

Automatic Screw Feeder

自動ネジ供給機

NJR Series

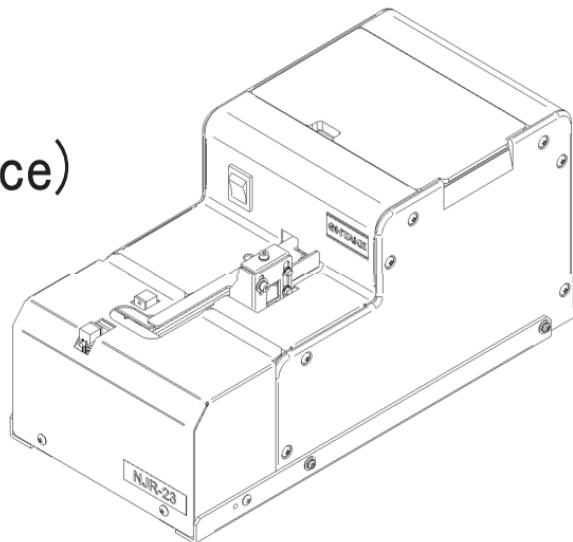
Operation manual(Maintenance)

- Read these instructions for the proper use of this machine.
- After having read these instructions, keep them in a convenient place so you or the operator can refer to them whenever necessary.

ATTENTION : www.ohtake-root.co.jp is the only web site associated with our company.
We do not have any branches in China.

各位顾客请注意! : 「www.ohtake-root.co.jp 是敝司唯一的官方网站,
目前, 敝司在中国没有办事处与所谓的中国官网。」

注意! : www.ohtake-root.co.jp が当社唯一の HP アドレスです。
弊社の名を騙る偽サイトにご注意下さい。現在、当社は中国国内に支店はございません。



NJR1MAE02bM

Contents

1. OVERVIEW OF THIS MACHINE-----	1	7. MAINTENANCE-----	16
2. BEFORE USE -----	1	8. REPLACING PARTS-----	18
3. OPERATING PRECAUTIONS-----	2	9. TROUBLESHOOTING-----	23
4. NAMES OF MACHINE PARTS-----	6	10. SPECIFICATIONS-----	26
5. ADJUSTMENTS AND CHECKS BEFORE USE-----	7	11. EXTERNAL DIMENSIONS -----	28
6. OPERATING INSTRUCTIONS-----	12	12. WARRANTY-----	29

1. OVERVIEW OF THIS MACHINE

Thank you very much for selecting our Automatic Screw Feeder “NJR Series”.

This machine can line up screws (Type M2 - M5) and supplies them one by one to an automatic machine to help streamline screw tightening.

Different sizes of screws can be used by changing the rail, escaper and passing plate.

It can be used wherever there is a power source for an AC adapter.

2. BEFORE USE

Please check for the following accessories before operating the machine.

- * Operation Manual 1 copy
- * Hexagonal Wrench 1 piece
- * AC Adapter 1 unit
- * Ground wire 1 piece
- * Screwdriver 1 piece

※ The design, performance and specifications are subject to change without prior notice for the sake of improvement.

3. OPERATING PRECAUTIONS

This manual contains safety alert symbols and signal words to help prevent injuries to the user or damage to property.

◎ Indications



WARNING

This indicates there is a chance of death, serious injury or fire if the instructions are not followed.



CAUTION

This indicates there is a chance of personal injury or damage to property if the instructions are not followed.

◎ Symbols indicating type of danger and preventative measures



Prohibited operation. Never do this!



Do not disassemble, modify or repair.



Do not touch with wet hands.



This indicates to stop operations.



Unplug power supply from wall outlet.



General caution.

Attach the ground wire by loosening the screw near the mark  of the equipment.



the bottom of the main body

WARNING

-  Do not disassemble the AC adapter as there is a risk of electric shock, fire or malfunction.
-  Do not damage, alter or change the power cord. Do not place heavy objects on the cord.
 Do not pull hard on the cord or twist the cord as it could be damaged, thereby causing a risk of fire or electric shock.
-  Do not handle the AC adapter with wet hands as it could cause an electric shock.
-  When using an outlet with AC100 ~ 240V, don't overload the electrical circuit.
 Do not modify or remodel this machine as this may cause a fire or electric shock.
-  Do not operate this machine near flammable liquids, gasses or materials as there could be a risk of fire or explosion.
-  Stop operating the machine and unplug the AC adapter from the wall outlet when you detect overheating, smoke, a pungent odor or any other unusual condition, as there may be a risk of fire or electric shock. Contact the dealer, from which you purchased the machine and have it examined and repaired.
-  In the case of a thunderstorm, stop operating the machine, turn off the power and unplug the AC adapter from the wall outlet. If there is lightning and thunder nearby, move away from the machine and do not touch it or the AC adapter.
After the thunder stops, and when it is safe to do so, check the machine.
If there is any abnormality, contact your dealer.
-  When performing maintenance, changing parts or when you sense an abnormality in the machine, turn the power off and pull the AC adapter from the wall outlet.
In addition, there are parts that become hot in the circuit board. When performing maintenance around the circuit board, turn off the power for at least 5 minutes before performing work. There is a risk of burns.

CAUTION

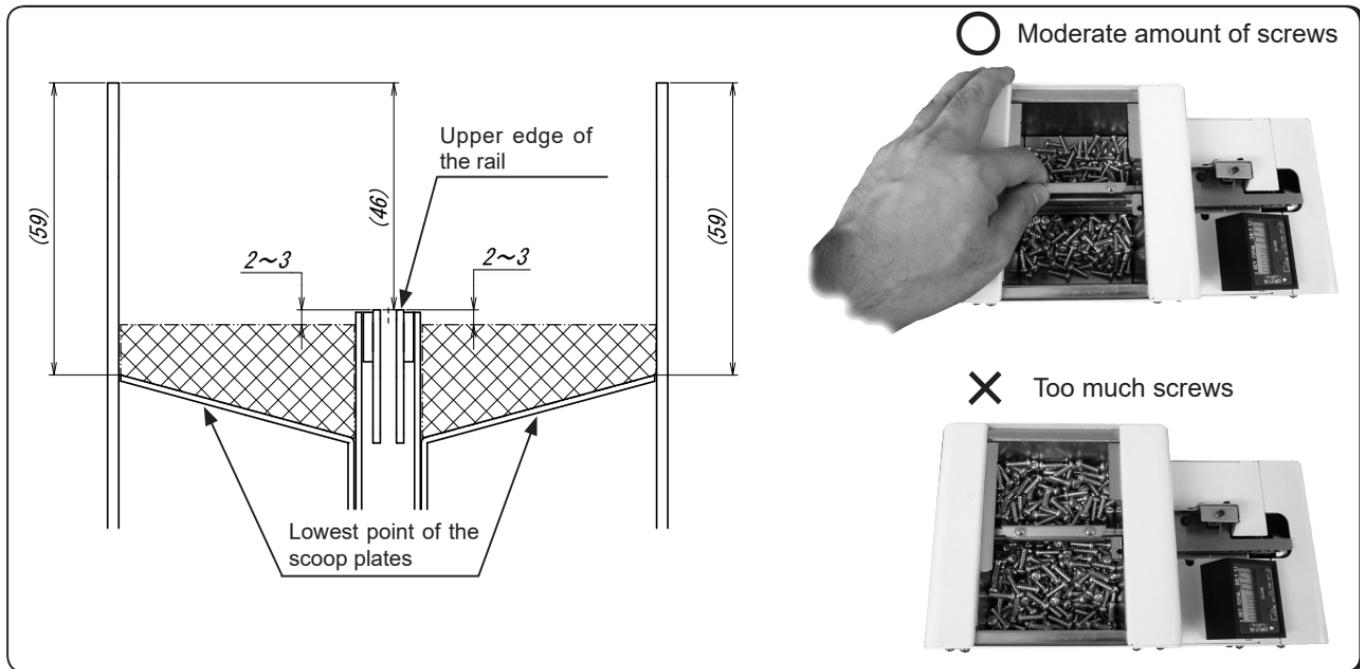
-  Use only the AC adapter supplied with this machine otherwise it may result in a fire or electric shock.
-  Do not install this machine in an unstable location otherwise it may fall causing damage or injury.
-  Always operate the machine with the upper cover in place, otherwise it may result in injury.
-  Do not allow any foreign material to enter the machine while in operation.
-  Do not put your fingers into the machine while in operation, otherwise an injury will result.
-  Do not operate this machine in overly humid or dusty conditions.
-  Keep the plug socket clean at all times otherwise it may cause a fire or electric shock.
-  When moving the machine, always disconnect the AC adapter from the wall outlet or it may result in damage to the cord, or cause a fire or electric shock.
-  Turn off the machine and unplug the AC adapter from the wall outlet during closing hours or if the machine will be unused for any extended period of time.
-  When moving the machine, be sure to hold it with both hands and be careful not to drop it. Dropping the machine at your feet may cause injury.
-  Do not operate the machine with tension on the AC adapter cord. Keep the cord loose and untangled.
-  Do not bend, alter or damage the rail. Do not apply any oil. It is recommended that the user clean the rail periodically.
-  Do not use any screw that is out of the specified range nor any screw that is oily or dirty.
-  When picking up screws, do not exert excessive force or shock to the screws.

