

2.2. Preparations for Use

2.2.1. Front cover

The Front Cover is a semi-translucent cover to prevent its operator from access to moving parts of machine.

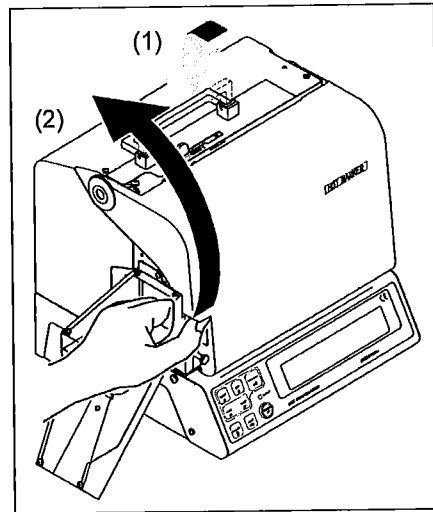
Be sure to close the front cover whenever you operate the machine.

2.2.1.1. How to open & close Front Cover

- (1) To close the front cover, pinch bottom left of the front cover and pull it down.
- (2) To open the front cover, press down the carrying handle and retract it to "unused" position.

Then, pinch bottom left of the front cover and pull it upward.

If you move the front cover upward without retracting the carrying handle, that would be the cause of damage to the front cover.



2.2.2. Safety Cutter Cover

The Safety Cutter Cover is an attachment to prevent access to moving cutter unit.

Upon shipment of SP8600 from our factory, the Safety Cutter Cover is separated into the two main parts.

Referring to the following instructions, reassemble the safety cutter cover and fit it to the machine properly.

⚠ WARNING!

1. The machine is equipped with the cutter blade. Handle the cutter blade with caution.
2. To prevent from cutting your hands or fingers with the edge of cutter blade, be sure to keep your hands away from the cutter blade unless you replace the blade with a new one.
3. For your safety, be sure to turn the main switch off and pull out the power supply cord from an AC outlet until all attachment/detachment works are done.

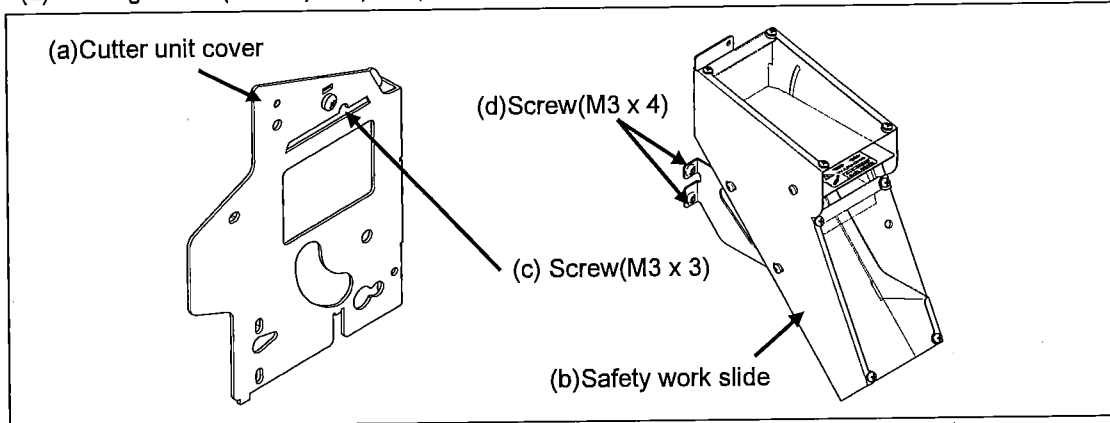
2.2.2.1. Tools for assembly

Please ensure that you have the following tools necessary for assembly:

Crosshead type screwdriver

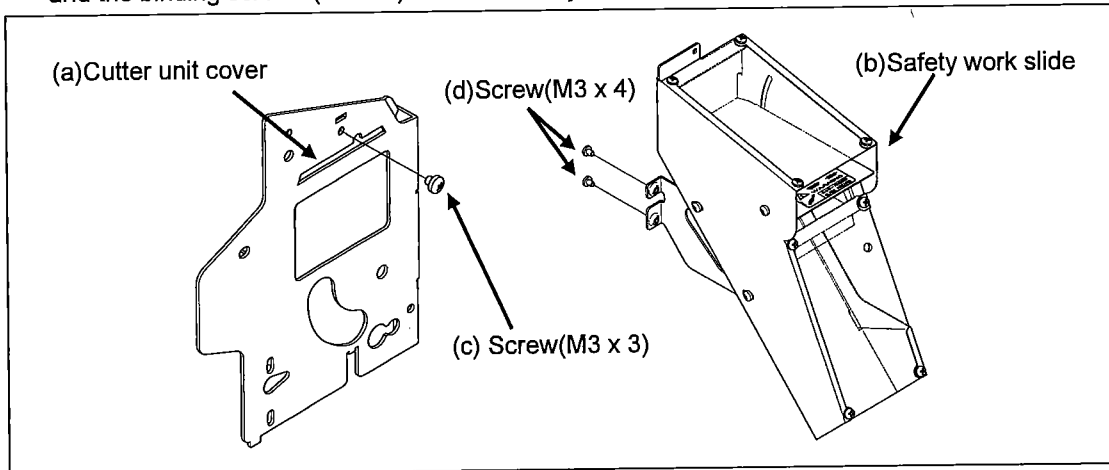
2.2.2.2. Components

- (a) Cutter unit cover x 1 pce. (fitted to SP8600 upon shipment)
- (b) Safety work slide x 1 pce. (included in the standard accessories of SP8600)
- (c) Binding screw (M3 x 3) x 1 pce. (fitted to Cutter unit cover)
- (d) Binding screw (M3 x 4) x 2 pcs. (fitted to Safety work slide)

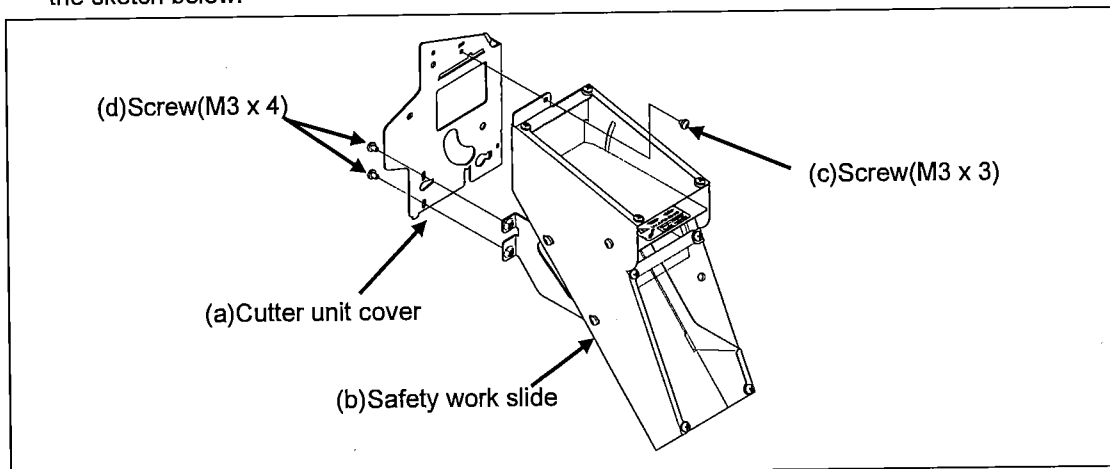


2.2.2.3. Assembly

- (1) Using a crosshead type screwdriver, unscrew the binding screw (M3 x 3) from the cutter unit cover and the binding screws (M3 x 4) from the safety work slide respectively.



- (2) Fit the safety work slide to the cutter unit cover and fix the two parts with the screws, as shown in the sketch below.

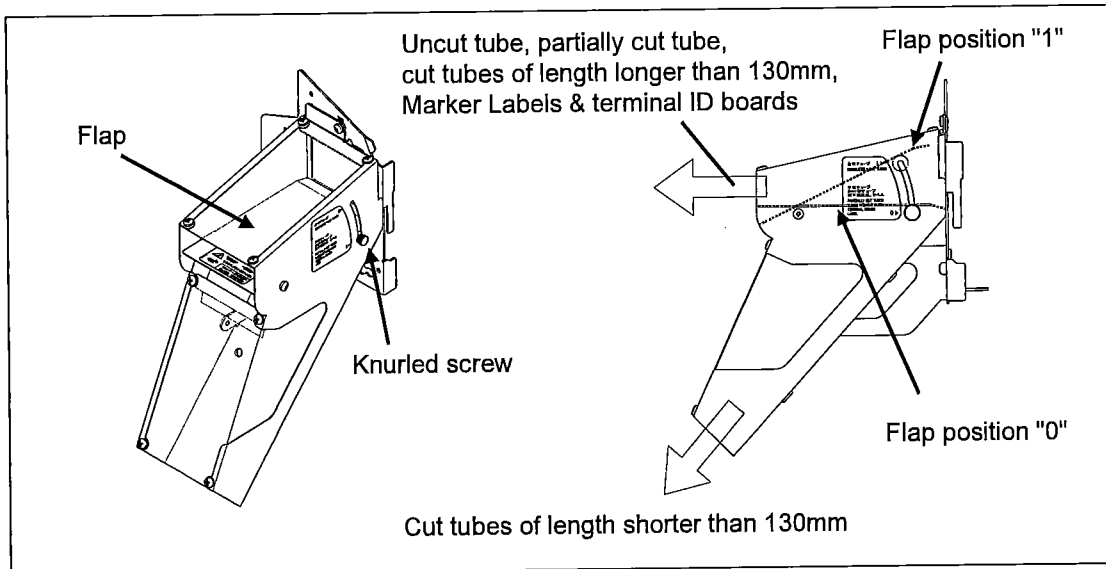


- (3) Fit the safety cutter cover to the left side of SP600 and fix it properly with the screws.

2.2.2.4. Usage

According to the type and length of marked materials, set the position of internal flap and fix the position with the knurled screw as follows:

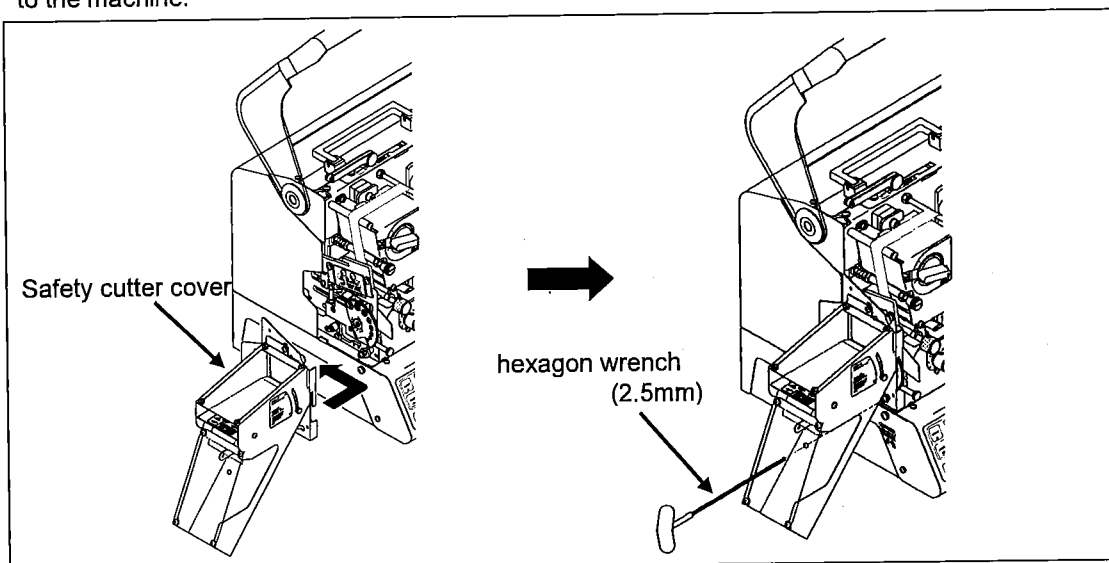
Flap Position "0"	Uncut tube, partially cut tube, cut tubes of length longer than 130mm, Marker Labels & terminal ID boards.
Flap Position "1"	Cut tubes of length shorter than 130mm.



