AD-8124

Label Printer

INSTRUCTION MANUAL

A&D Company, Limited

WM:PD4000290

CONTENTS

1. INTRODUCTION

1-1 About the Printer

The AD-8124 is a label printer, designed exclusively for the SF/SG series price computing scales manufactured by A&D.

We recommend use of the SF/SG program version "rP 4.00" or later, to ensure the maximum performance of the AD-8124. In addition, to fully use various functions of the AD-8124, a personal computer is necessary.

To make a connection between the AD-8124 and the scale, an optional RS-232C serial interface must be installed in the SF/SG series price computing scale.

1-2 What the Printer Can Do

The AD-8124 label printer can:

- Receive weighing data from the scale and print a label using a bar code, PLU number, weight, unit price, total price and date.
- Set the length of a label between 28 mm and 62 mm, in 1-mm increments, with a fixed width of 58 mm.
- Create a unique label, by changing the data printing position or by adding an illustration or characters on an unused portion of the label.
- Change the unit price data stored in the scale PLU memory, using a personal computer.

2. PART NAMES AND FUNCTIONS

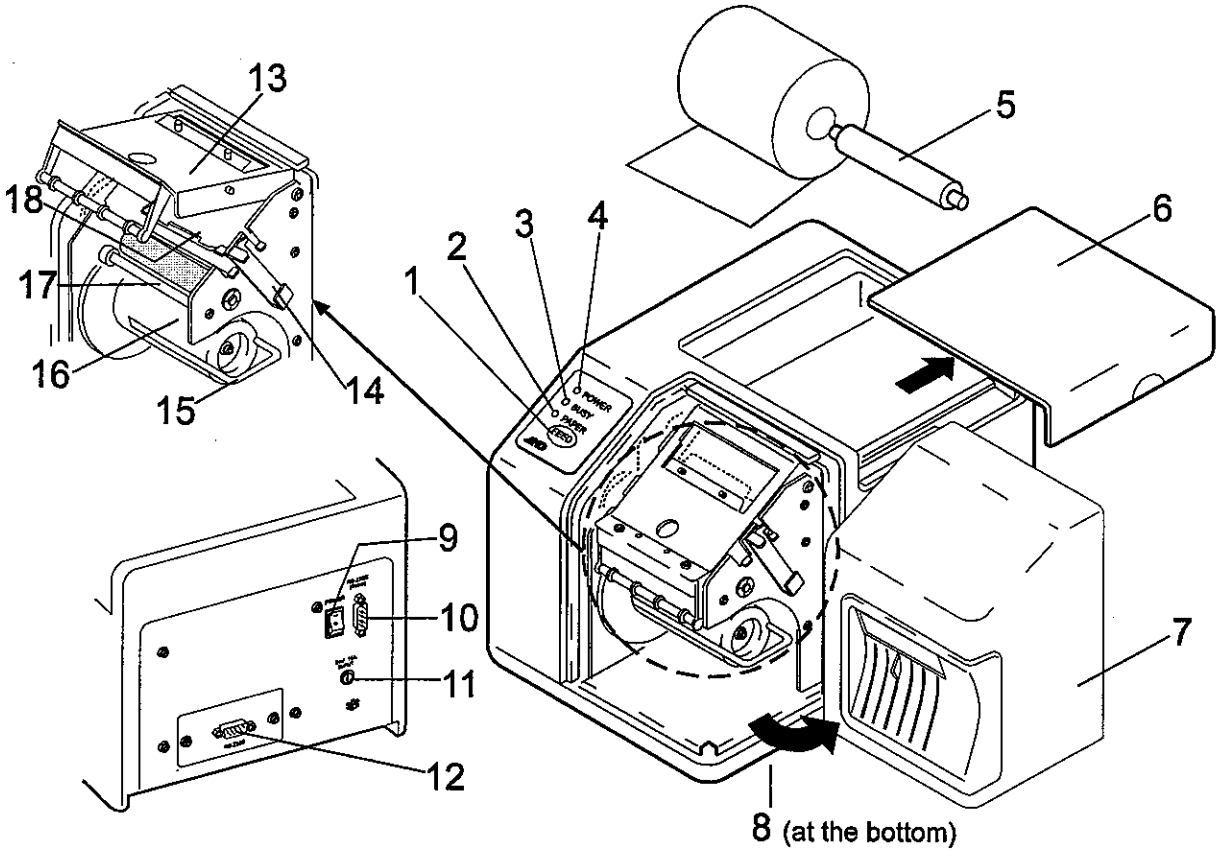
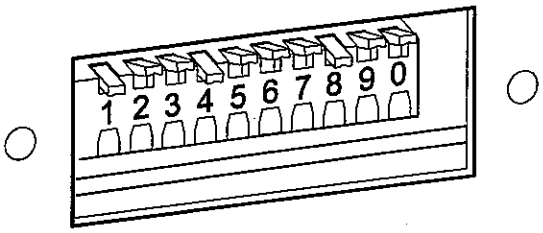


