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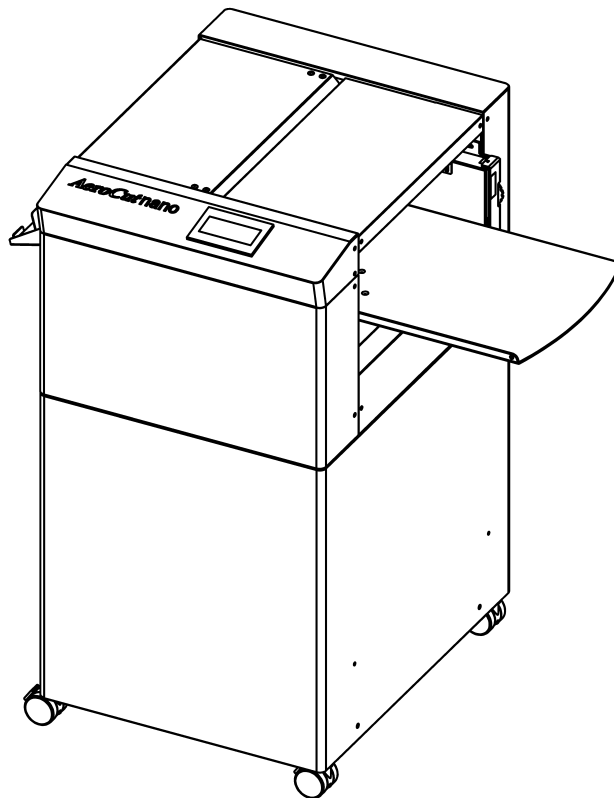
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UCHIDA

AeroCut nano

SERVICE MANUAL



UCHIDA YOKO CO., LTD., TOKYO, JAPAN

V1.01

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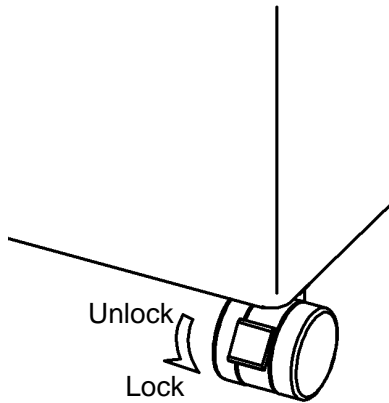
Record of change

No.	Date	Contents of change	Expected date to change

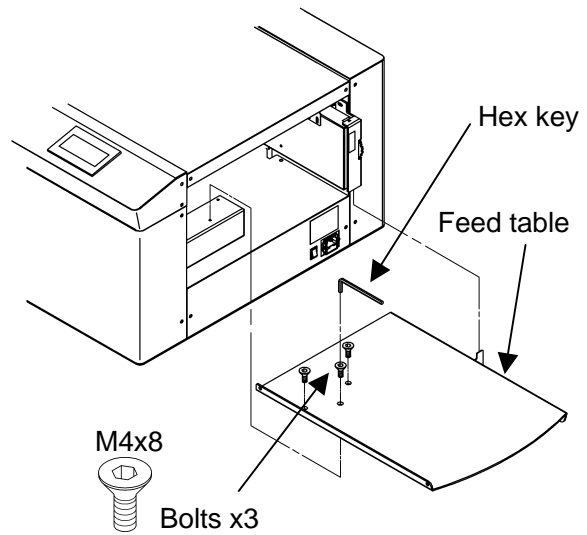
1. Installation

(a) Caster

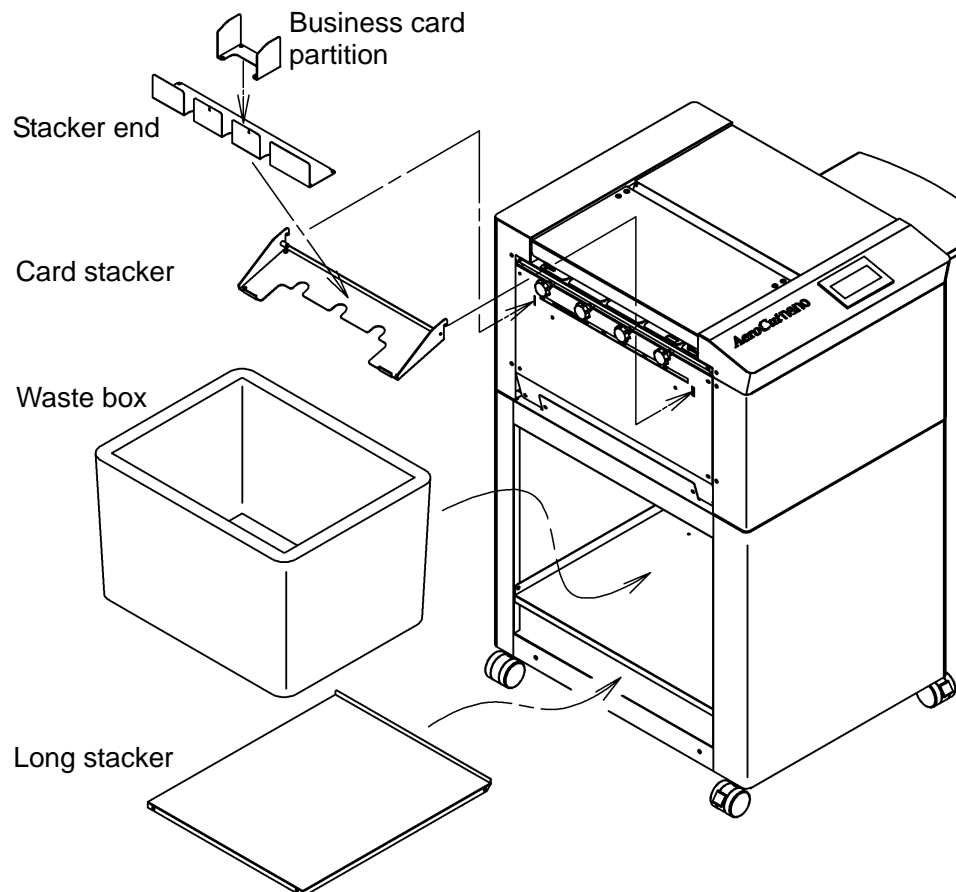
Please be sure to lock a caster brake.



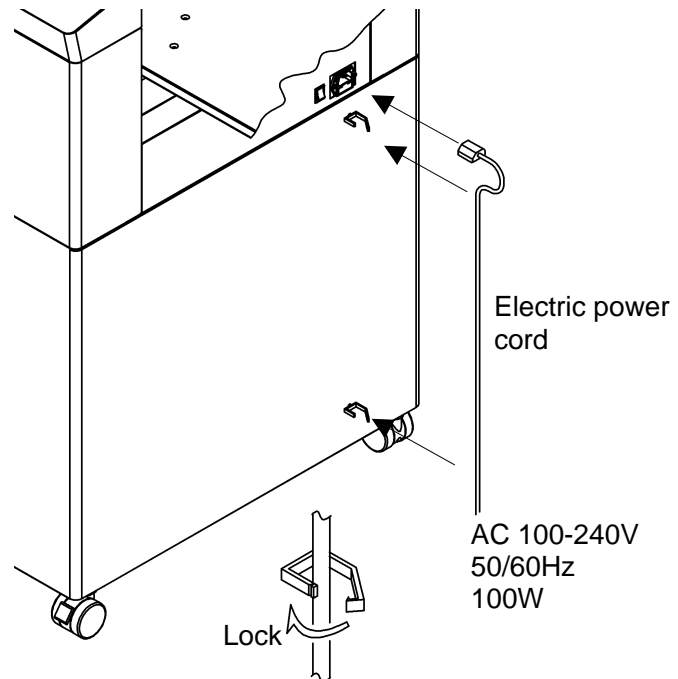
(b) Feed table



(c) Stacker and Waste box

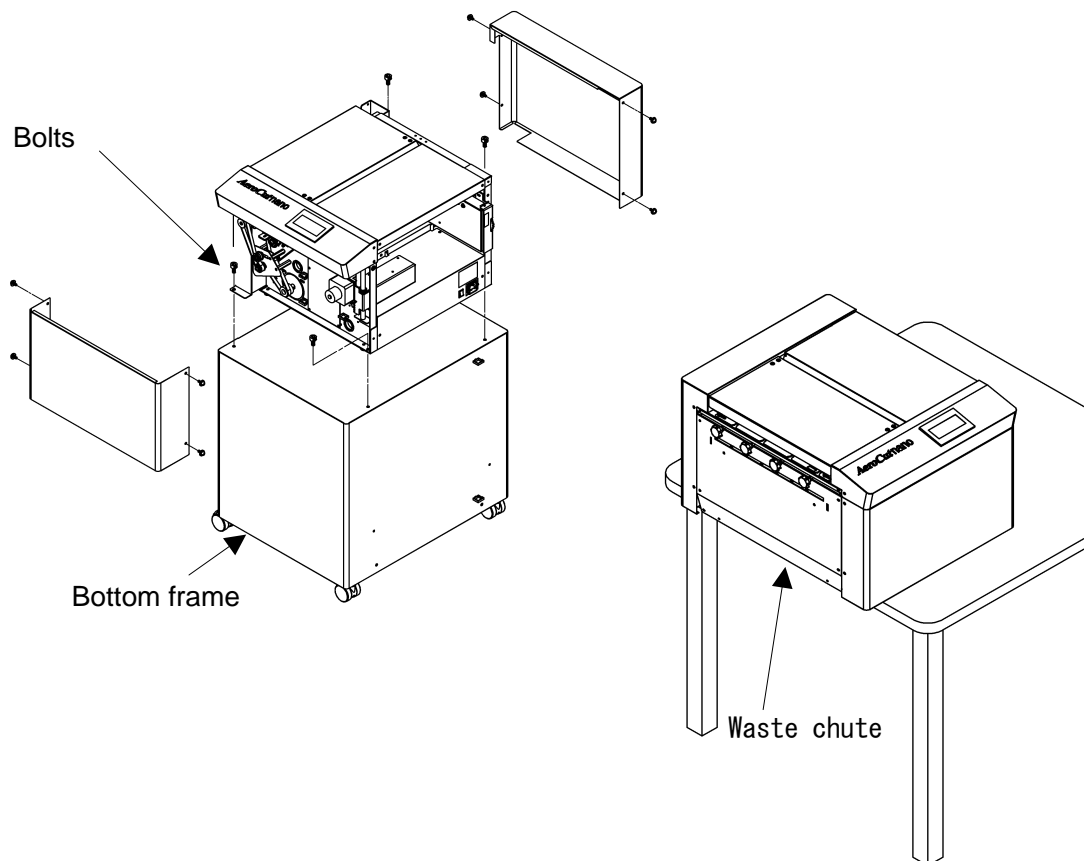


(d) Electric-power



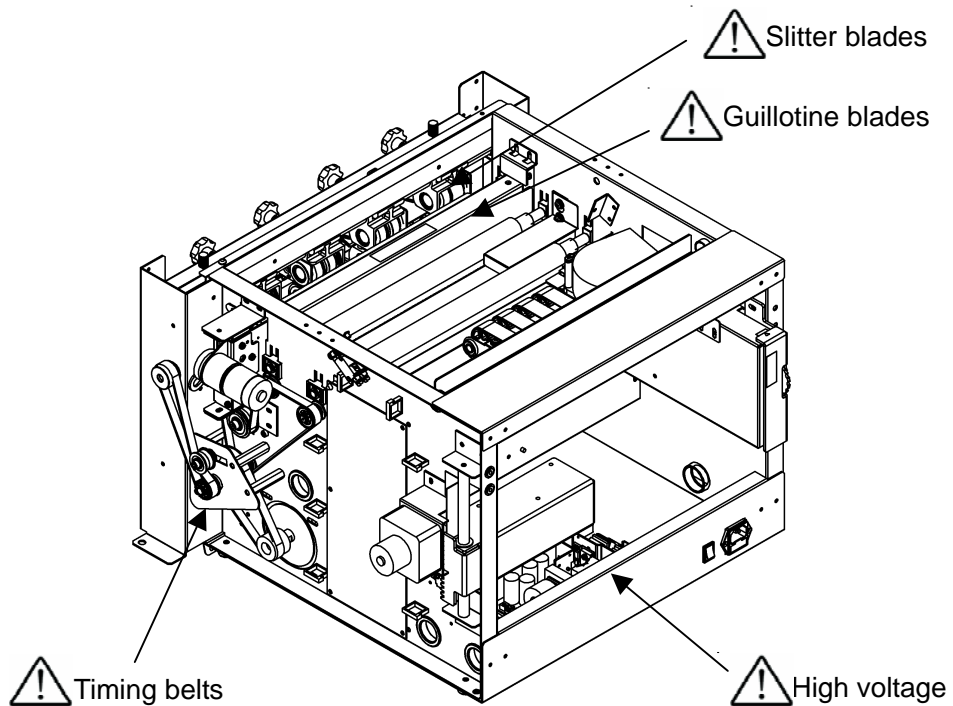
(e) In case of tabletop use

- ① Remove the bottom frame connecting bolts.
- ② Put the machine on a table not to cover the waste chute.