2.2.2.5. Setting Safety Cutter Cover to SP8600

Set the safety cutter cover to SP8600 in the following sequence:

- (1) Open the acrylic cover.
- (2) Fit the safety cutter cover to the left side of SP8600 with the multi hook bolt passing through the large circular hole at the bottom right corner of safety cutter cover.
- (3) Slide the safety cutter cover backward until you hear the "click" sound, which tells you that the safety cutter cover is fitted to the proper position.
- (4) Tighten the multi hook bolt with the hexagon wrench (2.5mm) and fix the cutter unit cover to the machine.



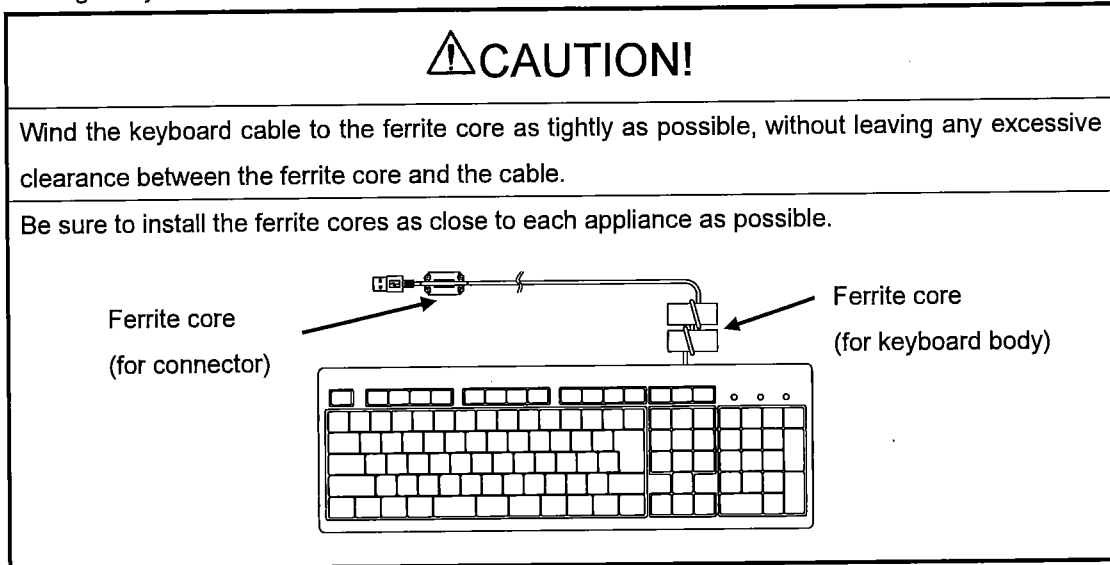
2.2.3. Keyboard

2.2.3.1. How to install ferrite cores on keyboard cable

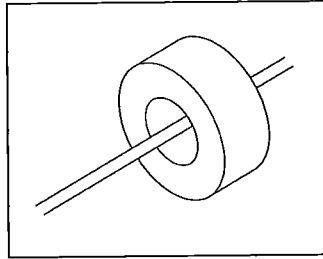
The ferrite cores are included in the standard accessories.

Be sure to install the ferrite cores on the keyboard cable.

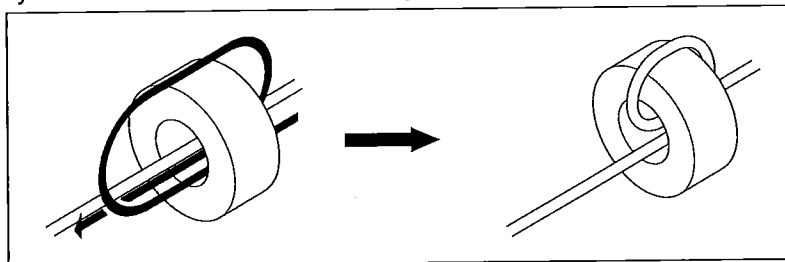
Using a keyboard without ferrite cores installed could cause malfunction.



(1) Pass the keyboard cable through the hole of first piece of ring—shaped ferrite core.

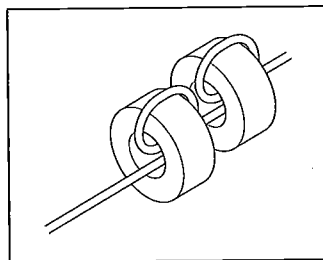


(2) Wind the keyboard cable once around the first piece of ferrite core.



(3) Pass the keyboard cable through the hole of second piece of ring—shaped ferrite core.

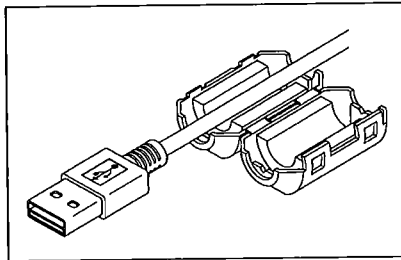
Wind the keyboard cable once around the second piece of ferrite core.



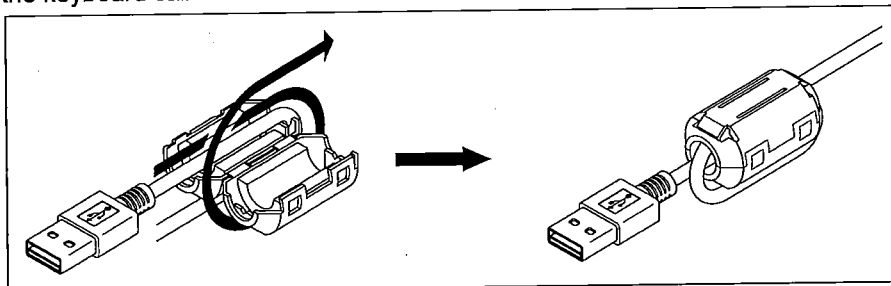
(4) Refer to the following instructions and attach the snap-on ferrite core as close to the keyboard connector as possible.

If a ferrite core is already attached near the keyboard connector, leave the ferrite core.

Open the snap-on ferrite core and pass the keyboard cable through the ferrite core.



(5) Wind the keyboard cable once around the ferrite core, as shown in the sketch below.

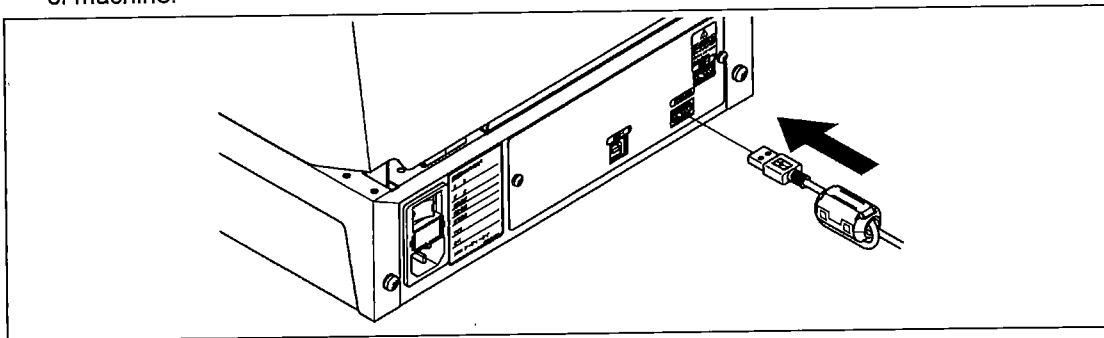


2.2.3.2. How to connect external keyboard

If you wish to operate the machine with the optional external keyboard, please be sure to connect the keyboard before you start operation of the machine.

(1) Confirm that the main switch is turned OFF.

(2) Connect the plug of external keyboard to the receptacle located at bottom right corner on rear side of machine.



⚠ WARNING!

1. Make sure that the plug of keyboard is pushed securely into the receptacle on the machine. A loose connection or improper connection of the plug may cause damage / malfunction to both SP8600 and keyboard.
2. Make sure that the power switch of SP8600 is turned OFF whenever you plug / unplug the keyboard to / from SP8600.
3. Hold the plug of keyboard firmly whenever you plug / unplug the keyboard to / from SP8600. If you remove the plug of keyboard from SP8600 by pulling on the cord, that would be a cause of disconnection of plug and/or cord.

2.2.4. Connecting Power Supply Cord

⚠WARNING!

Confirm the voltage of your power supply (i.e. AC outlet) is within the range of 110 - 240V AC \pm 10% and connect the machine to the power supply.

If output voltage of your power supply is fluctuating a lot, do not connect the machine to its outlet.

Be sure to use the power supply cord attached as an accessory of the machine.

Use a single AC outlet for exclusive connection of the power supply cord of the machine.

Do not rework, twist, bend or tug the power supply cord.

Such reworked or damaged cord would be the cause of fire.

Do not use a distribution cord for connecting multiple number of equipment to an AC outlet.

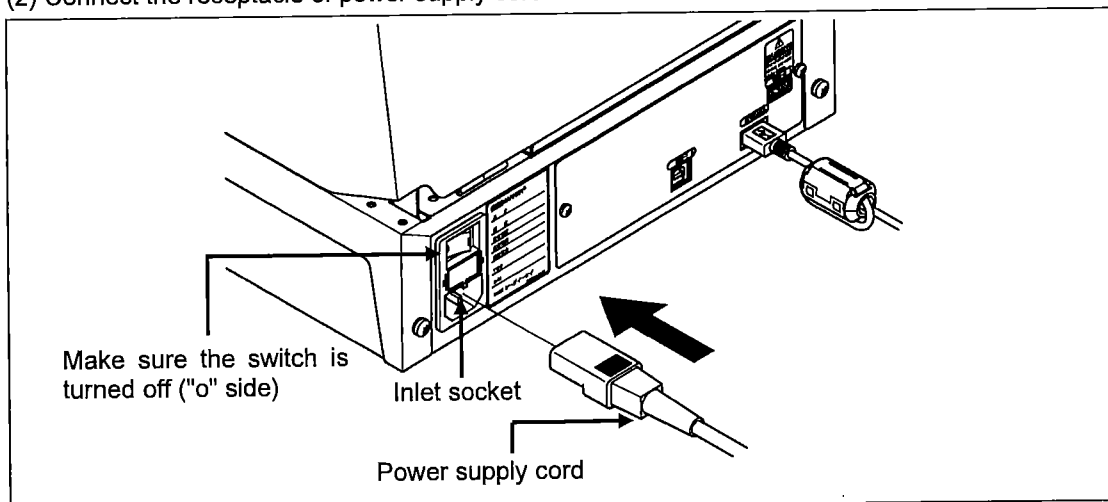
Such wiring by using a distribution code would be the cause of overload and fire.

Do not touch the plug of power supply cord with a wet hand to prevent accidents of electric shock.

Be sure to hold the plug when pulling out the power supply cord.

Pulling the cable damages to the power supply cord, which would result in accidents by fire, electric shock, etc.

- (1) Confirm that the main switch of machine is turned off.
- (2) Connect the receptacle of power supply cord to the AC inlet on rear side of machine.



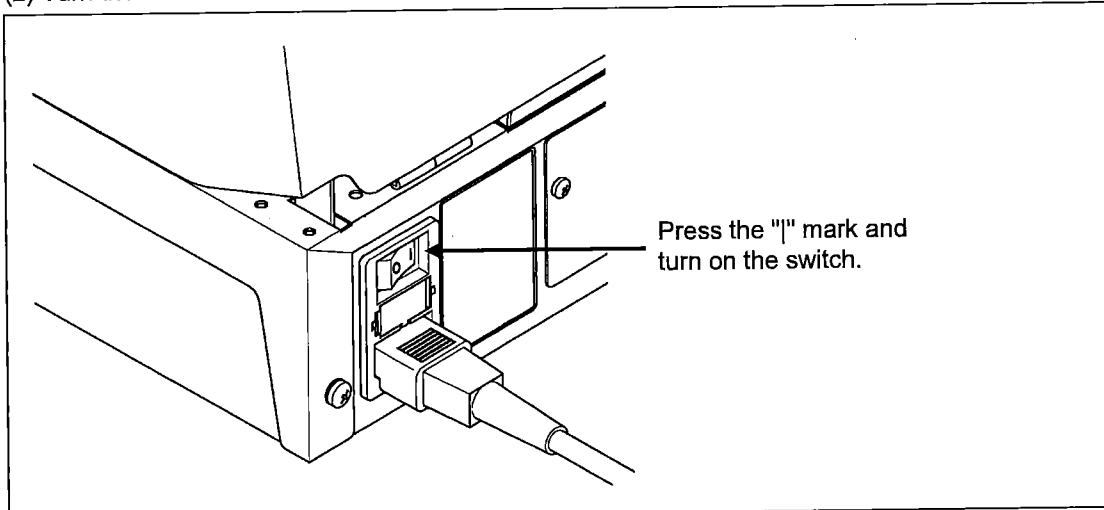
- (3) Insert the plug of power supply cord to a single AC outlet for exclusive connection for the machine.
- (4) This machine must be earthed. Always connect the plug of power supply cord into a correctly installed earthed socket.