Fig.1 Printer view

No.	Part names	Description
1	FEED key	Feeds the paper by the amount of one label.
2	PAPER LED	Flashes when the paper has run out.
3	BUSY LED	Indicates the communications status with a scale or a personal computer.
4	POWER LED	Illuminates when the power is turned on.
5	Paper roll core	
6	Paper cover	
7	Front cover	
8	DIP switches	Sets various functions.
9	POWER switch	Turns the power on and off.
10	RS-232C connector for scale	Connects to a scale.
11	AC adapter jack	
12	RS-232C connector for PC	Connects to a personal computer.
13	Head installation area	
14	Head securing fixture	
15	Paper securing fixture	
16	Paper take-up core	
17	Label peeling bar	
18	Paper guide	

3. DIP SWITCHES

3-1 The DIP Switch Functions



In the illustration above, DIP switches, 2, 3, 5, 6, 7, 9 and 10 are turned ON.
Please note that DIP switch 10 is labeled as 0.

Fig.2 DIP switches

Each DIP switch has the following function.

Switch No.	Function	Description
1	Baud rate between the printer and the scale	Keep this switch turned OFF.
2 3	Label length	Three standard settings and a user setting are available.
4 5 6	Bar code format	Eight settings including none are available
7	Date printing	Yes/No
8	Printer adjustment	Keep this switch turned OFF.
9	Printer adjustment	Keep this switch turned ON.
10	Internal setting	Turn ON when the Label Design Tool is used.

3-2 Detailed Description of DIP Switch Settings

The following are the detailed description of DIP switch settings.

Baud rate between the printer and the scale

	Switch 1	Description
9600 bps	OFF	Use this for the SF/SG scales.
19200 bps	ON	

Label length

	Switch 2	Switch 3	Description
34 mm	OFF	OFF	
40 mm	ON	OFF	
46 mm	OFF	ON	
User setting	ON	ON	When using the Label Design Tool

Bar code format

	Switch 4	Switch 5	Switch 6
No bar code	OFF	OFF	OFF
D1 D2 I1 I2 I3 I4 I5 S P1 P2 P3 P4 C	ON	OFF	OFF
D1 D2 I1 I2 I3 I4 S P1 P2 P3 P4 P5 C	OFF	ON	OFF
D1 D2 I1 I2 I3 I4 I5 I6 P1 P2 P3 P4 C	ON	ON	OFF
D1 D2 I1 I2 I3 I4 I5 P1 P2 P3 P4 P5 C	OFF	OFF	ON
D1 D2 I1 I2 I3 I4 P1 P2 P3 P4 P5 P6 C	ON	OFF	ON
D1 D2 I1 I2 I3 P1 P2 P3 P4 P5 P6 P7 C	OFF	ON	ON
D1 D2 I1 I2 I3 I4 W1 W2 W3 W4 W5 W6 C	ON	ON	ON

D : Store code (Corresponds to "Store No." of the Label Design Tool)
I : Item code (Corresponds to "Item Code" of the Label Design Tool)
P : Price
W : Weight
S : Checksum for price data
C : Checksum for all characters

Date printing

	Switch 7	Description
No	OFF	
Yes	ON	

Printer adjustment

Switch 8	Switch 9	Description
OFF	ON	Keep these switches as shown to the left

Internal settings

	Switch 10	Description
Standard printing	OFF	
Label designing	ON	When using the Label Design Tool

4. PREPARATION

Note: To get optimum performance from the AD-8124, use the SF/SG program version "rP 4.00" or later. Some functions can not be used with the earlier versions.

Prior to printing a label using the AD-8124 label printer, the following operations are necessary.

4-1 Confirming the SF/SG Program Version

Confirm the SF/SG program version as follows:

1. While holding down the ZERO key ((0)) of the ten numerical keys, turn the power switch on.
2. After "8888888", the scale program version, "rP 4.00" appears in the display.
3. If another display appears, press the ZERO key to display the version number "rP XXX".
4. After confirmation, turn the power switch off.

4-2 Setting the "F" Functions

Note: Refer to the SF/SG price computing scales instruction manual for a detailed description of the setting procedure.

