MSSC

QM1610

Large Character Ink-jet Printer

Operator Manual

P/N 462376-01

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Introduction

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QM1610 Printer

Thank you for purchasing MSSC's next generation large character ink-jet printer — QM1610.

The QM1610 large character ink-jet printer is a contactless ink-jet printer. It is used to spray-print large character messages on product outer cases by using porous inks.

About the Manual

This manual is intended for operator use and offers relevant information on how to operate the printer. Unless otherwise stated, printer operators can execute all the tasks described in this manual.

All occurrences of the word 'printer' are references to the QM1610 printer.

⚠ **Warning**

PERSONAL INJURY. If you wish to perform your own service and maintenance on the printer, make sure that only qualified personnel execute the operating programs pertaining to printer maintenance.

⚠ **Warning**

PERSONAL INJURY. The term *Qualified Personnel* refers to individuals who are technically trained (have completed relevant training courses on printer operations), have relevant printer operating experience, and are aware of the potential hazards.

Note: This Operator Manual is intended to be a supplement to (and not a replacement for) customer training.

Keep this manual in a safe place for easy reference. Even if you choose MSSC (or one of its dealers) to provide maintenance for your printer, retain a copy of this Operator manual for future reference.

MSSC reserves the rights to update the contents of the manual and printer performance.

Standard Product Features

The product features are listed below:

- Simple system composition
- Character size includes 1 line of 16 dots or 2 lines of 7 dots
- Self-defined time and date format
- Automatic date rollover time
- Automatic valid date printing
- Automatic shift setup (a maximum of four shifts)
- Automatic count setup (a maximum of ten digits)
- Print delay distance setup (maximum delay of 50 cm)
- Adjustable character width
- Integrated internal product sensor (external sensor can be connected)
- Standard printing character height (20 mm)
- Automatic detection and manual setup of production line speed
- Production line speed range: 6 meter/minute to 60 meter/minute
- Each message may contain upto 40 characters of 16 dot font or 160 characters of 7 dot font (upto 80 characters per line).
- Message storage capability (maximum 40 messages)
- Work temperature is 4°C to 49°C
- Global universal power supply capability
- Self-adjusted-pressure ink system

Product Safety

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Introduction

MSSC is committed to producing contactless spray coding/coding systems and ink consumables, that meet high performance and reliability standards. We adopt rigid quality control technology to eliminate possibilities of product defects and hazards.

The QM1610 large character printers are used to print messages on the outer casing of packing packages. Any other usage of the printer may result in injury to the operator.

⚠ **Caution**

Read through this chapter before using the printer.

⚠ **Warning**

PERSONAL INJURY. While installing, operating, servicing or performing maintenance activities on the printer or relevant devices, you must obey the safety rules listed in this chapter.

⚠ **Warning**

PERSONAL INJURY. All electrical wiring and connections must comply with applicable local codes. Consult the appropriate regulatory agency for further information.

⚠ **Caution**

EQUIPMENT DAMAGE. Use only the attached AC power supply adapter for QM1610.

⚠️ **Caution**

EQUIPMENT DAMAGE. Do not use the printer in a wet or dusty environment.

⚠️ **Warning**

PERSONAL INJURY. To remove power in case of emergency, disconnect the power supply from the AC Main.

⚠️ **Warning**

PERSONAL INJURY. The inks and solvents are irritating to the eyes and the respiratory system. To prevent personal injury while handling these substances:

Always wear protective rubber gloves and clothing.

Always wear goggles with side-shields or a face mask. It is also advisable to wear safety glasses when carrying out maintenance.

If solvent contaminates the skin, rinse off with running water for at least 15 minutes.

⚠️ **Warning**

PERSONAL INJURY. While operating with inks or solvents, wear butyl rubber gloves to avoid contact with skin and mucosa (nasal canal and throat). If skin contact occurs, immediately take off the contaminated clothes and use soap and water to rinse the affected area. If the burning sensation persists, go to the nearest hospital.
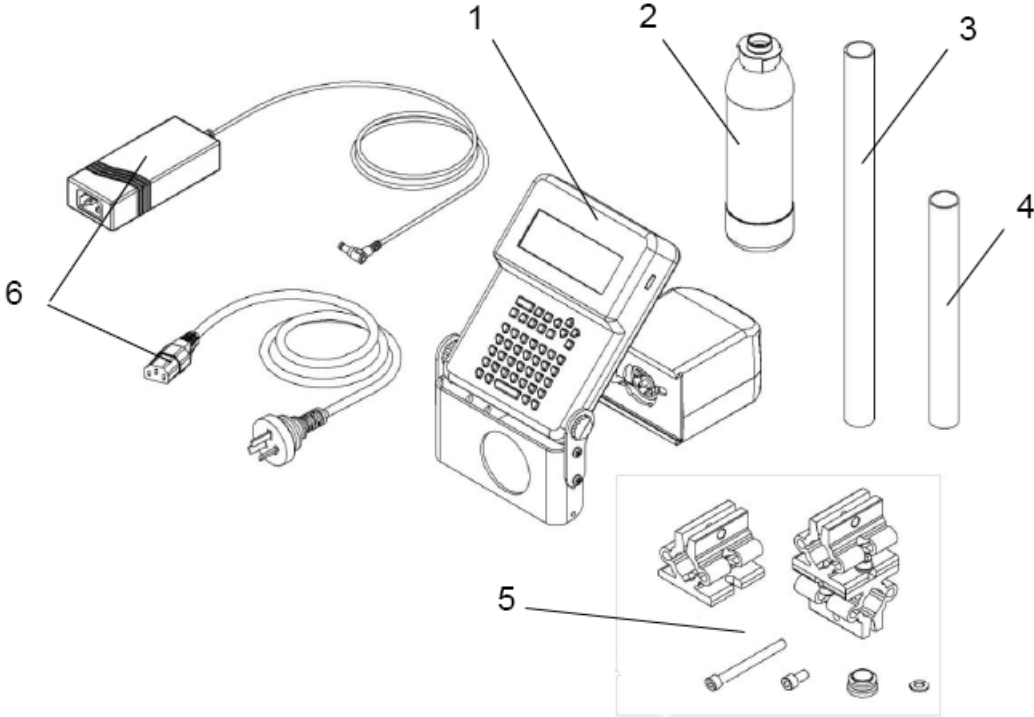
⚠️ **Caution**

EQUIPMENT DAMAGE. Only use the approved ink and solvent produced by MSSC.

Fast Installation

Printer Overview

Standard Components

The standard QM1610 product package contains the following components.

1. QM1610 printer
2. Ink (230ml)
3. Stainless steel tube (outer diameter 1 inch and length 15 inches)

4. Stainless steel tube (outer diameter 1 inch and length 9 inches)
5. Fastening and fixing components
6. Power supply adapter and cable
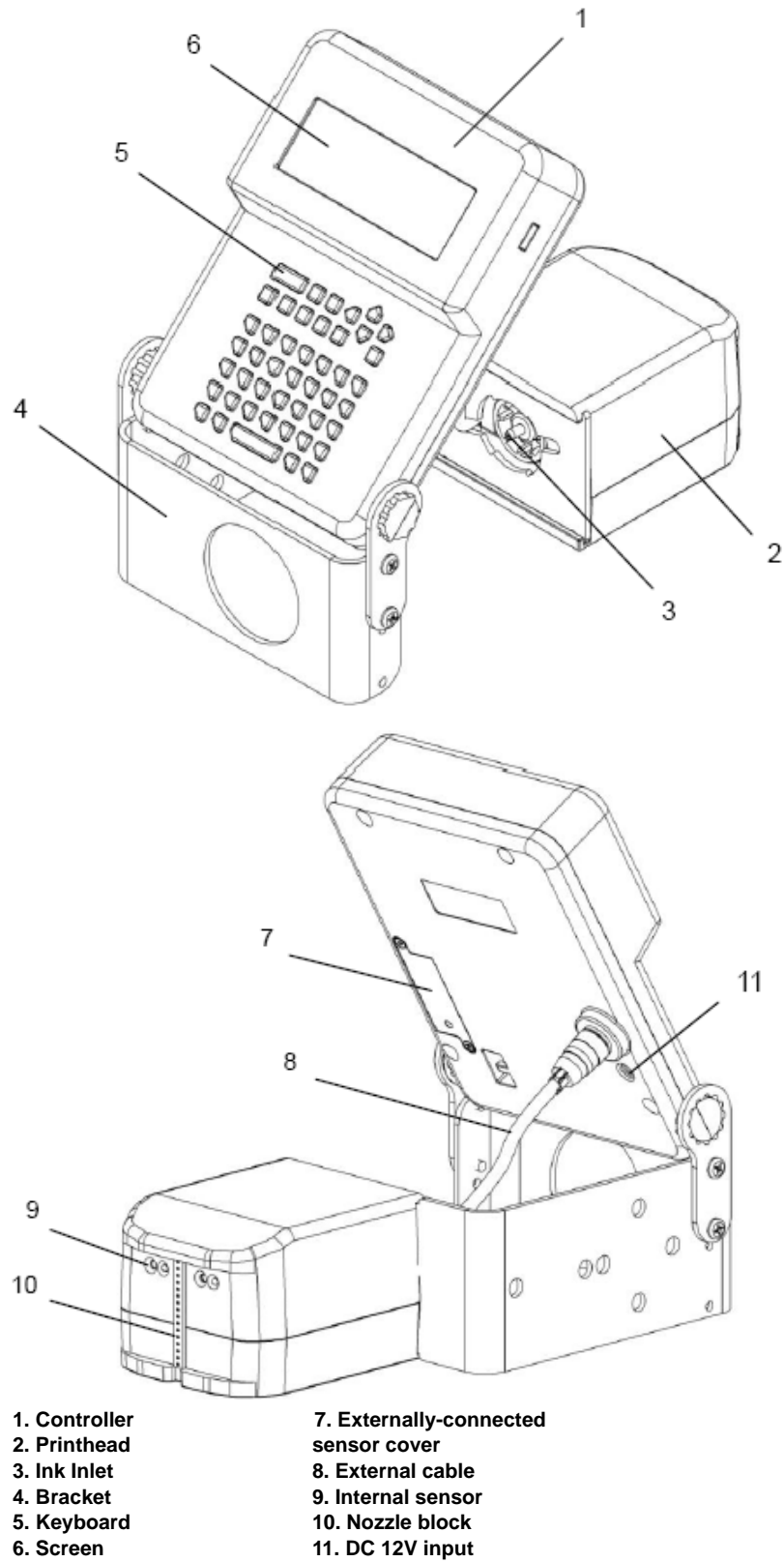
Figure 3-1: Standard QM1610 Packing Components

Printer

1. Controller
2. Printhead
3. Ink Inlet
4. Bracket
5. Keyboard
6. Screen
7. Externally-connected sensor cover
8. External cable
9. Internal sensor
10. Nozzle block
11. DC 12V input

Figure 3-2: Standard QM1610 Printer

Fast Installation
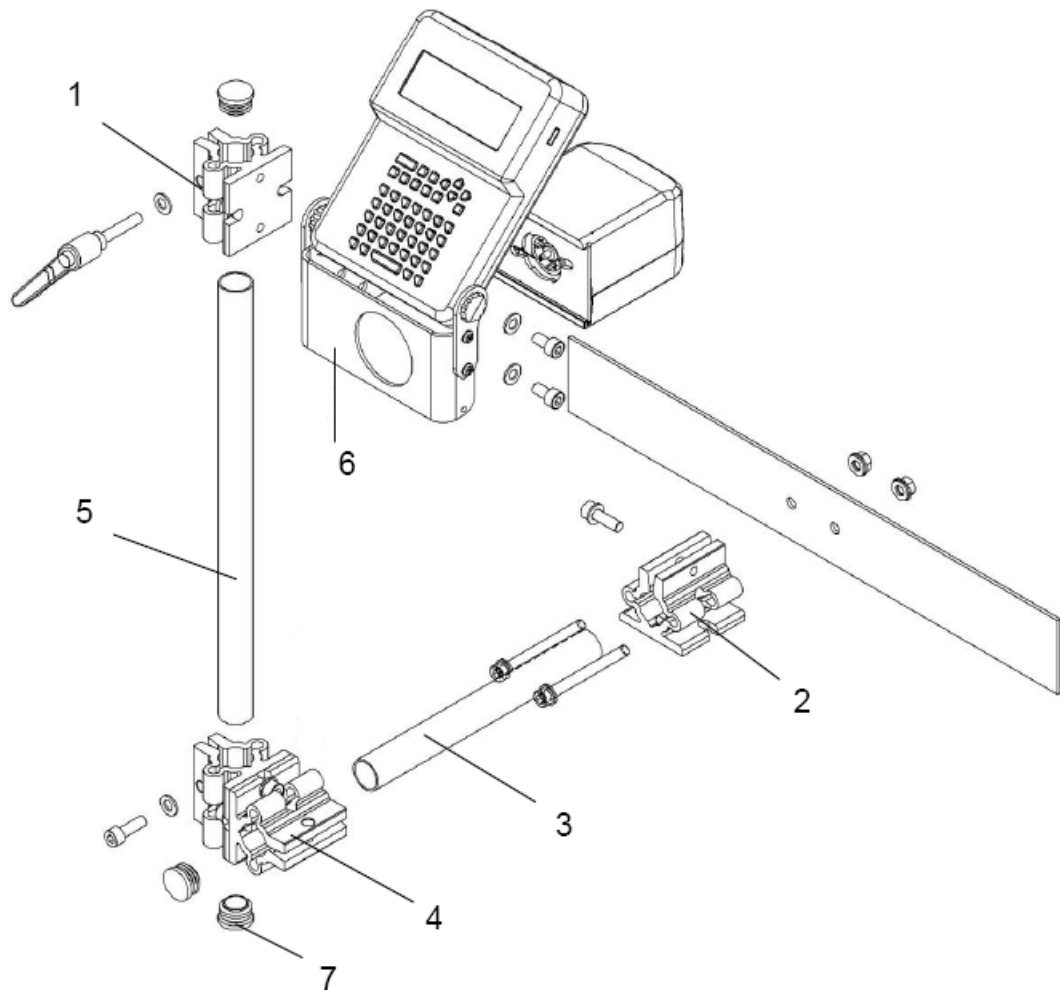
Figure 3-3: Printer Installation

Installation Procedure

Prepare for Installation

Select a mounting location where there are guide bars on the conveyor. If necessary, install the guide bars. This will keep the product at a correct distance from the printhead (no further away than 6 mm) and prevent any damage to the unit. Refer to Figure 3-4 on page 3-4.

