NITTO KOHKI CO.,LTD.

Sliding Closer

For steel lightweight fittings, horizontal

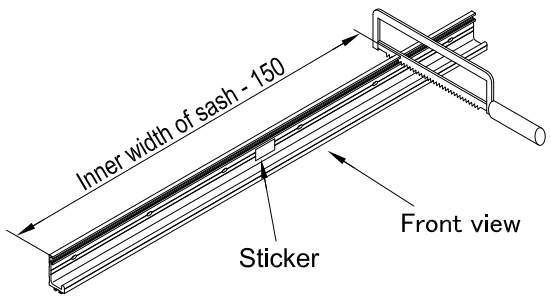
Installation Procedure for NSC-C/CB

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

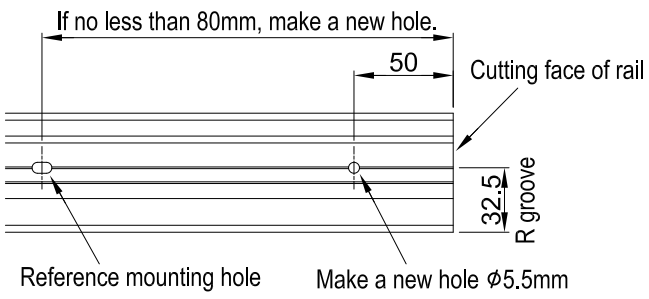
1 Installing a rail

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 of the left end as viewed from the front.

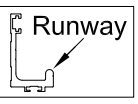


- If the distance between the cutting face of the rail and the reference mounting hole is no less than 80mm, make a new hole ϕ5.5mm for installing the rail at the position 50mm from the end.



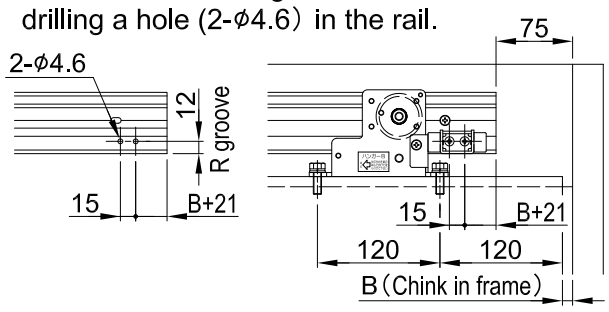
⚠ Caution

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



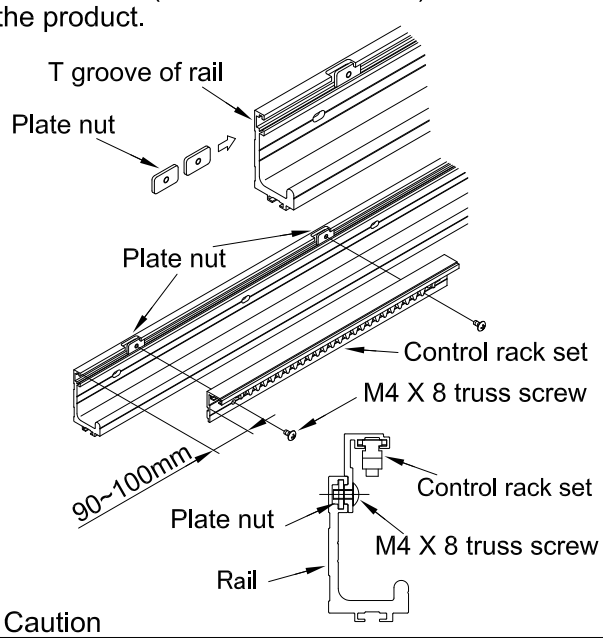
2) Drilling a hole for door stopper

- As shown in the diagram, drilling a hole (2-ϕ4.6) in the rail.



3) 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.

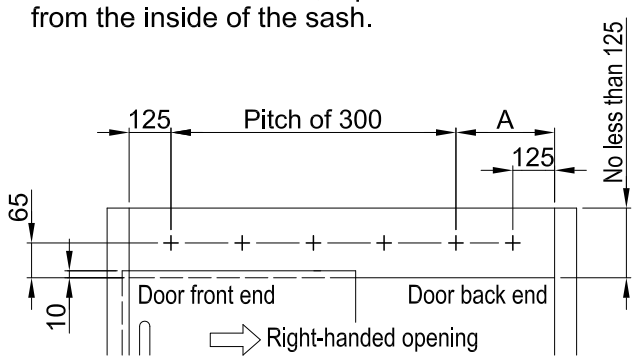


⚠ Caution

- 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.

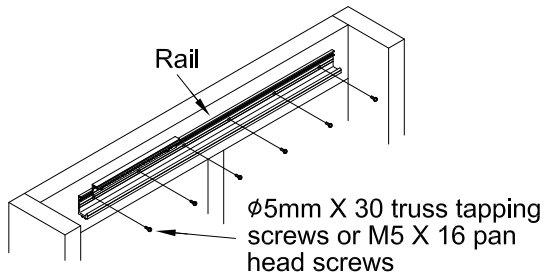
4) Setting rail mounting holes

- 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.



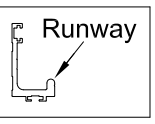
5) Installing the rail

- Install the rail with screws (ϕ5mm X 30 truss tapping screws or M5 X16 pan head screws)



⚠ Caution

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

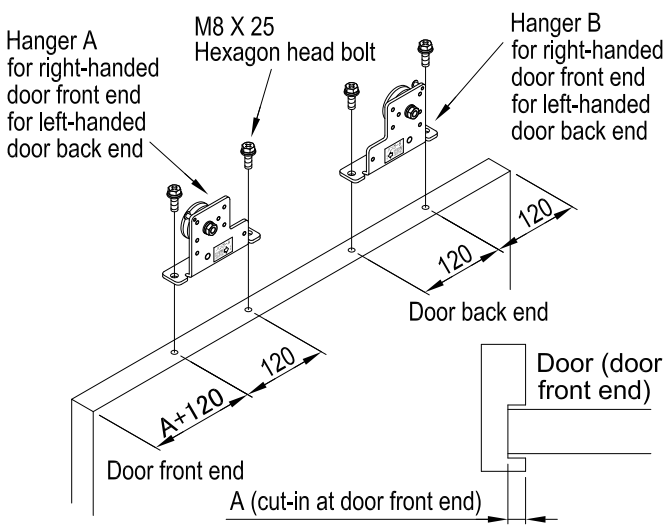


2 Installing the hanger

1) Making holes in the top of the door

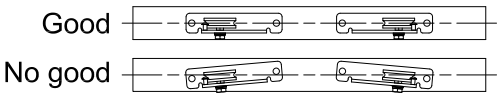
- As shown in the diagram, install the hanger A and hanger B.

	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



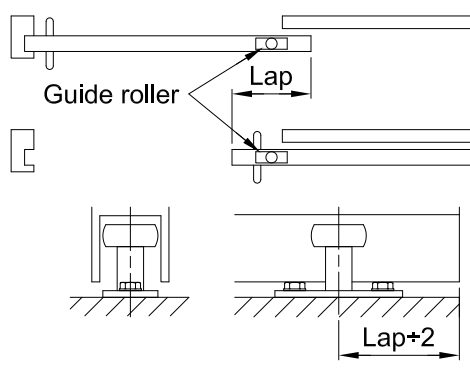
⚠ Caution

- 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 becomes vertical with the floor area.



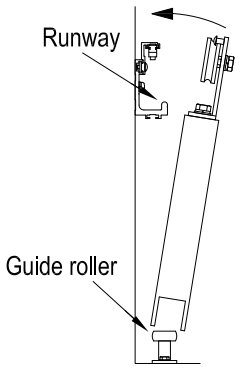
⚠ Caution

- Be sure to use the guide roller.

4 Mounting the door

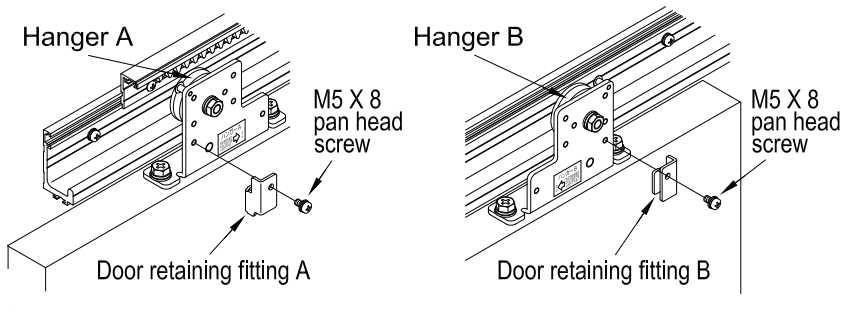
1) Mounting the door

- Before mounting the door, wipe off the dirt from the rail runway.
- Match the door bottom to the guide roller, 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 fitting

- Install the door retaining fitting in the hanger A and B with screw (M5 X 8 pan head screw).