2. General instruction

(a) Caution



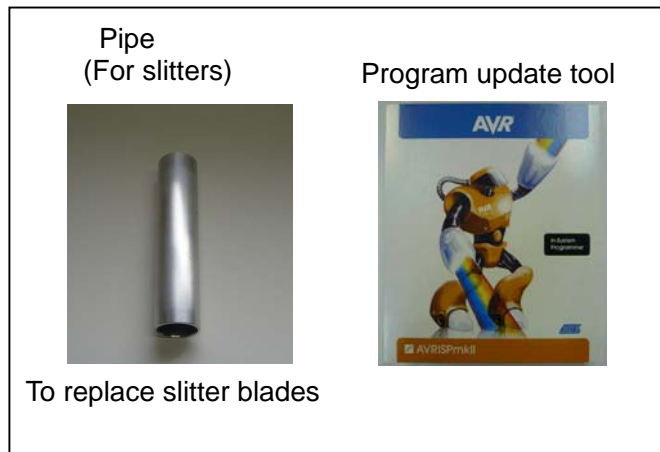
(b) Necessary tools

- C-clip ring pliers



To replace slitter blades

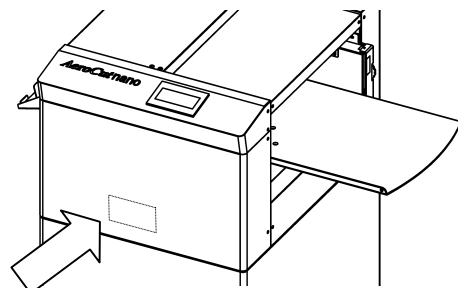
- Maintenance kit



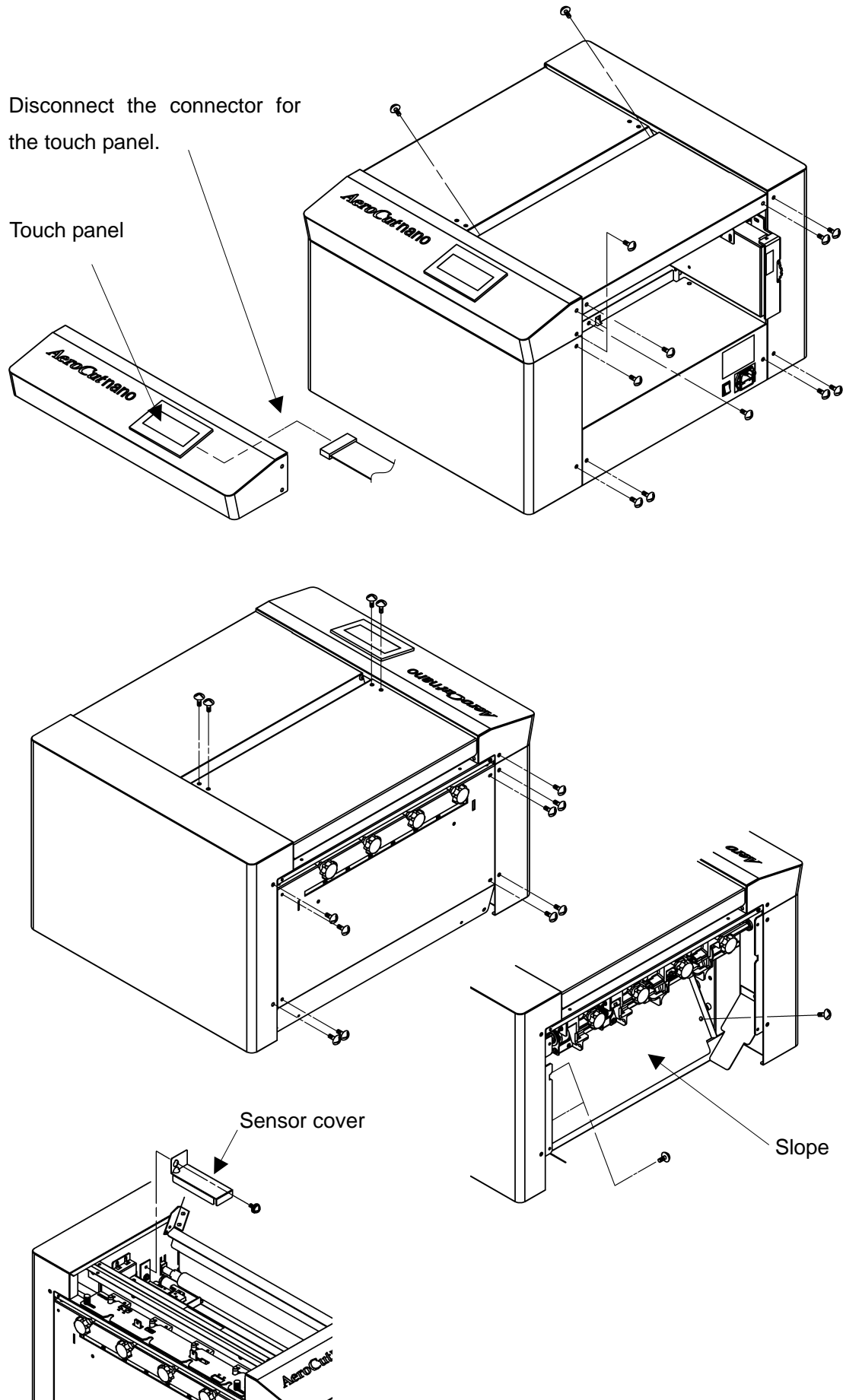
To replace slitter blades

(c) Factory setting

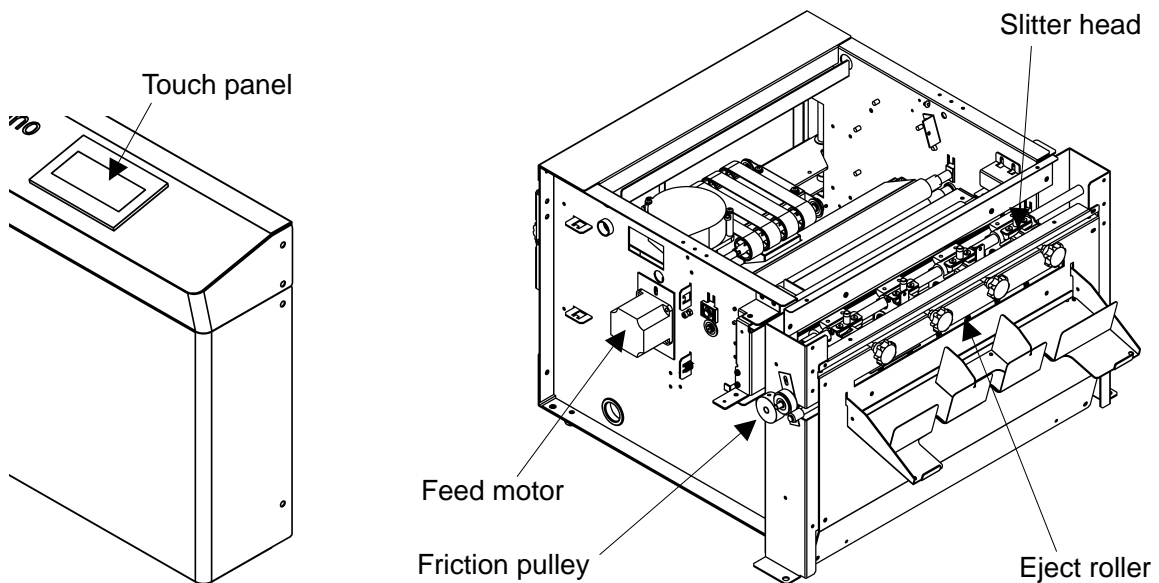
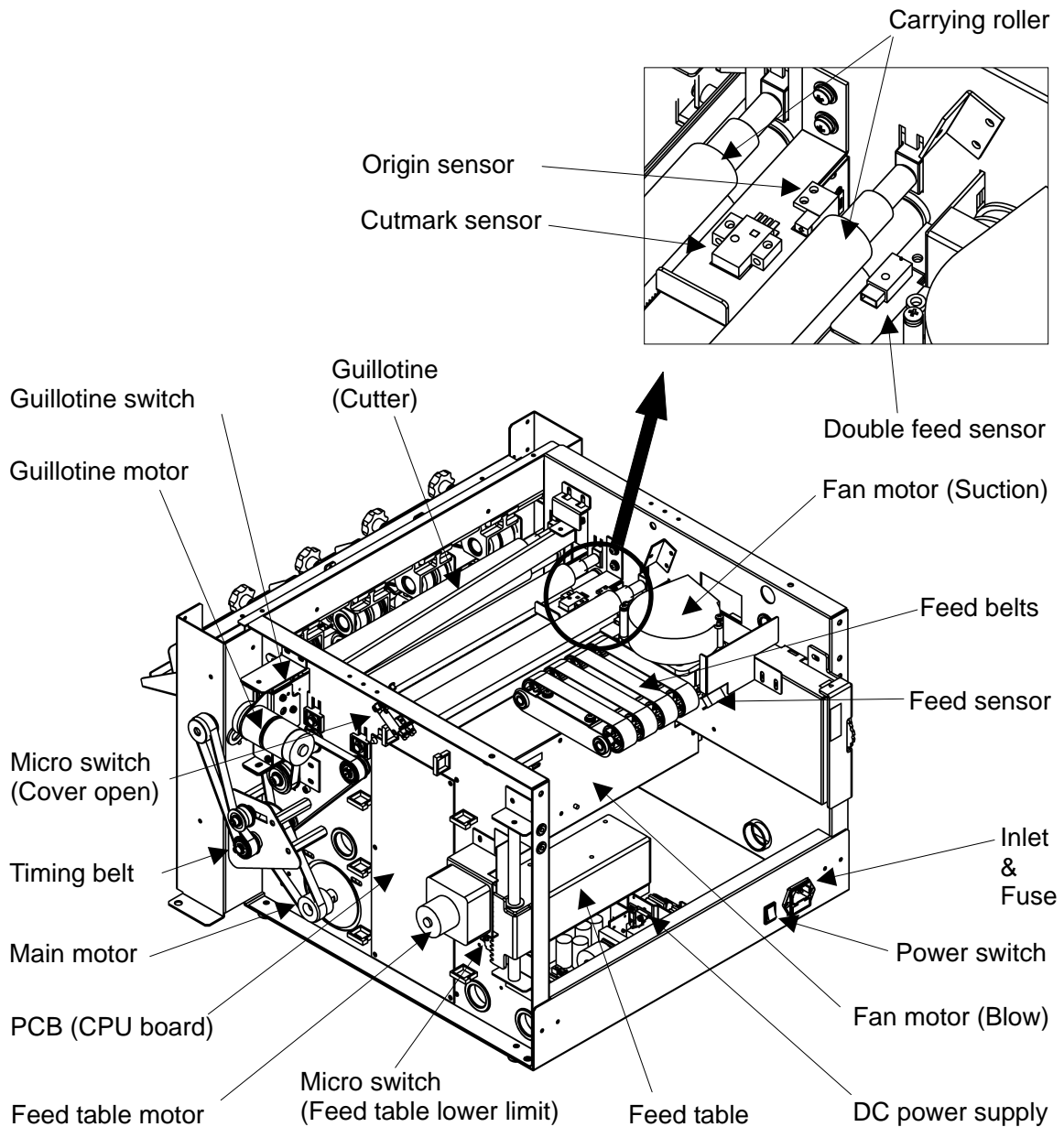
Factory setting sheet is attached inside of the front cover.



(d) Remove covers

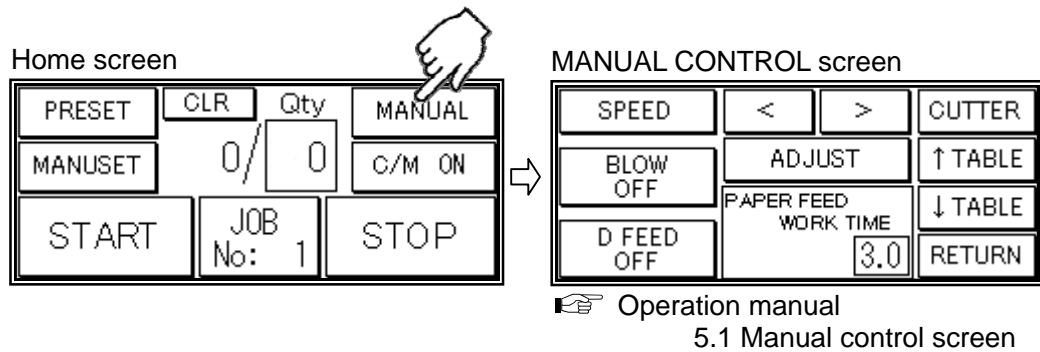


(e) Names of parts

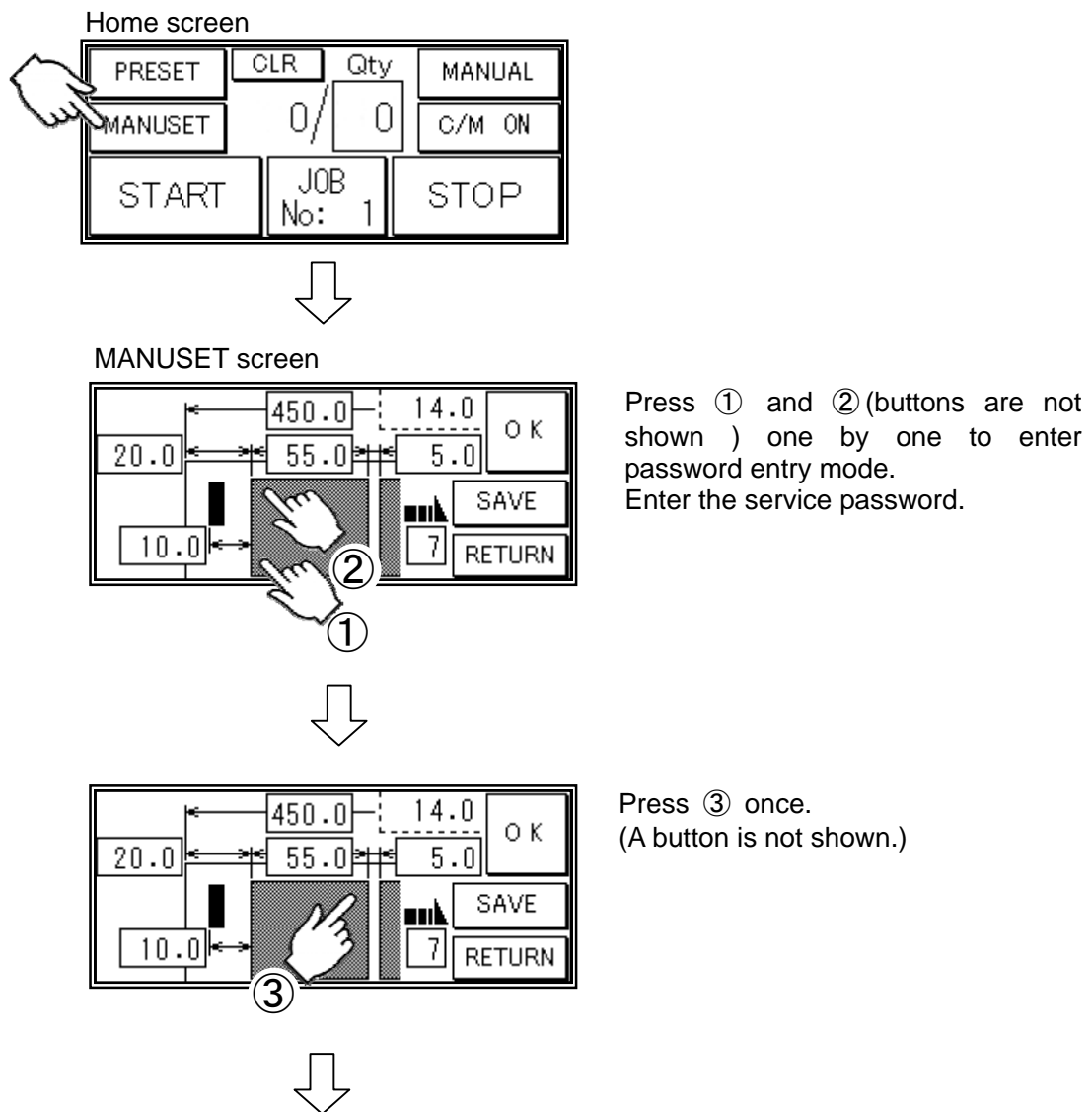


3. Touch panel operation

3- (1) MANUAL CONTROL screen



3- (2) Maintenance screen

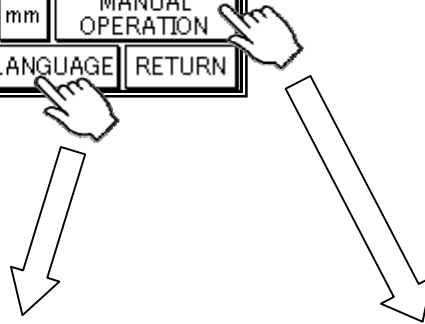




SERVICE MENU screen

☞ Page 11

DIST BTW	**.*	COUNT	*****
SENS & KNF	**.*	CUTTER	*****
DIST BTW	**.*	TABLE	****:*
SENS & C/M	**.*	mm	MANUAL
DOUBLE	**		OPERATION
FEED CHK	**		
VAC	**.*	LANGUAGE	RETURN
DURTN	**.*		



LANGUAGE screen

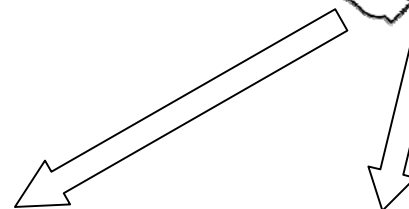
☞ Page 12

English	français	Portugues
日本語	español	中文
Deutsch	italiano	RETURN

MANUAL OPERATION screen

☞ Page 11

<	>	BLOW	VACUUM
<<	>>	INPUT	CUTTER
50.0	FIXED FEED	↑ TABLE	TABLE
		SPEED	RETURN



SPEED screen

☞ Page 12

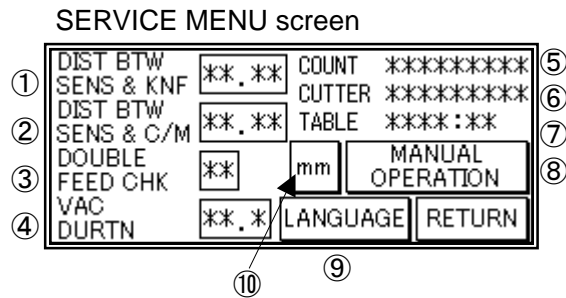
1	2	3	4
RETURN			

INPUT DATA CHECK screen

☞ Page 12

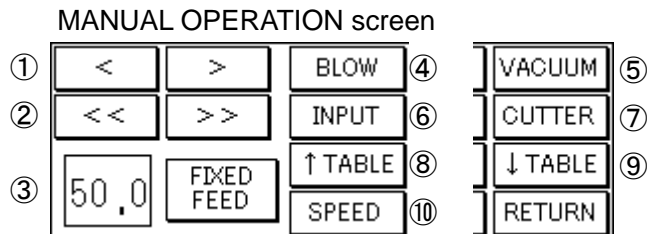
<input type="checkbox"/> PPR L /EDGE	<input type="checkbox"/> DOUBLE FEED ****
<input type="checkbox"/> SENS 1	<input type="checkbox"/> SENSOR
<input type="checkbox"/> C/MARK	<input type="checkbox"/> CUTTER UP
<input type="checkbox"/> SENS	<input type="checkbox"/> /LMT SW
<input type="checkbox"/> FD TBL UP	<input type="checkbox"/> CVR SENS A
<input type="checkbox"/> /SENS	<input type="checkbox"/> CVR SENS B
<input type="checkbox"/> TBL UP	
<input type="checkbox"/> /LMT SW	RETURN
<input type="checkbox"/> TBL LW	
<input type="checkbox"/> /LMT SW	

3- (3) SERVICE MENU screen



- ① Distance between origin sensor and guillotine. [mm]
 - ② Distance between origin sensor and Cutmark sensor. [mm]
 - ③ The number of times that the machine checks double-feed. [times]
 - ④ Paper vacuuming time when the feed table is lifted to the upper limit. [sec]
 - ⑤ Total number of processed paper. [sheets]
 - ⑥ Total number of processed Guillotine. [times]
 - ⑦ Operation time of Feed table. [hours : minutes]
 - ⑧ Go to MANUAL OPERATION screen
 - ⑨ Go to LANGUAGE screen
 - ⑩ This is to set either mm or inch as the measurement input unit.
- } Not changeable

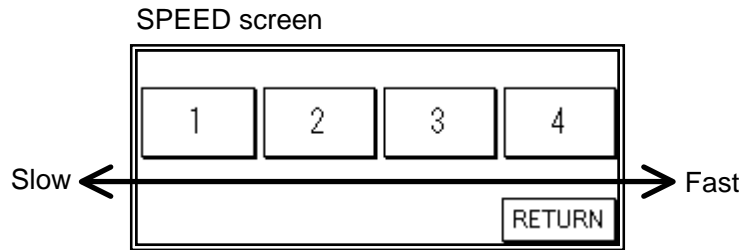
3- (4) MANUAL OPERATION screen



- ① Carrying roller will rotate.
- ② Carrying roller will rotate. (Continuous)
- ③ Carrying rollers will rotate at input length. [mm]
- ④ Fan motor (Blow) will be turned ON.
- ⑤ Fan motor (Suction) will be turned ON.
- ⑥ Go to INPUT DATA CHECK screen.
- ⑦ Guillotine will move once.
- ⑧ Feed table will move upward.
- ⑨ Feed table will move downward.
- ⑩ Go to SPEED screen.

3- (5) SPEED screen

Same as the MANUAL CONTROL screen. (☞ Page 9 SPEED)



- In case of finishing thick paper, slow down the speed.
- If finished sizes are inaccurate or inconsistent, there is a possibility that the running speed is too fast. Slow down the speed.

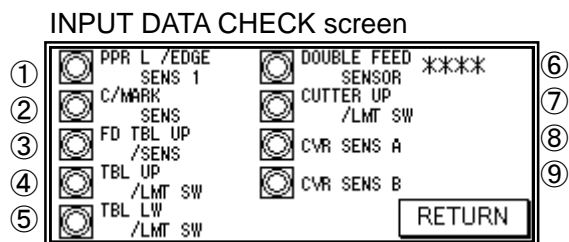
• Note. The reference of the paper thickness and speed.

-160 g/m ²	4	- 0.006" (0.15mm)	4
160-280 g/m ²	3	0.006" - 0.01"(0.25mm)	3
280- g/m ²	2	0.01" -	2

3- (6) INPUT DATA CHECK screen

Sensor / Switch signals can be checked.

- | | | |
|---|-------------------------------------|-----|
| ① Origin sensor | <input checked="" type="checkbox"/> | On |
| ② Cutmark sensor | <input type="checkbox"/> | Off |
| ③ Feed sensor | | |
| ④ - Invalid - | | |
| ⑤ Micro switch (Feed table lower limit) | | |
| ⑥ Double feed sensor | | |
| ⑦ Guillotine switch | | |
| ⑧⑨ Micro switch (Cover open) | | |



3- (7) LANGUAGE screen

Languages on the touch panel can be changed. LANGUAGE screen



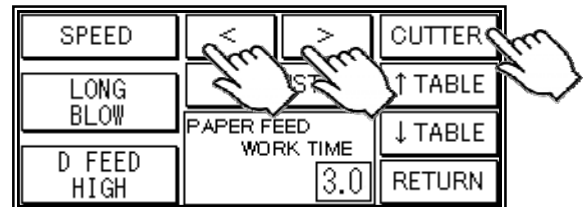
- Some languages are not selectable.
- Some languages require Passwords.

4. Paper jam

- ① Enter MANUAL CONTROL screen, press < > buttons to inch the rollers forward/backward and remove the jammed paper.

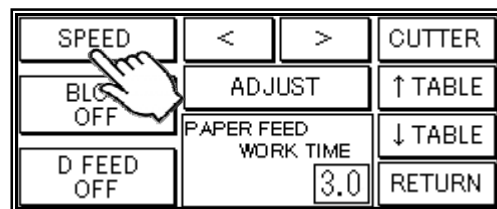
If paper is stuck around the guillotine section, press CUTTER to cycle the guillotine to chop jammed paper.

MANUAL CONTROL screen

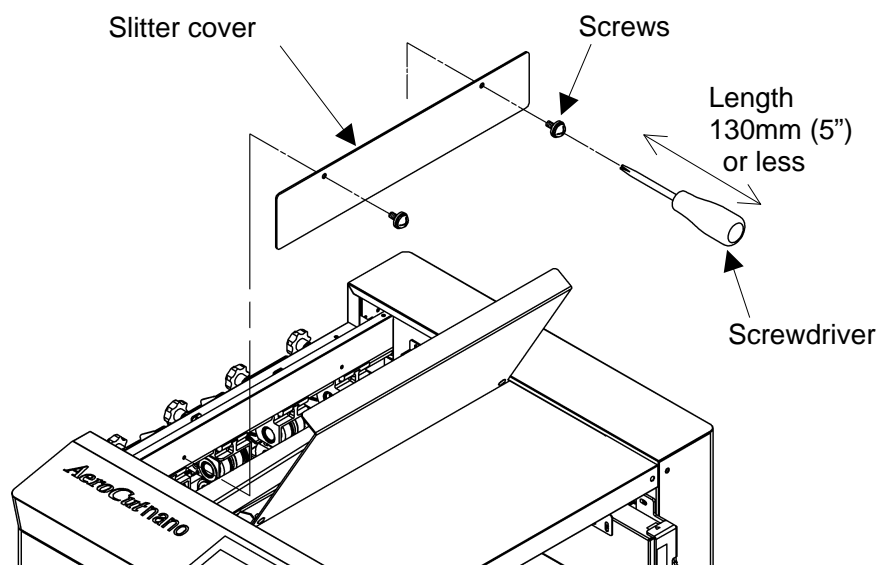


- ② If the Main motor doesn't rotate, slow down the speed.
The main motor has more torque as the speed becomes slower.

MANUAL CONTROL screen



- ③ If paper is still remaining after process ① and ②, remove the slitter cover and pick up the jammed paper.

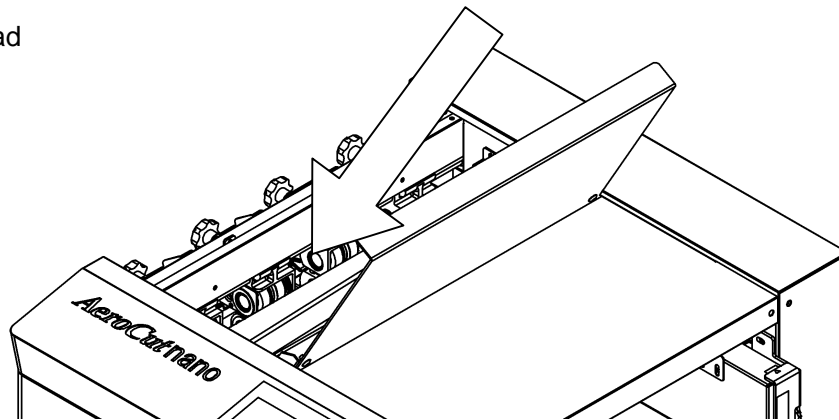


- ④ After removing the jammed paper, put the slitter cover and reset SPEED.

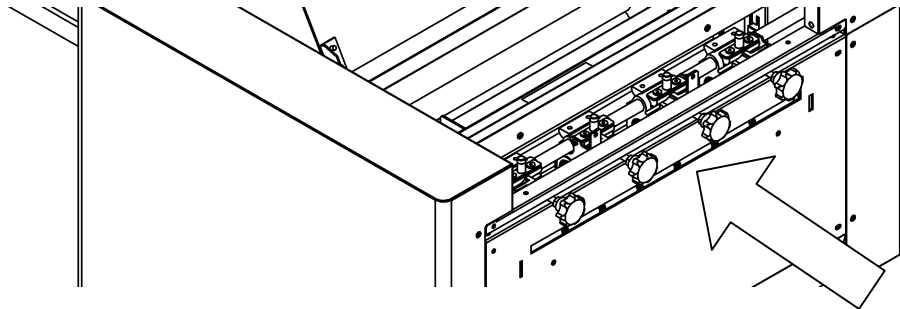
Note.

If paper jam often occurs, make sure that paper strip is not left in the indicated sections.