⚠️ **Warning**

PERSONAL INJURY. Avoid any contact between QM1610 and the product as this will result in poor print quality.

6 mm maximum
throw distance
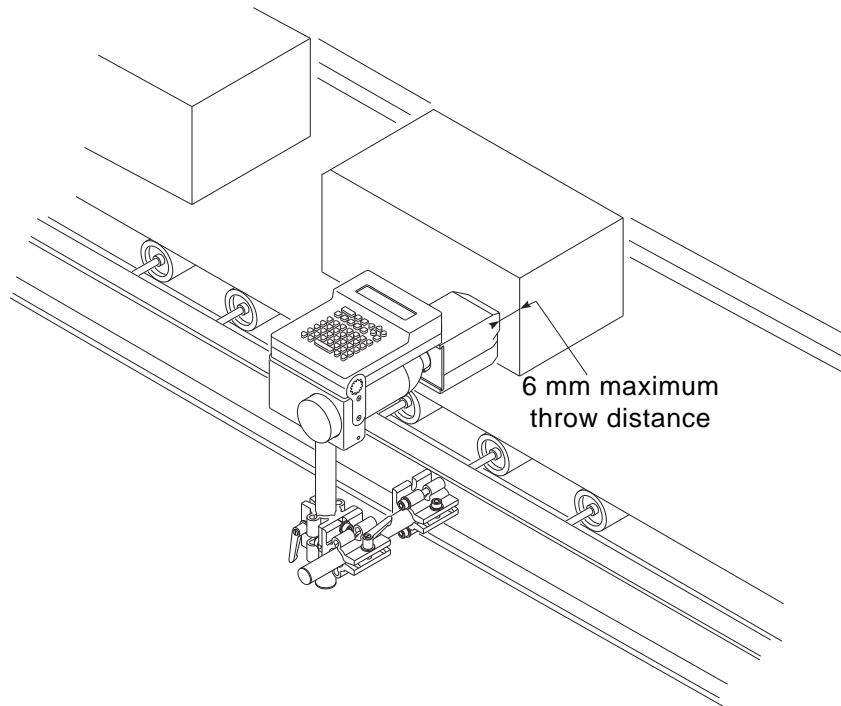
Figure 3-4: QM1610 and Conveyor

Procedure

Note: For pictorial guidance on the installation steps, refer to Figure 3-3 on page 3-3.

1 Attach the aluminium clamp to the printer controller mounting frame using the two screws and two nuts. Refer to Figure 3-5 on page 3-5.

Note: Make sure the mounting clamp hole faces the floor.
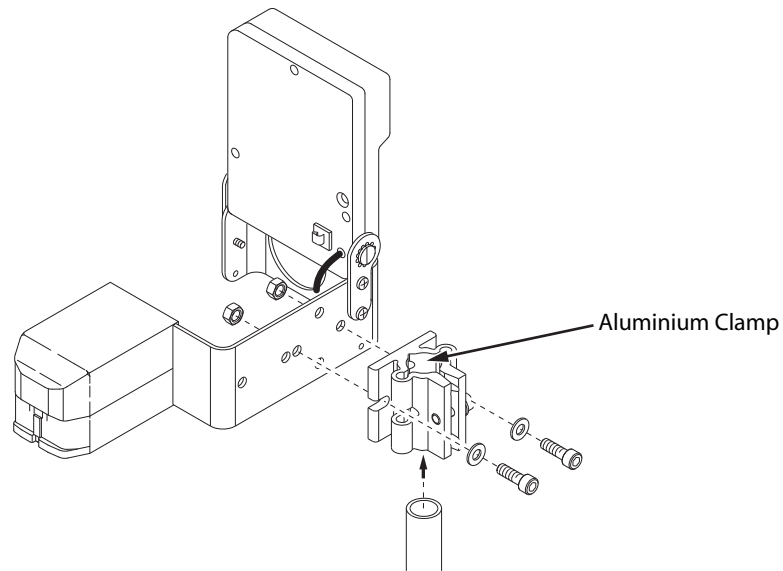
Figure 3-5: Printer Controller Mounting Frame

2 Attach another aluminium clamp to the production line.

For floor mounting, secure the aluminium clamp to the floor using concrete anchors. Use standard stainless steel tubes with an outer diameter of 2.5 cm (1 inch).

Note: The conveyor side rails channel should be a 0.32 cm x 6.3 cm (1/8 inches x 2.5 inches) or greater steel.

Note: Make sure the QM1610 mounting bracketry is mounted securely. Avoid any sway or vibration of the printhead. If not, this will affect the print quality.

Production Line Guidelines
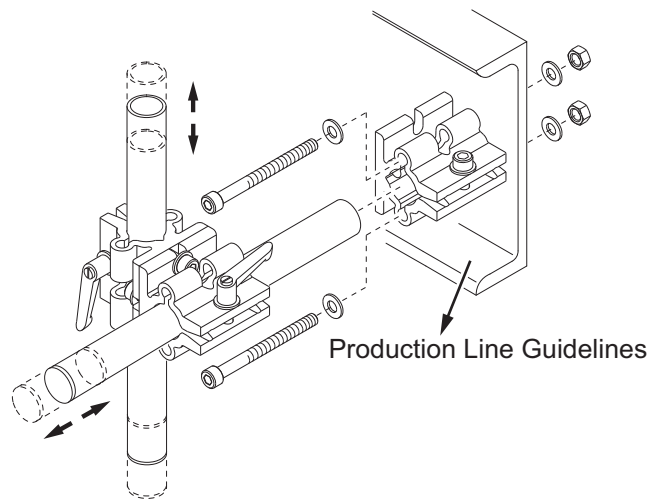
Figure 3-6: QM1610 Production Line Guidelines

3 Attach a stainless steel tube to the aluminium clamp installed in Step 2.

4 Attach the combined aluminium clamp to the stainless steel tube installed in Step 3.

5 Attach the vertical stainless steel tube to the combined aluminium clamp (refer to Figure 3-6).

6 Attach the printer (with the controller) to the vertical stainless steel tube installed in Step 5.

Note: Adjust the printhead by loosening the cross clamp with the ratchet handles.

Note: The QM1610 printhead should be perpendicular to the product. If some nozzles are further away from the product than the others, the print quality will suffer.

7 Install the plastic end-cap on the surface of the stainless steel tube to protect the production line operator from being hurt.

The installed printer and assembled bracketry are shown in Figure 3-7 on page 3-7.

Note: After the QM1610 is in position, tighten the bracketry.
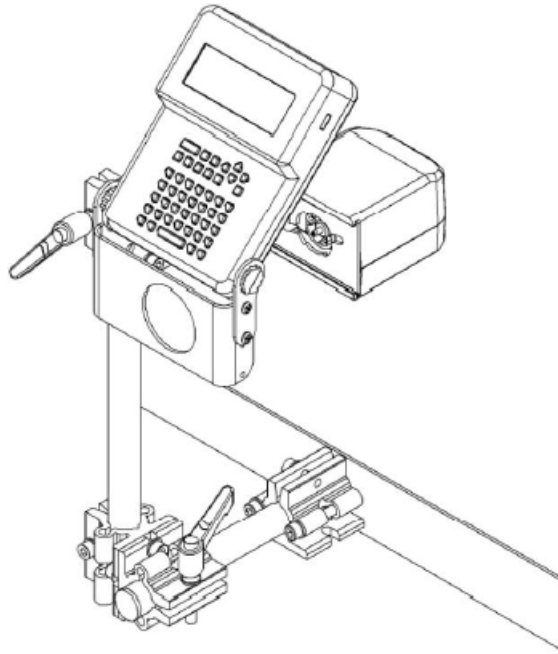
Figure 3-7: Printer Assembly

Note: *To achieve optimal print quality, position the printhead nozzles to a maximum throw distance of 6 mm from the substrate. (refer Figure 3-8). Prevent any strong wind (like that from a fan) from blowing onto the nozzle.*
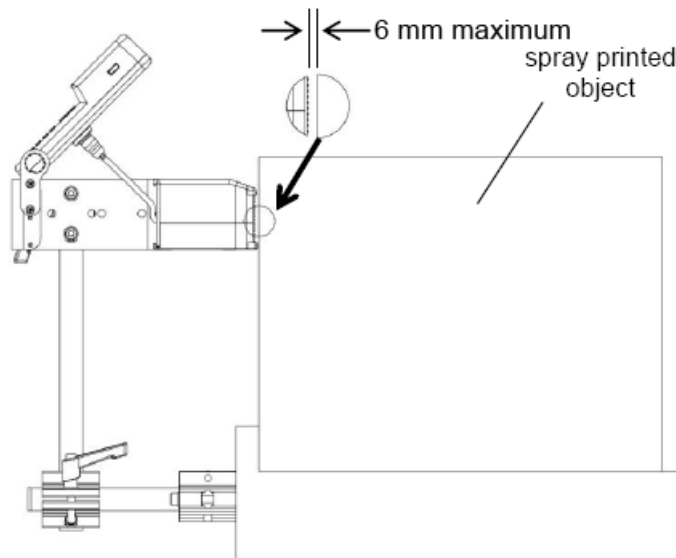
Figure 3-8: Print Distance Adjustment

Note: *There are two methods of installing the printer brace. This enables the printer to move forward and backward by 55.7 mm distance. Refer to Figure 3-9 on page 3-8.*
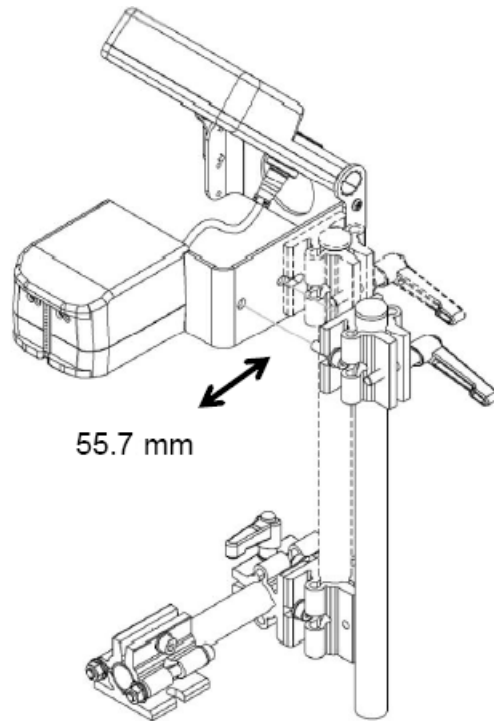
Figure 3-9: Movement Distance

Controller Screen Setup

Adjust the angle of the controller to monitor the screen and operate the keyboard as shown in Figure 3-10 on page 3-9.

a. Follow direction 1 (in the following figure) to push the controller to release it from the rotation restriction.

b. Follow direction 2 (in the following figure) to rotate the controller to the angle convenient for operation and monitoring.
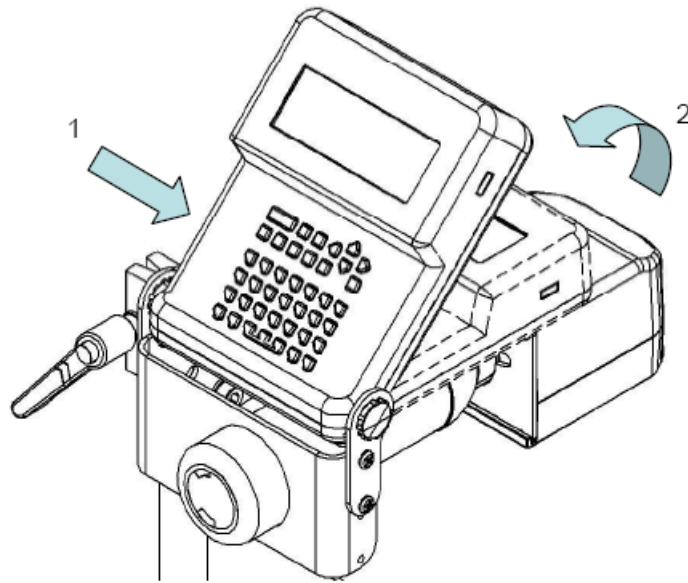
Figure 3-10: Printer Movement

Externally-connected Sensor

If the customer orders an externally-connected sensor, perform the installation according to the following steps:

1 Peel off 80 mm length of the protection cover from the sensor-connecting end wire.

2 Peel off 5 mm length of the external cover of the core wire.

3 Open the cover of the externally-connected sensor.

4 Insert the wire of the externally-connected sensor through the orifice on the cover. The total length of the wire should be around 140 mm (Figure 3-9 on page 3-8).
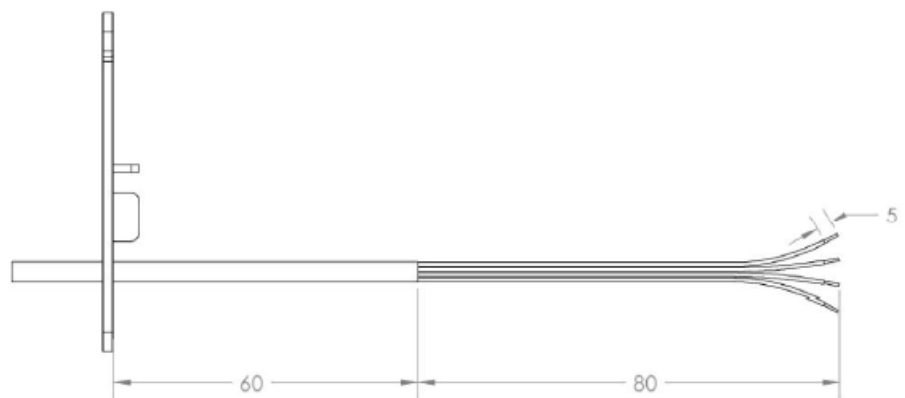
Figure 3-11: Wires

Note: Install tie-wrap to act as strain relief for the wire.

