

DELUXE 300M

THERMAL TRANSFER / DIRECT THERMAL
BAR CODE PRINTER

USER' S
MANUAL

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1. PRODUCT INTRODUCTION

Thank you very much for purchasing this bar code printer. The attractive printer delivers superior performance at an economical price. Both powerful and easy-to-use, this printer is your best choice.

The printer offers both thermal transfer and direct thermal printing at user selectable speeds of 1.5 and 2.0 inches per second. It can accept a wide range of media, including roll feed, die-cut, and fan-fold labels for both thermal transfer and direct thermal printing. All of the most frequently used bar code formats are available. Fonts and bar codes can be printed in any one of the four directions. This printer provides a choice of five different sizes of alphanumeric fonts. By using font multiplication, an even greater range of sizes is possible. Smooth fonts can be down-loaded from the user friendly, label design Windows software. In addition, this printer is capable of independently executing BASIC programming functions, including arithmetic, logical operation, loop, flow-control and file management, among others. This programming capability provides the greatest efficiency in label printing. The status of printer and error messages may be printed out, viewed on a monitor, or displayed now on the LCD screen. Unlike its predecessors, this model features an LCD screen to facilitate the operation of the printer. This new feature enables the user to view printer status or set printing parameters directly on the printer unit in English, Chinese, Japanese, etc., making interfacing with the printer all the more simple and viable!

1.1 Compliances

CE:

EN55022:1994/A1:1995 Class A, EN50082-2:1995

(EN61000-4-2:1995, EN61000-4-3:1996, EN61000-4-4:1995)

UL/CUL:

UL1950, File Number: 178707

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which the user will be required to correct the interference at his or her own expense.

TUV-GS:

EN60950, Certificate Number: AL990636129001

Wichtige Sicherheits-Hinweise

1. Bitte lesen Sie Diese Hinweis sorgfältig durch
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie Keine Flüssig-oder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlußsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
8. Dieses das Gerät kann bis zu einer Außentemperatur von maximal 40 °C betrieben werden.

2. GETTING STARTED

2.1 Unpacking and Inspection

This printer has been specially packaged to withstand damage in the shipping process. However, for fear that unexpected damage might occur, upon receiving the bar code printer, carefully inspect the package and the device. In case of evident damage, contact the carrier directly to specify the nature and extent of the damage. Please retain the packaging materials in case you need to reship the printer.

2.2 Equipment Checklist

- Bar code printer unit
- Ribbon paper core
- Ribbon supply/rewind spindle (2 pcs.)
- Power cord
- Label Design Windows software
- Windows driver

Separately purchased items may also be included. These additional items may include:

- Labels
- Ribbons
- Memory module
- Cutter module
- Portable LCD keyboard

If any parts are missing, please contact the Customer Service Department of your purchased reseller or distributor.

2.3 Printer Parts

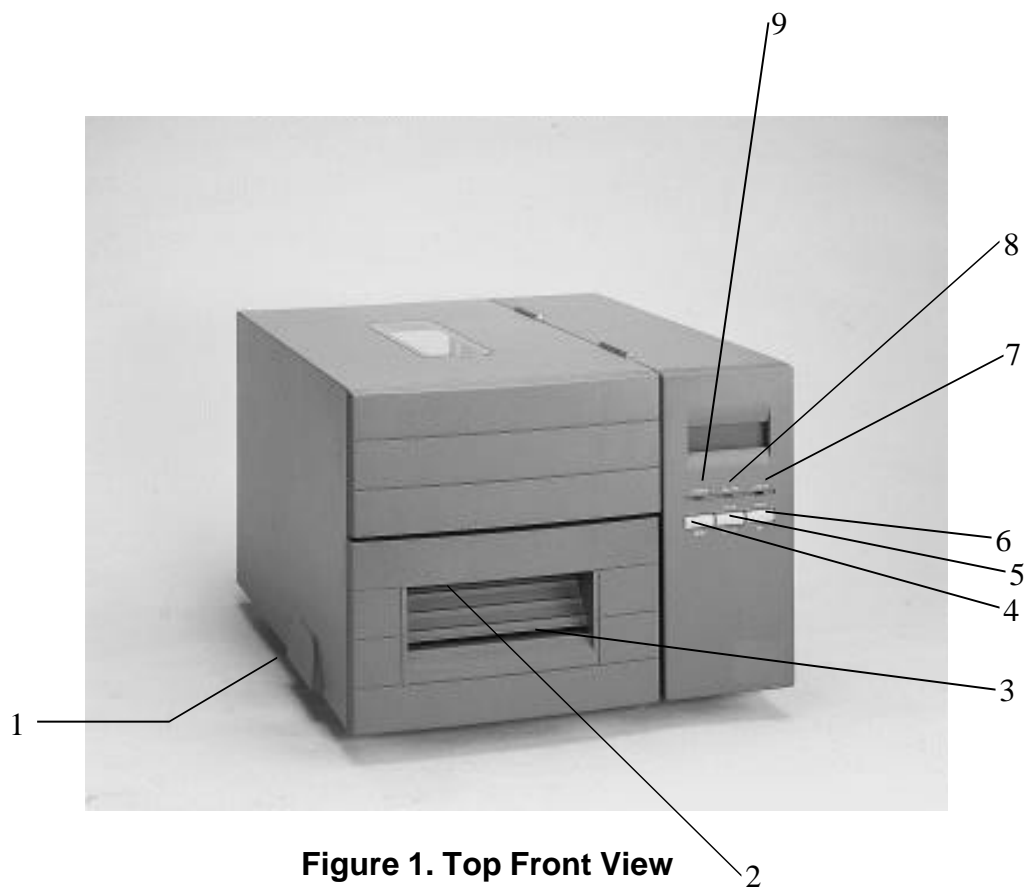


Figure 1. Top Front View

1. Cover Release Handle
2. Label Dispense Opening
3. Backing Paper Opening
4. MENU Button
5. PAUSE/SELECT Button
6. FEED/SET Button
7. Error Indicator
8. On-line Indicator
9. Power Indicator

