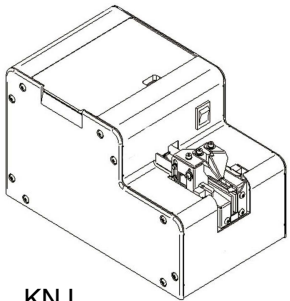
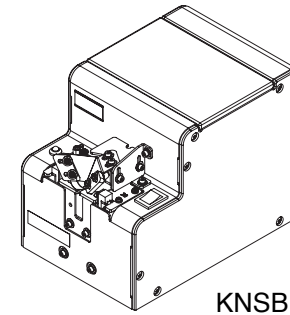


KNJ

KOLVER®

Screw Feeders



KNSBI

Table of Contents

SAFETY PRECAUTIONS

The following symbols are used throughout this manual:

Prohibited operation. Never do this!

Do not disassemble, modify or repair.

Do not touch with wet hands.

Prohibited operation. Never do this!

Do not disassemble, modify or repair.

Do not touch with wet hands.

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 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.

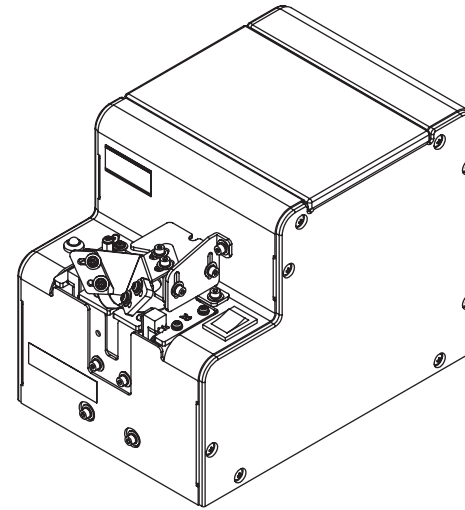
Stop operating the machine and unplug the AC adapter from the wall outlet if you detect overheating, smoke, a pungent odor or any other unusual condition, as there may be a risk of fire or electric shock. Contact the dealer and have it examined and repaired.

When performing maintenance around the circuit board, turn off the power for at least 5 minutes before performing work.

Only use clean screws of the correct size and do not oil the screws or rails.

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

KNSBI Series



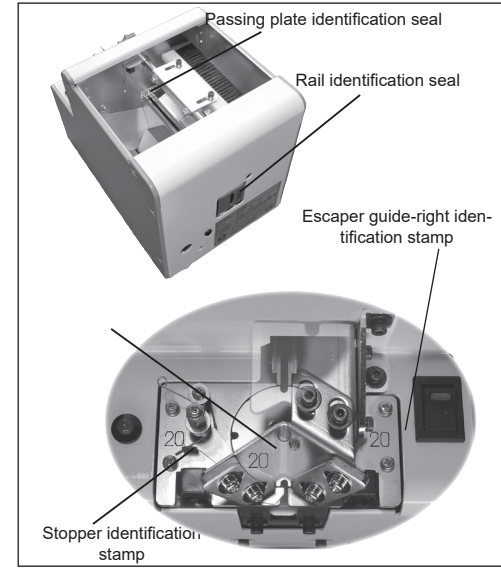
PREPARING AND ADJUSTING THE SCREW FEEDER

Verifying the model number

Check if the machine has the parts which match the nominal diameter of the screws to be loaded. Check the model number of the rail, escaper, stopper assembly, escaper guide-right and passing plate by referring to the following table. Eachescaper, stopper assembly and escaper guide-right is stamped with a model number which corresponds to the type of screws that can be used.

Screw feeder series	Screw feeder model	Screw size	Exchange kit No.	Rail model No.	Escaper model No.	Stopper assembly model No.	Escaper guide-right model No.	Passing plate model No.
KNSBI	KNSBI10	φ 1.0	BI10SET	BI10	SIE10	SIES10	SIEM10	SW1017
	KNSBI12	φ 1.2	BI12SET	BI12	SIE12	SIES12	SIEM12	
	KNSBI14	φ 1.4	BI14SET	BI14	SIE14	SIES14	SIEM14	
	KNSBI17	φ 1.7	BI17SET	BI17	SIE17	SIES17	SIEM17	
	KNSBI20	φ 2.0	BI20SET	BI20	SIE20	SIES20	SIEM20	SW2030
	KNSBI23	φ 2.3	BI23SET	BI23	SIE23	SIES23	SIEM23	
	KNSBI26	φ 2.6	BI26SET	BI26	SIE26	SIES26	SIEM26	
	KNSBI30	φ 3.0	BI30SET	BI30	SIE30	SIES30	SIEM30	

Note: To use screws with different nominal diameters, replace the rail, escaper, stopper assembly, right escaper guide, and passage plate.
All replacement parts are available separately.



The machine is factory-inspected and adjusted using pan-head screws matching the nominal diameter of the ordered model.
If screw head shape or height differs, or if abnormal operation occurs, readjust the machine as described below:

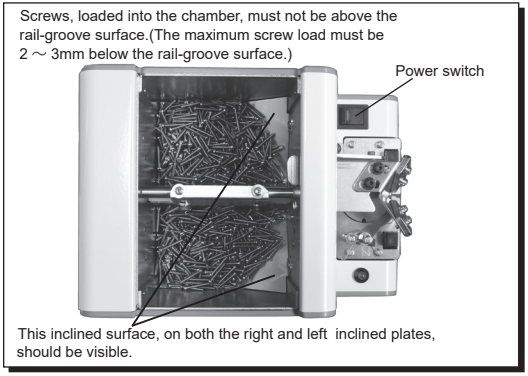
- ○ Check the screw load amount
- ○ Check and adjust the brush
- ○ Check and adjust the passing plate
- ○ Check and adjust the rail vibration
- ○ Check and adjust the holding plate
- ○ Check and adjust the front & rear sides of the rail
- ○ Check and adjust the timer

When the rail, escaper, stopper assembly, right escaper guide, and passage plate are replaced, screws with a different nominal diameter can be used.
After replacement, fine adjustment is required. Refer to the relevant adjustment procedures in this manual.

Recommended Screw Load

Loading too many screws into the scooping chamber can negatively affect screw alignment and feeding performance.
The illustration on the right shows the maximum recommended screw quantity. Use it as a reference when loading screws.

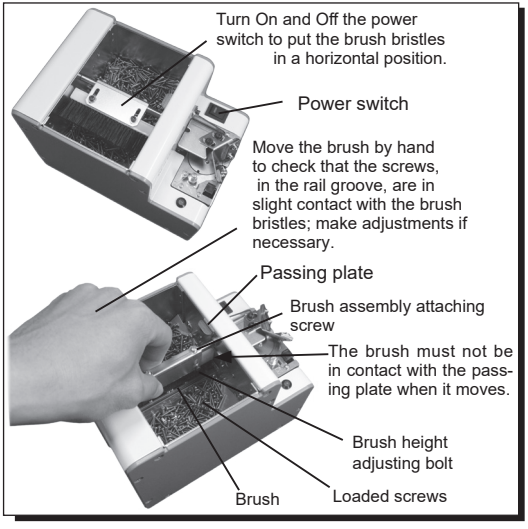
- Turn the power switch ON and OFF to bring the scooping blocks to their lowest position.
- Load the screws so that their level is approximately 2–3 mm below the rail surface.
- Make sure the screws do not cover the upper part of the inclined plates.
- Always confirm the correct screw quantity by observing the machine during operation.



Checking and adjusting the brush

Turn OFF the power supply before this.

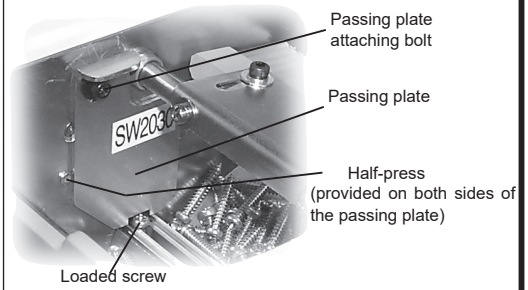
- Load the screws into the scooping chamber.
- Turn the power switch ON and OFF to align the screws in the rail groove and and until the brush bristles are in a horizontal position as shown in the figure at right.
- Check that the screw heads in the rail groove are lightly contacting the brush bristles.
- If the brush height is set too high or too low, screw alignment and transport may be adversely affected.
- To adjust the brush height, loosen the brush height adjustment bolt and set the brush to the correct position.
- If the plastic part at the front of the brush touches the passage plate, loosen the brush assembly mounting screw and adjust the brush position forward or backward.
- After adjustment, operate the machine and confirm that brush operation is normal.



Checking and adjusting the passing plate

Turn OFF the power supply before this.

- Check that the passage plate is adjusted to a height that allows the loaded screws to pass with minimal clearance.
- If the passage plate is set too low, screws will not pass.
- If it is set too high, screw transport will become unstable.
- If adjustment is required, loosen the passage plate mounting bolt and adjust the height.
- After adjustment, perform an operational check.
- Note: use the half-press marks on both sides of the passage plate as guides, and slide the passage plate up or down to the required position.

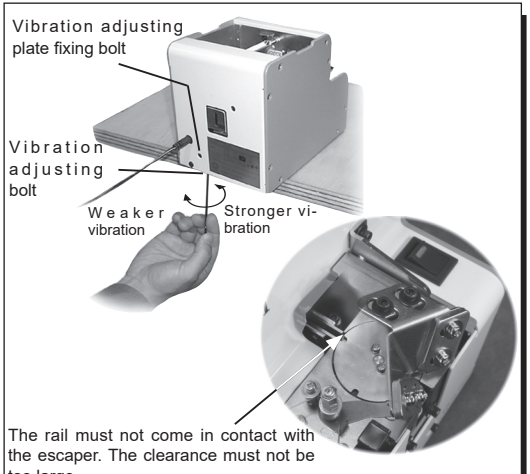


The clearance should be just enough to permit the loaded screws to pass through the passing plate.

Checking and adjusting the rail vibration

The rail vibration of this machine can be adjusted.
Screw transport speed varies depending on screw type. Check the transport speed, and if rail vibration interferes with smooth screw movement, adjust the vibration accordingly.

- Loosen the anti-vibration bolt at the rear of the machine.
- Next, turn the vibration adjustment bolt located on the bottom of the machine to adjust the vibration level.
- Turning the bolt clockwise (viewed from the bottom) increases vibration.
- Turning the bolt counterclockwise decreases vibration.
- If the vibration is set too high in an attempt to increase transport speed, the rail may strike the escaper and screws may fall into the machine, preventing normal unloading.
- Adjust the vibration to a level appropriate for the screws being used.
- (Related item: Check and adjust the front and rear positions of the rail.)
- After adjustment, tighten the vibration plate fixing bolt securely.
- Finally, perform an operational check.

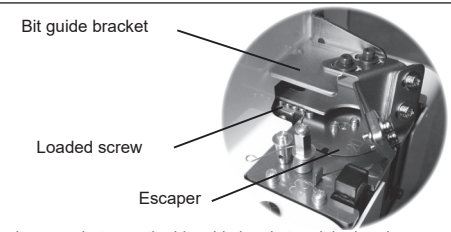


The rail must not come in contact with the escaper. The clearance must not be too large.

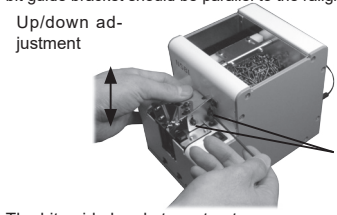
Checking and adjusting the bit guide bracket height

- Verify that the clearance between the head of the loaded screw in the rail groove and the bit guide bracket is 0–1 mm.
- If there is no clearance, the screw may become caught.
- If the clearance is too large, screws may pile up or jump.

- If adjustment is required, loosen the bit guide bracket mounting bolt and adjust the bracket up or down.
- Ensure that the bit guide bracket does not contact the escaper, as this will hinder escaper movement.
- After adjustment, operate the machine and confirm normal operation.



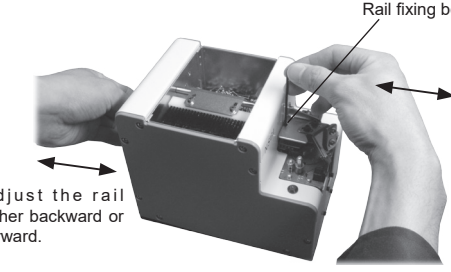
The clearance between the bit guide bracket and the head of the loaded screw should be 0 ～ 1mm. The bottom of the bit guide bracket should be parallel to the railgroove surface.



The bit guide bracket must not come into contact with the escaper.

Checking and Adjusting the Rail's Front/Rear Position

- If the rail contacts the escaper, or if the clearance between the rail and escaper is excessive during operation, adjustment is required.
- Loosen the rail fixing bolt and adjust the rail forward or backward as necessary.
- After adjustment, tighten the rail fixing bolt securely.
- Notes:
- If the rail contacts the escaper, the escaper will not operate correctly.
- If the clearance is too large, screws may fall into the machine.
- After adjustment, readjust the rail vibration if necessary.
  (Refer to “Checking and Adjusting the Rail Vibration.”)



