 2 fixing screws and fix the fittings.

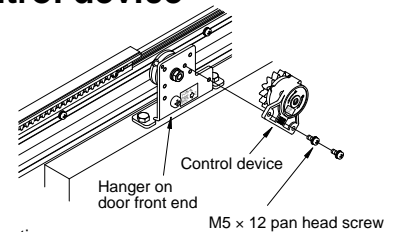


### ⚠ Caution

- Tighten the fixing screws securely, or the door stopper fittings may become out of place.

## 7 Installing the control device

- In assembling and reengaging the clutch gears, follow the "Procedure for assembling and reengaging clutch gears."
- Install the control device on the hanger on the door front end with screws (M5 x 12 pan head screws) furnished with the product. Install it with the door open by at least 60cm (where it does not engage with the control rack set).



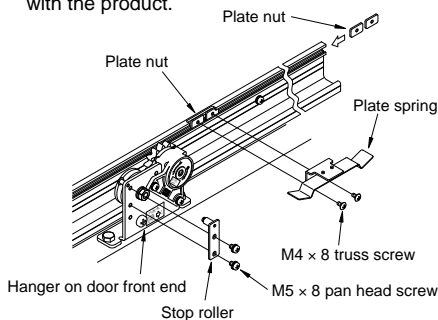
### ⚠ Caution

- Check the orientation of the control device (right- or left-handed). Be sure to orient it correctly, or the control will not work.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail or other component.

## 8 Installing the stop device

### 1) Installing the stop roller and plate spring

- Install the stop roller on the hanger on the door front end with screws (M5 x 8 pan head screws) furnished with the product.
- Insert the plate nuts in the T groove in the rail, then install the plate spring with screws (M4 x 8 truss screws) furnished with the product.

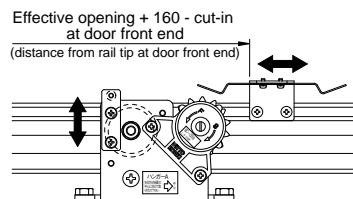


### ⚠ Caution

- Be sure to use the specified screws furnished with the product. Using any unspecified screw may cause it to interfere with another component.
- Securely tighten the screws furnished with the product, to keep the stop roller and plate spring in place at all times.

### 2) Adjusting the stopping position and force

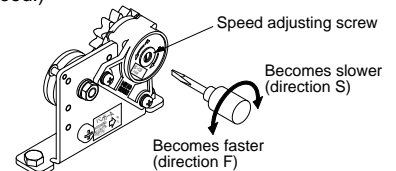
- Adjust the position of the plate spring to stop it at the position where the door is fully open.
- Move the stop roller up and down to adjust the stopping force.
  - Increase the stopping force. Raise the stop roller.
  - Reduce the stopping force. Lower the stop roller.



**When the clutch gear is inserted or removed, be sure to turn it as following instruction.**

## 9 Adjusting the closing speed

- Turn the speed adjusting screw of the control device with a screwdriver to adjust the closing speed. (It is factory-configured to the highest speed.)



- Slide the control rack set to adjust the controlling interval, thus adjusting the closing speed.
  - Shorten the controlling interval – to increase the closing speed.
  - Elongate the controlling interval – to decrease the closing speed.

### ⚠ Caution

- Turn the speed adjusting screw lightly. Otherwise an imperfect control may result. After turning it all the way home, do not turn it with overstrain.
- A change in the ambient temperature varies the closing speed somewhat. As the temperature rises, the speed increases. As the temperature declines, the speed decreases.

## Procedure for assembling and reengaging the clutch gear

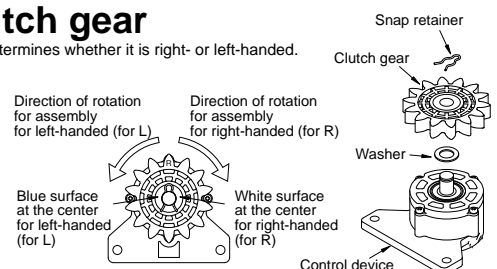
The control device used for this product is for both orientations (right- and left-handed). The orientation of the clutch gear determines whether it is right- or left-handed. When assembling and reengaging the clutch gear, follow the procedure described below.

### 1. Procedure for assembling the clutch gear

- Insert the washer into the shaft of the control device.
- Insert the clutch gear into the shaft.
  - If right-handed**  
Make the white surface (the R-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the right-handed opening type illustrated in the right-hand diagram.
  - If left-handed**  
Make the blue surface (the L-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the left-handed opening type illustrated in the right-hand diagram.
- Install the snap retainer in the groove at the tip of the shaft.

### 2. Procedure for reengaging the clutch gear

- Remove the clutch gear in reverse order of assembly. (Remove the clutch gear while turning it in the same direction as in assembly.)
- Assemble the clutch gear according to the assembly procedure.
- The product comes with one spare snap retainer.

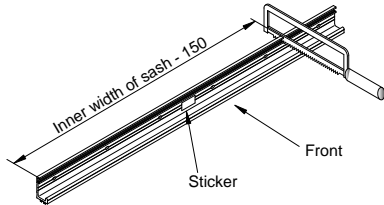


# Installation Procedure for NSC-CW (The diagrams shown represent a right-handed opening type. The left-handed opening type is symmetrical with the type represented in these diagrams.)

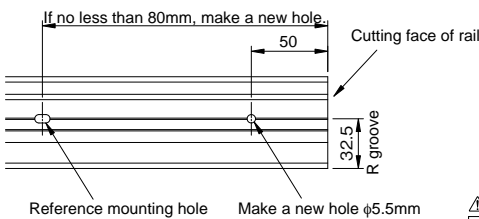
## 1 Installing a rail

### 1) Cutting the rail, making a new mounting hole

- Cut the rail to the inner width of the sash less 150mm.
- Cut off the correct end according to the instructions given on the sticker as follows:
  - For the right-handed opening type, cut off the right end as viewed from the front.
  - For the left-handed opening type, cut off the left end as viewed from the front.