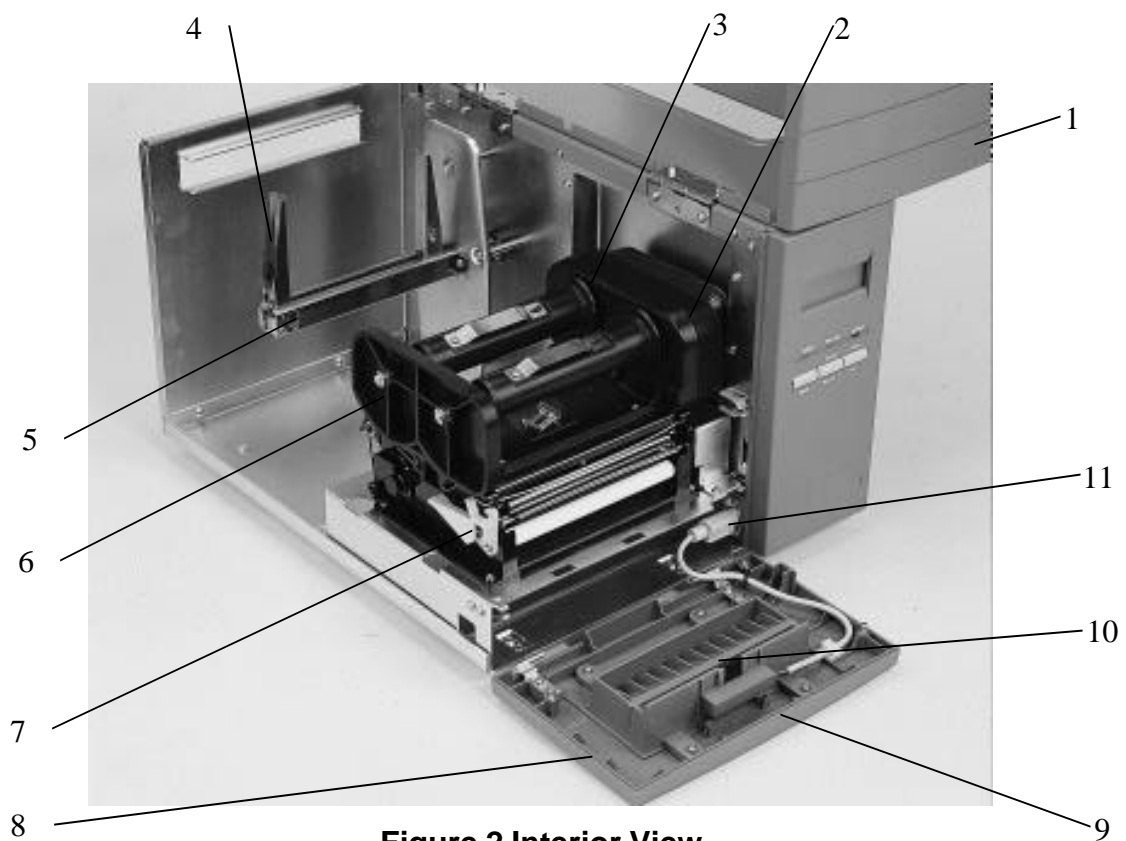


Figure 2 Interior View

1. Printer Cover (in open position)
2. Ribbon Rewind Spindle
3. Ribbon Supply Roll Spindle
4. Label Roll Guard
5. Label Supply Roll Spindle
6. Ribbon Mechanism
7. Carriage Release Lever
8. Front Panel
9. Peel Off Sensor
10. Backing Paper Opening
11. Peel-Off Sensor / Cutter Power Connector

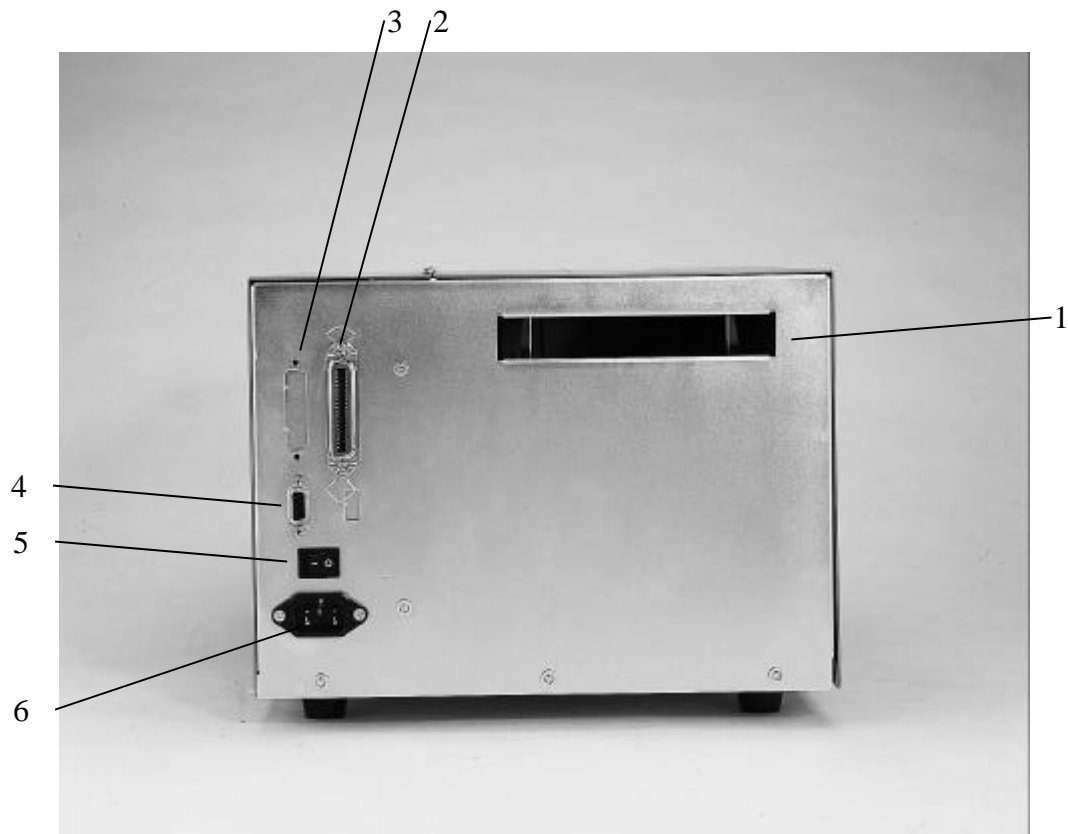


Figure 3. Rear View

1. Label Insert Opening (for use with external labels)
2. Centronics Interface Connector
3. RS-232 DB-25 Interface Connector (See Note below)
4. RS-232 DB-9 Interface Connector (See Note below)
5. Power On/Off Switch
6. Power Supply Connector

Note: According the customer's specifications, the printer will be equipped eihter with RS-232 DB-25 or with RS-232 DB-9 Interface connector, but not both.

