Micro Nejeana

Automatic Panhead Machine Screw Feeder Nejeana Z

Thank you for purchasing KOFU SEIBYO's Automatic Panhead Machine Screw Feeder Nejeana NJN-Z.

This manual is intended to describe the operation of the product
and important safety precautions.
For safety and operating comfort of this machine,
be sure to read this Operation Manual
and clearly understand the contents.
This manual is also of help for handling an uncertain situation
and malfunction in case it occurs.

Keep this manual available whenever necessary.

Safety

The following safety precautions should always be observed to assure further safe operations.

Safety Precautions

Read and understand "Safety" carefully before using the product for safety assurance.
Observe the following precautions to protect workers, workers around, and property.

The following safety precautions should always be observed for safety.

1. Avoid the following conditions for machine installation.
   Locations exposed to dust, oil, moisture and vibrations
2. Do not control and disassemble the AC adapter with wet hands.
3. Stop using the machine when abnormal smoke, odor or noise is detected, and unplug the cord from the wall outlet.
   (Attachment plug, adapter, connecting cord, and socket included)

DANGER

"DANGER" denotes that there is an imminent hazard which will cause serious personal injury or death, if disregarded and mishandled.

Prohibited

Do not plug too many leads into a single socket.
Potential fire and overheating will occur if disregarded.

Prohibited

Do not modify, forcefully bend, and pull the AC adapter. No heavy object must be placed on the adapter.
Potential fire and electric shock will occur if disregarded.

Prohibited

Be sure to use the specified power voltage (AC100V-240V) and supplied AC adapter only.
Potential fire, electric shock and damage will occur if disregarded.

Prohibited

Do not touch the AC adapter with wet hands.
Potential electric shock will occur if disregarded.

Prohibited

Do not touch the AC adapter during electrical storms.
Potential electric shock will occur if disregarded.

Prohibited

Make sure the blade of the AC adapter is free of dust before plugging it into the wall outlet.
Potential fire and electric shock will occur if disregarded.

WARNING

"WARNING" denotes that there is a hazard which may cause serious personal injury or death, if disregarded and mishandled.

Prohibited

Keep metal away from the opening of the machine.
* In case the metal object enters the AC adapter, remove the adapter
from the wall outlet and contact the dealer.
Potential fire, electric shock and damage may occur if disregarded.

Prohibited

Keep from water. (Make sure that a water-filled container is kept clear of the machine.)
* This machine is not water-resistant. In case water enters the machine, remove the AC adapter from the wall outlet and contact the dealer.
Potential fire, electric shock and damage may occur if disregarded.

Prohibited

Do not disassemble and modify the machine. (Modification is prohibited by law.)
Potential fire, electric shock and damage may occur if disregarded.

Prohibited

Remove the AC adapter from the wall outlet if smoke or abnormal odor occurs.
Potential fire and accident may occur if disregarded

CAUTION

"CAUTION" denotes that there is a hazard which may cause minor personal injury or property damage, if disregarded and mishandled.

Prohibited

Keep the AC adapter cord and the machine away from flame.
Potential fire, electric shock and damage may occur if the cord sheath or the machine melts.

Prohibited

Avoid unstable and vibration-prone areas.
Potential personal injury and damage may occur if the machine falls.

Prohibited

Do not leave the machine in an area exposed to direct sunlight.
Potential fire may occur due to rise in internal temperature.

Prohibited

Avoid areas subjected to abrupt changes in temperature
Potential damage may occur if disregarded.

Prohibited

Avoid dust, dirt, and moisture.
Potential fire, electric shock and damage may occur if disregarded

Always hold the machine when removing the AC adapter.
Potential fire, electric shock and damage may occur if the cord is pulled.

Symbol of don'ts

Symbol of dos

***** Table of Contents *****

[1] Overview of Nejeana (NJN-Z)

Nejeana Z is designed to enhance screw fastening efficiencies in the cell manufacturing system and minimize burdens on workers. Be sure to be well-versed in machine adjustment, described later, to make proper adjustments attuned to screw characteristics and allow this machine to deliver its performance fully.