3.1. Main Switch

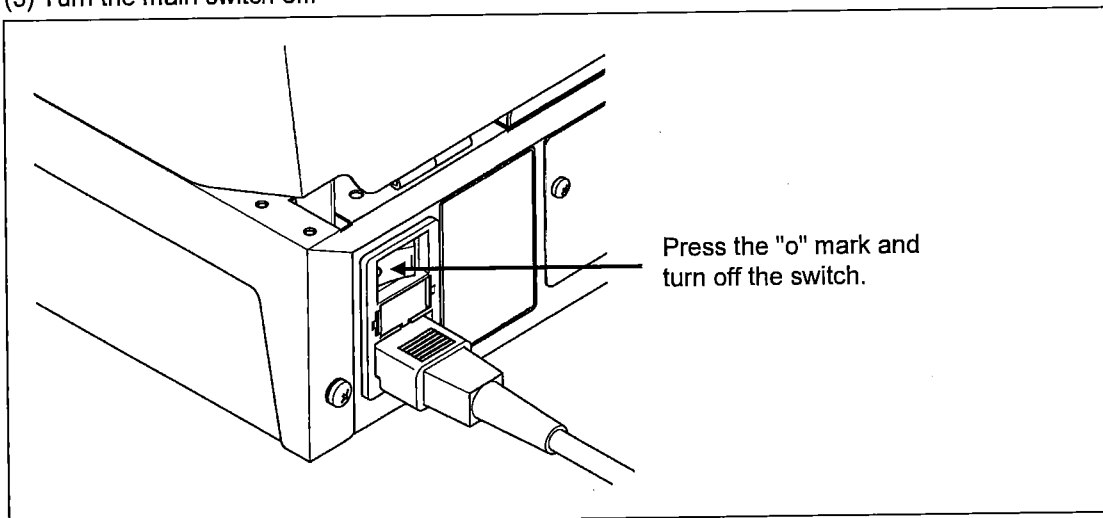
(1) Connect the power supply cord (included in the standard accessories) to the AC inlet on rear side of machine.

Then, insert the plug of power supply cord to a single AC outlet for exclusive connection for the machine.

(2) Turn the main switch on.

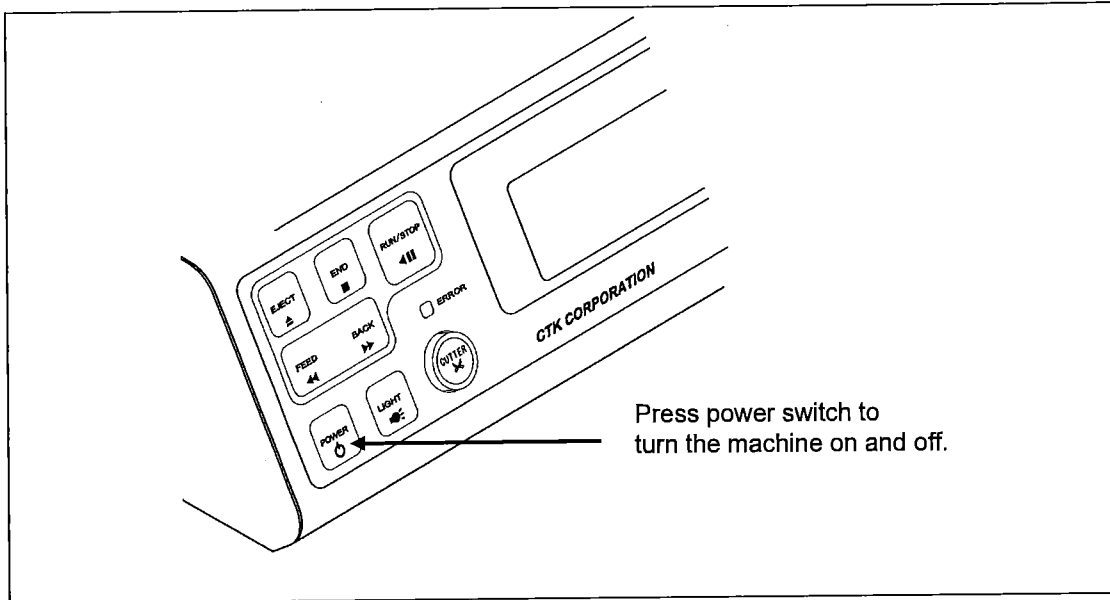


(3) Turn the main switch off.



3.2. Power Switch

If the main power switch (located on rear of the machine) is turned on and you press the power switch located on the front panel, power is supplied to the machine and a screen is indicated on the LCD. If you press the power switch again, power is turned off and a menu screen will be disappeared from the LCD.



3.3. Thermal head lever

The thermal head lever is used to move up and down the thermal head. Set the thermal head lever to the position (1) or (2) for marking operation. Otherwise keep the lever on the position (0) ("UNUSED" position).

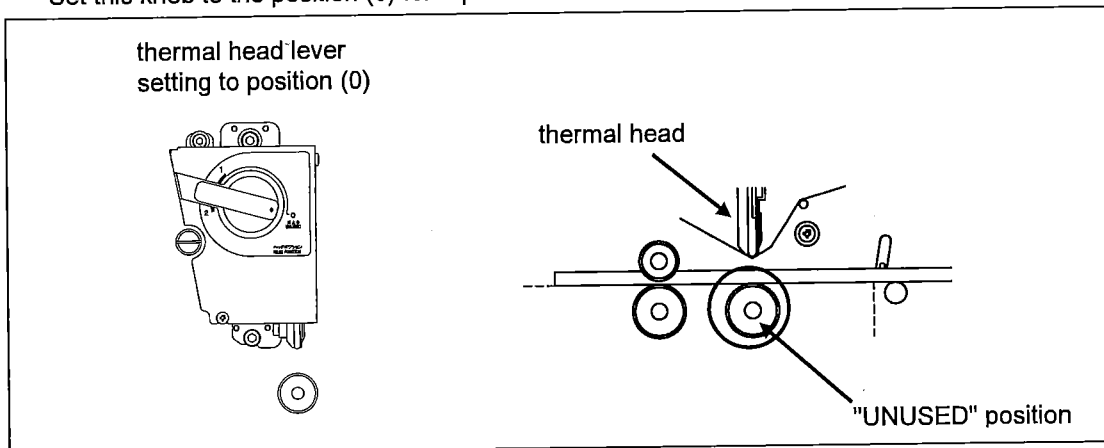
⚠ CAUTION!

Be sure to set the thermal head lever at position (0), (1) or (2) of the scale properly.
If the knob is set between the adjoining positions, the machine stops the marking operation and raises an alarm with "HEAD ERROR 1" or "HEAD ERROR 2" message on the LCD display.

3.3.1. Position of Knob and Thermal Head

(1) Position (0)

When the thermal head lever is set to the position (0), the thermal head is raised to its top position.
Set this knob to the position (0) for replacement of marked material, color foils, etc.

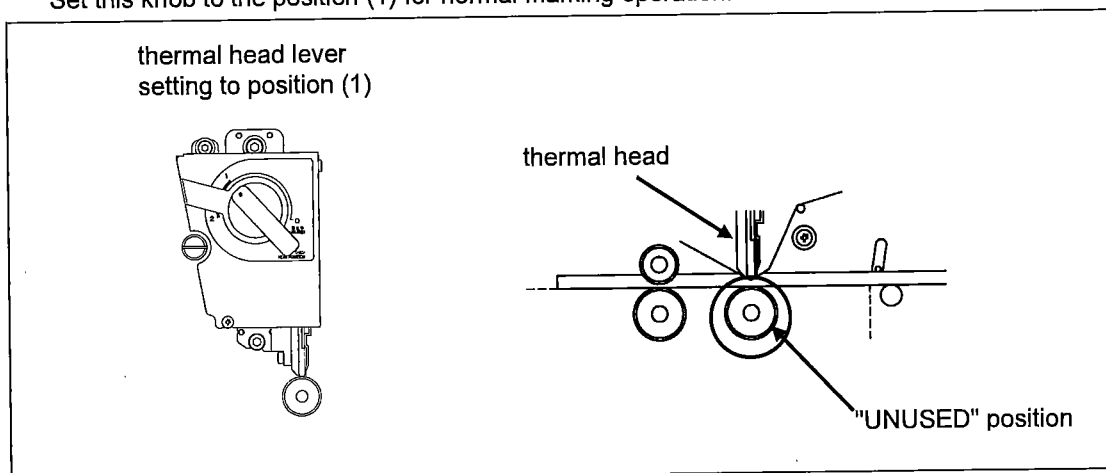


(2) Position (1)

When the thermal head lever is set to the position (1), the thermal head is lowered to its marking position.

Color foil and the marked material lie between the thermal head and the marking roller.

Set this knob to the position (1) for normal marking operation.



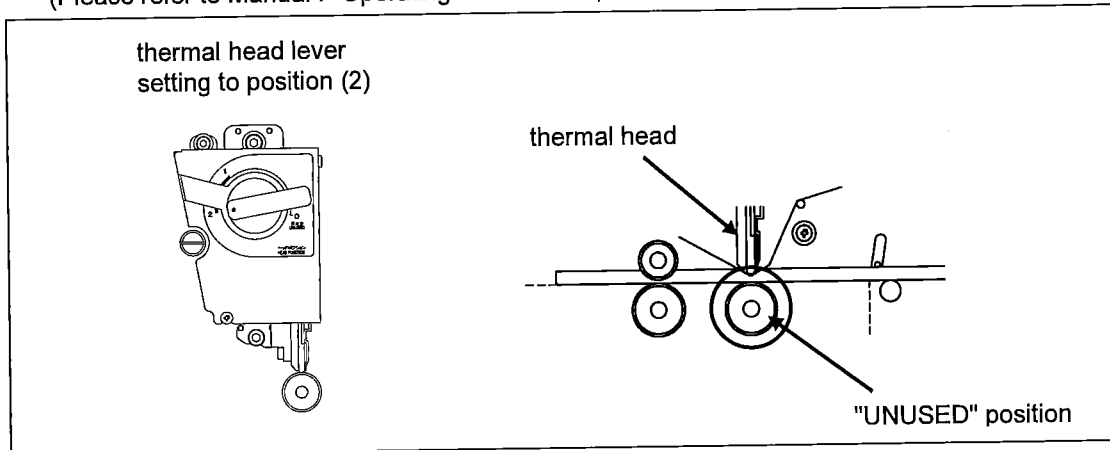
(3) Position (2)

The thermal head unit goes down to contact a material to be marked, with a larger pressure.

Set the knob to the position (2) when the characters are blurred on hard material tubes, tubes stiffened by coldness, etc., even if the materials are printed with largest density (220).

In case the printed characters are too dark (i.e. on a softened tube during summer seasons), be sure to set the knob to the position (1).

(Please refer to Manual I "Operating Instructions", Section 7.1.16 "Density".)