⚠ Caution

- Be sure to install the door retaining fitting, the door may come off.

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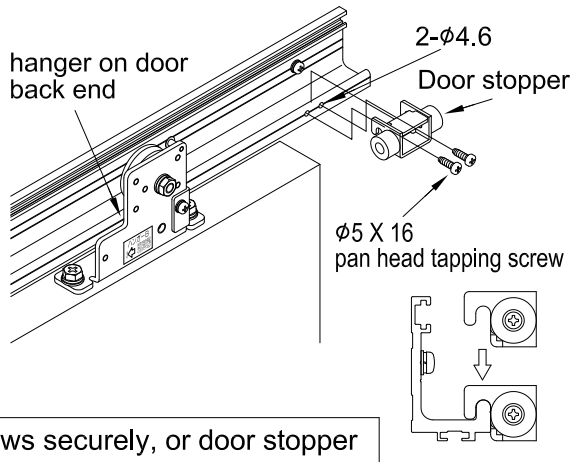
NITTO KOHKI CO.,LTD.

Installation Procedure for NSC-C/CB

5 Installing the door stopper

- Insert the door stopper in the rail runway.
- Slide the door stopper, adjust the door-opening position, then tighten the 2 fixing screws (ϕ5 X 16 pan head tapping screw) follow the hole for door stopper.
- See the page 1, 1 Installing a rail 2) Drilling a hole for door stopper

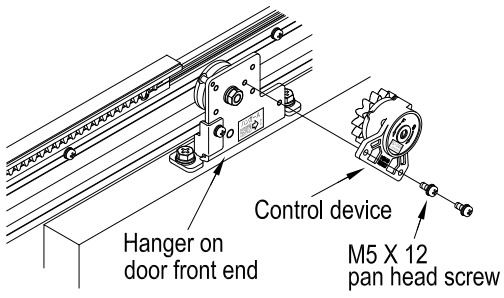


⚠ Caution

- Tighten the fixing screws securely, or door stopper May become out of place.
- In case of slam the door strongly, install the back check device.

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).



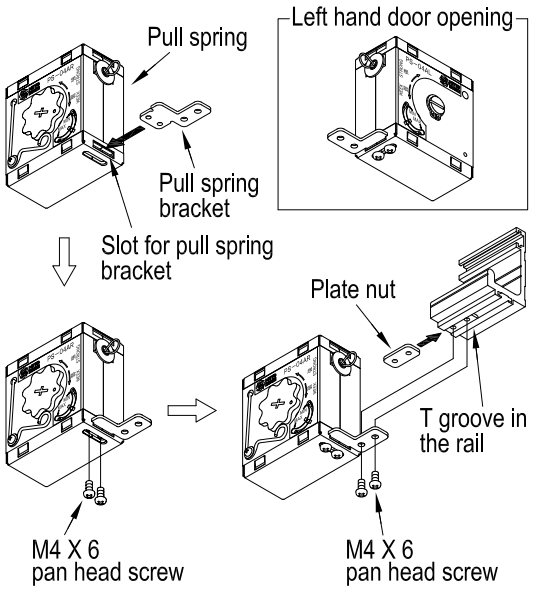
⚠ Caution

- 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 a pull spring

1) Installing a pull spring

- Insert the pull spring bracket in to the fixing slot of the pull spring, then install. It with screws (M4 X 6 Pan head screw).
- Insert the plate nut in the T groove in the rail then install the pull spring with screws (M4 X 6 Pan head screw).

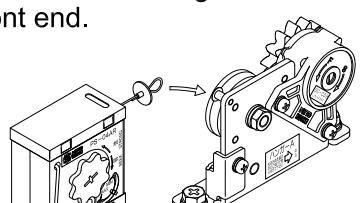


⚠ Caution

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

2) Setting the wire

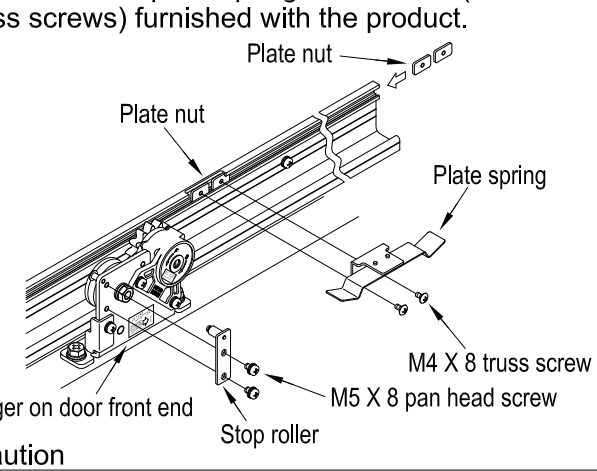
- Draw the wire of the pull spring, then hook it on the hanger on the door front end.



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 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.

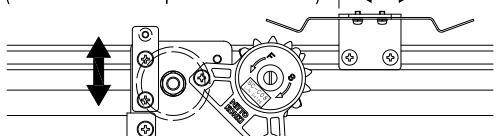


⚠ Caution

- 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 remoned, be sure to turn it as following instruction

9 Adjusting the closing force and closing speed

1) Adjusting the closing force

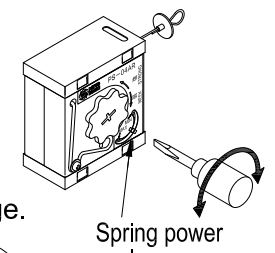
- If the closing force needs to be adjusted, turn the gear shaft with a screwdriver.
- The spring power scale attached in the main part. Whenever gear shaft every one turn, a power scale pin moves. The adjustment should follow the following procedure.

＜Adjustment direction＞

Be aware that direction of rotation is different for left- handed opening or right-handed opening.

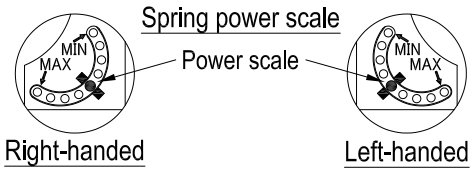
Right-handed: Strong "強" / Week "弱" — To increase the closing force. To decrease the closing force.

Left-handed: Strong "強" / Week "弱"



＜Adjustment range＞

Do not exceed the adjustable range.

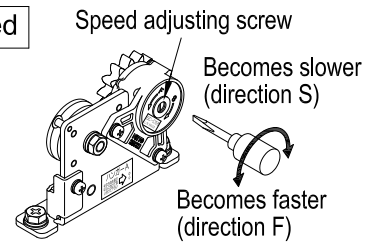


⚠ Caution

- Over exceed adjustable range will failure. Be sure to adiust the position of a power scale pin in the range of min to max of a label display.

2) Adjusting the closing speed

- Turn the speed adjusting screw of the control device with a screwdriver to adjust the closing 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.

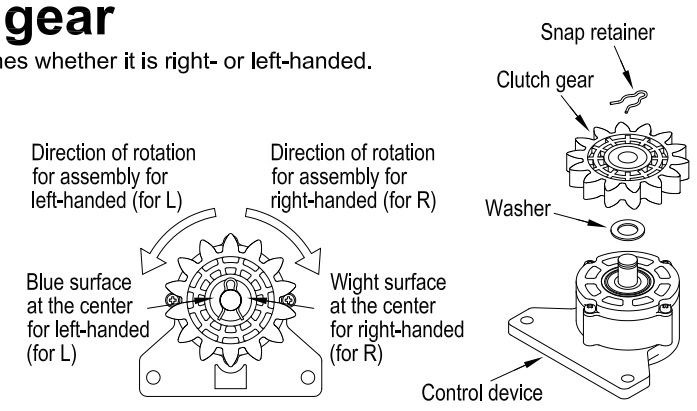
If left-handed

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.



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NITTO KOHKI CO.,LTD. Sliding Closer Installation manual Horizontal model NSC-C60V

Safety Precautions

Thank you for purchasing our product. Before using the product, please read this instruction manual carefully and abide by safety precautions. After reading, keep it on hand for quick reference.