- Inside of Slitter head

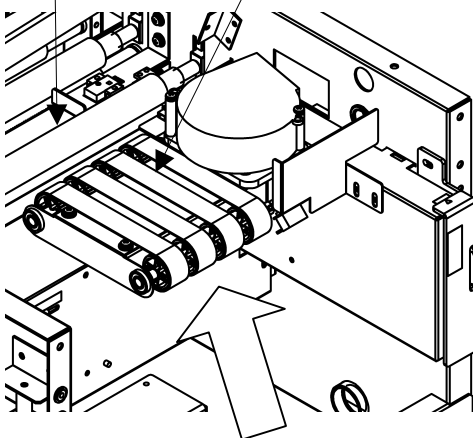


- Eject roller



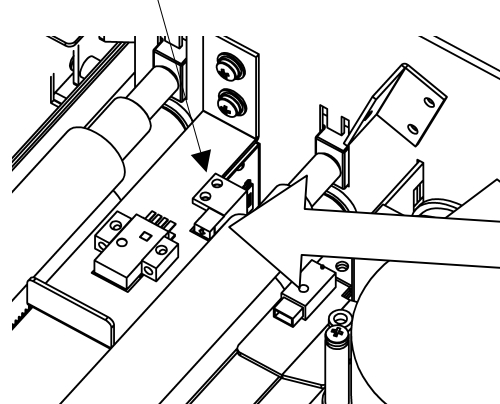
- The path between the feed belt to the carrying rollers.

Carrying roller Feed belt



- Origin sensor

Origin sensor



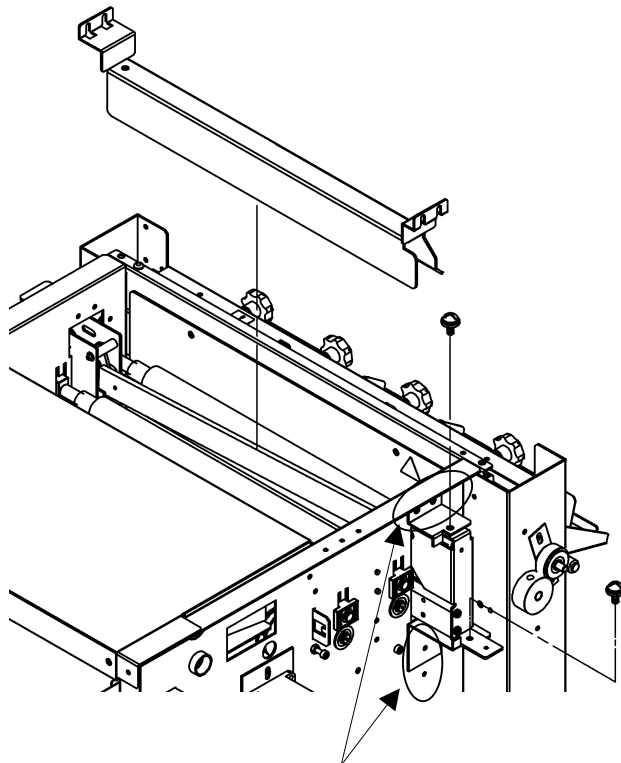
5. Replacement of parts

5- (1) Guillotine

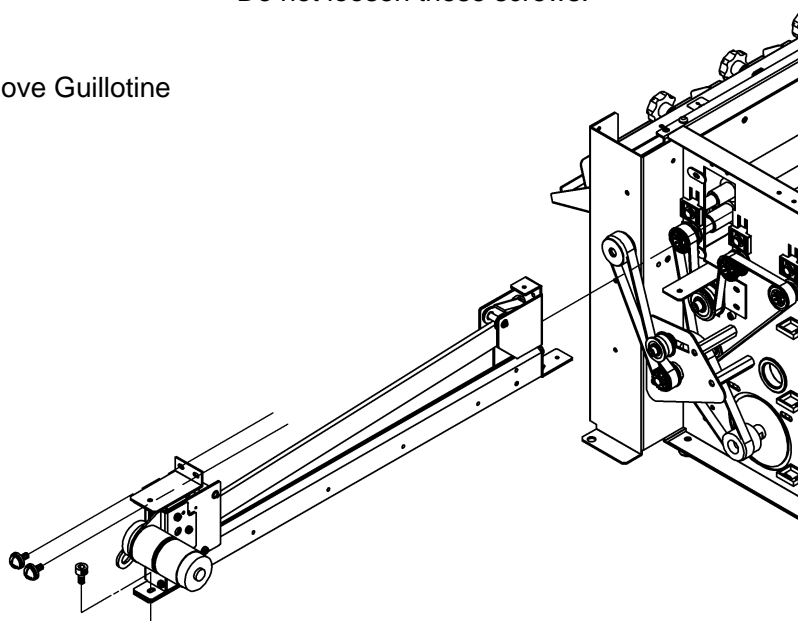
- ① Check if the locating metal plate is in contact with the cutter unit.

This will be a mark for reattachment.

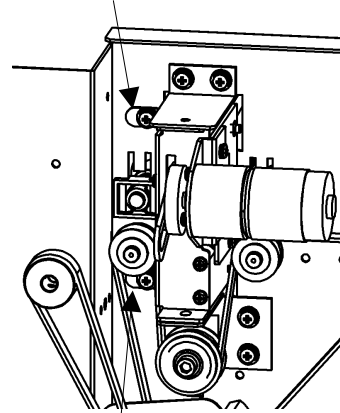
- ② Remove cover and screws



- ③ Remove Guillotine

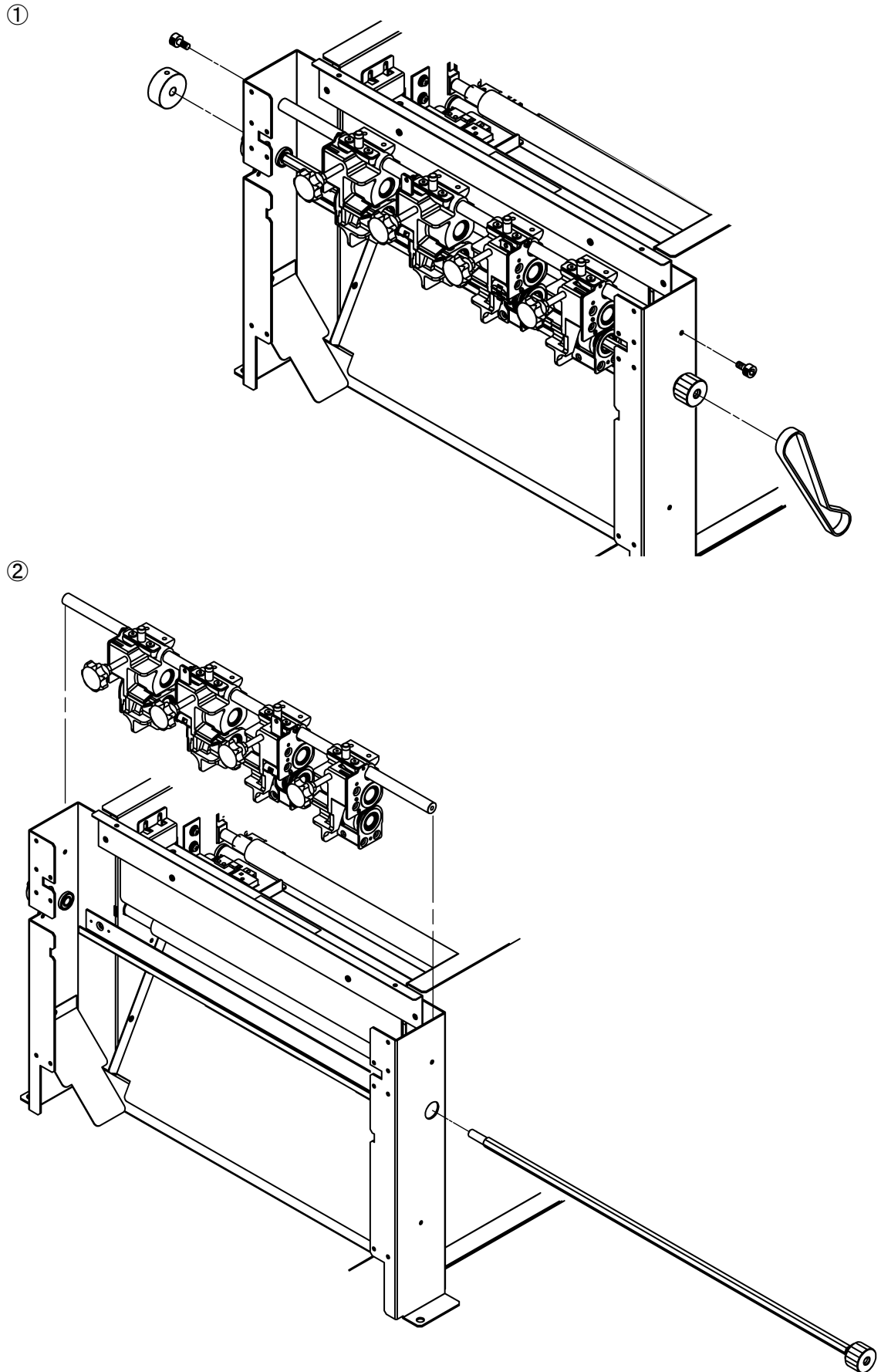


Locating metal plate



Locating metal plate

5- (2) Slitter

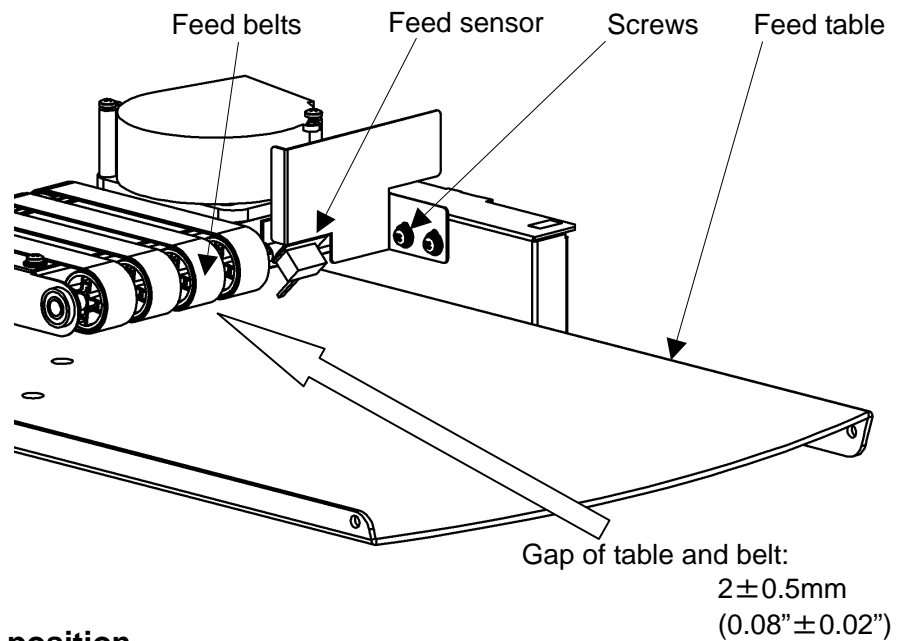


6. Adjustment

6- (1) Feed sensor position

When the feed table is upper dead point, the proper gap between the feed table and the feed belt is $2 \pm 0.5\text{mm}$ ($0.08'' \pm 0.02''$).

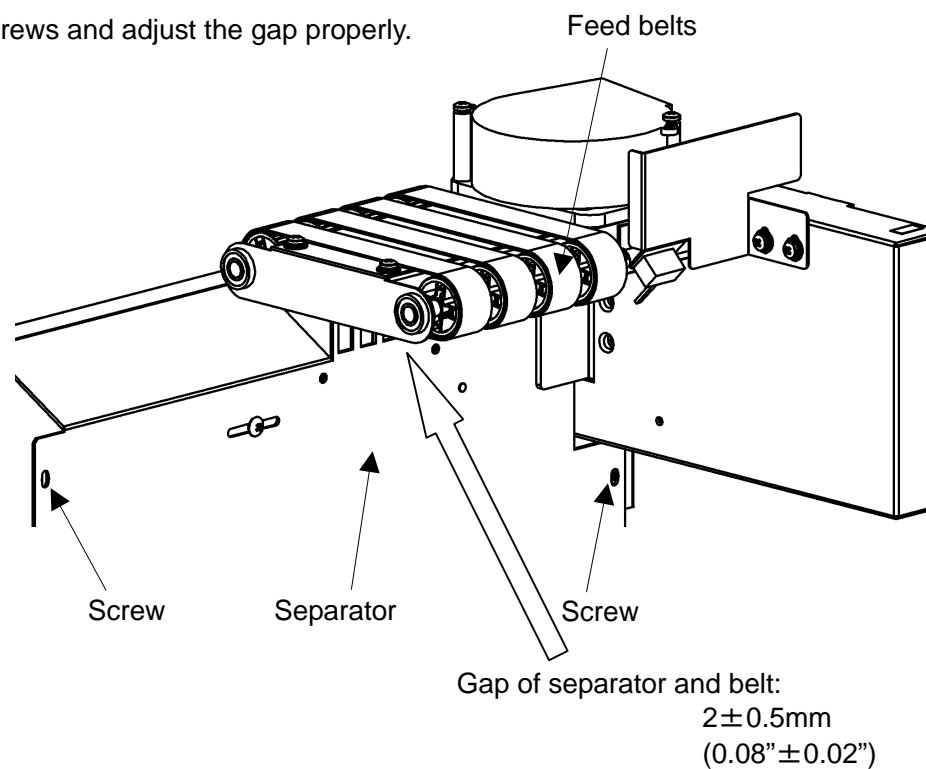
Loosen the screws and adjust the position of the feed sensor properly.



6- (2) Separator position

The gap between the separator and the feed belts is $2 \pm 0.5\text{mm}$.

Loosen the screws and adjust the gap properly.

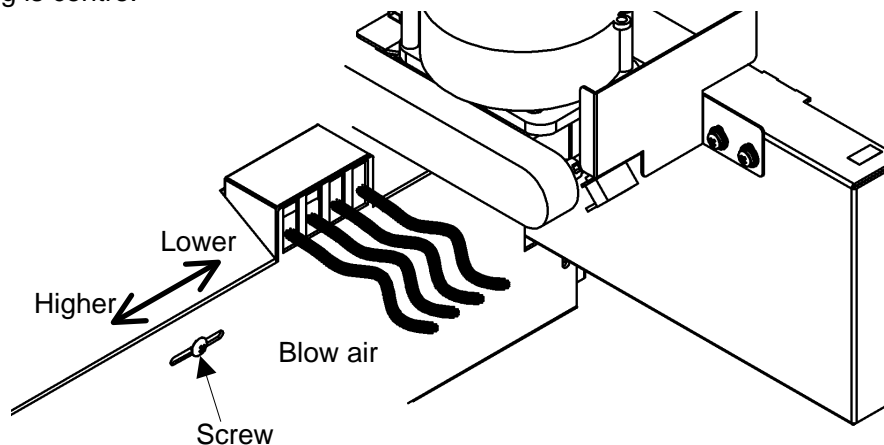


6- (3) Blow rate

Loosen the screw to adjust the amount of the blowing air.

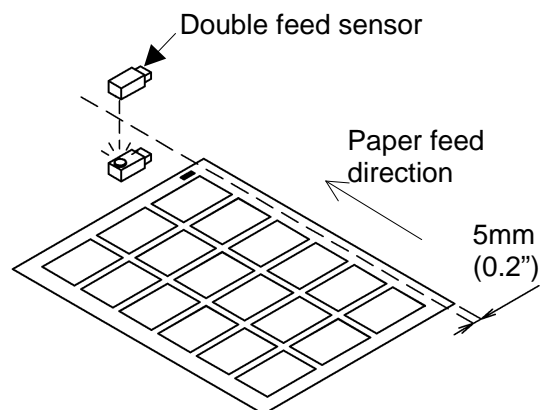
Thicker the paper stock is, more blowing air is required.

The factory setting is centre.

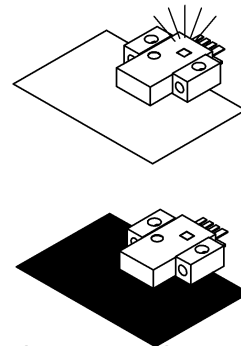
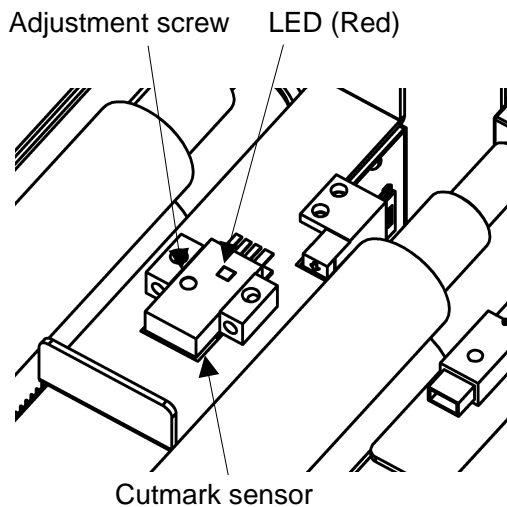


6- (4) Double feed sensor adjustment

- Double feed detection device
 - The sensor senses the amount of the transmitted light.
 - The result of the first fed sheet becomes reference. For this reason, the machine does not detect double-feed on the first fed sheet.
 - The machine detects double-feed when the amount of the transmitted light of the second sheet and later is less than the reference.
 - The sensitivity of the double feed detection can be adjusted.
 - ✎ Operation manual “3.3 Adjustments on the paper feed section”
 - The sensor reads 5mm from the edge of the top margin. It is not recommended to print on this area.

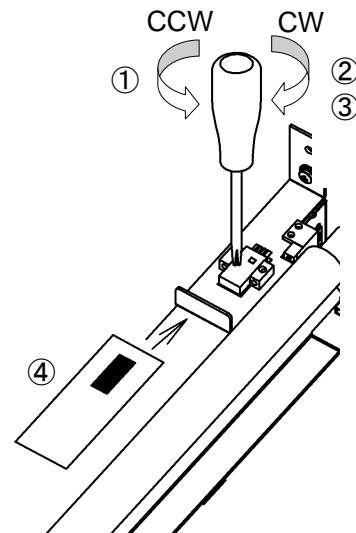


6- (5) Sensitivity of Cutmark sensor



When the sensor detects black color, the light is turned off.

- ① Turn the adjustment screw counterclockwise to the dead point without paper underneath the sensor.
- ② Turn the adjustment screw clockwise until the LED lights.
- ③ Turn the adjustment screw slightly clockwise (approx. 5 degrees.)
- ④ Make sure that the LED turns off when a paper with a cut mark is put underneath the sensor.



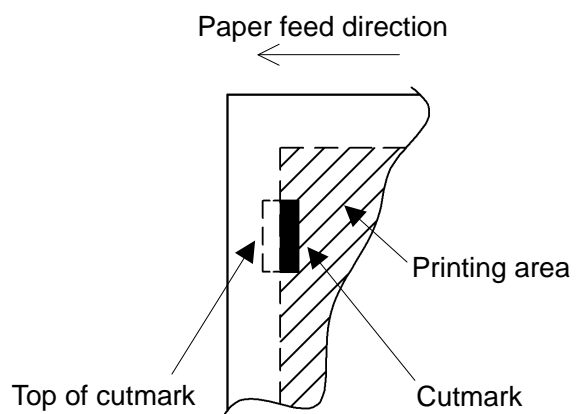
Note.

The Cut-mark sensor utilizes infrared light.

Depending on print, the ink or toner might reflect the infrared light and cause the cut-mark sensor not working properly.

Note.

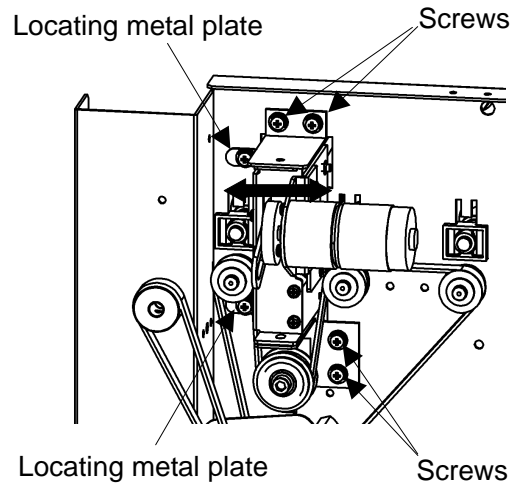
Please make sure to print the whole of cutmark if not, machine can't cut first cut correctly.