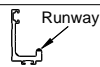


- If the distance between the cutting face of the rail and the reference mounting hole is no less than 80mm, make a new hole  $\phi 5.5$ mm for installing the rail at the position 50mm from the end.



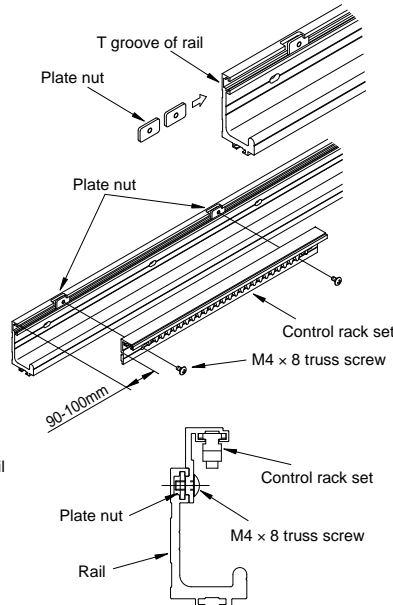
#### ⚠ Caution

- When making any change in the rail, take care not to scratch the runway.



### 2) Installing a control rack set

- Insert 2 plate nuts in the T groove in the rail.
- Match the plate nuts to the mounting holes in the control rack set, then install the control rack set with screws (M4 x 8 truss screws) furnished with the product.

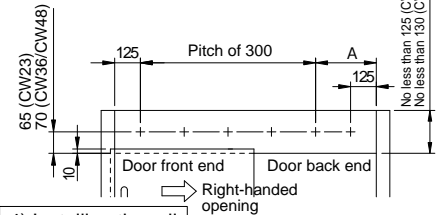


#### ⚠ Cautions

- Be sure to use specified screws furnished with the product. Using any unspecified screw may cause it to interfere with the clutch gear of the control device
- Tighten the screws securely. Otherwise an abnormal noise or imperfect control may result.

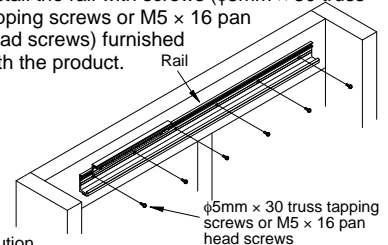
### 3) Setting rail mounting holes

- Tap holes (M5, pitch 0.8) horizontally at intervals of 300 with the hole specified below as the reference point.
  - Dimension from the inside of the sash on the door front end = 125mm
  - Dimension from the bottom of the top frame of the sash = 65mm (CW23) = 70mm (CW36/CW48)
- (When the cover between the top frame and door is 10mm)
- If the dimension A in the diagram below (the dimension from the final hole at a pitch of 300 to the inside of the sash on the door back end) is no less than 155mm, tap a hole at 125mm from the inside of the sash.



### 4) Installing the rail

- Install the rail with screws ( $\phi 5$ mm x 30 truss tapping screws or M5 x 16 pan head screws) furnished with the product.



#### ⚠ Caution

- Install the rail horizontally.
- When installing the rail, take care not to scratch the runway.

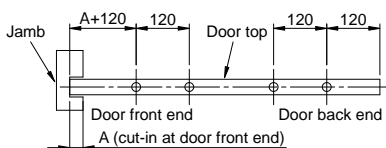


## 2 Installing the hanger

### 1) Making holes in the top of the door

- Make holes in the top of the door at the positions shown in the diagram below, as specified below.

Model	Hole	Depth	Remark
CW23	$\phi 5.5-6$	35mm and over	Coach screw
CW36/48	$\phi 9$	20mm and over	Wooden door plate



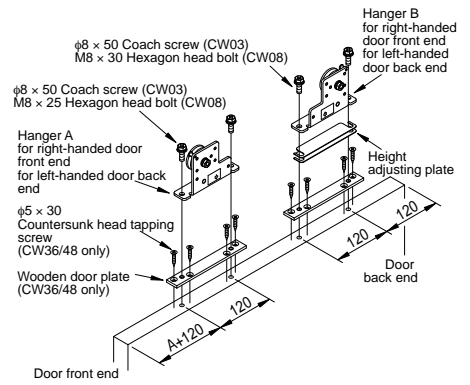
#### ⚠ Caution

- For the bottom diameter of the coach screws, be sure to follow the specified dimension. If the bottom hole diameter is too large, the door may come off.

### 2) Installing the wooden door plate, and the hanger

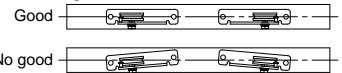
- As shown in the diagram, install the wooden door plate with screws ( $\phi 5$ mm x 30 pan head tapping screws) furnished with the product, with the M8 screw as the reference point. (The wooden door plate is installed on the CW36/48 only.)
- As shown in the diagram, install the hanger A, hanger B, and height adjusting plate.
- Install the hanger while orienting it as shown in the table below, according to the instructions given on the sticker attached to the hanger.

	Door front end	Door back end
Right-handed opening type	Hanger A side	Hanger B side
Left-handed opening type	Hanger B side	Hanger A side



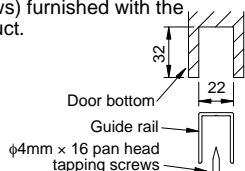
#### ⚠ Caution

- Install the hanger on the centerline of the door.



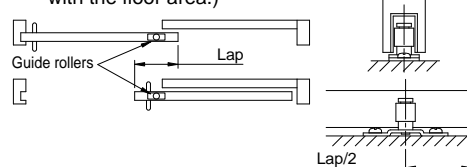
## 3 Installing the guide rail

- Cut off the guide rail according to the door width.
- Carve the door bottom to the dimension shown in the dimension specified below, then install the guide rail with screws ( $\phi 4$ mm x 16 pan head tapping screws) furnished with the product.