Checking and adjusting the bit guide

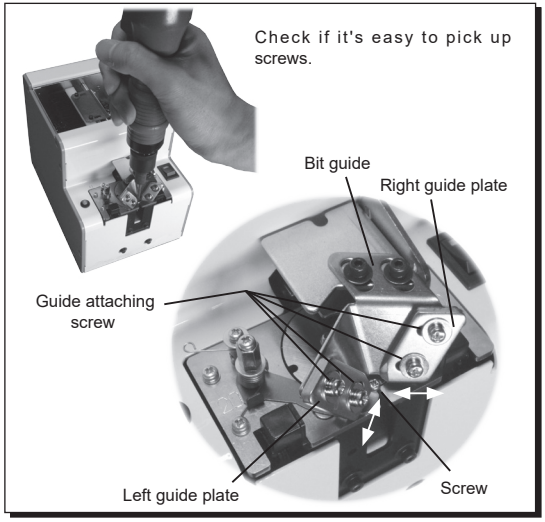
- Adjust the bit guide to a position that allows the operator to easily pick up screws.
- Try picking up screws several times and fine-tune the position as needed.
- Loosen the bit guide mounting bolts to make adjustments.

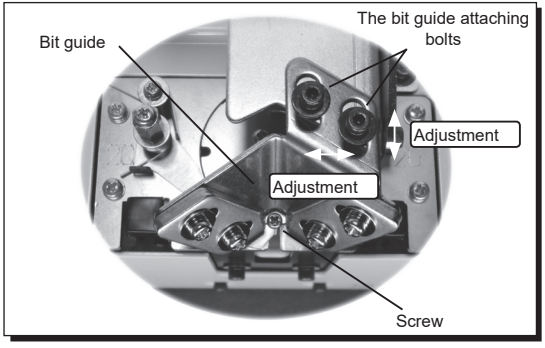
Adjusting the Guide Plate

- If screws are difficult to pick up with the bit, adjust the guide plate.
- Loosen the guide plate mounting screw.
- Insert the bit being used and adjust the guide plate position accordingly.
- After adjustment, check that screw pickup with the bit is smooth.

Adjusting the Groove Between the Bit Guide and Guide Plate

- Adjust the groove position so that screws can be picked up easily.
- Loosen the bit guide mounting bolt and reposition as required.
- After adjustment, confirm smooth screw pickup.





Checking and adjusting the timer

The screw transport feed differs depending on the screw type.
This machine can smoothen screw unloading through timer adjustment. For screws with a low transport speed, set a long timer interval. For screws with a high transport speed, set a short timer interval.

The machine will continue operating even when no screw is present at the pickup site. If a screw is present but not picked up within a set time, the machine will stop. This time delay can be adjusted using the timer. Once the screw is picked up, normal operation resumes automatically.

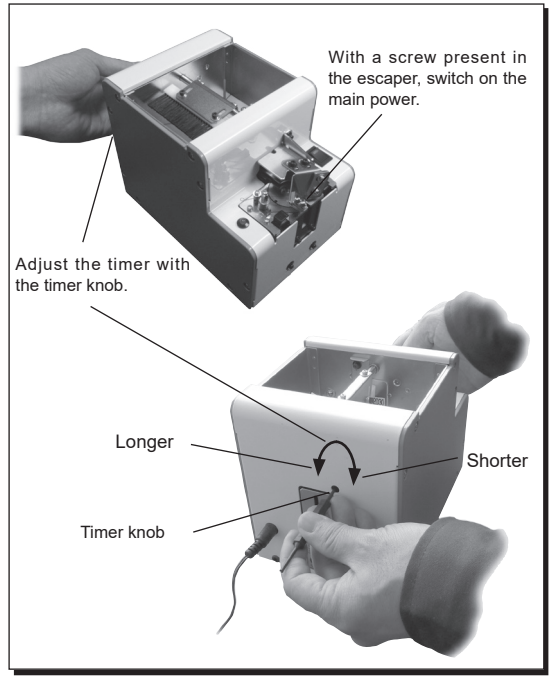
To check the operation:

1. Intercept the sensor's optical axis.
2. With a screw in the escaper and the main power ON, block the infrared sensor using a finger or an object, then switch the power on again.
3. Adjust the timer using the knob located at the rear of the machine (see figure).

Timer adjustment:

- Turning the knob clockwise (as viewed from the rear) shortens the time delay.
- Turning the knob counterclockwise increases the time delay.
- Use the supplied screwdriver to adjust the knob within the allowed range, avoiding excessive force.

Finally, perform an operational check with screws loaded in the scooping chamber and set the timer correctly.



OPERATING THE SCREW FEEDER

Loading the screws

1. Open the upper cover.
2. Lower the chamber plates to their lowest position.
3. Load screws up to 2–3 mm below the rail groove surface.
4. Ensure screws do not cover the upper portion of the inclined plates.

Starting the machine

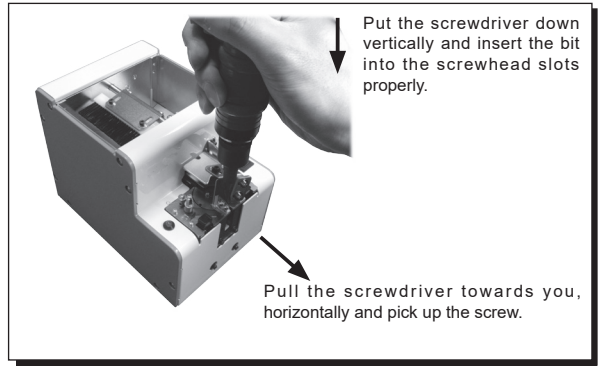
1. Connect the supplied AC adapter to the machine and a power outlet.
2. Turn on the power switch. The switch lamp lights up, the scooping block begins moving up and down, the rail vibrates, and the escaper starts rotating.
3. Screws move along the rail toward the rotating escaper, which selects one screw at a time.
4. The escaper deposits the selected screw at the pickup site. The sensor detects the screw, the sensor LED lights up, and the machine stops.
5. The machine remains stopped until the screw is picked up. Once picked up, the sensor LED turns off, and the machine resumes operation.

Picking up screws

1. Use an electric screwdriver with a magnetized bit.
2. Place the screwdriver bit vertically into the screwhead slots using the bit guide.
3. Pull the screwdriver horizontally toward you to pick up the screw.
4. Slight twisting may help insert the bit properly into the screwhead.

Caution: Do not use excessive force when inserting the screwdriver, as this may misalign the escaper or damage the machine.

[Reference] See the recommended table for screwdriver bits and sizes.



MAINTENANCE

The brush and main motor are consumable parts. When using a different diameter of screw, the following items must be replaced: rail, stopper assembly, escaper and escaper guide-right. These parts may be ordered separately. The replacing and adjusting procedures are described below. When replacing any parts, a fine adjustment is required. Make these fine adjustments by reading the corresponding contents carefully. Before replacing any parts, be sure to remove all the screws from the chamber.

Turn OFF the power supply before doing any of the following.

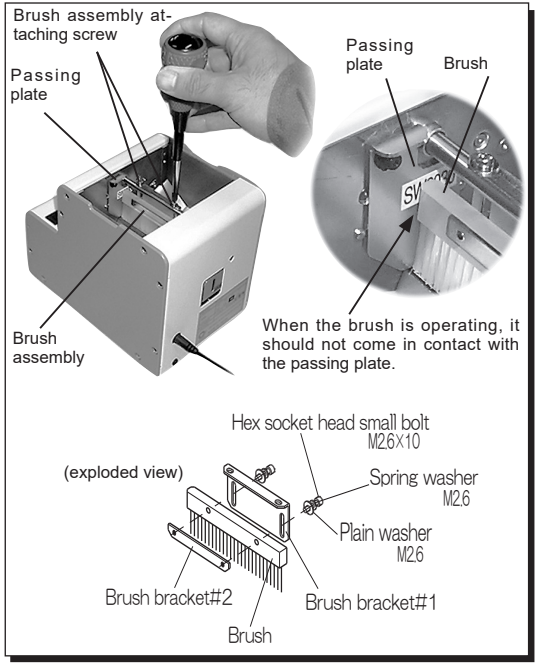
Replacing and Adjusting the Brush

If the brush is too worn to sweep screws off of the rail, replace it.
A brush with harder bristles, than the standard brush, is available as an option.

- Turn ON and OFF the power switch in order to set the brush at the position shown in the figure on the right and detach the brush assembly.
- The brush assembly can be disassembled as shown in the figure on the right.
- For assembly, reverse the disassembling procedure.
- After completing the assembly, check that the front part of the brush doesn't come in contact with the passing plate. The ideal clearance is 0mm.
- For adjustment, refer to “Checking and Adjusting Before Operating the Machine”.

Part number of brush assembly:

- NSB 02053 #01 (standard brush)
- NSB 02053 #02 (optional, harder bristle brush)



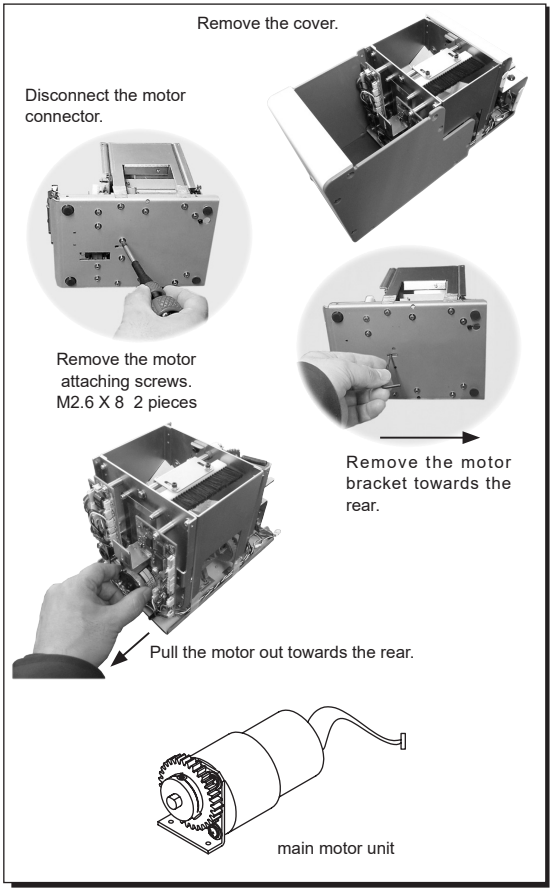
Replacing the Main Motor

When the motor is damaged, replace it with a new one.

- First, remove the cover from the main body. Then, disconnect the connectors for the power switch and LED screw indicator. This makes it easier to work within the body.
- Disconnect the motor junction connector.
- Remove the motor attaching screws on the bottom of the main body.
- Pull out the motor from the rear side of the main body. (If the motor is hard to pull out, insert an Allen wrench into the oblong hole in the base of the body and push the motor bracket backward.)
- The motor can be disassembled as shown in the figure on the right.
- For reassembly, reverse the disassembling procedure. The combination of the operation timing for the left and right scooping blocks is shown on the next page.

Note: Do not use excessive force with the motor wiring in order to avoid wire breakage.

Part number of main motor unit : NSIB 7115



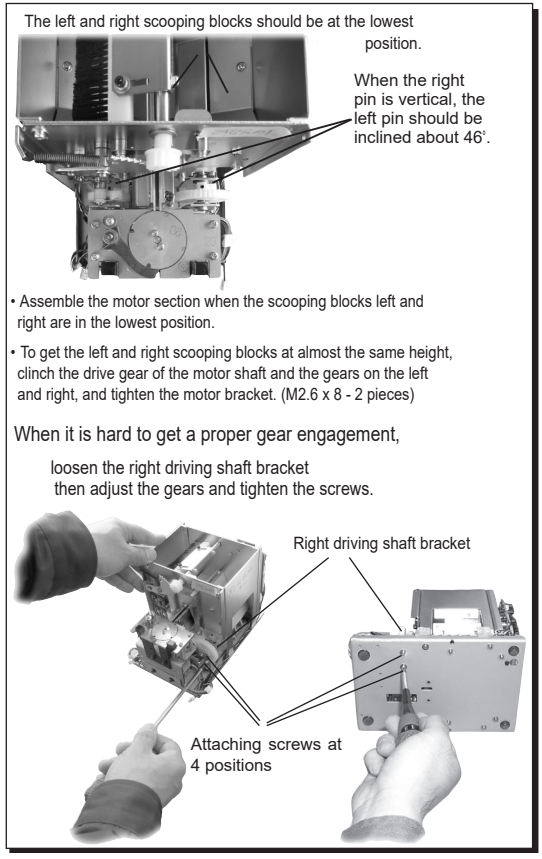
Adjusting the Motor Gear Engagement

To synchronize the scooping block timing with the brush movement, the motor gear engagement must be adjusted.
With the motor removed from the main body, adjust the gear engagement as shown in the figure to set the correct operating timing. If the motor drive gear does not engage easily with the driven gear, slightly loosen the right-hand drive shaft bracket to ease assembly (see figure). Once proper engagement is achieved, re-tighten all screws securely.