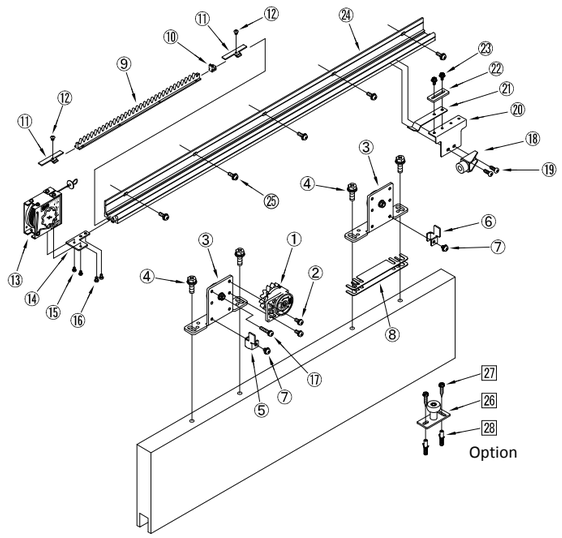
《Safety Precautions》

1. Do not the use product for unspecified door dimensions or door weight
2. If the 'Control Device' of the sliding door closer becomes ineffective,the door could close vigorously with possible risk of injury. Should there be any oil leakage,component damage or ineffective control could occur,despite speed adjustment. Replace the control promptly.
3. Guarantee and performance of the product cannot be upheld should the product be disassembled or remodeled in anyway.
4. Securely tighten the screws that mount the product. Failure to observe these precautions may cause product damage or accident.
5. Be sure to install the Door Retaining Fitting (part 5 below), Failure to observe this instruction may dismount the door with possible risk of injury.
6. Do not open the door strongly; Failure to observe this precaution may cause product damage or accident.
7. Be sure to install the door stopper on the door back end.
8. Do not drop or strike any of the components. Failure to follow this precaution may cause a breakdowns.
9. The closer incorporated in the product causes the door to close on its own. Therefore do not close the door with a strong force. Any such actions may cause the door to close vigorously, resulting in an unexpected accident or defect.
10. Take care not to let a child play with or bang 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 lose screws and other anomalies.

Parts details (The product can be converted between the right- and left-handed opening types. This drawing shown represent a right-handed opening type.)



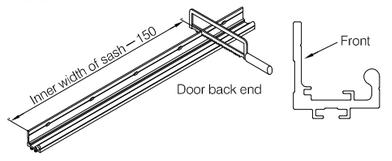
No.	Parts name	Quantity	Remarks
①	Control device	1	
②	Pan head screw M5X12	2	
③	Hanger	2	
④	Cross recessed hexagon head screw M8X25	4	
⑤	Door retaining fitting L	1	
⑥	Door retaining fitting R	1	
⑦	Pan head screw M5X8	2	
⑧	Height adjusting plate (t=1.0mm)	4	
⑨	Control rack	1	
⑩	Noise suppression rubber	1	
⑪	Control rack fitting	2	
⑫	Hexagon socket button head screw M4X5	2	
⑬	Pull spring	1	
⑭	Pull spring bracket	1	
⑮	Pan head screw M3X8	2	
⑯	Pan head screw M4X5	2	
⑰	Pan head screw M5X25	1	Pull spring wire bracket
⑱	Door stopper	1	
⑲	Pan head drill screw 5X16	2	
⑳	Plate spring bracket	1	
㉑	Plate spring	1	
㉒	Stop force adjusting plate	1	
㉓	Cross recessed hexagon head screw M4X10	2	
㉔	Rail L=2200[L=3100]	1	
㉕	Pan head screw M5X16	8[11]	
㉖	Guide roller	1	
㉗	Hexagon head tapping screw 5X25 (Option)	2	Wood.For fisher plug
	Hexagon head screw M5X12 (Option)	2	For steel
㉘	Fisher plug 6X30 (Option)	2	Concrete, for mortar

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

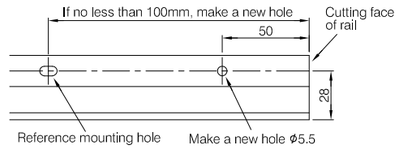
1 Installing a rail

① Cutting the rail, making a mounting hole

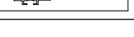
- Cut the rail to the inner width of the sash less 150mm.
- Cut off the door end according to the instructions
  - ・For the right hand opening type, cut off the right end as viewed from the front.
  - ・For the left hand opening type, cut off the left end as viewed from the front.



- If the distance between the cutting face of the rail and the reference mounting hole is no less than 100mm,make a new hole ϕ5.5mm at the position 50mm from the rail end.

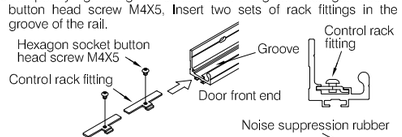


⚠ Caution
- When making any change in the rail, take care not to scratch the runway.

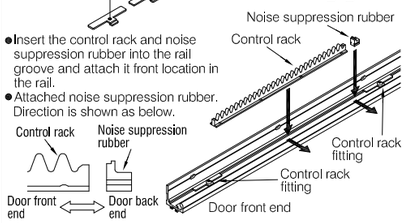


② Installing a control rack

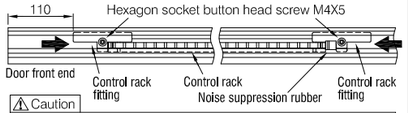
- Temporary tightening the control rack fitting with hexagon socket button head screw M4X5, Insert two sets of rack fittings in the groove of the rail.



- Insert the control rack and noise suppression rubber into the rail groove and attach it front location in the rail.
- Attached noise suppression rubber. Direction is shown as below.



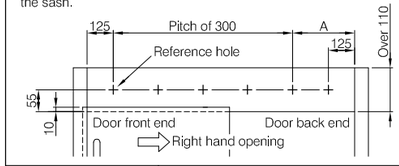
- Slide the control rack fitting on the rail, sandwiching the control rack and noise suppression rubber and fix the control rack fitting with hexagon socket button head screw. (Hex wrench 2.5mm)



⚠ Caution
- Be sure to tighten the screw correctly, To avoid an unusual sound and unusual control speed.
- Be sure to fix the control rack and noise suppression rubber without rattling. Failure to make an unusual sound.

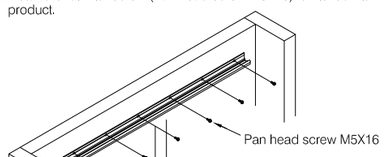
③ Setting rail mounting holes

- Tap holes (M5 pitch 0.8) horizontally at intervals of 300 with the hole 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 = 55mm (When the cover between the top frame and door is 10mm)
- If the dimension A in the drawing 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 than175mm, tap a hole at 125mm from the inside of the sash.



④ Installing the rail

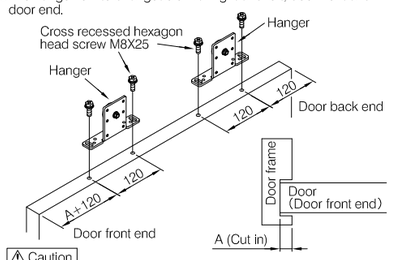
- Install the rail with screw (Pan head screw M5X16) furnished with product.



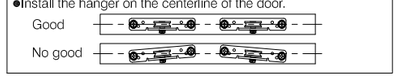
⚠ Caution
- When installing a rail, take care not to scratch the runway.

2 Installing the hanger

- As shown in the drawing, install the hanger.
- The hanger is interchangeable with right and left, door front and door end.

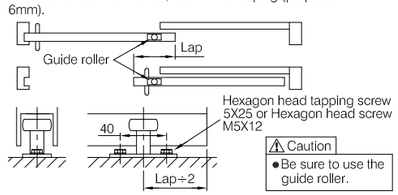


⚠ Caution
- Install the hanger on the centerline of the door.



3 Installing the guide roller (optional)

- Install the guide roller in the middle of the door lap.
- Install the guide roller so that the door becomes vertical with the floor.
- If floor is concrete or mortar, use the fisher plug (prepared hole 6mm).

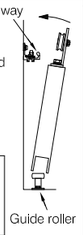


⚠ Caution
- Be sure to use the guide roller.

4 Mounting the door

① Mounting the door

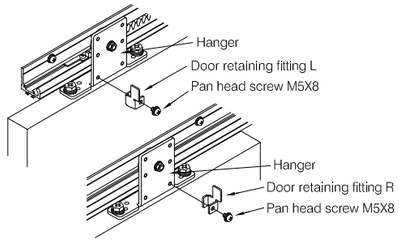
- Before mounting the door, wipe off the dirt from the rail runway.
- Match the door bottom to the guide roller, then suspend the door rollers and mount them onto the rail runway.
- Check that the door operates smoothly.
- Adjust the clearance between the door and jamb by varying the number of height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



⚠ Caution
- When mounting the door, take care not to scratch the rail runway.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail and other component.

② Installing the door retaining fitting

- Install the door retaining fitting in the door front hanger and door end hanger with screw (Pan head screw M5X8).

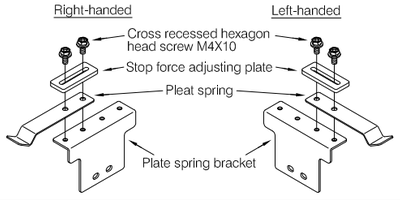


⚠ Caution
- Be sure to install the door retaining fitting, the door may come off.