Note : About the screws stock limit

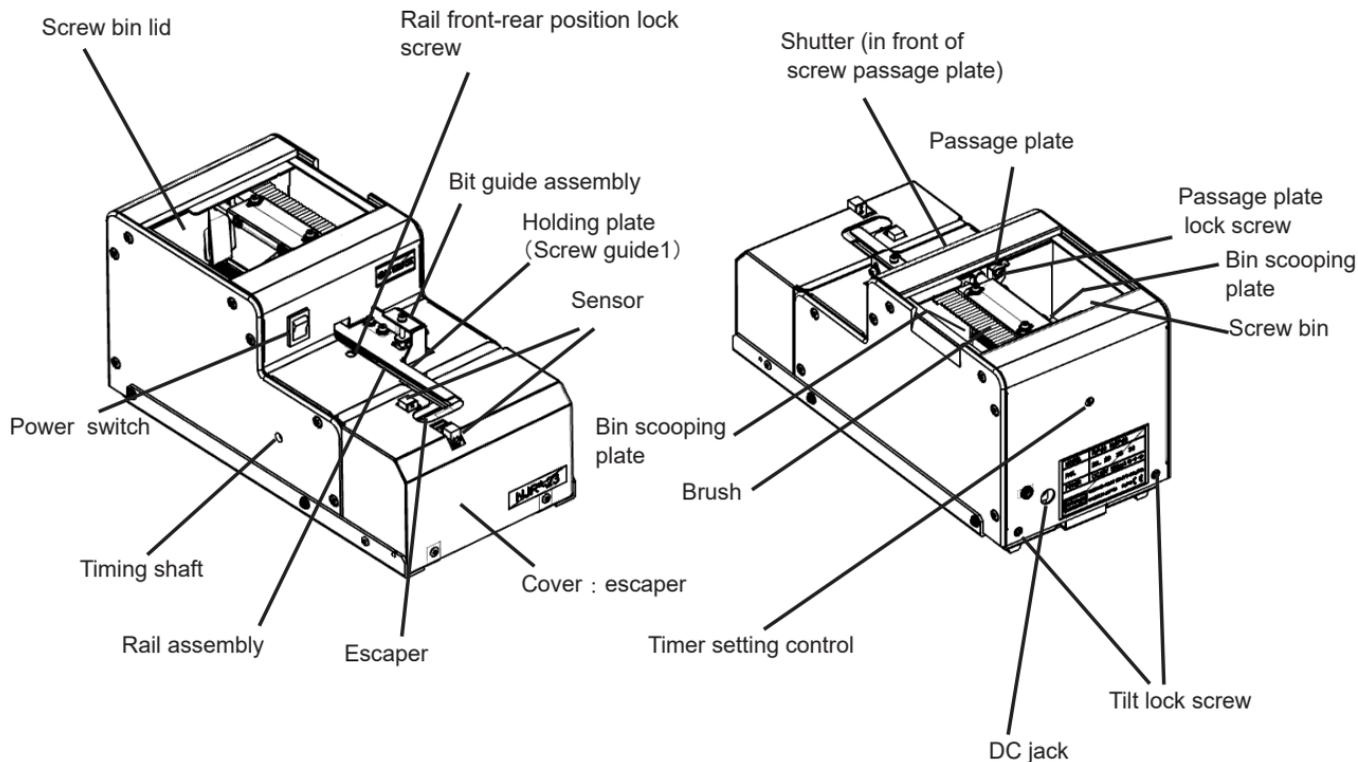
CAUTION !

If too much screws are placed into the storage chamber of the feeder, it may affect the process of screw feeding, or cause the machine to be overloaded and malfunction.

Please refer to the diagram below and carefully adjust the screw level to be 2 ~ 3mm below upper edge of the rail.
(When the scoop plates are at the lowest point.)



4. NAMES OF MACHINE PARTS



5. ADJUSTMENTS AND CHECKS BEFORE USE

5-1. Confirming the Machine's Model Number

Before using this machine, verify that the model matches the screw size to be used.

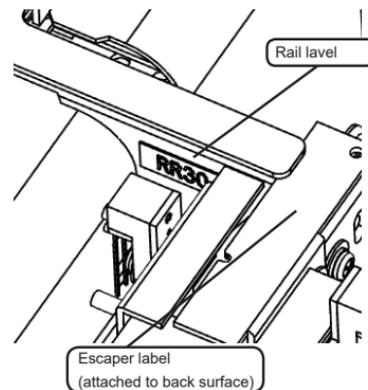
To confirm the model number, remove the escaper cover and note the labels attached to the rail assembly and escaper. The identification label marking is in RR** form.

This machine can be converted to accept a different screw size by replacing the rail assembly, escaper, and passage plate. When you replace component parts, verify the actual screw size.

Type	Model number	Screw nominal diameter	Exchange Kit number	Rail model number	Escaper model number	Passage plate model number
NJR-23	NJR-2320	φ2.0	RR20SET	RR20	E20	W2320
	NJR-2323	φ2.3	RR23SET	RR23	E23	W2323
	NJR-2326	φ2.6	RR26SET	RR26	E26	W2326
	NJR-2330	φ3.0	RR30SET	RR30	E30	W2330
NJR-45	NJR-4535	φ3.5	RR35SET	RR35	E35	W4540
	NJR-4540	φ4.0	RR40SET	RR40	E40	
	NJR-4550	φ5.0	RR50SET	RR50	E50	W4550

NOTE: Replacement rails, escapers, and passage plates are available as options.

In the Exchange Kit ordered separately, rails, escapers and passage plates are included.



This machine is factory adjusted with pan-head screws prior to shipment. If readjustments are needed to match the applied screw, complete the following check/adjustment procedures before using this machine.

- Checking and adjusting the brush
- Checking and adjusting the holding plate (screw guide 1)
- Checking and adjusting the passage plate
- Checking and adjusting the rail assembly and escaper components



CAUTION Before performing any check/adjustment procedure, turn off the power switch

5- 2. Checking and Adjusting the Brush

Check the height of the brush. Ensure that the brush check/adjustment procedure is completed while the brush is placed in a horizontal position as shown at right. To place the brush in a horizontal position, rotate the timing shaft with the Allen wrench attached with the machine.

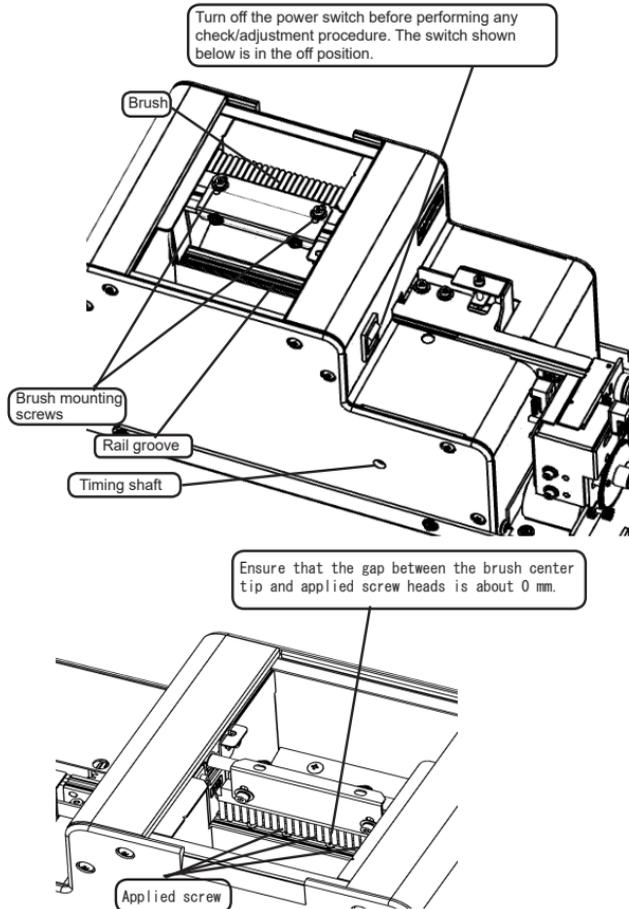
Please prepare the screws to be used. Drop a few of them into the rail groove, and check and adjust the brush height as directed below.