## 4 Installing the guide rollers

- Install them in the middle of the door lap. (The product does not come with such mounting screws.)
- Install them so that the door become vertical with the floor area.)



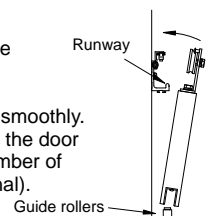
#### ⚠ Caution

- Be sure to use the guide rollers.

## 5 Mounting the door

### 1) Mounting the door

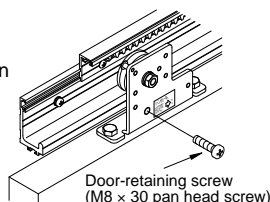
- Before mounting the door, wipe off the dirt from the rail runway.
- Match the door bottom to the guide rollers, then suspend the door rollers and mount them onto the rail runway.
- Check that the door operates smoothly.
- Adjust the clearance between the door and jamb by changing the number of height adjusting plates (optional).



# Installation Procedure for NSC-CW

## 2) Installing the door-retaining screws

- Tighten the door-retaining screws (M8 × 30 pan head screws) in the hangers A and B.

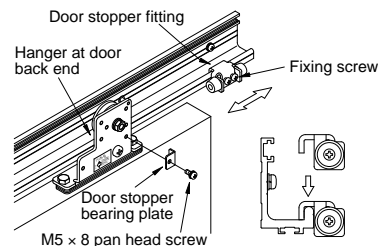


### ⚠Caution

- Tighten the screws securely to prevent the door from coming off.

## 6 Installing the door stopper

- Install the door stopper bearing plate on the hanger on the door back end with screws (M5 × 8 pan head screws) furnished with the product.
- Insert the door stopper fittings in the rail runway. Slide the door stopper fittings, adjust the door-opening position, then tighten the 2 fixing screws and fix the fittings.

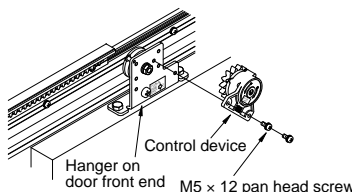


### ⚠Caution

- Tighten the fixing screws securely, or the door stopper fittings may become out of place.

## 7 Installing the control device

- In assembling and reengaging the clutch gears, follow the "Procedure for assembling and reengaging clutch gears."
- Install the control device on the hanger on the door front end with screws (M5 × 12 pan head screws) furnished with the product. Install it with the door open by at least 60cm (where it does not engage with the control rack set).



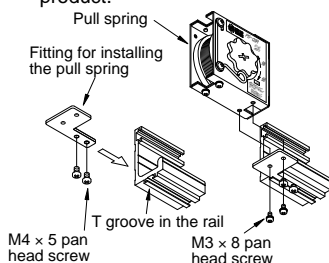
### ⚠Caution

- Check the orientation of the control device (right- or left-handed). Be sure to orient it correctly, or the control will not work.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail or other component.

## 8 Installing a pull spring

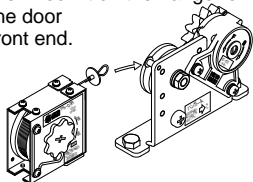
### 1) Installing a pull spring

- Temporarily tighten the screws (M4 × 5 pan head screws) furnished with the product, on the fittings for installing the pull spring. Then insert them into the T groove in the bottom of the rail.
- Tighten the screws to fix the fittings. Install the pull spring on the fittings for installing the pull spring, with screws (M3 × 8 pan head screws) furnished with the product.



### 2) Setting the wire

- Draw the wire of the pull spring, then hook it on the hanger on the door front end.



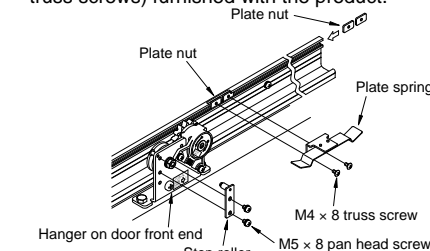
### ⚠Caution

- Do not draw the wire with the pull spring alone (before the installation). Any such practice might scratch the wire.

## 9 Installing the stop device

### 1) Installing the stop roller and plate spring

- Install the stop roller on the hanger on the door front end with screws (M5 × 8 pan head screws) furnished with the product.
- Insert the plate nuts in the T groove in the rail, then install the plate spring with screws (M4 × 8 truss screws) furnished with the product.

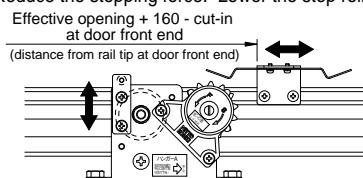


### ⚠Caution

- Be sure to use the specified screws furnished with the product. Using any unspecified screw may cause it to interfere with another component.
- Securely tighten the screws furnished with the product, to keep the stop roller and plate spring in place at all times.

### 2) Adjusting the stopping position and force

- Adjust the position of the plate spring to stop it at the position where the door is fully open.
- Move the stop roller up and down to adjust the stopping force.
  - Increase the stopping force. Raise the stop roller.
  - Reduce the stopping force. Lower the stop roller.

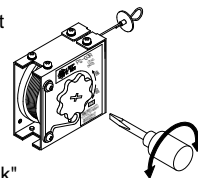


**When the clutch gear is inserted or removed, be sure to turn it as following instruction.**

## 10 Adjusting the closing force and closing speed

### 1) Adjusting the closing force

- If the closing force needs adjustment, turn the gear shaft with a screwdriver for adjustment. Label on the component Turn it in the direction of "Strong" → to increase the closing force. Turn it in the direction of "Weak" → to decrease the closing force.

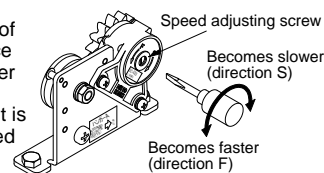


### ⚠Caution

- Overwinding it in the direction of "Strong" will cause a breakdown. Be sure to set it to a value not exceeding the number of windings indicated on the label on the component.