2.4 Buttons and Indicators

POWER Indicator

The green **POWER** indicator illuminates when the power switch is turned on.

ON-LINE Indicator

The green **ON-LINE** indicator illuminates when the printer is ready to print. When the **PAUSE** button is pressed, the **ON-LINE** indicator flashes.

ERROR Indicator (Error/Paper Empty)

The red **ERROR** indicator illuminates in the event of a printer error, such as memory error, syntax error, and so forth. For a full list of error messages, please refer to Section 4.2, Error Messages.

MENU Button

Provided with a built-in menu, the printer allows the user to directly set printing parameters or view printer status on the LCD display panel. To enter the Menu mode, press the **MENU** button. Press the button over again to proceed from one menu item to another or to revert to the original Ready status. The menu is comprised of these major items: **Printer Info, File List, Memory Info, Date/Time,** and **Printer Setup**. Each of said items, in turn, is made up of a number of sub-items, which can be selected by pressing the **SELECT** button, or viewed or set by pressing the **SET** button. Refer to Appendix for the structure and operation logic of the menu.

PAUSE/SELECT Button

This button combines two functions: **PAUSE** if the printer is in the Ready status, or **SELECT** if in the Menu mode.

The **PAUSE** button allows the user to hold a print job and then resume the printing with a second depression of the button. By pressing the **PAUSE** button: (1) the printer stops at the completion of printing of the current label, (2) the **PAUSE** LED flashes, and (3) the printer holds all data in memory. This allows for trouble-free replacement of label stock and thermal transfer ribbon. A second depression of the **PAUSE** button will restart the printer.

Note: If the PAUSE button is held down for more than 3 seconds, the printer will be reset and all data of the previous printing job will be lost.

The **SELECT** button allows the user select for the sub-item to be processed. Once the sub-item has been selected, the user can change its setting by press-ing the **SET** button.

FEED/SET Button

As does the **PAUSE/SELECT** button, this button also has dual functions: **FEED** and **SET**.

Press the **FEED** button for label to advance to the next print position.

Press the **SET** button to change parameter settings or view printer status on the LCD screen.

3. SET UP

3.1 Setting Up the Printer

1. Place the printer on a flat, secure surface.
2. Make sure the power switch is off.
3. Connect the printer to the computer mainframe with the provided RS-232C or Centronics cable.
4. Plug the power cord into the power supply connector at the rear of the printer, and then plug the power cord into a properly grounded receptacle.

3.2 Loading Label Stock

1. Open the printer cover
2. Disengage the printer carriage by pulling the printer carriage release lever located to the left side of the platen.
3. Lower the label roll guard to the horizontal position, slide the label stock into label roll spindle, and then flip back the label roll guard.
4. Feed the label under the carriage and over the platen.
5. Adjust the label guide to fit the width of the media.
6. Engage the printer carriage.
7. Wind the label roll until it becomes adequately stretched for the intended purpose.
8. Close the printer cover and press the **FEED** button three or four times until the green **ON-LINE** indicator illuminates.
9. When the printer is out of ribbon or media, the **ON-LINE** LED will not illuminate and the **ERROR** LED will flash. Reload the ribbon or media without turning off the printer power. Press the **FEED** button three or four times until the **ON-LINE** LED illuminates. The printing job will be resumed without data loss.