After reinstalling the motor, switch the power ON and check the operating timing. Confirm that the left and right scooping blocks move almost simultaneously.

Once the operation check is complete, restore the internal wiring to its original arrangement. When reinstalling the cover, ensure that no wires are pinched and that the wiring does not interfere with moving parts or with external adjustments.

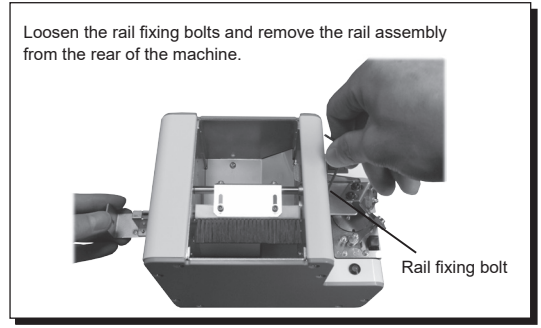
Note: do not apply excessive force to the motor wiring to prevent damage.



Replacing the rail

The rail of this machine can be easily replaced.
If there is any dirt or flaw on the rail groove that prevents a smooth operation, we recommend the user clean or replace the rail.
Use the passing plate, rail and escaper that correspond to the diameter of the screws loaded.

Loosen the rail fixing bolts and pull out the rail assembly from the rear of the machine. After replacing the rail, each part must be adjusted.



Replacing the Passing Plate

Use the passing plate, rail and escaper that correspond with the diameter of the screws loaded.

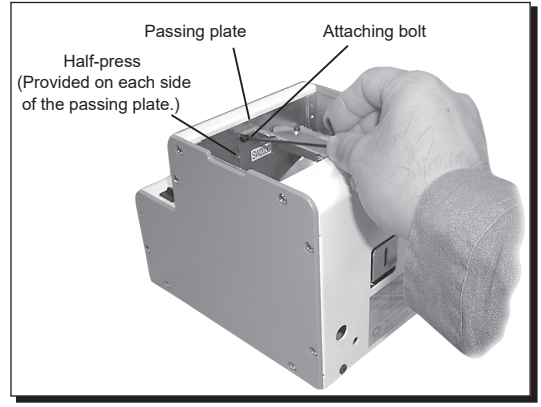
The following are passing plate numbers which correspond with the model numbers:

1.0 ～ 1.7 corresponds with Model No. SW1017

2.0 ～ 3.0 corresponds with Model No. SW2030

Please check that the model numbers correspond with the screws that can be used.

Remove the passing plate. Do not lose the attached bolts. Using bolts other than those supplied with this machine may result in a malfunction. When installing, use the half-press on both sides of the passing plate as guides. After replacement, make the adjustments that correspond with the screws loaded.



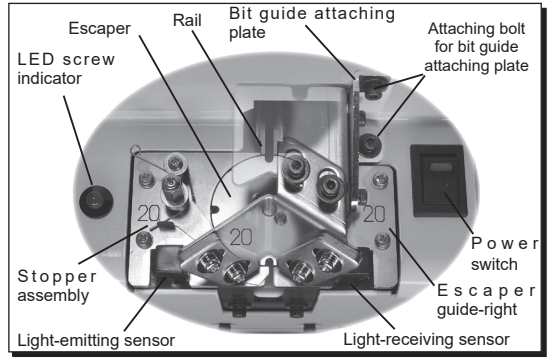
Replacing and adjusting the escaper, the stopper assembly and the escaper guide-right

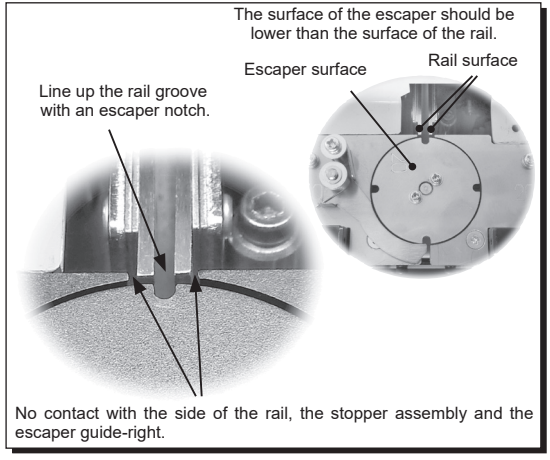
When using screws with a different diameter, replace the escaper, the stopper assembly, the escaper guide-right, the rail and the passing plate.

First, remove the bit guide attaching plate and then replace and adjust the parts.
After replacement, be sure to adjust and check the parts in the area of the escaper.
When you remove the escaper attaching screw, please use the driver for M2 (bit No.0).

(Summary of the adjustment)

Adjust moving parts to correspond with the rail.
In terms of height, the level of the escaper surface should be lower than the level of the rail surface.
Line up the rail groove with an escaper notch at the end of the reference point run. A reference point run is the detecting of the starting point of the escaper motor rotation. Also, make sure there is no contact with the side of the rail and the robot escaper guide.





①. Replace the escaper, stopper assembly and escaper guide-right.

Before replacement, remove any screws that were loaded in the chamber.

First, remove the bit guide attaching plate, then replace and adjust the parts.

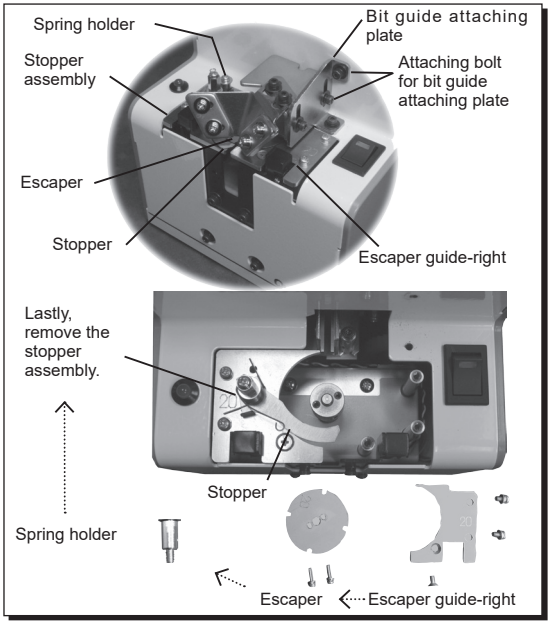
As looking at the front of the machine, start by removing the parts from the right side.
Start by removing, in this order:

the escaper guide-right → escaper
→Spring holder (fixing the stopper assembly with screws)→ stopper assembly.

When you remove the Spring holder,
you can remove the flathead screw under the stopper.
Do not lose the attaching screws.

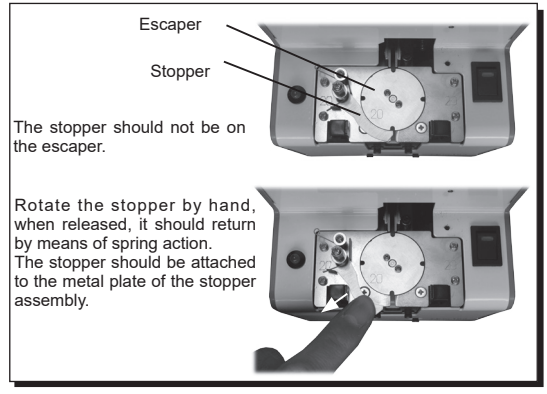
For assembly of the repacement parts, reverse the disassembly procedure.
After installing the Spring holder, assemble the spring as shown in the figure at right.

The escaper notch needs to be adjusted to the rail groove position later. Assemble the escaper loosely as it will need adjusting later.



Check the movement of the stopper before adjusting the parts in the area of the escaper.

- The stopper should not be on the escaper.
- Rotate the stopper by hand, when released, it should return by means of spring action.
- The stopper should be attached to the metal plate of the stopper assembly.



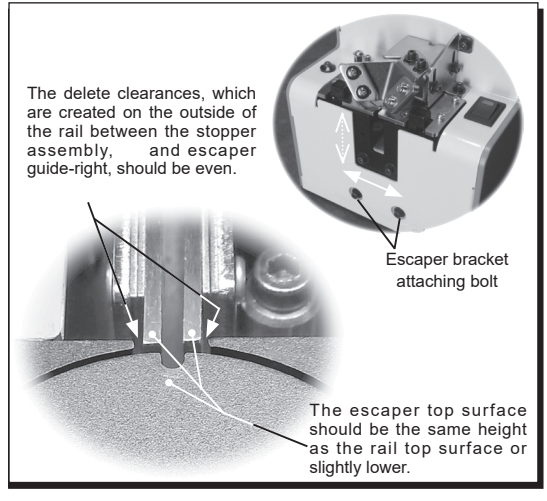
②. Check and adjust the position of the escaper in relation to height and clearance.

Check that the clearances on the outside of the rail, between the stopper assembly and the escaper guide-right are almost even.

If they are in contact, the screws cannot be delivered.
If there is too much clearance on either side, screws may fall into the machine.

When the clearances are not even, loosen the escaper bracket attaching bolt and adjust so that the clearances on the left and right of the rail are even.

At this time, make the top surface of the escaper even to or slightly lower than the rail surface. If it's too high, a screw won't enter an escaper notch. If it's too low, a screw will not enter a notch properly.



③. Adjust the escaper notch position.

Turn the power switch ON while covering the sensor light axis.
When the power is ON, the screw sensor LED lights up and the escaper motor moves around to the back, to the starting point. (Reference point run.) When the escaper motor is at the reference point, the escaper doesn't move. When it is not at the starting point, the escaper motor moves oppositely around to return to the starting point and then stops. (Reference point run.)

※ Before adjustment, the starting point for the escaper motor and the position of the escaper notch are not the same.

※ A reference point run is the detecting of the starting point of the escaper motor rotation.

※ Cover the sensor's optical axis with a piece of paper.

When the power is on, the escaper motor has the ability to remain stationary. Make a reference point run-and-stop and when the escaper motor is stationary, then you can align the position of an escaper notch with the rail groove.

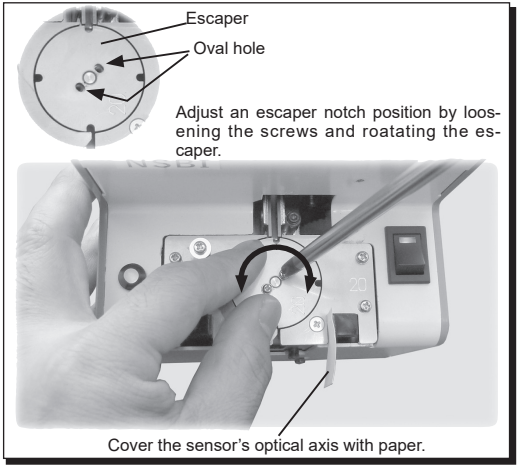
Fine adjustments can be made for the clearance between the end of the rail and the escaper by loosening the screws, on either side of the center of the escaper, and moving the escaper to an ideal position. Remember to tighten the screws again.

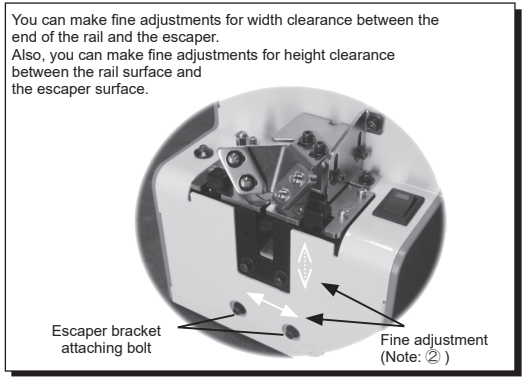
After adjustment, turn the power witch OFF/ON in order to make a reference point run and check that an escaper notch and the rail groove align. After, remove the paper blocking the sensor's optical axis and the escaper will start rotating.

Check that all 4 notches of the escaper, each in rotation, stop at the rail groove.

[Reference] It is possible to adjust, finely, the groove section as you adjust the position of the escaper bracket. However, to do so, you must do as follows: ＊ See ② "Check and Adjust "on page 20.

- There must not be any contact between the rail, the stopper and the escaper guide-right. Being in contact stops feeding the screws.
- The escaper top surface should be the same height as the rail top surface or slightly lower.





④. Explanation of the escaper movement before adjusting the sensor

When the power switch is turned ON, if there is no screw at the site where the screw is to be picked up, the escaper rotates with the screw sensor LED off.

The escaper rotates and accepts a screw from the rail.
As the escaper rotates, it brings the screw to the screw pick up site.
At this time, the sensor detects the screw, the LED lights up and the escaper stops.