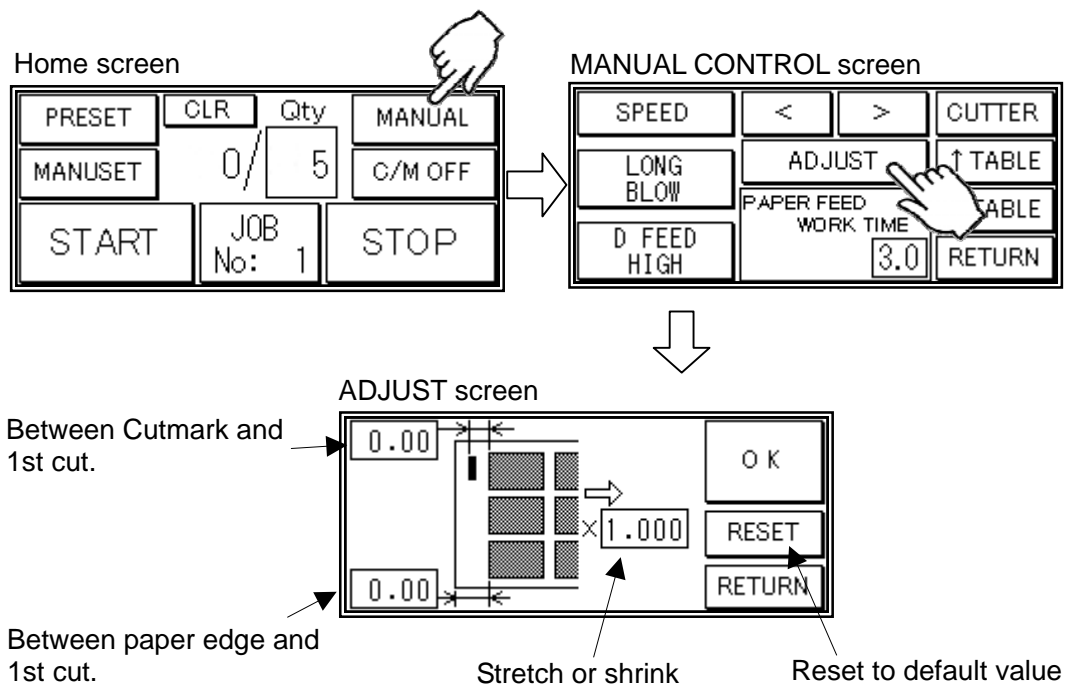
6- (6) Guillotine angle

Loosen the screws and adjust the position of the guillotine unit.

After the adjustment, make sure that the locating metal plate contacts to the guillotine unit.



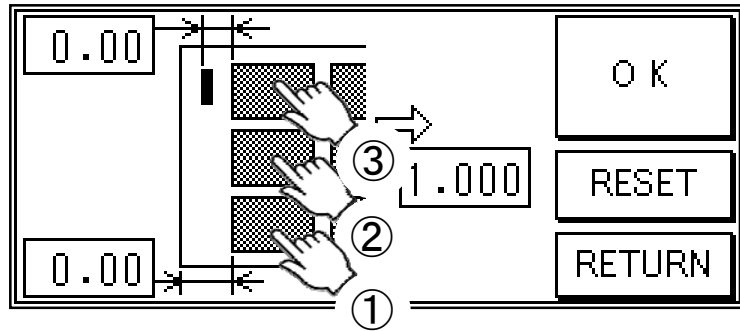
6- (7) Cutting location (Guillotine)



Input the difference between the MANUSET input value and the actual cut size.

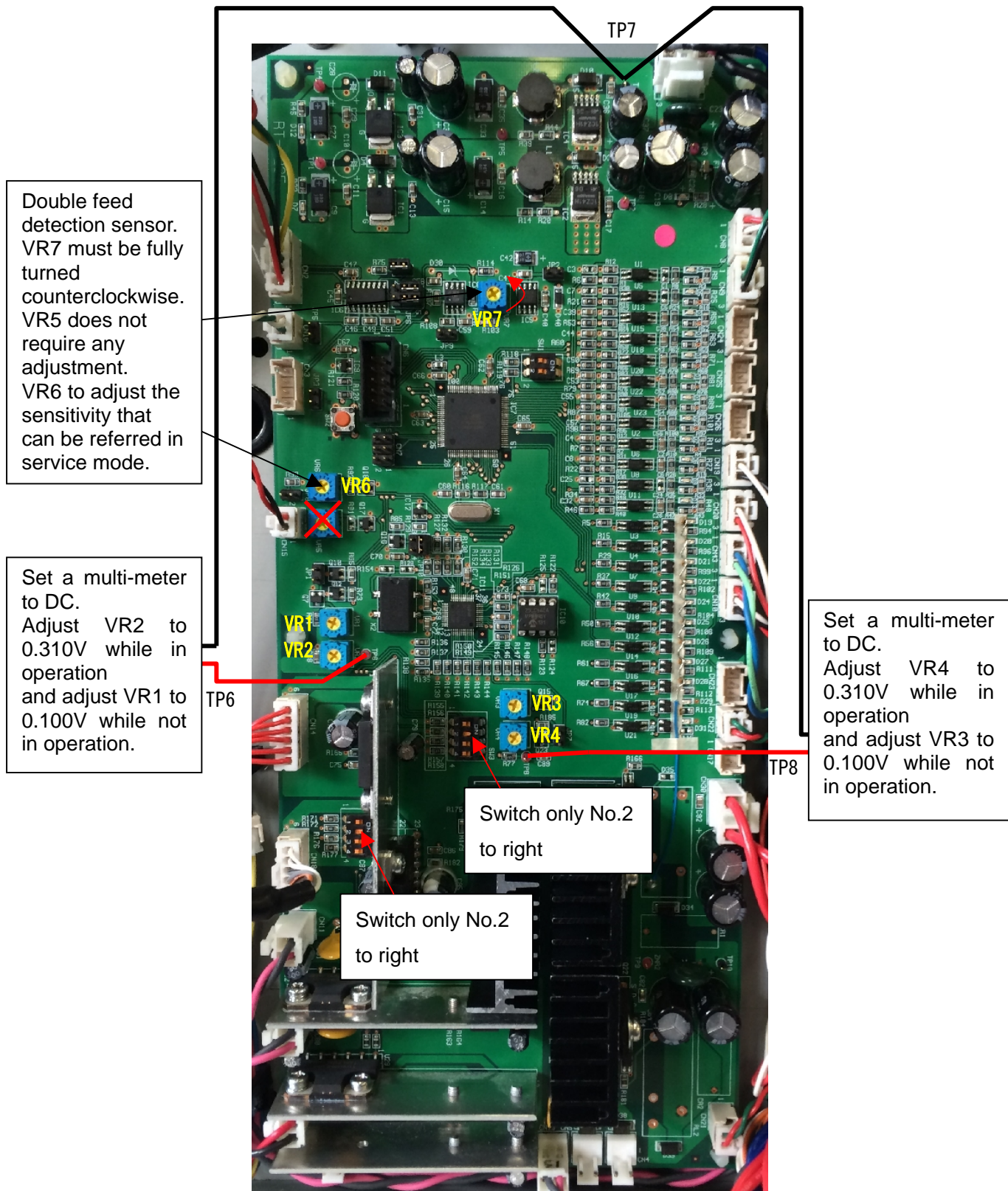
Note.

- In case of changing the default value.
 - i Input values to the ADJUST screen.
 - ii Press ①, ② and ③ one by one. The buttons are not shown.
- After the confirmation screen, the default value will be overwritten.



- To return the default values to the factory setting values.
 Input the factory setting values to SERVICE MENU screen ① and ②. (☞ Page 11)
 The factory setting values are shown on a sheet attached inside of the front cover.
 (☞ Page 6)

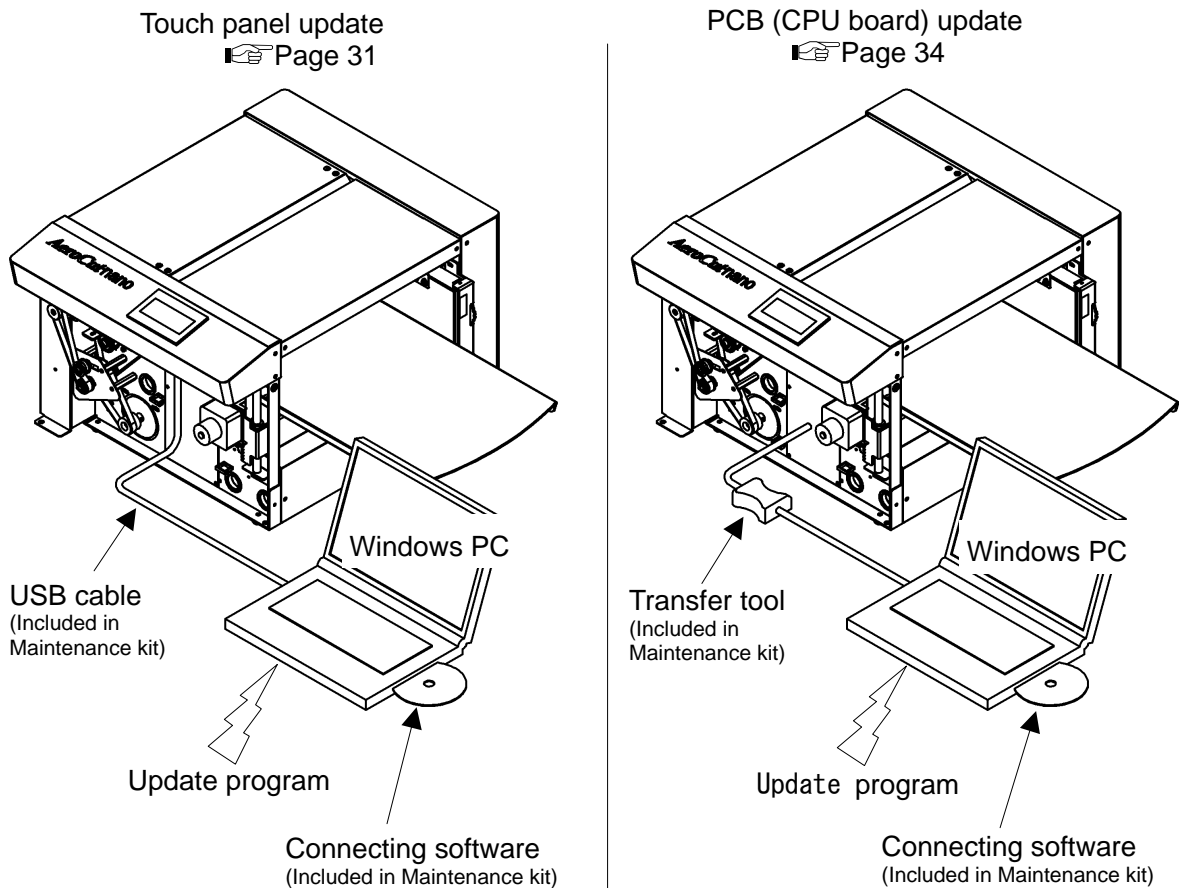
6- (8) PCB (CPU board) setting



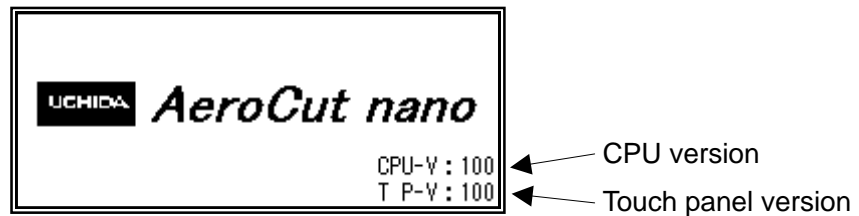
7. Program update

7- (1) Outline

Update programs can be sent via email. Please contact to UCHIDA team.



- Program version is shown on the screen when the machine power is turned on.

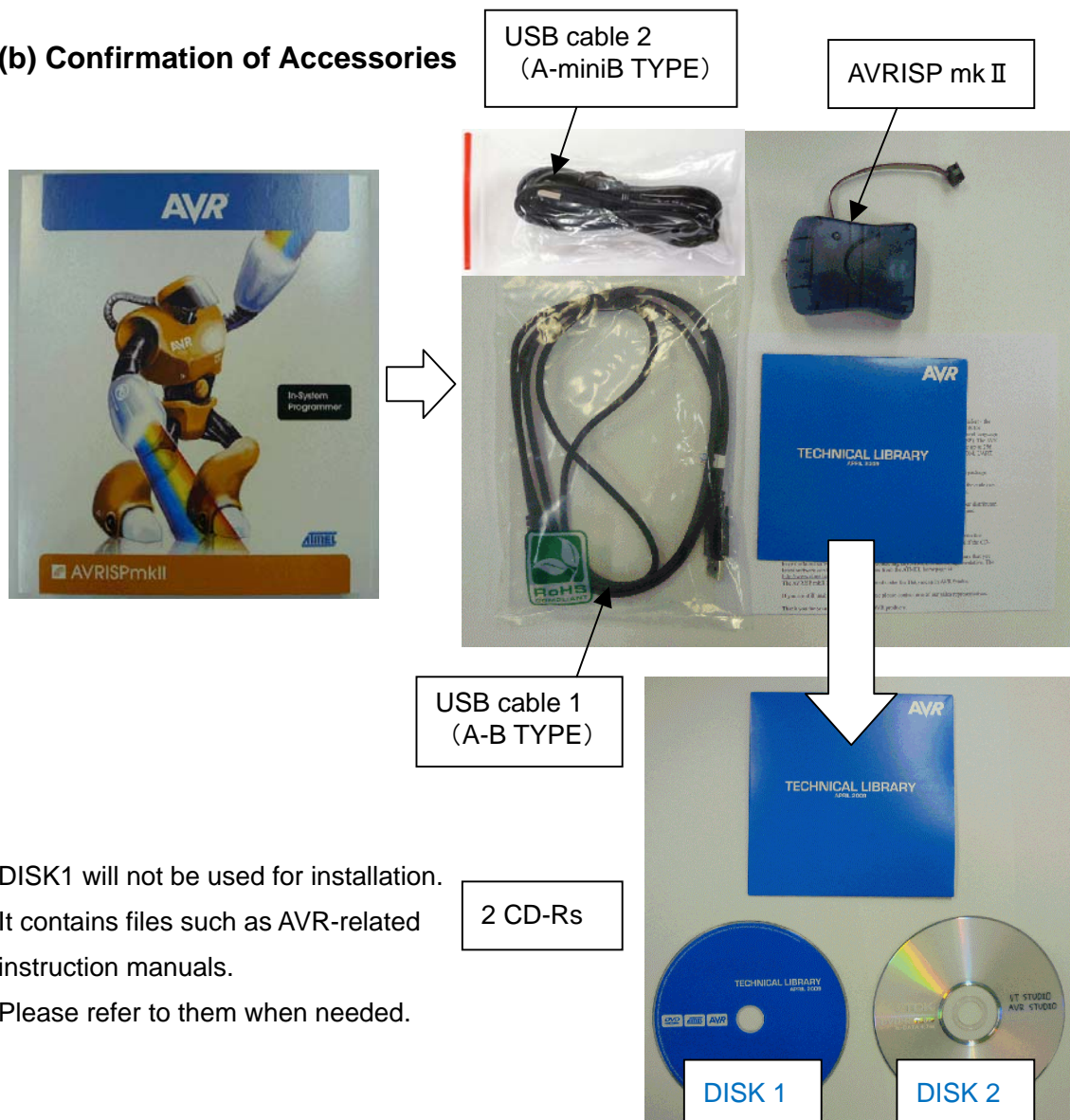


7- (2) Connecting software install

(a) Requirements

	Terminal GTWIN (For touch panel update)	AVR STUDIO (For PCB update)
Supported OS	Windows 2000/XP/VISTA/7	Windows 98/NT/2000/XP/XP/VISTA/7
CPU	Pentium III 600 MHz processor or more	Pentium 200 MHz processor or more
Memory	128 MB or more	256 MB or more
Hard disk space	600 MB or more	100 MB or more
Display	1240 × 768 or more 4096 colors or more	1024 × 768 screen (minimum 800 × 600 screen)
Interface	USB port	USB port

(b) Confirmation of Accessories

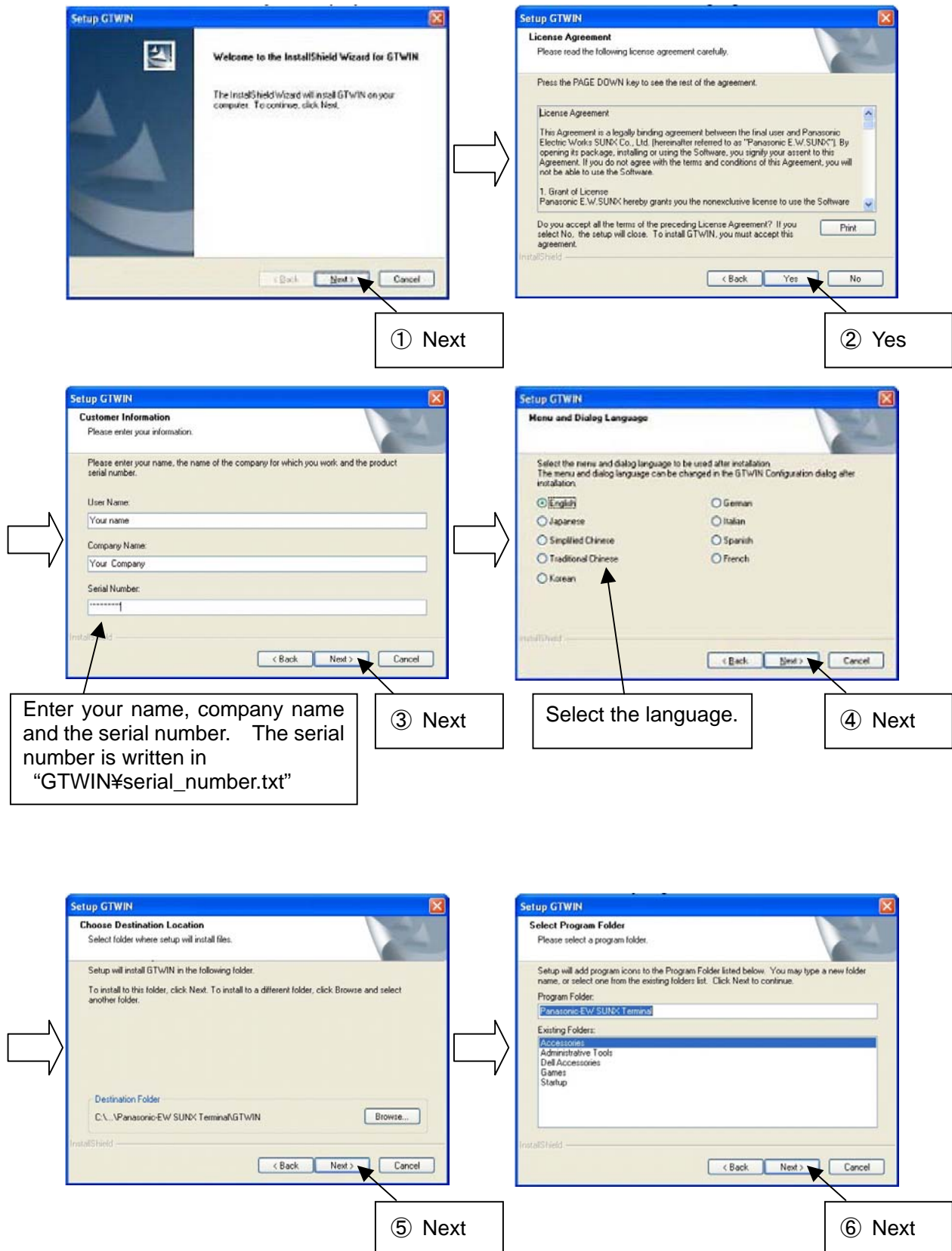


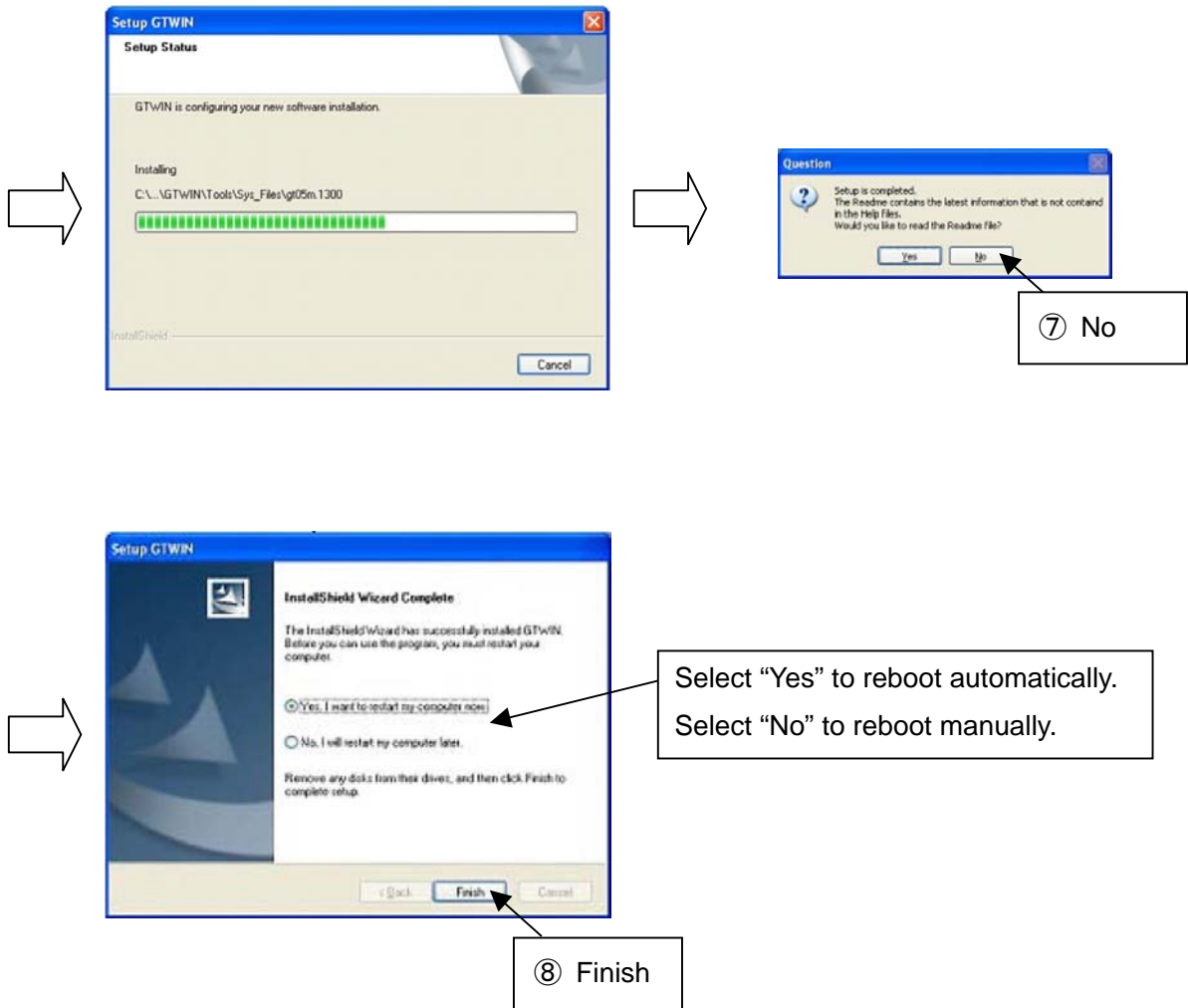
(c) How to install Terminal GTWIN (For touch panel update)

Insert DISK2 in the CD/DVD drive and install it according to the following procedure.