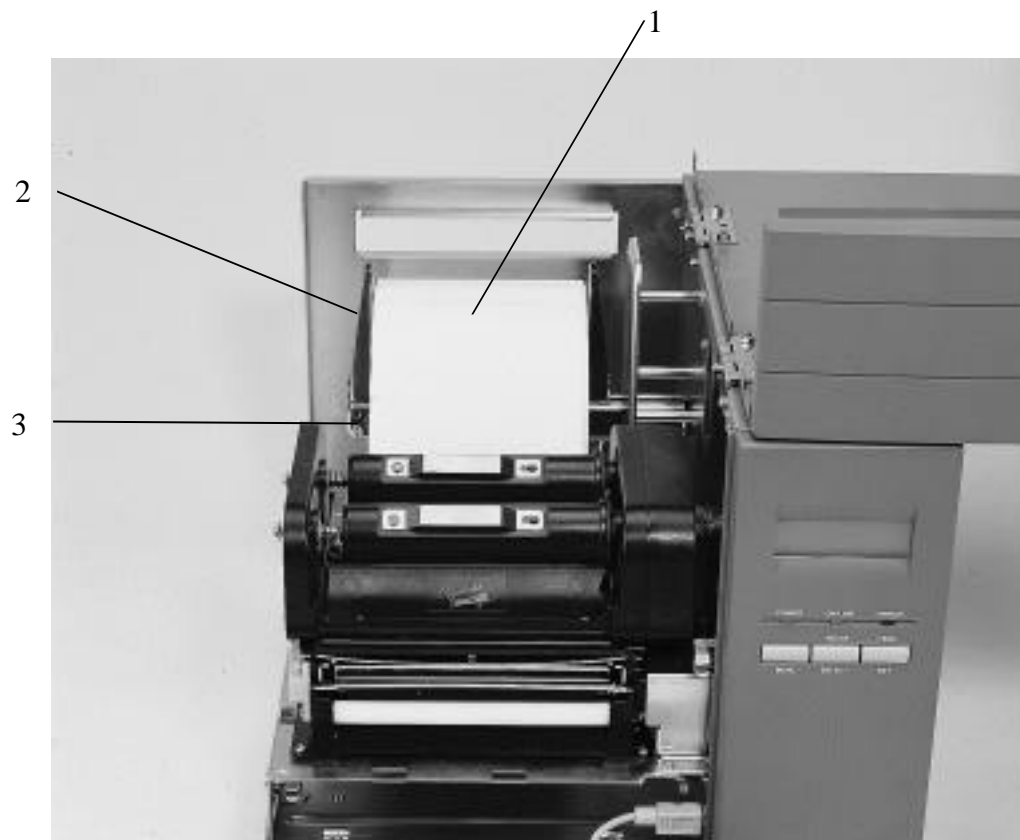


Figure 4. Inserting Label Supply Roll Onto Label Roll Spindle

- 1. Label Roll
- 2. Label Roll Guard
- 3. Label Supply Roll Spindle

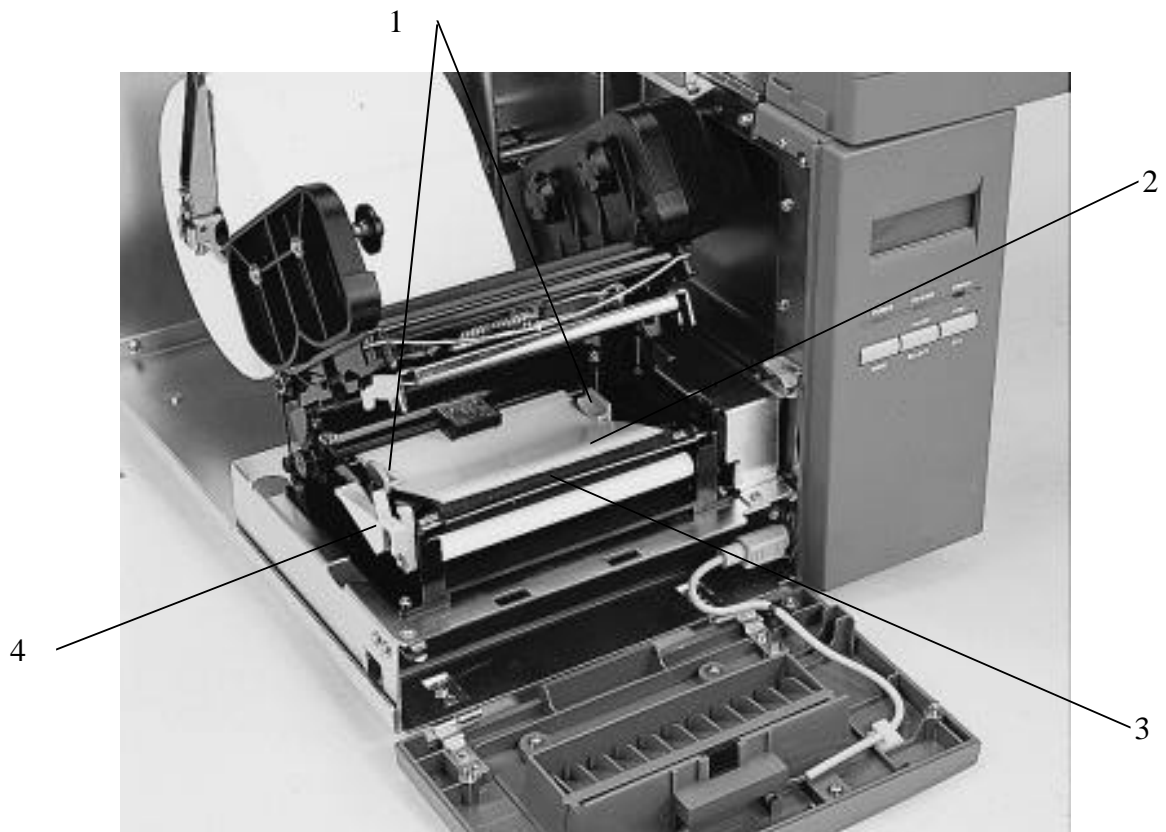


Figure 5. Feeding Labels Through Adjustable Label Guide

1. Adjustable Label Guide
2. Label Media
3. Platen
4. Printer Carriage Release Lever

3.3 Self-Peeling Function

(The self-peeling function and the cutter function cannot be installed at the same time. To uninstall the cutter, refer to Section 3.4)

To employ the self-peeling function, load the label stock according to the following steps.

1. Open the top cover and front panel.
2. Tear off the foremost one or two labels of the label stock, as befits the case.
Feed the backing paper between the platen and the white “self-peeling” roller, as shown in Figure 6.
3. Feed the backing paper through the backing paper opening in the front panel, as shown in Figure 7.
4. Close the front panel and top cover.