For the "rP 4.00" or later versions, set the "F" functions as below:

- Output data Label printer mode F3=8
- Baud rate 9600 bps F4=4
- Parity bit 8 bits (No parity) F5=1

For earlier versions, set the "F" functions as below:

Under the conditions below, when DIP switches 2 and 3 of the label printer are turned ON, the printer will print a label using the label design of the label number 300.

- Output data Key trigger mode Format 1 F3=0
- Baud rate 9600 bps F4=4
- Parity bit 8 bits (No parity) F5=1

Note: To print a label using the earlier versions, set the printer DIP switch 7 to OFF (No date printing).

4-3 Loading the Paper

Load the paper in the printer as follows:

1. Remove the front cover and the paper cover from the printer.

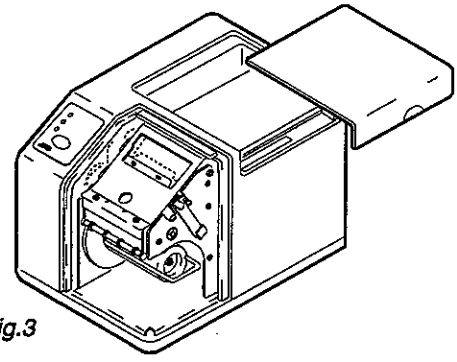


Fig.3

2. Release the head securing fixture to raise the print head.

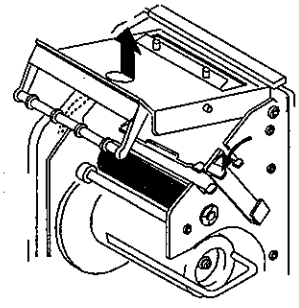


Fig.4

3. Attach the roll core to the paper. Place the paper in the paper holder as shown in Fig.5.

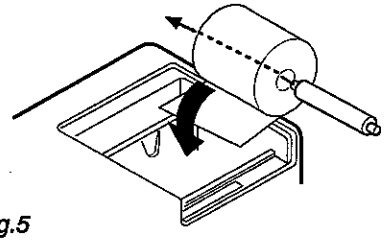


Fig.5

4. Remove the labels from the first 30 cm from the paper.

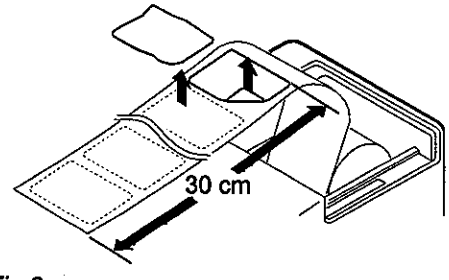


Fig.6

5. Remove the paper securing fixture from the paper take-up core.

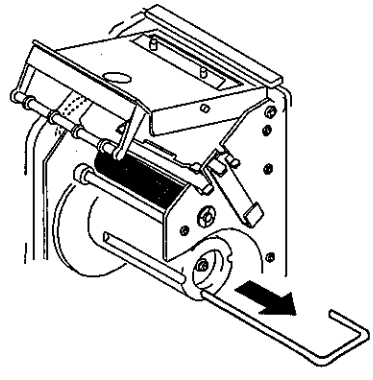


Fig.7

6. Thread the paper through the paper guide, fold the paper at the label peeling bar and place the paper on the paper take-up core.