Features of Nejeana (NJN-Z)

1. Compact screw feeder with 25% lower volume compared as before
2. Smooth screw feeding achieved with the dual sensor
3. Low-friction and less-soil design attributed to low hopper internal circulation
4. All-in-one front panel operation allows easy access to the control panel during lateral alignment
5. Support for No.0 panhead machine screws ranging from M1.4 to M2.0

[2] Accessories

Accessories listed below are supplied in the product package.
Be certain all the accessories are packed with your machine.

●NJN-Z summarized instructions 1
The summarized instructions for operating Nejeana Z are provided.
(Note: This Operation Manual is not included with the machine. A downloadable file is available at our website. Download the manual and print it out when necessary.)

●M2.6CAP bolt hexagonal wrench
This hexagonal wrench is used to position the bit guide.

●Warranty card
Keep the warranty card under seal of the dealer.

●Power adapter
Supplied adapter (standard): AC100 to 240V/50Hz•60Hz (input), DC12V (output)
Use the supplied adapter only.

●Sensitivity adjustment slot screwdriver
Use the dedicated Phillips screwdriver to adjust the drum reverse sensitivity.
When using other screwdriver, make sure to use one of the proper size that fits the adjustment slot groove. Failure to use the proper screwdriver may cause the slot's flutes to be damaged and disable adjustment.

[3] Names of Parts (NJN-Z)

Figure 1

Figure 2

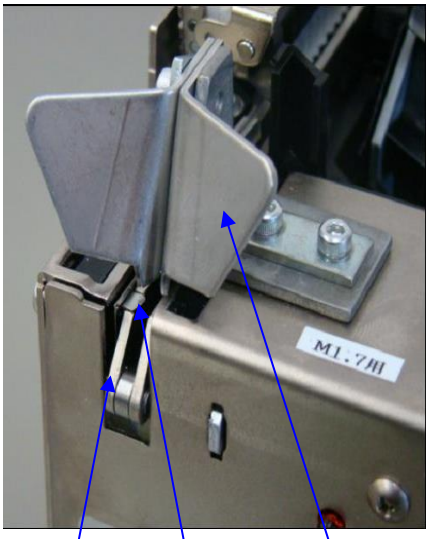


Figure 3

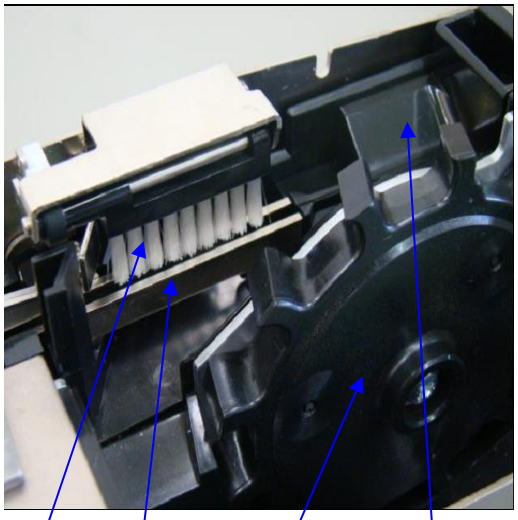
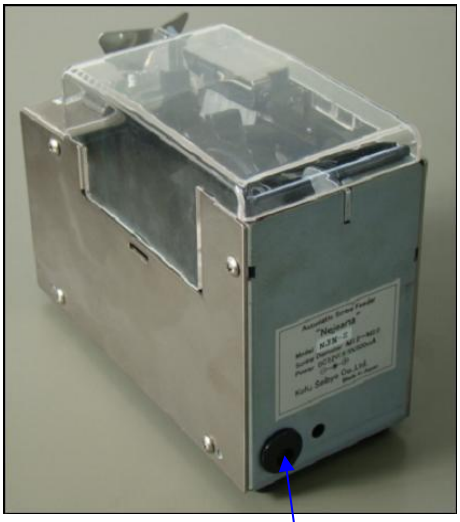