5   Refer to Figure 3-12 while performing the wiring. Also, refer to the sensor description provided in Table 3-1.
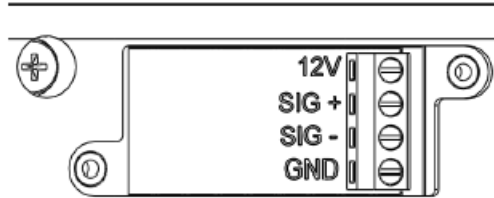
Figure 3-12: Wiring Details

The wiring description for the sensor (PN: 35464) is as listed in the following table:

Sensor Wire Color	Controller Wiring Base	Remarks
Red	12 V	Short connected 12 V and SIG+ by using wire
White	SIG -	
Black	GND	

Table 3-1: Wiring Description

6   Replace the cover of the externally-connected sensor and fasten the bolt.

7   Fix the sensor onto the production line. Make sure that the distance from the sensor to the nozzle is not greater than 500 mm.

Note: You must set the printer software properly while using the external photocell. With an external photocell, 'Auto Detect' is not used to set speed or direction. Use the 'Set Line' option in the main menu ("Set Production Line" on page 4-21) to manually set the speed, the direction and to set the 'Select Sensor' setting to 'External'.

8   Power supply installation:

⚠️ **Warning**

PERSONAL INJURY. Make sure that the mains socket outlet is installed in the vicinity of the equipment so that it is easily accessible.

a. Connect the power supply cable to the power supply adapter, as shown in Figure 3-13.
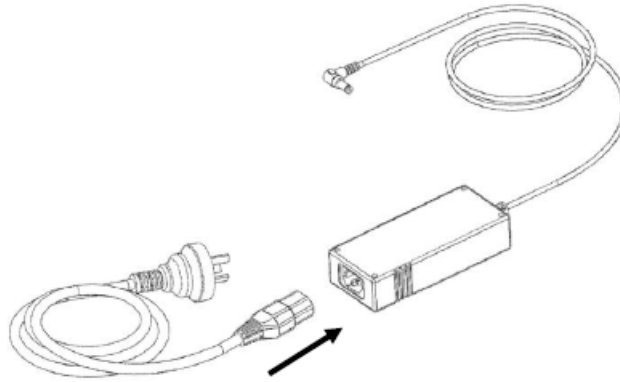
Figure 3-13: Power Supply Cable Connection

b. Connect the male plug from the power supply adapter to the printer controller (refer Figure 3-14).

c. Connect the power supply to an appropriate voltage power source.
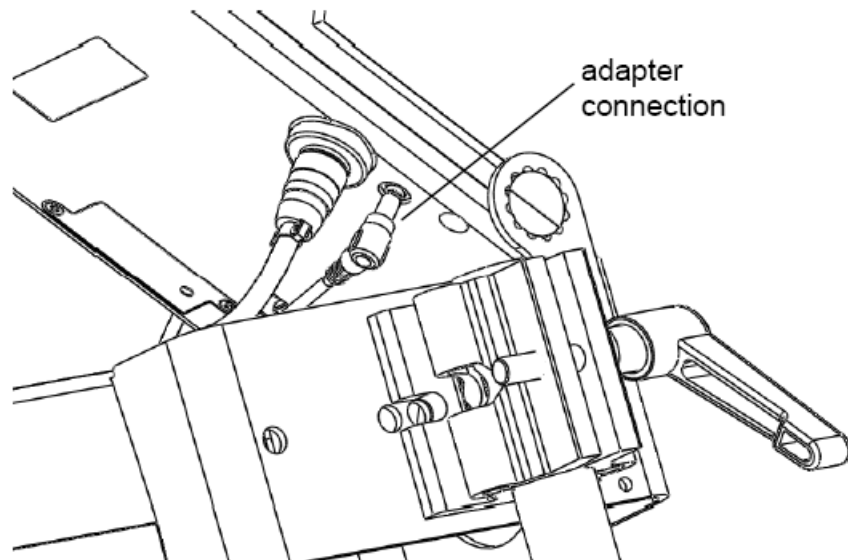
Figure 3-14: Adapter Connection

Note: Before printing, fix the power supply adapter with the cable tie provided by MSSC, or the customized brace, as shown in Figure 3-15 on page 3-12. This holds the cord in position and reduces the strain on the power cord connector.
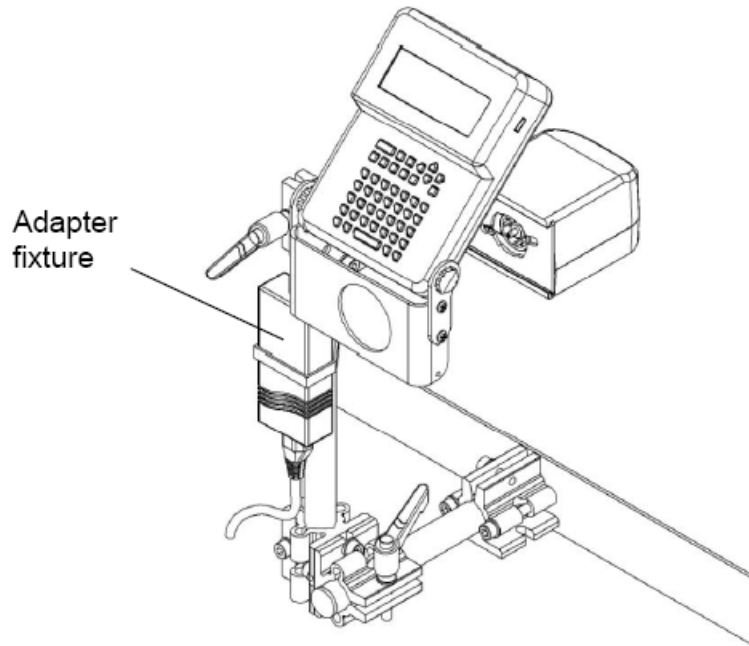
Figure 3-15: Adapter Fixture

9 Ink bottle installation:

    a. Insert the ink bottle through the orifice and position the mouth of the ink bottle towards the printhead.
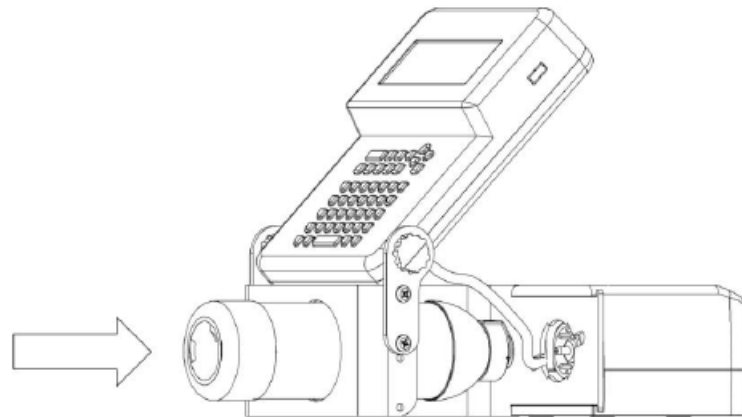
Figure 3-16: Ink Bottle Installation

    b. Push the ink bottle forward and twist it clock-wise until it is tightly connected to the printer.
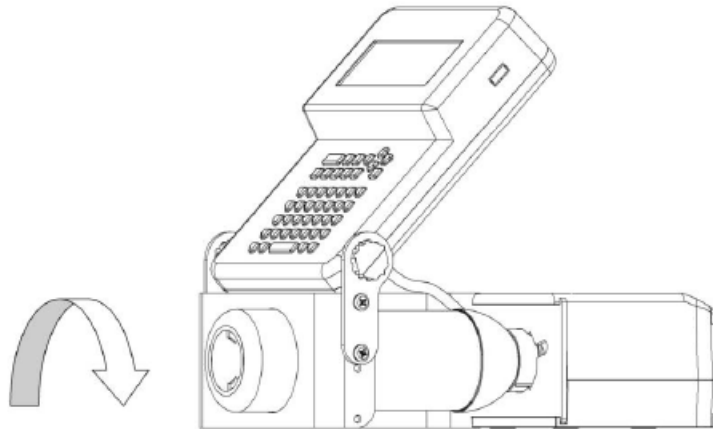
Figure 3-17: Lock the Ink Bottle

Note: *You must remove the air in the system by purging the unit with ink.*

After performing Steps 1 through 9, connect the power supply cable to a 100 V ~ 240 V DC power supply socket.

You can use the printer once the power is switched ON.

⚠ **Warning**

PERSONAL INJURY. Make sure that the mains socket outlet is installed in the vicinity of the equipment so that it is easily accessible.

Note: *Make sure that the power source for the QM1610 is free from surges and spikes. The QM1610, like other computer equipment, is sensitive to surges and spikes. For best results, use a dedicated receptacle on a direct line from the power panel.*

Note: *To guarantee regular operation of the internal sensor, make sure that the product spacing on the production line is greater than 35 mm as shown in Figure 3-18 on page 3-14.*
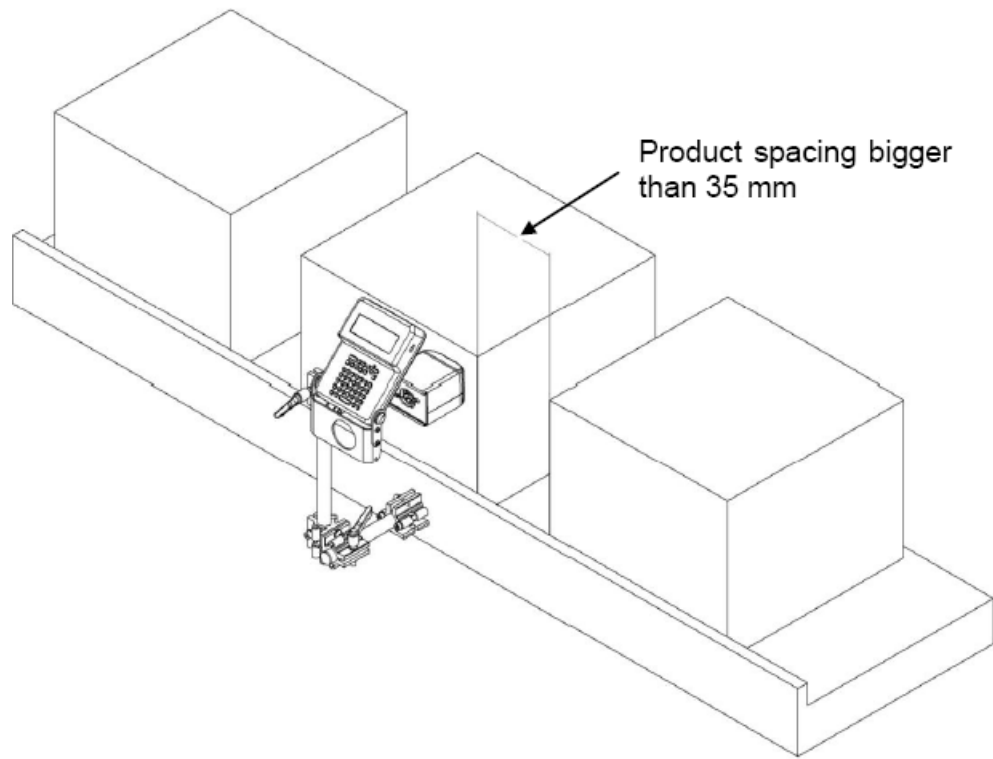
Figure 3-18: Product Spacing