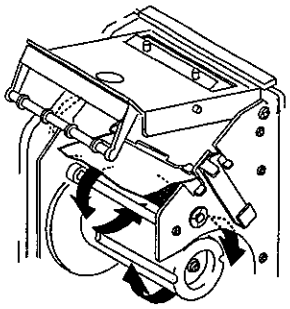


Fig.8

7. Secure the paper using the paper securing fixture.
Pull the paper edge by hand so that no slack exists in the paper.

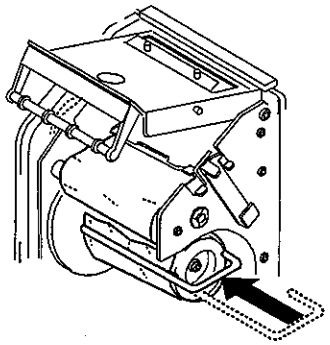


Fig.9

8. Secure the print head using the head securing fixture.
If any labels remain near the print head, remove them.

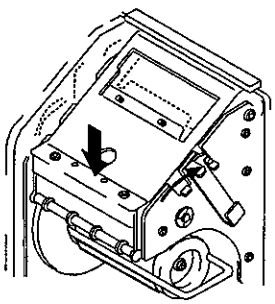


Fig.10

9. Turn the POWER switch on.

10. Press the FEED key several times to eject one label.

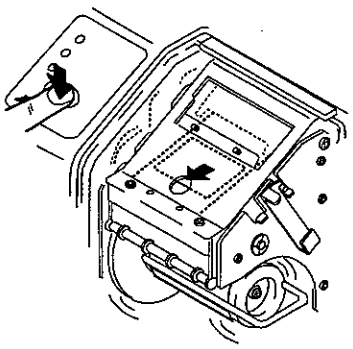


Fig.11

11. Reinstall the front cover and the paper cover.

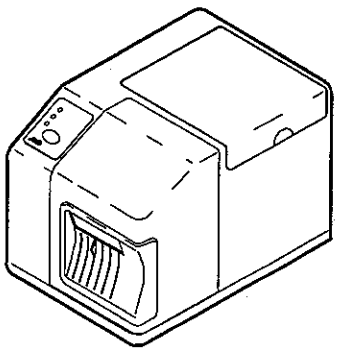


Fig.12

12. If the label printing position is incorrect, restart the printer.

4-4 Setting the Date and Time

Note: This function is available only for SF/SG program version "rP 4.00" or later.

Set the printer internal clock using the SF/SG scale as follows:

1. Connect the printer and the scale using an RS-232C crossover cable.
2. Turn the POWER switch of the printer on.
3. While holding down the TARE key (T TARE), turn the power switch of the scale on.
4. Enter the date and time. The entering procedure depends on the order to print the date and time. The following three formats are available.

   - Year - Month - Date order
     (1) Enter the year (4 digits), month (2 digits), date (2 digits), hour (2 digits in 24-hour format), and minute (2 digits) in this order, using the ten numerical keys.
     (2) Press the PLU 1 key.
   - Month - Date - Year order
     (1) Enter the month (2 digits), date (2 digits), year (4 digits), hour (2 digits in 24-hour format), and minute (2 digits) in this order, using the ten numerical keys.
     (2) Press the PLU 2 key.
   - Date - Month - Year order
     (1) Enter the date (2 digits), month (2 digits), year (4 digits), hour (2 digits in 24-hour format), and minute (2 digits) in this order, using the ten numerical keys.
     (2) Press the PLU 3 key.

5. The setting data is sent to the printer.
6. The printer internal clock functions as set above. The internal clock remains functioning even after the printer power is turned off.

5. USING THE PRINTER

5-1 Basic Operation

Basic operation of the printer connected to the SF/SG scale is as follows:

The printer prints a bar code, PLU number, weight, unit price, total price, and date (all data without units of measure) on predetermined positions. The bar code is of the EAN-13 type.

Three types of label length are available: 34 mm, 40 mm and 46 mm.

Note: No special label design is available for the basic operation.

Perform a basic printing operation as follows:

1. Set the DIP switches located on the printer bottom.
2. Set the "F" functions of the SF/SG price computing scale.
3. Set the printer internal clock using the SF/SG scale.
4. Weigh a product using the SF/SG scale. Press the * key () to issue a label.