5 Installing door stopper and stop device

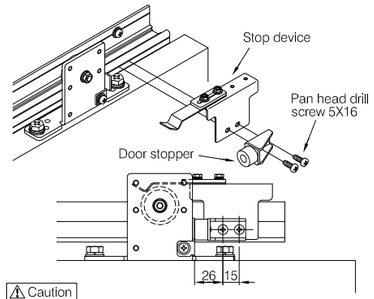
① Assembly the stop device

- Assembly the stop device, below the drawing.



② Installing door stopper and stop device

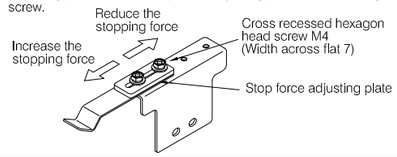
- Install the door stopper at the door stop position with screw (Pan head drill screw 5X16) .
- Tighten screw together with stop device and door stopper.



⚠ Caution
- Be sure to tighten screw, door stopper may come out of place.
- In case of the door open strongly, install the door stopper in center of the door.

③ Adjusting the stopping force

- Adjusting position of the stop force adjusting plate with the hexagon screw.



6 Installing the control device

The control device is interchangeable with right hand operation and left hand opretion .The orientation of the clutch gear determines whether it is right or left hand.

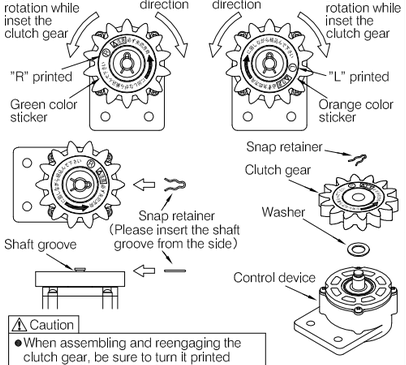
① Procedure for clutch gear

- Insert the washer into the shaft of the control devices.
- Insert the clutch gear follow the below instructions.

《If right-handed opening》
Make the green color sticker (R printed) face upwards, and then insert it while turning (follow the printed direction on the sticker) it.

《If left-handed opening》
Make the orange color sticker (L printed) face upwards, and then insert it while turning (follow the printed direction on the sticker) it.

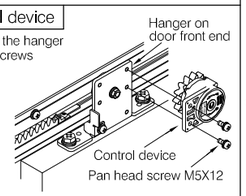
- Be sure to confirm the direction of clutch gear correctly, or control device will not work. Refer to control direction is below the drawing.
- Install the snap retainer in the groove at the tip of the shaft.



⚠ Caution
- When assembling and reengaging the clutch gear, be sure to turn it printed direction. If push roughly, the clutch gear may breakdown.

② Installing the control device

- Install the control device on the hanger on the door front end with screws (Pan head screw M5X12) furnished with the product.
- Install it with the door open by at least 60cm (where it does not engage with the control rack).

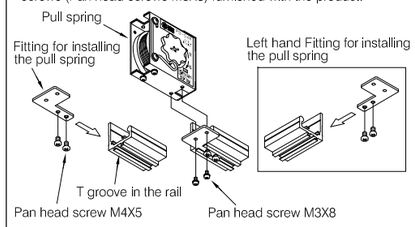


⚠ Caution
- Check the orientation of the control device (right- or left-handed). Be sure to orient it correctly, or the control will not work.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail or other component.

7 Installing a pull spring

① Installing a pull spring

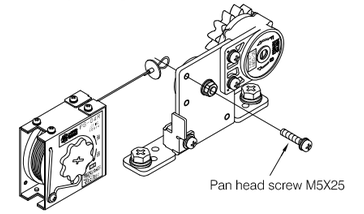
- Temporarily tighten the screws (Pan head screws M4X5) furnished with the product, on the fittings for installing the pull spring. Then insert them into the T groove in the bottom of the rail.
- Tighten the screws to fix the fittings.
- Install the pull spring on the fittings for installing the pull spring, with screws (Pan head screws M3X8) 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

- Attach the pan head screw (M5 X 25) on door front end hanger. Hook the wire of pull spring on the pan head screw.



8 Adjusting the closing force and closing speed

① Adjusting the closing force

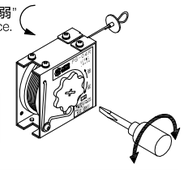
- If the closing force needs adjustment, turn the gear shaft with a screwdriver for adjustment.
- Be sure to make an adjustment as following instruction. (Also instruction is shown sticker on the component.)

<Adjustment direction>
Be aware that direction of rotate is different on left- handed opening or right-handed opening.

Right-handed: Strong "強" To increase the closing force. Week "弱" To decrease the closing force.
Left-handed: Strong "強" Week "弱"

<Adjustment range>
Be sure to adjustment within the limits of following instructions.

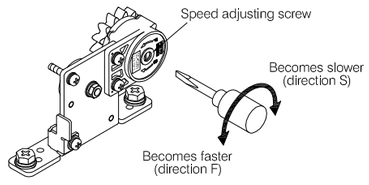
Model	PS-04
Strong	5 turn from factory setting
Week	3 turn from factory setting



⚠ Caution
- Over winding 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 sticker 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.



- If faster closeting speed is required, move the control rack to door front end side and readjust a control 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.

Installation is completely.

For 150kg, horizontal

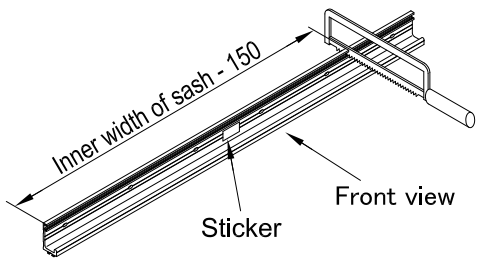
Installation Procedure for NSC-C1215

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

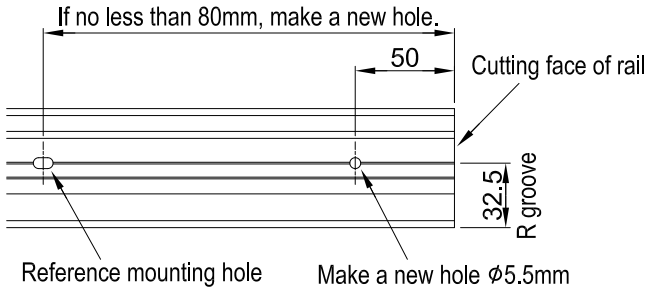
1 Installing a rail

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.

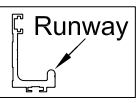


- If the distance between the cutting face of the rail and the reference mounting hole is no less than 80mm, make a new hole ϕ5.5mm for installing the rail at the position 50mm from the end.



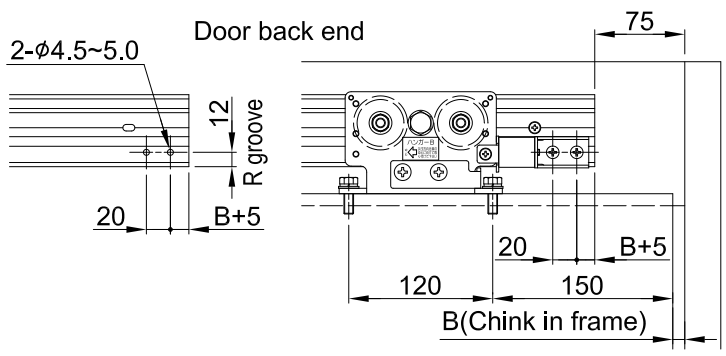
⚠ Caution

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



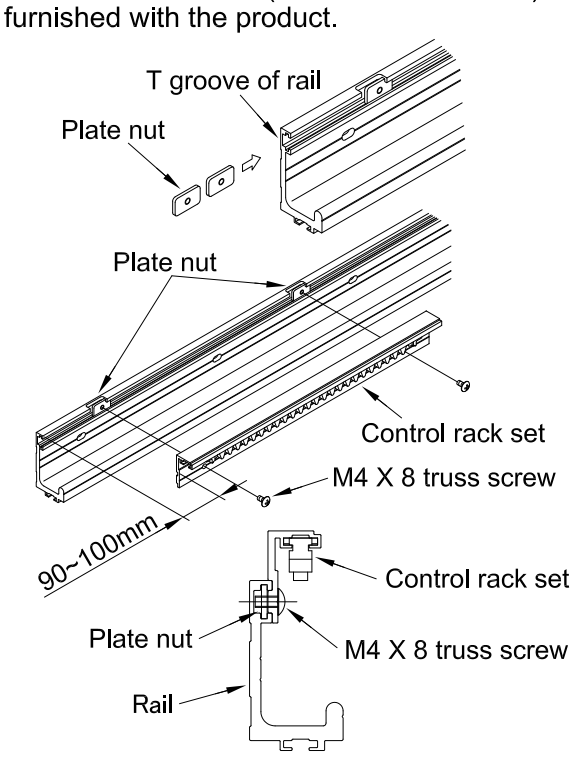
2) Drilling a hole for door stopper

- As shown in the diagram, drilling a hole (2- ϕ4.5~ϕ5.0mm) in end of rail.