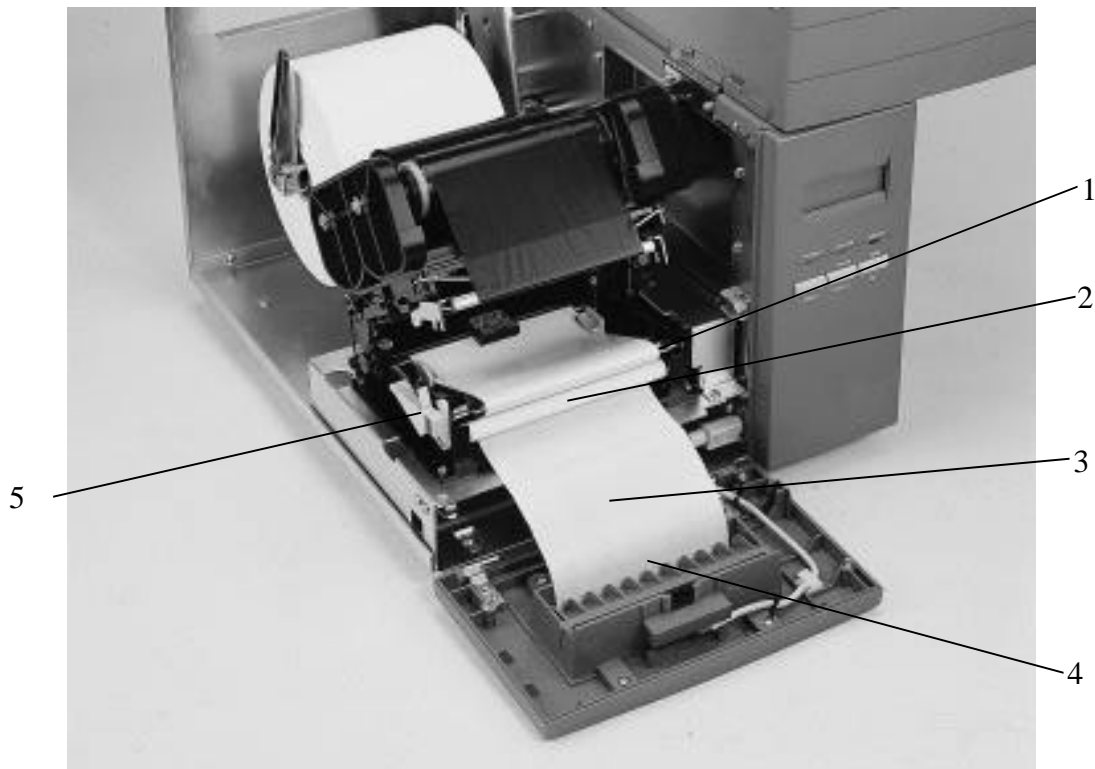


Figure 6. Setting Up Printer for Self-Peeling Function

1. Platen
2. Self-Peeling Roller
3. Backing Paper
4. Backing Paper Opening
5. Carriage Release Lever



Figure 7. Printer Ready for Self-Peeling Function

1. Printer Front Panel
2. Backing Paper Opening
3. Backing Paper
4. Printer Carriage Release Lever
5. Label (Media)

3.4 Cutter Function

(Unlike the aforesaid self-peeling function, the cutter function is not a standard device of this printer. To have this function, user should additionally purchase the cutter set, which includes a cutter module and a detachable front panel.)

To employ the cutter function, follow the steps below.

1. Open the top cover and front panel.
2. Unfasten the front panel, replace it with the one that goes with the cutter module.
3. Install the cutter module. First fit the cutter module in the slits at the front edge of the carriage and slide the module to the right. After that, fix the cutter module in place with the provided tap screw; and then connect the cutter to the power connector below and to the right of the carriage.
4. Install the ribbon and feed the labels as shown.
5. Put back the front panel and top cover.

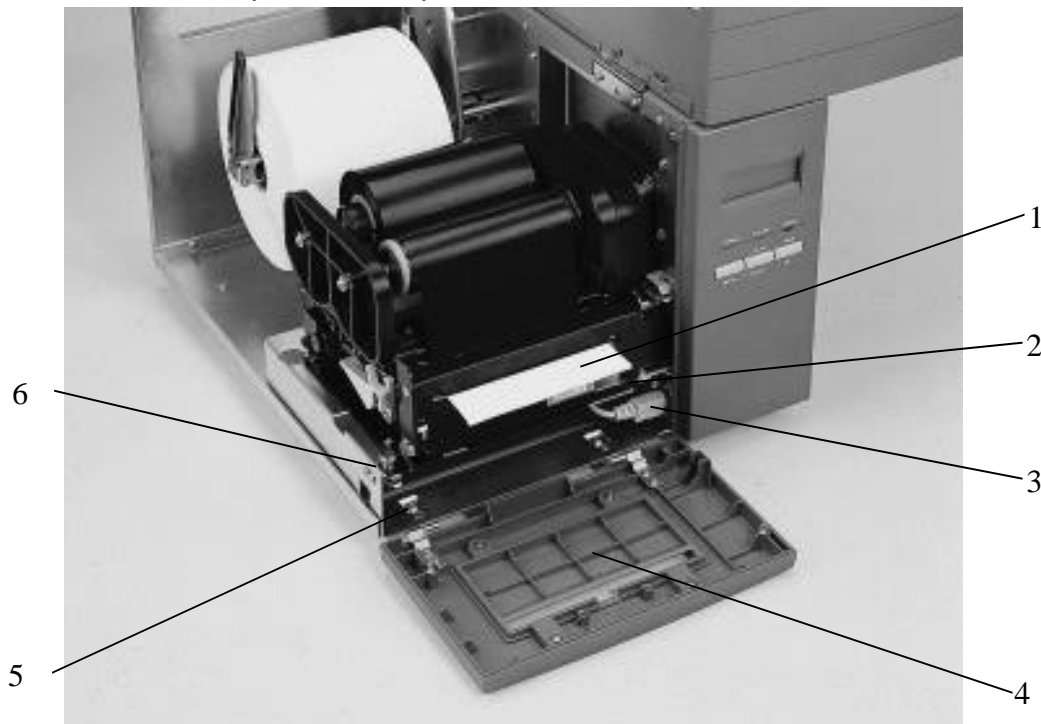


Figure 8 Cutter Function Installation

1. Label
2. Cutter Module
3. Cutter Power Connector
4. Cutter Mode Front Panel
5. Cutter Power Cord (Insert the cord in cord clips right under the carriage)
6. Screw

3.5 Ribbon Loading Instructions

1. Place an empty paper core on the ribbon rewind spindle.
2. Install the ribbon on the ribbon supply spindle.
3. Disengage the printer carriage.
4. Pull the ribbon leader to the front from beneath the printer carriage. Attach the ribbon leader to the ribbon rewind paper core (with a tape).
5. Rotate the ribbon rewind roller until the ribbon leader is thoroughly, firmly encompassed by the black section of the ribbon.
6. Engage the printer carriage.
7. Close the printer cover and press the **FEED** button until the green **ON-LINE** LED illuminates.



Figure 9. Placement of Ribbon Supply Roll

- 1. Thermal Transfer Ribbon
- 2. Ribbon Supply Spindle
- 3. Ribbon Rewind Spindle



Figure 10. Installation of Label Stock and Thermal Transfer Ribbon

3.6 Self Test

To initiate the self test mode, hold down the **FEED** button and activate the printer power simultaneously. The printer will calibrate the label length. If the label gap is not detected within 7", the printer stops feeding labels and the media is regarded as continuous paper. In self test, a check pattern is used to check the performance of the thermal print head. Following the check pattern, the printer prints its internal settings as listed below:

1. Printer model and firmware version
2. Mileage
3. Flash times
4. Check sum
5. Serial port setting
6. Code page setting
7. Country code setting
8. Print speed setting
9. Print density setting
10. Label size setting
11. Gap (Bline) width and offset setting
12. Backing paper transparency
13. File list
14. Memory available

When the self test is completed, the printer enters the dump mode. Please turn the printer's power off and then on again to resume normal printing.