### 2) Adjusting the closing speed

- Turn the speed adjusting screw of the control device with a screwdriver to adjust the closing speed. (It is factory-configured to the highest speed.)
- Slide the control rack set to adjust the controlling interval, thus adjusting the closing speed.
  - Shorten the controlling interval → to increase the closing speed.
  - Elongate the controlling interval → to decrease the closing speed.



### ⚠Caution

- Turn the speed adjusting screw lightly. Otherwise an imperfect control may result. After turning it all the way home, do not turn it with overstrain.
- A change in the ambient temperature varies the closing speed somewhat. As the temperature rises, the speed increases. As the temperature declines, the speed decreases.

## Procedure for assembling and reengaging the clutch gear

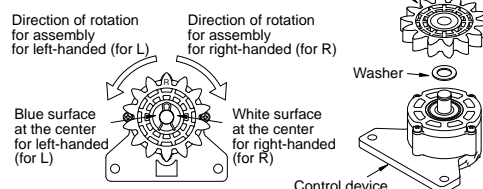
The control device used for this product is for both orientations (right- and left-handed). The orientation of the clutch gear determines whether it is right- or left-handed. When assembling and reengaging the clutch gear, follow the procedure described below.

### 1. Procedure for assembling the clutch gear

- Insert the washer into the shaft of the control device.
- Insert the clutch gear into the shaft.
  - If right-handed**  
Make the white surface (the R-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the right-handed opening type illustrated in the right-hand diagram.
  - If left-handed**  
Make the blue surface (the L-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the left-handed opening type illustrated in the right-hand diagram.
- Install the snap retainer in the groove at the tip of the shaft.

### 2. Procedure for reengaging the clutch gear

- Remove the clutch gear in reverse order of assembly. (Remove the clutch gear while turning it in the same direction as in assembly.)
- Assemble the clutch gear according to the assembly procedure.
- The product comes with one spare snap retainer.

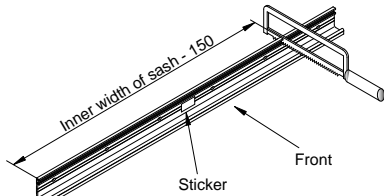


# Installation Procedure for DSC-C (The diagrams shown represent a right-handed opening type. The left-handed opening type is symmetrical with the type represented in these diagrams.)

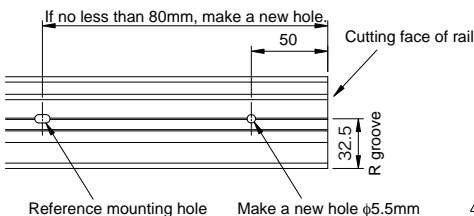
## 1 Installing a rail

### 1) Cutting the rail, making a new mounting hole

- Cut the rail to the inner width of the sash less 150mm.
- Cut off the correct end according to the instructions given on the sticker as follows:
  - For the right-handed opening type, cut off the right end as viewed from the front.
  - For the left-handed opening type, cut of the left end as viewed from the front.



- If the distance between the cutting face of the rail and the reference mounting hole is no less than 80mm, make a new hole  $\phi 5.5$ mm for installing the rail at the position 50mm from the end.



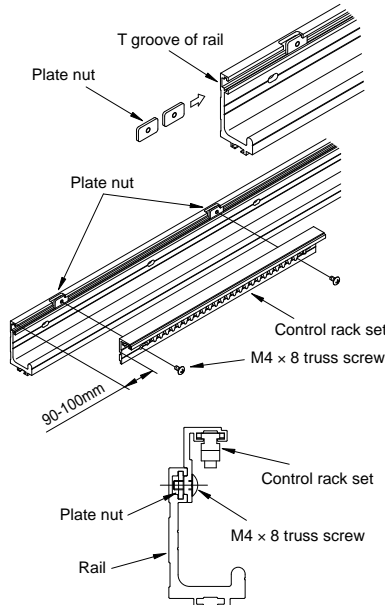
#### ⚠ Caution

- When making any change in the rail, take care not to scratch the runway.



### 2) Installing a control rack set

- Insert 2 plate nuts in the T groove in the rail.
- Match the plate nuts to the mounting holes in the control rack set, then install the control rack set with screws (M4 x 8 truss screws) furnished with the product.

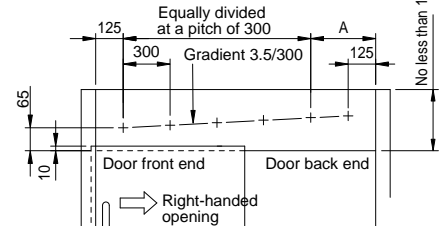


#### ⚠ Cautions

- Be sure to use specified screws furnished with the product. Using any unspecified screw may cause it to interfere with the clutch gear of the control device.
- Tighten the screws securely. Otherwise an abnormal noise or imperfect control may result.

### 3) Setting rail mounting holes

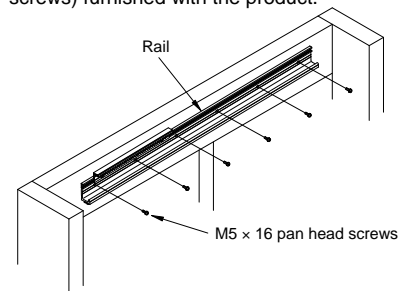
- Tap a hole (M5, pitch 0.8) at the position specified below, as the reference hole.
  - Dimension from the inside of the sash on the door front end = 125mm
  - Dimension from the bottom of the top frame of the sash = 65mm
 (When the cover between the top frame of the sash and the door is 10mm)
- Tap subsequent holes (M5, pitch 0.8) with a level difference of 3.5mm at pitch intervals of 300.
- If the dimension A in the diagram below (the dimension from the final hole at a pitch of 300 to the inside of the frame on the door back end) is no less than 155mm, tap a hole on the site at 125mm from the inside of the frame.