3.3.2. Turning Direction of Thermal head lever

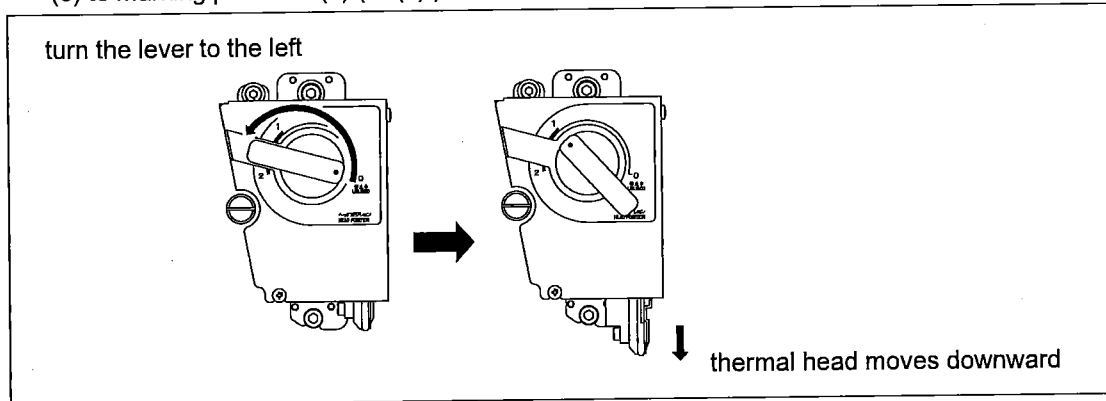
⚠ CAUTION!

Be sure to set the thermal head lever at position (0), (1) or (2) of the scale properly.

If the knob is set between the adjoining positions, the machine stops the marking operation and raises an alarm with "HEAD ERROR 1" or "HEAD ERROR 2" message on the LCD display.

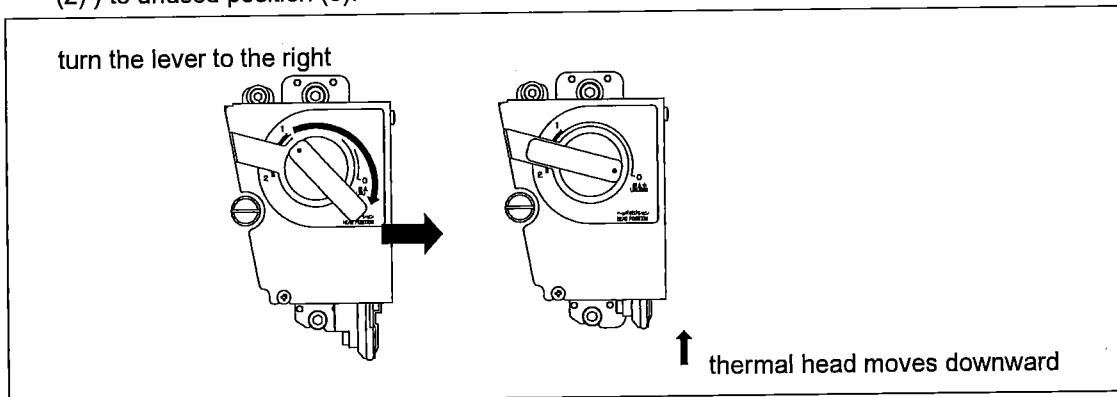
(1) To lower the thermal head

Turn the thermal head lever to the left (counter-clockwise) to move the head from unused position (0) to marking positions (1) (or (2)).



(2) To raise the thermal head

Turn the thermal head lever to the right (clockwise) to move the head from marking position (1) (or (2)) to unused position (0).



3.4. Press Roller Arm Handle

The press roller arm handle is used to move the press roller.

Normally, the press roller should be lifted up (by shifting the press roller arm handle to position (0)).

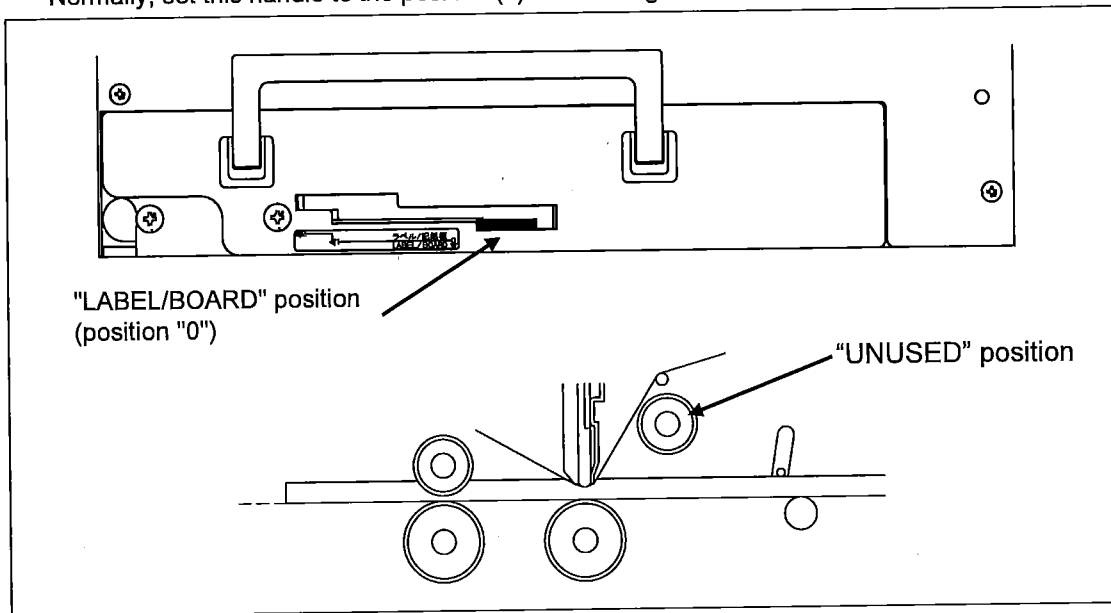
According to characteristics of the marked material, etc. set the handle to the position (1) for using the press roller.

3.4.1. Position of Handle and Press Roller

(1) Position (0)

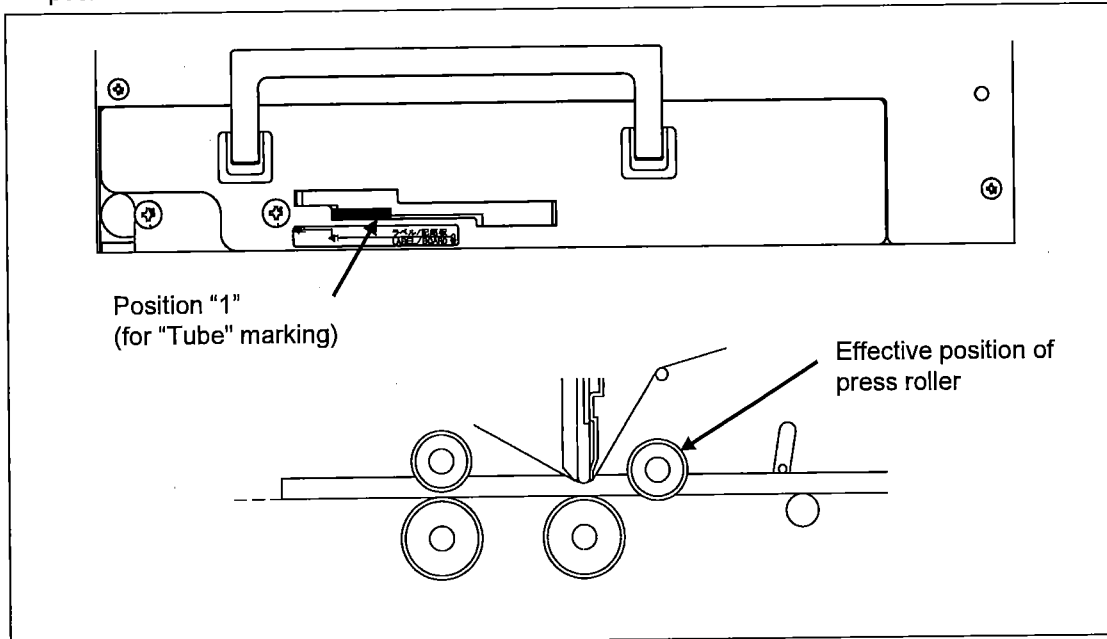
When the press roller arm handle is set to the position (0), the press roller is raised to its top position.

Normally, set this handle to the position (0) for marking Marker Labels & terminal ID boards.



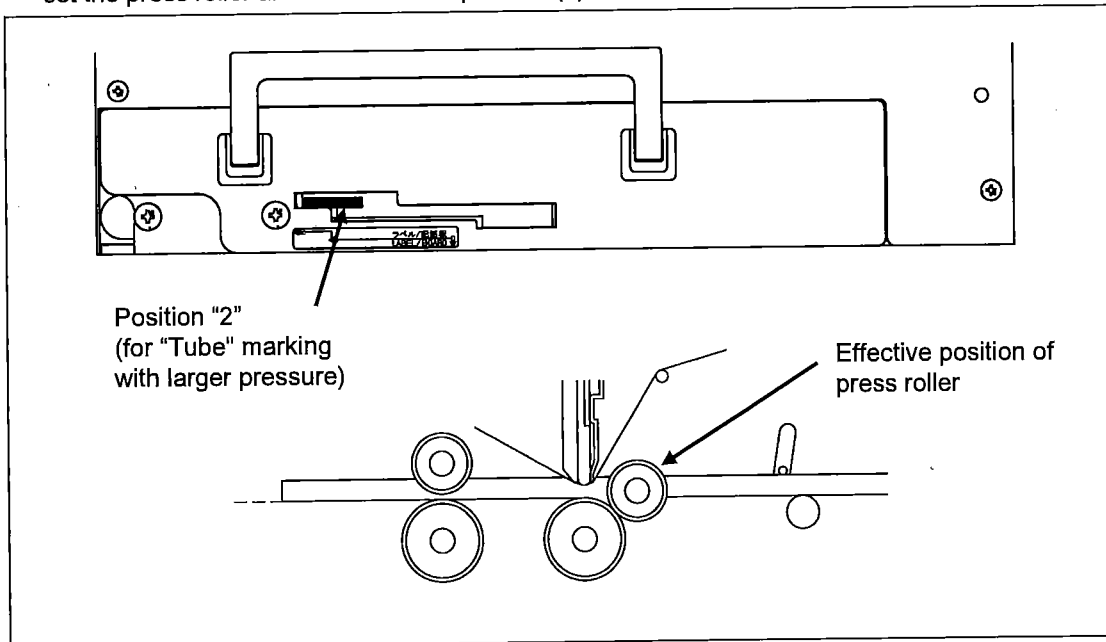
(2) Position (1)

When the press roller arm handle is set to the position (1), the press roller is lowered to its bottom position.

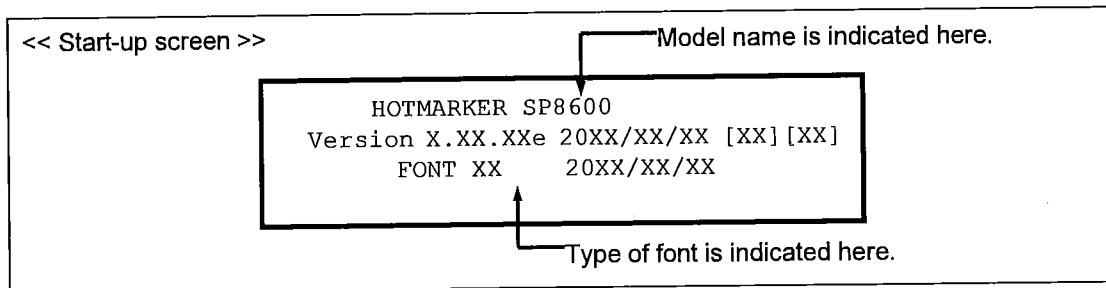


(3) Position (2)

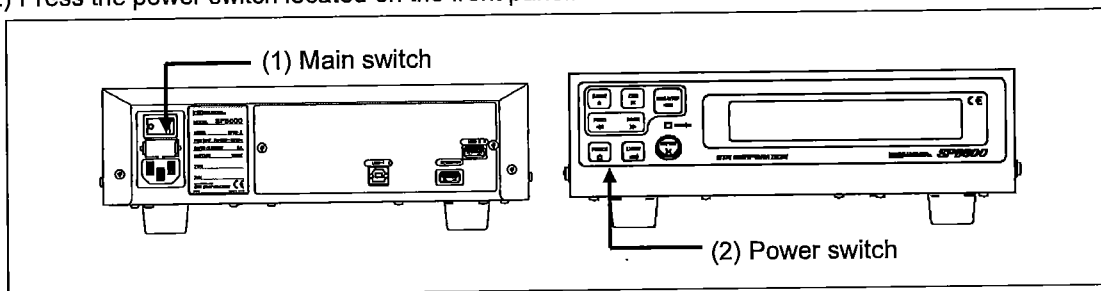
If larger pressure is required on the press roller (i.e. for marking large diameter tubes), set the press roller arm handle to the position (2).