PRINTER INFO.



MILAGE(Km):0.10
FLASH TIMES:9
CHECK SUM:7181
SERIAL PORT:96,N,8,1
CODE PAGE:437
COUNTRY CODE:001
SPEED:2 INCH
DENSITY:09
SIZE:4.02,2.87
GAP(BLINE):0.19,0.00
TRANSPARENCY:05,05,05

FILE LIST:

TOTAL FLASH: 704 K BYTES
AVAIL FLASH: 704 K BYTES
TOTAL RAM: 1984K BYTES
AVAIL RAM: 1948K BYTES

END OF FILE LIST

NOW IN DUMP MODE

3.7 Dump Mode

After the self test, the printer enters the dump mode. In this mode, any characters sent from the host computer will be printed in two columns, as shown. The characters received will be shown in the first column, and their corresponding hexadecimal values, in the second. This is often helpful to users for the verification of programming commands or debugging of printer programs. Reset the printer by turning the **POWER** switch off and on.

```
*****
NOW IN DUMP MODE

DOWNLOAD "DE  44 4F 57 4E 4C 4F 41 44 20 22 44 45
MO2.BAS" SI  4D 4F 32 2E 42 41 53 22 0D 0A 53 49
ZE 4.00,5.00 5A 45 20 34 2E 30 30 2C 35 2E 30 30
  CLS SPEED  0D 0A 43 4C 53 0D 0A 53 50 45 45 44
  1.5 DENSIT 20 31 2E 35 0D 0A 44 45 4E 53 49 54
Y 10 DIRECT 59 20 31 30 0D 0A 44 49 52 45 43 54
ION 0 SET C  49 4F 4E 20 30 0D 0A 53 45 54 20 43
UTTER OFF S  55 54 54 45 52 20 4F 46 46 0D 0A 53
ET DEBUG LAB 45 54 20 44 45 42 55 47 20 4C 41 42
EL REFERENC 45 4C 0D 0A 52 45 46 45 52 45 4E 43
E 0,0 A=100  45 20 30 2C 30 0D 0A 41 3D 31 30 30
0 Y=100 FO   30 0D 0A 59 3D 31 30 30 0D 0A 46 4F
R I=1 TO 3   52 20 49 3D 31 20 54 4F 20 33 0D 0A
BARCODE 100, 42 41 52 43 4F 44 45 20 31 30 30 2C
Y,"39",96.1, 59 2C 22 33 39 22 2C 39 36 2C 31 2C
0.2,4,STR$(A 30 2C 32 2C 34 2C 53 54 52 24 28 41
) A=A+1 Y=   29 0D 0A 41 3D 41 2B 31 0D 0A 59 3D
Y+150 NEXT  59 2B 31 35 30 0D 0A 4E 45 58 54 0D
PRINT 1 EO  0A 50 52 49 4E 54 20 31 0D 0A 45 4F
P DEMO2     50 0D 0A 44 45 4D 4F 32 0D 0A
```

4. USING THE PRINTER

4.1 Power-on Utilities

There are three power-on utilities to set up and test the printer hardware. These utilities are activated by pressing the **FEED** or **PAUSE** button and turning on the printer power simultaneously. The utilities are listed below:

1. Self test
2. Gap sensor calibration
3. Printer initialization

4.1.1 Self Test Utility

Install the label first. Press the **FEED** button and then turn on the printer power. Do not release the **FEED** button until the printer feeds labels. The printer performs the following:

1. Calibrate label pitch
2. Print out thermal print head check pattern
3. Print the internal settings
4. Enter dump mode

For more information on self test and dump mode, refer to Section 3.6, Self Test, and Section 3.7, Dump Mode.

4.1.2 Gap Sensor Calibration Utility

This utility is used to calibrate the sensitivity of the gap sensor. Users may have to calibrate the gap sensor on two occasions:

1. Changing to a new type of label media.
2. Initializing the printer.

Note: *The ERROR LED may flash if gap sensor is not calibrated properly.*

Please follow the steps below to calibrate the gap sensor:

1. Turn off the printer power and install blank labels (without any logo or character) on the printer.
2. Hold down the **PAUSE** button and turn on the printer power.
3. Release **PAUSE** button when the printer feeds labels. **Do not turn off the printer power** until the printer stops and the two green LEDs light on.

4.1.3 Printer Initialization

Printer initialization clears all downloaded files resident in the flash memory and sets printer parameters to default values.

Parameter	Default Value
MILEAGE	Automatic
FLASH TIMES	Automatic
CHECK SUM	Automatic
SERIAL PORT	96,N,8,1
CODE PAGE	437 (8 bit), USA (7 bit)
COUNTRY CODE	001
SPEED	1.5"/sec
DENSITY	09
SIZE	N/A
GAP(BLINE)	N/A
TRANSPARANCY	05,05,05
LCD Language	English

Please follow the steps below to initialize the printer:

1. Turn off the printer power.
2. Hold down the **PAUSE** and **FEED** buttons and turn on the printer power.
3. Do not release the buttons until the three LEDs flash in turn.

Note: Printing method (thermal transfer or thermal direct printing) will be set automatically at the activation of printer power.

4.2 Error Messages

Syntax Error

The command format is incorrect.

The serial port setting is incorrect.

Out of Range

Numeric input is too large to be processed.

The input string is too long to be stored.

The size of the text or bar code exceeds that of the label.

Download Error

The download file format is incorrect.

There is not enough memory to store the file.

Stack Overflow

A mathematical expression is too complicated. Divide it into several expressions.

The nested routine is too deep.

Memory Error

Too many variables defined.

RS-232 Error

The serial port setting is incorrect.

File not Found

Cannot open the file specified. Download the file again.

Type Mismatch

Variable type mismatch.