Operation and Setup

<div style="text-align: right">

4

</div>

Overview

Some of the important features of the user interface and keyboard are as follows:
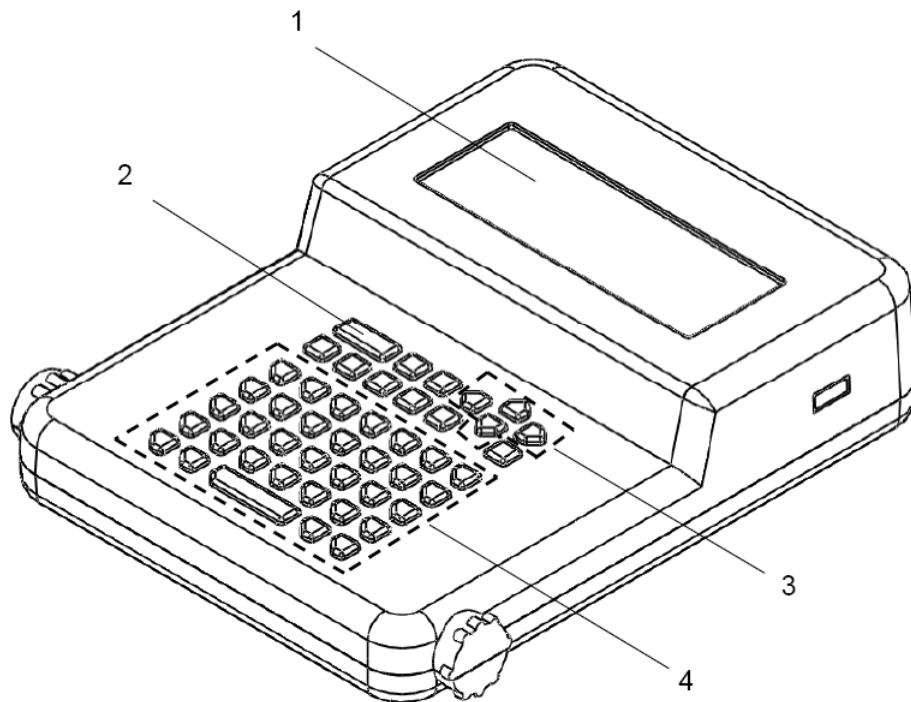
Figure 4-1: Controller Features

1   **User interface**: Use the interface to create, edit, and print messages, as well as for the other functionalities.

2   **Function area:** Use to set up the *special function* and *hot keys* for inserting special functionalities into messages.

3   **Guide key area:** Use to move the cursor's position in the menu and while creating the message.

4   Letter and number/special character key area.

Keyboard Description

Figure 4-2: Keyboard
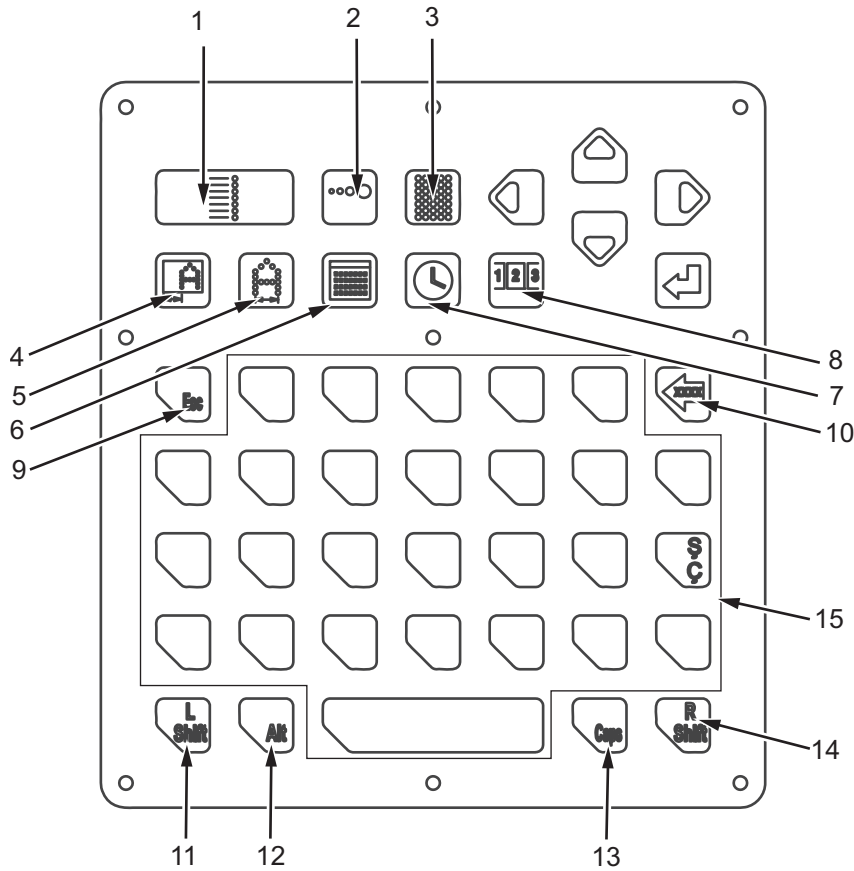
Keyboard contains following main functionalities:

1. Print on/off	**9.** ESC (Exit)
2. Dot size--hot key	**10.** Backspace/delete
3. Purge--hot key	**11.** Left Shift
4. Print delay--hot key	**12.** Input method switch
5. Character width--hot key	**13.** Capital lock
6. Date setup/insert--hot key	**14.** Right Shift
7. Time setup/insert--hot key	**15.** Language Dependent Character Keys
8. Count setup/insert--hot key	

Keyboard contains following main functionalities:

1. Print on/off	8. Count setup/insert--hot key
2. Dot size--hot key	9. Number key lock
3. Purge--hot key	10. Backspace/delete
4. Print delay--hot key	11. Exit
5. Character width--hot key	12. Input method switch
6. Date setup/insert--hot key	13. Capital lock
7. Time setup/insert--hot key	

Figure 4-3: Keyboard - Chinese (Simplified)

Print On/Off

Press [ ] to switch ON or OFF the print.

Green light ON - Print mode ON

Red light ON - Print mode OFF

Note: In order to prevent on-site misoperations, dot size, print delay, and character width can only be set via hot keys (on the printer) while printing is in process (green light is ON). For other operations (like edit, select message etc.), if the customer needs to enter the main menu, stop the printing (press [ ] till the red indication light turns ON).

Dot Size

Press ⬤⋯● to enter the following user interface.

```
                                    10: 04: 59
Set   Dot  Size                     09/ 09/ 14


Press   Up/ Down Key ( 1-9 ) :  1

```
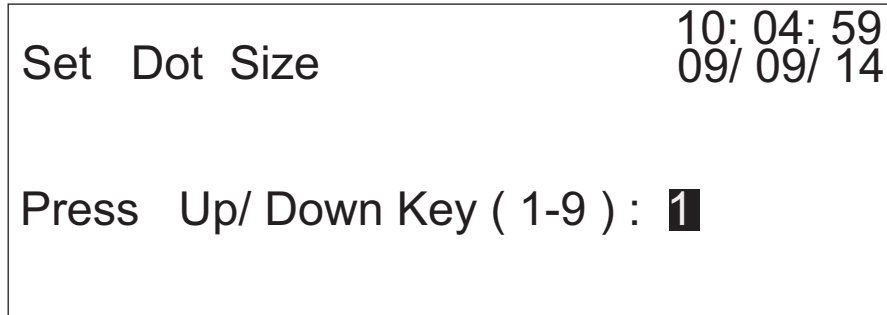
Figure 4-4: Set Dot Size

Press ⬆⬇ to change the dot size value and then press ↵ to confirm the edit.

Purge

Press ▦ . The printer starts to purge the ink circuit system. Press ▦ again to stop purge.

Note: During purge, ink is sprayed out from the nozzle. Therefore, before pressing ▦ , make sure that the proper collection devices are placed in front of the nozzle to prevent ink from spraying on other products.

Note: If you have not used the printer for a while (for example, 3 days), MSSC recommends that you use a special cleaner to purge the printer completely (run more than five purge cycles), before switching off the printer. This action makes sure that the nozzle is ready for the next use of the printer.

Print Delay

Press [ ] to enter the following user interface.

```
                                    10: 05: 19
Set   Delay                         09/ 09/ 14



Press   Up/Down  Key (0-50cm) : 00. 0
```
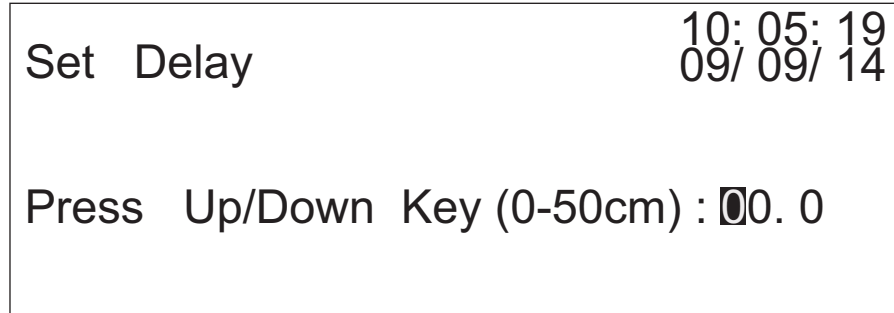
Figure 4-5: Print Delay

Press [◀] [▶] to move the cursor to the correct position to enter data and press [▲] [▼] to change the print delay value. Press [↵] to confirm the change.

Note: When the printer is connected to an external sensor, the distance from the sensor to the nozzle is added to the print delay.

Note: Changing the print delay value affects only the message that is currently selected for print and that delay value is stored with the message.

Note: Printing on the leading edge of the product, requires an external photocell.

Character Width

Press [ ] to enter the following user interface.

```
                                    10: 05: 30
Set   Width                         09/ 09/ 14



Press   Up/Down  Key (1-15)  : 04
```
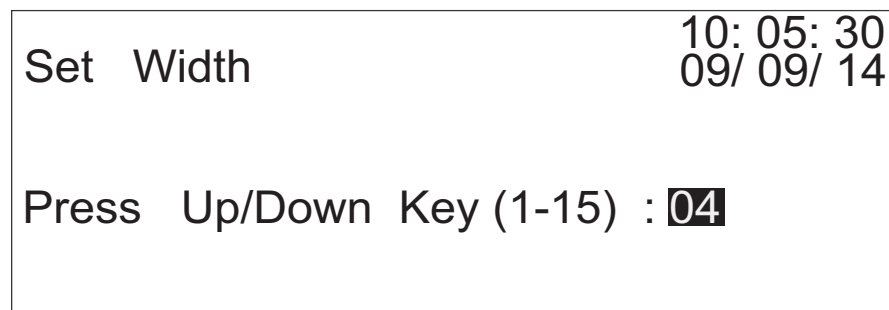
Figure 4-6: Set Character Width

Press [▲] [▼] to change the character width value and press [↵] to confirm the change.
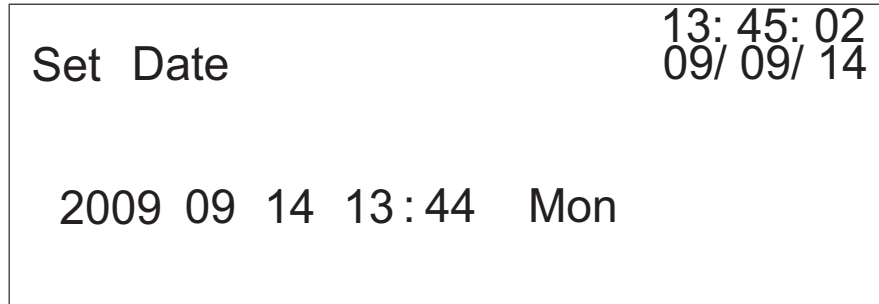
Date

Press ⌨ to enter the following user interface.

```
                                              13: 45: 02
  Set  Date                                   09/ 09/ 14


     2009  09  14  13 : 44   Mon


```

Figure 4-7: Set Date

Press ◀ ▶ to move the cursor to the correct position to enter data and press ▲ ▼ to change the value. Press ⏎ to confirm the change.

Time
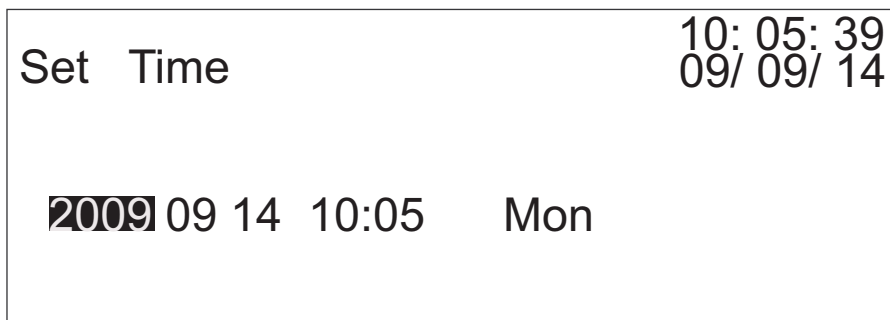
Press 🕐 to enter the following user interface.

```
                                              10: 05: 39
  Set   Time                                  09/ 09/ 14


     2009 09  14  10:05     Mon


```

Figure 4-8: Set Time

Press ◀ ▶ to move the cursor to the correct position to enter data and press ▲ ▼ to change the value. Press ⏎ to confirm the change.