Figure 4



[4] Adjustment and Handling

4-1 Switches and adjustment slots (See Fig. 5)

Nejeana Z is designed to allow setting change of screw feed speed, vibration frequency, and drum rotation speed in combination with Switch 2 (SW2) and Switch 3 (SW3) mounted on the front panel. (See table 1)

Respective operation modes are established if the power is turned on while holding SW2 or SW3. (See table 2)

Table 1. Switch Operation (Setting change during operation)

SW3	SW2	Operation
↑	↑	Motor acceleration
↓		Motor deceleration
↑	↓	Increase in vibration amplitude
↓		Decrease in vibration amplitude
↑	○	Increase in vibration frequency
↓		Decrease in vibration frequency
○	↑	Storing settings (Hold up the switch for 5 sec.)

Symbols ↑: Push up the switch.
↓: Push down the switch.
○: The switch is in the center position.

Note ・Drum rotation speed and brushing speed change with acceleration and deceleration of the motor.
・Screw feed speed varies with the vibration amplitude.
・Changes should be saved after setting changes are made. If not saved before power-off, they are overridden by default settings upon power-on.

Figure 5

Table 2. Switch Operation (When the switch is held down for startup)				
SW3	SW2	Operation mode	LED3 blinking	Remarks
○	↑	Normal operating mode	Once	This is mode used for normal operation. Screw supply starts upon input of the incoming screw sensor and stock sensor.
↓	○	Sensor disabled	Twice	Screw supply remains on despite sensor input.
↑	○	Sensor operation check	5 times	This is mode used for sensor operation check.
○	○	Memory mode	6 times	Screw supply starts in a mode stored in the setting.
○	↓	SCI command mode	3 times	Not used by a user.
X	X	SCI command mode	4 times	Not used by a user.

If new settings are not saved after startup in any mode, the settings are overridden by default settings upon next startup.

Normal operating mode	In this mode, the incoming screw sensor built in the end of the rail and the stock sensor in the middle of the rail monitor the flow of screws and control it to assure smooth screw supply. The machine is designed to continue operation to keep screws stored if no next screw is fed after a screw reaches the end of the rail. Screw supply stops when screws are filled up to the stock sensor. Screw supply is resumed upon removal of the screw on the rail end. If the two sensors detect no screws for 4 minutes, it is recognized as no screws, which brings the machine to a stop.
Sensor disabled	The machine remains on until the power is turned off despite the presence of screws on the rail or running out of screws.
Sensor operation check	This mode is used for checking operation of the incoming screw sensor and stock sensor. The vibrator and the motor remain off. Incoming screw sensor ON・・・・・LED2 OFF OFF・・・・LED2 ON Stock sensor ON・・・・・LED3 OFF OFF・・・・LED3 ON
Memory mode	In this mode, the LED blinks according to a mode set after it blinks 6 times for representing the memory mode. (common for normal operation) e.g.: Startup in the sensor disabled mode →LED3 Blinking (6 times) Blank (1 sec) Blinking (twice) Startup in the normal operating mode →LED3 Blinking (6 times) Blank (1 sec) Blinking (once)

4-2 Vibration adjustment

Before adjustment

Nejeana Z is factory-adjusted in vibration for screw feeding. Proper adjustments of vibration frequency and amplitude are required based on usage conditions.

If adjustment works in reverse, immediately turn off the power without saving the setting. Upon re-turn on of the power, pre-adjustment setting is restored.

Potential malfunction may be occurring if extremely low or no oscillations are encountered when Nejeana Z is in use. See the later chapter "Troubleshooting" for proper handling.