# of holes from reference hole (except for reference hole)	Horizontal distance (mm) from reference hole	Level difference (mm) from reference hole
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
8	2400	28.0
9	2700	31.5
10	3000	35.0

### 4) Installing the rail

- Install the rail with screws (M5 x 16 pan head screws) furnished with the product.



#### ⚠ Caution

- After installing the rail, protect the rail runway from scratches and paint.



## 2 Installing the hanger

### 1) Making holes in the top of the door

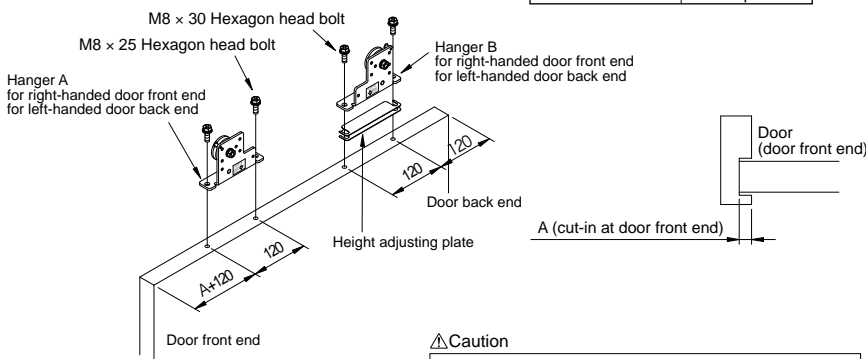
- As shown in the diagram, install the hanger A, hanger B, and height adjusting plate.
- Install the hanger while orienting it as shown in the table below, according to the instructions given on the sticker attached to the hanger.

	Door front end	Door back end
Right-handed opening type	Hanger A side	Hanger B side
Left-handed opening type	Hanger B side	Hanger A side

- The number of height adjusting plates varies with the door width. See the table below and install the appropriate number of them.

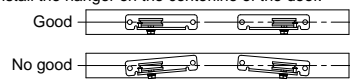
Number of height adjusting plates to be used (reference)

Door width (mm)	No. of plates used
700-800 or less	6 pcs
800-900 or less	7 pcs
900-1000 or less	8 pcs
1000-1100 or less	9 pcs
1100-1200 or less	10 pcs
1200-1300 or less	12 pcs
1300-1400 or less	13 pcs
1400-1500 or less	14 pcs
1500-1600 or less	15 pcs



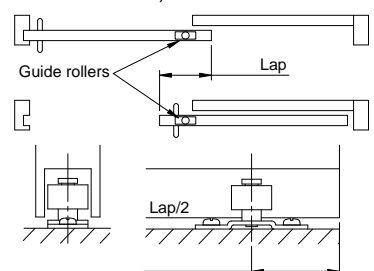
#### ⚠ Caution

- Install the hanger on the centerline of the door.



## 3 Installing the guide roller (optional)

- Install them in the middle of the door lap. (The product does not come with such mounting screws.)
- Install them so that the door become vertical with the floor area.)



#### ⚠ Caution

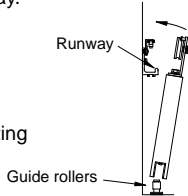
- Be sure to use the guide rollers.



## 4 Mounting the door

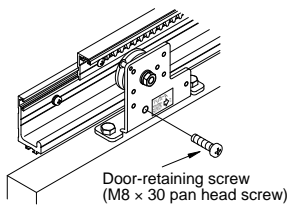
### 1) Mounting the door

- Before mounting the door, wipe off the dirt from the rail runway.
- Match the door bottom to the guide rollers, then suspend the door rollers and mount them onto the rail runway.
- Check that the door operates smoothly.
- Adjust the clearance between the door and jamb by varying the number of height adjusting plates used.



### 2) Installing the door-retaining screws

- Tighten the door-retaining screws (M8 x 30 pan head screws) in the hangers A and B.

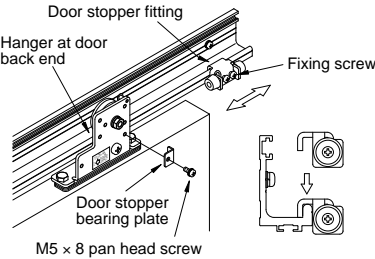


#### ⚠ Caution

- Tighten the screws securely to prevent the door from coming off.

## 5 Installing the door stopper

- Install the door stopper bearing plate on the hanger on the door back end with screws (M5 x 8 pan head screws) furnished with the product.
- Insert the door stopper fittings in the rail runway. Slide the door stopper fittings, adjust the door-opening position, then tighten the 2 fixing screws and fix the fittings.

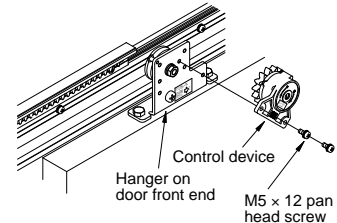


#### ⚠ Caution

- Tighten the fixing screws securely, or the door stopper fittings may become out of place.

## 6 Installing the control device

- In assembling and reengaging the clutch gears, follow the "Procedure for assembling and reengaging clutch gears."
- Install the control device on the hanger on the door front end with screws (M5 x 12 pan head screws) furnished with the product. Install it with the door open by at least 60cm (where it does not engage with the control rack set).



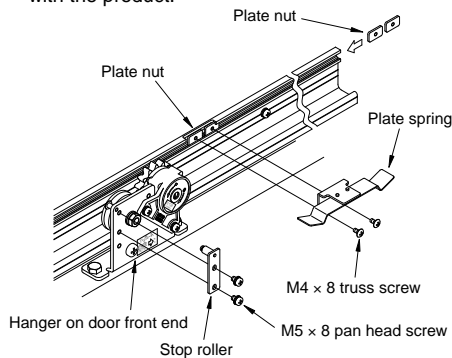
#### ⚠ Caution

- Check the orientation of the control device (right- or left-handed). Be sure to orient it correctly, or the control will not work.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail or other component.