After the brush is placed in a horizontal position as shown below, rotate the brush. When the resultant gap between tip of the brush and applied screw heads is approximately 0 mm, no adjustments are needed.

If any adjustments are needed, perform the following procedure. Loosen the brush mounting screws.

Make adjustments so that the gap between tip of the brush center and applied screw heads is approximately 0 mm. In this instance, avoid lowering the brush too much. After completion of adjustments, tighten the brush mounting screws.

After the brush is properly adjusted, rotate it again to verify that it smoothly moves without any obstruction.

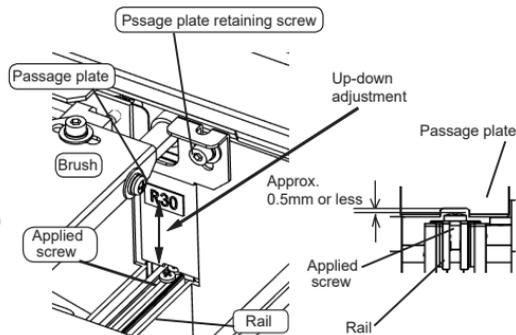


5- 3. Checking and Adjusting the Passage Plate

Drop few screws into the rail groove. Slide the screws to the passage plate section and check or adjust the passage plate height. Check that the clearance between the passage plate upper end and the screw heads is not greater than about 0.5 mm and that the screws can pass the passage plate.

If the above requirements are not met, repeat the following adjustment procedure. Loosen the passage plate retaining screw. Adjust the passage plate up or down to reduce the clearance between the passage plate upper end and screw heads to about 0.5 mm or less and allow the screws to pass the window.

After completion of adjustment, tighten the passage plate retaining screw. If the applied screw has a relatively short shank, fine adjustments are needed. For screws having a relatively long shank, however, coarse adjustments will suffice.



5-4. Checking and Adjusting the Holding Plate (Screw Guide 1)

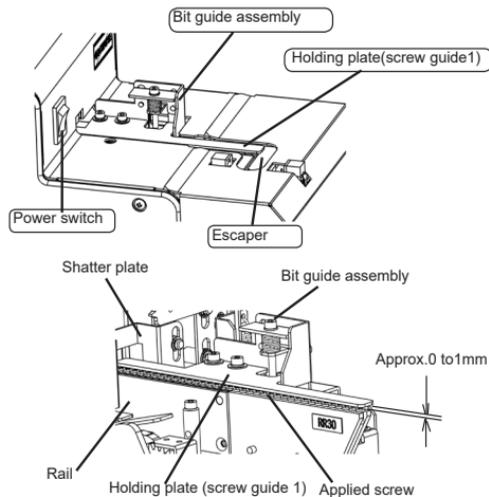
Drop about 10 applied screws into the rail groove.

Tilt this machine or operate it so that the screws are shifted to the escaper section.

If the shutter is closed or there is no clearance between the holding plate (screw guide 1) and screw heads, the screws cannot move. The screws can move when the shutter is open with an adequate clearance provided between the holding plate (screw guide 1) and screw heads.

When the clearance is 0 to 1 mm, the holding plate (screw guide 1) height needs no adjustment.

NOTE: If the escaper section captures a screw and brings the vibration to a stop immediately, adjust the timer setting control on the rear of the unit.



If the holding plate (screw guide 1) height needs to be adjusted, proceed as directed below.

Tilt this machine or operate it so that the screws are delivered to the escaper section. If there is no clearance between the holding plate (screw guide 1) and screw heads, the screws cannot move. The screws can move while the shutter is open with an adequate clearance provided between the holding plate (screw guide 1) and screw heads.

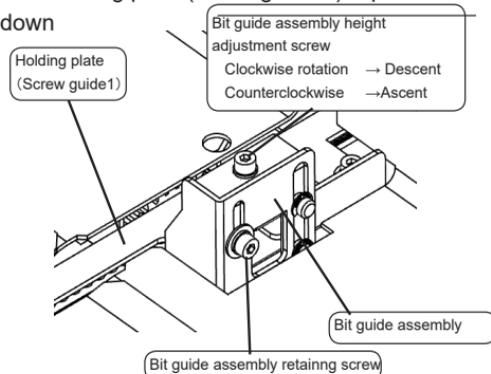
If the screws do not move to the escaper section, loosen the bit guide assembly retaining screw, and rotate the bit guide assembly up-down adjustment screw counterclockwise with the accessory Allen wrench to move the holding plate (screw guide 1) upward.

Adjust the holding plate (screw guide 1) height by rotating the bit guide assembly up-down adjustment screw to provide a clearance of 0 to 1mm between the holding plate (screw guide 1) and the heads of the applied screws.

When performing the above adjustment procedure, ensure that the gap between the holding plate (screw guide 1) and rail is parallel. Make the gap provided for the rear side of the holding plate is not narrower than the front. After completion of adjustments, be sure to tighten the bit guide assembly retaining screw.

If the applied screw has a relatively short shank, fine adjustments are needed.

For screws having a relatively long shank, however, coarse adjustments will suffice.

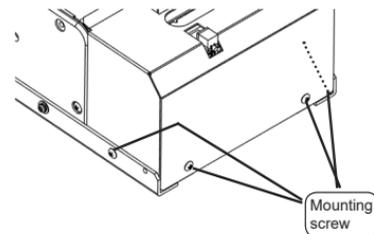


5- 5. Checking and Adjusting the Rail Assembly and Escaper Components

This machine is factory adjusted for pan-head screws prior to shipment. Under normal conditions, you do not have to readjust the rail assembly or escaper components.

However, if the applied screws have an extremely thin head or a smaller diameter, please perform a check/adjustment procedure. To check or adjust the rail assembly and escaper components, you have to remove the four mounting screws to take off the escaper cover.

NOTE: After the rail has been removed for cleaning or the rail or escaper has been replaced for a change in the applied screw size, be sure to adjust the escaper components and rail assembly. The replacement procedures are detailed in Section 6-3, Replacement procedures.



If the escaper operates in such a manner that the applied screws are not readily retained by the escaper, perform the following check/adjustment procedure.

●Check that the clearance between the rail and escaper is properly adjusted.

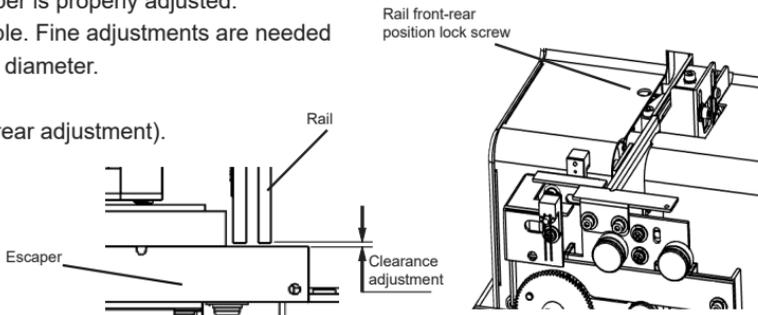
The clearance should ideally be as small as possible. Fine adjustments are needed particularly when the applied screws have a small diameter.

Adjustment procedure:

Adjust the rail assembly mounting position (front-rear adjustment).

NOTE 1: Make adjustments so that the rail end does not come into contact with the escaper when the rail vibrates.

NOTE 2: After adjustments, be sure to tighten the rail front-rear position lock screw.



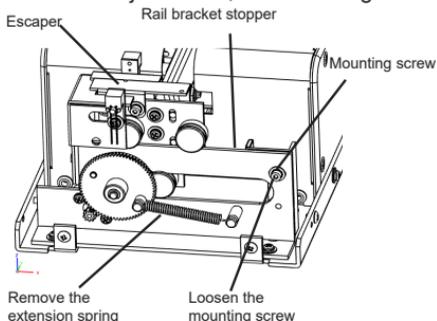
●Check that the rail groove is in alignment with the escaper groove.