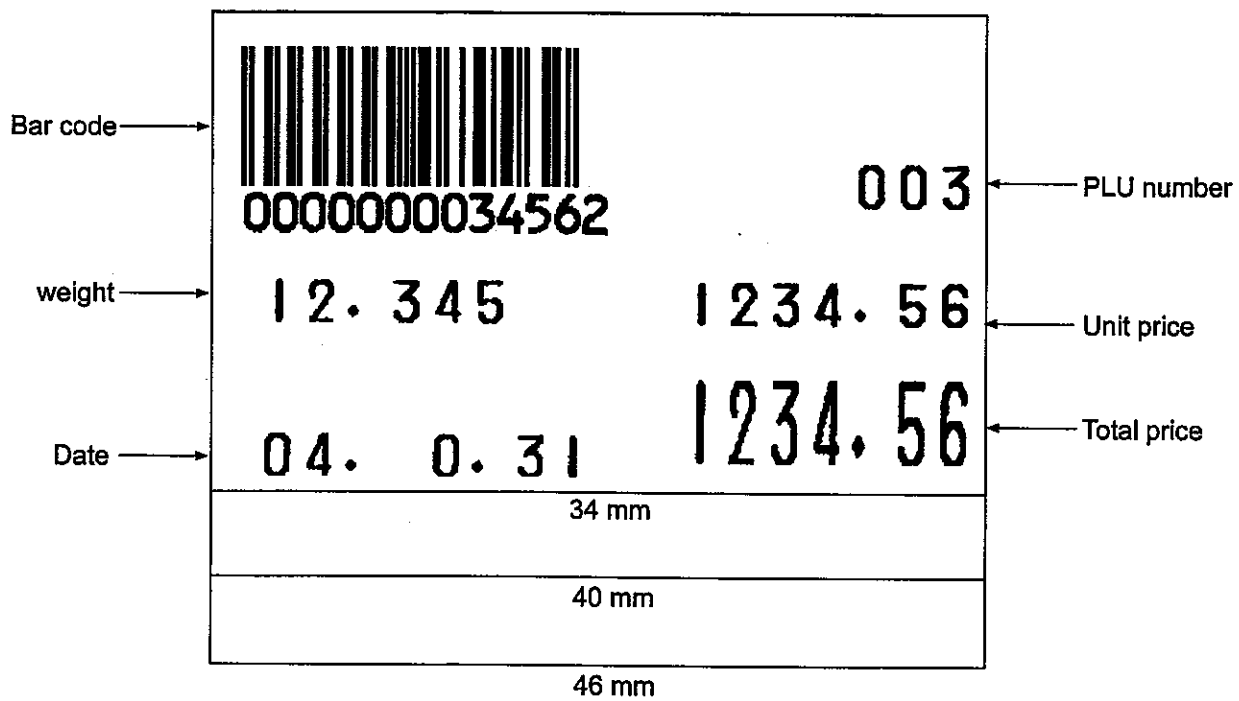


Fig.13 Standard label example and printing positions

5-2 Enhanced Operation

Note: This function is available only for the SF/SG program version "rP 4.00" or later.

5-2-1 Issuing a user-designed label

Note: To use this function, a Windows-based personal computer (Windows 95 or Windows 98) is required.

Windows 95, Windows 98, Mspaint.exe and MS Paint are registered trademarks of Microsoft Corporation.

Issue a user-designed label as follows:

1. Using the dedicated software "Label Design Tool", design a label.
   For details on the Label Design Tool, refer to "10. DEDICATED SOFTWARE".

   Note: A wide black portion on a label may print blurred.

2. Turn DIP switch 10, located on the printer bottom, to ON to receive the designed data from the software. The data received remains in the printer, even after the printer power is turned off.

3. Set the following DIP switches:

Switch 10	OFF
Switches 2 and 3	ON
Others	As necessary.

4. Set the "F" functions of the SF/SG price computing scale.

5. Weigh a product using the SF/SG scale. Press the * key to issue a label.

5-2-2 Combining the designed data with a PLU number

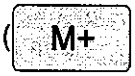
Use the designed data with each PLU number added to print a label as follows:

In the initial setting, the PLU number is the same as the label number.

When the unit price data is entered using the ten numerical keys, the printer will print a label using the label design of the label number 300.

1. Connect the printer and the scale using an RS-232C crossover cable.

2. Turn the POWER switch of the printer on.

3. While holding down the M+ key (), turn the power switch of the scale on.

4. Using the ten numerical keys on the scale, enter a three-digit label number. This number must be the same as the "Label No." specified using the Label Design Tool.

5. Press one of PLU keys to combine with the data.

6. Repeat steps 4 and 5 to combine the label number with the PLU number.

7. After the setting has been completed, turn the power switches off.

5-2-3 Changing the scale PLU unit price data

The PLU unit price data, stored in the scale, can be changed using a personal computer.

1. Connect the printer and the personal computer to the SF/SG scale and turn them on.
2. Using the dedicated PLU software, set the unit price data for each PLU number.
   For details on the PLU software, refer to "10. DEDICATED SOFTWARE".
3. The printer receives data from the PLU software. The data received will be erased when the printer power is turned off.
4. After the printer receives data, it sends the data to the SF/SG scale immediately. If the printer is not connected to the SF/SG scale, it will not send the data.
5. If the data is not changed correctly, "Err 10" appears in the display of the scale.
   Under that condition, press the C key (Ⓒ) to release the error, check the unit price data entered using the PLU software and try sending the data again.

6. MAINTENANCE

6-1 Cleaning the Printer

Clean the printer periodically to maintain the optimum performance of the printer.

Print head: Wipe lightly using a cotton swab moistened with alcohol.

Other parts: Wipe lightly using a dry lint-free cloth to remove paper dust.

6-2 Removing the Paper Guide

If a label sticks inside of the printer, remove the paper guide to get to the label.