Adjustment

Change of screw feeding pattern during vibration

1.Faster screw supply
Increase the vibration amplitude (see table 1). Push up SW3 while holding SW2 down to increase the amplitude.

2. Slower screw supply
If adjustment works in reverse, immediately turn off the power without saving the setting. Upon re-turn on of the power, pre-adjustment setting is restored.

3. Coarser vibrations
Decrease the vibration frequency (see table 1). The frequency decreases to produce coarser vibrations with time while SW3 is held down.

4. Finer vibrations
Increase the vibration frequency (see table 1). The frequency increases to produce finer vibrations with time while SW3 is held up.

A combined use of adjustments 1 to 4 is recommended depending on vibration conditions.

The oscillation intensity gets maximized around the resonance point of the machine. The closer to the resonance point, the higher vibrations get, with the same set amplitude.
Vibration (screw supply) conditions are likely to get unstable if the machine is used around the resonance point, and are susceptible to the amount of screws in the hopper. Vibration frequency should be set slightly higher than the resonance point to attenuate the influence and maintain stable screw supply.

4-3 Bit guide unit adjustment (See Figs. 4, 5)

Before adjustment

In standard Nejeana Z, No.0 panhead machine screws are factory-positioned.
Screw positioning is required if other screws are used.
(Except in cases where machines are shipped pursuant to your requirements.)

Adjustment

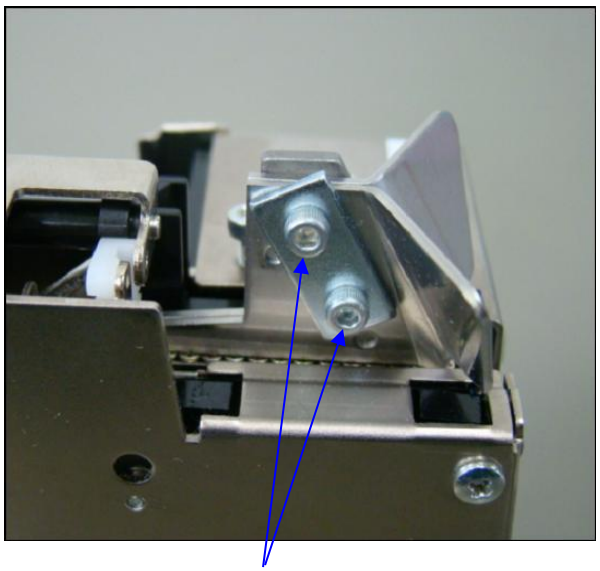
Height adjustment

1. Loosen the height adjustment bolts and raise the bit guide.
2. Put a pinch of screws into the hopper, and turn on the power.
3. When a few screws come under the bit guide, turn off the power to stop the bit guide.
4. Adjust the height of the bit guide to satisfy the conditions listed below: Keep the screw heads from overlapping. Keep the screws from contact with the rail.（It is recommended to place a piece of paper in between the bit guide and the screw head, tighten the height adjustment bolts temporarily and remove paper for obtaining adequate clearance.)
5. Tighten the height adjustment bolts after adjustment and make sure the bit guide is aligned.

Note

6. Final adjustment of the bit guide height can be completed with the use of the fine adjustment bolt shown in figure 7. The fine adjustment bolt is factory-adjusted to the minimum of the adjustable range that allows the bit guide to be only raised. An attempt of coarse adjustment could result in deformation or damage to the front panel and abnormal oscillations.