When the escaper moves to receive an applied screw from the rail, it is ideal that the rail groove is in alignment with the escaper groove. Fine adjustments are needed particularly when the applied screw diameter is small.

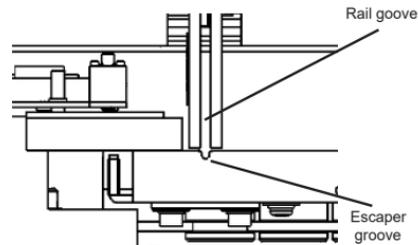
Adjustment procedure

Adjust the rail bracket stopper mounting position (left-right adjustment).

NOTE: After adjustments, be sure to tighten the mounting screw.



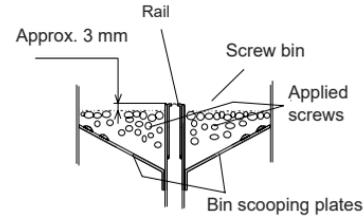
- Make adjustments so as to align the rail groove with the escaper groove.
- After adjustments, tighten the mounting screw and set the extension spring in position.



6. OPERATING INSTRUCTIONS

6- 1. Loading the Screws

Open the screw bin lid. While the bin scooping plates are at the lowest position, you turn off the power, and pour in the screws until they are piled up to about 3 mm below the rail upper surface. Ensure that the screws are equally distributed into the right-and left-hand bins.



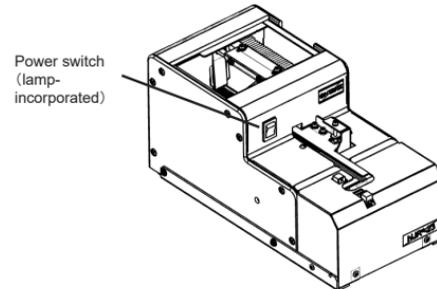
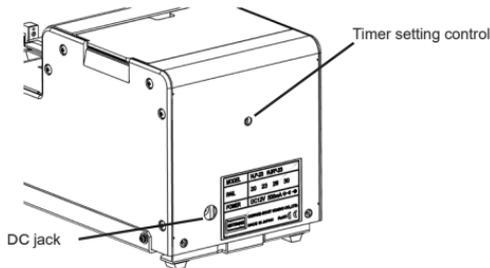
Do not to load the screws to excess.



6- 2. Operating this machine

Connect the accessory AC adapter plug to the DC jack on the rear of this machine. Connect the AC adapter to a power outlet. Turn on the power switch. The lamp incorporated in the power switch then comes on.

Turning on the power switch causes the drive motor to rotate normally, the bin scooping plates to move up and down, and the rail to vibrate. The escaper reciprocates at the same time. After a while, the loaded screws are sequentially transported along the rail groove and delivered to the escaper. The escaper picks a screw and retains it in the ready position. If you do not remove the screw from the removable position for a set period of time, this machine will come to a stop. The moment the screw is pick-up, this machine resumes operation.



Operational features

This machine is equipped with an overload protection circuit.

If a movable section is overloaded during a this machine operation , for instance, when a trapped screw or other article, or excessive screw is caught up inside the screw bins, the overload protection circuit will activate.

Function descriptions and remedies

Under normal conditions, the drive motor in this machine rotates in normal direction to feed the loaded screws continuously to the escaper section, thereby allowing you to obtain the screws successively. However, if any movable section is overloaded, the drive motor will rotate, in reverse direction for a predetermined period of time and then resumes its normal rotation. When the cause of the movable section overload is eliminated upon motor reversal, the motor reverts to normal rotation, resuming screw supply.

If the cause of the movable section overload is not eliminated upon motor reversal, the overload protection circuit performs the reverse rotation and normal rotation repetition cycle for a predetermined period of time and then shuts off the power supply to the drive motor. In this instance, however, the escaper continues operating.

When the power to the drive motor shuts off as above, turn off the power switch and then eliminate the cause of the overload manually. If, for instance, the screw bins are overloaded with screws, reduce the number of screws in the bins. If a screw or other article is trapped in a movable section, please remove it with tools. After the cause of the overload is eliminated, turn the power switch back on (power-on reset) and resume operation..

This machine is equipped with a timer.

You can adjust the timer setting according to the applied screw type.

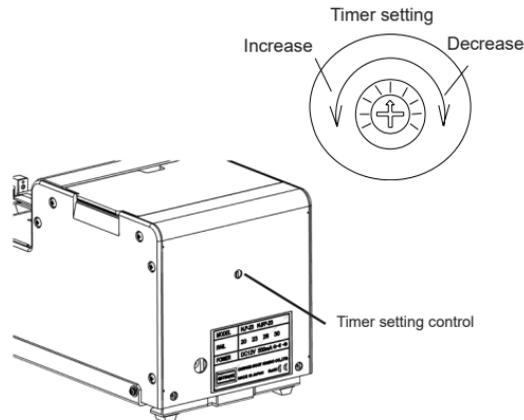
Function descriptions

The actual screw feeding speed varies with applied screw type.

This machine continues running while there is no screw in the screw removal area of the escaper section. It stops its operation when a predetermined period of time elapses after a screw is retained in the removal section. This duration of time can be adjusted with the timer setting control on the rear of this machine.

It is recommended that you decrease the timer setting when the feeding speed for the applied screw type is high and increase the setting when the feeding speed is slow.

When adjusting the timer setting, exercise care not to rotate the control beyond the its limit.



This machine is equipped with an external output signal cable.

The incorporated signal cable enables you to obtain a signal that indicates whether a screw is present in the escaper section screw removal area.

This signal wire shall be used with automativ assembly machines or external screw counters.

[Function]: Screw present : signal high (ON)

Incoming current: shall be limited to less than 100mA

****CAUTION:** Additional resistor is required on external circuit for regulating current **

[Capacity]: Max DC current: 100mA

External supply voltage : 5 ~24VDC (Max: 27VDC)

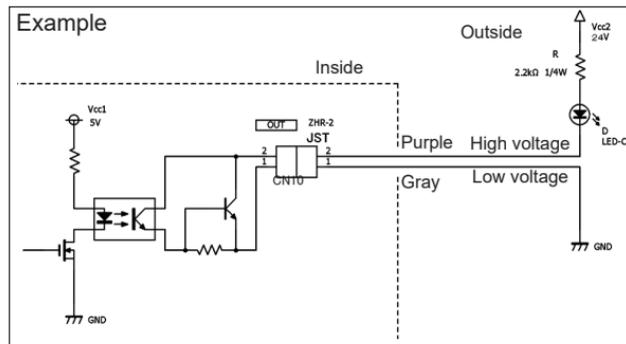
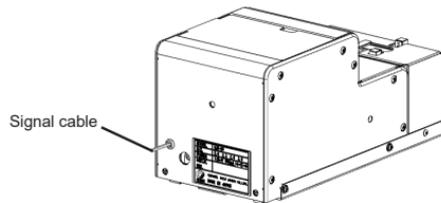
[Caution]: Please keep the length of output signal wire less than 3m.

* The purple wire functions as signal output high (Collector end), with the gray wire as common (Emitter end)

Purple line--->Signal line (OFF when no screw is present)

(On when a screw is present)

Gray line --->Common line



This machine is equipped with a tilt mechanism.

When the screw feed speed is low, you can install this machine in a tilted position.

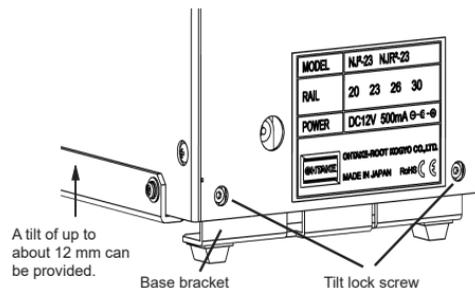
Descriptions

Loosen the tilt lock screws.

Pull out the base bracket from the rear of this machine and fix it in an appropriate position.

After this machine is tilted in this manner, make sure that it is steady.