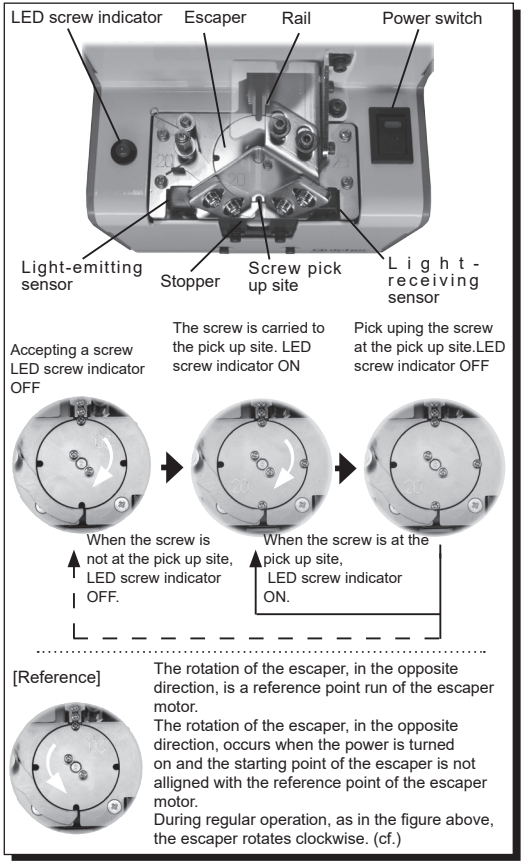
When the screw is removed from the pick up site, the LED light goes off and the escaper rotates.

This is the correct sequence of operation. Usually, there is no need to adjust the sensor as it was done when assembled in the factory.

The following are irregular situations that require adjustment:

-There is no screw at the pick up site but, the LED is on and the escaper doesn't rotate.

-There's a screw at the pick up site, but the LED is not lit and the escaper rotates.



⑤. Checking and adjusting the sensor

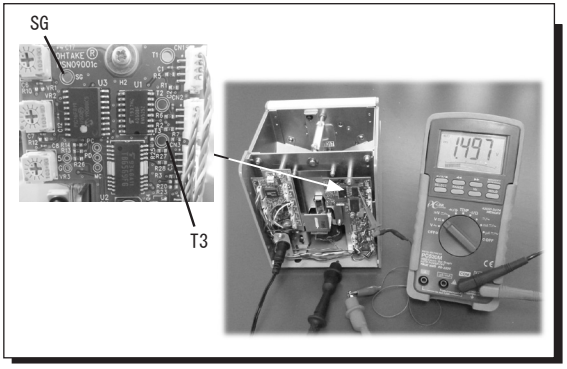
Check when required.

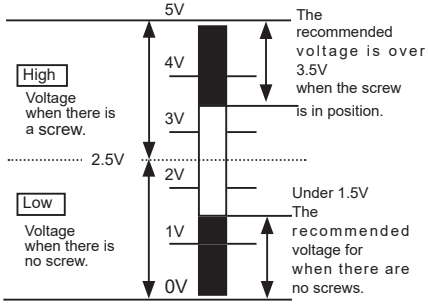
Remove the rear cover of the main unit and measure the voltage level.
Confirm using the test hole on the board.
Connect the negative terminal of the tester to SG and the positive terminal to T3.
When a screw is not at the pick up site, turn the power ON.
Next loosen the 2 sensor bracket attaching bolts and do the following:

①. Pull the sensor bracket down and check if the voltage is over 4V and if the sensor light is ON. At this time, the escaper is stopped.

②. Next, while checking the voltage level, slowly push the sensor bracket up which causes the voltage to decrease. When the voltage is around 0.25V ～ 1.5V tighten the sensor bracket. During this procedure when the voltage is around 2.5V, the LED screw indicator turns OFF and the escaper rotates.

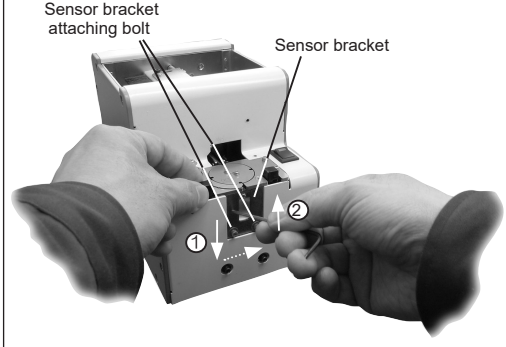
When there is no screw at the pick up site, the voltage is 0.25V ～ 1.5V and the LED screw indicator is OFF.
When there is a screw at the pick up site and the voltage is over 3.5V, the LED screw indicator is ON. This is a general standard.
The borderline, if there is a screw in position or not, is 2.5V.





This is no malfunction when the voltage is slightly off of 2.5V.
The adjustment, for ordinary screws, would be as described above.
For screws which have a flatter head, refer to the figure on the left for adjustments.
Depending on the screw-head height, it may be necessary to set the low-range voltage at more than 1.5V and the high-range volatge at under 3.5V.

①. Push the sensor bracket down and check if the voltage is more than 4V.
②. Lift the sensor bracket up slowly to reach a voltage of between 0.25V ~ 1.5V.



⑥. Operational check

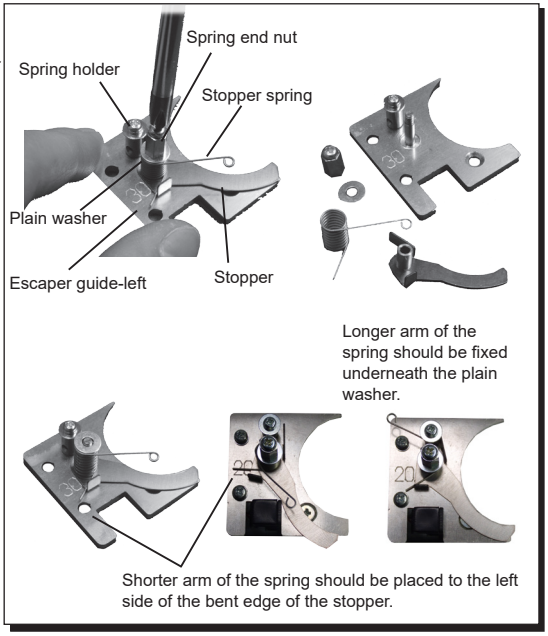
After checking and adjusting each component, do an operational check with screws loaded.
If any abnormality is found, make the said adjustments once again in addition to the rail vibration and front/rear position adjustments.
After completing the operational check, return the wiring arrangement to its original status.
When installing the cover, take care not to catch or pinch the wires.
Watch that the wiring does not hinder the operation of this machine.

Replacing the stopper

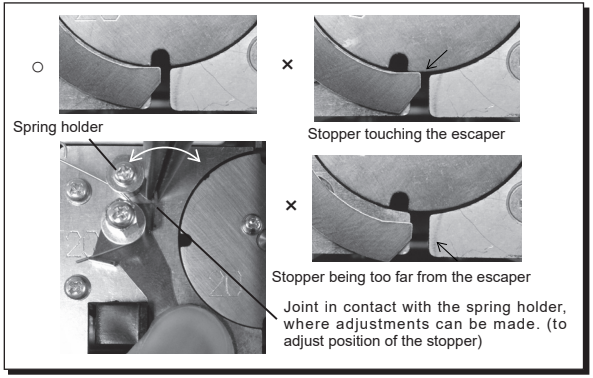
The stopper is a consumable part. When the stopper is worn-off or damaged in shape, replacement is necessary to ensure proper machine operations.
(When stopper is being replaced, the escaper guide does not need to be removed from the machine.)

Part number: E-Stopper TPO-00512

- Release longer end of the stopper spring from the spring holder, and unfasten the spring end nut. When unfastening the end nut, please be cautious that the washer underneath may spring out.
- Disassemble the plain washer, stopper spring, and stopper in order.
- Install the new stopper, stopper spring, and washer in order. Fasten the end nut while holding down the plain washer in place. During this process, please be careful not to allow the spring to become trapped by spring end nut and plain washer.
- When the stopper spring assembly is completely fastened, fix the longer end of the spring onto the spring holder (as shown on right).
  Please check if the stopper can move freely, and that the bottom edge of the stopper is completely aligned and parallel with escaper guide.



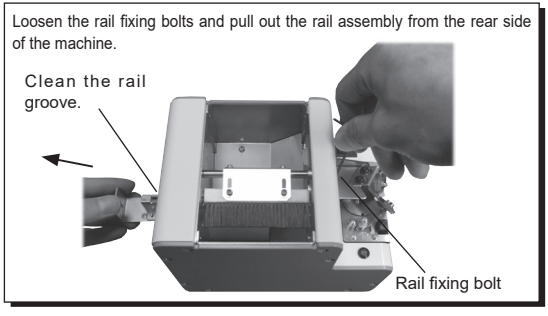
Please make sure the tip of the stopper does not touch the escaper, as it may interfere with the escaper's
rotation.
If the end of the stopper is too close or too far from the escaper, please adjust the bent joint of the stopper where it makes contact with the spring holder, with a pair of long-nose pliers, so that the front of the stopper rests at the proper position.



Cleaning the rail

Contamination in the rail groove can interfere with screw transport. Clean the rail groove using a soft, clean cloth lightly moistened with alcohol. If cleaning is difficult, remove the rail and clean it separately. Before removing the rail, turn OFF the power and remove all screws from the scooping chamber.

If the rail groove is damaged or excessively worn and may affect operation, replacement of the rail is recommended.

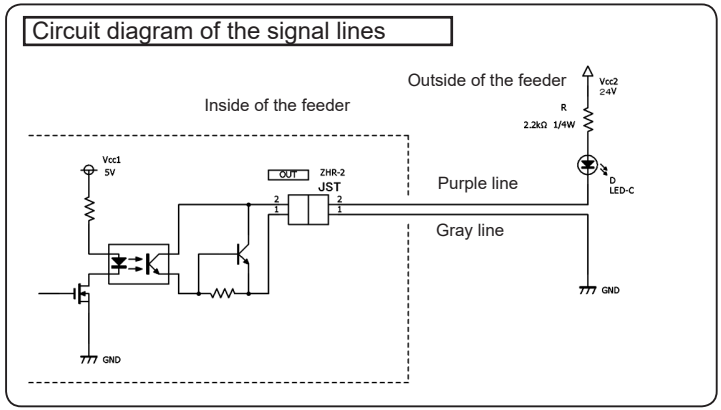


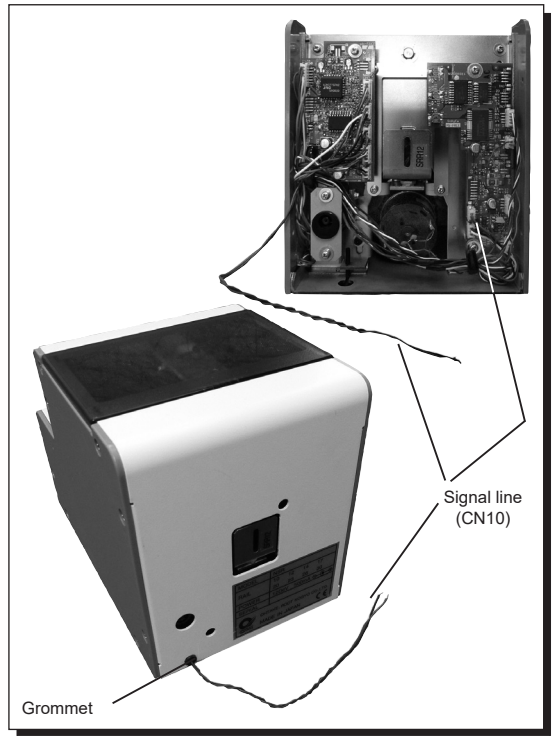
EXTERNAL OUTPUT SIGNALS

This machine provides a screw presence output signal that can be used to connect external devices such as a general-purpose counter. The signal cable is stored inside the machine. To use it, remove the rear cover and pull the signal cable out through the grommet.

[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





Note on the overload protective circuit

This machine is equipped with an overload protective circuit.
Normally, the driving motor rotates forward to feed screws to the escaper continuously.

However, if there is an overload at the driving section, the driving motor rotates backward for a certain amount of time and then returns to normal rotation.

When the cause for the overload is removed, during the reverse rotation, the driving motor returns to the normal rotation. If the cause of the overload is not removed, during the reverse rotation, the driving motor repeats the sequence of reverse rotation/normal rotation, reverse rotaion/normal rotation to shut off the power to the driving motor.
During this time, the escaper action is not stopped.

When the power to the driving motor is shut off, turn OFF the power switch and remove the cause of the overload.
For example, when too many screws are loaded into the scooping chamber, reduce the quantity of loaded screws to a proper level. If any screw is caught in the transport section, remove it.

After removing the cause of the overload, turn ON the power switch to operate the machine.
(Power reset)

TROUBLESHOOTING

For safety, always unplug the AC adapter from the wall outlet before making any adjustments.

Trouble	Cause	Corrective measures
T-1 The machine does not operate though the power switch is turned ON.	• Power is not supplied. • The machine has not unloaded screws from the pick up site for a certain amount of time. • Too many screws were loaded into the scooping chamber. • A foreign object (for example: a screw) intruded into the main body. • The AC adapter is faulty.	• Check the connection of the power supply of the AC power adapter. • Take out the screw from the pick up site. • Adjust the timer setting knob. • Reduce the quantity of screws in the scooping chamber to a proper load level. • Remove the foreign object. • Consult our service section. [Model number UI315-15]
T-2 Screws do not flow.	• Screws with a larger diameter than the specified rail size were loaded or screws with a different diameter were mixed in together. • An insufficient quantity of screws are in the scooping chamber.	• Use screws with the specified nominal diameter. • Remove the screws with the odd nominal diameter. • Add a proper quantity of screws into the scooping chamber.