Figure 6

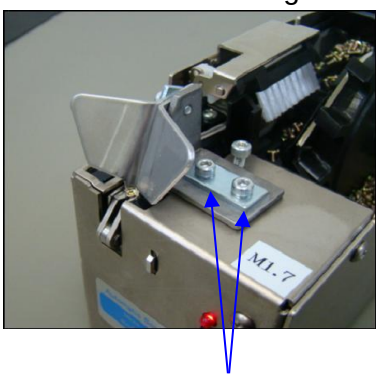


Height adjustment bolts

Horizontal positioning

1. Start the machine and move screws until they come in contact with the stopper. Turn off the power.
2. Use a screwdriver bit to position the bit guide to align the bit with a recessed area of the screw head properly.
   - The bit is properly guided with the bit guide.
   - The screwdriver bit stays straight up when it is aligned with the recessed area.
   - The end of the bit guide is over a screw in the stopper.
     (If not, the screw is pushed by the next screw that may make it difficult to remove.)
3. Tighten the horizontal positioning bolts after adjustment and make sure the bit guide is aligned.
   (This adjustment exerts effect on operation efficiency, which requires careful adjustment.)

Figure 7



Fine adjustment bolt

Horizontal positioning bolt

4-4 Drum inversion sensitivity adjustment (See Fig. 7)

Before adjustment

Drum rotation produces rotational failures including engagement of screw heads, entanglement of screws, besides torque in the normal range through scooping screws. The drum is designed to recover from failures by inversion.

The reverse sensitivity adjustment slot is used to adjust loads that is applied at the start of drum inversion. The reverse sensitivity varies with rotational speed, and slight sensitivity drift exerts no effect on performance. Readjustment, however, may be required when substantial changes are made in the rotational speed.

Adjustment

1. Bring the rotating drum to a stop forcefully by inserting an object in it and check reverse torque.
2. Use the adjustment slot to adjust the sensitivity properly.
   (The sensitivity heightens when the screwdriver is turned clockwise.)

4-5 Drum rotational speed and screw feed rate

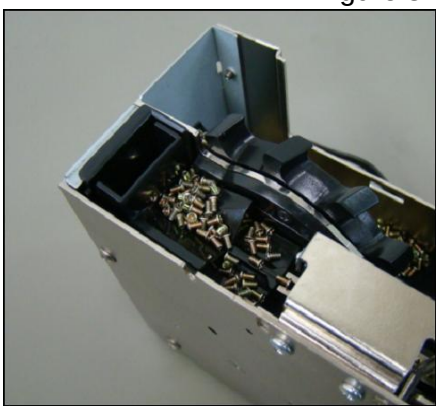
Drum rotational speed is closely related to "screw overfeeding" and "screw underfeeding".

Screw underfeeding : Screws are not filled in immediately after they are removed, which causes non-smooth screw feeding.

Screw overfeeding : Screws overflow on the rail and standby alignment part, or defective screws remain inside.

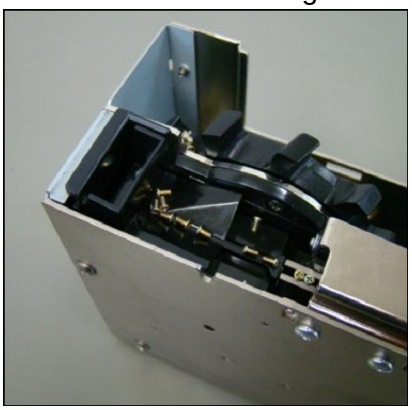
Screws fed through drum rotation are spread on the standby alignment part and moved in the directions of the rail. A recommended drum rotational speed is when all screws are spread and a screw is replenished with a new one immediately after it is removed. Nejeana Z is equipped with the brush in synchronization with the drum. Excessively slow drum rotation decreases the effect of the frush to sweep out defective screws.

Figure 8



Screw overfeeding

Figure 9



Proper screw feeding

[5] Precautions for Use

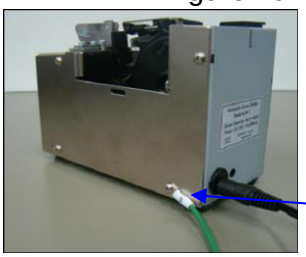
(1) Power supply socket

Make sure to insert the power adapter output plug (input: AC100 to 240v, output: DC12v) into the power socket securely. Improper plug insertion could cause potential malfunction. For long-term storage of the machine, make sure to remove the power adapter from the wall outlet.