Remove the paper guide as follows:

1. Remove the front cover and the paper cover from the printer.

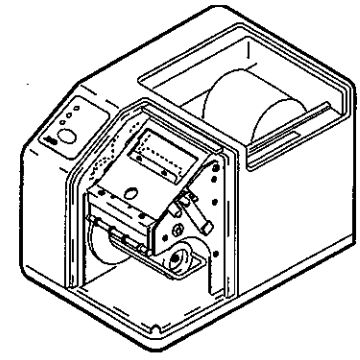


Fig.14

2. Release the head securing fixture to raise the print head.

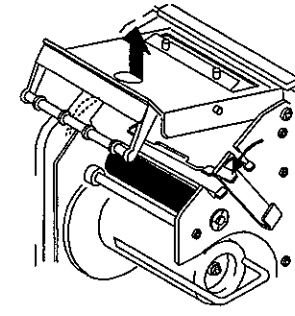


Fig.15

3. Raise both ends of the paper guide with hands, release the catch, and push lightly from behind to slide the paper guide forward.

4. Pull the paper guide out front while taking care not to touch the paper sensor.

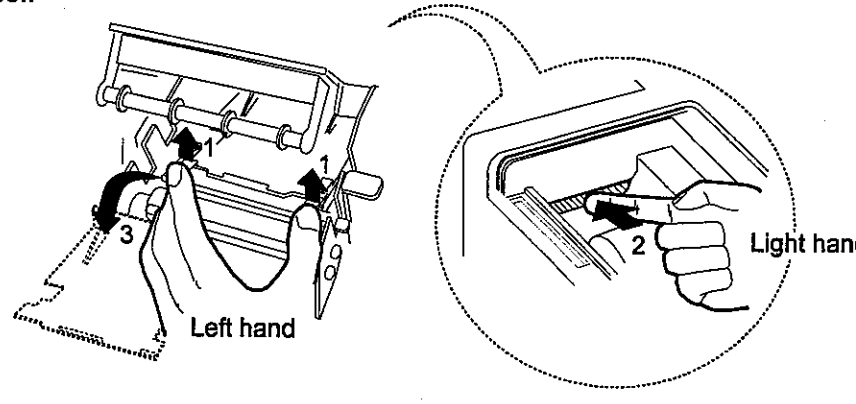


Fig.16

5. To reinstall the paper guide, slide it in until the rear end reaches the printer casing while taking care not to touch the paper sensor, then hook on the catch to secure the paper guide in place.

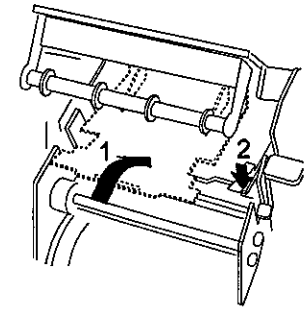


Fig.17

7. PACKING LIST

The printer package contains the following items:

Printer	1
AC adapter	1
Power cord	1
CR-ROM	1
Instruction manual	1

8. SPECIFICATIONS

8-1 General

Power supply	: 24VDC, 2.5A
Power consumption	: Standby: 10VA Printing: 60VA (when the printing rate is 50%)
Operating temperature range	: 5°C to 40°C, Non condensing
External dimensions	: 178 (W) X 242 (D) X 158 (H) mm, excluding the protrusions
Mass	: Approx. 3.3 kg

8-2 Printing

Printing method	: Direct thermal line dot type
Effective printing width	: 56 mm
Printing density	: 8 dots /mm
Printing speed	: 80 mm/second max.
Bar code type	: EAN-13, (Code 39), NW7, 2 of 5, ITF
	: With Code 39, data may exceed the width of a label.
Label	: Width 58 mm
	: Length 28 to 62 mm (Standard settings: 34, 40, and 46 mm)

8-3 Interface

Transmission system	: RS-232C, 2-channel	
Transmission form	: Asynchronous, half duplex	
Transmission rate	: Scale	9600 bps, 19200 bps
	: Personal computer:	115200 bps
Data format	: Start bit	1 bit
	: Data bits	8 bits
	: Parity	None
	: Stop bit	1 bit
	: Code	ASCII
Connector	: D-Sub 9 pin	

Signal table for printer connectors

Pin No.	Signal name	Description
1	NC	
2	RXD	Input
3	TXD	Output
4	DTR	Output
5	GND	
6	DSR	Input
7	RTS	Output
8	CTS	Input
9	NC	

Note: To connect the SF/SG scale or personal computer to the printer, use a crossover cable.