Count Display

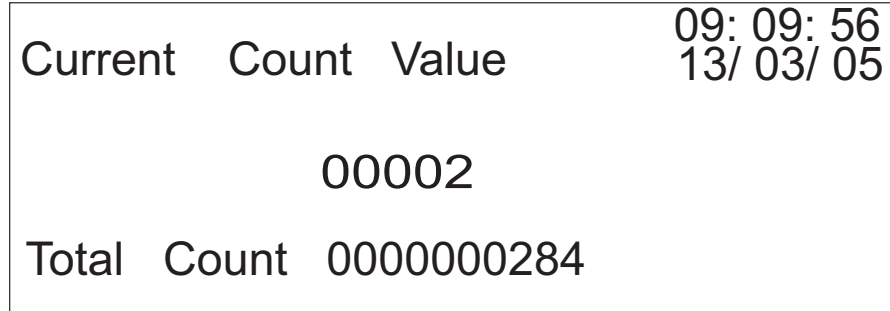Press [123] to enter the following user interface.

```
                                      09: 09: 56
Current   Count   Value               13/ 03/ 05


              00002

Total   Count   0000000284
```

Figure 4-9: Count Display

Note: 'Total Count' value is the total number of prints the QM1610 has printed. This value is for view only and cannot be inserted into a message.

Number/Special Character Key Lock

To input the upper characters/numbers on the keypad, press [L] or [R] to lock the input. To select the upper-left characters, press [L] and for the upper-right characters, press [R].

Note: QM1610 displays the 'lock' status of the keys in the status display area on the right, at the bottom of the screen. The display of 'SHIFT' indicates that the Number/Special Character input keys are locked.

Backspace/Delete

Press [◄] to delete a character or variant in the message, immediately before the position of the cursor.

Exit

Press [Esc] to exit the current user interface to an upper level interface.

Input Method Switch

Press ⟨Alt⟩ to input the lower characters on the keypad. Also, use ⟨Alt⟩ to change between the available language input characters and to switch between the font sizes (16 dot and 7 dot).

```
┌─────────────────────────────────────────────┐
│                                   08: 11: 18 │
│  Message  Editor                  09/ 09/ 14 │
│                                              │
│                                              │
│                                              │
│                                        EN    │
│                                        a     │
└─────────────────────────────────────────────┘
```
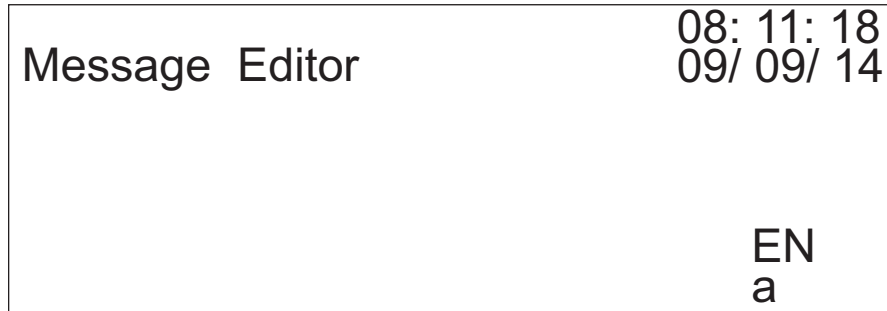
Figure 4-10: Input Method Status

Note: Pay attention to the status display at the right-bottom corner of the user interface. This indicates the language input currently selected.

Capital Lock

In the "Edit Message" interface, if the current character input style is lowercase, press ⟨Caps⟩ to switch to the uppercase. To switch back to the lowercase, press ⟨Caps⟩ again.

Note: QM1610 displays the character input style in the status display area on the right, at the bottom of the screen. 'a' indicates lowercase character input while 'A' indicates uppercase character input.

User Interface

Start Screen

```
                QM1610

   C   4. 00    P 3.03    F1 02    F2 13    F3 03K
```

Figure 4-11: Start Screen

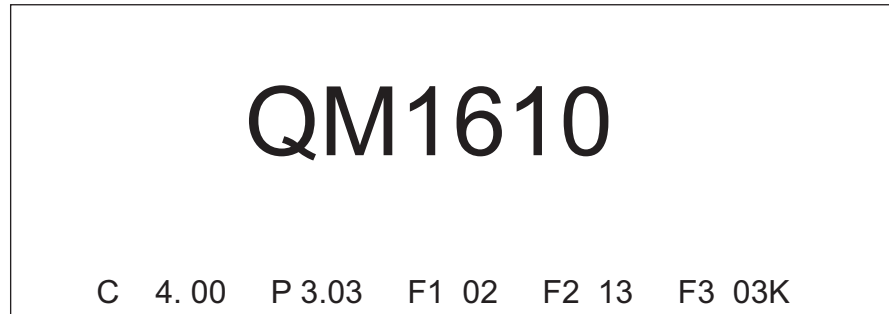The start screen displays details such as the device name, language and software version number.

Main Menu Structure

```
                                   07: 48: 29
  Main  Menu                       09/ 09/ 14

    1.   Select    Message

    2.   Create    Message

    3.   Edit  Message
```
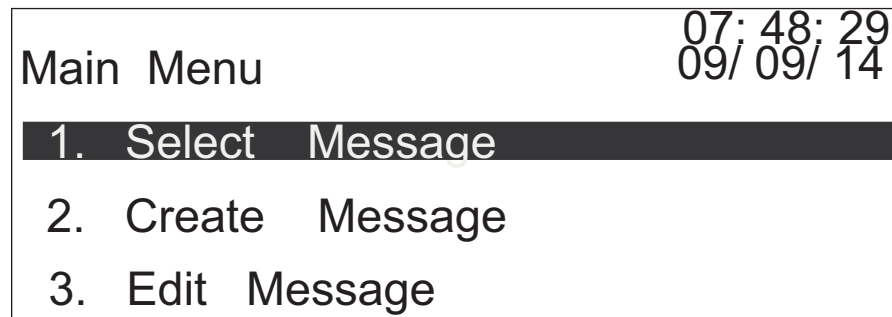
Figure 4-12: Main Menu Screen 1

```
                                   07: 52: 16
  Main  Menu                       09/ 09/ 14

    4.   Set  Rollover  Time

    5.   Set  Count

    6.   Set  Shifts
```
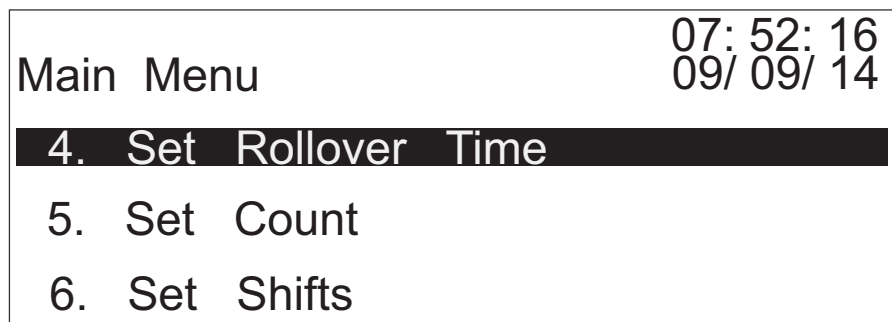
Figure 4-13: Main Menu Screen 2

```
                                           07: 52: 25
  Main  Menu                               09/ 09/ 14

    7.   Set   Line

    8.   Software   Version

    9.   Select   Language
```
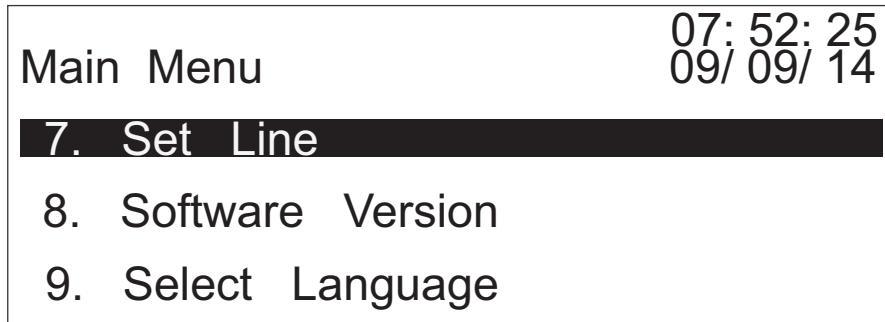
Figure 4-14: Main Menu Screen 3

Select Message

In the main menu, when "Select Message" is highlighted, press [⏎] to enter the following interface.

```
                                           07: 53: 08
  Select    Message                        09/ 09/ 14

      alphabet

    √ TEST

      count
```
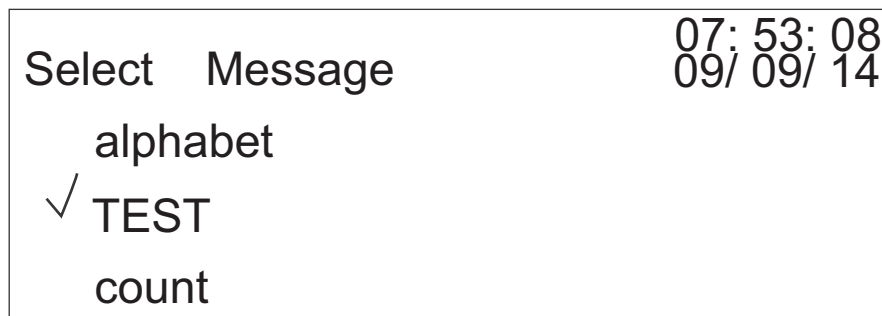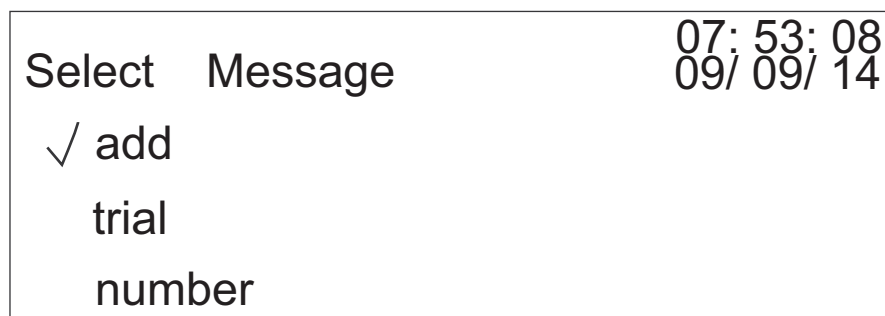
Figure 4-15: Select Message Screen

```
                                           07: 53: 08
  Select    Message                        09/ 09/ 14

    √ add

      trial

      number
```

Figure 4-16: Message Selection

A list of all the saved messages is displayed in the interface. Press [▲][▼] to select a message for printing. If there are more than three saved messages, press [▼] to go to the next page. If you wish to select a

message with the name 'add', press ⏎ to enter the following interface while the message is selected (" √ " before the message name).

```
                                        08: 12: 00
 Select    Message                      09/ 09/ 14

 S/N  35200   BETA 001
 09/ 14/ 09  08: 11
   Print  ?              No        Yes


```

Figure 4-17: Confirm Print

To confirm the printing of a message, press ◀ ▶ to select "Yes" and then press ⏎ to select the message and return to the main menu. After selection, to switch ON the printing function, press [▤] till the green light turns ON. Automatic spray printing starts once the sensor is triggered.