(2) Ground connection

Make sure the machine is well grounded by using this specified setscrew to prevent electric shock hazards or eliminate internal static buildup.

Figure 10



(3) Maximum screw feed rate

Make sure the rotating drum is to be filled with screws in the hopper up to its center.

Figure 11

Important

Feeding screws must be free of contamination, foreign particles, foreign objects, and magnetization. The machine is designed for use with precision screws and may become incapable of exerting its performance or get damaged if a small gap is clogged with dirt, chippings or plated strips.

(4) Screw changeover

Make sure all screws are completely removed from the hopper and other parts before performing screw changeovers. It is recommended to hold the machine upside down to remove the screws.

(5) Slot adjustment

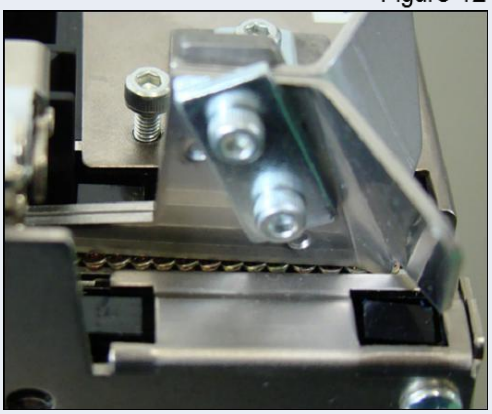
Always use a screwdriver of the proper size that fits the groove of the drum reverse sensitivity adjustment slot to adjust the drum reverse sensitivity. Failure to use the proper screwdriver may cause the slot's flutes to be damaged and disable adjustment.

(6) Inspection and maintenance of Nejeana Z

When removing the outer panel for inspection and maintenance of Nejeana Z, always use a tool mated to screws. Potential interference with the machine function may occur due to damage to the screws if disregarded.

[6] Troubleshooting

Problem	Probable Cause/ Remedy
The machine remains off after the power switch is turned on.	1. Make sure the power adapter is inserted into a wall outlet properly. 2. Make sure the power adapter output plug is inserted into the power socket. 3. Make sure screws that do not need to be removed are aligned on the rail. 4. Make sure LED 1 remains on with the power switch on. ⇒ ・Breakdown of the AC adapter (Replacement required) ・Breakdown of the main board (Replacement required) ・Poor connection of the power socket (Repair required) 5. Make sure the bit guide is positioned properly (not too low). ⇒The bit guide could block the optical axis of the two sensors if positioned too low, which may cause the sensors to misrecognize that the screw has reached the rail end. ↓ Check sensor operation in the sensor operation check mode.
No response to incoming screws	1. Make sure screws fill the rail up to the stock sensor. (Screw supply remains on until the sensor detects screws filled up to the stock sensor.) 2. Make sure the bit guide is positioned properly (not too high). ⇒The optical axis of the two sensors is not blocked if the bit guide is positioned too high, which may cause the sensors not to detect that the screw has reached the rail end. ↓ Check sensor operation in the sensor operation check mode. 3. Make sure the sensor is not exposed to sunlight. (The sensor may malfunction when the sensor light receiving section is exposed to sunlight. Block out the sunlight.)
No drum rotation despite normal movement of the vibrating part	1. Breakage of the rotating drum and the drive gear (Replacement required) 2. Breakdown of the motor and the drive circuit (Replacement required) 3. Make sure the drum rotation adjustment slot is not turned to the lowest.
Feed speed of the vibrating part varying with the amount of screws in the hopper	1. The oscillation intensity may vary with the amount of screws in the hopper when frequency adjustment is set to the maximum resonance point. Frequency should be set higher than the resonance point by turning the frequency adjustment slot to the UP side.