(The procedure below is for WINDOWS XP)

Double click on "GTWIN¥gtwin_setup.exe" of the CD/DVD.

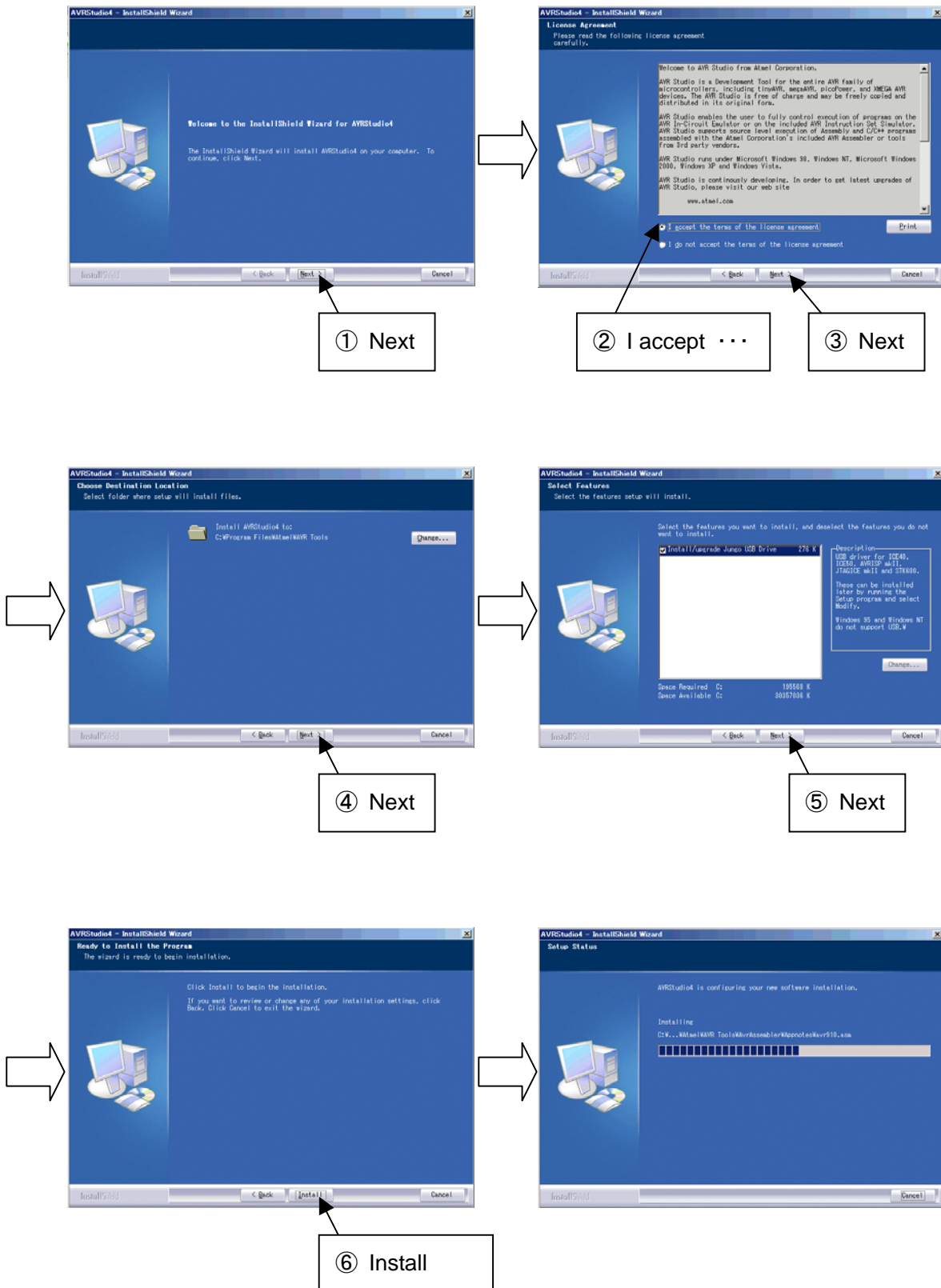


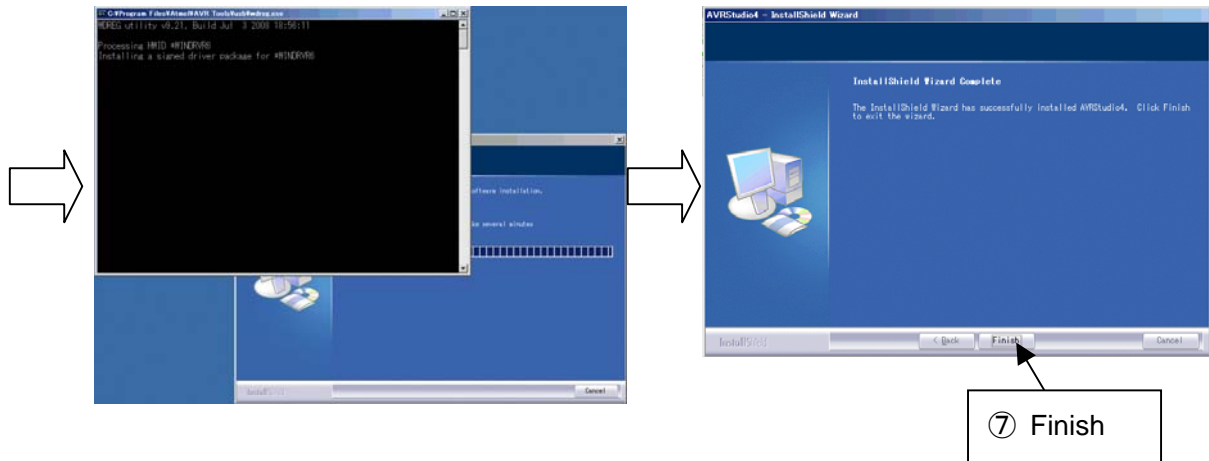


(d) How to install AVR STUDIO (For PCB update)

(The procedure below is for WINDOWS XP)

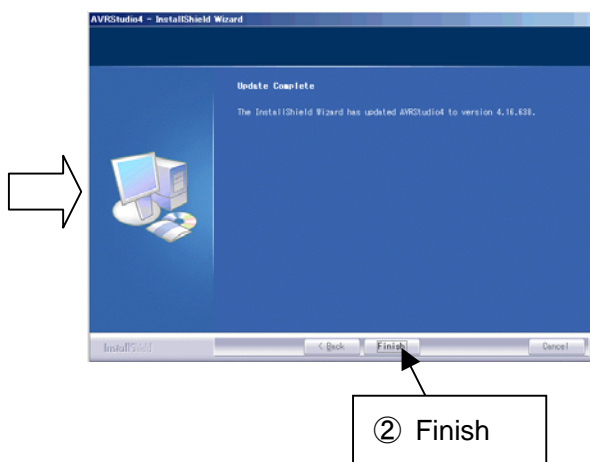
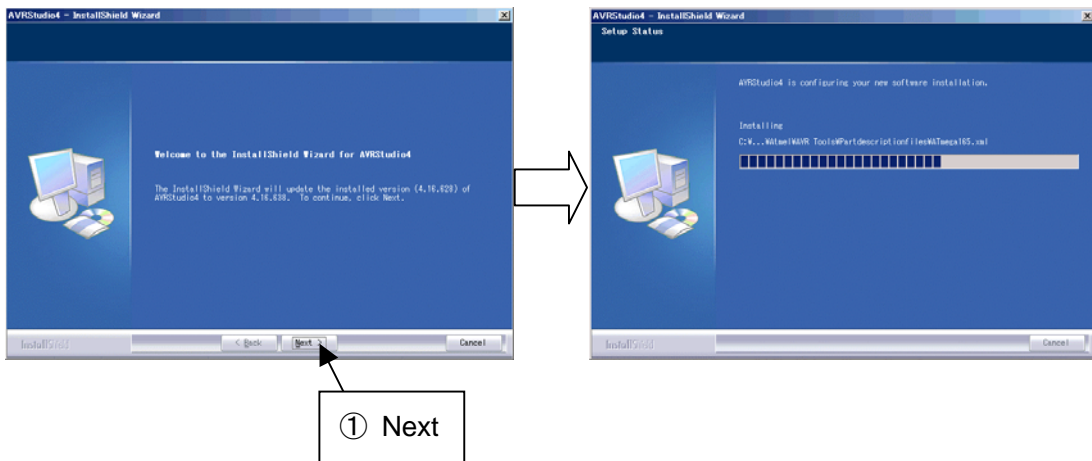
Double click on “AVR_TOOL¥ AvrStudio4Setup.exe” of the CD/DVD.





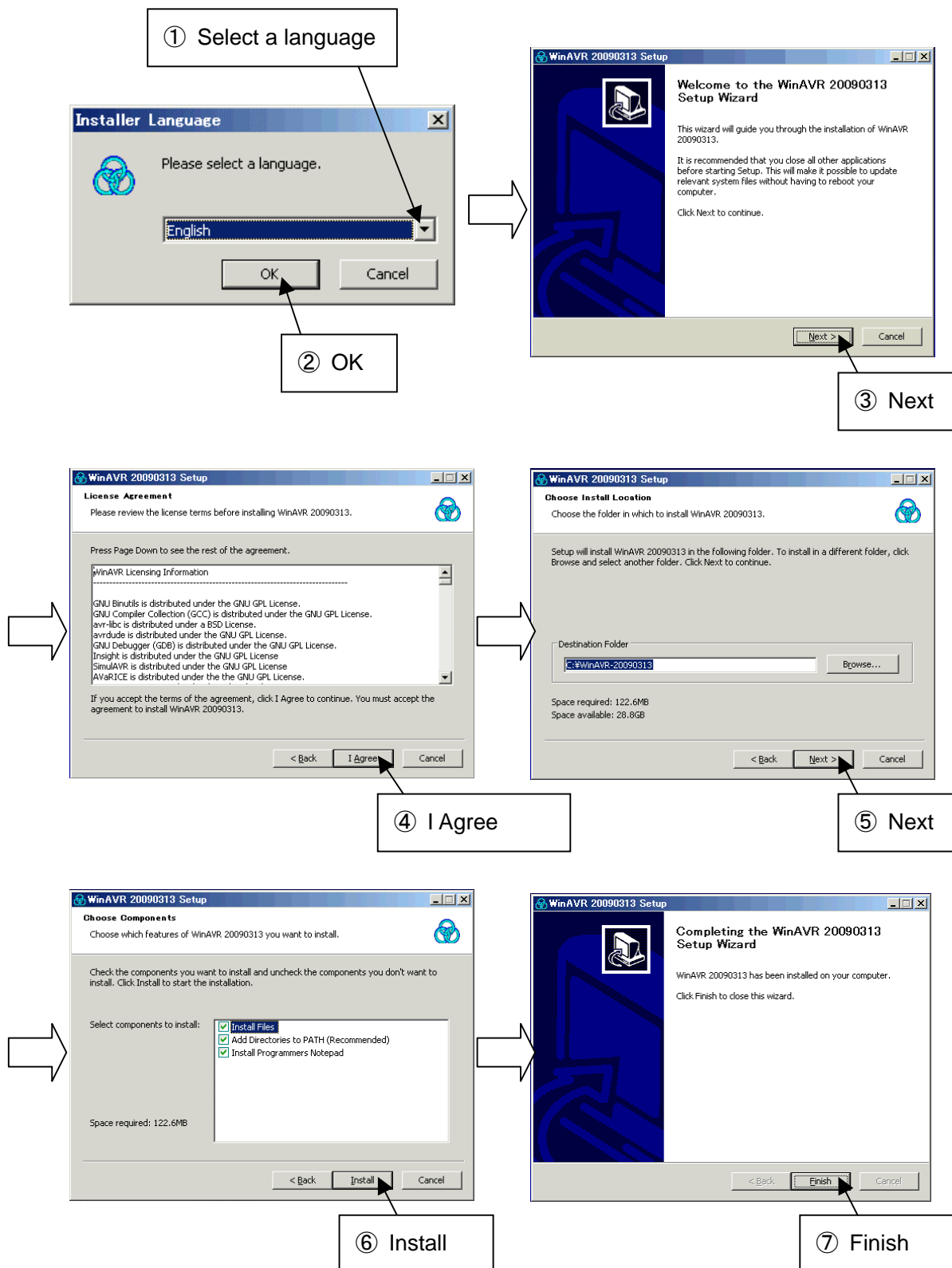
Next is the update of AVR STUDIO.

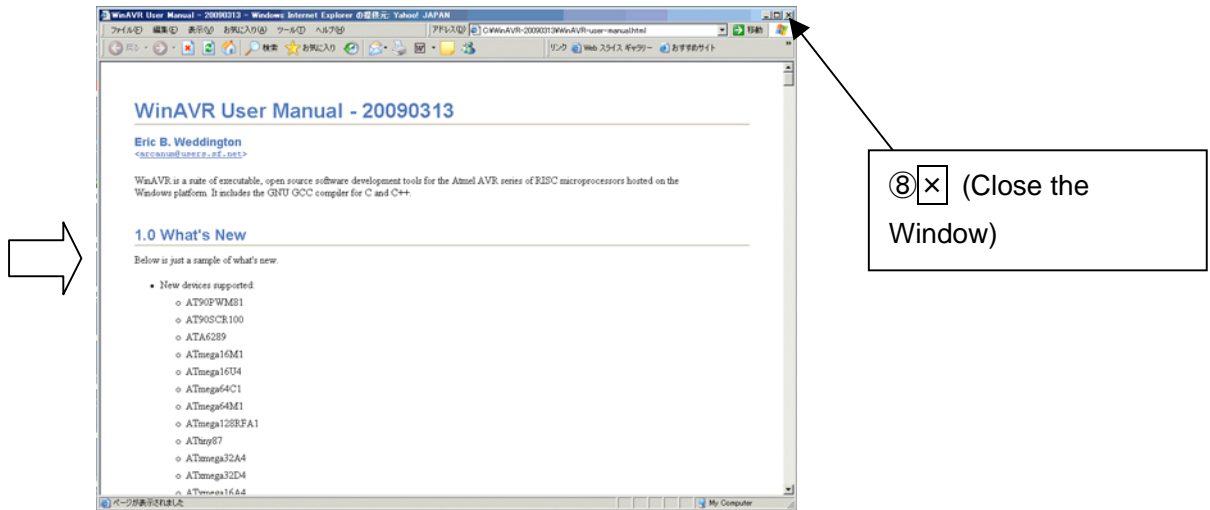
Double click on “AVR_TOOL¥ AVRStudio4.18SP3.exe” of the CD/DVD.



Next is the installation of WINAVR.

Double click on “AVR_TOOL¥ WinAVR-20100110-install.exe” of the CD/DVD.





7- (3) Touch panel update

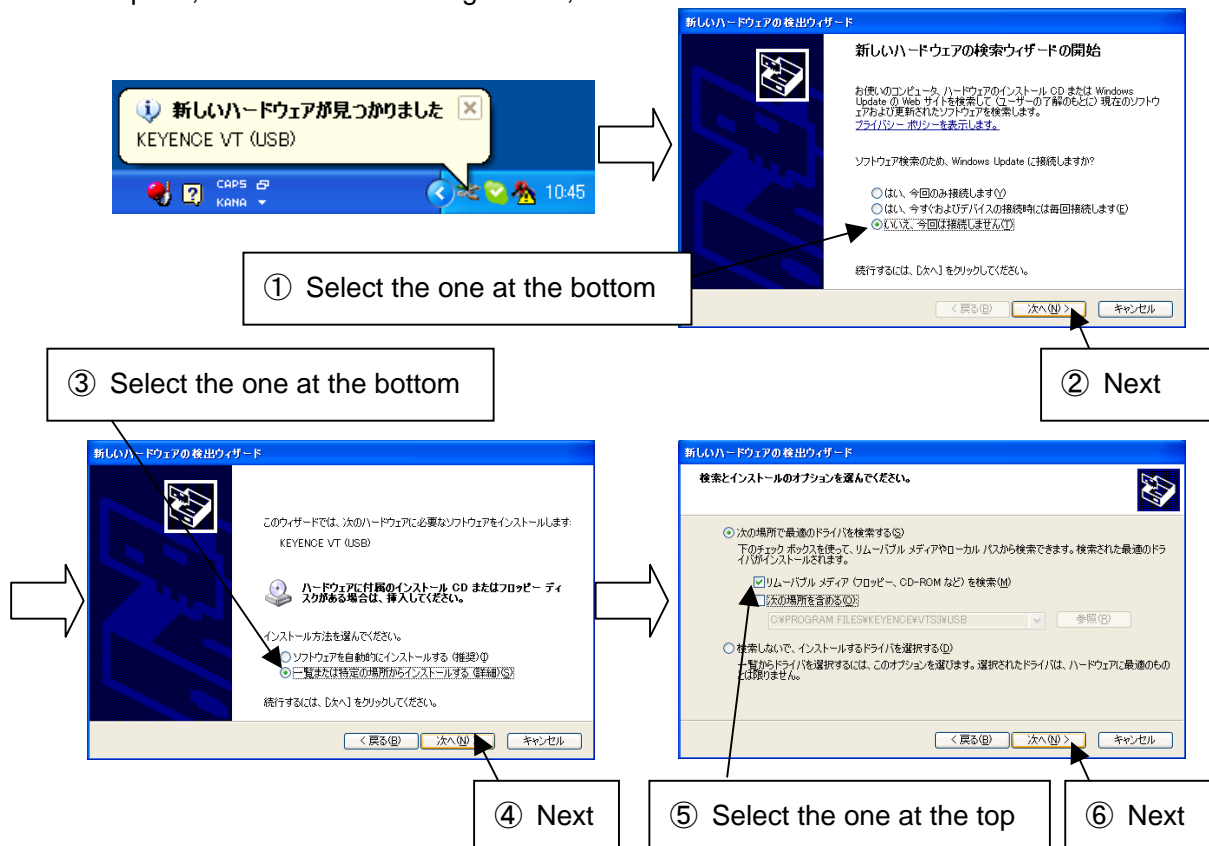
(a) Connecting to a computer/Terminal GTWIN operation

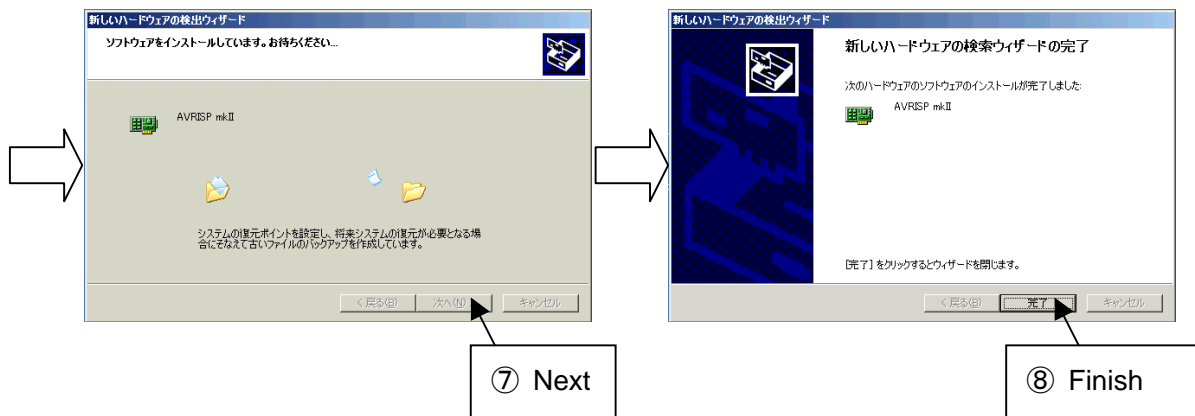
If any changes are made to the touch panel content, we will send the data to you most likely by e-mail. The data format will look like “AeroCut_eco100.IOP” with a file extension of “.IOP.” The figure “100” refers to a version, which means Version 1.00. Save this data in a folder of your choice in your computer and upgrade the version as follows:


- ① Remove the unit cover, and connect the USB cable provided with the unit to the back of the touch panel as shown below.