2.1. Boot-up Screen



- (1) Turn on the main switch located on rear side of machine, by pressing “|” mark.
- (2) Press the power switch located on the front panel.



The boot-up screen appears on the LCD for about one second, which will then be turned to the main menu.

- (3) The boot-up screen indicates the type of machine and the version number and date of system software of machine, which are useful upon repair and maintenance work.

2.2. Main Menu Screen

The Main Menu screen is used as a "terminal" screen of the machine.

All operations start from this menu and revert to this screen after the operation is completed.

2.2.1. How to show the Main Menu

Turn on the main switch of the machine. The boot-up screen appears on the LCD for about one second, followed by the "Main Menu" screen.

<<Main Menu display>>

```
<MAIN MENU> T1 [TUBE MODE]
[1]EDIT [2]MARKING [3]MEMORY MODE
[T]TABLE [ESC]MODE SELECT
PRESS [KEY] TO ENTER
```

At the main menu, press a key corresponding to the task you wish to operate with the machine.

Example:

Press [1] when you select "EDIT" (enter to data edition screen).

2.2.2. Description of each option on the main menu

<<Main Menu display>>

```
<MAIN MENU> T1 [TUBE MODE]
[1]EDIT [2]MARKING [3]MEMORY MODE
[T]TABLE [ESC]MODE SELECT
PRESS [KEY] TO ENTER
```

[1] EDIT

Enter to the data edition screen.

[2] MARKING

Mark the data inputted at the above data edition screen

[3] MEMORY MODE

Max. 8 banks (each bank consists of Max. 1,000 lines x 22 digits) of marking data can be stored in the internal memory, so that total Max. 8,000 lines of marking data can be processed simultaneously.

[T] TABLE

Enter to the Table edition screen.

[ESC] MODE DELECT

The main screen turns to the "Mode Selection" (sub-main) screen.

T1

Showing the Table number currently activated in the machine.

[TUBE MODE]

Showing the work mode set in the currently activated Table.

After each operation is completed, the screen returns to the main menu.

CAUTION!

The above items [T1] & [TUBE MODE] are not changeable from the Main Menu screen. Please refer to Section 3.2.1 "Why Table Setting is necessary?" for details of Table setting operation.

3.1. Inputting Marking Data

3.1.1. Preparation

REFERENCE: What is "Marking Data"?

One line of "Marking Data" consists of "Marking Texts", "Marking Quantity" and "Numbering data (end of sequential numbers)".

("Numbering Data" is not explained in this Section.)

Operation:

Turn main switch "ON" -> Press power switch "ON"

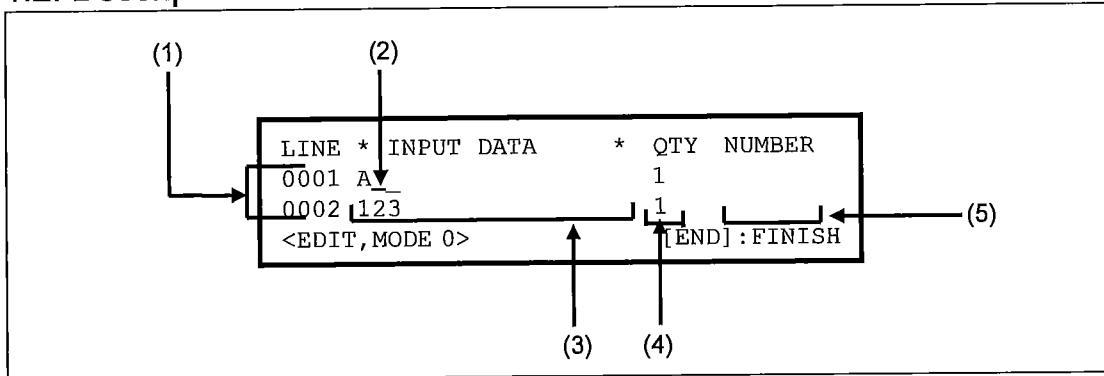
```
<MAIN MENU> T1 [TUBE MODE]
[1]EDIT [2]MARKING [3]MEMORY MODE
[T]TABLE [ESC]MODE SELECT
PRESS [KEY] TO ENTER
```

Press [1] at the Main Menu screen.

The data edition screen appears on the LCD.

```
LINE * INPUT DATA * QTY NUMBER
0001
0002
<EDIT,MODE 0> [END]:FINISH
```

3.1.2. Description of each item in the Data Edition screen



(1) Line number

The number of 2 adjoining lines -- A line on which the cursor is positioned and the previous or next line - are displayed. The number changes between "0001" and "1000".

(2) Cursor

Your data can be entered, corrected or deleted at the point the cursor is positioned.

Usually, the machine edits the data under "replace" (or overwrite) mode.

Section 3.6 "Function Keys for Marking Operation" of this manual.

(3) Marking Data area

Input characters to be marked and "function characters" in this field.

Up to 22 digits of characters (including function characters) can be inputted.

(4) Marking Quantity area

Input your desired marking quantity for the line.

The quantity can be set between the range of 1 through 9,999 pieces.

(5) Numbering area

This area is not used in this Chapter.

Tips

For more information on "Numbering Marking", Please refer to Section 8.2 "Numbering Marking" of this manual.

3.1.3. Function Keys for Basic Editing Operation

The following keys are usable for easy editing of data.

Reference

List of the keys is available at the end of this manual.

(1) [←][→][↑][↓] : Cursor Movement keys

The cursor moves in every direction by pressing [←], [→], [↑] or [↓] key.

The cursor does not move to the left or right side where no data exists.

If the cursor is in a certain column and is moved up or down to where no data exists, cursor positions itself to the far left hand column.

(2) [TAB] : Tab key

By pressing [TAB] key, cursor moves to the left edge of next field (to the right).

(i.e.: marking data → [TAB] → marking quantity → [TAB] → numbering data)

By pressing [Shift] key and [TAB] key simultaneously, cursor moves to the left edge of previous field (to the left).

(i.e.: numbering data → [Shift]+[TAB] → marking quantity → [Shift]+ [TAB] → marking data)

(3) [DEL] : Delete Key

By pressing [DEL] key once, one character above the cursor is deleted and the following data is moved to the left.

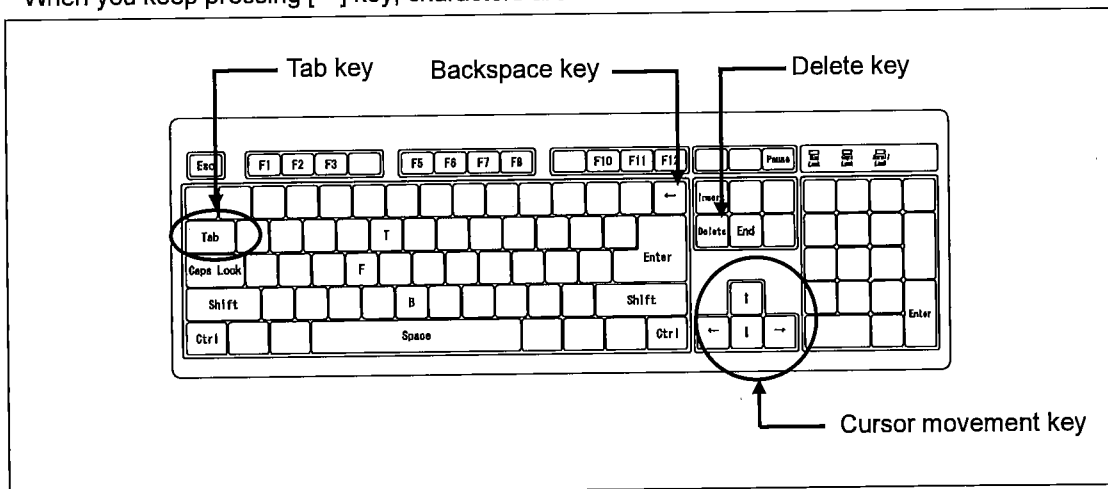
If no data exists above the cursor, one character to the left side of cursor is deleted by pressing [DEL] key once.

When you keep pressing [DEL] key, characters are deleted one after another.

(4) [←]: Back Space Key

By pressing [←] key once, one character on the left side of the cursor is deleted and the following data is moved to the left.

When you keep pressing [←] key, characters are deleted one after another.



(5) [INS] : Insert key

Replace Mode (the cursor appears without flashing)

When a character exists above the cursor and you input new data, replacement of existing text is carried out by replacement. In other words, a memorized character above the cursor is replaced with (overwritten by) the newly inputted character.

Data input is always carried out under Replace mode after booting up the machine (by turning on the main switch again).

By pressing [DELR] key at a certain field, all characters to the right of cursor (including the character above the cursor) are deleted.

Example:

LINE * INPUT DATA ...		LINE * INPUT DATA ...
0001 123	→ [A]→	0001 1A3
↑		
└─ cursor (without flashing)		

insert mode (the cursor flashes)

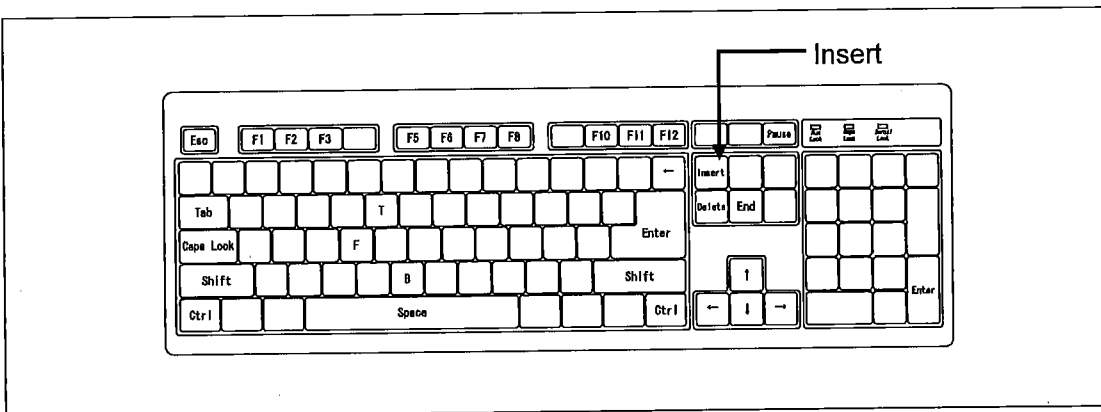
By pressing [INS] key once under Replace mode (the cursor appears without flashing), cursor flashes and data input can be performed in Insert mode.

Move the cursor to the point where you wish to insert characters, and input desired characters. They are inserted between the cursor point and the character to the left.

By pressing [INS] key once again, the cursor stops flashing and Insert mode returns to Replace mode.

Example:

LINE * INPUT DATA ...		LINE * INPUT DATA ...
0001 123	→ [A]→	0001 1A23
↑		
└─ cursor (flashing)		



⚠ CAUTION!

When an additional character is inserted to an existing line with 22 digits of character under insert mode, the overflowed 22nd character originally positioned at the right end will disappear..

Example:

LINE * INPUT DATA ...

0001 ABCDEFGHIJKLMNOPQRSTU

↓ cursor (flashing)

[5] cursor moves to the right

↓ "V" is overflow

LINE * INPUT DATA ...