Trouble	Cause	Corrective measures
T-2 Screws do not flow.	• Screws in an abnormal position in the passing plate cannot be swept away with the brush.	• Adjust the brush. Adjust the passing plate. If a proper amount of screws are loaded into the scooping chamber, the status may be improved. Use the optional brush. (stiffer bristles) [Parts No: NSB02110a#02]
	• The axis of the screw thread entered the passing plate.	• Remove the abnormal screw and check and adjust the passing plate.
	• A screw has stopped in an abnormal position while moving on the rail.	• Remove the screw in the abnormal position. Take care not to damage the rail groove. Move the bit guide bracket upward to remove the screw. After, adjust the position of the bit guide bracket in relation to height and direction.
	• The rail does not vibrate. (For example, a screw is obstructing the clearance in scooping chamber.)	• Remove the screw that is obstructing the clearance. • Check the vibration adjustment. If no screw is obstructing the clearance, consult our service section.

Trouble	Cause	Corrective measures
T-3 A screw has fallen into the rail groove.	• Screws with a smaller diameter than the specified rail size were loaded. • Screws with a total length shorter than the rail groove width cannnot be loaded.	• Use screws with the specified nominal diameter and length. • No corrective measure is available. Consult our service section.
T-4 The flow on the screw rail is improper.	• The clearance between the bit guide bracket and the head of the loaded screw is narrow. • Screws with a spring washer having one increment smaller than the specified nominal rail size were loaded. • The rail is oily or dirty. • The rail does not vibrate. (A screw is caught in the clearance.) • The motor is worn.	• Adjust the height of the bit guide bracket. Adjust the vibration. If, after following the instructions written above, the machine still does not function properly, consult our service section. • Clean the rail. • Remove the screws caught in the clearance. If there is no screw that is caught, consult our service section. • Adjust the vibration. • Replace the motor. [Part No: NSB 09182#05]

Trouble	Cause	Corrective measures
T-5 Screws tend to pass through the passing plate in an abnormal position.	• The passing plate is not adjusted properly.	• Adjust the passing plate.
The axis of the screw thread tends to enter the passing plate.	• Too many screws are in the scooping chamber.	• Reduce the quantity of screws to a proper level.
T-6 No screw comes to the pick up site.	• Screws are stopped while still on the rail.	• Adjust the height of the bit guide bracket.
	• Screws cannot be transferred smoothly from the rail to the escaper.	• Adjust the distance between the end of the rail and the escaper as well as the height of the escaper in relation to the rail.
T-7 The machine stops its operation suddenly.	• The overload protective circuit was activated.	• Turn the machine OFF and then ON again. • Remove the cause of overload.
	• Too many screws are in the scooping chamber.	• Remove screws to a proper level.
	• A screw is caught in the clearance.	• When the machine stops, even if the screws are at a proper level, consult our service section. • Remove the screw that is caught.
	• A screw, at the pick up site, could not be picked up for an amount of time.	• Remove the screw.

Trouble	Cause	Corrective measures
T-8 The scooping operation does not stop though screws are at the pick up site.	• The timer knob is not properly adjusted.	• Readjust the timer knob.
T-9 The escaper operation does not stop though screws are at the pick up site.	• The sensor does not detect a screw.	• Readjust the voltage of the sensor.
T-10 A screw has fallen into the machine.		• Shake the screw down through the hole at the bottom of the machine.
T-11 The noise of the machine has increased.	• There is insufficient grease.	• Apply grease to the transport section. ○ Recommended grease: BR2 Plus , Dow Corning Asia Co. Ltd.

Trouble	Cause	Corrective measures
T-12 The escaper does not rotate when no screws are present, although the indicator light is on.	• Undesired objects blocking front screw sensor. • Adjustment of the front screw sensors is unsuitable.	• Make sure there are no debris or other objects present in the sensor brackets. • If the escaper or stopper is damaged or worn-off, parts replacement is recommended. • Adjustment on front screw sensors as shown on P.23.
T-13 The escaper rotates in the wrong direction.	• When the escaper is operating, some alien object is preventing the escaper from rotating smoothly. • Escaper and the escaper guide do not fit together.	• Please check if the bit-guide and its mounting bracket are both positioned correctly so that sensors are not interfered or blocked, and that the screw can move freely. • If the escaper or escaper guide is damaged or worn off, replacement is recommended.
T-14 The escaper continues to rotate in the wrong direction.	• The origin sensor may be improperly adjusted.	• Please contact your dealer or our service section.

SPECIFICATIONS

Power AC adapter (switching type)	Input: AC100～240V 50/60Hz Output: DC15V 1A
Dimensions	123(W) × 181(D) × 145(H) (mm)
Weight	Approx. 3Kg (including rail)
Screw capacity	Approx. 80cc
Following accessories	Operation Manual 1 copy AC Adapter 1 unit Hexagonal Wrench 1 piece Screwdriver 1 piece Ground Wire 1 piece
Installation location	Level stable place
Installation and storage condition	Temperature 0 ~ 40 ℃ Humidity 10 to 85% (without condensation)
Compliance standards	EMC: 2014/30/EU MD: 2006/42/EC RoHS: 2011/65/EU

Notes :
- Please consult your distributor for thin head.
- Check if the axis diameter of the loaded screw corresponds with the below rail groove width.
- With therange of screw size and lengths below, there may be instances If unique screw shape or stracture not com;atible with the screw feeder unit.
- In the main body type, the main body model can be changed.
- To change the nominal diameter of loaded screw, replace it with a part that is mentioned in the next page table.
- The rail, escaper, stopper assembly, escaper guide-right and passing plate are separately available for replacement.
- The design, performance and specifications are subject to change without prior notice for the sake of improvement.
-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.

Reference table of the specified screws					Shape of screw head						
							Pan head				
Screw size	Screw shaft diameter(φ)	Screw head diameter (φ)	Screw head thickness (mm)	Screw shaft length (mm)	No. 0 pan head	Pan head	Sems	Double sems	Washer head	bind	Counter sunk head
φ1.0	0.9～0.95	1.8～4.5	0.35～1.0	1.6～10	○						
φ1.2	1.1～1.15	1.8～4.5	0.35～1.0	1.9～10	○						
φ1.4	1.3～1.4	2.0～4.5	0.35～1.0	2.2～10	○						
φ1.7	1.6～1.7	2.5～4.5	0.35～1.0	2.7～10	○						
φ2.0	1.9～2.1	3.0～6.0	0.35～4.5	3.2～20		○	○	○	○	○	○
φ2.3	2.2～2.4	3.3～6.0	0.35～4.5	3.7～20		○	○	○	○	○	○
φ2.6	2.5～2.7	3.6～6.0	0.35～4.5	4.2～20		○	○	○	○	○	○
φ3.0	2.9～3.2	4.0～6.0	0.35～4.5	4.8～20		○	○	○	○	○	○

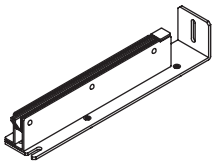
※ Compatible with washer diameter up to 9 mm, thickness 0.35 to 1.0mm.

Screw feeder series	Screw feeder model	Screw size	Exchange kit No.	Rail model No.	Escaper model No.	Stopper assembly model No.	Escaper guide-right model No.	Passing plate model No.
KNSBI	KNSBI10	φ 1.0	BI10SET	BI10	SIE10	SIES10	SIEM10	SW1017
	KNSBI12	φ 1.2	BI12SET	BI12	SIE12	SIES12	SIEM12	
	KNSBI14	φ 1.4	BI14SET	BI14	SIE14	SIES14	SIEM14	
	KNSBI17	φ 1.7	BI17SET	BI17	SIE17	SIES17	SIEM17	
	KNSBI20	φ 2.0	BI20SET	BI20	SIE20	SIES20	SIEM20	SW2030
	KNSBI23	φ 2.3	BI23SET	BI23	SIE23	SIES23	SIEM23	
	KNSBI26	φ 2.6	BI26SET	BI26	SIE26	SIES26	SIEM26	
	KNSBI30	φ 3.0	BI30SET	BI30	SIE30	SIES30	SIEM30	

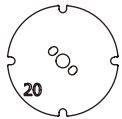
※ -In the Exchange kit ordered, Rail assembly, Escaper, Stopper assembly, Escaper guide-right and Passing plate are included.
-Please contact us by ″ ～ SET″ type when you need rail.