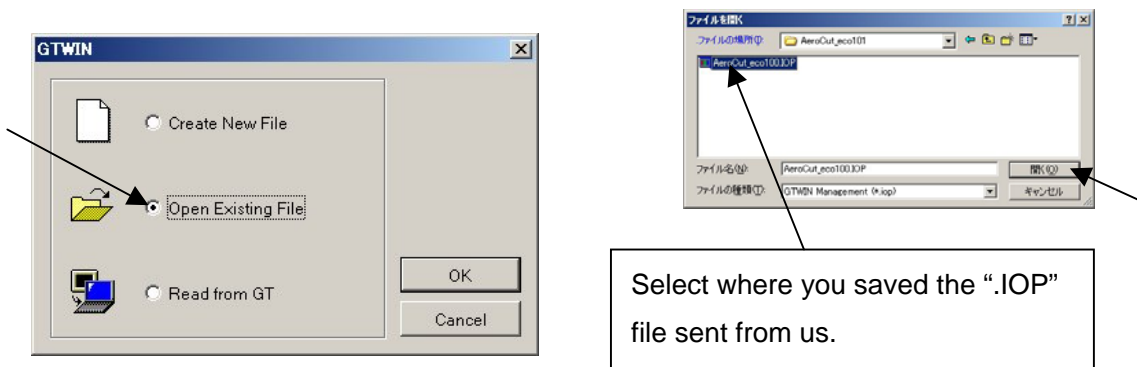
- ② Turn on the power supply. If the installation of the USB driver is necessary at this point, install the driver using DISK2, which contains the driver in the USB folder.



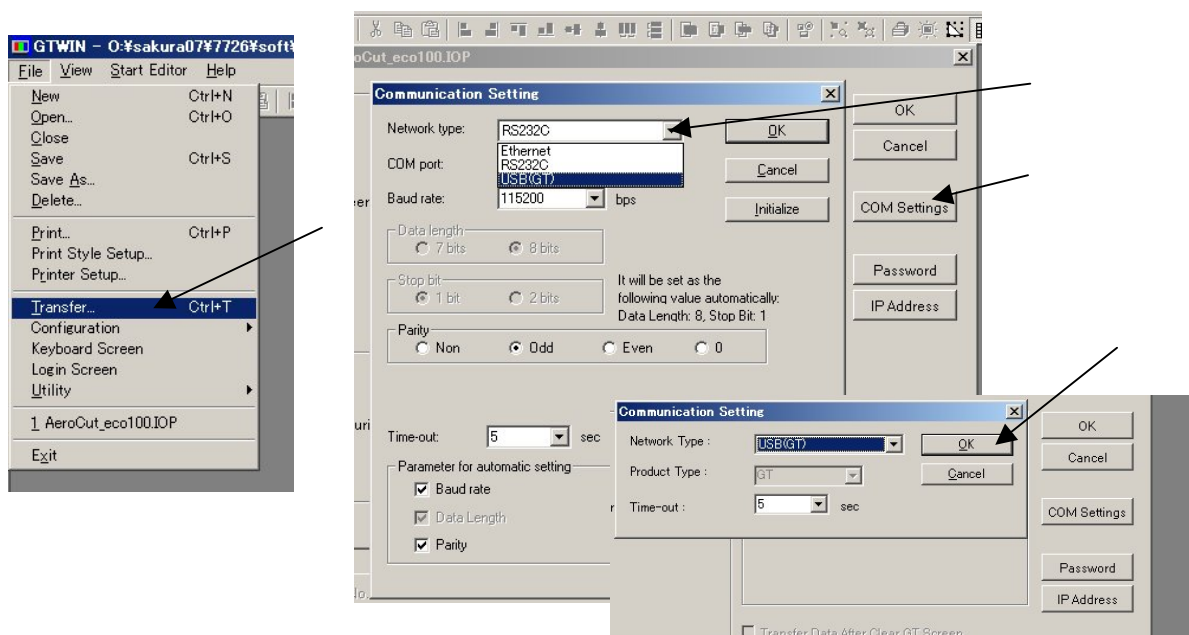


- ③ Start up the computer and double click on  (GTWIN).

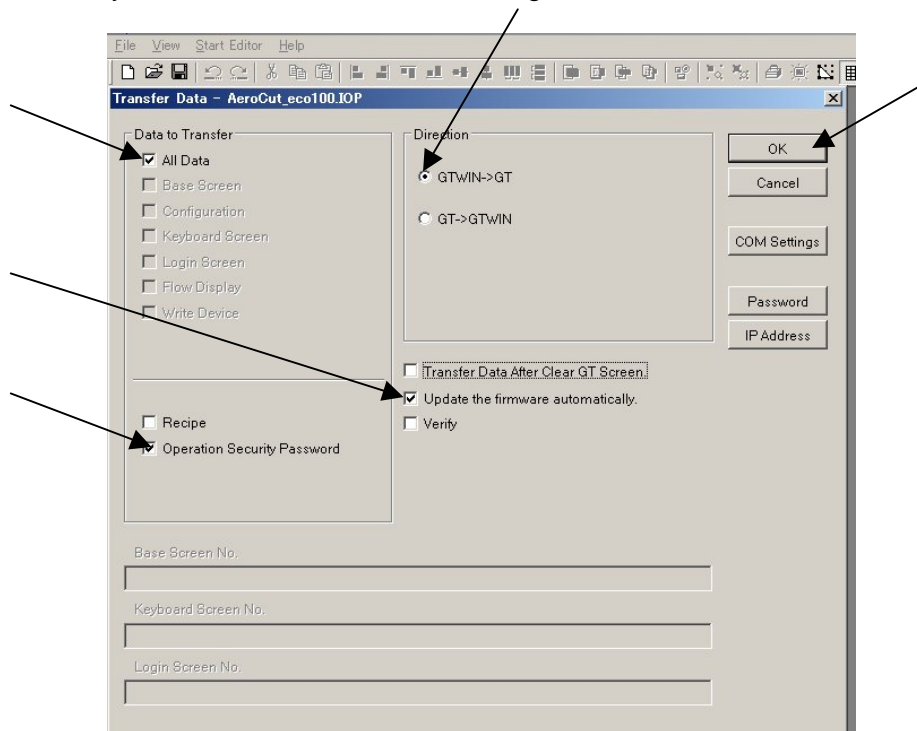
- ④ Click on Open Existing File. Select the folder in which you saved our screen data, select a file with a file extension of IOP.



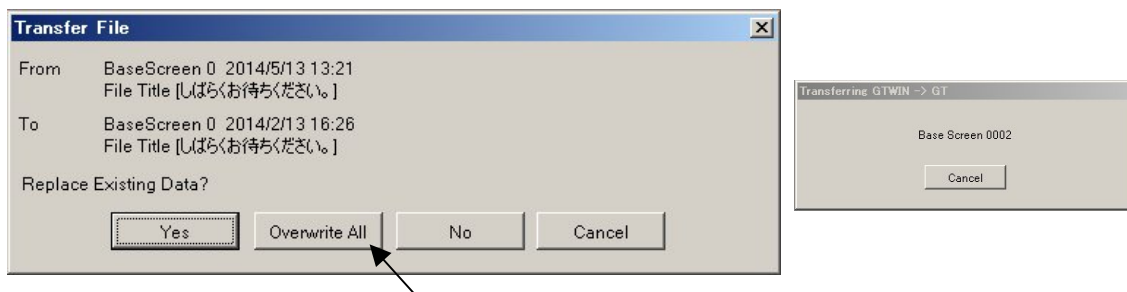
- ⑤ Select File⇒Transfer⇒COM Settings⇒USB(GT) and click OK. This setting is necessary once after installation.



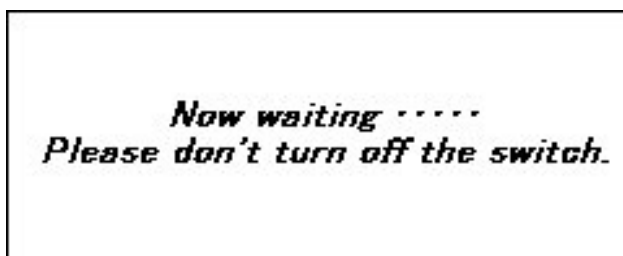
- ⑥ Tick “All Data”, “Operation Security Password”, “GTWIN->GT”, “Update the firmware automatically” and click OK to start transferring.



- ⑦ If asked to replace existing data, click “Overwrite all”. It takes several minutes to transfer the data.



- ⑧ After your installing updated software, the direction you can see the below will remain on the touch panel. After seeing that words on the screen, turn off the machine and turn it on again.

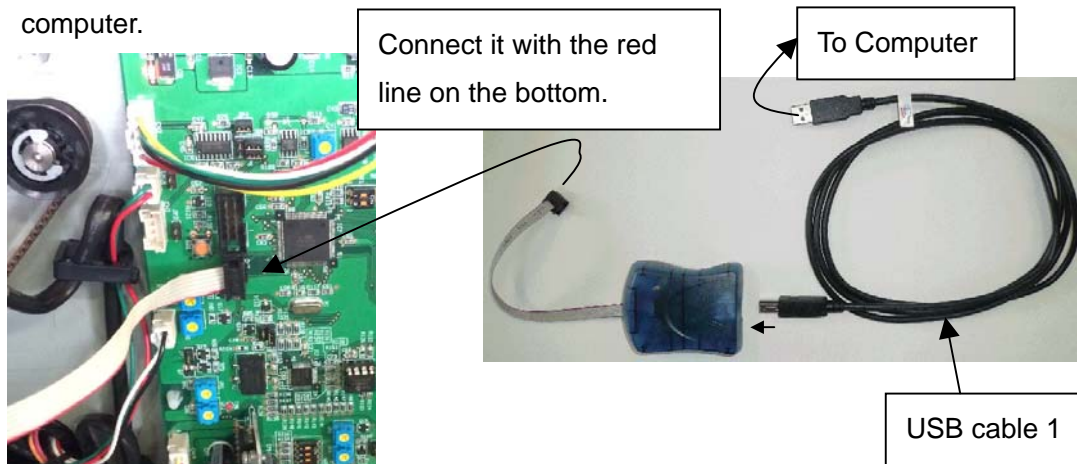


7- (4) PCB (CPU board) update

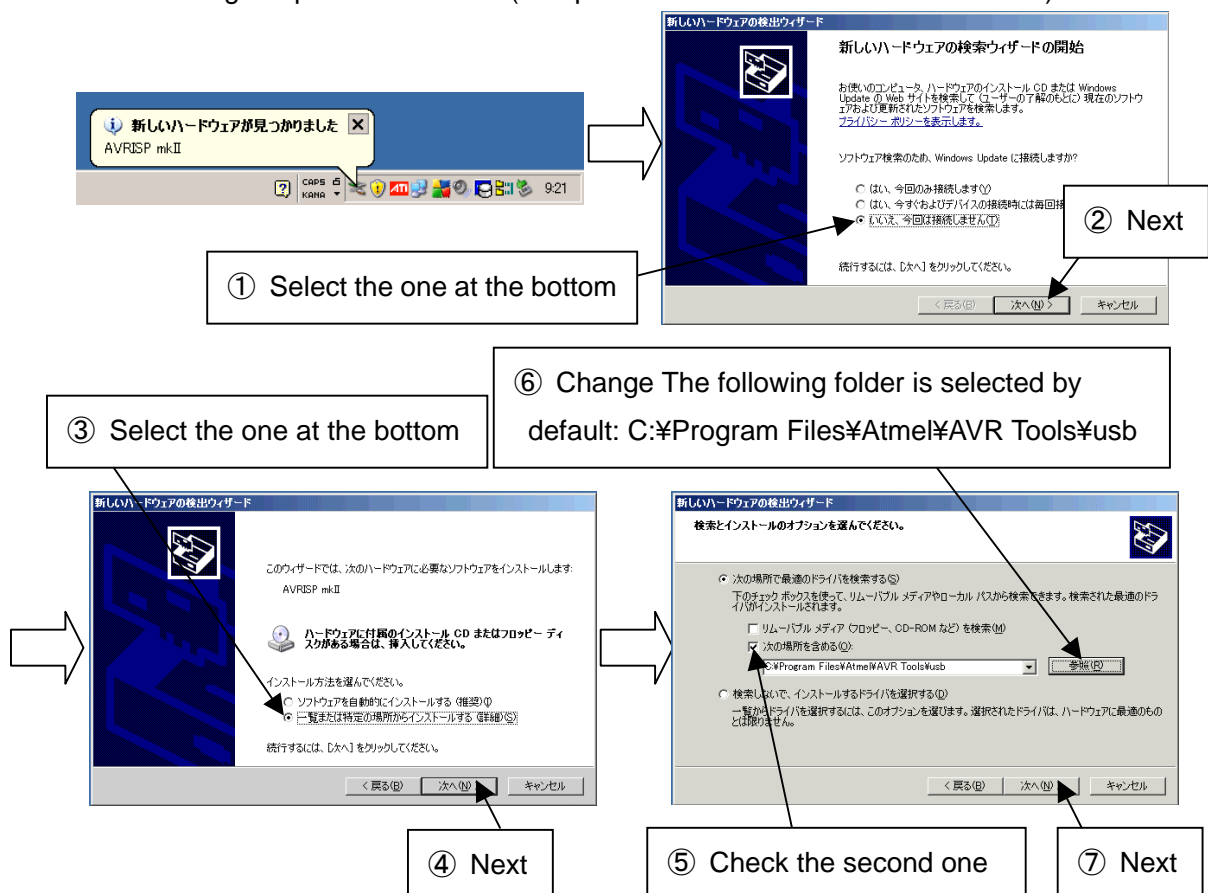
(a) AVRISP mk II connection and AVR STUDIO operation

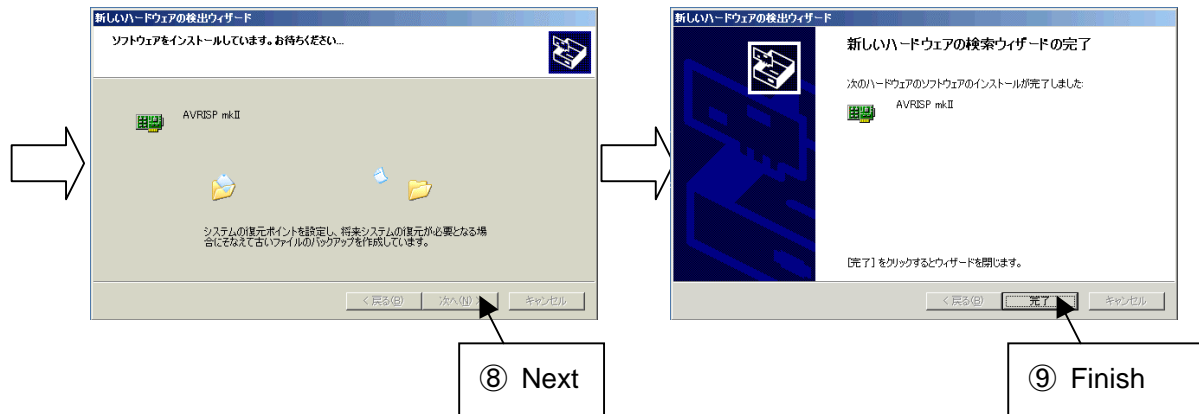
If any changes are made to the program content, we will send the data to you most likely by e-mail. The data format will look like "AeroCut_100.hex" with a file extension of ".hex." The figure "100" refers to a version, which means Version 1.00. Save this data in a folder of your choice in your computer and upgrade the version as follows:

- ① Remove the cover at the bottom of the front of the unit. Connect AVRISP mk II provided with the unit to CN7 of the CPU Board, and connect the USB cable to the computer.

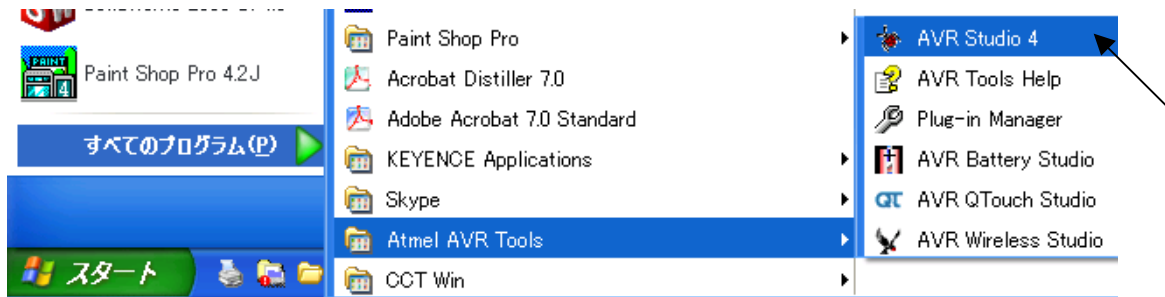


- ② If the installation of the USB driver is necessary at this point, install the driver following the procedure below (The procedure below is for WINDOWS XP).

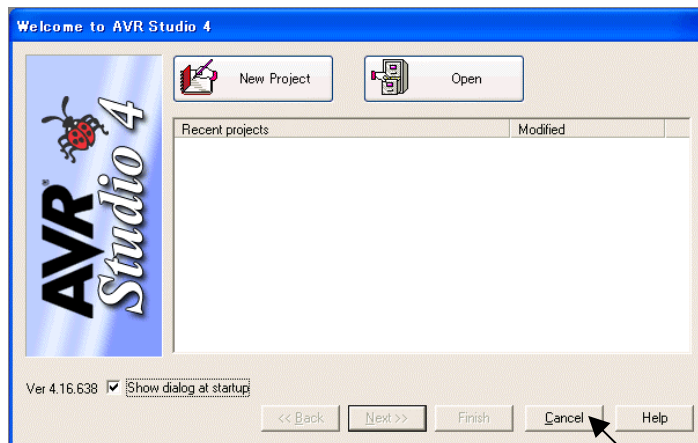




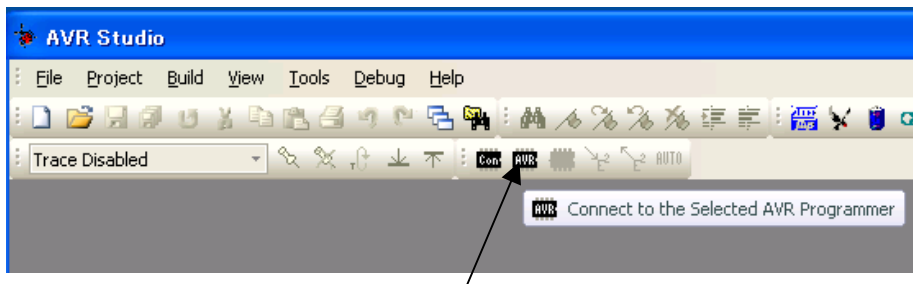
③ Start up the computer and double click on Start ⇒ Program ⇒ Atmel AVR Tools ⇒ AVR Studio 4.



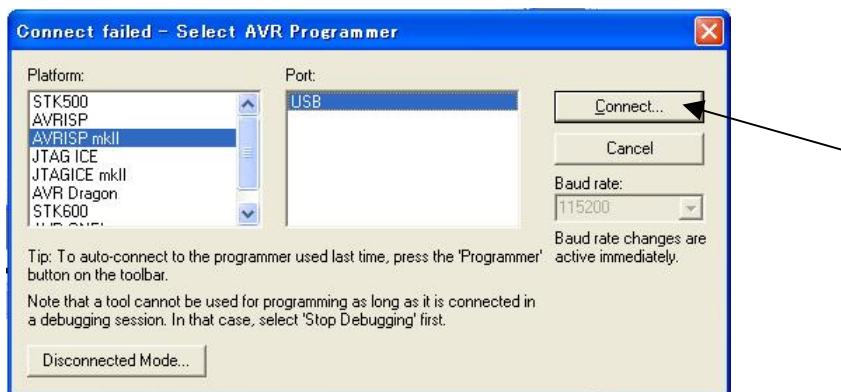
④ Click on Cancel.