## 7 Installing the stop device

### 1) Installing the stop roller and plate spring

- Install the stop roller on the hanger on the door front end with screws (M5 x 8 pan head screws) furnished with the product.
- Insert the plate nuts in the T groove in the rail, then install the plate spring with screws (M4 x 8 truss screws) furnished with the product.

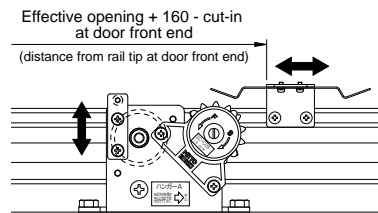


#### ⚠ Caution

- Be sure to use the specified screws furnished with the product. Using any unspecified screw may cause it to interfere with another component.
- Securely tighten the screws furnished with the product, to keep the stop roller and plate spring in place at all times.

### 2) Adjusting the stopping position and force

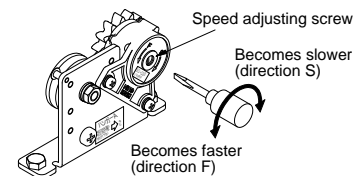
- Adjust the position of the plate spring to stop it at the position where the door is fully open.
- Move the stop roller up and down to adjust the stopping force.
  - Increase the stopping force. Raise the stop roller.
  - Reduce the stopping force. Lower the stop roller.



**When the clutch gear is inserted or removed, be sure to turn it as following instruction.**

## 8 Adjusting the closing speed

- Turn the speed adjusting screw of the control device with a screwdriver to adjust the closing speed. (It is factory-configured to the highest speed.)



- Slide the control rack set to adjust the controlling interval, thus adjusting the closing speed.
  - Shorten the controlling interval – to increase the closing speed.
  - Elongate the controlling interval – to decrease the closing speed.

#### ⚠ Caution

- Turn the speed adjusting screw lightly. Otherwise an imperfect control may result. After turning it all the way home, do not turn it with overstrain.
- A change in the ambient temperature varies the closing speed somewhat. As the temperature rises, the speed increases. As the temperature declines, the speed decreases.

## Procedure for assembling and reengaging the clutch gear

The control device used for this product is for both orientations (right- and left-handed). The orientation of the clutch gear determines whether it is right- or left-handed. When assembling and reengaging the clutch gear, follow the procedure described below.

### 1. Procedure for assembling the clutch gear

- Insert the washer into the shaft of the control device.
- Insert the clutch gear into the shaft.
  - If right-handed**  
Make the white surface (the R-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the right-handed opening type illustrated in the right-hand diagram.
  - If left-handed**  
Make the blue surface (the L-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the left-handed opening type illustrated in the right-hand diagram.
- Install the snap retainer in the groove at the tip of the shaft.

### 2. Procedure for reengaging the clutch gear

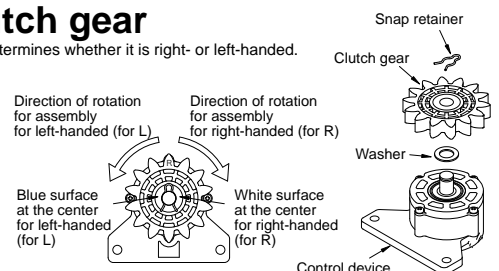
- Remove the clutch gear in reverse order of assembly. (Remove the clutch gear while turning it in the same direction as in assembly.)
- Assemble the clutch gear according to the assembly procedure.
- The product comes with one spare snap retainer.

Direction of rotation for assembly for left-handed (for L)

Direction of rotation for assembly for right-handed (for R)

Blue surface at the center for left-handed (for L)

White surface at the center for right-handed (for R)



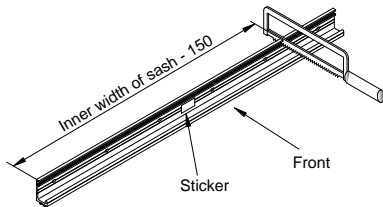
# Installation Procedure for NSC-C/CB

(The diagrams shown represent a right-handed opening type. The left-handed opening type is symmetrical with the type represented in these diagrams.)

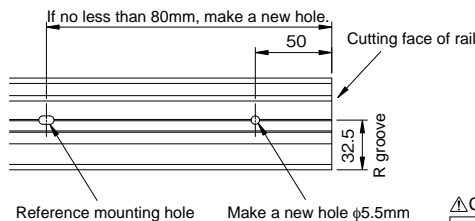
## 1 Installing a rail

### 1) Cutting the rail, making a new mounting hole

- Cut the rail to the inner width of the sash less 150mm.
- Cut off the correct end according to the instructions given on the sticker as follows:
  - For the right-handed opening type, cut off the right end as viewed from the front.
  - For the left-handed opening type, cut off the left end as viewed from the front.

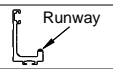


- If the distance between the cutting face of the rail and the reference mounting hole is no less than 80mm, make a new hole  $\phi 5.5$ mm for installing the rail at the position 50mm from the end.



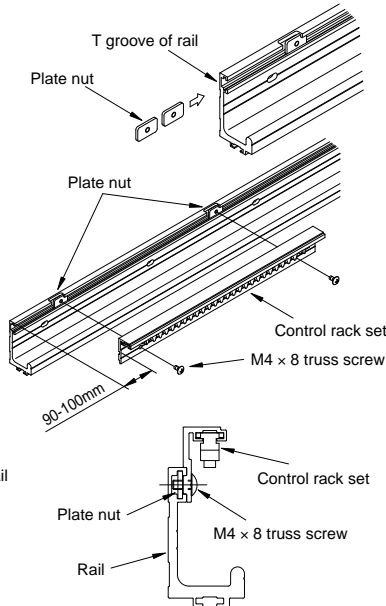
#### ⚠ Caution

- When making any change in the rail, take care not to scratch the runway.