Problem	Probable Cause/ Remedy
Extremely low oscillation at the vibrating part	1. Check the gap between the vibrating part and the fixed part for foreign objects. ⇒Check the gap between the drum guide base plate/roof and the standby alignment part by inserting a 0.2-mm thickness gauge or a strip of copy paper into it for foreign objects. Check the gap between the standby alignment part and the left side panel for screws or foreign objects.
Abnormal screw feeding despite normal movement of the vibrating part (screws fed in a cluster, not spread)	1. Re-adjust oscillations (see section 4-2). 2. Replace all screws in Nejeana Z with new ones. Defective screws may be magnetized if normal screw feeding is observed after screw replacement. (Demagnetize it with the demagnetizer.)
Disrupted screw feeding despite normal movement of the vibrating part	1. Check the vibrating part and the screw surface for contamination. ⇒Check the surfaces of the vibrating part, standby alignment part, rails, rotating drum, and hopper for contamination, oil, and metal impalpable powder. Always keep all surfaces that screws come into contact, especially the inside of the rail, clean. Screw feeding may be disrupted if disregarded. ↓ Wipe them with a clean dry cloth. Wipe them with a swab wetted with alcohol if considerably contaminated.
Screws are clogged in the screw head retainer of the bit guide.	1. Check the bit guide for height misaligned. ⇒Check to see that screw heads are kept from overlapping at the bit guide screw head retainer. Align the screws if overlapped. (See section 4-3) Figure 12  Screw heads overlapped

Problem	Probable Cause/ Remedy
Drum is locked by screw engagement.	1. The detection circuit is triggered to cause drum inversion when a screw is engaged in the rotating drum during normal operation. Drum inversion may be disabled if the screw is firmly engaged in the drum. 2. The drum reverse sensitivity is out of adjustment. ⇒Adjust the drum reverse sensitivity (see section 4-4). To set the detection sensitivity, hold the rotating drum with the finger to lock it as shown below while checking inversion starting torque. Release the drum with drum inversion started when you feel less resistance in it. Figure 13 

[7] Main Specifications

Model	NJN-Z
Input voltage	DC12V (±5%)
Feeding type	Electromagnetic, drum rotating and pumping type, drum inversion available
Applicable screws	M1.2 to M2.0 × 5 (panhead)
Hopper capacity	Approx. 3000 M1.4 × 3 panhead screws
Outer dimensions	W61.6 × D141 × H103
Weight	Approx. 1.1Kg (machine only)
Power adapter	AC100V to 240V(center+, plug EIAJ-4)

(The specifications are subject to change without notice due to continual improvements.)

[8] After-sales Service

This machine is accompanied with the product warranty attached.
Please make sure the warranty card is under seal of the dealer when you purchase the machine.
(After-sales service is available for a product with a stamped warranty card.)
Please complete the warranty card and keep it along with this manual
The warranty period of the product is 6 months from the date of your purchase.
Repair shall be provided in accordance with the warranty period and preconditions defined in the warranty.
The repair service shall be available on a chargeable basis after the warranty period, to the extent that the machine can restore performance and function, on request basis.
Repair parts for NJN-Z are available at manufacturers for 6 years after production is suspended.
The repair service may be available after the expiration of the holding period depending on the locationof the fault.
Please contact the dealer you purchased from for repair service.

*** Provisions of This Warranty ***

KOFU SEIBYO CO., LTD.'s repair services shall be supplied on any problems caused during the warranty period if the machine is used under proper conditions according to the operation manual, with no charge, at the dealer you purchased from.
The repair service shall be available upon presentation of the warranty card.
KOFU SEIBYO's liability under this warranty shall not be available for the following troubles and damages.

(1) Troubles or damages caused by mishandling or unauthorized modification
(2) Troubles or damages caused by post-purchase transport and drop
(3) Troubles or damages caused by natural disaster such as fire, earthquake, lightning strike, wind and flood, or pollution, salt damage and abnormal voltage
(4) No presentation of the warranty card
(5) Omission of the purchase date, dealer name and customer name on the warranty card, or tampering of entries