Create New Message

In the main menu, once "Create New Message" is highlighted, press ⏎ to enter the following interface.

```
                                        08: 11: 35
 New Message  Name                      09/ 09/ 14


 |

                                        EN
                                        A

```

Figure 4-18: Create New Message

Enter a name for the new message. The name can be a single line character, or number, or a special character. It can also be a combination of various inputs.

```
                                              08: 11: 35
New Message  Name                             09/ 09/ 14

 abcd

                                                 EN
                                              A
```

Figure 4-19: New Message Name

Once you enter the name, press [⏎] to enter the following interface.

```
                                              08: 11: 18
Message  Editor                               09/ 09/ 14




                                                 EN
                                              A
```

Figure 4-20: Edit Message

Taking `2009 Sep 14` `Count  0003313` as an example to introduce the process of message editing:

1 Press [⌨] to enter the following interface.

```
                                              13: 13: 07
 Insert    Date/ Shift                        09/ 09/ 14

 Current  :  YYYY   YY   MMM  MM   DD

 Exp.     :  000  YYYY  YY   MMM MM   DD

 SHIFT
```

Figure 4-21: Insert Year

'YYYY', the Current Year insert, is highlighted. Press [⏎] to insert '2009'. The interface displays the following information.
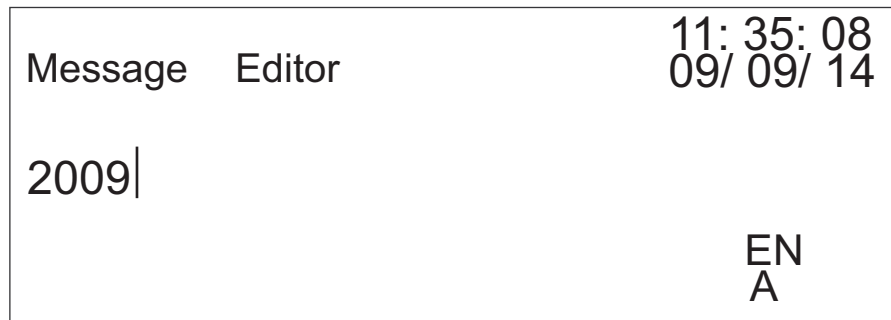
```
                                      11: 35: 08
 Message    Editor                    09/ 09/ 14


 2009|


                                            EN
                                            A
```

Figure 4-22: Message Editor-Current Year

2 Press ⬡ to input a space, as shown in the Figure 4-23.

```
                                      11: 35: 08
 Message    Editor                    09/ 09/ 14


 2009  |


                                            EN
                                            A
```
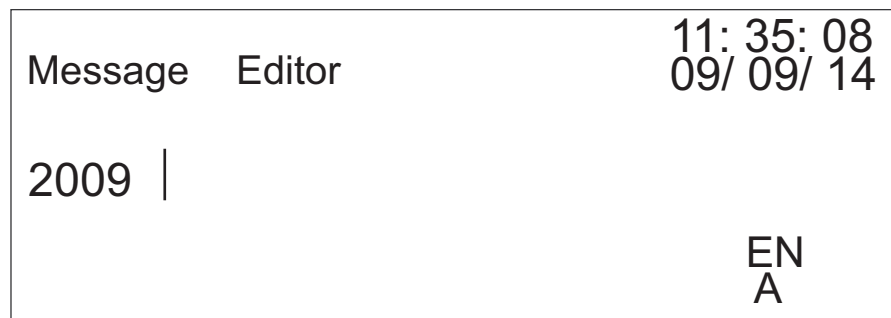
Figure 4-23: Message Editor - Space

3 Press ▦ to enter the following interface.

```
                                      13: 13: 07
 Insert    Date/ Shift                09/ 09/ 14

 Current  :  YYYY   YY   MMM  MM   DD

 Exp.     :  000  YYYY YY   MMM MM   DD

 SHIFT
```

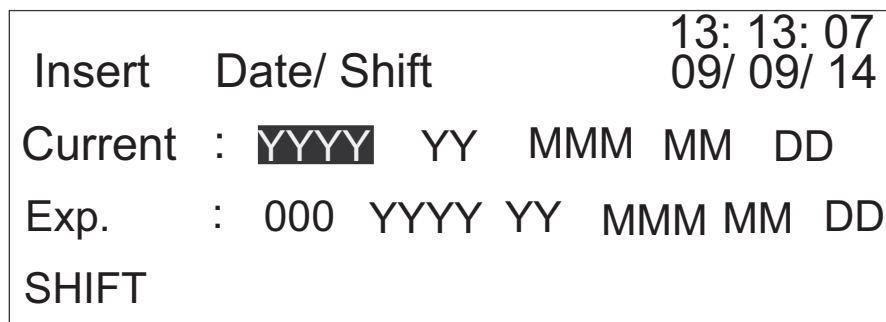*Figure 4-24: Insert Date/Shift*

Press ▶ till 'MMM' (Current) is highlighted.

```
                                        13: 13: 07
Insert    Date/ Shift                   09/ 09/ 14

Current  :  YYYY   YY   [MMM] MM   DD

Exp.     :  000  YYYY YY   MMM MM  DD

SHIFT
```

Figure 4-25: Insert Month

Press ⏎ to insert the current month, for example 'Sep'.

4 Press ⌨ to enter the following interface.

```
                                        13: 13: 07
Insert    Date/ Shift                   09/ 09/ 14

Current  :  [YYYY]   YY    MMM  MM   DD

Exp.     :  000  YYYY YY   MMM MM  DD

SHIFT
```

Figure 4-26: Insert Year

Press ▶ till DD (Current) is highlighted.

```
                                        13: 13: 07
Insert    Date/ Shift                   09/ 09/ 14

Current  :  YYYY   YY    MMM  MM   [DD]

Exp.     :  000  YYYY YY   MMM MM  DD

SHIFT
```

Figure 4-27: Insert Date

Press ⏎ to insert the current day. For example, 14.
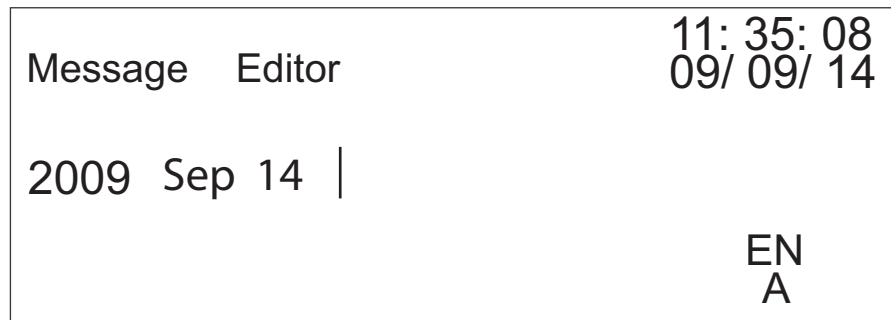
```
                                        11: 35: 08
  Message    Editor                     09/ 09/ 14


  2009  Sep  14  |

                                           EN
                                           A
```

Figure 4-28: Message Editor - Current Day

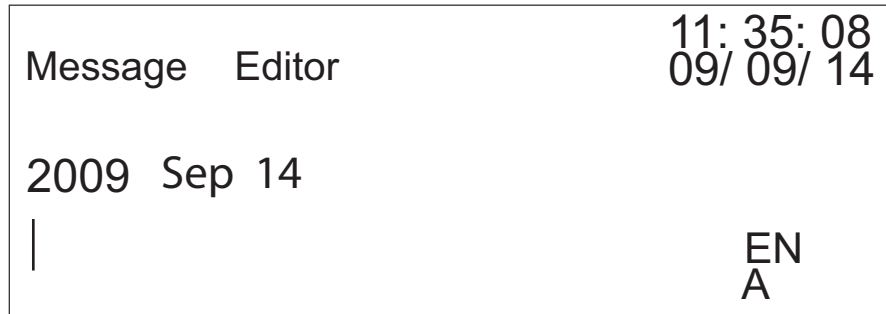**5** Press ⌐Alt to move the cursor to the second line. Press ◀ to move the cursor to position (refer Figure 4-29).

```
                                        11: 35: 08
  Message    Editor                     09/ 09/ 14


  2009  Sep  14

  |                                        EN
                                           A
```

Figure 4-29: Message Editor

6 Press @C to insert the letter 'C' to the current position. Press Caps to switch between the lowercase and uppercase input styles. Press O ⌐U ⌐N and ⌐T to insert 'o', 'u', 'n', and 't' into the message, as shown in the Figure 4-30.
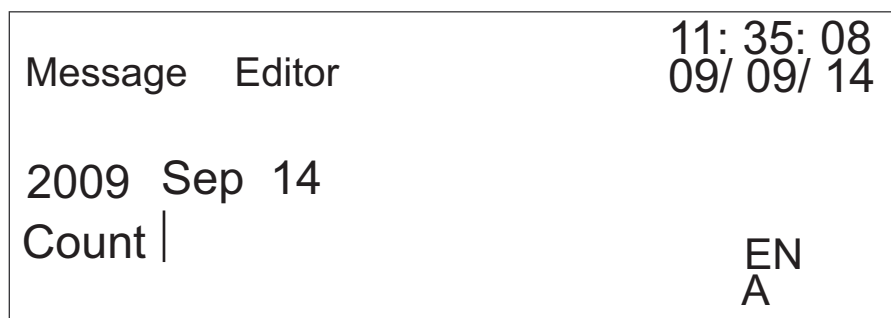
```
                                        11: 35: 08
  Message    Editor                     09/ 09/ 14


  2009  Sep  14
  Count |                                  EN
                                           A
```

Figure 4-30: Insert Character

```
                                                11: 35: 08
  Message   Editor                              09/ 09/ 14


  2009  Sep  14
  Count: |
                                                    EN
                                                    A
```
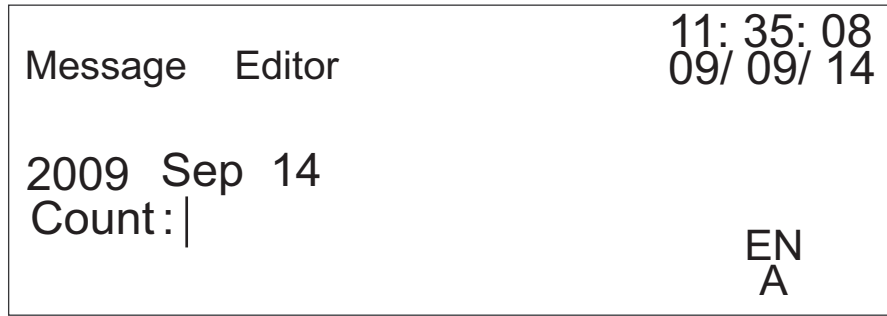
Figure 4-31: Insert Special Character
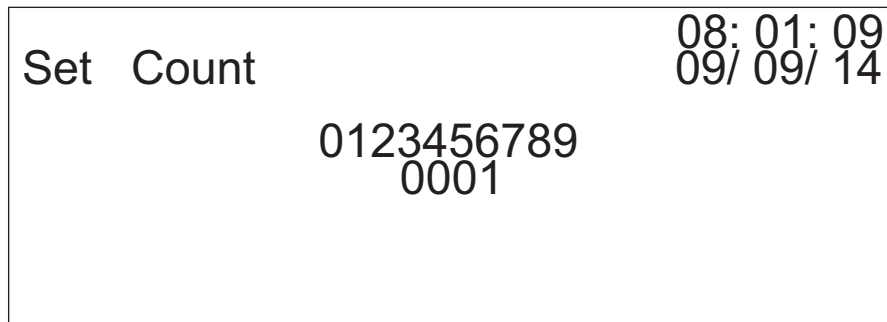
7   Press [123] to enter the following interface.

```
                                                08: 01: 09
  Set   Count                                   09/ 09/ 14

                          0123456789
                            0001
```

Figure 4-32: Set Count Value

Press the following buttons [0] [0]

[0]   [9J] [9J] [1H] [9J] in sequence to set the initial count value as 0003313.

```
                                                08: 01: 09
  Set   Count                                   09/ 09/ 14

                         0123456789
                          0003313
```

Figure 4-33: Set Initial Count Value

Press [↵] to insert the count value into the message.

```
                                     11: 35: 08
  Message    Editor                  09/ 09/ 14


  2009  Sep  14
  Count:0003313|
                                          EN
                                           A
```
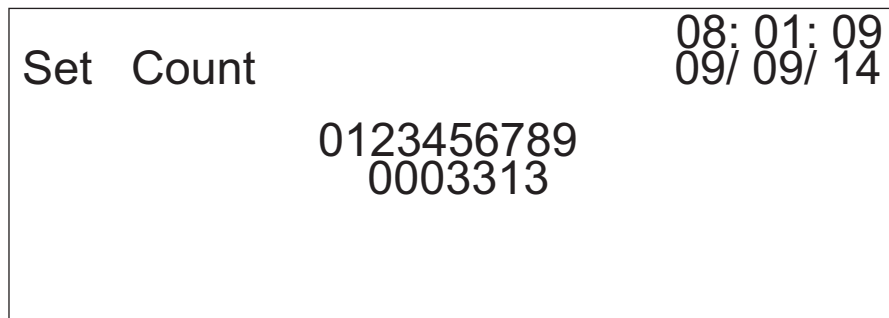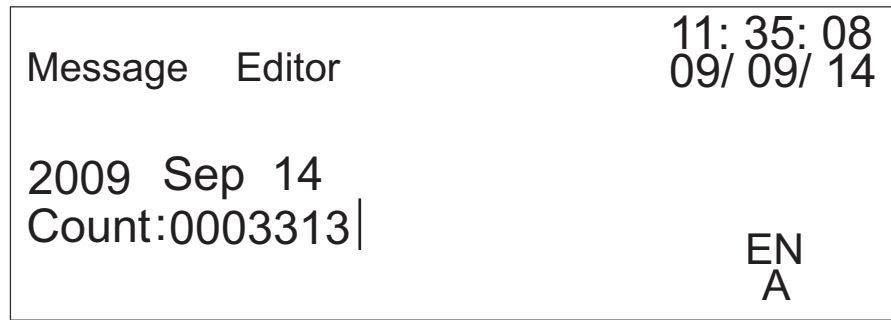
Figure 4-34: Insert Count Value

After completion of the above steps, the new message is created. Press ⏎ to confirm the completion of message creation. Press ⏎ again to save the message and return to the main menu.