3) 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.

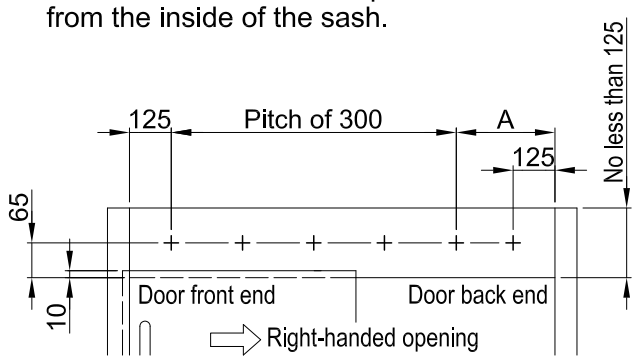


⚠ Caution

- 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.

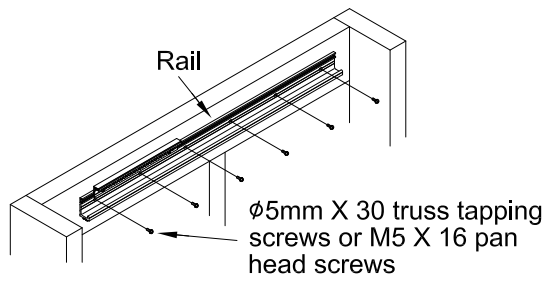
4) Setting rail mounting holes

- 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.



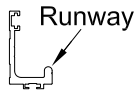
5) Installing the rail

- Install the rail with screws (ϕ5mm X 30 truss tapping screws or M5 X16 pan head screws)



⚠ Caution

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



2 Installing the hanger

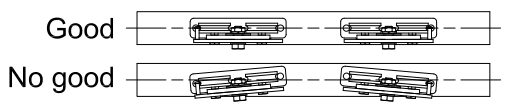
1) Making holes in the top of the door

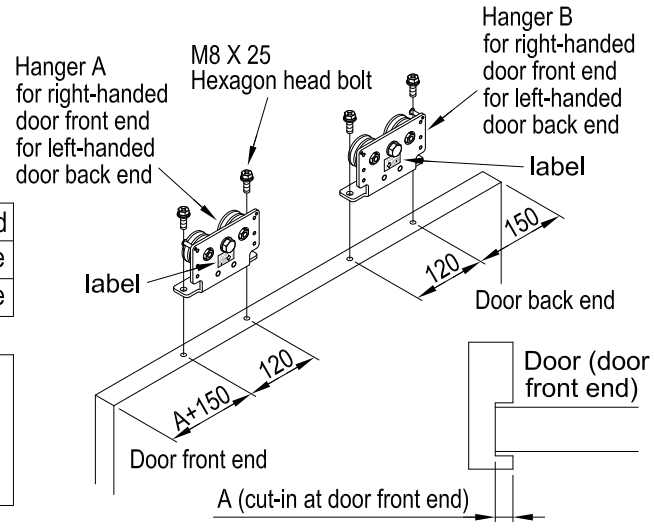
- As shown in the diagram, install the hanger A and hanger B.

	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

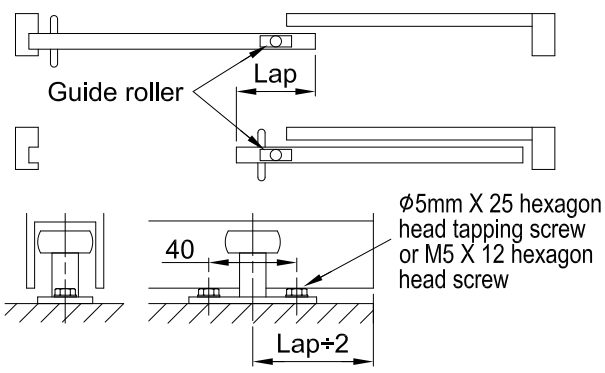
- Install the hanger on the centerline of the door.





3 Installing the guide roller (optional)

- Install the guide roller in the middle of the door lap.
- Install the guide roller so that the door becomes vertical with the floor.
- If floor is concrete or mortar, use the fisher plug (prepared hole 6mm).



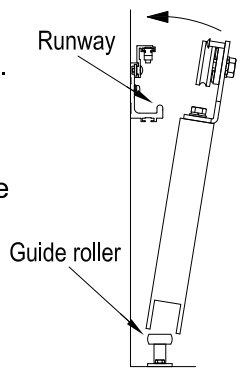
⚠ Caution

- Be sure to use the guide roller.

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 roller, 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.

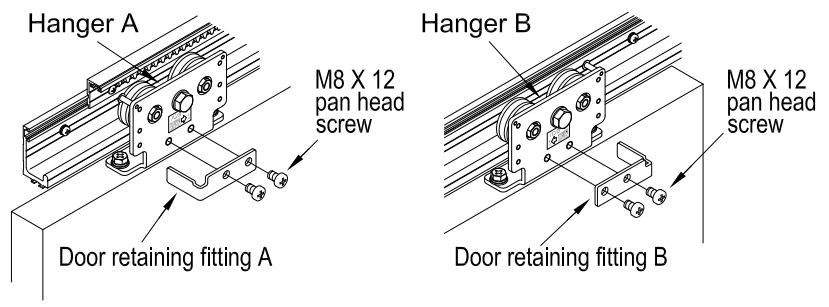


⚠ Caution

- When mounting the door, take care not to scratch the rail runway.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail and other component.

2) Installing the door retaining fitting

- Install the door retaining fitting in the hanger A and B with screw (M8 X 12 pan head screw).



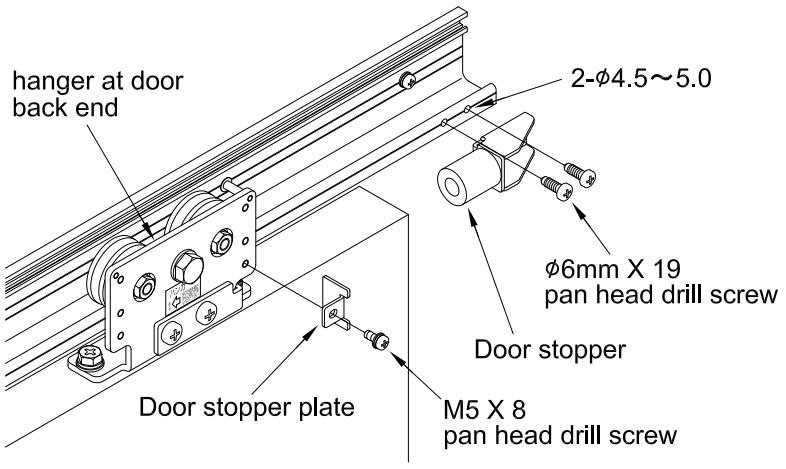
⚠ Caution

- Be sure to install the door retaining fitting, the door may come off.

Installation Procedure for NSC-C1215

5 Installing the door stopper

- Install the door stopper plate on the hanger on the door back end with screws (M5 X 8 pan head screws)
- Install the door stopper in the rail runway.
- See the page 1 , 1 Installing a rail 2) Drilling a hole for door stopper

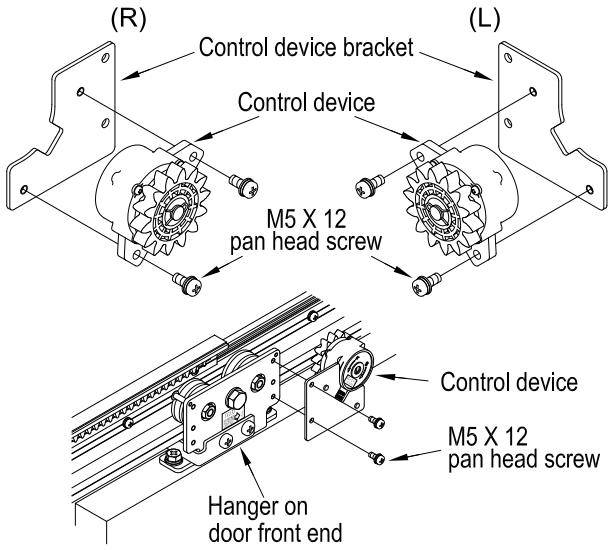


⚠ Caution

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

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).