- ⑤ Click on AVR (Connect to the Selected AVR Programmer).



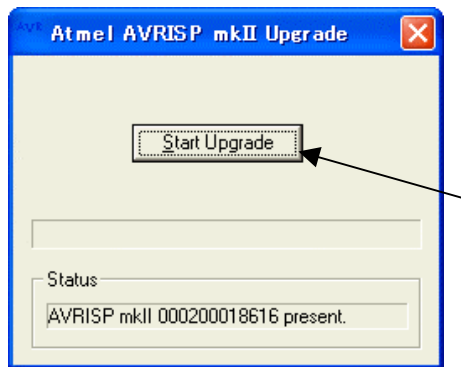
- ⑥ Select AVRISP mk II for Platform, Select USB for Port, click on Connect.



- ⑦ If the following warning appears on the screen, AVRISP mk II firmware upgrade is necessary. Click on OK. If the warning does not appear on the screen, skip to ⑩.



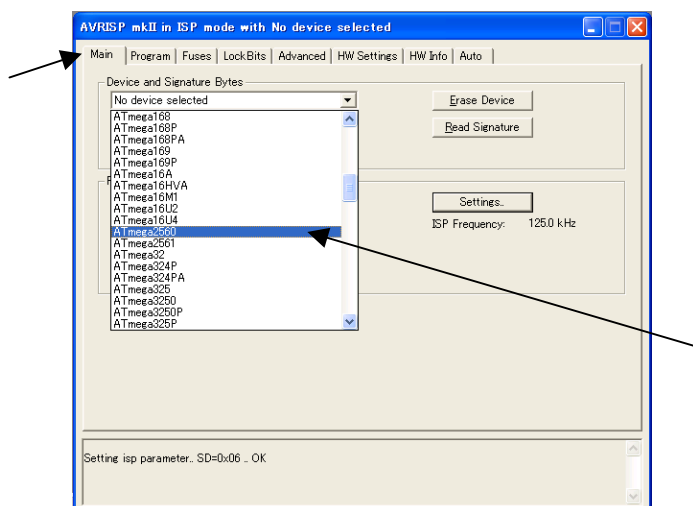
⑧ Click on Start Upgrade.



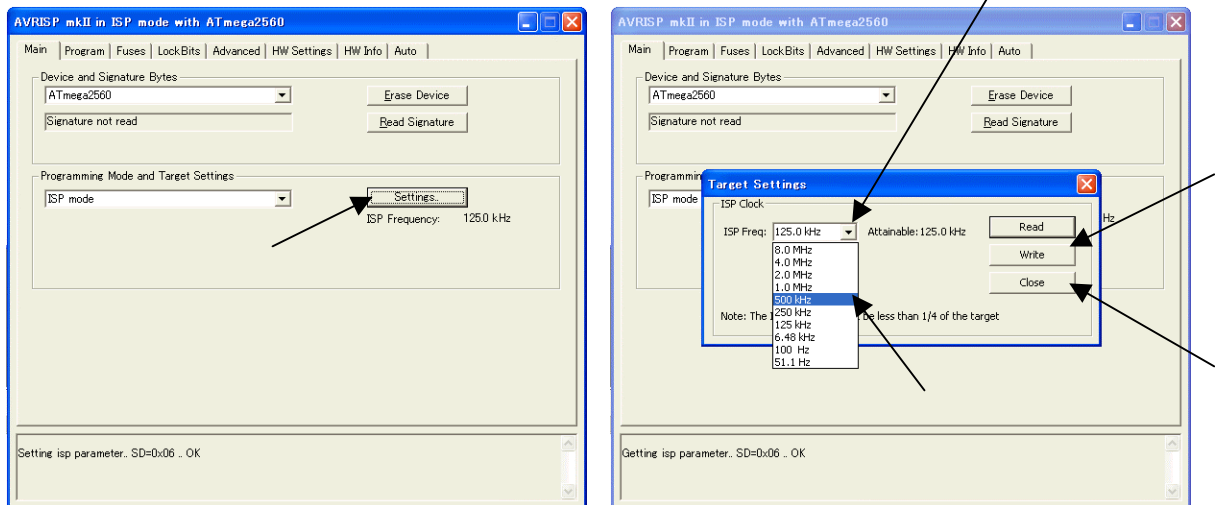
⑨ Disconnect the USB cable of AVRISP mk II and connect it again. After that, click on OK. If AVR STUDIO has shut down, return to ③ and conduct the operation again.



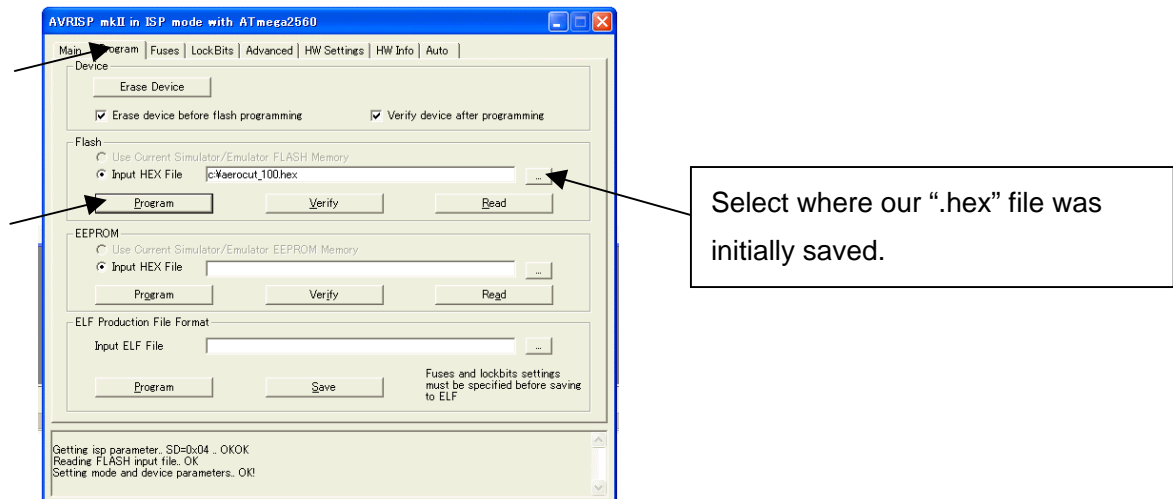
⑩ Click on Main tab, select the Atmega2560 for Device and Signature Bytes.



- ⑪ Click on Main tab and on Settings. Select 500 kHz for ISP Freq, click on Write, and click on Close.

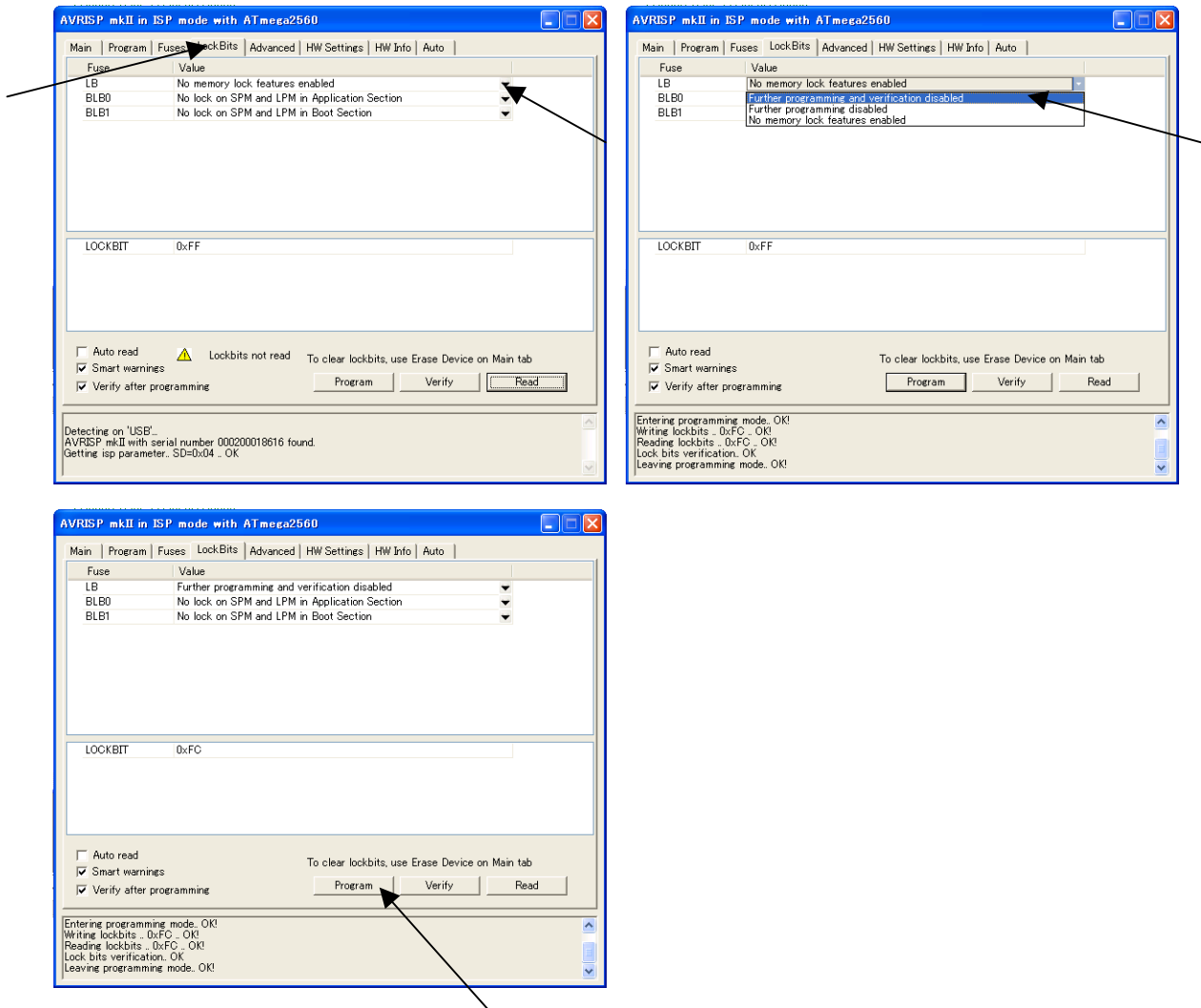


- ⑫ After clicking on Program tab, select the folder where the file was initially saved as the save location. By clicking on Program, the transmission of the program will start. (About 30 sec.)



⑬ Click the LockBits tab, and click ▼ next to “No memory lock features enabled,” then, select

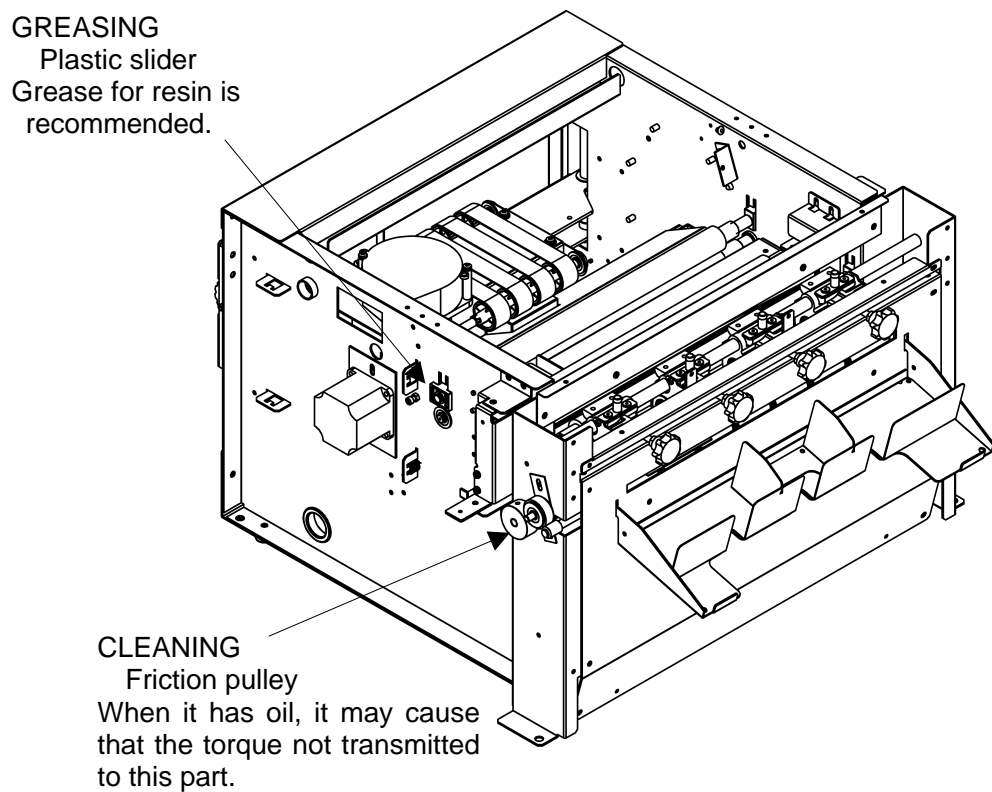
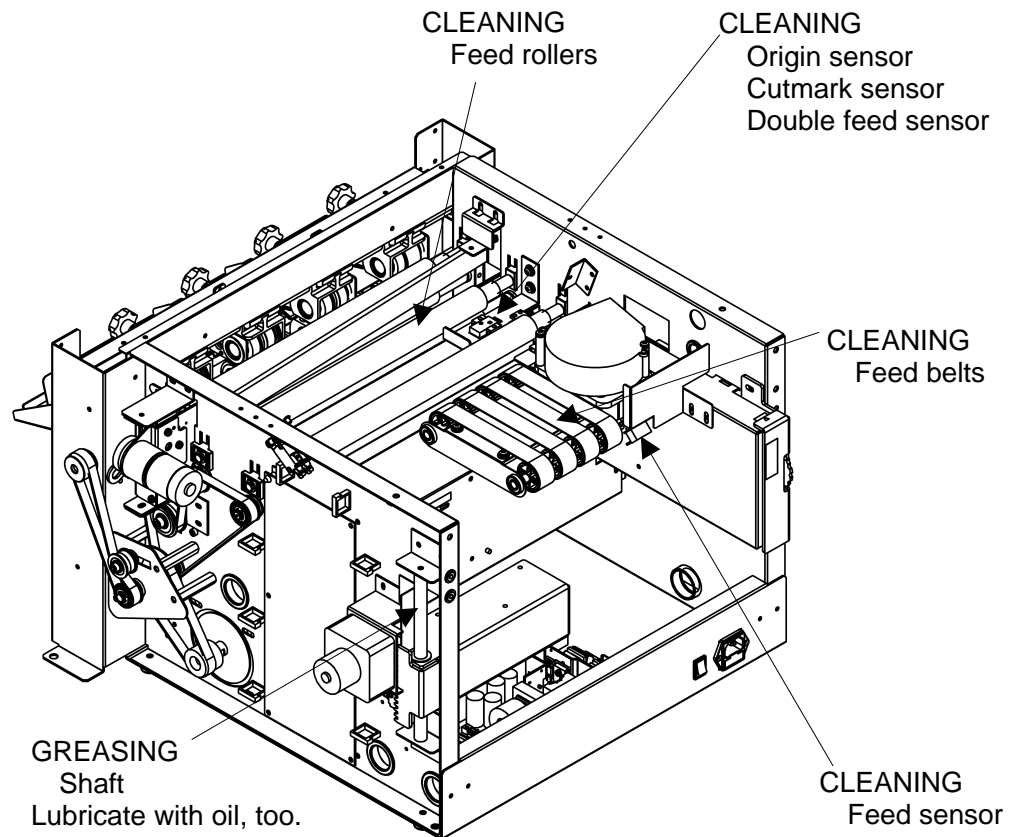
“Further programming and verification disabled.” Click “program”.



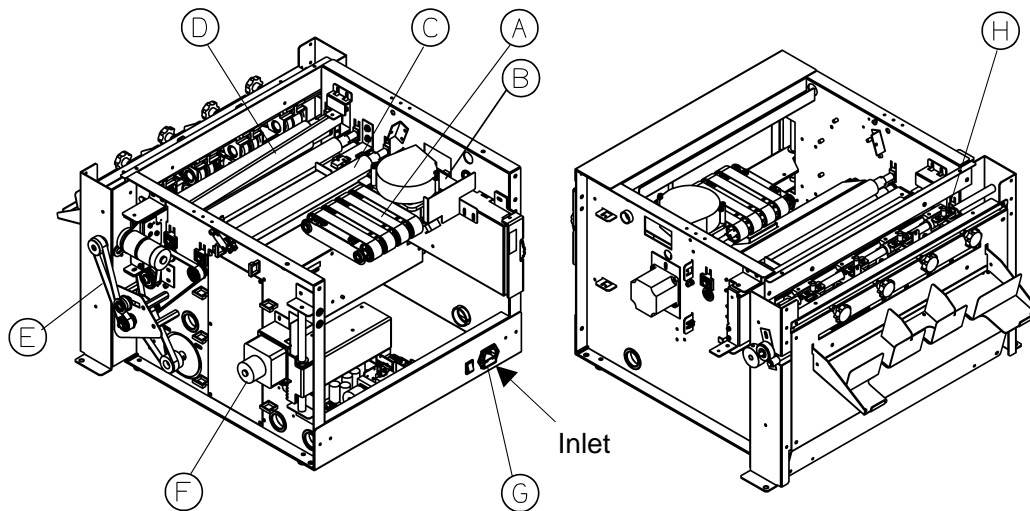
⑭ The process is completed when the transmission of the program has finished.

⑮ From the next time onward, proceed in the order of ③, ④, ⑤, ⑩, ⑫, and ⑬.

8. Cleaning & greasing



9. Recommended replacement parts



No.	Parts name	Parts No.	Qty	Remarks
A	Feed belt	82-571	4	
B	Timing belt	82-557	1	S3M216
C	Carrying roller (Hard)	7726-0601	3	
	Carrying roller (Soft)	7726-0602	3	
	Roller slider	51-592	6	
D	Guillotine	61-055	1	
E	Timing belt	82-558	1	S3M 315
	Timing belt	82-559	1	S3M 348
	Timing belt	82-560	1	S3M 624
F	Motor	72-785	1	
G	Fuse	73-996	1	FUJI TERMINAL INDUSTRY EWM-250V-3.15A One spare fuse is in inlet.
H	Slitter blade			Reference: PARTS LIST


10. Error messages

Operation manual “6 Error messages”

1.



This occurs when the Safety cover is opened.

- Micro switch (Cover open) or bracket may be out of order.
 Page 12 3- (6) INPUT DATA CHECK screen
- PCB (CPU Board) may be out of order.
- Wire breakage or connection failure may have occurred.

2.



Timeout error 1

This occurs when the paper did not pass through Origin Sensor at time of paper feeding.

When Feed Belt and Carrying Roller are both rotating:

- Paper guides hold the sheets too tightly on the Feed table.

- Paper tip could remain inside of the machine.
- Clean feed belts.
- Vacuum motor may be out of order.
- Origin Sensor may be out of order.

 Page 12 3- (6) INPUT DATA CHECK screen

When Feed Belt is not rotating:

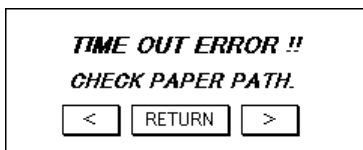
- Feed Motor may be out of order.

When Carrying roller is not rotating:

- Main motor may be out of order.

- PCB (CPU Board) may be out of order.
- Wire breakage or connection failure may have occurred.

3.



Timeout error 2

This occurs when the paper did not pass Origin Sensor within a designated period of time.

When Feed Roller is rotating:

- Paper tip could remain inside of the machine.
- Origin Sensor may be out of order.

 Page 12 3- (6) INPUT DATA CHECK screen

- Slipping is caused by powdered paper at Feed Roller.
- Paper warpage may have occurred.
- Slitter may be out of order.

When Carrying roller is not rotating:

- Main motor may be out of order.

- PCB (CPU Board) may be out of order.
- Wire breakage or connection failure may have occurred.

4.

CUT-MARK NOT READ !!
CHECK CUT-MARK
or SENSOR!!

< RETURN >

 - Cut Mark printing density needs to be checked.
 - Cut Mark Sensor needs to be re-adjusted.
 ☞ Page 19
 - Cut Mark Sensor may be out of order.
 - CPU Board may be out of order.
 - Wire breakage or connection failure may have occurred.

5.

CUT PAPER JAMMED !!
REMOVE JAMMED PAPER.

< RETURN >

☞ Page 13 Paper jam

6.