8-4 Label Printer Paper

Paper manufactured by A&D	: Label length 34 mm AX:PP158-34-S (Approx. 800 pcs X 5 rolls)
	: Label length 40 mm AX:PP158-40-S (Approx. 700 pcs X 5 rolls)
	: Label length 46 mm AX:PP158-46-S (Approx. 600 pcs X 5 rolls)
Recommended thermal paper	: LD4131 manufactured by LINTEC Corporation
Label	: Width 58 mm
	: Length 28 to 62 mm (Standard settings: 34, 40, and 46 mm)
Backing paper	: Width 60 mm, white
Maximum take-up diameter	: 80 mm
Inside diameter of the core	: 25.4 mm
Take-up direction	: Inside

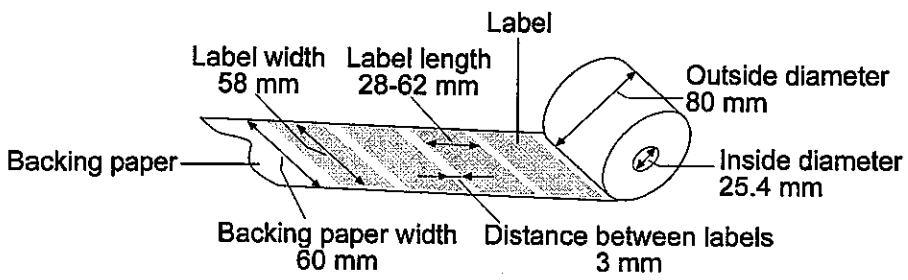


Fig.18

9. DIMENSIONS

9-1 Basic Print Area

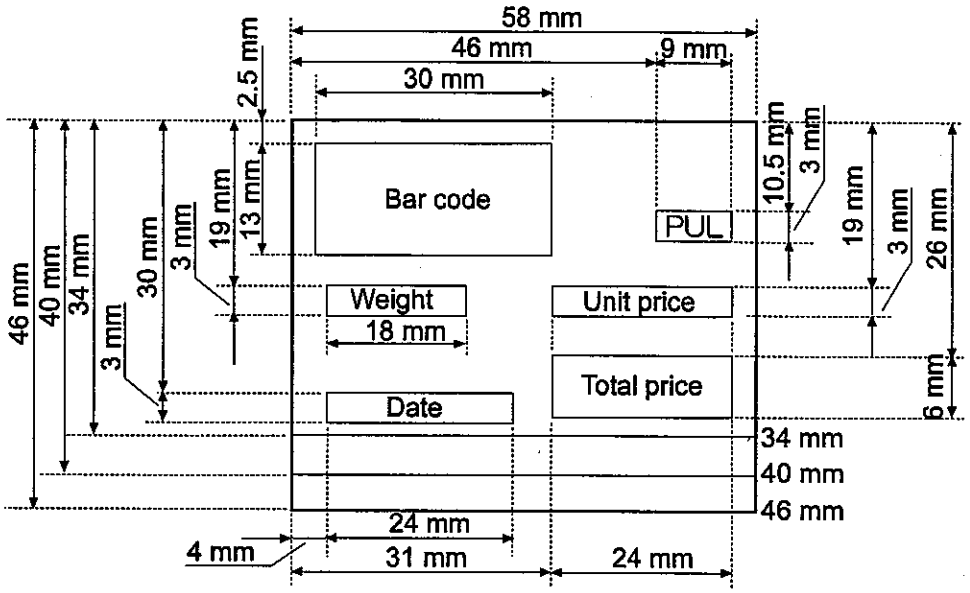


Fig.19

9-2 Printer External Dimensions

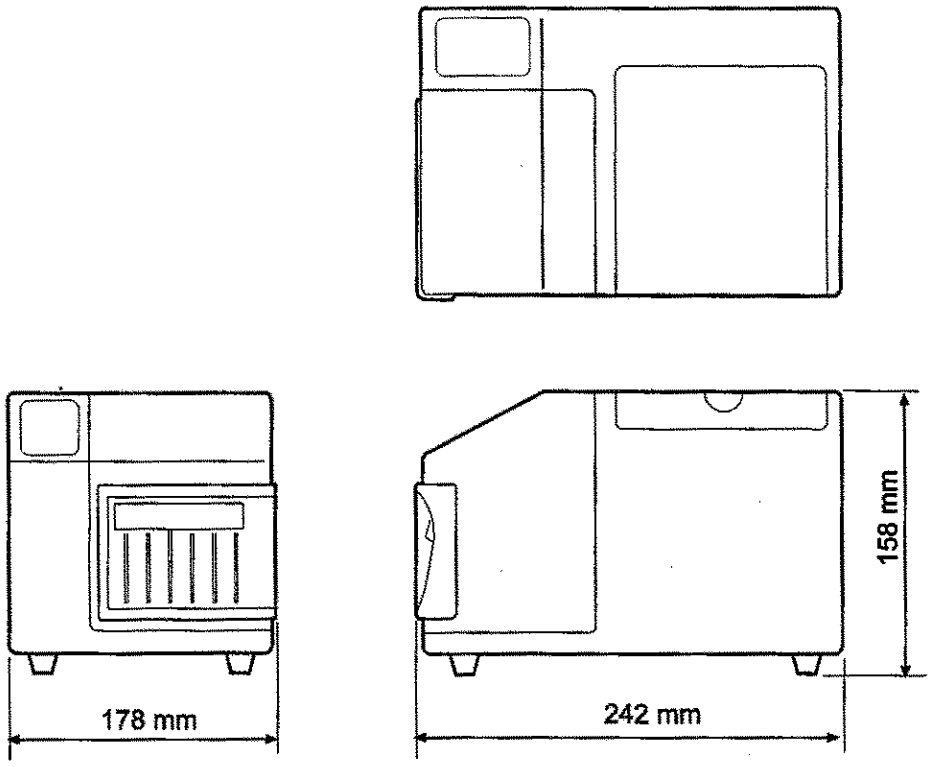


Fig.20

10. DEDICATED SOFTWARE

Caution

It is recommended that all data be backed up.

In no event will A&D be liable for errors or malfunction in connection with the use of this product.

10-1 Label Design Tool

10-1-1 Introduction

Label Design Tool is software to design a label to your preferences. You can design 300 labels. The software can be used on a Window 95 or Window 98 personal computer and for the SF/SG scale with the program version "rP 4.00" or later. To use it, Mspaint.exe and a display with a resolution of 600X800 dots are required.

10-1-2 Installing the Label Design Tool

Install the Label Design Tool as follows:

1. Use a Window 95 or Window 98 personal computer with Mspaint.exe installed.
2. Run Setup.exe of "Install" in Label Design Tool and follow the instructions on the display.
3. To uninstall the software, use "Add/Remove Programs" in the control panel.

10-1-3 Using the Label Design Tool

1. Select [Start], [Program] and [Label Design Tool] or run Label Design Tool.exe in Labeldz located in the Program Files folder.
2. Set each item in the "System Setup" tag and the "Common Setup" tag. Save the settings using the Save button.

   Note: When Code 39 is selected for Bar Code Format, the data may exceed the label width.

3. Go to the "Label Design" tag and set Label No. and Item Code.
4. Click the Image Edit button to run Mspaint.exe. For how to use MS Paint, refer to the Mspaint.exe instructions.

   Note: Do not change the canvas size.

5. Design a label while taking care not to override the frames for Bar Code, PLU, Weight, Unit Price, Date and Total Price.