0001 ABCDEFGHIJ5KLMNOPQRSTU

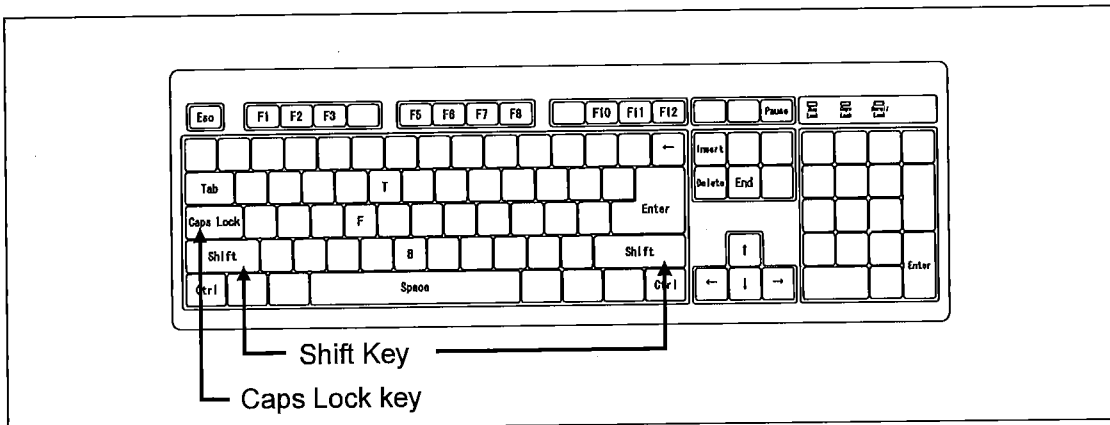
(6) [Shift]+[Caps Lock] : Lower Case lock key

By pressing [Shift] and [Caps Lock] keys simultaneously, Input mode for lower case alphabet letters is locked. If [Shift] and [Caps Lock] keys are pressed once again, the machine is released from Input mode for lower case alphabet letters.

⚠ CAUTION!

Please note that, depending on size and orientation of font, lower case alphabet letters are provided with either block style or script style.

For details, please refer to Section 7.1.4 "CHARACTER" (type of font)" in this manual.



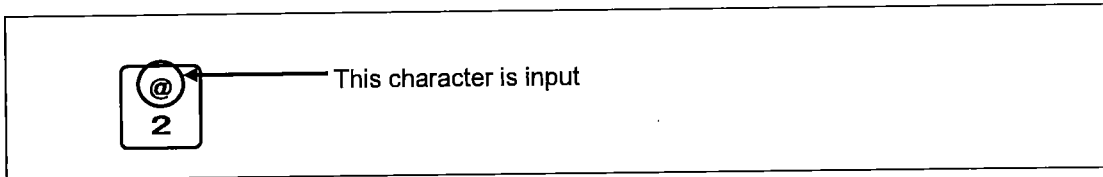
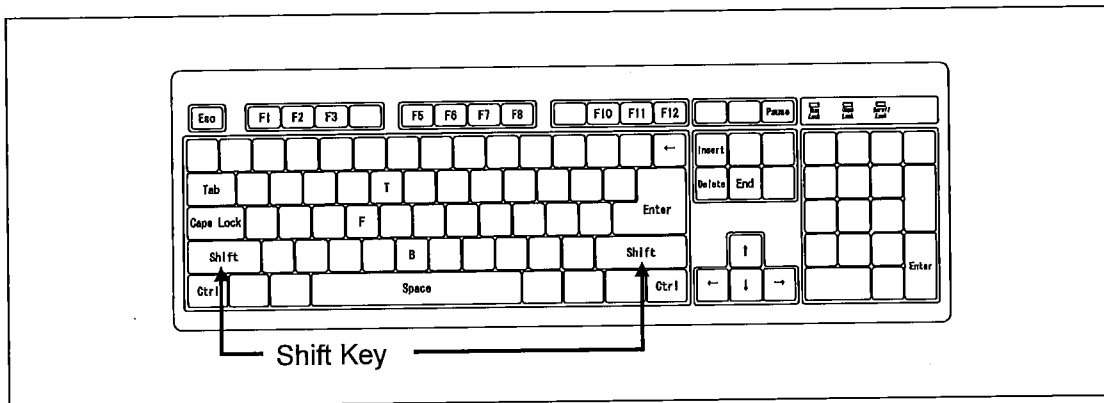
(7) [Shift] : Shift key

2 [Shift] keys are equipped with the keyboard - one each around the lower left and right corners of typing area.

Input a letter key while [Shift] key is pressed. A symbol / mark printed on upper side of the letter key is inputted.

When an alphabet letter key and [Shift] key are pressed simultaneously, the alphabet letter is inputted in its lower case letter.

At this time, if the lower case lock key ([Shift]+[Caps Lock]) is pressed, the alphabet letter is inputted in its capital letter.



(8) [Enter] : Enter key

2 [Enter] keys are equipped with the machine - one at the typing area and the other at the ten-key area.

After [Enter] key is pressed, data on this line / field is memorized and the cursor moves to left end of the next line.

(9) [End] : End key

After completion of all data input, press [End] key.

The screen returns to the Main Menu display (main menu).

Tips

By pressing [End] key at any screen, you can revert to a previous screen.

(The display finally returns to the Main Menu by pressing [End] continuously.)

Only when the machine works under "Parallel Processing" mode, the display returns to the normal marking screen.

(10) [F10] : Marking Start key

After all instructions for marking line are completed at the Marking screen, press [F10] key to start marking operation as instructed.

When [F10] key is pressed during interruption of marking operation, the machine restart marking from the point where interrupted.

(11) [F11] : Stop key

When [F11] key is pressed, the machine completes marking of the character above the cursor at the time, and marking operation stops immediately.

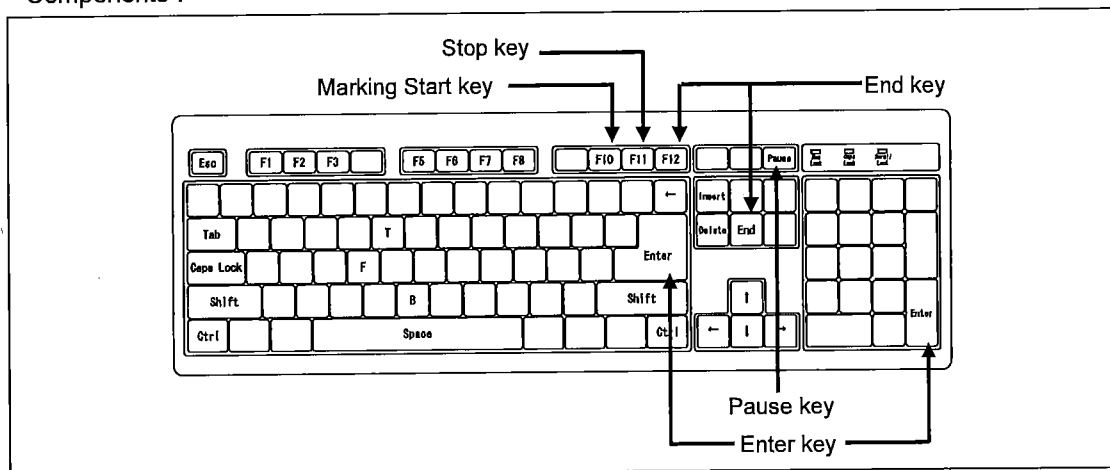
Press [F10] (Marking Start) key (or ◀|| switch on the front panel) to restart the marking operation, or [End] key (or ■ switch on the front panel) to cancel the marking operation.

(12) [Pause] : Pause key

When [Pause] key is pressed, the machine completes marking of the character above the cursor at the time, and marking operation stops immediately.

Press [F10] (Marking Start) key (or ◀|| button on the front panel) to restart the marking operation, or [End] key (or ■ button on the Front panel) to cancel the marking operation.

As for the switches on the front panel, please refer to Section 1.2 "Name and Function of Components".



3.1.4. How to Input Marking Data

Basic Operation:

Input marking data → [Tab]→ Quantity→ [Enter]

- (1) Input marking texts in the marking text field up to 22 digits.

Character keys within the heavy-line frame of the above sketch (character keys, space bar, [+], [-], [*], [/] keys on ten keys) can be used for input of marking texts.

- (2) When a key is pressed once, the machine inputs the character.

If you keep pressing the key, a character (assigned to the key) is continuously inputted.

- (3) After inputting the quantity, press [Enter] key.

Data on this line is memorized and the cursor moves to the first digit of marking data field on the next line, to continue data input.

Tips

When [Enter] is pressed at the text field without inputting marking quantity, the quantity of the previous line is repeated in the quantity field of current line.

You can utilize this function efficiently if marking quantity of the current line is the same as that of a previous line.

```
LINE * INPUT DATA      * QTY NUMBER
0001 A                   10
0002 123_
<EDIT,MODE 0>           [END]:FINISH
```

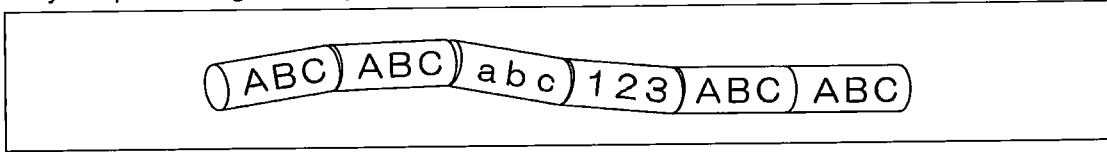
↓ [Enter] ↓

```
LINE * INPUT DATA      * QTY NUMBER
0002 123                10
0003 _
<EDIT,MODE 0>           [END]:FINISH
```

Quantity of the previous line (0001) is automatically copied.

3.1.5. Exercise for Inputting Marking Data

Try to input marking data for production of the marked tubes as shown in the sketch below:



Data for the marked tubes can be arranged in the following table:

Input the marking texts and quantity to the line 0001 through 0004 respectively.

LINE NUMBER	MARKING TEXTS	MARKING QUANTITY
0001	ABC	2
0002	Abc	1
0003	123	1
0004	ABC	2

Operation:

Press [1] at the Main Menu display to enter to the Data Edition display.

Confirm the cursor is positioned at the first digit of line 0001. If not, move the cursor to the point with cursor movement keys.

<<Main Menu display>>

```

<MAIN MENU> T1 [TUBE MODE]
[1]EDIT [2]MARKING [3]MEMORY MODE
[T]TABLE [ESC]MODE SELECT
PRESS [KEY] TO ENTER
    
```

[1]

<<Data Edition display>>

```

LINE * INPUT DATA * QTY NUMBER
0001 _
0002
<EDIT, MODE 0> [END] : FINISH
    
```

[A][B][C][Tab][2][Enter] (Input to Line 0001.)

[Shift]+[Caps Lock][A][B][C][Shift]+[Caps Lock][Tab][1][Enter] (Input to Line 0002.)

<<Data Edition display>>

LINE	* INPUT DATA	* QTY	NUMBER
0001	ABC	2	
0002	abc	1	
<EDIT, MODE 0>			[END] : FINISH

[1][2][3][Tab][1][Enter] (Input to Line 0003.)

<<Data Edition display>>

LINE	* INPUT DATA	* QTY	NUMBER
0002	abc	1	
0003	123	1	
<EDIT, MODE 0>			[END] : FINISH

[X][Y][Z][Tab][2][Enter] (Input to Line 0004.)

<<Data Edition display>>

LINE	* INPUT DATA	* QTY	NUMBER
0003	123	1	
0004	XYZ	2	
<EDIT, MODE 0>			[END] : FINISH

<<Data Edition display>>

LINE	* INPUT DATA	* QTY	NUMBER
0004	XYZ	2	
0005			
<EDIT, MODE 0>			[END] : FINISH

[End]

<<Main Menu display>>

<MAIN MENU> T1 [TUBE MODE]			
[1]	EDIT	[2]	MARKING [3]MEMORY MODE
[T]	TABLE	[ESC]	MODE SELECT
PRESS [KEY] TO ENTER			

3.2. Basic Table Setting (part 1: before marking operation)

As 20 combinations of basic Table settings are already inputted in the machine at the time of inspection upon shipment, you have only to choose a Table number (from 1 through 20) to suit your type of material to be marked. (In this section, PVC tube of O.D. 3mm is used as an example.) For practical method of adjustment of Tables, please refer to Chapter 7 "TABLE EDITION" of this manual.