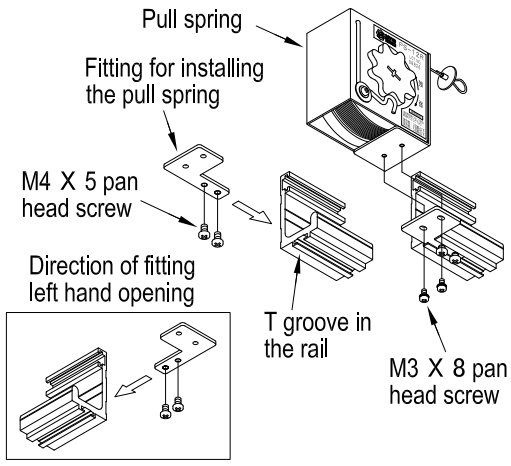
⚠ Caution

- 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 a pull spring

1) Installing a pull spring

- Temporarily tighten the screws (M4 X 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 X 8 pan head screws) furnished with the product.

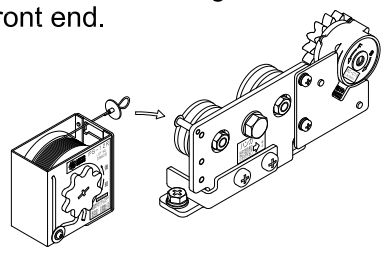


⚠ Caution

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

2) Setting the wire

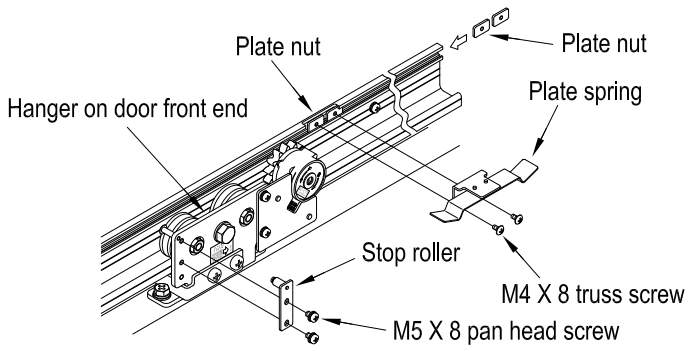
- Draw the wire of the pull spring, then hook it on the hanger on the door front end.



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 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.

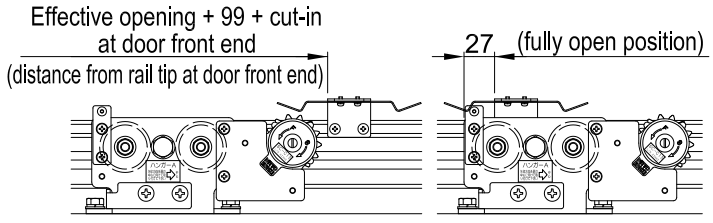


⚠ Caution

- 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.

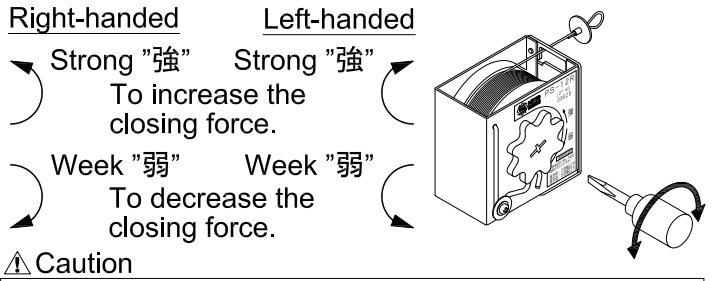


When the clutch gear is inserted or remoned, be sure to turn it as following instruction

9 Adjusting the closing force and closing speed

1) Adjusting the closing force

- If the closing force needs to be adjusted, turn the gear shaft with a screwdriver.
- Be aware that direction of rotation is different for left-handed opening or right-handed opening.

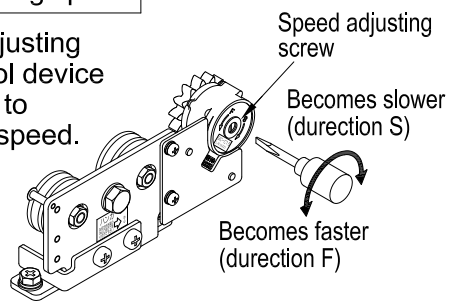


⚠ Caution

- Over winding 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 sticker 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.



- 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.
- Change of 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

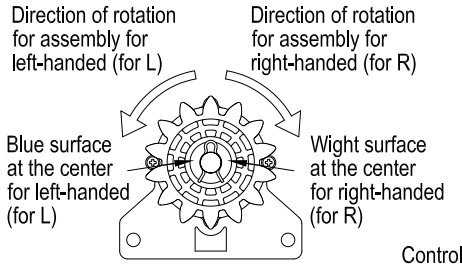
  Make the white surface (the R-stamped surface) at the center of the clutch gear face upwards, then insert it while turning it in the direction of the arrow for the right-handed opening type illustrated in the right-hand diagram.

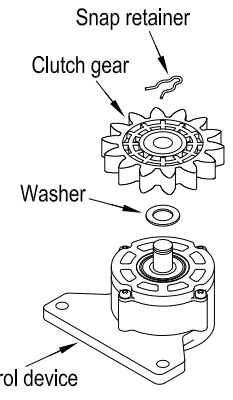
  If left-handed

  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.





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NITTO KOHKI Sliding Closer Installation manual Horizontal model NSC-C2525

Safety Precautions

Thank you for purchasing our product. Before using the product, please read this instruction manual carefully and abide by safety precautions. After reading, keep it on hand for quick reference.

《Safety Precautions》

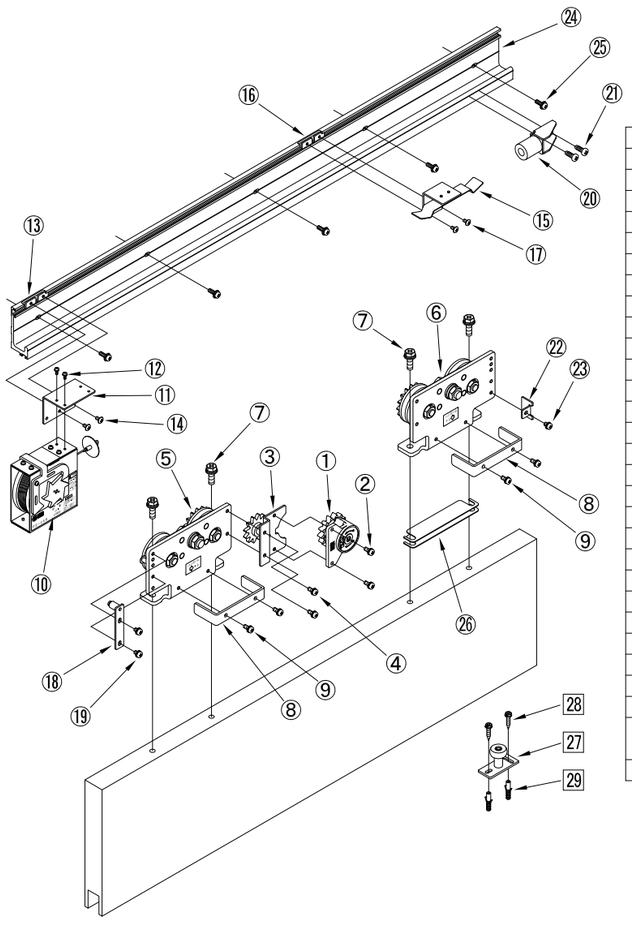
1. Do not use product for unspecified door dimensions or door weight
2. If the 'Control Device' of the sliding door closer becomes ineffective, the door could close vigorously with possible risk of injury. Should there be any oil leakage, component damage or ineffective control could occur, despite speed adjustment. Replace the control device promptly.
3. Guarantee and performance of the product cannot be upheld should the product be disassembled or remodeled in anyway.
4. Securely tighten the screws that mount the product .Failure to observe these precautions may cause product damage or accident.
5. Be sure to install the Door Retaining Fitting (part 5 below), Failure to observe this instruction may dismount the door with possible risk of injury.
6. Do not open the door strongly; Failure to observe this precaution may cause product damage or accident.
7. Be sure to install the doorstopper on the door back end.
8. Do not drop or strike any of the components. Failure to follow this precaution may cause a breakdowns
9. The closer incorporated in the product causes the door to close on its own. Therefore do not close the door with a strong force. Any such actions may cause the door to close vigorously, resulting in an unexpected accident or defect.
10. Take care not to let a child play with or bang 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 lose screws and other anomalies.

Parts details

(The product can be converted between the right- and left-handed opening types. This drawing shown represent a right-handed opening type.)