### 2) Installing a control rack set

- Insert 2 plate nuts in the T groove in the rail.
- Match the plate nuts to the mounting holes in the control rack set, then install the control rack set with screws (M4 x 8 truss screws) furnished with the product.

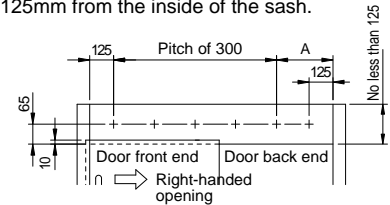


#### ⚠ Cautions

- Be sure to use specified screws furnished with the product. Using any unspecified screw may cause it to interfere with the clutch gear of the control device.
- Tighten the screws securely. Otherwise an abnormal noise or imperfect control may result.

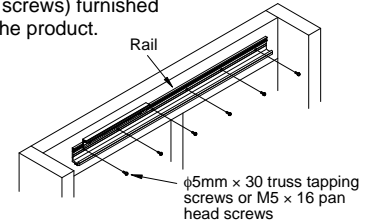
### 3) Setting rail mounting holes

- Tap holes (M5, pitch 0.8) horizontally at intervals of 300 with the hole specified below as the reference point.
  - Dimension from the inside of the sash on the door front end = 125mm
  - Dimension from the bottom of the top frame of the sash = 65mm
 (When the cover between the top frame and door is 10mm)
- If the dimension A in the diagram below (the dimension from the final hole at a pitch of 300 to the inside of the sash on the door back end) is no less than 155mm, tap a hole at 125mm from the inside of the sash.



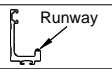
### 4) Installing the rail

- Install the rail with screws ( $\phi 5$ mm x 30 truss tapping screws or M5 x 16 pan head screws) furnished with the product.



#### ⚠ Caution

- Install the rail horizontally.
- When installing the rail, take care not to scratch the runway.

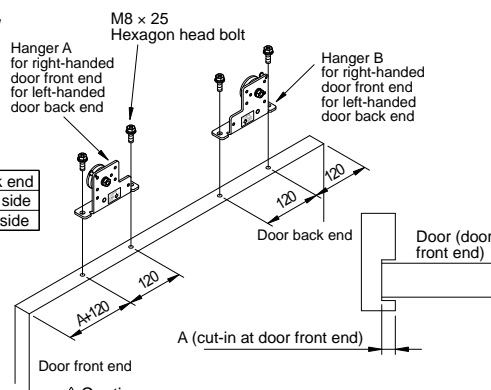


## 2 Installing the hanger

### 1) Making holes in the top of the door

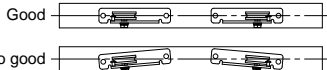
- As shown in the diagram, install the hanger A and hanger B.

	Door front end	Door back end
Right-handed opening type	Hanger A side	Hanger B side
Left-handed opening type	Hanger B side	Hanger A side



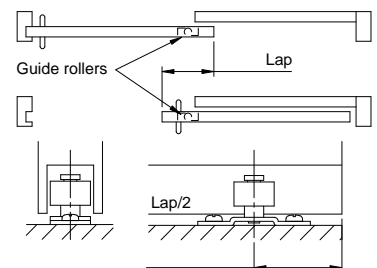
#### ⚠ Caution

- Install the hanger on the centerline of the door.



## 3 Installing the guide roller (optional)

- Install them in the middle of the door lap. (The product does not come with such mounting screws.)
- Install them so that the door become vertical with the floor area.)



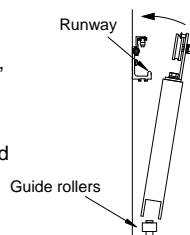
#### ⚠ Caution

- Be sure to use the guide rollers.

## 4 Mounting the door

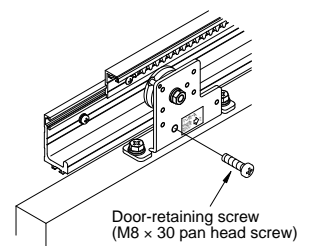
### 1) Mounting the door

- Before mounting the door, wipe off the dirt from the rail runway.
- Match the door bottom to the guide rollers, then suspend the door rollers and mount them onto the rail runway.
- Check that the door operates smoothly.
- Adjust the clearance between the door and jamb by varying the number of height adjusting plates used.



### 2) Installing the door-retaining screws

- Tighten the door-retaining screws (M8 x 30 pan head screws) in the hangers A and B.



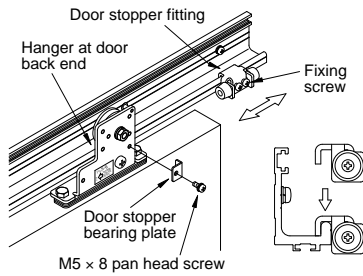
#### ⚠ Caution

- Tighten the screws securely to prevent the door from coming off.

# Installation Procedure for NSC-C/CB

## 5 Installing the door stopper

- Install the door stopper bearing plate on the hanger on the door back end with screws (M5 × 8 pan head screws) furnished with the product.
- Insert the door stopper fittings in the rail runway. Slide the door stopper fittings, adjust the door-opening position, then tighten the 2 fixing screws and fix the fittings.

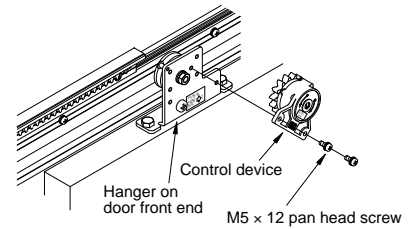


### ⚠ Caution

- Tighten the fixing screws securely, or the door stopper fittings may become out of place.

## 6 Installing the control device

- In assembling and reengaging the clutch gears, follow the "Procedure for assembling and reengaging clutch gears."
- Install the control device on the hanger on the door front end with screws (M5 × 12 pan head screws) furnished with the product. Install it with the door open by at least 60cm (where it does not engage with the control rack set).