OVERLOADED !!
CHECK KNIFE UNIT !!

RETURN

Overload error 1

 - Paper tip could remain inside of the machine.
 - Paper double feeding.
 - Paper thickness is out of specification.
 - Cutter blade may be blunt.
 - Cutter Motor may be out of order.
 - Switch may be out of order.
 ☞ Page 12 3- (6) INPUT DATA CHECK screen
 ⑦ Guillotine switch
 - I/O Board may be out of order.
 - CPU Board may be out of order.
 - Wire breakage or connection failure may have occurred.

7.

OVERLOADED !!
CHECK PAPER
FEED TABLE !!

RETURN

Overload error 2

 - Feed Motor may be out of order.
 - Switch may be out of order.
 ☞ Page 12 3- (6) INPUT DATA CHECK screen
 ③ Feed sensor
 ⑤ Micro switch (Feed table lower limit)
 - Screws of the coupling may be loose.
 - I/O Board may be out of order.
 - CPU Board may be out of order.
 - Wire breakage or connection failure may have occurred.








8.

COMMUNICATIONS ERROR!!
Cut off the power supply!
ERROR CODE: -*****

 - Touch Panel may be out of order.
 - CPU Board may be out of order.
 - Wire breakage or connection failure may have occurred.

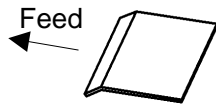
11. Troubleshooting

Operation manual “7 Troubleshooting”

1. The machine is not turned on.
 - Check the fuse.
 - One spare fuse is in inlet.
73-996 (FUJI TERMINAL INDUSTRY EWM-250V-3.15A)
2. The machine doesn't feed properly.
 -  Operation manual “7 Troubleshooting”
 - Adjust the blow rate. ( Page 18)
3. The machine feeds double-sheets.
 -  Operation manual “7 Troubleshooting”
 - Adjust the blow rate. ( Page 18)
4. The machine doesn't detect double-feed properly.
 -  Operation manual “7 Troubleshooting”
5. The machine detects double-feed mistakenly.
 -  Operation manual “7 Troubleshooting”
6. Paper jam often occurs.
 -  Page 13

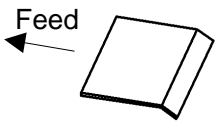
7. The guillotine doesn't cut paper properly.

7-a. In case there is a mark on the lead edge of the card.



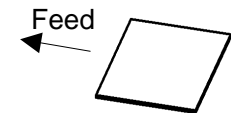
- It may occur when the paper is too thick.
- It may occur when the gap between the cards are too short.
- There may be a gutter remaining on top of the guillotine blade.

7-b. In case there is a mark on the tail edge of the card.



- It may occur when the paper is too thick.
- There may be a gutter remaining on top of the guillotine blade.

7-c. In case there is no mark on the card.

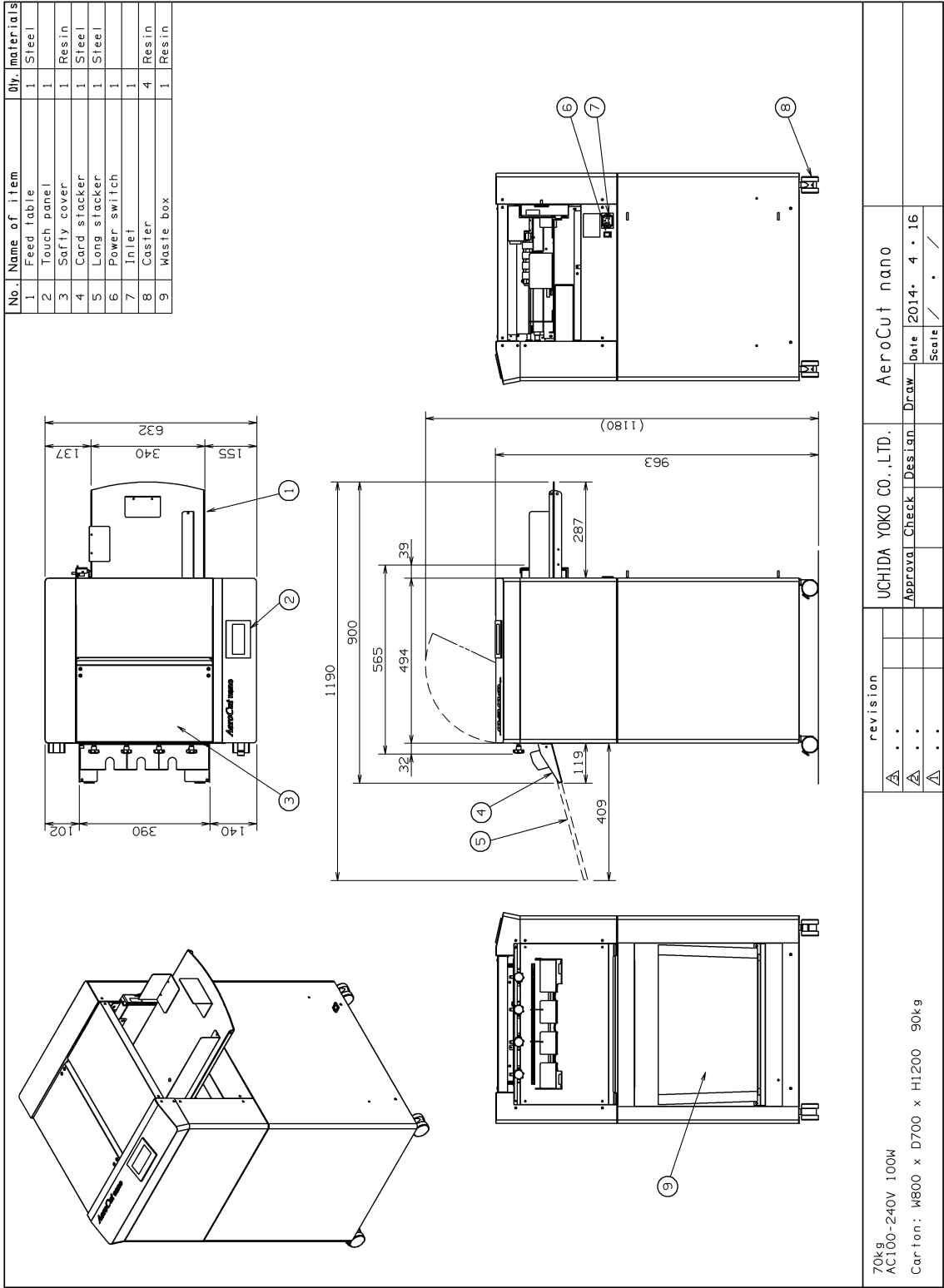


- The micro switch of the guillotine unit may be defective. It happens sometimes.

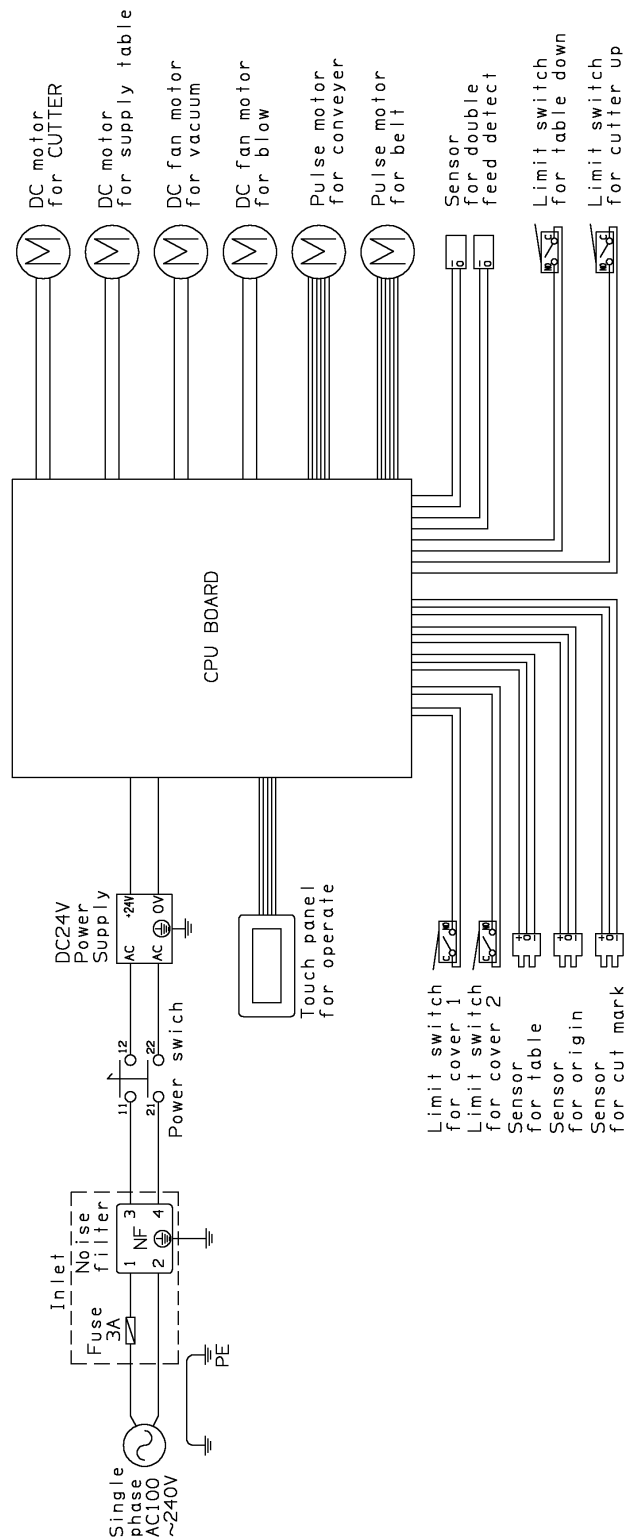
If it always occurs, make sure that the input values of MANU SET are right.

12. Drawing

12- (1) Drawing

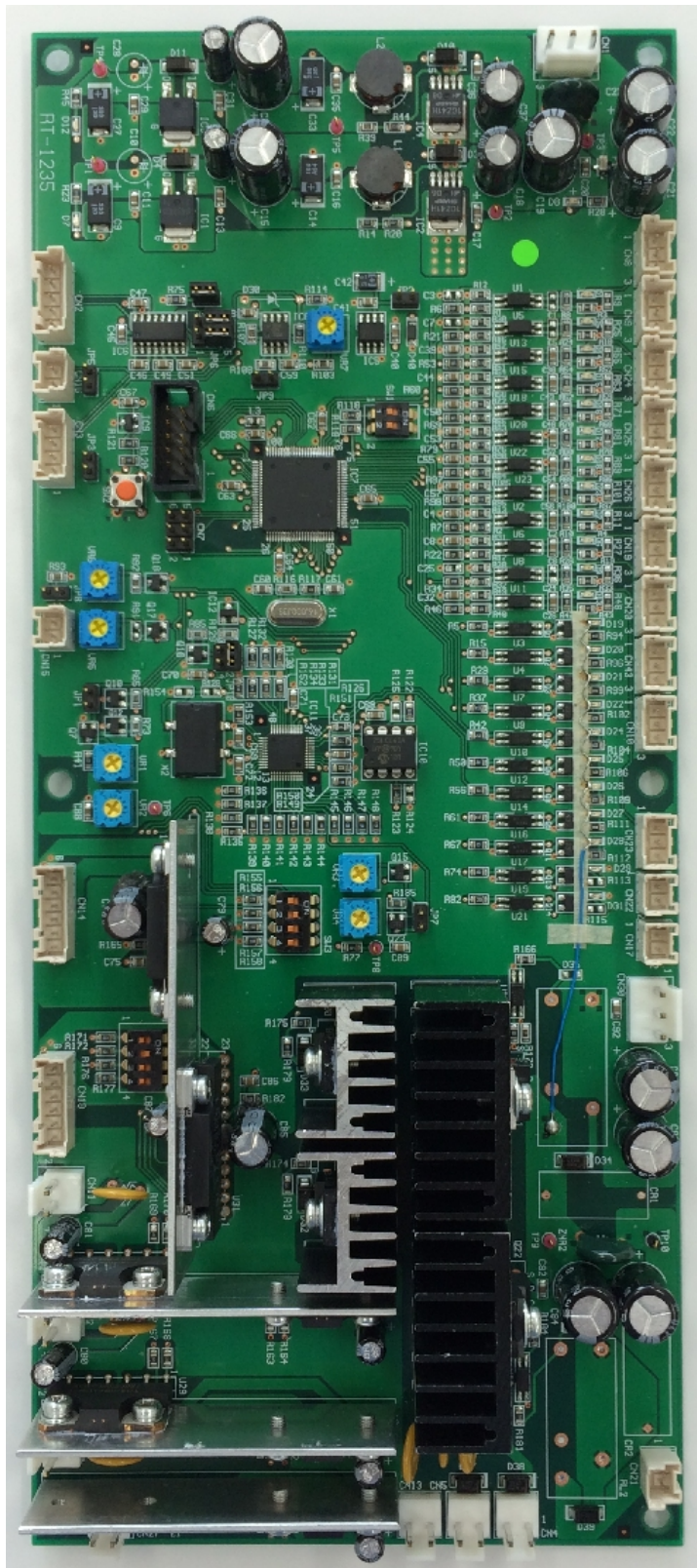


Electric Circuit (V1.00)

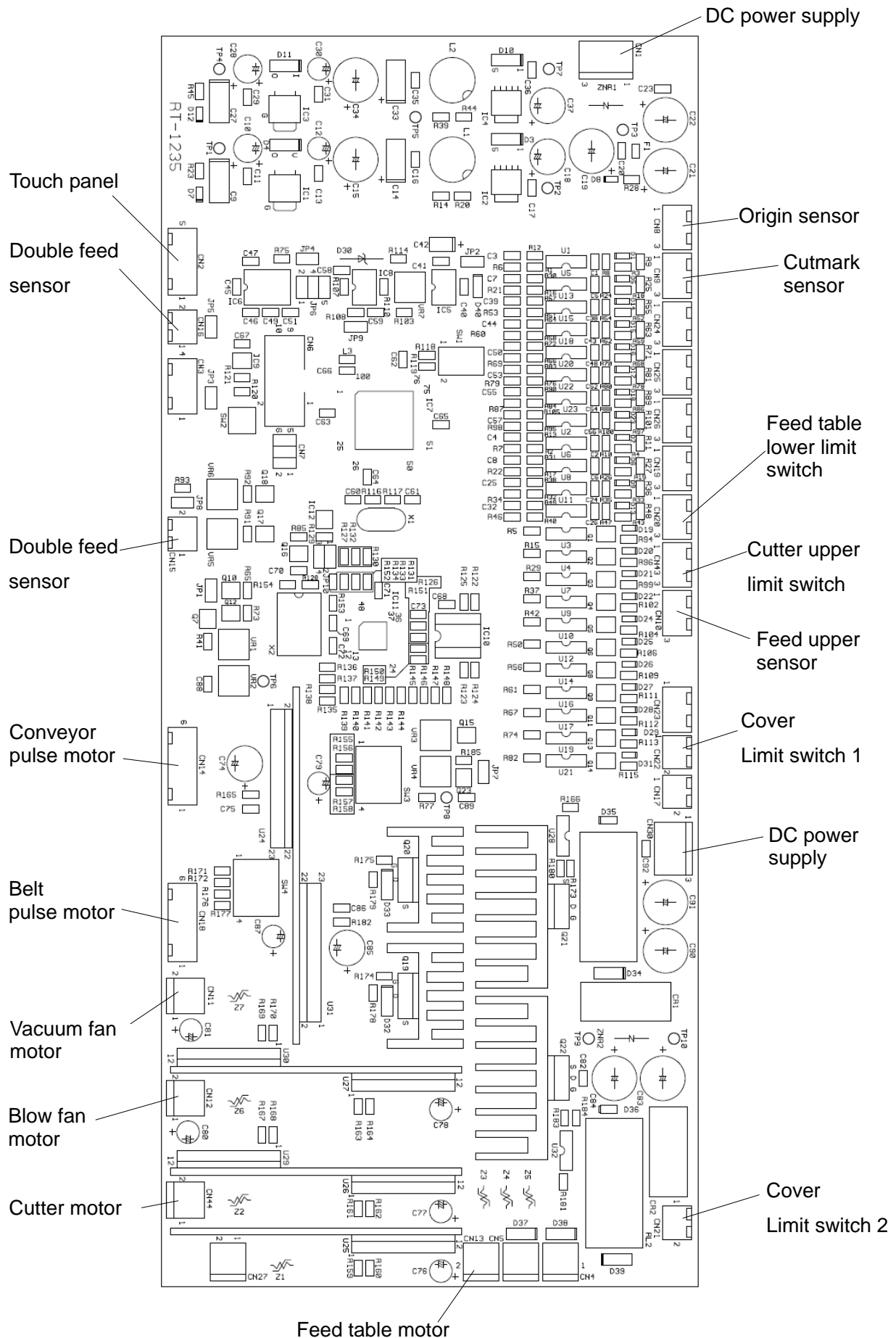


12- (2) Board Details

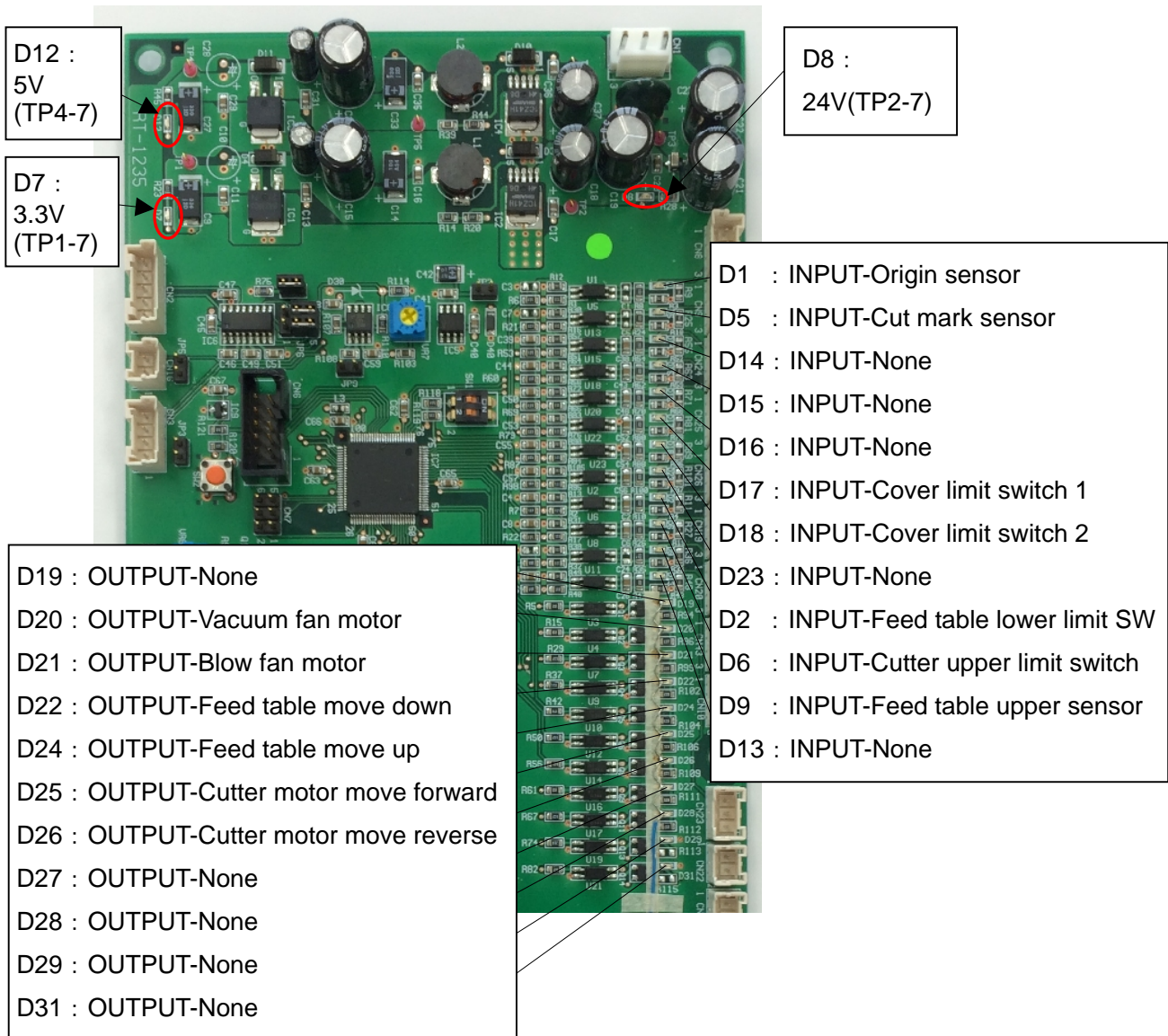
(a) PCB (CPU board)



(b) Wiring Details



12- (3) Input/Output LED Details



12- (4) Tap Voltage Details