No.	Parts name	Quantity	Remarks
①	Control device	1	
②	Pan head screw M5X12	2	
③	Control device bracket	1	
④	Pan head screw M5X12	2	
⑤	Hanger A	1	
⑥	Hanger B	1	
⑦	Cross recessed hexagon head screw M8X25	4	
⑧	Door retaining fitting	2	
⑨	Pan head screw M5X12	4	
⑩	Pull spring	1	
⑪	Pull spring bracket	1	
⑫	Pan head screw M3X8	2	
⑬	Plate nut	2	
⑭	Truss screw M4X8	2	
⑮	Plate spring	1	
⑯	Plate nut	2	
⑰	Truss screw M4X8	2	
⑱	Stop roller	1	
⑲	Pan head screw M5X8	2	
⑳	Door stopper fitting	1	
㉑	Pan head drill screw ϕ6X19	2	
㉒	Door stopper plate	1	
㉓	Pan head screw M5X8	1	
㉔	Rail L=3100[L=4900]	1	
㉕	Pan head screw M5X16	11 [17]	
㉖	Height adjusting plate (t=1.0mm)	4	
㉗	Guide roller	1	Option
㉘	Hexagon head tapping screw ϕ5X25	2	Wood,For fisher plug
	Hexagon head screw M5X12	2	For steel
㉙	Fisher plug 6X30	2	Concrete, for mortar

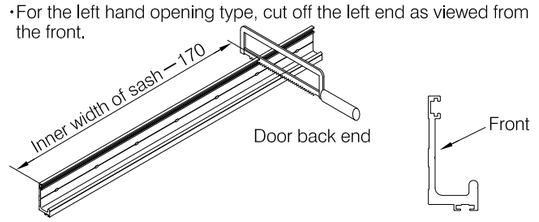
Installation

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

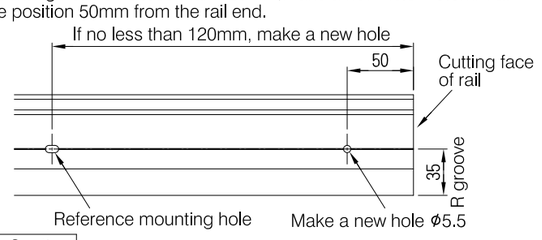
1 Installing a rail

①Cutting the rail , drilling a new mounting hole .

- Cut the rail to the inner width of the sash less 170mm.
- Cut off the door end according to the instructions
  - For the right hand opening type, cut off the right end as viewed from the front.
  - For the left hand opening type, cut off the left end as viewed from the front.

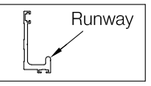


- If the distance between the cutting face of the rail and the reference mounting hole is no less than 120mm,make a new hole ϕ5.5mm at the position 50mm from the rail end.



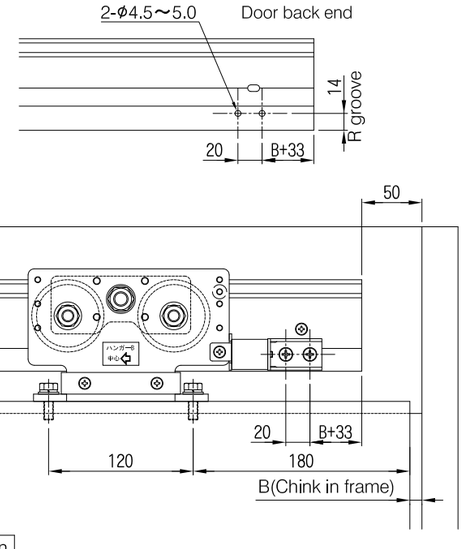
⚠ Caution

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



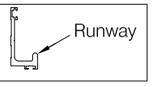
②Drilling a hole for door stopper.

- As shown in diagram drilling a two holes (4.5mm～5.5mm) in the rail.



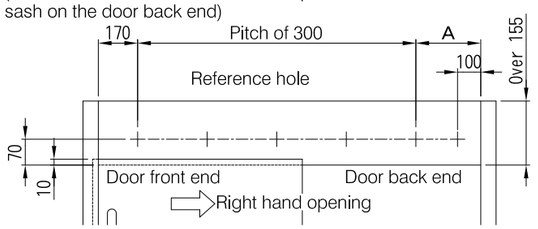
⚠ Caution

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



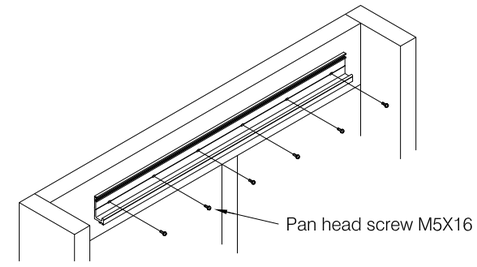
③Setting rail mounting holes.

- Tap a holes (M5,P=0.8) horizontally at intervals of 300mm with the hole specified below as the reference point.
  - Dimension from the inside of the sash on the door front end =170mm
  - Dimension from the bottom of the top frame of the sash =70mm (When the cover between the top of frame and door is 10mm)
- If the dimension A in the diagram below in no less than 170mm ,tap a hole at 100mm from the inside of the sash.
  (A:Dimension from the final hole at a pitch of 300 to the inside of the sash on the door back end)



④Installing the rail

- Install the rail with screws(M5x16 pan head screw).



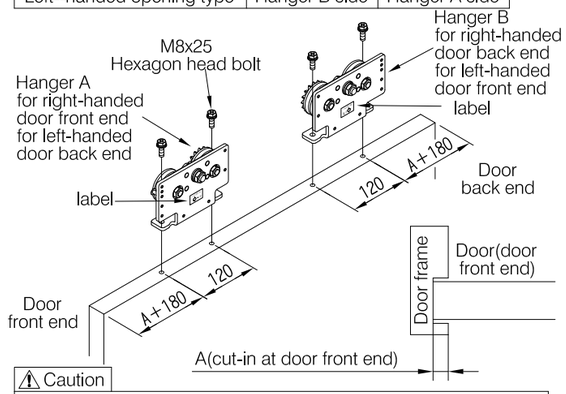
⚠ Caution

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

2 Installing the hanger

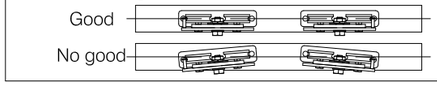
- Making holes in the top of door.
- As shown in the diagram, install the hanger A and B.

	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.



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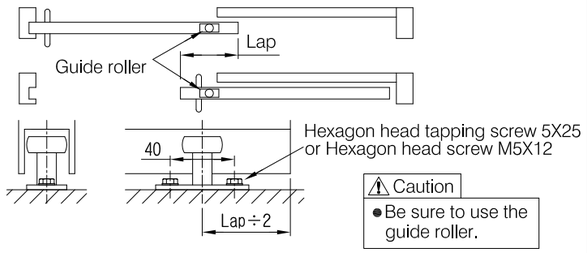
3 Installing the guide roller (optional)

- Install the guide roller in the middle of the door lap.
- Install the guide roller so that the door becomes vertical with the floor.
- In case of floor is concrete ,Use the fisher plug .(Twist drill is 6mm)

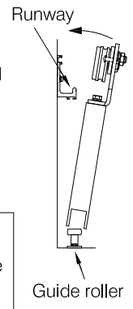


⚠ Caution
- Be sure to use the guide roller.

4 Mounting the door

① Mounting the door

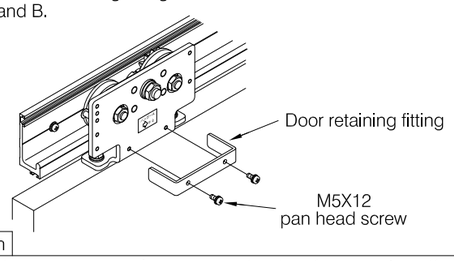
- Before mounting the door, wipe off the dirt from the rail runway.
- Match the door bottom to the guide roller, then suspend the door rollers and mount them onto the rail runway.
- Check that the door operates smoothly.
- Adjust the clearance between the door and jamb by varying the number of height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



⚠ Caution
- When mounting the door, take care not to scratch the rail runway.
- Be sure to install the control device after mounting the door. When suspending and mounting it, the door may strike and damage the rail and other component.

②Installing the door retaining screw.

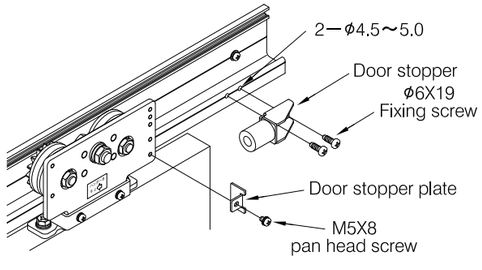
- Tighten the door retaining fitting with Pan head screw M5X12 in the Hanger A and B.