○ Replacement parts

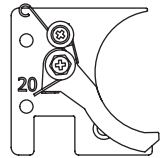
・Rail



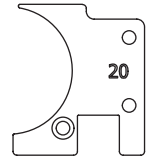
・Escaper



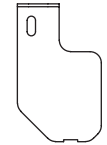
・Stopper assembly



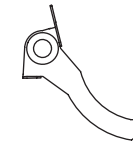
・Escaper guide-right



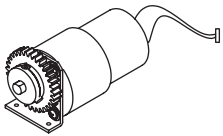
・Passing plate



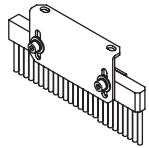
・Stopper
TPO00512



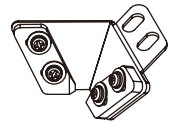
・Main motor unit
NSIB7115



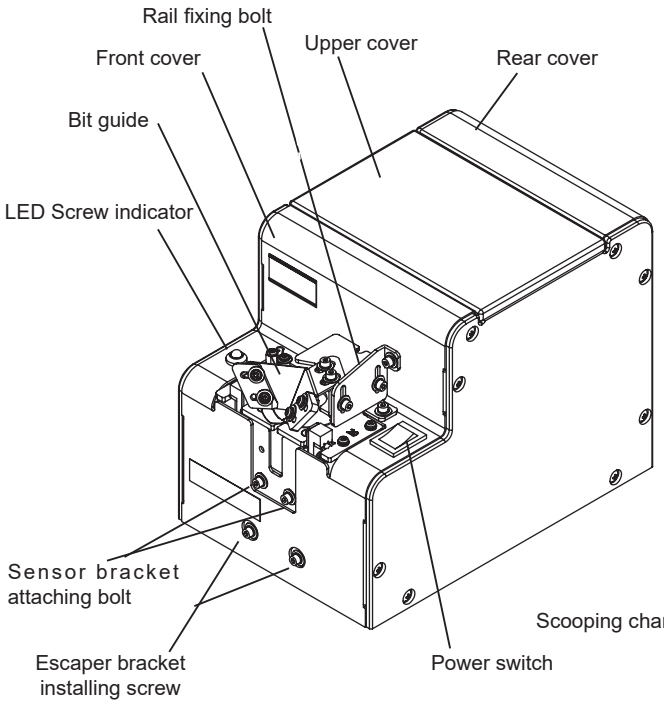
・Brush assembly
NSB02053 #01

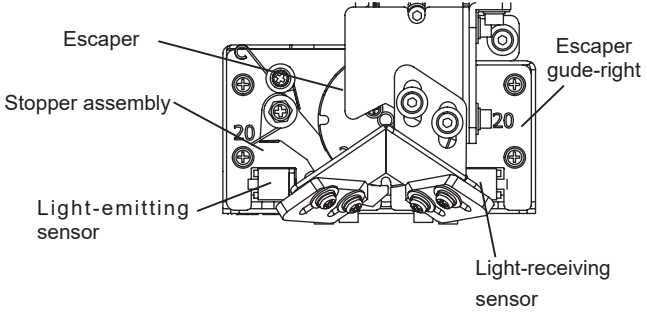


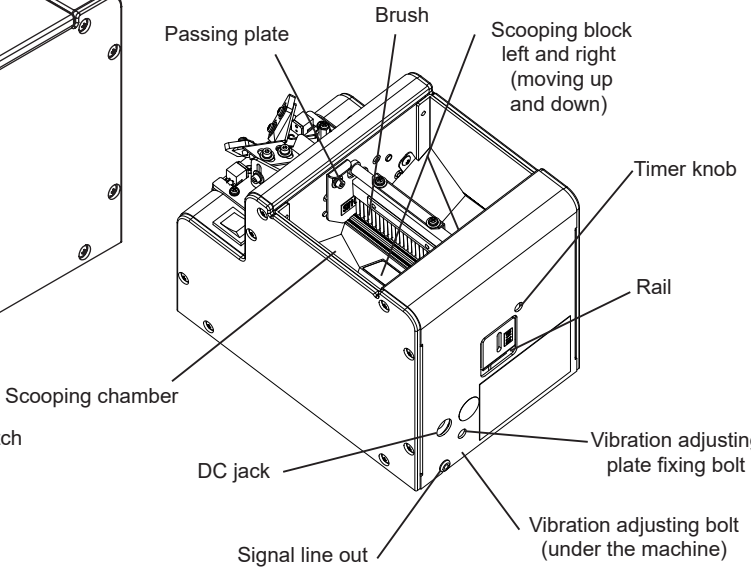
・Bit guide assembly
NSIB6103



PARTS AND COMPONENTS

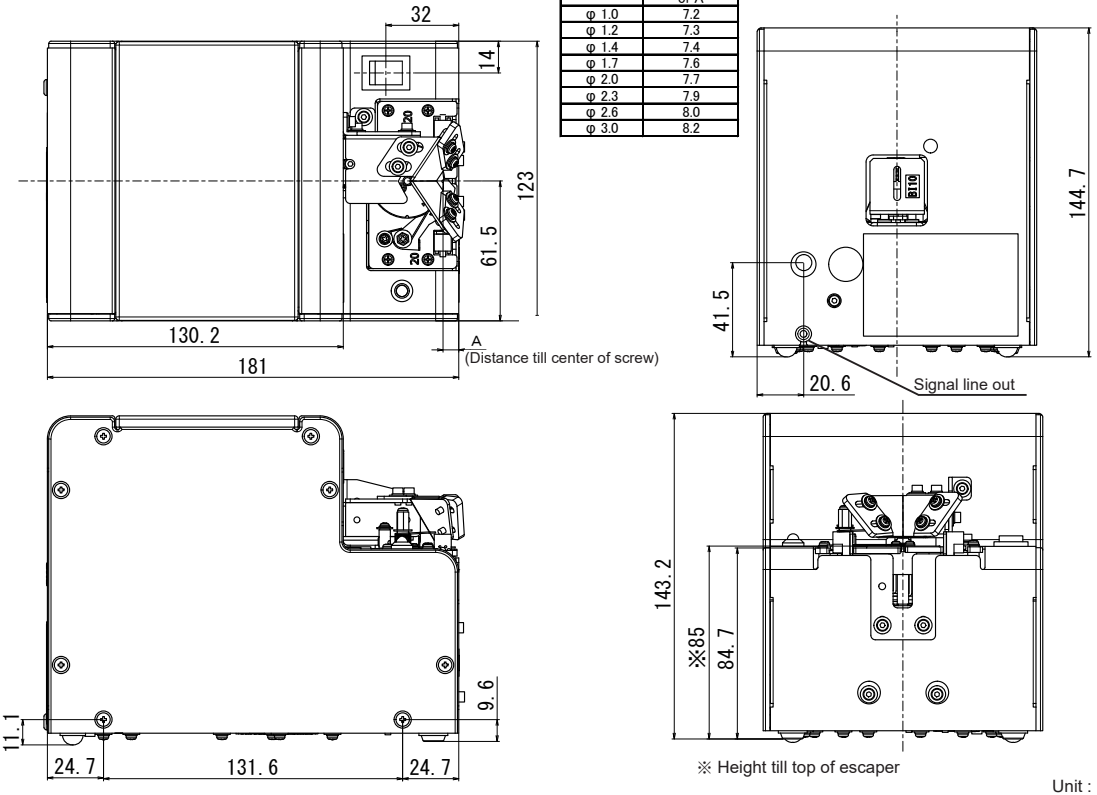






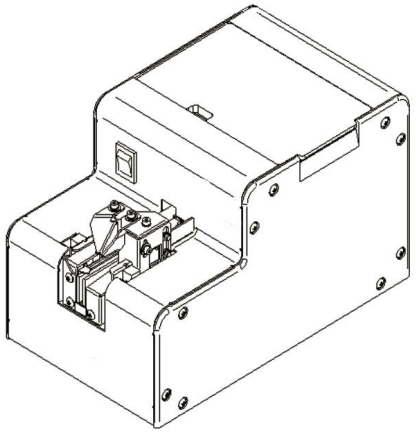
EXTERNAL DIMENSIONS

Screw size	Approximate measurement of A
φ 1.0	7.2
φ 1.2	7.3
φ 1.4	7.4
φ 1.7	7.6
φ 2.0	7.7
φ 2.3	7.9
φ 2.6	8.0
φ 3.0	8.2



Unit : mm

KNJ Series



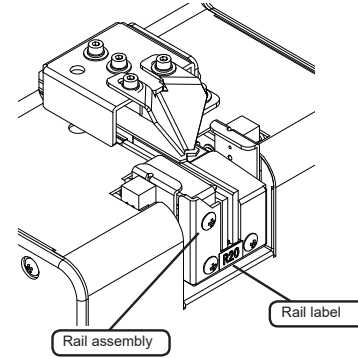
PREPARING AND ADJUSTING THE SCREW FEEDER

Verifying the model number

Check if the machine has the parts which match the nominal diameter of the screws to be loaded. Check the model number of the rail, escaper, stopper assembly, escaper guide-right and passing plate by referring to the following table.

Type	Model number	Screw nominal diameter	Exchange Kit number	Rail model number	Passage plate model number
KNJ-23	KNJ-2320	φ2.0	R20SET	R20	W2320
	KNJ-2323	φ2.3	R23SET	R23	W2323
	KNJ-2326	φ2.6	R26SET	R26	W2326
	KNJ-2330	φ3.0	R30SET	R30	W2330
KNJ-45	KNJ-4535	φ3.5	R35SET	R35	W4535
	KNJ-4540	φ4.0	R40SET	R40	W4540
	KNJ-4550	φ5.0	R50SET	R50	W4550

NOTE: Replacement rails and passage plates are available as options.
In the Exchange Kit ordered separately, rails and passage plates are included.



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

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

CAUTION Before performing any adjustment procedures, please turn off the power

Checking and Adjusting the Brush

Check the height of the brush.

Turn the power on and off and make sure the brush is horizontal as shown in the right figure.

Insert 2-3 screws into the rail groove and rotate the brush downwards by hand. If the gap between the tip of the center of the brush and the head of the screw used is approximately 0 mm, no adjustment is necessary.

If adjustment is necessary, perform the following adjustment.

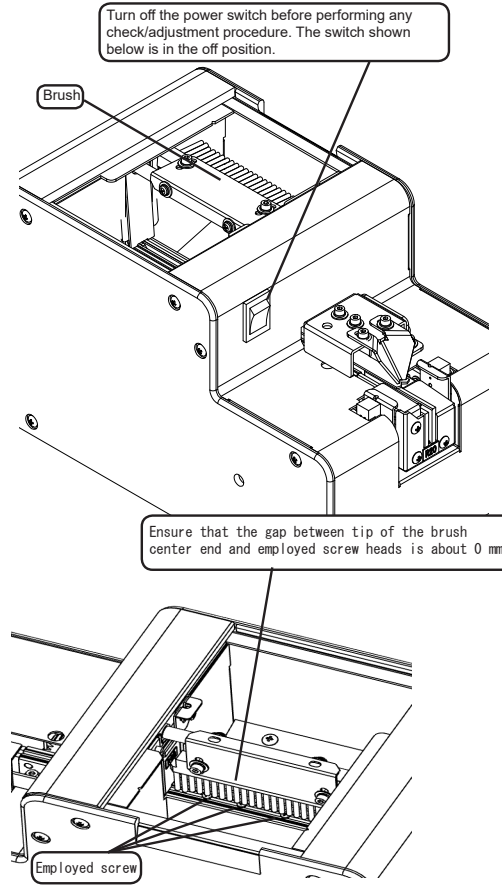
Loosen the brush mounting screw.

Adjust so that the gap between the tip of the center of the brush and the head of the screw used is approximately 0 mm.

Do not adjust the brush too low at this time.

After adjustment, tighten the brush mounting screw.

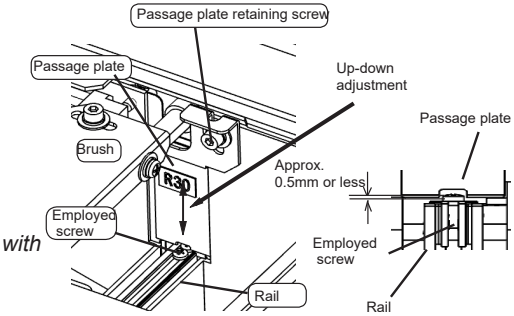
Rotate the brush again and make sure it moves smoothly without resistance.



Checking and Adjusting the Passage Plate

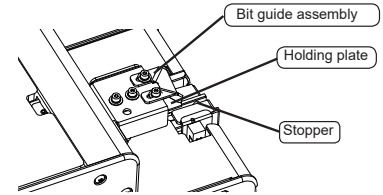
Drop the screws into the rail groove and slide them to the passage window.
Check or adjust the passage plate height: ensure the clearance between the upper edge of the passage window and the screw heads is no more than ~0.5 mm, and that screws pass through smoothly.
If requirements are not met, repeat the adjustment as needed.
Once properly adjusted, tighten the passage plate retaining screw.

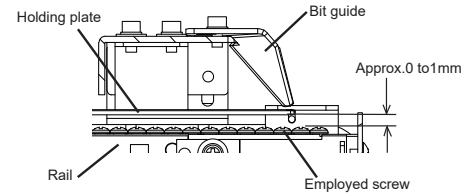
Note: Screws with a short shank may require fine adjustments, while screws with a long shank typically need only coarse adjustments.



Checking and Adjusting the Holding Plate

Drop about 10 applied screws into the rail groove.
Tilt this machine or operate it so that the screws are delivered to the rail assembly stopper.
If the shutter is closed or there is no clearance between the holding plate and screw heads, the screws will not be able to move. The screws can move when the shutter is open with an adequate clearance provided between the holding plate and screw heads.
When the clearance is 0 to 1 mm, the holding plate height needs no further adjustment.
NOTE: If the rail stopper captures a screw and brings the vibration to a stop immediately, adjust the timer setting control on the rear side of the unit.



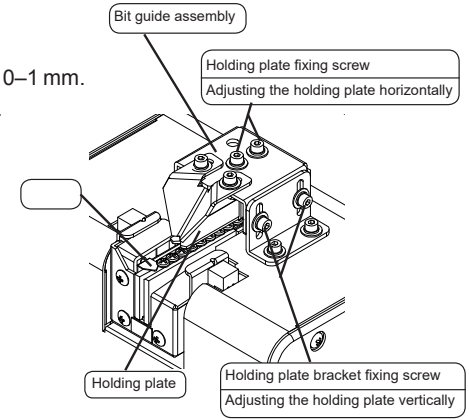


If the holding plate height needs to be adjusted, proceed as directed below.
Drop a screw into the escaper and operate the machine.
If the hold down plate touches the screw head with no gap, the screw will not move.
If the shutter is open and there is a gap, the screw will move.

Height Adjustment:
Loosen the hold down plate bracket fixing screw.
Move the hold down plate up or down so the gap between the plate and screw head is 0–1 mm.
Ensure the plate is parallel to the rail; the rear gap should not be smaller than the front.
Retighten the fixing screw after adjustment.

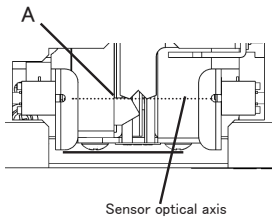
Left-Right Adjustment:
Loosen the fixing screw and shift the hold down plate as needed, then retighten.

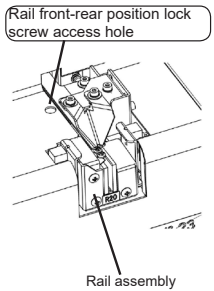
Note on Screw Shank Length:
Short shank screws require fine adjustments.
Long shank screws can be adjusted coarsely.



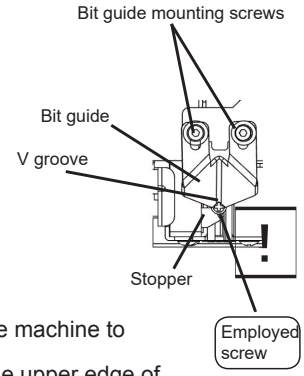
Checking and Adjusting the Rail Assembly

Check the position of the stopper and sensor.
- Ensure that the rail is fixed so that "A" portion of the stopper is 0mm to 0.5mm ahead of the sensor optical axis.
- If adjustment is necessary, adjust it front and rear by loosening the rail front-rear position lock screw





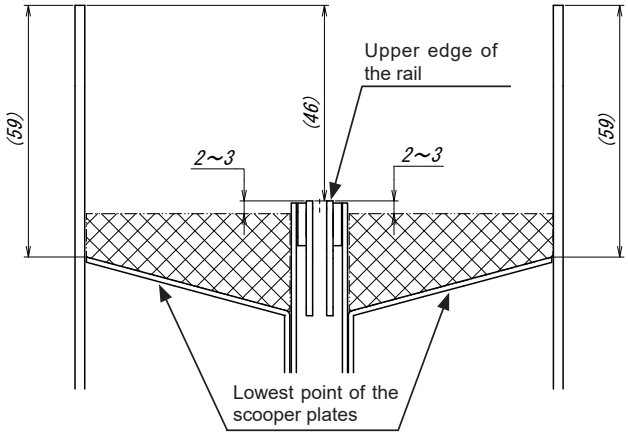
Checking and Adjusting the Bit Guide



Load 5–10 screws and tilt the machine until they hit the stopper.
If screws are blocked, turn timing shaft clockwise to open shutter.
Adjust stopper by moving rail assembly forward/backward.
Align bit guide “V” groove with screw head: loosen guide, shift, retighten.