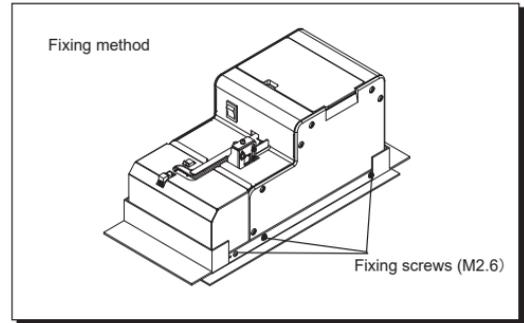
Do not tilt this machine beyond the capacity of the tilt mechanism.



Installation with Robotic System

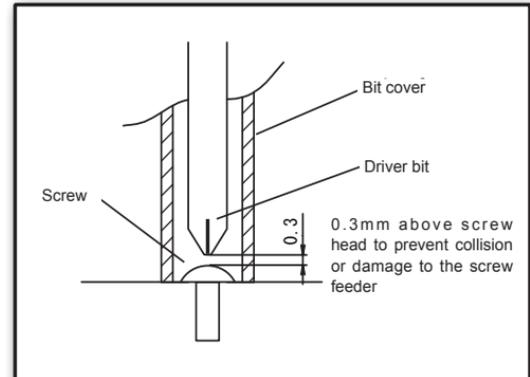
When installed with a robotic assembly, the screw feeder shall be fastened by lower edges of the cover. (Please refer to diagram on the right side) Fastening screws on bottom edge of the cover can be used for this purpose as well.

In addition, if the rubber supports shall be replaced with fastening assemblies
When using the fastening screw hole in the lower part of the feeder shown in the figure on the right, please keep length of the screws less than 8mm going inside the machine, in order to prevent damage to internal mechanism of the screw feeder.



Robotic Operations

When the screw feeder is used with an automatic assembly system, in order to avoid contacts between screw driver and screw feeder, please set the lowest point of the bit at least 0.3mm above the screw, so that contact or collision of the driver bit and screw feeder can be avoided.



7. MAINTENANCE

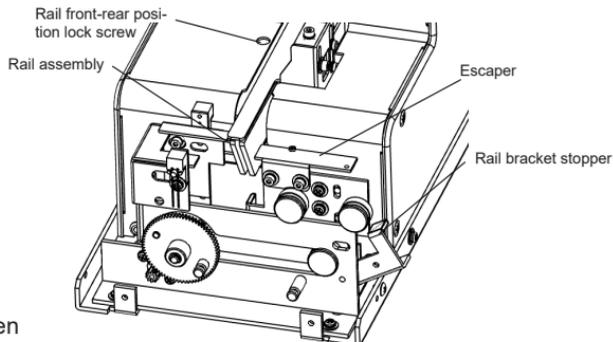
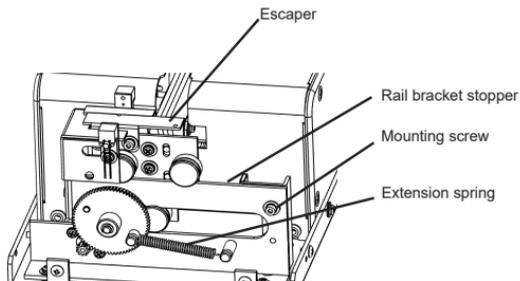


CAUTION

Before performing any maintenance, turn off the power switch and remove all the loaded screws from this machine.

7- 1. Cleaning the Rail and Rail Guide Wall

When the rail groove is soiled, the screw feeding speed may become lower. If such a situation is encountered, wipe the rail groove clean with a thin, clean cloth moistened with alcohol.



If the rail groove is heavily soiled, remove the rail assembly and then perform cleaning.

Remove the escaper cover.

Remove the extension spring.

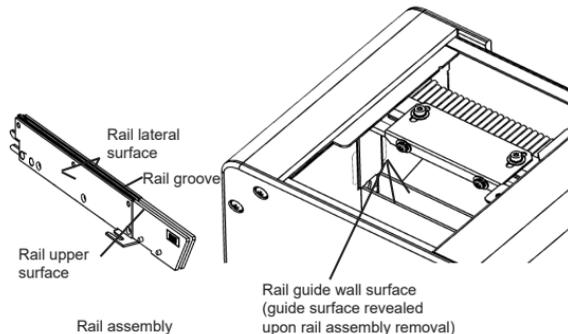
Remove the rail bracket stopper mounting screw.

Rotate the rail bracket stopper to move the escaper to the right.

Loosen the rail front-rear position lock screw and then pull the rail assembly forward and out.

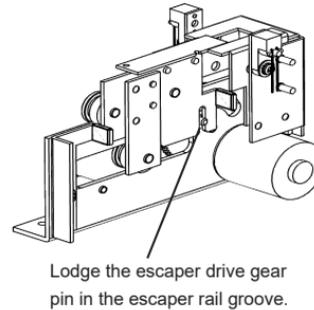
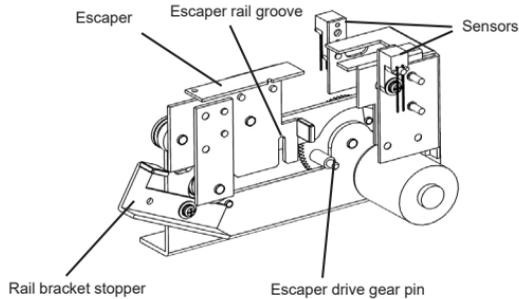
With a thin, clean cloth moistened with alcohol, wipe clean the rail groove and upper and lateral surfaces of the rail assembly.

With a thin, clean cloth moistened with alcohol, wipe clean the rail guide wall surface, which is revealed upon rail assembly removal.



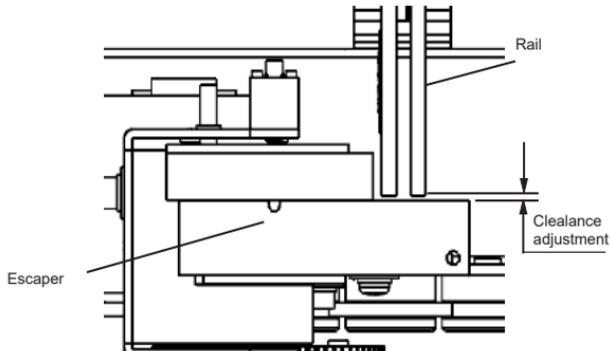
7- 2. Installing the Rail Assembly and Escaper Components

After cleaning, reassemble the rail section by reversing the rail removal procedure. Be sure to lodge the escaper drive gear pin in the escaper rail groove as shown on right.

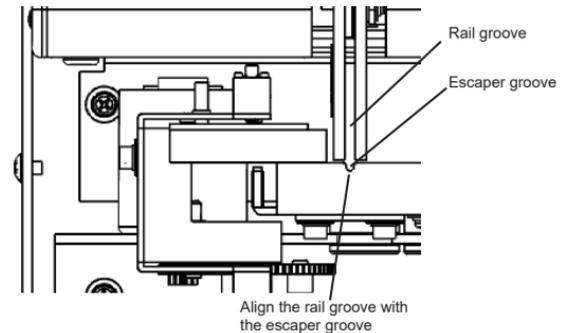


Complete rail assembly installation and escaper position adjustments as indicated on page 11.

- Adjusting the clearance between the rail and escaper



- Aligning the rail groove and escaper groove



8. REPLACING PARTS

● Replacing the rail assembly

The rail assembly of this machine can easily be replaced.

If the loaded screws do not smoothly feed after cleaning or if you intend to use a different screw diameter, replace the rail assembly.

For the replacement procedure, refer earlier section on cleaning.

● Replacing the passage plate and escaper

This machine allows you to change the screw diameter setup by replacing associated components.

(this change can be made even if you do not change this machine type).

To change the screw diameter, you have to replace the passage plate and escaper in addition to the rail assembly.

To replace the passage plate, remove its retaining screw.

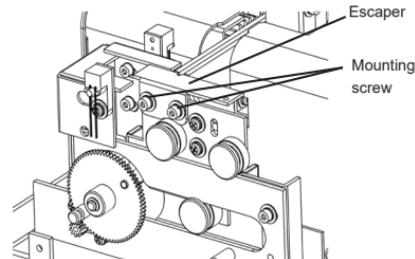
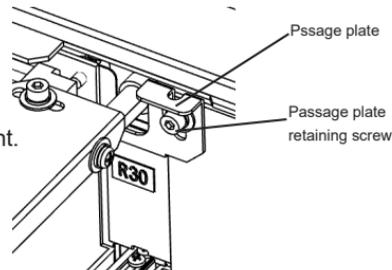
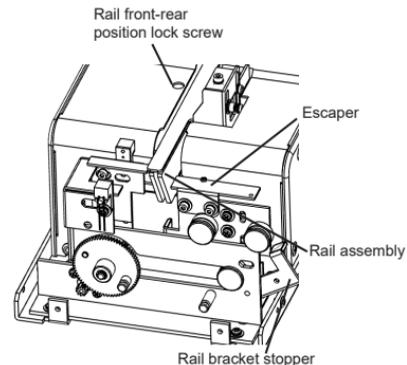
Replace the passage plate in such a manner that the brush is positioned as shown at right.