Gap not Found

Cannot detect label gap. Calibrate the label again.

Clock Access Error

Can not read from / write to the real time clock.

4.3 Troubleshooting Guide

The following guide lists some of the most common problems that may be encountered when operating the bar code printer. If the printer still does not function after all suggested solutions have been invoked, please contact the Customer Service Department of your purchased reseller or distributor for assistance

Problem	Solution
Ribbon does not advance or rewind	Check the setting of print method. (SET RIBBON ON)
Poor print quality	Clean the thermal print head. Adjust the print density setting. Ribbon and media are not compatible.
Power indicator does not illuminate	Check the power cord, see whether it is properly connected.
ON-LINE indicator is off	Out of paper or out of ribbon Calibrate the sensitivity of gap sensor.
ERROR indicator is on	Command syntax is not correct. Rewind ribbon paper core is not installed. Serial port baud rate setting is not correct.
Continuous feeding when printing labels	Calibrate the gap sensor.

5. SPECIFICATIONS, OPTIONS, & SUPPLIES

5.1 Specifications

5.1.1 Printer

- Type: Direct thermal or thermal transfer
- Print speed: Selectable speeds of 1.5 or 2 inches per second
- Resolution: 300 DPI for 300 dpi printer
- Font style: Five alphanumeric fonts from 0.059" H (1.5 mm) to 0.23" (6.0mm), expandable vertically and horizontally up to 8X. Smooth fonts may be downloaded from "Label Design"
- Bar Codes: Code 39, Code 93, Code 128 UCC, Code 128 (Subsets A, B and C), Codabar, Interleaved 2 of 5, EAN-8, EAN-13, UPC-A, UPC-E, EAN and UPC with 2 or 5 digit add-on, Postnet
- 2D bar codes: Maxicode, PDF-417, DataMatrix
- Graphics: Mono PCX format

5.1.2 Indicators and Buttons

- Indicators: POWER., ON-LINE, ERROR.
- Buttons: MENU, PAUSE/SELECT, FEED/SET

Note: The functions of buttons and LEDs can be redefined by commands.

5.1.3 Communication Interface

- Communications: RS-232C (DB-9 or DB25) at 2400, 4800, 9600 or 19200 baud rate and standard Centronics interface
- Character set: ANSI ASCII character set
- Word length: 7 or 8 data bits, 1 or 2 stop bits, even, odd or none parity.
- Handshaking: Xon/Xoff (on receive mode only) and DSR/DTR
- Input buffer: 60KB

5.1.4 Power Requirements

- Input voltage: 100-240 VAC, 50-60 Hz
- Circuit protection: 3A

5.1.5 Environment

- Operating environment:
Temperature: 41°F to 104 °F (5°C to 40 °C)
Humidity: 30% - 85%
- Storage environment:
Temperature: 14 °F to 140°F (-10 °C to 60 °C)
Humidity: 20% - 95%
- Ventilation: Free air movement

5.1.6 Printer Body

- Dimensions:
6.14"H x 9.13"W x 11.34"D (15.6 cm H x 23.2 cm W x 28.8 cm D)
- Net Weight:
9 kg

5.2 Options

A number of different options may be added to this bar code printer for even greater convenience and versatility. The available options include:

- Foreign character fonts, including Chinese, Japanese and others
- Expandable FLASH memory module
- Cutter Module
- Portable LCD keyboard

5.3 Supplies

5.3.1 Label Stock

This printer is capable of both direct thermal and thermal transfer printing. Many different direct thermal or thermal transfer stocks can be used. Refer to the following list for specifications of compatible media.

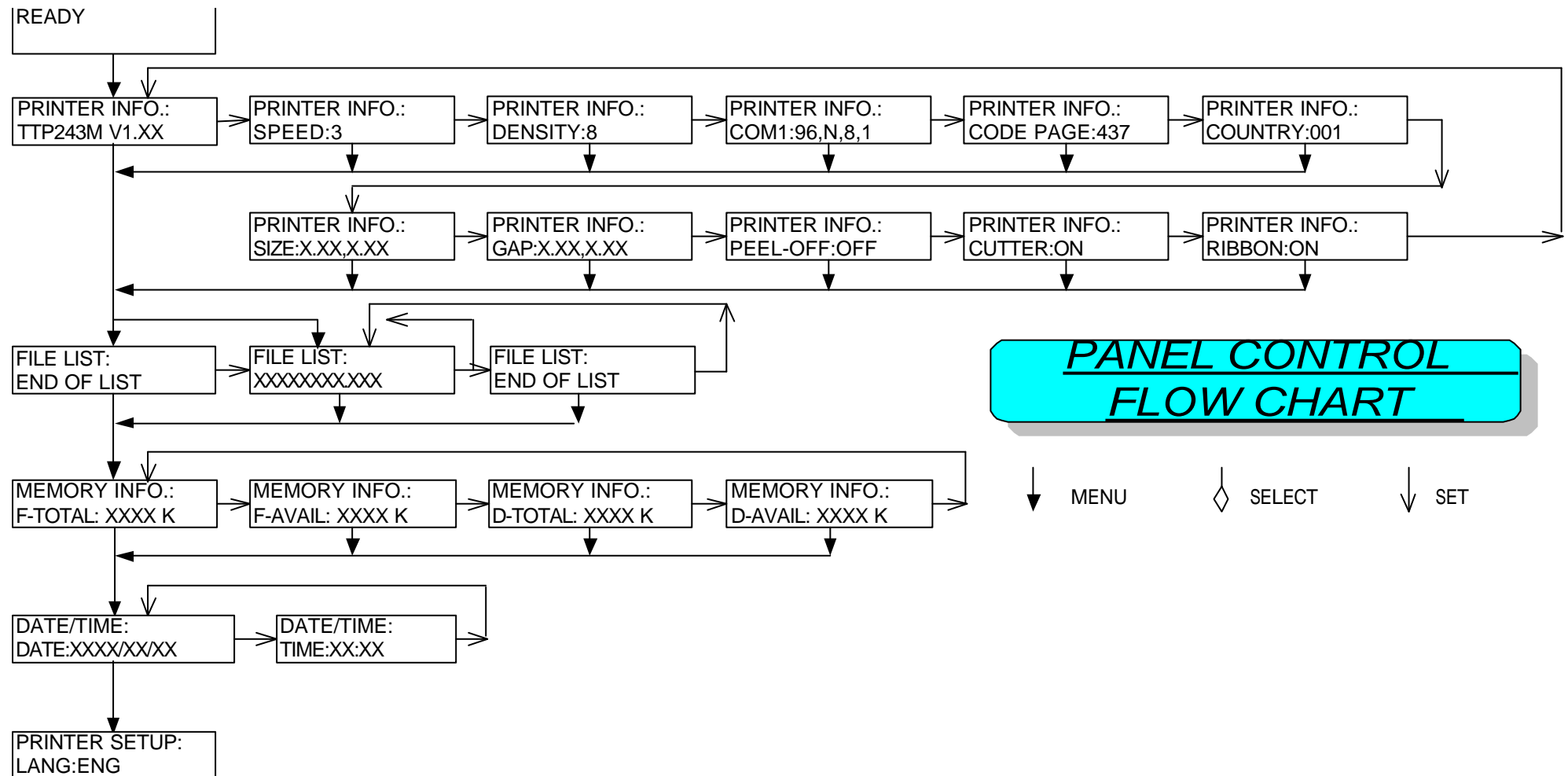
Media Specifications	Label
Paper Width	Min. 1" (25.4 mm)
	Max. 4.4" (114mm)
Paper Weight	Less than 110 g/m ²
Length (Pitch)	0.4" (10 mm) ~ 90" (2286 mm) Max. 38.8" (986 mm) for 300 dpi printer
Thickness	0.002" (0.06mm) ~ 0.01" (0.25mm)
Max. Roll Diameter. (1" core)	O.D = 8" (200mm)
Roll Up Method	Print surface wound outside as standard
Paper Core ID.	φ25.7± 0.3 mm