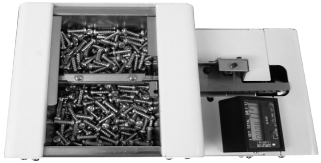
Note: screw stock limit

Overfilling the storage chamber of the feeder can interfere with screw feeding or cause the machine to overload and malfunction.
Please refer to the diagram below and adjust the screw level so that it is 2–3 mm below the upper edge of the rail when the scooper plates are at their lowest position.



○ Moderate amount of screws

✕ Too many screws



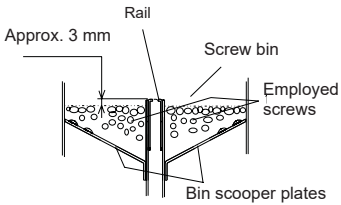
OPERATING THE SCREW FEEDER

Loading the Screws

Open the screw bin lid.

With the bin dipper plates at their lowest position, pour in screws until they are ≈3mm below the top of the rail.

Ensure screws are evenly distributed between the left and right bins and do not overload the bin.



Starting the machine

Connect the AC adapter: plug one end into the machine's DC jack and the other into a power outlet.

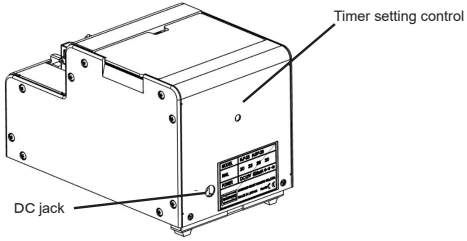
Turn on the main power switch; the built-in lamp will illuminate.

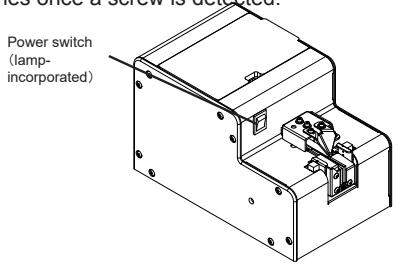
When powered on:

- The drive motor runs,
- The bin scooper plates move up and down,
- The rail vibrates.

Screws are transported along the rail to the stopper.

If no screw is picked up for a while, vibration stops automatically and resumes once a screw is detected.





Operational features

This machine is equipped with an overload protection circuit.

If a movable part is overloaded during a feeder operation, for instance, when a small screw or other particles is trapped, or excessive screw is placed into 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 overload is eliminated upon motor reversal, the motor reverts to its normal rotation, resuming normal screw supply.

If the cause of the movable section overload is not cleared 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 power supply to the drive motor.

When the power to the drive motor shuts off as above, please turn off the power switch and clear the cause of overload. For instance, when 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.

The timer setting can be adjusted according to the screw type.

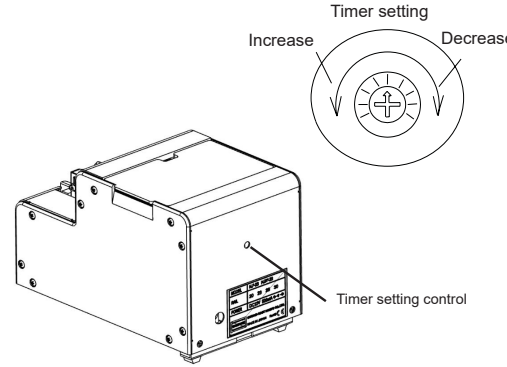
Function descriptions

The actual screw feeding speed varies with 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 the feeder.

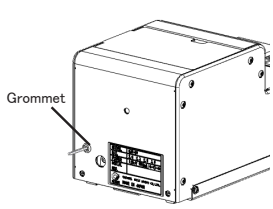
It is recommended that you decrease the timer setting when the feeding speed is high, and increase the setting when the feeding speed is slow.

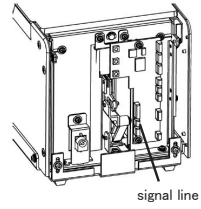
When adjusting the timer setting, please exercise care and do not rotate the control beyond its permissible range.



This machine is equipped with an external output signal cable.

This machine can take out the screw extraction signal. Please use it for connectionwith general purpose counter etc. Since the signal line is stored inside, when using it please remove the back cover and pull out the signal line from the grommet.



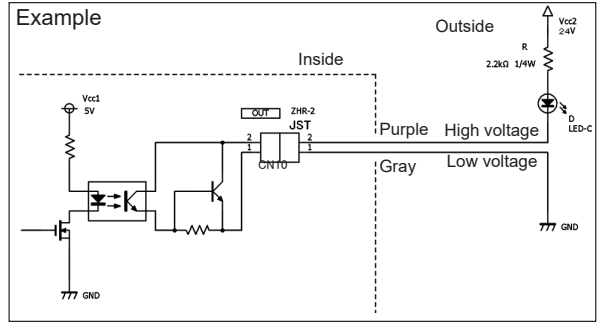


[Function]
When picked screw up : signal high (ON) approx. 0.2sec
Incoming current : shall be limited to less than 100mA
CAUTION : Additional resistor is required on external circuit for regulating current

[Capacity]
MAX DC current : 100mA
External supply voltage : 5 to 24VDC(max27VDC)

[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 (Nomally OFF)
(ON when picked screw up)
Gray line --->Common line



This machine is equipped with a tilting mechanism

When the screw feeding speed is too slow, you can install this machine in a tilted position.

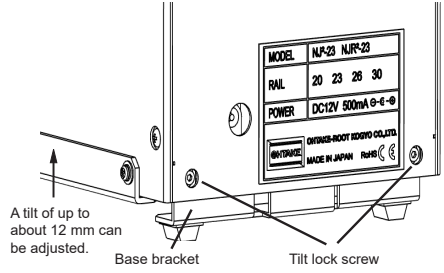
Descriptions

Loosen the tilt lock screws.

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

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

Please do not tilt this machine beyond the capacity of its tilt mechanism.



Count sensitivity adjustment

The machine counts screws by detecting the movement of the rail stopper. If the count seems off or the rail has been replaced, adjust the angle of the switch link receiver.

Normally, the micro switch is pressed. When a screw is removed, the stopper moves, pushing the roller on the switch link and activating the micro switch.

To adjust:

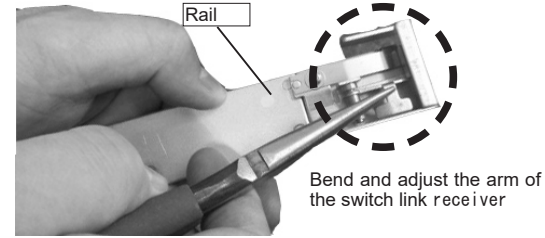
Hold the switch link receiver with needle-nose pliers.

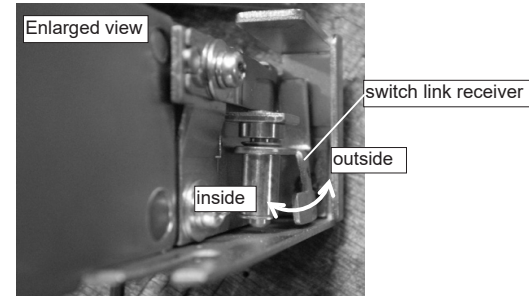
Gently bend it to set the angle so the micro switch triggers reliably when a screw is taken from the rail.

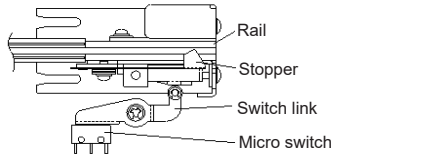
Tips:

If screws aren't being counted, bend the link slightly outward.

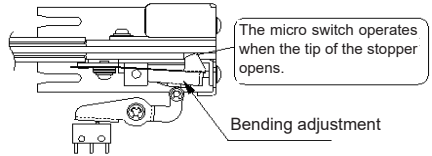
If it opens too far and misses counts, bend it back a little.



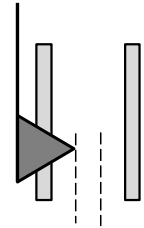




When waiting for screw removal



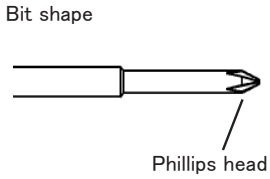
When screw removal



Ideally, the microswitch will operate when the stopper is open to 2/3 of the rail width. Adjust according to the screws used and the actual removal.

Picking up the screw

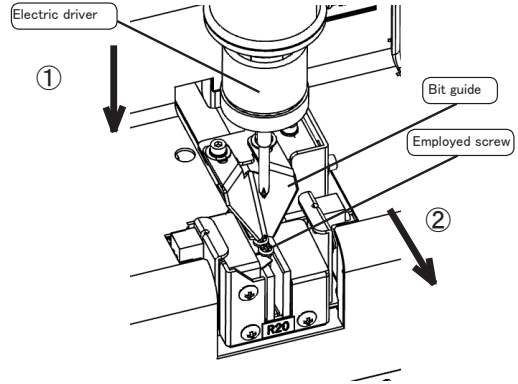
Attach a bit to your electric screwdriver to match the head of the screw. Refer to the following.



Standard	Screw normonal diameter	Cross size on top No.
JIS small screw	ϕ 2.0	No.1/No.2
	ϕ 2.3	No.1/No.2
	ϕ 2.6	No.1/No.2
	ϕ 3.0	No.1/No.2
	ϕ 3.5	No.1/No.2
	ϕ 4.0	No.2
	ϕ 5.0	No.2

Notice: The screwdriver bit must be magnetized before use.

Put the driver bit somewhere in the opening of the bit guide and push it straight down while turning the bit slightly, until it hits the screw head.
Vibration of the rail shall stop when the screwdriver bit reaches the bottom of the screw head slot.
Then pull the screw out towards yourself.
Be careful not to push the screwdriver bit into the screw head with too much force. If the driver is lowered into the screw head with moderate force, vibration of the rail shall stop.
Do not use more pressure than necessary to stop movement of the rail.



MAINTENANCE

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

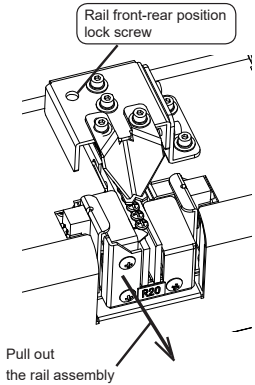
Cleaning the Rail and Rail Guide Wall

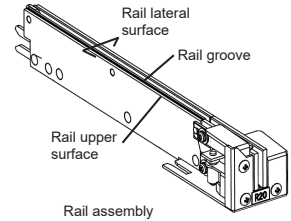
When the rail groove becomes dirty, the screw feeding speed may be affected. If such situation occurs, wipe the rail groove clean with a thin, clean cloth moistened with alcohol.

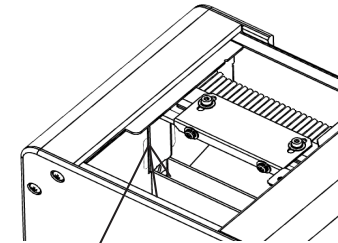
If the rail groove is heavily soiled, remove the rail assembly and then perform cleaning.

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

After cleaning, reassemble the rail section by reversing the removal procedures above.
Adjust the rail assembly position.(Refer to 4-5)







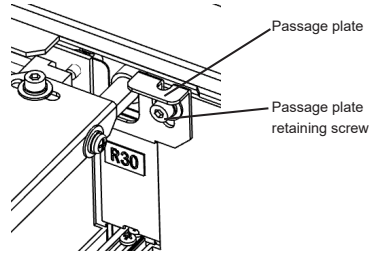
Replacing the rail assembly

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, see the earlier section on cleaning.

Replacing the passage plate

This machine allows you to change the screw diameter setup by replacing some components.
To change the screw diameter, you have to replace the passage plate 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.

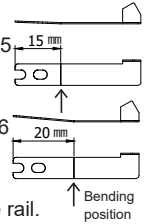


Replacing the stopper

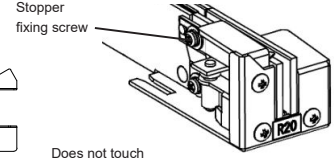
When the tip of the stopper of the rail becomes worn-off or damaged and becomes troublesome in taking out, please order an optional stopper and exchange it.
Please note that the shape varies depending on the rail size.

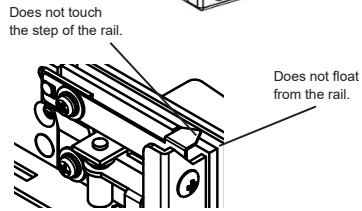
Part number: Stopper:M2.0-3.0 NJ06075

Stopper:M3.5-5.0 NJ06076



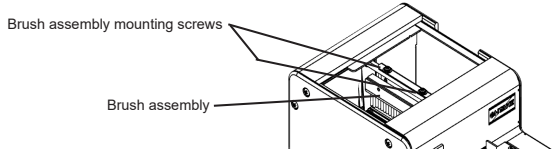
Remove the stopper fixing screw and replace it.
When installing, please make sure the tip of the stopper does not float from the rail.
If taking out is heavy or too light, adjust the bending condition manually according to your preference.