Exercise care not to lose the retaining screw.

To replace the escaper, you have to remove its mounting screws. Remove the extension spring, shift the escaper to the right as shown at right, , remove the mounting screws, and replace the escaper.

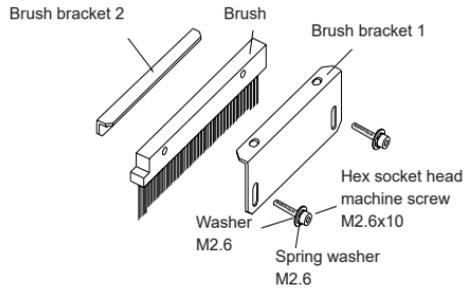
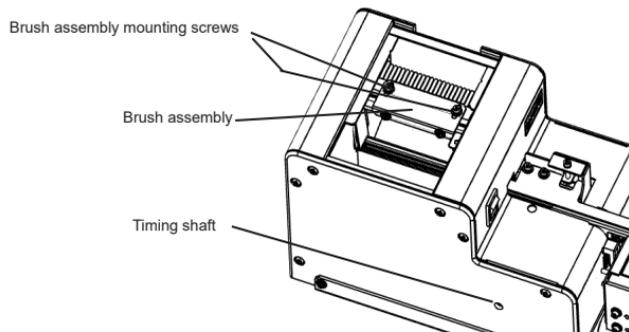
After the rail assembly and escaper have been replaced, it is necessary to adjust the escape section.

The adjustment procedure is indicated on pages 17 and beyond.



● Replacing the brush

If the ends of the brush bristles are worn out so that improperly oriented screws cannot be swept away, please replace the brush. To replace the brush, position it as shown. You can adjust its position by rotating the timing shaft. Remove the brush assembly mounting screws and then the brush assembly. You can disassemble the brush assembly. After the brush is replaced, install the brush assembly by reversing the preceding steps.



Brush assembly exploded view

Parts number : NJ02005a #02

All the above replacement parts are available as options. When they need replacement, contact your local dealer and specify the machine model number, part names, and part model numbers.

Type	Model number	Screw nominal diameter	Exchange Kit number	Rail model number	Escaper model number	Passage plate model number
NJR-23	NJR-2320	φ2.0	RR20SET	RR20	E20	W2320
	NJR-2323	φ2.3	RR23SET	RR23	E23	W2323
	NJR-2326	φ2.6	RR26SET	RR26	E26	W2326
	NJR-2330	φ3.0	RR30SET	RR30	E30	W2330
NJR-45	NJR-4535	φ3.5	RR35SET	RR35	E35	W4540
	NJR-4540	φ4.0	RR40SET	RR40	E40	
	NJR-4550	φ5.0	RR50SET	RR50	E50	W4550

- NOTE 1: Different screw sizes may be applicable with exchanging parts.
 NOTE 2: To change the screw size (nominal diameter), replace all the parts indicated at left.
 NOTE 3: The replacement rails, escapers, passage plates, and brushes are available as options.

NOTE: Replacement rails, escapers, and passage plates are available as options.

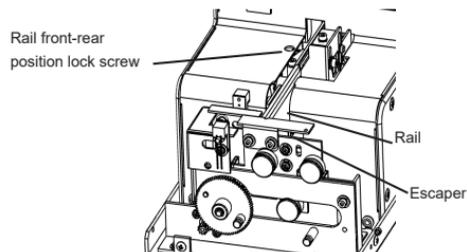
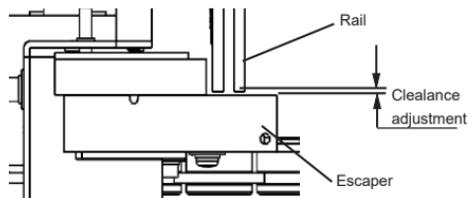
In the Exchange Kit ordered separately, rails, escapers and passage plates are included.

Adjustments to be made after rail assembly/escaper replacement

① .Adjust the clearance between the rail assembly and escaper.

---> Adjust the rail assembly mounting position (front-rear adjustment).

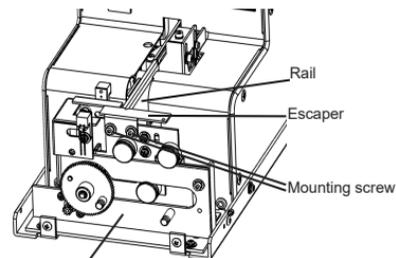
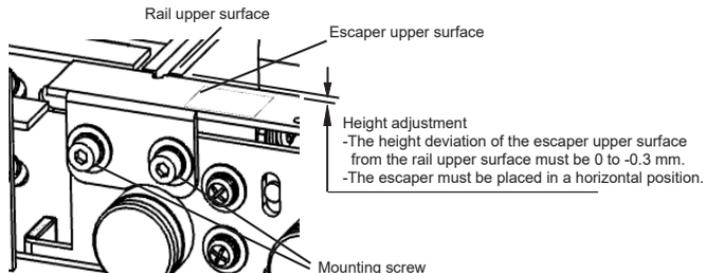
The clearance should be minimized. Fine adjustments are needed particularly when the applied screws have a small diameter. For the adjustment procedure, see page 11.



② .Adjust the escaper height relative to the rail.

---> Adjust the escaper mounting position (height adjustment).

Ensure that the height deviation of the escaper upper surface from the rail upper surface is 0 to -0.3 mm or so. Also, be sure that the escaper is placed in a horizontal position. Fine adjustments need to be made to reduce the height difference to about 0 mm particularly when a small diameter screw is used.

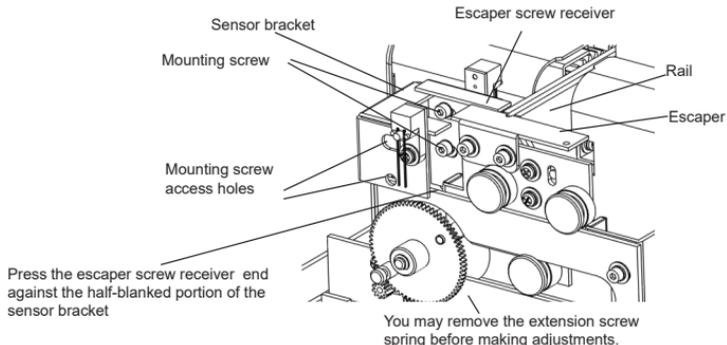
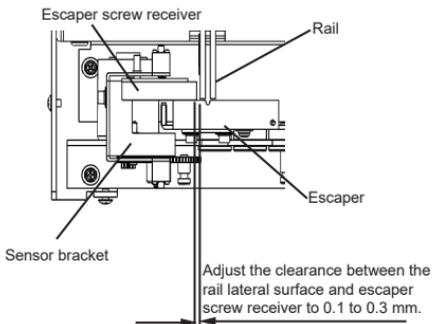


Please remove the extension spring before making adjustments.

③ .Adjust the clearance between the rail lateral surface and escaper screw receiver.

--> Adjust the escaper screw receiver mounting position (left-right adjustment).

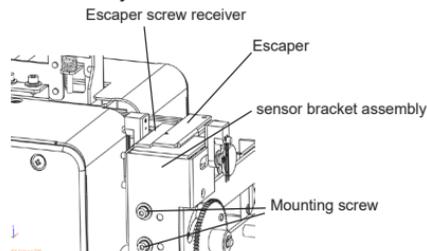
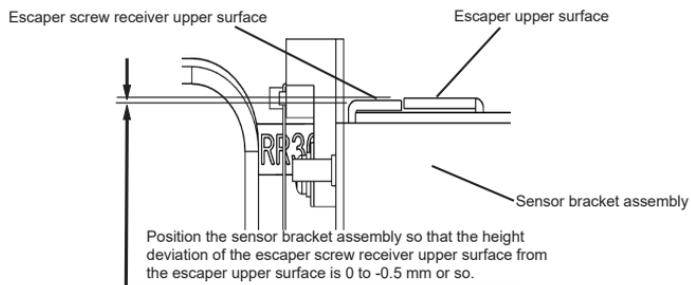
Position the escaper screw receiver so that a clearance of about 0.1 to 0.3 mm is provided between the rail lateral surface and escaper screw receiver. Fine adjustments need to be made to reduce the clearance particularly when a small screw diameter is applied. Accomplish vertical positioning by pressing the escaper screw receiver end against the half-blanked portion of the sensor bracket.