Edit Message

In the main menu, while "Edit Message" is highlighted, press ⏎ to enter the following interface.

```
                                     08: 11: 10
  Edit    Message                    09/ 09/ 14

       alphabet
     √ TEST

       count
```

Figure 4-35: Edit Message

The list of all saved messages is displayed. Press ⬇ to select the message you wish to edit. If there are more than three saved messages, press ⬇ to go to the next page.

```
                                                    07: 53: 08
Edit    Message                                     09/ 09/ 14

   √ add

     trial

     number
```
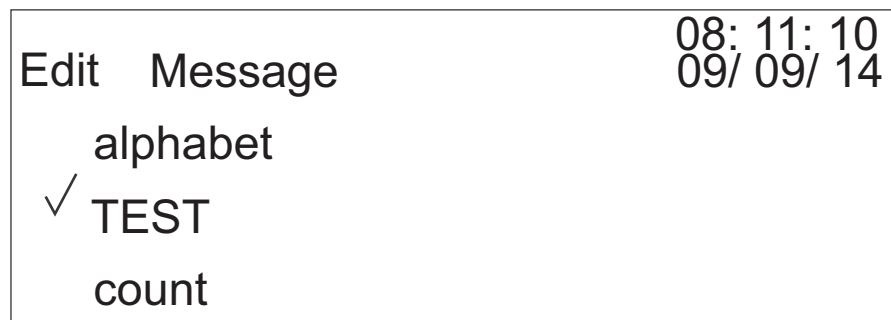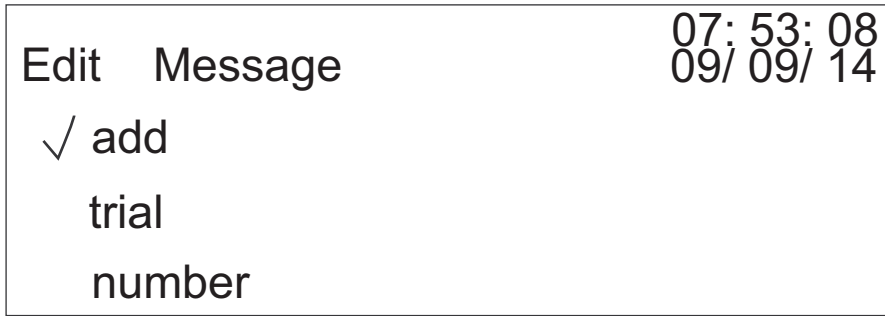
Figure 4-36: Select Message to Edit

1 For example, if you wish to edit a message, select the message and press ⏎ to enter the following interface.
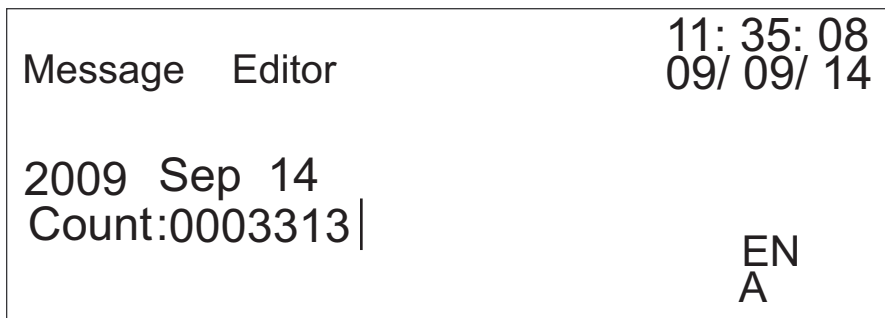
```
                                                    11: 35: 08
Message    Editor                                   09/ 09/ 14


2009  Sep  14
 Count:0003313|
                                                          EN
                                                          A
```

Figure 4-37: Editing Message

Press ◀ ▶ to move the cursor through the message. Press ⬅ to delete a character or string with a fixed format, placed directly before the cursor. After editing the message, press ⏎ to confirm the edit.

```
                                                    08: 00: 05
Message  Edited                                     09/ 09/ 14


         Save ?            No            Yes
```
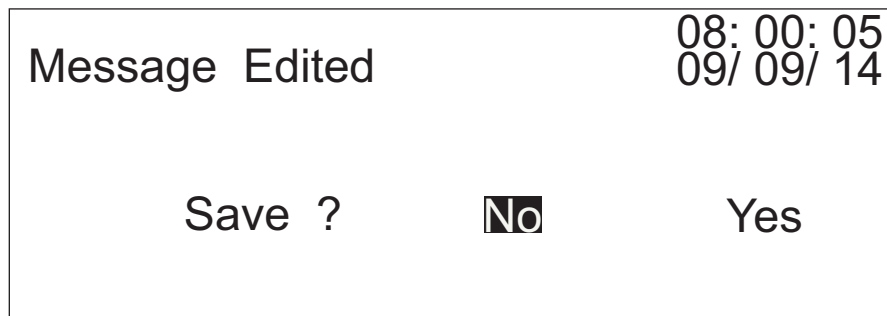
Figure 4-38: Confirm Edit

To save the edited message, press ◀ ▶ till 'Yes' is highlighted and then press ⏎ to save the message and return to the main menu. To

cancel the edits, press ◀ ▶ till 'No' is highlighted and then press ⏎ to return to the main menu. The changes to the message are not saved.

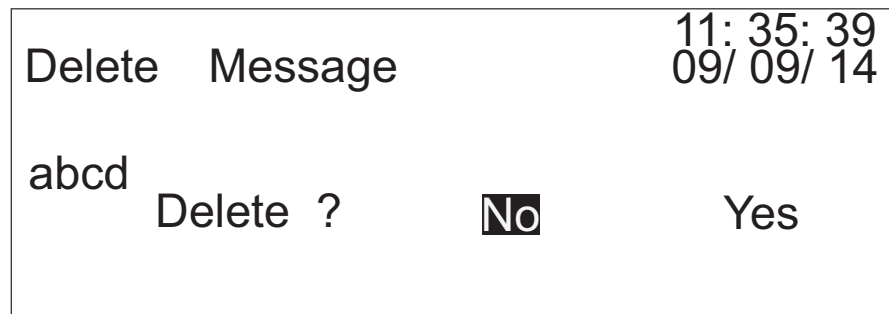2 To delete a message, select the message and press ⬅ to enter the following interface.

```
                                          11: 35: 39
Delete   Message                          09/ 09/ 14


abcd
       Delete ?              No            Yes

```

Figure 4-39: Confirm Delete

Press ◀ ▶ till 'Yes' is highlighted and then press ⏎ to delete the message and return to the main menu. If you do not wish to delete the message, press ◀ ▶ till 'No' is highlighted. Then press ⏎ to return to the main menu without deleting the selected message.

Date Rollover Time

In the main menu, while "Date Rollover Time" is highlighted, press ⏎ to enter the following interface.

```
                                          08: 00: 50
Set   Rollover  Time                      09/ 09/ 14



                      00: 00

```

Figure 4-40: Set Rollover Time

You can set the date rollover time in this option. For instance, if the current date is '14 Sep', and if the rollover time is set to '23:59', the date will turn to '15 Sep' when the system reaches the rollover time.

Press ⏎ to save the rollover time and return to the main menu.

Set Counter

In the main menu, while "Set Counter" is highlighted, press [↵] to enter the following interface.

```
                                    08: 01: 09
 Set   Count                        09/ 09/ 14

              0123456789
                0001


```

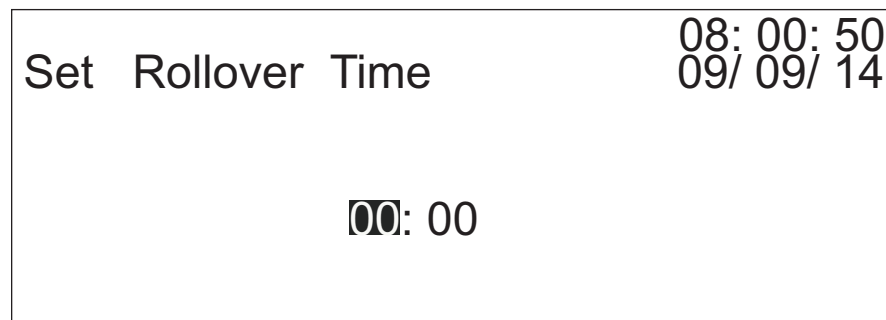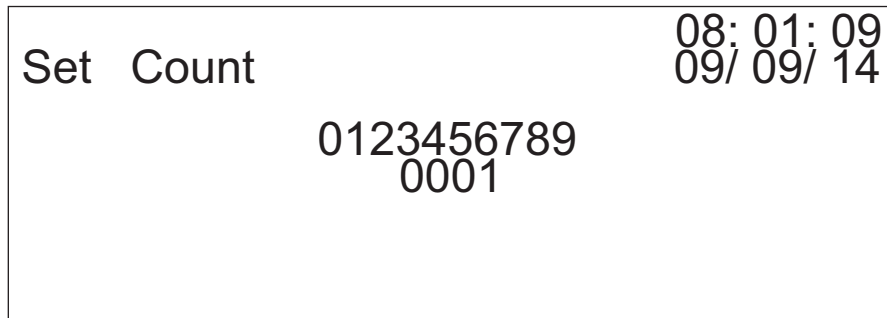*Figure 4-41: Set Count*

You can set the initial count value in this option. For instance, the initial count value is '0003133'. Press the following buttons [0] [0] [0] [9J] [9J] [1H] [9J] in sequence to set the initial count value as '0003313'.

```
                                    08: 01: 09
 Set   Count                        09/ 09/ 14

              0123456789
                0003313


```

Figure 4-42: Set Initial Count Value

After the value is set, the end count value is the default value '999,9999'. The number of digits is the same as that of the initial count value. Press [↵] to save the count value and return to the main menu.

Set Shift

In the main menu, while "Set Shift" is highlighted, press [↵] to enter the following interface.

```
                                    08: 02: 01
Set   Shifts                        09/ 09/ 14

1.   A =   06: 00      2.   B  =  12: 00
3.   C =   18: 00      4.   D  =  23: 59
```
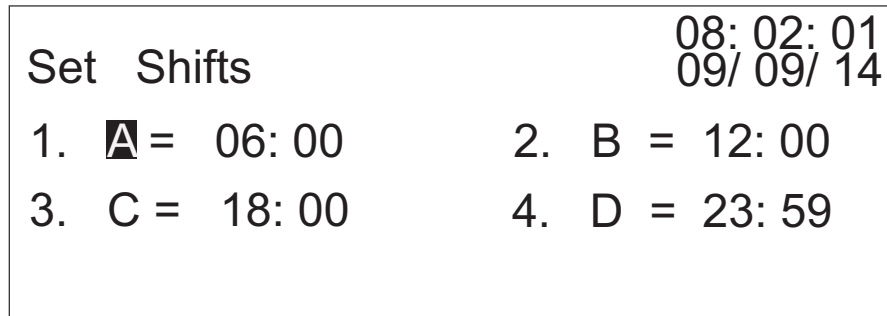
Figure 4-43: Set Shifts

You can set four shifts and edit the shift codes according to the user's requirements using this option. Press ◀ ▶ to move the cursor to the shift time and press ▲ ▼ to alter the time. Then press ◀┘ to save the settings and return to the main menu.

Set Production Line

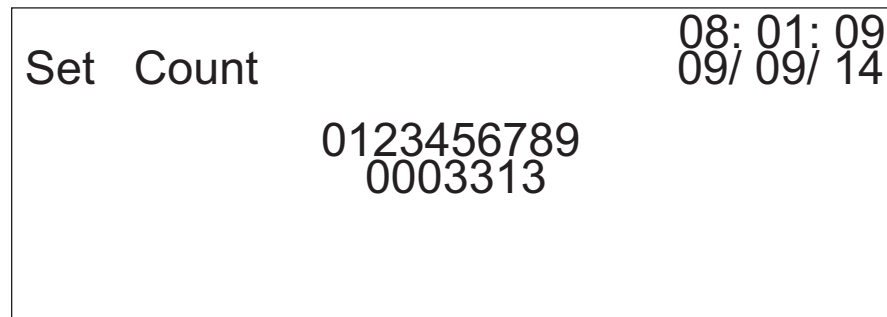In the main menu, while "Set Line" is highlighted, press ◀┘ to enter the following interface.

```
                                    08: 02: 29
Set   Line                          09/ 09/ 14

  1.   Set   Speed

  2.   Set   Direction

  3.   Select   Sensor
```

Figure 4-44: Set Production Line

> *Note:* 'Auto Detect' option for speed and direction cannot be used while using an external photocell.