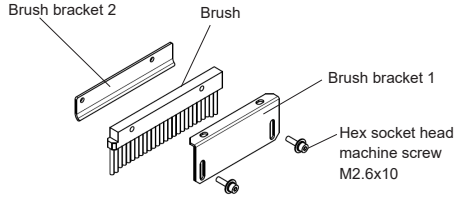




Replacing the brush

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, please position it as shown below.
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 preceding steps.

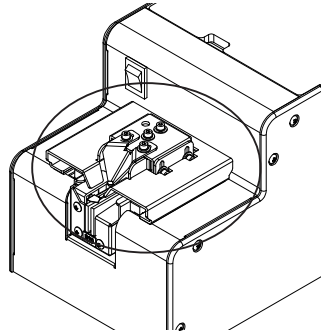




All the above replacement parts are available as options. When they need replacement, contact your local dealer and specify the machine model number, part names, and part model numbers.

●Sub-cover (optional)
To protect the sensor and prevent screws from falling inside the device, an optional cover is available.
It can be attached to the front cover of the device with a magnet.
Please contact your dealer.

- Sub-cover assembly for NJ: NJ00104
- Sub-cover assembly for NJC: NJ00106



TROUBLESHOOTING

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

Problem	Cause	Remedy
T-1 The machine does not start when power switched on.	-No power is supplied. -The screw in the removal section has not been removed for a predetermined period of time.	-Ensure that the AC adapter is properly connected to a power source. -Remove the screw from the removal section. Adjust the timer setting control.
T-2 Loaded screws do not feed.	-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 adjusted.	-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.
T-3 A screw has been trapped in the rail groove.	-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.	-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
T-4 The screws on the rail do not feed smoothly.	-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.	-Shift the holding plate (screw guide 1) upward. Use the Quicher 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.
T-5 Oddly oriented screws occasionally travel through the passage window. A screw shank easily gets caught in the passage window.	-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.	-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.
T-6 Screws are not transported to the removal section.	-Screws are stopped in the middle of the rail section. -Screws are not smoothly delivered from the rail to the front stopper.	-Readjust the holding plate (screw guide 1). -Readjust the passage plate.
T-7 The bit doesn't match the Pillips head.	-The rail assembly is improperly adjusted. -The bit guide is improperly adjusted.	-Readjust position between the rail and bit guide.

Problem	Cause	Remedy
T-8 The machine comes to a sudden stop.	-The overload protection circuit is activated. -The screw in pick-up section has not been removed for a long period of time.	-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.
T-9 The bin scooping plates fail to stop moving when there is the screw in pick-up section.	-The timer setting control is improperly adjusted.	-Readjust the timer setting control.
T-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.

SPECIFICATIONS

Exclusive adapter (Switching type)	Input : AC100～240V 50/60Hz Output : DC15V
Dimension	134W X 215D X 139H (mm)
Weight	Approx.3.7kgf
Screw capacity	150cc
Accessories	Safety information x1 AC adapter x1 Allen wrench x1 Screwdriver x1 Ground wire x1
Installation location	Level stable place
Installation and storage condition	Temperature 0 ~ 40 ℃ Humidity 10 to 85% (without condensation)
Compliance standards	EMC: 2014/30/EU MD: 2006/42/EC RoHS: (EU)2015/863

NOTES

-Measure the shank diameter of the screw to be used, and 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 the feeder unit. Please consult the distributor or manufacturer for further infomation.

-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.

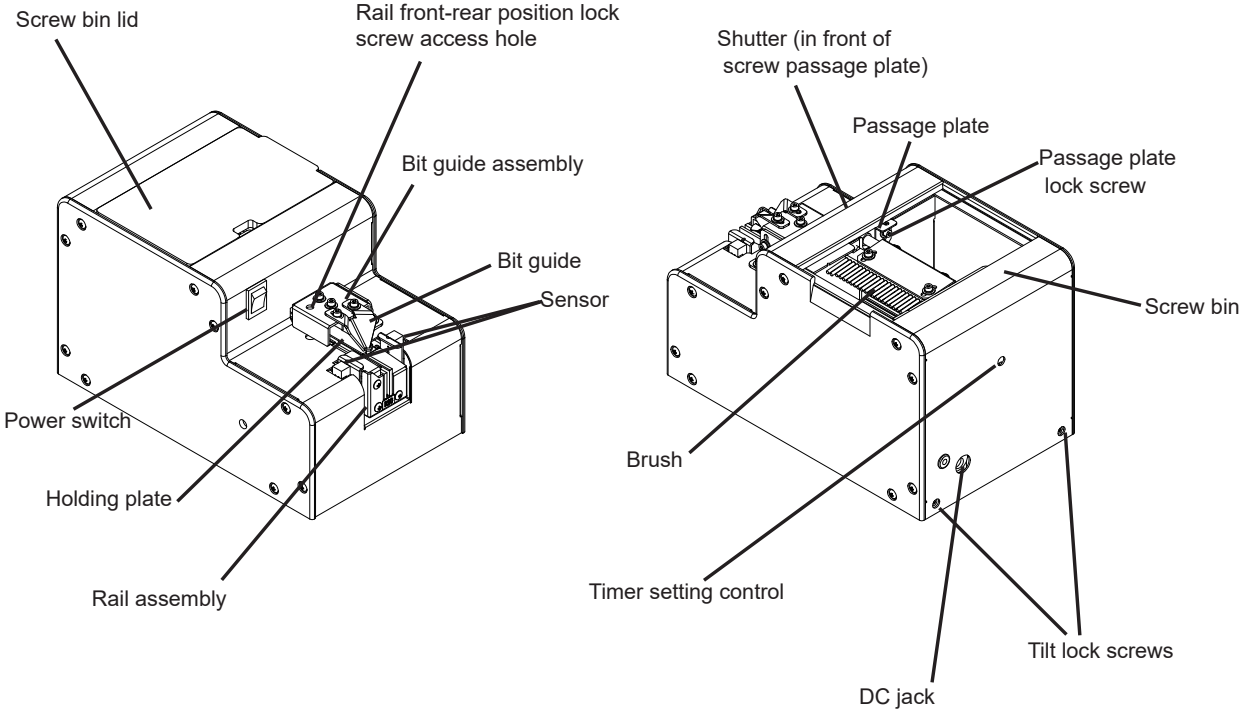
Applicable Screw Reference Table						Screw head shape						
							Pan head					
Screw nominal diameter	Screw shaft diameter A(φ)	Screw shaft length B(mm)	Screw head thickness C(mm)	Screw head diameter D(φ)	Washer diameter E(φ)	Pan head	Sems	Double sems	Washer head	Bind	Counter -sunk	CAP screw
φ2.0	1.8～2.1	3.2～18	0.5～5.5	3.0～ 3.5	3.0～ 8.0	○	○	○	○	○	○＊1	○＊2
φ2.3	2.1～2.4	3.7～18	0.5～5.5	3.0～ 4.0	3.0～ 8.0	○	○	○	○	○	○＊1	○＊2
φ2.6	2.4～2.7	4.2～18	0.5～5.5	3.6～ 4.5	3.6～ 8.0	○	○	○	○	○	○＊1	○＊2
φ3.0	2.8～3.2	4.8～18	0.5～5.5	4.0～ 5.5	4.0～ 8.0	○	○	○	○	○	○＊1	○＊2
φ3.5	3.3～3.8	5.6～18	0.5～8.0	4.8～8.0	4.8～12	○	○	○	○	○	○＊1	○＊2
φ4.0	3.8～4.3	6.4～18	0.5～8.0	5.4～8.0	5.4～12	○	○	○	○	○	○＊1	○＊2
φ5.0	4.8～5.2	8.0～18	0.5～8.0	6.2～10.0	6.2～12	○	○	○	○	○	○＊1	○＊2

＊ Compatible with washer thicknesses from 0.4 to 1.0 mm.

＊1 Special specification T046 recommended. (With screw guide for countersunk screws)

＊2 Special specification T274 recommended. (With chamfered rail/L-shaped brush)

PARTS AND COMPONENTS

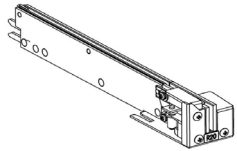


Type	Model number	Screw nominal diameter	Exchange Kit number	Rail model number	Passage plate model number
KNJ-23	KNJ-2320	φ2.0	R20SET	R20	W2320
	KNJ-2323	φ2.3	R23SET	R23	W2323
	KNJ-2326	φ2.6	R26SET	R26	W2326
	KNJ-2330	φ3.0	R30SET	R30	W2330
KNJ-45	KNJ-4535	φ3.5	R35SET	R35	W4535
	KNJ-4540	φ4.0	R40SET	R40	W4540
	KNJ-4550	φ5.0	R50SET	R50	W4550

NOTE: Replacement rails and passage plates are available as options.
In the Exchange Kit ordered separately, rails and passage plates are included.
Please contact us by " ～ SET" type when you need rail

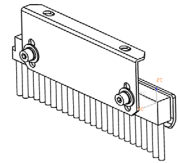
Replacement parts

Rail

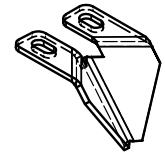


Passage plate

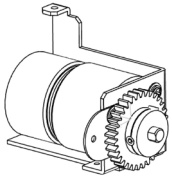
Brush assembly : NJ02005 #02



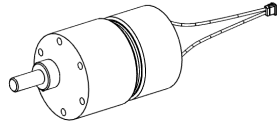
Bit guide : NJ05016



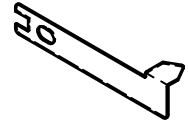
Motor drive assembly: NJ04500 #01



Main motor (with harness)
: NJ09582 #05

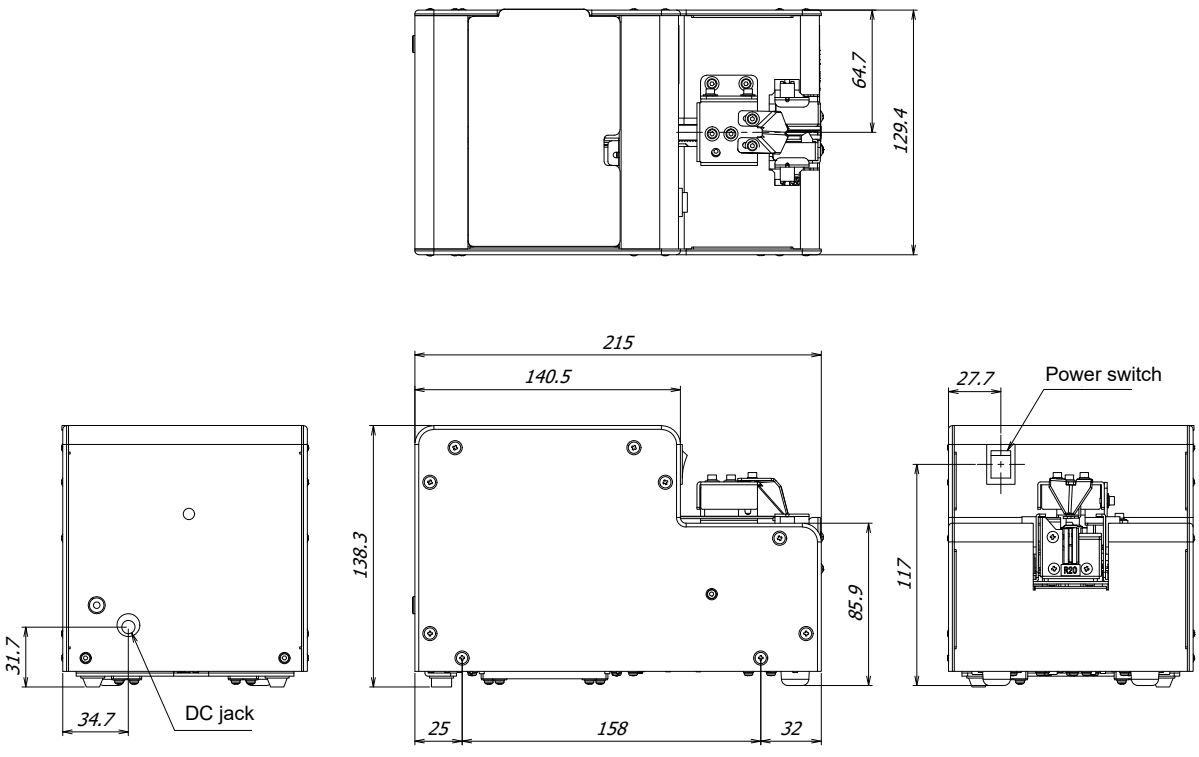


Stopper



・stopper : M2.0-3.0
NJ06075
・Stopper : M3.5-5.0
NJ06076

External dimensions



[unit: mm]

AFT
AIR FLUID TECHNOLOGY

Ketzergasse 427 | A-1230 Wien

T: +43 / 1 / 9619448

E: office@aft-gmbh.at

W: www.aft-gmbh.at