④ .Adjust the height relationship between the escaper screw receiver upper surface and escaper upper surface.

--> Adjust the sensor bracket assembly mounting position (height adjustment).

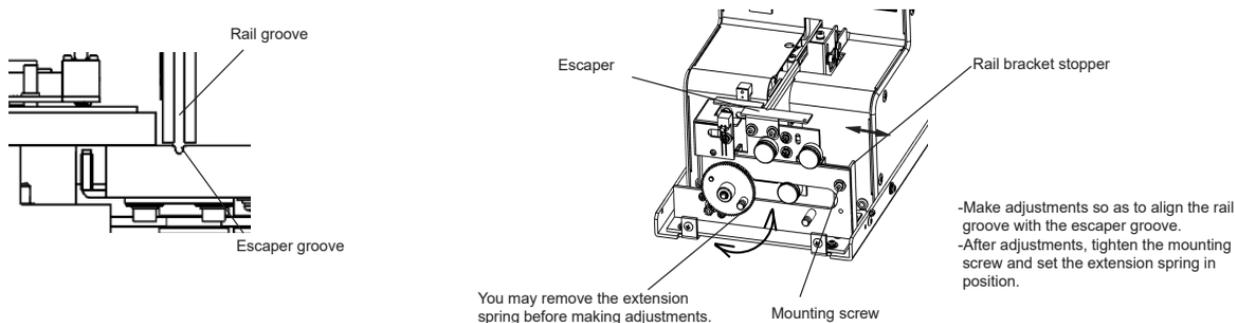
Position the sensor bracket assembly so that the height deviation from the escaper screw receiver upper surface to the escaper is about -0.5 mm or so. The escaper screw receiver adjusted in step ③ must not be repositioned here. Make fine adjustments as directed on pages 7 and 8 when the applied screw has an extremely thin head or small diameter.



⑤ .Adjust the positional relationship between the rail groove and escaper groove.

---> Adjust the rail bracket stopper mounting position (left-right adjustment).

Position the rail bracket stopper so that the escaper groove is aligned with the rail groove when the escaper moves to receive a screw from the rail. Fine adjustments are important especially when the applied screw diameter is small. For the adjustment procedure, see page 11.



After rail assembly and escaper replacement, be sure to perform steps ① through ⑤ above for readjustment purposes.

After completion of adjustments, operate this machine to perform the following operational checks.

- Check that screws are smoothly delivered from the rail to the escaper.
- Check that the sensor detects a screw in the removal section and brings the escaper to a stop. Also, check that the escaper resumes operation when the screw is removed.

If any improper operation is encountered, perform adjustment steps ① through ⑤ again.

9. TROUBLESHOOTING



CAUTION Before taking any action, please turn OFF the power switch.

Problem	Cause	Remedy
7-1 The machine does not start when power switched on.	<ul style="list-style-type: none"> -No power is supplied. -The screw in the removal section has not been removed for a predetermined period of time. 	<ul style="list-style-type: none"> -Ensure that the AC adapter is properly connected to a power source. -Remove the screw from the removal section. Adjust the timer setting control.
7-2 Loaded screws do not feed.	<ul style="list-style-type: none"> -Diameter of the loaded screw does not match the rail size. -The number of screws in the screw bins is too low. -The brush cannot sweep an oddly oriented screw away from the passage window section. -A screw shank has been trapped in the passage window. -An abnormally oriented screw is stuck in the rail section. -The rail does not vibrate (a screw or foreign object is trapped in a gap). -The timer setting control is not properly 	<ul style="list-style-type: none"> -Change to the machine that is suitable for the screw size. Use the rail that fits the screw. -Load additional screws into the screw bins. -Adjust the brush. Adjust the passage plate. The problem may also be cleared by adding some screws to the screw bins -Remove any oddly oriented screw and then adjust the passage plate. -Remove the oddly oriented screw as indicated below. Loosen the bit guide assembly retaining screw, shift the holding plate (screw guide 1) upward, and remove the abnormally oriented screw. After screw removal, readjust the holding plate (screw guide 1). -Remove the trapped screw or foreign matter. -Adjust the timer setting control.
7-3 A screw has been trapped in the rail groove.	<ul style="list-style-type: none"> -The diameter of the loaded screw does not match the rail size. -The total length of the loaded screw is less than the rail groove opening width. 	<ul style="list-style-type: none"> -Switch to the machine that is suitable for the screw size. Use the rail that fits the screw. -the problem cannot be remedied. Please consider another automatic screw feeder series.

Problem	Cause	Remedy
<p>7-4 The screws on the rail do not feed smoothly.</p>	<ul style="list-style-type: none"> -The clearance between the holding plate (screw guide 1) and screw heads is insufficient. -Dirt, oil, or grease is attached to the rail. -The rail fails to vibrate due to a screw or foreign object trapped in the opening. 	<ul style="list-style-type: none"> -Shift the holding plate (screw guide 1) upward. Use the machine in a tilted position. Adjust the timer setting control. -Clean the rail and rail guide. -Remove the trapped screw or foreign object and then clean the rail and rail guide.
<p>7-5 Oddly oriented screws occasionally travel through the passage window. A screw shank easily gets caught in the passage window.</p>	<ul style="list-style-type: none"> -The passage plate is improperly adjusted. -The employed passage plate does not match the applied screw. -The forward-descending tilt of the machine is above the permissible limit. 	<ul style="list-style-type: none"> -Readjust the passage plate. -Use the passage plate that matches the applied screw. -Adjust the tilting angle, make sure it is within the permissible limit.
<p>7-6 Screws are not transported to the removal section.</p>	<ul style="list-style-type: none"> -Screws are stopped in the middle of the rail section. -Screws are not smoothly delivered from the rail to the escaper. 	<ul style="list-style-type: none"> -Readjust the holding plate (screw guide 1). -Readjust the position between the rail end and escaper.
<p>7-7 The machine comes to a sudden stop.</p>	<ul style="list-style-type: none"> -The overload protection circuit is activated. -The screw in pick-up section has not been removed for a long period of time. 	<ul style="list-style-type: none"> -Turn the power switch off and then back on. If the operation comes to a stop again, the probable causes are: There are too many screws in the screw bin. --> Adjust the number of screws in the screw bins. A screw or foreign object is trapped in the movable section. --> Remove any trapped screw or foreign object. -Pick up the screw.

Problem	Cause	Remedy
7-8 The bin scooping plates fail to stop moving when there is a screw in the pick-up section.	-The timer setting control is improperly adjusted.	-Readjust the timer setting control.
7-9 The escaper plates fail to stop running when there is a screw in the pick-up section.	-The screw is not detected by the sensor in the escaper section.	-Readjust the sensor bracket assembly.
7-10 Screws have been dropped inside the machine	-The holding plate (screw guide 1) is improperly adjusted. -The front-rear position of the rail is improperly adjusted.	-Readjust the holding plate (screw guide 1). -Readjust the front-rear position of the rail.

10. SPECIFICATIONS

Exclusive adapter (Switching type)	Input : AC100~240V 50/60Hz Output : DC15V
Dimension	134W X 274D X 139H (mm)
Weight	Approx.4.4kgf
Screw capacity	150cc
Accessories	Operation manual x1 AC adapter x1 Allen wrench x1 Screwdriver x1 Ground wire x1
Installation location	Level stable place
Installation and storage condition	Temperature 0 ~ 40 °C Humidity 10 to 85% (without condensation)
Compliance standards	EMC: 2014/30/EU MD: 2006/42/EC RoHS: 2011/65/EU

NOTES

- Measure the shank diameter of the screw to be used and then check whether it matches the rail groove reference dimension.
- Within The range of screw size and length below,there may be instances of unique screw shape or structure not compatible with this machine unit.
Please consult with distributor or manufacture for further infomation.
- You can change the model without changing the type.
- To change the screw size (nominal diameter), replace all the associated replacement parts.
- The replacement rails, escapers, passage plates, and brushes are available as options.
- The product design, performance characteristics, and other specifications are subject to change and improvement without prior notice.
- The noise of this unit is less than LAeq 70 dB at a distance of 1 m.
- This product complies with EU directive. Please check the EU Declaration of Conformity for compliance standards.