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

5 Installing the door stopper

- Install the door stopper plate on the hanger on the door back end with screws(M5 X 8 pan head screws)
- Install the door stopper in the rail runway.
  See the 1 Installing a rail ③ Drilling a hole for door stopper



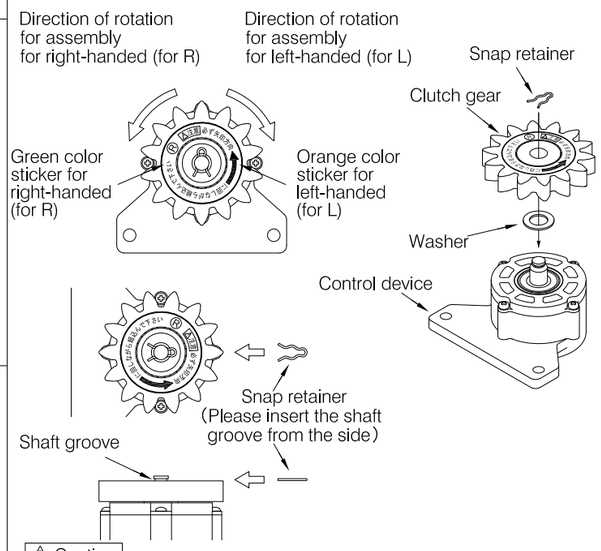
⚠ Caution
- Tighten the fixing screws securely, or door stopper may become out of plate.

6 Installing the control device

The control device is interchangeable with right hand operation and left hand opretion .The orientation of the clutch gear determines whether it is right or left hand.

① Procedure for clutch gear

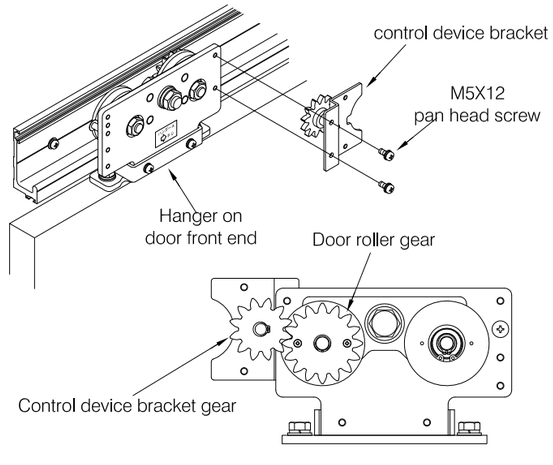
Insert the washer into the shaft of the control devices.
Insert the clutch gear follow the below instructions.
《If right-handed opening》
Make the green color sticker (R printed) face upwards, and then insert it while turning (follow the printed direction on the sticker) it.
《If left-handed opening》
Make the Orange color sticker (L printed) face upwards, and then insert it while turning (follow the printed direction on the sticker) it.
Be sure to confirm the direction of clutch gear correctly, or control device will not work. Refer to control direction is below the drawing.
Install the snap retainer in the groove at the tip of the shaft.



⚠ Caution
- When assembling and reengaging the clutch gear, be sure to turn it printed direction. If push roughly, the clutch gear may breakdown.

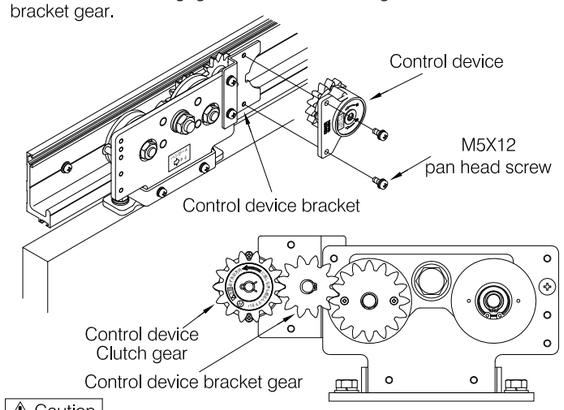
②Installing the Control device bracket

- Install the control device bracket with M5X12 Pan head screw on the door front end hanger.
- Be sure to correct engagement Hanger gear and Control device bracket gear.



③Installing the control device

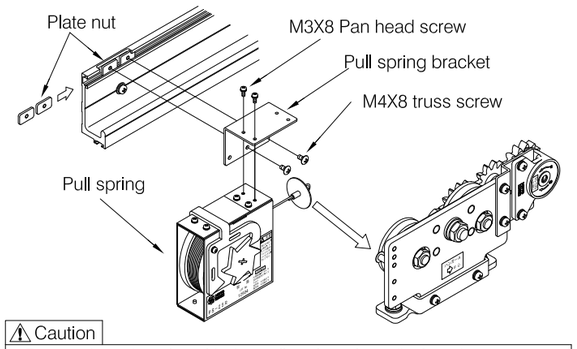
- Install the Control device on the Control device bracket with screw (M5X12 Pan head screw)
- Be sure to correct engagement Control device gear and Control device bracket gear.



⚠ 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 Pull spring

- Install the Pull spring bracket on the Pull spring with screw (M3X8 Pan head screw)
- Insert the pleat nut in the T groove in the rail, Then install Pull spring bracket with the screw (M4X8 truss screw)
- Hook the wire to the Door front hanger.
- **The pull spring can be converted to the right hand and left hand operation.Be sure to confirm the sticker is in front.**

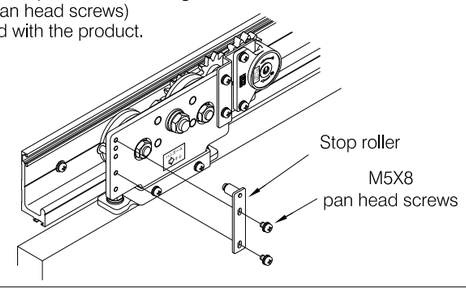


⚠ Caution
- Do not draw the wire with the pull spring alone (before the installation).
  Any such practice might scratch the wire.

8 Installing the Stop device

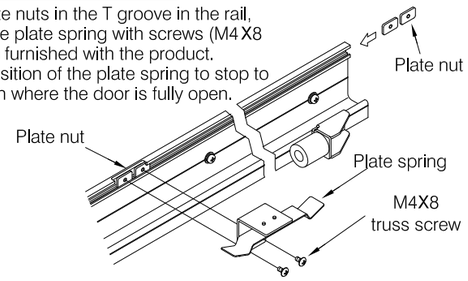
①installing the stop roller

- Install the stop roller on the hanger on the door front end with screws (M5X8 pan head screws) furnished with the product.



②Installing the plate spring

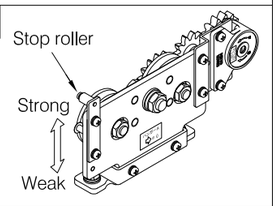
- Insert the plate nuts in the T groove in the rail, then install the plate spring with screws (M4X8 truss screws) furnished with the product.
- Adjust the position of the plate spring to stop to at the position where the door is fully open.



⚠ Caution
- Be sure to use the specified screws furnished with the product. Using any unspecified screw may cause it to interfere with another component.

③Adjusting the stopping force.

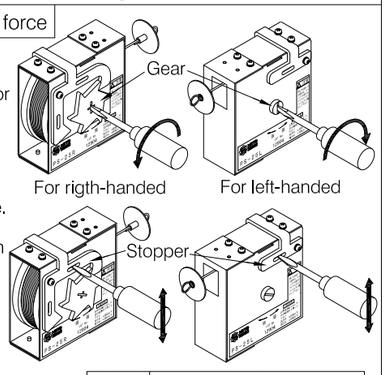
- Move the stop roller up and down to adjust the stopping force.
  ・Increase the stopping force : Upward the stop roller
  ・Reduce the stopping force : Downward the stop roller



9 Adjusting the closing force and speed

①Adjusting 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 "強(Strong)" => to increase the closing force.
  Unlocked the stopper,turn it in the direction of "弱(Weak)" => to decrease the closing force.



<Adjustment range>
Be sure to adjustment within the limits of following instructions.

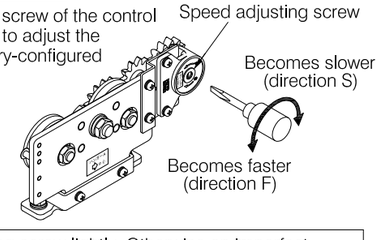
Model	PS-25
Strong	4 turn from factory setting
Weak	4 turn from factory setting

- Be sure to confirm the pull spring stopper is hooked with gear.

⚠ Caution
- Over winding 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 sticker on the component.

②Adjusting 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.)



⚠ 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.

Installation is completely.