1 Select "Set Speed" and press ◀┘ to enter the following interface.

```
                                           08: 02: 41
Set   Speed                                09/ 09/ 14

Auto   Detect?           No      [Yes]

                    60  m/min

```

Figure 4-45: Set Speed

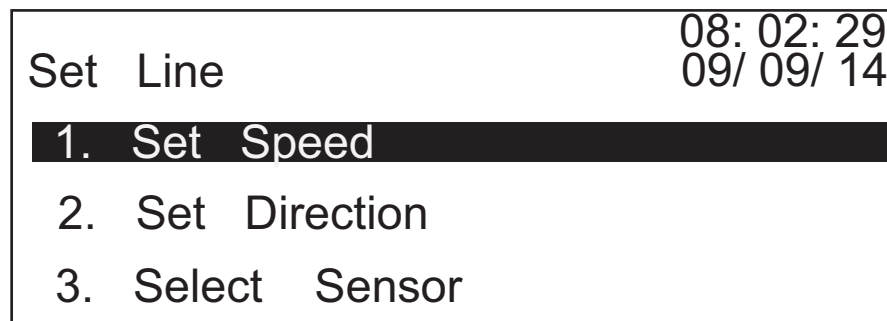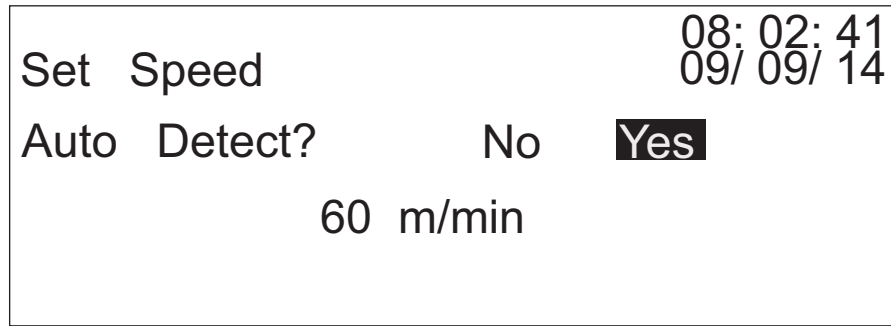If you require automatic detection of speed, press ◀ ▶ till 'Yes' is highlighted and press ↵ to save the settings and return to the main menu. If you wish to select manual speed detection, press ◀ ▶ till 'No' is highlighted and then press ▲ ▼ to change the speed value (range: 6-60 meter/minute). Press ↵ to save the speed settings and return to the main menu.

Note: If the production line speed is stable (if frequency-change control is adopted), MSSC recommends that you set the production line speed settings to the fixed speed mode. This improves the working stability of the printer.

2   Select "Set Direction" and press ↵ to enter the following interface.

```
                                           10: 05: 40
Set   Direction                            09/ 09/ 14


        [Auto]          L - ->R        R- ->L

```
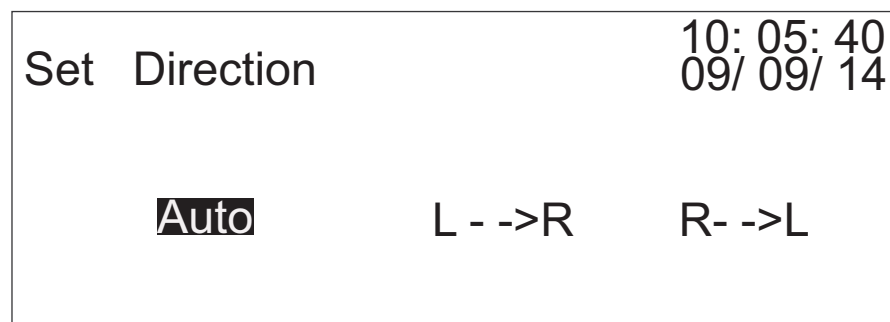
Figure 4-46: Set Direction

There are three production line direction options:

• **Auto** - Automatic detection of production line direction (internal sensors only. Cannot be used with an external photocell)

• **L-->R** - The direction of the production line is from left to right

• **R-->L** - The direction of the production line is from right to left

After selecting the production line direction, press [↵] to save the direction settings and return to the main menu.

Note: If you have fixed the speed of the production line, MSSC recommends that you set the production line direction to the Fixed Direction mode. This will optimize the working stability of the printer.

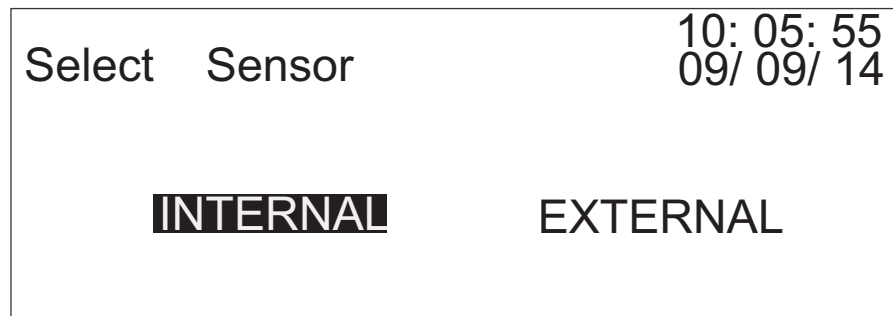**3** Choose "Select Sensor" and press [↵] to enter the following interface.

```
┌─────────────────────────────────────────────┐
│                                  10: 05: 55  │
│  Select   Sensor                 09/ 09/ 14  │
│                                              │
│                                              │
│        INTERNAL          EXTERNAL            │
│                                              │
└─────────────────────────────────────────────┘
```

Figure 4-47: Select Sensor

Press [◀] [▶] to select the sensor. If there are no externally-connected sensors, select "Internal" and press [↵] to return to the main menu. If there are external sensors, select "External" and press [↵] to return to the main menu.

Note: If the interference of the field environment is substantial (for example, the interference caused by the presence of a large electrical device), MSSC recommends that you use an external sensor and fix the metallic shell of the sensor to a metallic bracket with a reliable grounding device. This will improve the working stability of the printer.

Software Version Number

In the main menu, while "Software Version" is highlighted, press [↵] to enter the following interface.

```
                              09: 38: 46
Software Version              11/ 06/ 29

              QM1610


  C  4. 00   P 3. 03   F1 02   F2 13   F3 03K
```
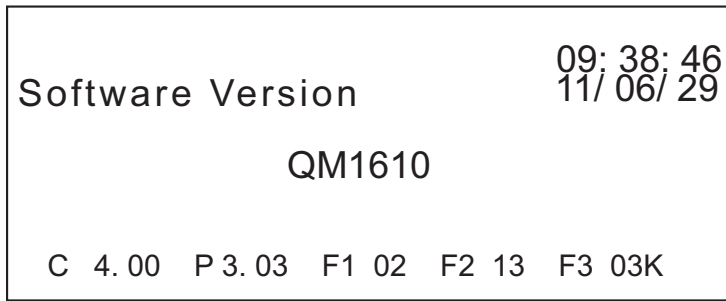
Figure 4-48: Software Version

This interface displays the current software version number of the printer.

Select Language

In main menu, while "Select Language" is highlighted, press ⏎ to enter the following interface.

```
                              08: 03: 21
Select Language               09/ 09/ 14

    1    English
    2    简体中文
```
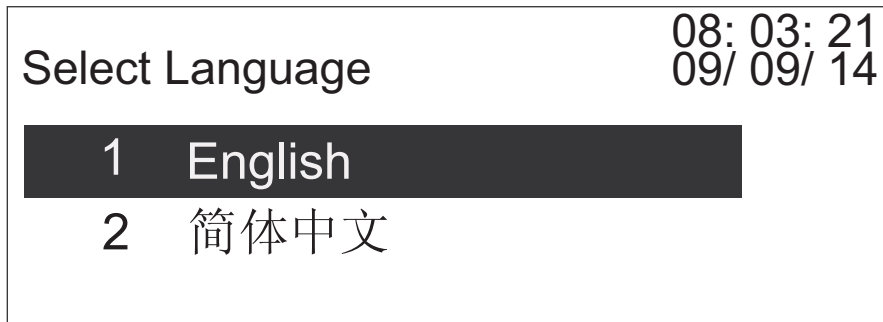
Figure 4-49: Select Language

There are various language options. Press ▲ ▼ to select the required language and press ⏎ to return to the main menu.

Maintenance

5

Frequently Used Printer

If the customer uses the printer frequently, perform the following procedure for printer maintenance. Printer maintenance extends the life of the printer and improves the print quality.

Maintenance of the Keyboard and the External Shell of the Printer

Keep the surface of the printer free of dust and other impurities. Dip a clean, soft cloth into some water. Remove the excess water from the cloth and use it to clean the surface of the keyboard and the external shell of the printer.

⚠️ **Warning**

PERSONAL INJURY. Do not use alcoholic or organic solvents to clean the external shell of the printer and the LCD screen.

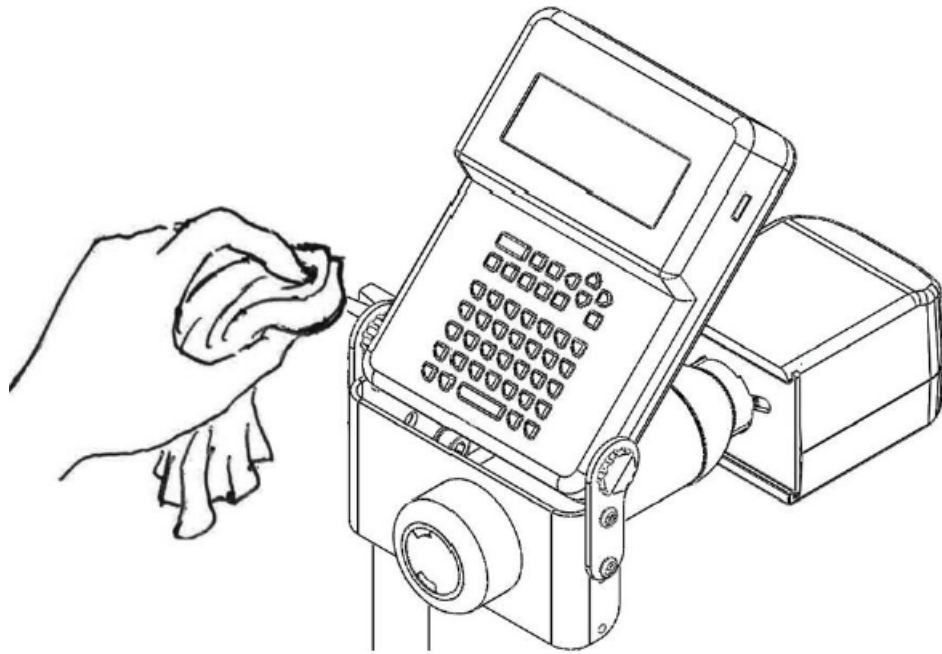*Figure 5-1: Keyboard and Printer External Shell*

Maintenance of the Nozzle and the Internal Sensor

Keep the nozzle and the internal sensor free of dust and other impurities. Dip a clean, cotton swab into some water and use it to clean the surface around the nozzle and sensor.

Note: *Make sure the nozzle surface is free of impurities from the cotton swab. Impurities on the sensor can cause bad print quality.*
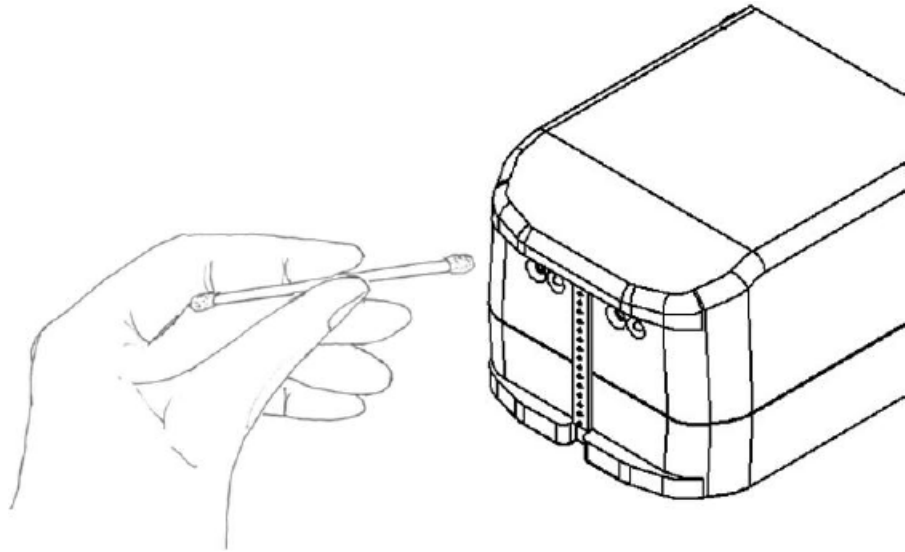
Figure 5-2: Nozzle and Internal Sensor Maintenance

If you frequently use the printer, MSSC recommends that you purge the system every 30 days. During purge, the solvent flushes the circuits of the system for two minutes. After purge, use the ink to wash away the solvent in the circuit. Flush the ink into the printer for two minutes to make sure that the circuit is full with the ink.

Note: During purge, keep an ink catch reservoir before the printer nozzle to prevent the ink from splashing on the products or the production line.

⚠️ **Warning**

PERSONAL INJURY. Do not point the nozzle at the operator or other persons present near the printer.

Startup Procedure

At the beginning of each shift, perform the following tasks:

1   With the spray cap on the solvent bottle, spray the nozzles with solvent. In harsh environments, you may need to spray the nozzles more often than once per shift.

2   Purge the printhead.

3   Check the ink level in the bottle; install a new bottle if necessary. In harsh environments, or if print quality declines, replace the ink bottle with solvent and purge solvent through the unit.

Shutdown Procedure

If you are shutting down a porous unit for less than two weeks, simply turn off the controller. You do not need to purge the printheads with ink or solvent. Also, do not remove any ink that may have caked on the nozzle block. This will keep contaminants from entering the nozzles.

When you restart the unit, follow the daily maintenance procedures on "Startup Procedure" on page 5-3.

If you are shutting down a porous unit for more than two weeks purge the printheads with porous solvent. Leave the solvent in the ink lines until you restart the unit.