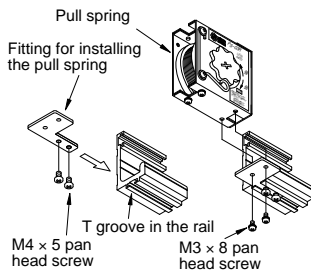
### ⚠ Caution

- Check the orientation of the control device (right- or left-handed). Be sure to orient it correctly, or the control will not work.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail or other component.

## 7 Installing a pull spring

### 1) Installing a pull spring

- Temporarily tighten the screws (M4 × 5 pan head screws) furnished with the product, on the fittings for installing the pull spring. Then insert them into the T groove in the bottom of the rail.
- Tighten the screws to fix the fittings. Install the pull spring on the fittings for installing the pull spring, with screws (M3 × 8 pan head screws) furnished with the product.

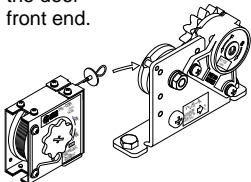


### ⚠ Caution

- Do not draw the wire with the pull spring alone (before the installation). Any such practice might scratch the wire.

### 2) Setting the wire

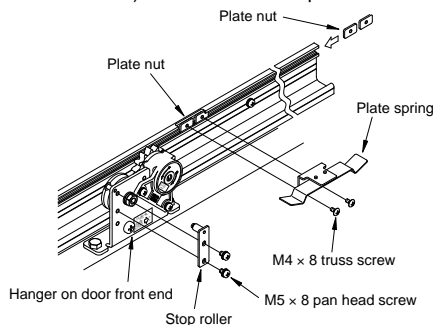
- Draw the wire of the pull spring, then hook it on the hanger on the door front end.



## 8 Installing the stop device

### 1) Installing the stop roller and plate spring

- Install the stop roller on the hanger on the door front end with screws (M5 × 8 pan head screws) furnished with the product.
- Insert the plate nuts in the T groove in the rail, then install the plate spring with screws (M4 × 8 truss screws) furnished with the product.

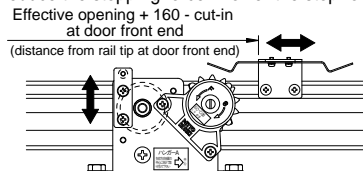


### ⚠ Caution

- Be sure to use the specified screws furnished with the product. Using any unspecified screw may cause it to interfere with another component.
- Securely tighten the screws furnished with the product, to keep the stop roller and plate spring in place at all times.

### 2) Adjusting the stopping position and force

- Adjust the position of the plate spring to stop it at the position where the door is fully open.
- Move the stop roller up and down to adjust the stopping force.
  - Increase the stopping force. Raise the stop roller.
  - Reduce the stopping force. Lower the stop roller.

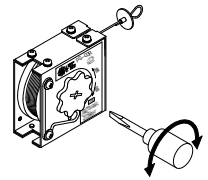


**When the clutch gear is inserted or removed, be sure to turn it as following instruction.**

## 9 Adjusting the closing force and closing speed

### 1) Adjusting the closing force

- If the closing force needs adjustment, turn the gear shaft with a screwdriver for adjustment. Label on the component Turn it in the direction of "Strong" → to increase the closing force. Turn it in the direction of "Weak" → to decrease the closing force.

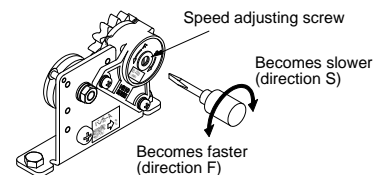


### ⚠ Caution

- Overwinding it in the direction of "Strong" will cause a breakdown. Be sure to set it to a value not exceeding the number of windings indicated on the label on the component.

### 2) Adjusting the closing speed

- Turn the speed adjusting screw of the control device with a screwdriver to adjust the closing speed. (It is factory-configured to the highest speed.)



- Slide the control rack set to adjust the controlling interval, thus adjusting the closing speed.
  - Shorten the controlling interval → to increase the closing speed.
  - Elongate the controlling interval → to decrease the closing speed.

### ⚠ Caution

- Turn the speed adjusting screw lightly. Otherwise an imperfect control may result. After turning it all the way home, do not turn it with overstrain.
- A change in the ambient temperature varies the closing speed somewhat. As the temperature rises, the speed increases. As the temperature declines, the speed decreases.

## Procedure for assembling and reengaging the clutch gear

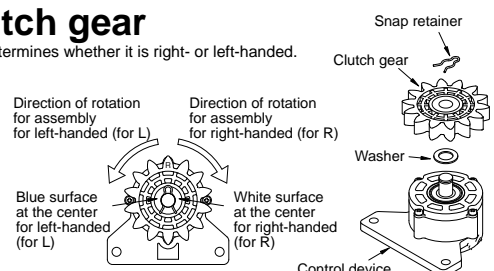
The control device used for this product is for both orientations (right- and left-handed). The orientation of the clutch gear determines whether it is right- or left-handed. When assembling and reengaging the clutch gear, follow the procedure described below.

### 1. Procedure for assembling the clutch gear

- Insert the washer into the shaft of the control device.
- Insert the clutch gear into the shaft.
  - If right-handed**  
Make the white surface (the R-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the right-handed opening type illustrated in the right-hand diagram.
  - If left-handed**  
Make the blue surface (the L-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the left-handed opening type illustrated in the right-hand diagram.
- Install the snap retainer in the groove at the tip of the shaft.

### 2. Procedure for reengaging the clutch gear

- Remove the clutch gear in reverse order of assembly. (Remove the clutch gear while turning it in the same direction as in assembly.)
- Assemble the clutch gear according to the assembly procedure.
- The product comes with one spare snap retainer.



# ***NITTO KOHKI Sliding Closer***

## ***Installation manual***

*Driving Inventive Technologies Too Open Up Tomorrows*



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