   Note: A wide black portion on a label may print blurred.

6. When the operation has been completed, close MS Paint. A confirmation whether or not to save the file appears. Select "Yes". Label No. + Item Code will be the file name.

Note: Do not change the file name.

7. Repeat steps 3-6 to make another label. Up to 300 labels can be designed.
8. To delete the design data, click the Delete button.
9. When the operation has been completed, click the "Common Setup" tag to go back to the Common Setup display.
10. Connect the personal computer to the printer.
11. Turn the printer DIP switch 10 to ON, then turn the POWER switch on.

Note: Each time a DIP switch is changed, be sure to restart the printer.

12. Click the Send Data button. The data is sent to the printer using the communication route that is set in the "System Setup" tag.
13. When the data has been sent, quit the software.
14. The design data is arranged by the label size in the Image folder which is made automatically.

10-2 PLU Software

10-2-1 Introduction

The PLU software is used to set the PLU unit price data. The software can be used on a Window 95 or Window 98 personal computer and for the SF/SG scale with a program version "rP 4.00" or later.

Note: The PLU number for the SF series scales is up to 30, and for the SG series scales, 12.

10-2-2 Installing the PLU software

1. Use a Window 95 or Window 98 personal computer.
2. Run Setup.exe of "Installer" in the PLU software and follow the instructions on the display.
3. To uninstall the software, use "Add/Remove Programs" in the control panel.

10-2-3 Using the PLU software

1. Select [Start], [Program] and [PLU] or run PLU.exe in PLU located in the Program Files folder.
2. Set each item in the "Set" tag.
3. Go to the "Data Input" tag and set data per PLU number.
4. Click the Data Save button to save the data.
5. Click the "Set" tag to go back to the Set display.
6. Connect the printer and the personal computer to the SF/SG scale.
7. Turn the printer and the SF/SG scale on.
8. Click the Send button to send data using the communication route set in the "Set" tag.
9. The data is sent to the SF/SG scale via the printer.
10. When the transmission has been completed, quit the PLU software.