Applicable Screw Reference Table						Screw head shape					
Screw nominal diameter	Screwshaft diameter (mm)	Screwhead diameter (mm)	Washer diameter (mm)	Screw head height (mm)	Screw length (under head portion) (mm)	Pan head	Pan head			Bind	Counter-sunk
							Sems	Double sems	Washer head		
φ 2.0	1.8~2.1	3.0~ 3.5	3.0~ 8.0	0.5~5.5	3.2~18	○	○	○	○	○	○
φ 2.3	2.1~2.4	3.0~ 4.0	3.0~ 8.0	0.5~5.5	3.7~18	○	○	○	○	○	○
φ 2.6	2.4~2.7	3.6~ 4.5	3.6~ 8.0	0.5~5.5	4.2~18	○	○	○	○	○	○
φ 3.0	2.8~3.1	4.0~ 5.5	4.0~ 8.0	0.5~5.5	4.8~18	○	○	○	○	○	○
φ 3.5	3.3~3.7	4.8~8.0	4.8~12	0.5~8.0	5.6~18	○	○	○	○	○	○
φ 4.0	3.8~4.1	5.4~8.0	5.4~12	0.5~8.0	6.4~18	○	○	○	○	○	○
φ 5.0	4.8~5.1	6.2~10.0	6.2~12	0.5~8.0	8.0~18	○	○	○	○	○	○

※ Compatible with washer thickness 0.4 to 1.0mm.

Type	Model number	Screw nominal diameter	Exchange Kit number	Rail model number	Escaper model number	Passage plate model number
NJR-23	NJR-2320	φ2.0	RR20SET	RR20	E20	W2320
	NJR-2323	φ2.3	RR23SET	RR23	E23	W2323
	NJR-2326	φ2.6	RR26SET	RR26	E26	W2326
	NJR-2330	φ3.0	RR30SET	RR30	E30	W2330
NJR-45	NJR-4535	φ3.5	RR35SET	RR35	E35	W4540
	NJR-4540	φ4.0	RR40SET	RR40	E40	
	NJR-4550	φ5.0	RR50SET	RR50	E50	W4550

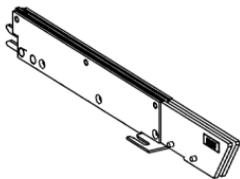
NOTE: Replacement rails, escapers, and passage plates are available as options.

In the Exchange Kit ordered separately, rails, escapers and passage plates are included.

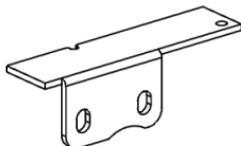
Please contact us by " ~ SET" type when you need rail

○Replacement parts

Rail



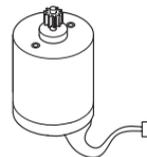
Escaper



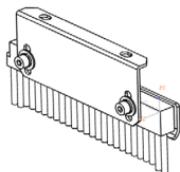
Passage plate



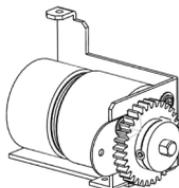
NJR Escaper motor (With Harness)
:NJO6643



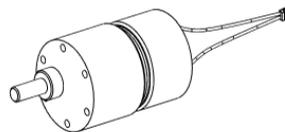
Brush assembly : NJ02005 #02



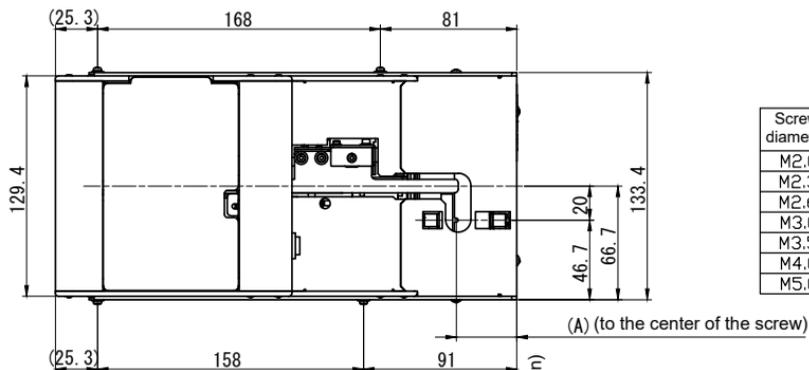
Motor drive assembly : NJ04501



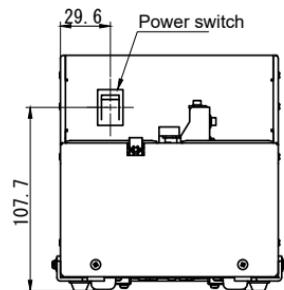
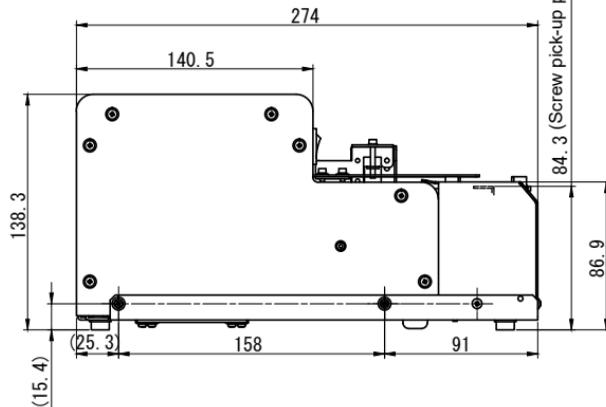
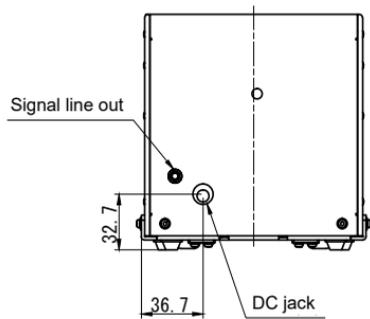
Main motor (With Harness)
: NJR09582 #08



11. EXTERNAL DIMENSIONS



Screw diameter	Dimension A
M2.0	35.9
M2.3	35.7
M2.6	35.6
M3.0	35.4
M3.5	35.1
M4.0	34.9
M5.0	34.4



[unit : mm]

12. WARRANTY

For users within Japan, the product is warranted for a period of six months after the date of delivery. Such warranty will not be applicable to purchases or users outside of Japan. If any troubles should occur, however, contact your local dealer.

The solutions to the following situations may be implemented at a reasonable charge without regard to the warranty period.

1. Failure due to improper handling.
2. Failure due to product modification or improper processing.
3. Failure due to causes beyond control (for example earthquake or fire).
4. Failure attributable to any cause other than this product.
5. Consumables (brushes, main motor, escaper motor) and replaceable parts and replacement work expenses.

The repair parts shall be available within 5 years after purchase

<http://www.ohtake-root.co.jp>

株式会社 大武・ルート工業

岩手県一関市萩荘字金ヶ崎 27 〒 021-0902

Tel +81-191-24-3144

Fax +81-191-24-3145

OHTAKE-ROOT KOGYO CO.,LTD.

27 Kanegasaki Hagisyuu Ichinoseki

Iwate, 021-0902 JAPAN

Tel +81-191-24-3144

Fax +81-191-24-3145

「Quicher」「OHTAKE」「OHTAKE・ROOT KOGYO」 is a trademark or registerd trademark of OHTAKE・ROOT KOGYO CO.,LTD.]
「Quicher(クイッチャー)」「OHTAKE」「OHTAKE・ROOT KOGYO」は、株式会社 大武・ルート工業の商標又は登録商標です。

The specification and the design of a product may be changed without a preliminary announcement for improvement.
改良のため、予告なくデザイン、性能、仕様等を変更することがあります。

Photocopy, reproduction or publication of any part of this user's manual without permission, is strictly prohibited by copyright law.

この取扱説明書の一部または全部の無断転載、複製を禁じます。

(as of Apr. 2021)

© Copyright OHTAKE・ROOT KOGYO CO.,LTD.

(2021年4月現在)