5.3.2 Ribbon

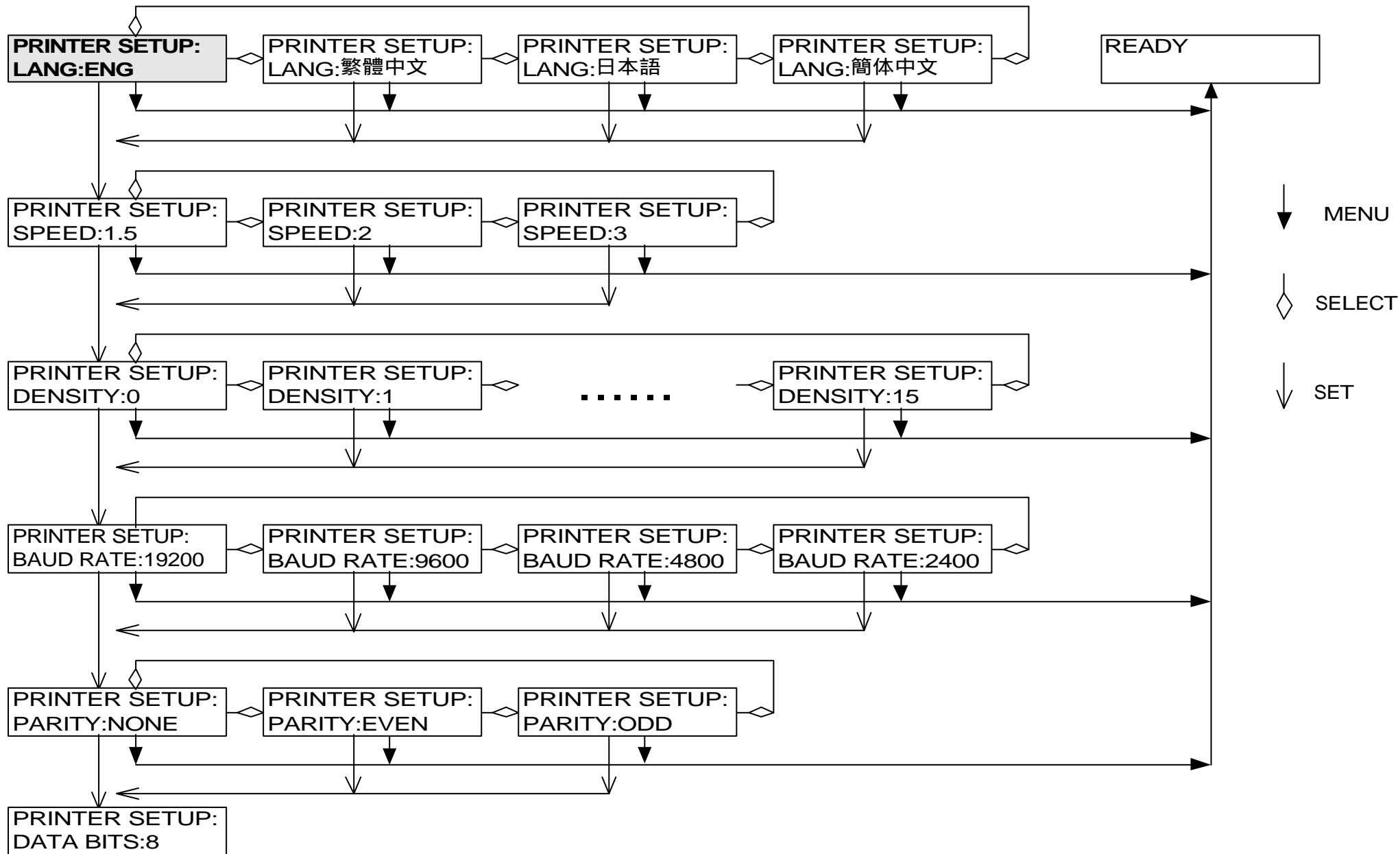
Standard 300m by 60 or 110mm thermal transfer ribbon with wax, wax-resin, or resin coating (wound outside) is available. In the selection of ribbon, it is recommended that the ribbon should be at least as wide as the print media. Also, the ribbon end should be transparent.

Appendix A Menu Control Flowchart

The following shows the control flowchart of the menu.



(Continued on next page)



(Continued on next page)