Tips: What is "Table" setting?

In order to mark different types of material in various ways, it is necessary to preset various combinations of marking parameters to meet each particular type of material. It would be very complicated and time-consuming if you adjust such marking conditions each time you operate the machine.

SP8600 can store in its memory 20 combinations of marking parameters such as "Length" (Marking length), "Character size" (type of characters to be marked), "Cutter position" (Cutter position adjustment), "Work mode" (mode of feeding/marketing materials), etc. Such combination is called as a "Table".

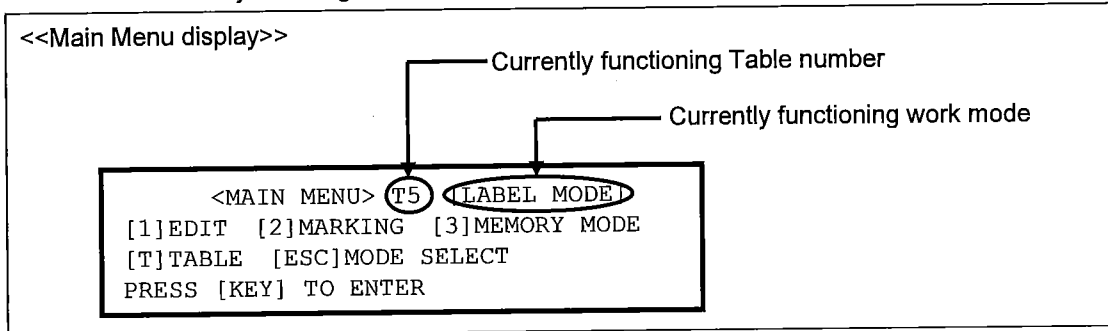
"Table Setting" operation is to edit and correct Tables to suit your particular type of material to be marked.

3.2.1. Why Table Setting is necessary?

Let's check the current settings of the Table (combination of various marking conditions).

You can see the functioning Table number and its work mode at the Main Menu display.

Supposing that you wish to mark tubes and "LABEL" is shown as the functioning work mode, it becomes necessary to change the work mode to "TUBE".



If the functioning Table number is "T1" and "TUBE" is shown at the main menu, it is not necessary to change the current Table number and work mode.

REFERENCE

Parameters on the Table No. 1 ("T1") are adjusted for marking our standard PVC tube of O.D. 3.0mm (Wall thickness 0.4mm through 0.5mm) at the time of inspection upon shipment from our factory.

3.2.2. How to Enter "Table Edition" Display

Operation:

Press [T] at the Main Menu display to enter the Table Edition display.

<<Main Menu display>>

```
<MAIN MENU> T6 [LABEL MODE]
[1]EDIT [2]MARKING [3]MEMORY MODE
[T]TABLE [ESC]MODE SELECT
PRESS [KEY] TO ENTER
```

[T] (Enter the Table Edition display from the main menu.)

```
T6 TABLE INDEX WORK ID CHAR ID
6 * L-17 LABEL 2.4x2.4 (HOR)
7 L-20 LABEL 2.4x2.4 (HOR)
<EDIT TABLE> [Enter]:EDIT[End]FINISH
```

Table number (#1-20)

REFERENCE: What is "Table"?

20 items of marking parameters (kind of work, character size, marking density, etc.) are stored as one line of Table.

20 combinations of these settings (referred to as Tables) can be stored in the machine.

3.2.3. How to Select a "Table" Number

Operation:

Press [T] at the Main Menu display to enter the Table Edition display.

<<Main Menu display>>

```

    <MAIN MENU> T6 [LABEL MODE]
    [1]EDIT [2]MARKING [3]MEMORY MODE
    [T]TABLE [ESC]MODE SELECT
    PRESS [KEY] TO ENTER
  
```

[T] (Enter the Table Edition display from the main menu.)

<<Table edition display>>

```

T6 TABLE INDEX WORK ID CHAR ID
6 * L-17 LABEL 2.4x2.4 (HOR)
7 L-20 LABEL 2.4x2.4 (HOR)
<EDIT TABLE> [Enter]:EDIT[End]FINISH
  
```

Position to change the functioning Table number

At the Table edition display, press cursor movement keys [←][→][↑][↓] and move the cursor to "TABLE" field (for change of functioning Table).

[Enter]

[1]

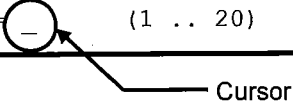
Input the number of Table (1 - 20) you wish to select.

At this time, input [1] to select the Table No. 1.

<<Table edition display>>

```

T6 TABLE INDEX WORK ID CHAR ID
1 _ 3.0mm TUBE 2.4x2.4 (HOR)
2 _ 3.0mm TUBE 2.4x2.4 (HOR)
[ 1]TABLE=_ (1 .. 20)
  
```



[END]

Table for marking tube of O.D.3.0mm

<<Table edition display>>

```

T1 TABLE INDEX WORK ID CHAR ID
1 _ * 3.0mm TUBE 2.4x2.4 (HOR)
2 _ 3.0mm TUBE 2.4x2.4 (HOR)
[ 1]TABLE=_ (1 .. 20)
  
```

Asterisk "*" shows that the Table No. 1 is functioning.

[END]

4.1. How to Set Tubes

4.1.1. Preparation for setting tubes

- (1) Open the front cover upward. Raise the thermal head to the highest (unused) position by turning the thermal head lever to the position (0).

(Please refer to Section 3.3 "Thermal head lever".)

- (2) Push the press roller arm handle to the right and hook it to the position (0).

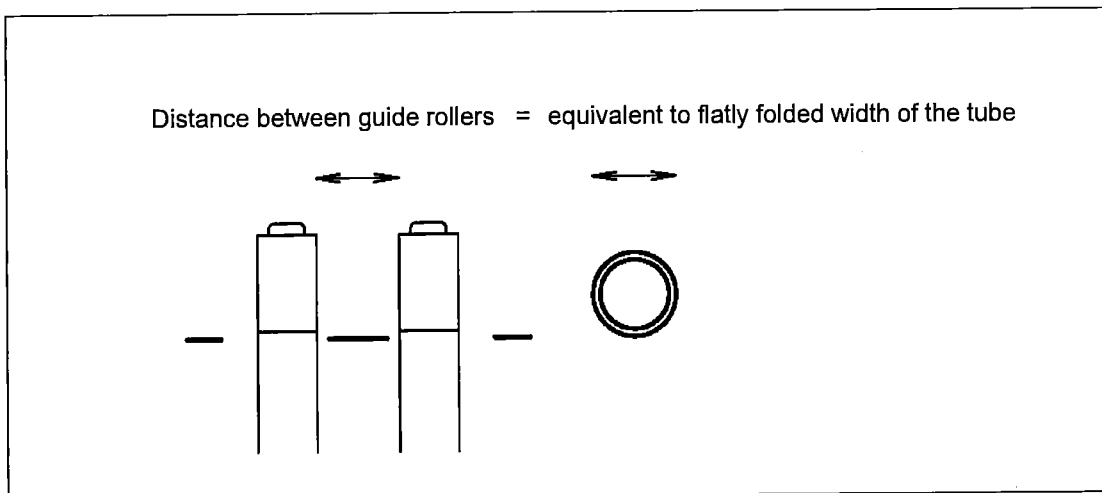
Then the press roller is raised up (set to unused position).

(Please refer to Section 3.4 "Press Roller Arm Handle".)

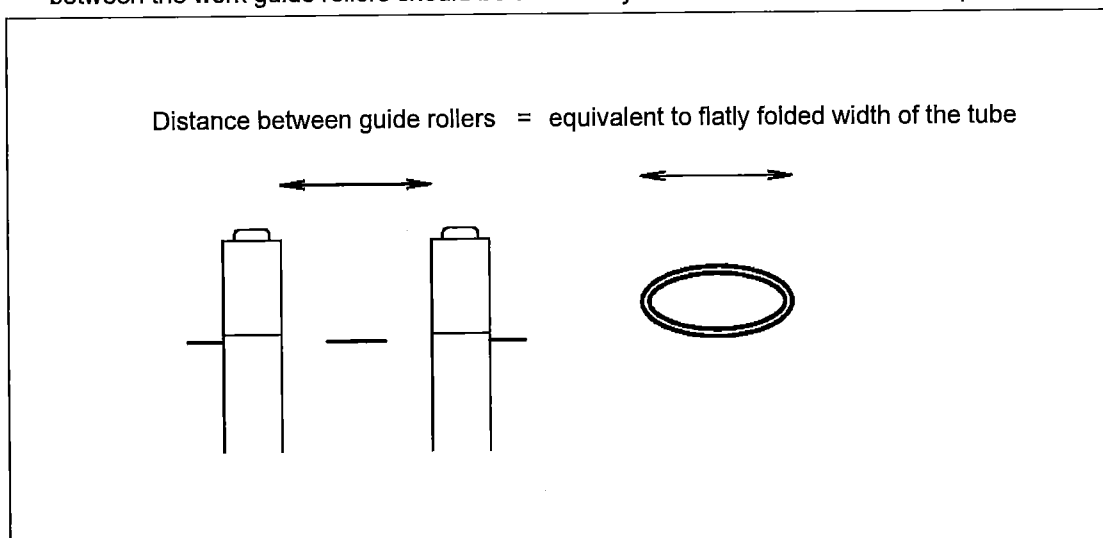
- (3) Referring to the sketch below, turn the work guide adjustment knob and widen the work guide to leave appropriate clearance between the unmarked material and work guides.

(Please refer to Section 3.8 "Work Guide Unit".)

When outer diameter of your tube is 6.0mm or smaller, it is recommended that the distance between the work guide rollers should be set to the outer diameter of the tube or equivalent.



When outer diameter of your tube is larger than 6.0mm, it is recommended that the distance between the work guide rollers should be set to flatly folded width of the tube or equivalent.



4.1.2. How to set tubes

(1) Turn the main switch on.

(Please refer to Section 3.1 "Main Switch".)

(2) Insert the end of tube (of O.D. 2.0mm through 7.0mm) in the preforwarding unit.

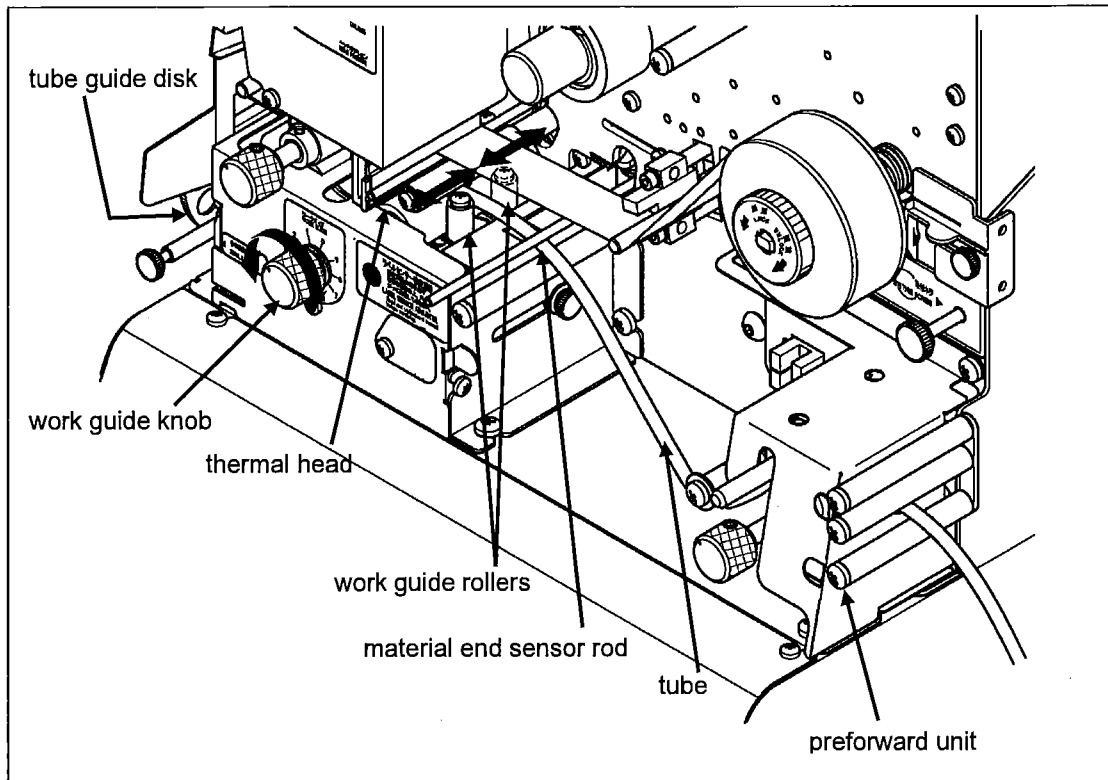
If the tube is larger than O.D. 7.0mm, do not use the preforwarding unit.

(Please refer to Section 3.5 "Preforwarding Unit".)

(3) Referring to the sketch below, lift up the material end sensor rod by fingers and pass the tube under the rod. (Please refer to Section 3.7 "'Material End" Sensor Rod".)

(4) Turn the work feeding knob clockwise and forward the tube until the work driving rollers grip the end of tube.

You can move the tube backward by turning the work feeding knob counter-clockwise.



(5) Turn the work guide adjustment knob and adjust width of the work guide rollers, according to the size of tube to be marked. (Please refer to Section 3.8 "Work Guide Unit".)

REFERENCE

You can move your marked material back and force by rotating the work feeding knob and find out the appropriate distance between work guide rollers to suit your particular type and size of marked material.

Please refer to Section 3.8 "Work Guide Unit" for details.

(6) Set the tube guide hole by turning tube guide disk, to match with the diameter of the tube.

Select the tube guide hole of which diameter is about 1.5mm or 2.0mm larger than outer diameter of the tube to be marked, in order to prevent tubes from being cut diagonally.

(7) Turn the thermal head lever to the position (1) (or position (2)) and lower the thermal head to contact its marking facet to the tube.

(Please refer to Section 3.3 "Thermal head lever".)

(8) Close the front cover.

REFERENCE

(1)For details of marking operation, please refer to the following sections of Manual I "Operating Instructions":

"Inputting Marking Data"

"Basic Table Setting (Part 1: before marking operation)"

"How to Use Cutter Switch"

"Starting Marking"

"Ejecting Marked Tubes"

(2)For adjustment of cutting conditions (complete / partial cuttings), please refer to section 5.2 "When Changing Mode of Cuttings".

(3)When tubes are jammed around the work driving rollers, please refer to section 7.2 "Maintenance of Work Drive Unit".

WARNING!

In order to prevent accidental injury by unexpected malfunction of the cutter device, be sure to turn the cutter switch on just before starting marking operation and to turn it off immediately after the operation is completed.

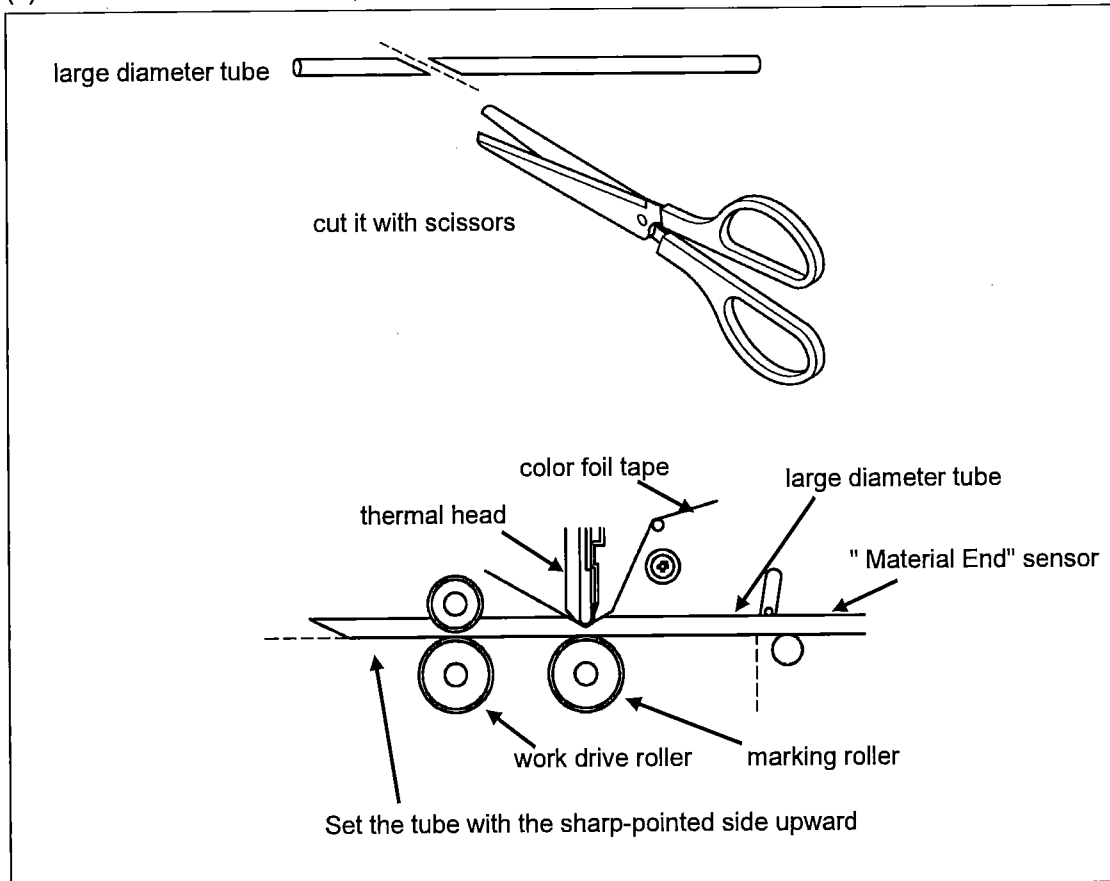
4.1.3. Notes for marking large diameter tubes

⚠ CAUTION!

When marking large diameter tubes, operate the machine in the following manners as described below.

If you do not follow this caution, the tube may not be forwarded normally.

- (1) Cut the end of tube diagonally with scissors, etc.
- (2) Set the tube to the machine, as shown in the sketch below:



3.7. Instruction for Marking Line

Use the marking text edited as per Section 3.1.5 "Exercise for Inputting Marking Data" and input instructions for marking line at the Marking display.

Operation:

<<Main Menu display>>

```
<MAIN MENU> T1 [LABEL MODE]
[1]EDIT [2]MARKING [3]MEMORY MODE
[T]TABLE [ESC]MODE SELECT
PRESS [KEY] TO ENTER
```

[2] (Press [2] at the Main Menu display to enter to Marking Instruction display.)

<<Marking Instruction display>>

```
START LINE NO = _
[END] FINISH
```

Input the first line number & the last line number to be marked and desired repeat frequency.

(c "Tips" on the next page for "REPEAT TIMES")

As the marking data from line 0001 through 0004 are already inputted for exercise, input [1] as the start line number. Input [4] as the end line number.

[1][Enter] (Input to "START LINE NO")

[4][Enter] (Input to "END LINE NO")

[1][Enter] (Input to "REPEAT TIMES")

```
START LINE NO = 1
END LINE NO = 4
REPEAT TIMES = 1
[F10]MARK [END] FINISH
```

After the 3 instructions are inputted, the screen shows "[F10]MARK [End]FINISH" on the last line of the screen.

Tips


When [Enter] key is pressed at the "START LINE NUMBER" and the "REPEAT TIMES" area without specific instruction, the default value "1" is automatically set at the said area respectively.

When [Enter] key is pressed at the "END LINE NUMBER" without specific instruction, the end line number is automatically set to the same number as the start line number.

By pressing the [Esc] key, You can reenter the instructions from the first line of Marking texts.

3.8. Starting Marking

Set the thermal head lever to the marking position ("1" position).

Close the front cover and press  (RUN/STOP) button on the front panel (or [F10] key on the keyboard) to start marking operation.

CAUTION!

If you start marking operation with the thermal head up (at unused position or "0" position), the machine will raise an alarm and indicate "HEAD ERROR 1" on the LCD, in order to prevent the thermal head from damages by overheat.

Be sure to set the thermal head lever to the marking position ("1" or "2" position) before starting marking operation.

If the thermal head is damaged by overheat, it will become necessary to replace the head with a brand-new one and the part cost is expensive.

Operation:

<<Marking Instruction display>>

```
START LINE NO = 1
END LINE NO   = 4
REPEAT TIMES  = 1
              [F10]MARK   [END]FINISH
```

 (RUN/STOP) / [F10]

Out of proportion to the number of tubes marked, the preset quantity decreases one by one.

```
LINE * INPUT DATA      * QTY NUMBER
0003 ABC                 2
0004 abc                 1
<MARKING,MODE 0>        [Pause]:HALT
```

<<Main Menu display>>

```
<MAIN MENU> T1 [LABEL MODE]
[1]EDIT [2]MARKING [3]MEMORY MODE
[T]TABLE [ESC]MODE SELECT
PRESS [KEY] TO ENTER
```

After the marking operation is completed, the display returns to the Main Menu display (main menu).

In case of fault on the machine, please refer to the following section according to the type(s) of error shown on the LCD.

Error Code	Name of Error	Relative Section
1101	TUBE TROUBLE	10.1.1
1102	MATERIAL END	10.1.2
1201	FOIL USED UP	10.1.3
1204	FOIL FULL	10.1.4
1103	LABEL ERROR (for "LABEL" mode only)	10.1.5
1212	COVER OPEN	10.1.7
1142	PRESS ERROR	10.1.8
1140	HEAD ERROR 1	10.1.9
1141	HEAD ERROR 2	10.2.2
1213	CUTTER COVER ERROR	10.1.10
1120	CUTTER ARM ERROR	10.1.11
1121	CUTTER TIMEOUT 1 ERROR	10.1.12
1122	CUTTER TIMEOUT 2 ERROR	10.1.13
1135	MAT SOL ERROR	10.1.14
1123	CUTTER INIT ERROR	10.1.15
1150	Y-ADJ ERROR	10.1.16
-	PRESET ERROR (for "LABEL", "BOARD" & "BRD-L" mode only)	10.1.6

3.9. Ejecting Marked Tubes

When a marking operation is completed, last part of marked tubes remain on the machine.

The machine is equipped with function for ejecting such marked material remaining on the machine.

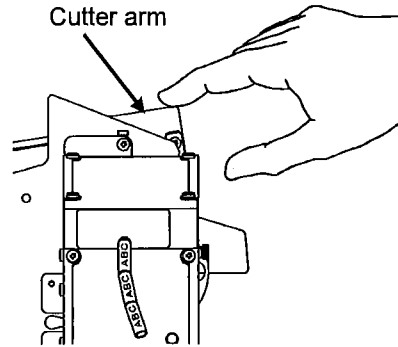
Operation:

At the Main Menu display, press the "EJECT" button on the front panel (or [\] key on the keyboard). The machine automatically feed the tube (located between the thermal head and the tube cutter) out of the left side of the cutter device.

Confirm that the machine fed all the marked tubes out and stopped its marking operation, movement of the cutter device, etc.

Open the safety acrylic cover upward and lower the cutter arm manually with your finger to cut the end of marked tube.

Pull the marked tube out of the safety tube slide.



⚠ WARNING!

Be sure to keep your hands away from the cutter device when ejecting marked tubes. While the machine is ejecting the marked tubes with the cutter switch on, that would be a possible cause of accidental injury by unexpected malfunction of the cutter device, etc.

⚠ CAUTION!

Keep the thermal head down (or set the head position to "1") and eject the marked tubes.

At this time, confirm that enough length of unmarked tube is remaining at right side of the thermal head.

If the marked tube is ejected with the thermal head up (or while the head position is set to "0"), that would be the cause of error in length of each tube sleeve, cutting position, etc.

If you reset the machine (by turning the main switch on) before the "EJECT" button on the front panel (or [\] key on the keyboard) is pressed, it becomes not possible to eject the marked tube with the "EJECT" button on the front panel (or [\] key on the keyboard). In that case, use ◀ and ▶ buttons to remove the marked tube out of the machine.

Test marking operation is now completed.

Check that you have got marked tubes as shown in the sketch on the left:

