PR9 ES

Service Manual

Ver 1.1

Catalogue

1.   PRODUCT OVERVIEW

1.1.   INTRODUCTION

PR9 is a specialized advanced banking printer. It can handle ordinary stationary (single and multicopy forms) and passbook for deposit/withdrawal transactions.

Very versatile, this printer can also be used in Public Administration front-office environments and in post offices. It can be equipped with a horizontal magnetic device for reading/writing horizontal magnetic stripes.It can also be incorporated scanner version for acquiring and handling graphical images. This printer model can also be configured with different interfaces and emulations.

The PR9 maintains complete compatibility to PR2/PR2E.
PR9 carries the following significant differences:

> Bran-new design.

> Improved printing speed.

> Interchangeable communication ports thanks to the possibility of installing supplementary snap-in interface cards.

> 200 to 240 VAC + 10% switching power supply unit

> Dual-interface functionality in all emulations.

> Front/Rear 600 dpi color scanner.

1.2.   GENERAL MACHINE CHARACTERISTICS

PRINTING MODULE	Dot-matrix printhead with 24 diamond-shaped needles and overtemperature protection printing capability: 1 original + 5 copies Passbook handling features.
PRINTING SPEED	100cps(10cpi LQ); 150cps(10cpi NLG); 300cps(10cpi DRAFT); 400cps(10cpi HSD);
PRINT QUALITY	H.S.D; DRAFT; N.L.Q.; L.Q.;
RIBBON BOX	Black fabric, with a life span of more than 5 million characters.
PAPER FEED	Front feeder with automatic document alignment.
PANEL	Located on the printer cover, it has 5 buttons, 4 LEDs and 1 LCD.
EMULATIONS	OLIVETTI (PR40+, PR9) IBM (PP II, X24) IBM 9068/4748 LQ1600K, OKI5330SC/5530SC

INTERFACE   Standard RS 232C serial, optional USB, with
                           the possibility of installing the following
                           interface cards:
                           - 2nd RS 232C serial
                           - Centronics parallel
                           - Centronics parallel + 2nd USB
                           - LAN

                           For Scanner model, the interface is RS 232C
                           serial + USB(on scanner board), the 2nd USB
                           (on main board) is factory option

DIMENSIONS   Width: 398   mm;
                           Depth: 296   mm;
                           Height: 201   mm;
                           Weight: 9 Kg (basic model)

ENVIRONMENTAL
CONDITION   Temperature:
                           Operation   5°C ~35°C
                           Storage / Transport   -40 °C ~ 50 °C

                           Relative Humidity:
                           Operation   15%-85%;
                           Storage / Transport   ^93% (40 °C)

POWER CONSUMPTION   Stand-by: < 5.5W(base model);
                           During operation: 70W, 170 W max

POWER SUPPLY   Voltage::   200 to 240 VAC   +/-**10**
                           Frequency: 50HZ + 2%.   **%**

The following figure gives an overall view of the printer.

Fig. 1-1 PR9 Printer

1.3. SCANNER TECHNICAL DATA

TYPE OF SCANNER	Contact
TECHNOLOGY	CIS
RESOLUTION	600dpi
ILLUMINATION	Set of LEDs
TYPE OF ILLUMINATION	RGB
IMAGE ACQUISITION	- White / black
	- 16 shades of gray
	- 256 shades of gray
	- RGB(color)
SCANNING WIDTH	216mm
SCANNING FORMAT	(W) 80～210 mm
	(H) 70～297 mm

1.4. DOCUMENTS HANDLED

1.4.1 PAPER HANDLE INSTITUTION

Advanced capacity of paper handling:
Automatic paper feeding.
Adjust the printing thickness automatically.
Automatic alignment.
Automatic paper edge detection.

1.4.2 CAPACITY OF COPY

Number of copies (carb.)
1+5 (original medium weight: 40g/ [mm]~60g/ [mm], carbon paper weight: 20g /[mm]~40g /[mm]), multicopy carbon paper weight: 380g/mm.

1.4.3 DOCUMENT HANDLED

Single forms, fanfold paper, multicopy paper, passbook, voucher etc.

1.4.4 DOCUMNETS SPECIFICATION AND SHEET THICKNESS DOCUMENTS

   SPECIFICATION

-—Single or multicopy carbon paper
Width   80mm ~ 245mm
Length (OLIVETTI)   70 mm ~ 450mm
                                                              Recommended length: 297mm
                                                              (IBM, OKI, LQ): more than 70mm
Printing field (10 cpi)   238mm

—- Vertical binding passbook
Open passbook width   90mm~241.3mm
Passbook length   85mm~ 220 mm

-—horizontal binding passbook
Passbook width   90mm~ 241.3[mm
Open passbook length   85mm~220mm

SHEET THICNESS
—single sheet: 0.06mm~0.28mm (45g/mm~160 g/mm)
Bind the passbook: only using thread but others, especial staples and clips.
Using the passbook: keep the passbook safely and steadily but collapse.

—passbook:
Maximum thickness   2mm
Max. difference in level between pages   1.2mm (between pages)
Cover thickness   0.2mm~0.5mm

1.5. ACCESSORIES

This section describes the accessories available for the PR9 printer.

BLACK NYLON SNUG CART RIBBON CARTRIDGE
Ribbon cartridge specific for the PR9's printhead, with width of 7mm, length of 18m and a life-span of more than 5 million characters The cartridge is installed in the machine by opening the printer cover, with automatic printhead positioning if the printer is powered on or manual positioning if powered off, and lifting the print assembly by using the appropriate green lever.

INDELIBLE NYLON SNUG CART RIBBON CARTRIDGE

Fig. 1-2 PR9 Ribbon Cartridge

1.6.   LOCATING THE PRINTER'S MAJOR COMPONENTS

Top cover   LCD

STATION 1   STATION 2

READY   FEED/EJECT▲

ON   STOP ■

COMPRESS ▼

Power switch   Front feeding platform

Rear paper output slot

Standard serial   USB   Interface card   USB   Power cord

interface port   interface1   option   interface2   connector

option   option

Printhead

Green lifting lever
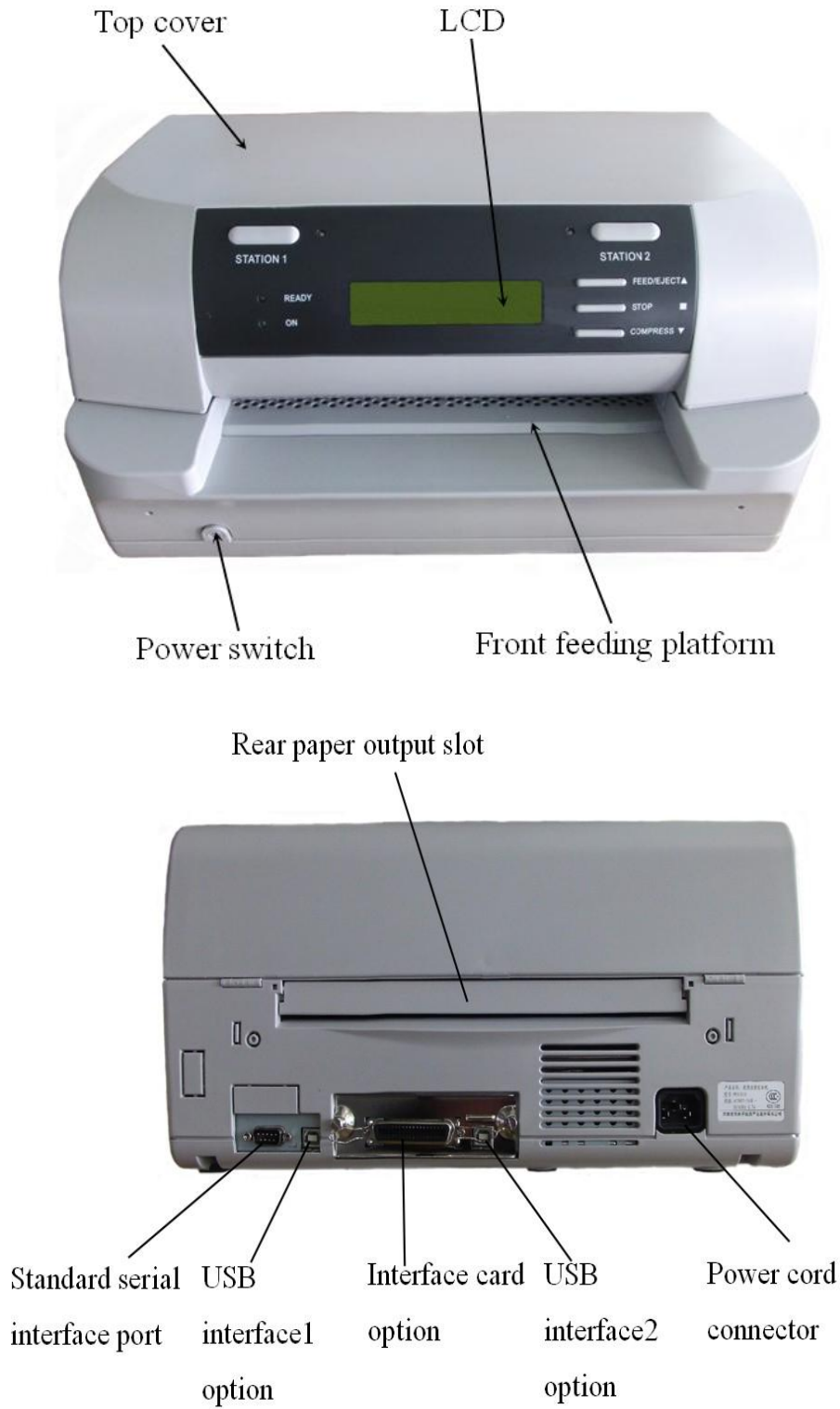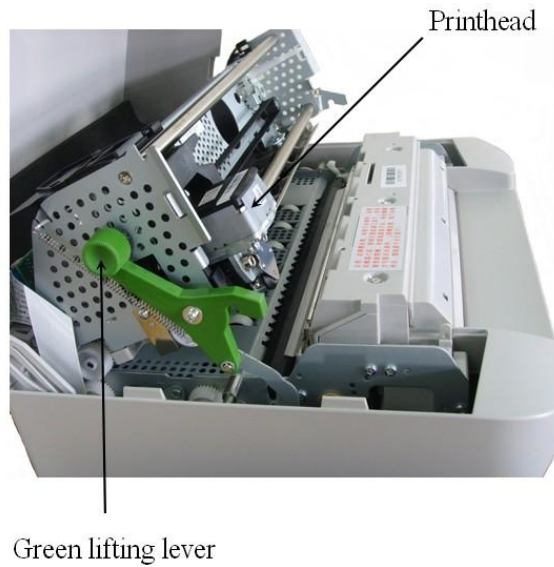
Fig. 1-3 Major Components of PR9

Note: The max. open angle of top cover is 90°, for a better view the open angle is 180° in the figure above

1.7. LOCATING THE PRINTER'S MAJOR INTERNAL COMPONENTS

Printhead flat cable

Arriage transport motor

Printhead

Service motor

Front paper feeding channels

Supply power

Power switch

Interface board(Option)

Paper feed motor

Main board
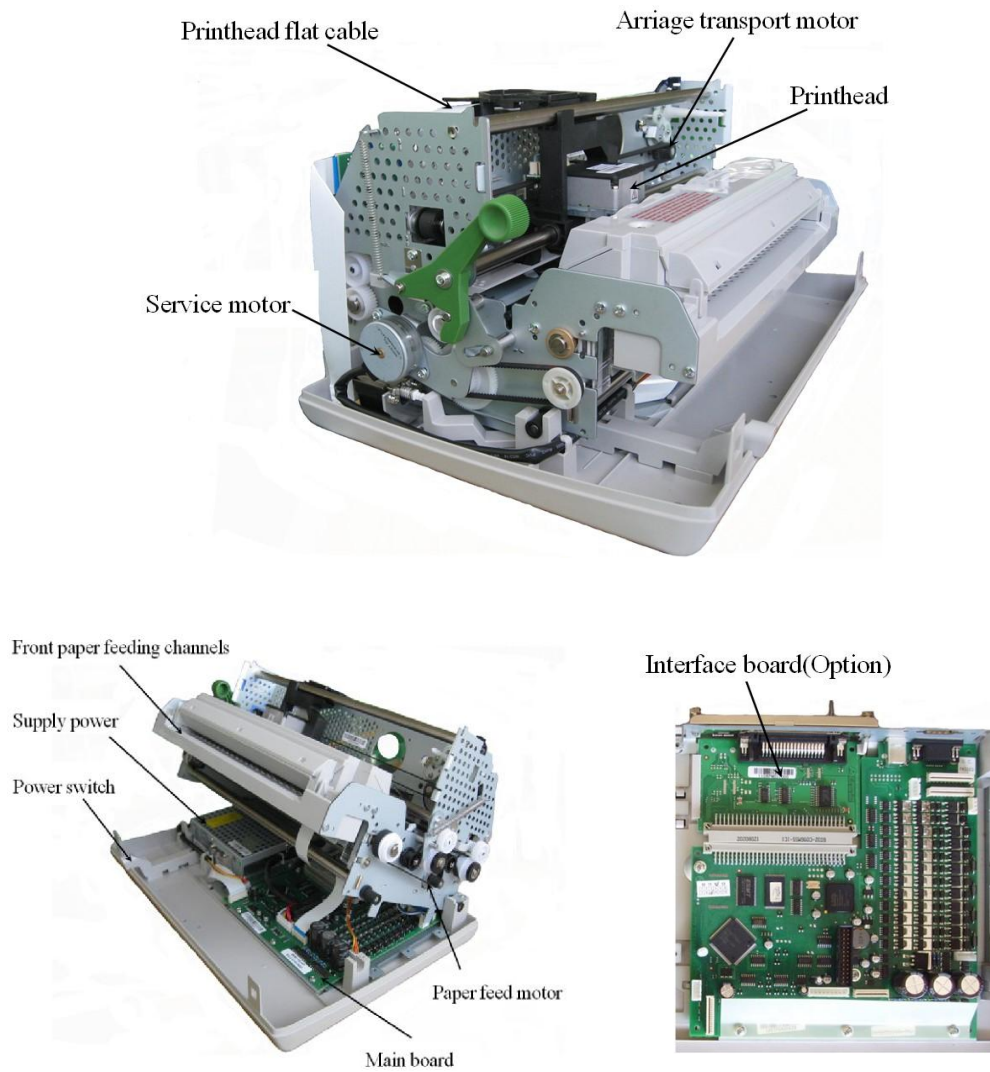
Fig. 1-4 PR9's Major Internal Components

1.8. GENERAL BLOCK DIAGRAM
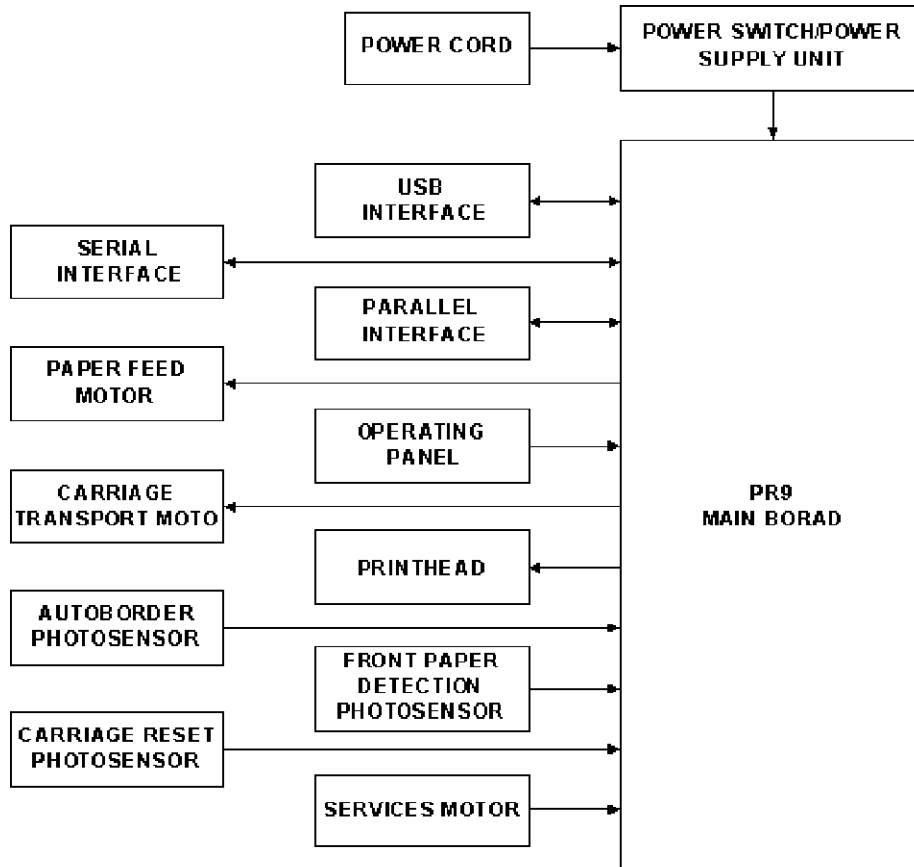
1.9. OPERATING COMMANDS

PR9 operating commands are the following:

    power switch
-   upper mechanical assembly green lifting lever
    LCD operating panel

1.9.1 POWER SWITCH

The printer is equipped with a two-pole power switch. The switch on/off command is provided by means of a rod that crosses the printer longitudinally.

1.9.2 UPPER MECHANICAL ASSEMBLY LIFTING LEVER

The upper mechanical assembly lifting lever (1) is located on the left-hand side of the printer and is used to lift the upper part of the mechanical assembly so that you can access the internal paper path so that paper jams can be cleared and the ribbon cartridge replaced without needing to power off the printer.
To access this lever, lift the printer cover about 45 degrees until it stops.

Green lifting lever

Power switch
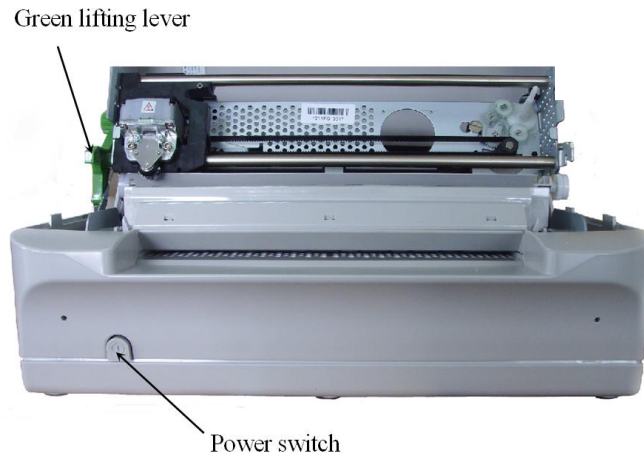
Fig. 1-5

Note: The max. open angle of top cover is 90 °, for a better view the open angle is 180 ° in the figure above

1.9.3 LCD OPERATING PANEL

The HMI (Human-machine interface) of the PR9 is mainly consisted of the operating panel (it has 5 keys, 4 LEDS and 160*32 LCD). You can access the different machine states, operating guide and etc. By powering on the printer, you can select and finish a serials of operations including off-line operation, off-line printing, menu setup and so on by pressing key. The PR9 offers more friendly HMI and it make the operation easier and humanization.

1.10. LCD PANEL

1.10.1 OPERATING PANEL
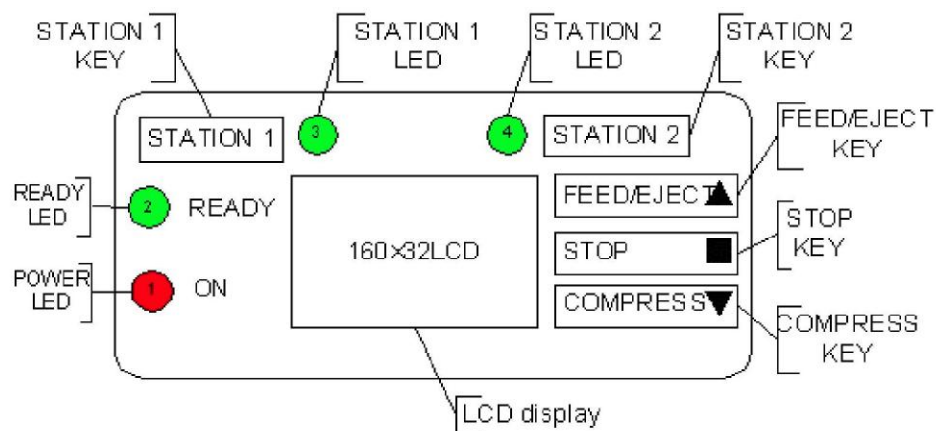
Capacity : Bim(64*256), Chinese character(10CCPL * 2 LINE, 8192 *16*16 Chinese character), character(20CPI * 2LINE , 16*8),User-define content(4*16*16).

1.10.2 LED Indicators

Led indication in on-line

LED	ON	OFF	BLINK
LED1(0N)	POWER ON	POWER OFF	
LED2(READY)			RECEIVING DATA
LED3(STATI0N 1)	ASSIGNED TO USER 1		
LED4(STATI0N 2)	ASSIGNED TO USER 2		

1.10.3 TERMS DEFINITION

ON-LINE: The statue when power on the printer in normal condition (Top cover is closed and no key is pressed).

STOP MODE: In the on-line mode, pressing |STOP| key or opening the cover, the printer will enter STOP MODE.

OFF-LINE OPERATION : In the ON-LINE mode, pressing |STATI0N2| and COMPRESSvl keys simultaneously, the printer will enter OFF-LINE MODE/ OPERATION

1.10.4 KEYS

The following table shows the keys' function definitions under different states

The following table shows the keys' function definitions under different states

FUNCTION			
STATION 1	^ Assign printer to user 1, only be valid under OLIVETTI emulation. ^ Pressing this key and power on the printer, after the printer resetting, insert A4 sheet, the printer will print PR9 Brief User's Guide	Invalid	Invalid
STATI0N2	^ Assign printer to user 2, only be valid under OLIVETTI emulation. ^ Pressing the key and power on the printer, after the	Invalid	Skip to upper menu level until the top level.

	printer resetting, insert A4 siheet, tine printer will print menu configuration		
FEED/EJECT	^ If there is fanfold paper in printer, pressing the key, the paper will feed the next page automatically ^ Pressing the key and power on the printer, the printer can ignore the status of cover open	Invalid	Menu move backward to the previous item within the same group. It may cycle to the last item from the first one.
STOP	Toggles between stop mode and on-line mode.	^ Enter on-line mode under stop mode ^ Invalid under stop mode with cover open	Confirm/accept the selection
COMPRESS	Toggles between normal width character and compressed character ,only valid under OKI and LQ emulation	Invalid	Move to the next item, return to the first item if current item is the last one .
STATI0N2+C0 MPRESS	pressing these two keys simultaneously, printer will enter the off-line mode	Invalid	Pressing these two keys simultaneously, printer will exit off-line mode
STATI0N2+ST0 P	In "Data backup "mode of HEX PRINTING, pressing these two simultaneously, the printer will save the last 8K byte data which it received into flash memory	Invalid	Invalid
FEED/EJECT+C OMPRESS	In "Data backup" mode of HEX PRINTING, pressing these two keys simultaneously, the printer will clear all received data which it backs up.	Invalid	Invalid

1.10.5 LCD:

LCD can display printer's status and operation indication to make the operation easier.

2. INSTALLATION

2.1 GENERAL INSTALLATION PRECAUTIONS

To ensure optimal printer functionality and to avoid making service calls for problems that are not directly caused by the product itself, bear in mind the information provided in the following sections.

2.1.1 ELECTRICAL POWER SUPPLY

Make sure that the electrical wall outlet to which the printer is connected has a valid ground and that it is able to supply the power needed by the machine. A wall outlet without ground can cause functional problems and can be a safety hazard.

Do not plug the printer to electrical wall outlets that are already being used by equipment that could cause electrical noise and excessive voltage fluctuations (fans and air conditioners, large photocopiers, lift motors, TV radio transmitters and signal generators, high frequency safety devices, and so on).

Common office equipment (calculating machines, typewriters, terminals and personal computers) can share the same outlet as long as they do not cause excessive electrical noise or voltage fluctuations.

2.1.2 ENVIRONMENTAL CONDITIONS

Environmental temperature: 15 to 35D
Relative humidity: 15 to 85%

During machine storage and operation, make sure that condensation does not form as the result of extreme environmental variations. Dust, dirt and smoke can cause the parts in motion to wear excessively, short circuits (in the presence of a high degree of humidity) and read/write errors during operation. High temperatures and low humidity can cause problems due to static electricity.

2.1.3 LOCATING THE MACHINE

The printer must be installed on a flat, vibration-free surface.
Do not position the machine near air conditioning systems, heat sources or in direct sunlight.
Do not obstruct the printer's ventilation slots.
If the printer is installed in a cabinet, make sure that it has good ventilation so as to avoid overheating. Install the printer in a position so that paper jams can be cleared easily.

2.2 UNPACKING AND INSTALLING THE MACHINE

2.2.1 UNPACKING THE MACHINE

Checking the box contents

The following items should be contained in the packaging:

- PR9 printer
- Power cord
- Operator Manual
- Ribbon cartridge
- CD-ROM with a PDF format of the User's Manual and additional information

Fig. 2-1 Package Contents

Unpacking and Setting-Up the Printer

- Remove the machine from its protective bag.
- Open the printer's top cover completely.
- Take out the two foam-rubber cushions which on the both sides of carriage .
- Remove the foam-rubber cushions to the front by lifting up.
- Take out the last two foam-rubber cushions.
- Quickly check that the printer was not damaged during transportation.
- Install the ribbon cartridge
- Close the machine.
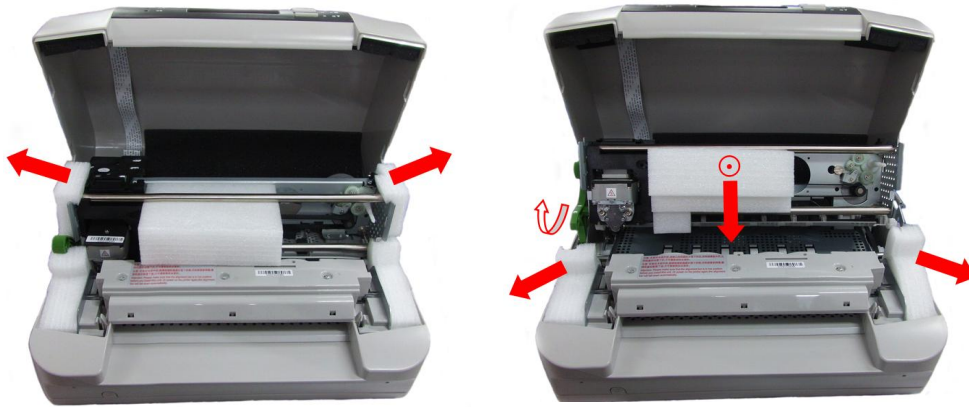
Fig. 2-2 Removing the Transportation Retainers

2.2.2 INSTALLING THE MACHINE

Position the machine for operation, making sure that it complies with the information provided in section 2.1.

- Make sure that the voltage rating indicated on the electrical data plate corresponds to the local mains.

Plug the power cord into the electrical wall outlet (make sure that the printer has been turned off) and then power on the printer.

- Make sure that the printer powers on by checking the mechanical reset and the lighting of the ON LED on the operating panel.

2.3 OFF-LINE TESTS

A print test can be run to make sure that the printer works correctly before actually connecting it to the system.

2.3.1 STARTING AND STOPPING THE PRINT TEST

Proceed as follows to activate the print test:

Power on the printer, after initialization, it will enter the on-line operation

- Pressing down the "STATION 2" and "COMPRESS" keys simultaneously on the console, the printer will enter the off-line operation.

- Pressing COMPRESS key until the LCD shows "MENU PRINTING", pressing STOP key to accept.

According the LCD's prompting, insert an A4 sheet into the front feed slot until triggering the paper alignment photosensor.

The machine will automatically feed the sheet and start printing the test. The sheet is automatically expelled at the end of the test. To repeat the test simply inserts a new of paper.

To stop the print test, power off the machine.

2.3.2   PRINT TEST CONTENTS

The print test provides the following information:

-   The release and version of the firmware and character generators installed
-   The ID of the printer
-   A graphical representation of 24-needle functionality (Needles test)
-   The configuration of the printer
-   The current macro.
-   The parameters defined for the configuration and emulation selected by the users.

The content of the test depends on the FW release and options installed on the printer.

The following pages provide examples:

PR9/K10-P   VER2.09   FPGA. 2.4 CCG. GB18030   CG. 001
PRINTER ID: 00000AEE616201   ‖‖‖i 00000AEE616201
Hill Hill Hill Hill ‖‖‖ Ulli

NEEDLESTEST:

```
-------------------------------------------------------    _   | |
                          1 1 1 1 1 1 1 1 1 1 2 2 2 2 2   O  E
1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4   D  V
```

CURRENT USER: MACROI

	MACROI*	MACRO2	MACRO3
CONFIGURE			
INTERFACE:	DUAL INTERFACE	DUAL INTERFACE	DUAL INTERFACE
RS1 EMULATION:	OLIVETTI	OLIVETTI	OLIVETTI
BAUD RATE(RS1):	9600	9600	9600
BITS/CHARACTER(RS1):	8	8	8
PARITY(RS1):	NONE	NONE	NONE
STOP BITS(RS1):	1	1	1
DSR(RS1):	NO	NO	NO
CX EMULATION:	OKI	OKI	OKI
CX STROBE EDGE:	RISING EDGE	RISING EDGE	RISING EDGE
CHINESE CODE STD:	GB18030	GB18030	GB18030
DRAFT SPEED:	NORMAL	NORMAL	NORMAL
LQ TYPE:	NLQ1	NLQ1	NLQ1
NEEDLES SWITCH:	YES	YES	YES
SPECIAL FORMS:	NO	NO	NO
BIM DIRECTION:	UNIDIRECTION	UNIDIRECTION	UNIDIRECTION
NEEDLE COMPENSATION:	NO	NO	NO
PNS #2000K:	SINGLE SHEET	SINGLE SHEET	SINGLE SHEET
PNS #2001K:	400	400	400
PNS #2002K:	NO	NO	NO
PNS »2003K:	NO	NO	NO
PNS #2004K:	205{nm	205mm	205mm
OLIVETTI CONFIGURE			
EMULATION:	PR9	PR9	PR9
TOF PR40 LIKE:	NO	NO	NO
PRINTING MODE:	CHINESE	CHINESE	CHINESE
ASCII CHARACTER SET:	OPTION 1	OPTION 1	OPTION 1
HIGH SPEED PRINTING:	YES	YES	YES
CPI:	12	12	12
LPI:	6	6	6
CHARACTER DEFINITION:	LQ	LQ	LQ
LF+CR:	NO	NO	NO
LEFT MARG.(1/60"):	0	0	0
TOP MARG.(1/60"):	0	0	0
CHARACTER SET:	OLIVETTI	OLIVETTI	OLIVETTI
OLI CHARACTER SET:	ST15INT	ST15INT	ST15INT
BIM DEFAULT DPI:	96	96	96
VERT. RESOLUTION:	1/240	1/240	1/240
LINE LENGTH:	94	94	94
RESET WHEN EJECT:	NO	NO	NO
COMPRESS:	16.6	16.6	16.6
OKI CONFIGURE			
AUTO COMPRESSION:	NO	NO	NO
LINE LENGTH COMPRESS:	NO	NO	NO
COMPRESS PROPORTION:	108/LINE(80%)	108/LINE(80%)	108/LINE(80%)
FAN FOLD LEFT MAR6.:	0	0	0
PAPER EMPTY WARNING:	YES	YES	YES
ONE BYTE BUFFER:	NO	NO	NO

```
PRINTING MODE:          CHINESE          CHINESE          CHINESE
ASCII CHARACTER SET:    ROMAN            ROMAN            ROMAN
HIGH SPEED PRINTING:    YES              YES              YES
LPI:                    6                6                6
CHARACTER DEFINITION:   DRAFT            DRAFT            DRAFT
LF+CR:                  YES              YES              YES
CR+LF:                  NO               NO               NO
LEFT MARG.(1/60"):      0                0                0
TOP MARG.(1/6"):        0                0                0
TOP MARG.(1/60"):       0                0                0
LINE LENGTH:            94               94               94
RESET WHEN EJECT:       NO               NO               NO
```

2.4 CONNECTION TO THE SYSTEM

In its basic configuration, the printer is equipped with an on-board standard RS232C interface, the optional interface(s) can be on-board USB and a slot for the installation in field of an optional interface card that connects to the specific connector on the main board. One of the following optional interface cards can be installed in the slot on the rear of the printer:

- 2nd RS 232C serial interface card.
- Centronics parallel interface card
- Centronics parallel + USB interface card
- LAN interface card

Active port configuration can be set in menu to be single port, dual-port and triple port configuration so as to satisfy specific application requirements.

2.4.1 RS 232C SERIAL INTERFACE (STANDARD)

Attach the serial cable to the interface located on the rear of the printer.

Via Set-up (Section 3.2) program the following interface parameters:
BAUD RATE; BIT/CHAR; PARITY; STOP BIT and DSR.
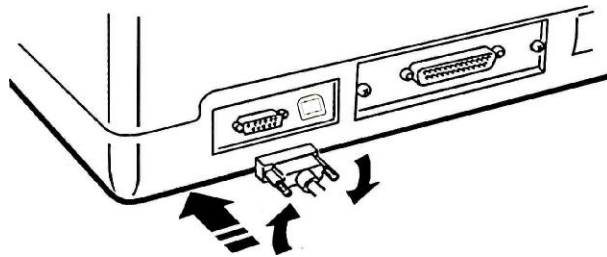
Fig. 2-3 Standard RS232 C Serial Interface

2.4.2 OPTIONAL SERIAL INTERFACE + USB INTERFACE CARD

The optional serial interface + Universal Serial Bus (USB) interface card hosts both interfaces and is installed in the specific slot alongside the standard first serial interface on the rear of the printer.

2.4.3 OPTIONAL PARALLEL INTERFACE CARD

The optional parallel interface card hosts a 36-pin Centronics parallel interface. It is installed in the specific slot alongside the first serial interface on the rear of the printer. It is suggested to use an interface cable up to 1.5 meters long. The ECP data exchange protocol is used.
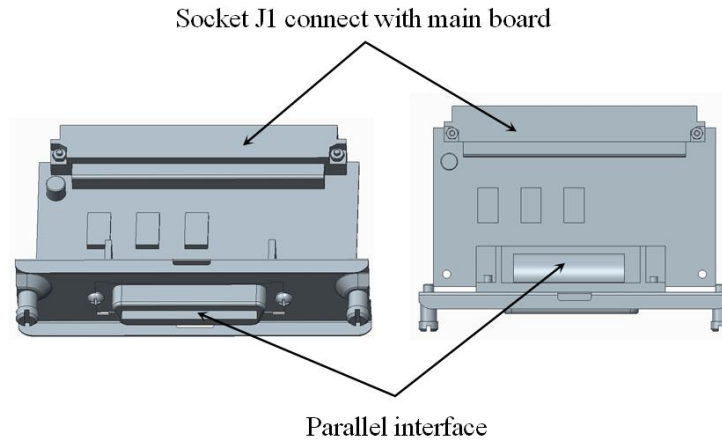
Fig. 2-4 Parallel Interface Card
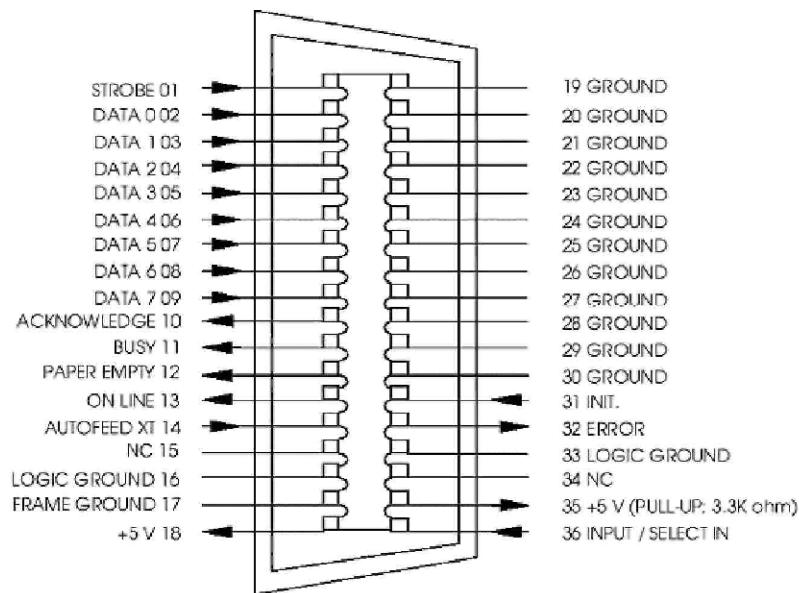
Fig. 2-5 Parallel Interface Pin-out

Proceed as follows to install this optional card:

- Power off the printer.
- Using a screwdriver, break off the slot cover of the optional serial interface on the rear of the printer.
- Insert the interface card in the slot and slide it along the guideways until it plugs into the related connector on the main board. Push firmly to ensure proper connection.
- Tighten the card's two side screws to secure it in place.

1

2
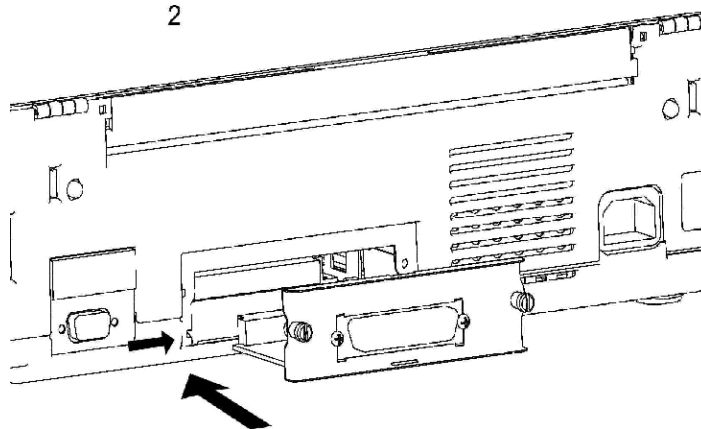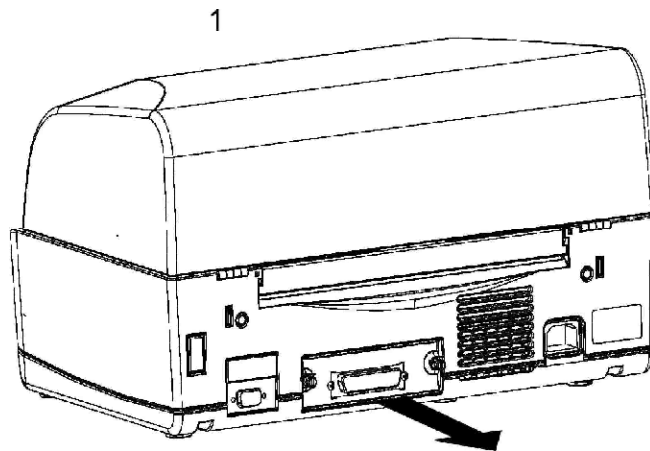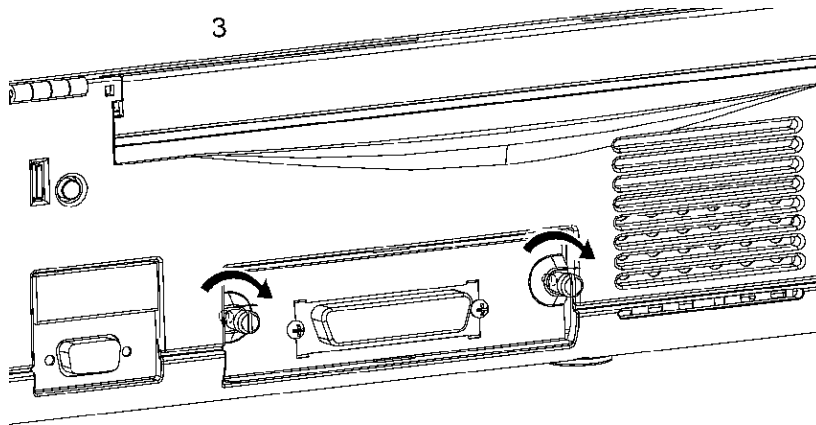
Fig. 2-6 Installing the parallel interface card

In a printer dual-port configuration consisting of the standard serial interface + parallel interface, in an empty buffer and out of paper condition the printer polls the two ports to see which one will be assigned. When a signal is received by any one of the two interfaces, the printer switches to the receiving interface and maintains this condition until the end of the print job. Dual-port functionality is configured during printer set-up; in particular, active emulation can be set on each of the two interfaces and can be changed in run-time mode by means of a specific command.

2.5 INFORMATION FOR THE OPERATOR

After installation, the field engineer has the responsibility of informing the operator on how to use the printer, how to replace the cartridge and how to clear paper jams. It is suggested that a practical demonstration be given for the following operations:

　　Using the operating panel, interpreting the error messages and unlocking the machine whenever necessary.

- Inserting a passbook and sheets of paper into the front insertion slot, stressing the importance of avoiding the use of crumpled or torn paper or passbooks with jutting spines. Show how to insert the sheet of paper (automatic alignment) and the savings book (manual alignment).

　　Replacing the ribbon cartridge.

　　Removing a jammed document from the printer by using the lever for lifting the upper mechanical assembly.

　　Inserting a check or tab in the optional check reader, making sure to avoid using documents that are torn, wrinkled, folded or stapled together with paper clips.

- Stress the importance of good internal ventilation and therefore the need to keep the printer vents unobstructed (from forms or other types of paper).

Make it clear to the operator that observing these simple precautions ensures good printer operation in time. If failures should arise, however, the operator should promptly call the field engineering service.

2.6 OPERATING PROCEDURES

2.6.1   INSERTING A DOCUMENT WITH AUTOMATIC ALIGNMENT

The front shelf on the case helps to insert the document in the printer.

- With the printer powered on, place the document at the center of the front slot and then insert it into the feed slot.

   Release the document as soon as the automatic alignment system is activated.
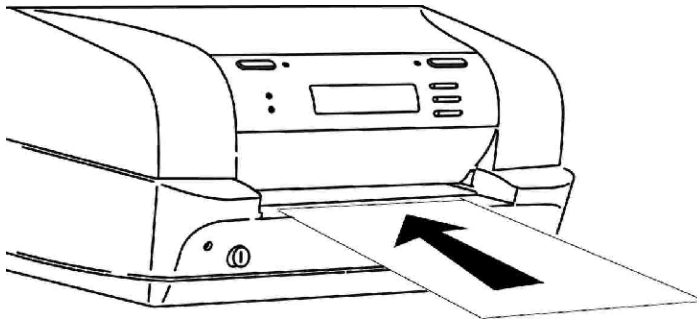
Fig. 2-7 Automatic Document Insertion

2.6.2   INSERTING A PASSBOOK

Before inserting a passbook, open it and press it along its spine so that it remains completely open horizontally. Make sure that pages of the book are not folded or ripped so as to prevent a poor print quality and errors during book insertion.
Place the open passbook on the front shelf with the magnetic stripe on the bottom.
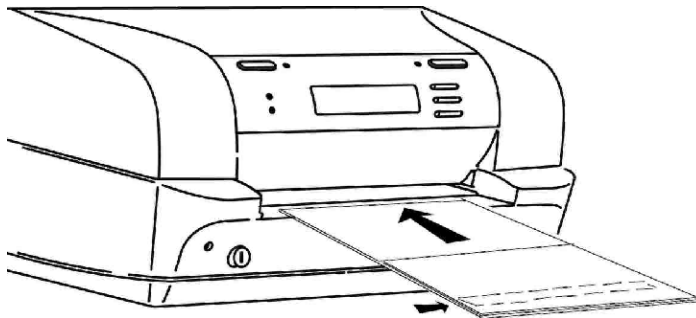
Fig. 2-7 Manual Insertion of a passbook

2.6.3   EXPULSION OF PROCESSED DOCUMENTS

The processed documents can be expelled from the printer, according to the application program, in the following ways:
- Returning back to where the documents were manually inserted (paper feed slot)
- From the printer's rear slot, starting from the front feed slot

If the documents that are expelled from the front feed slot:
- The documents are less than 100mm long, they will be released from the feed rollers
- The documents are 100mm long or longer, they will remain gripped by the last set of rollers to avoid that the document tails off the front shelf

2.6.4   REPLACING THE RIBBON CARTRIDGE

The ribbon cartridge must be changed when printing is incomplete or faded, or when there are frequent optical read errors on the printed documents. This procedure is to be performed with the machine powered off, if necessary, however, it can even be performed with the machine powered on.

2.6..4.1 TURN OFF PRINTER AND CHANGE THE RIBBON BOX

Proceed as follows to change the ribbon cartridge:
- Power off the machine.
- Open the printer top cover.
- Lift the upper mechanical assembly by pushing the appropriate green lever.
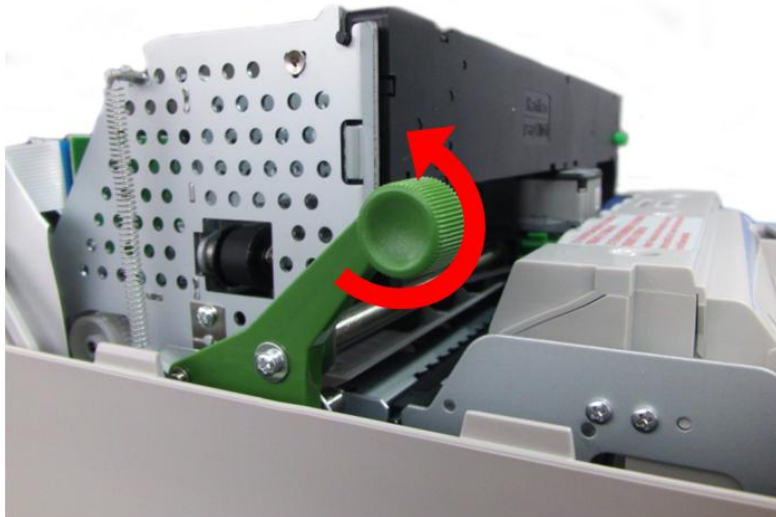
Fig.2-8   Lifting the Upper Mechanical Assembly

Push the ribbon guide downwards, make it withdraw from print head.
Take out the used ribbon casket
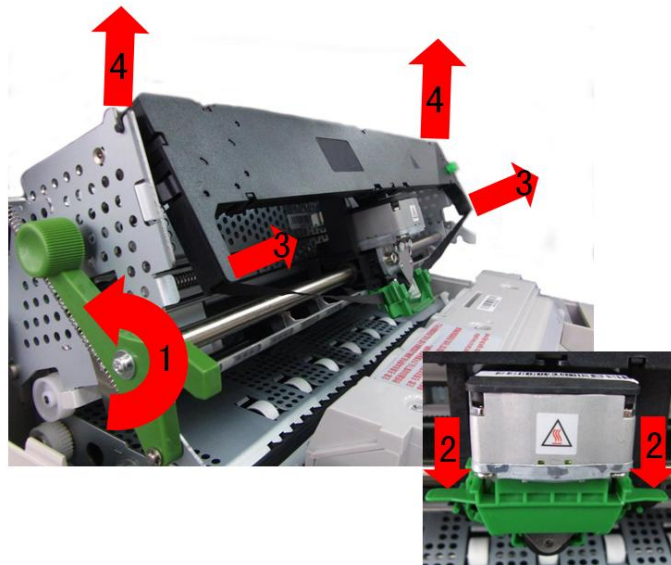
Insert the cartridge into the feed gears, hooking it on the two sides and making sure to insert pin into the related hole of the ribbon feed knob.
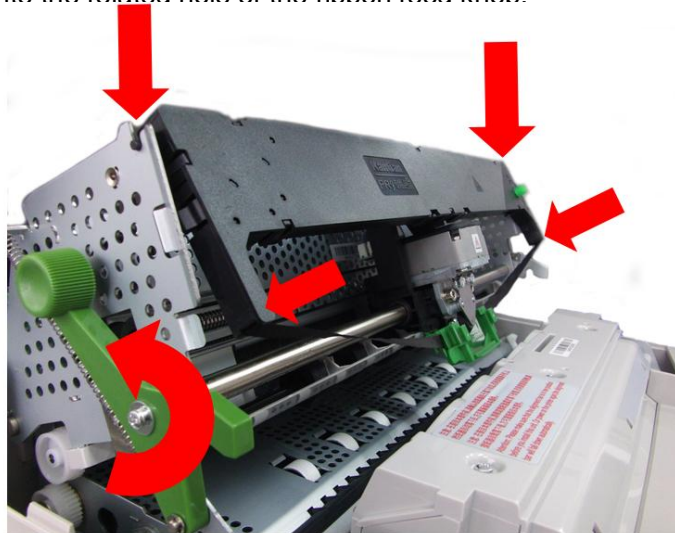
Fig. 2-10 Inserting the Ribbon Cartridge

Insert the ribbon guide front wards and then lift it until it hooks on to the two plastic pins on the carriage's open slots behind the print head platen (a "clack" sound is heard).
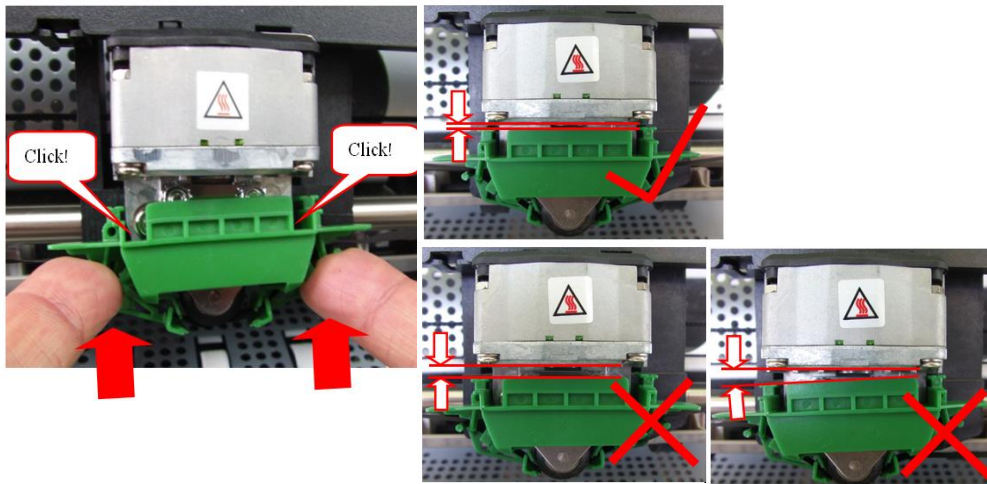
Fig. 2-11 Hooking the Ribbon Guide

- Turn the carriage knob counterclockwise until the ribbon is taut and then remove tab.

  Using the specific lever, completely lower the upper part of the mechanical assembly containing the print head and ribbon cartridge.
- Close the printer cover.

  Power on the machine.

2.6..4.2   REPLACING THE RIBBON CARTRIDGE WITH THE MACHINE POWERED ON

The ribbon cartridge can be changed with the machine powered on and by following the procedure listed below:

- Open the printer cover; printing stops automatically.

  Lift the upper mechanical assembly by using the appropriate green lever.

  Remove the used cartridge and replace it with a new one as previously described.

  Lower the upper mechanical assembly by using the appropriate lever.
- Close the printer cover.

Note: DO not remove the print head manually.

2.6.5   PAPER JAMS

The paper could jam along its path inside the machine.
Jamming could be caused by one of the following:

- Obstructed paper path (for example, residual pieces of paper)

  Paper skew

  Paper weight or size non-compliant with the specifications
- Crumpled, folded or badly preserved paper
- Stapled paper or with paper clips (this can seriously damage the machine)

- Multi copy forms where the sheets are poorly glued together.

The areas where jams are more likely to occur are:

- front document feed slot
- inside the printer
- rear document output slot

2.6..5.1 PAPER JAMS AT THE FRONT DOCUMENT FEED SLOT

To remove a jammed document from the front feed slot, carefully pull the document from the printer to avoid ripping it.
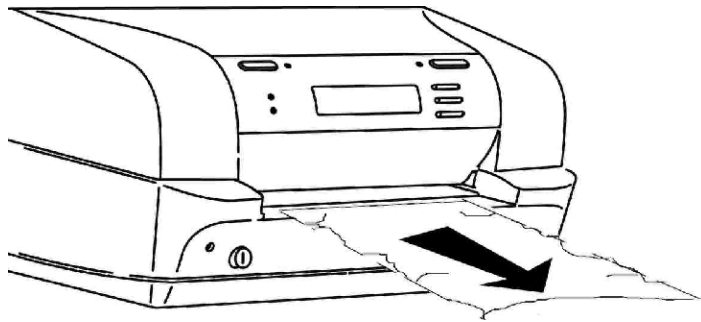
Fig. 2-13 Removing the Document from the Front Feed Slot

2.6..5.2 PAPER JAMS INSIDE THE PRINTER

Proceed as follows to remove a document from inside the printer:

- Open the cover without powering off the machine.

    Lift the upper mechanical assembly by using the upper mechanical assembly lifting green lever.

    Remove the jammed document by carefully pulling it from the printer.
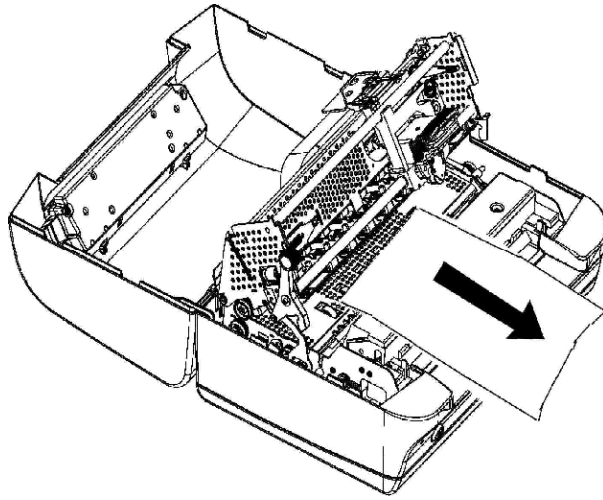
Fig. 2-14 Removing a Document from Inside the Printer

If pieces of paper are jammed in inaccessible areas inside the machine, proceed as follows to remove them:

1) Open the cover and power on the printer while pressing the FEED/EJECT▲ button. The pieces of paper will move forwards/backwards so that the jam can be cleared.
2) Power off the machine and close the cover before powering it back on again

2.6..5.3   PAPER JAMS AT THE REAR OUTPUT SLOT

To remove a document from the rear output slot, without opening the cover carefully pull the document outward trying not to tear it.
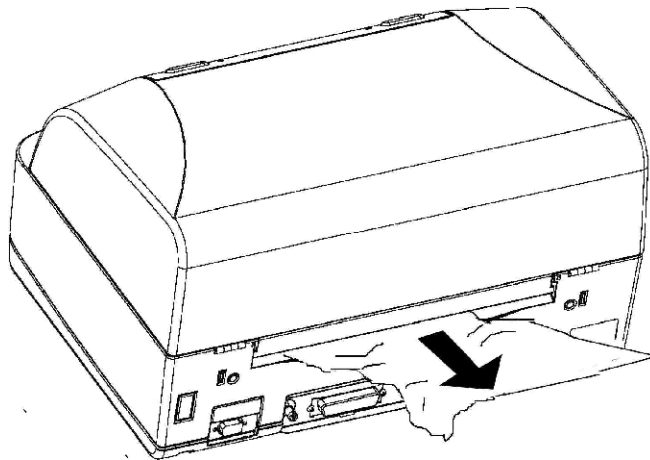
Fig. 2-15 Removing a Document from the Rear Output Slot

3. OFF-LINE OPERATION, SETUP AND ADJUSTMENT

3.1 Overview of off-line operation

When pressing down STATION2 and COMPRESS▼ keys simultaneously, printer will enter the off-line mode. Under this mode, the following operations offered
(Operating according the LCD displaying):
^ Basic function test
   Hardware and software's parameters setup
   Inquire and printing
   ASCII Character sets printing , Chinese characters set printing.
   Printer test.
   Hex printing and so on.

3.2 Classification of off-line operations

The off-line operations can be divided into 7 classes and 4 levels by different functions and objects.

	Classification	Status	Contents of LCD
Off-line Opera -tion	Menu setup	Menu setup	Menu parameters of current level and next level
	Menu printing Printing Test	Menu printing	Menu printing and indications
		User's Guide	Instruction of the off-line operation and relative information
		Chinese character	Character set printing and indications
		ASCII character set	Chinese character set printing and indications
		Character Attributes	Character attributes printing and indications
		Dr. Grauert	Dr. Grauert printing and indications
	Adjustment	Photosensor value	Photosensor's parameter and indications
		Left margin	Left margin setting and indications
		Top margin	Top margin setting and indications
		Run in test	Run-in printing and indications
		Bidirection Align	Alignment adjusting for bidirection printing and indications
		Print photo value	Photosensor value printing and relative information
		Inquire photo values	Photosensor statues Inquiry and indications
		Resume HW parameters	Resume adjustment parameters to default setting and indications
	Debug /test	Hex Printing	Hex printing and indications
		Magnetic Test	Reading or writing magnetic stripe and indications

Info inquiry	Version	FW version, special version tag, extended emulation, version of FPGA, etc.
	HW configuration	characters generators, optional interface, and other options.
	ID	ID number

> **Menu setup**
  ^ Content: Modify the parameters of the printer configuration, including each emulation, different macro and different language.
  ^ Object: All the operators who need to modify the menu parameters, such as engineer, users and so on.

> **Printing menu**
  ^ Content: Printing all menu parameters of various modules;
  ^ Object: The one who want to get the menu parameters of the printer, including the engineer, users and so on.

> **Printing test**
  ^ Content: The printing of User's Guide, ASCII character set, Chinese character set, character attribute. Dr. Grauert and so on.
  ^ Object: users and product line

> **Adjustment: (Only for Professional)**
  >/
    Content: Printing current photosensor parameter, reset photosensor parameters and printing; adjust left margin, top margin and bi-direction printing, run-in printing, inquire photosensor   value, reset hardware parameters. The relative printing content refers to appendix.
    Object: Service engineer and workshop production.
  >/

> **Debug/Test**
  ^ Content: Hex printing(include: data backup, printing backup data, directly dump), magnetic stripe operation (include read and write), The relative printing content refer to appendix .
  ^ Objection: Maintenance and Service engineer

> **Inquiry**
  ^ Content: Inquiry the current setting parameters of software or hardware, including version (FW version, special version tag, special emulation, FPGA Version, etc.), hardware configuration (characters generators, optional interface, scanner, sprocket), printer ID etc.
  ^ Object: The one who need to get the configuration of printer including engineers, user and so on.

As following table shows:
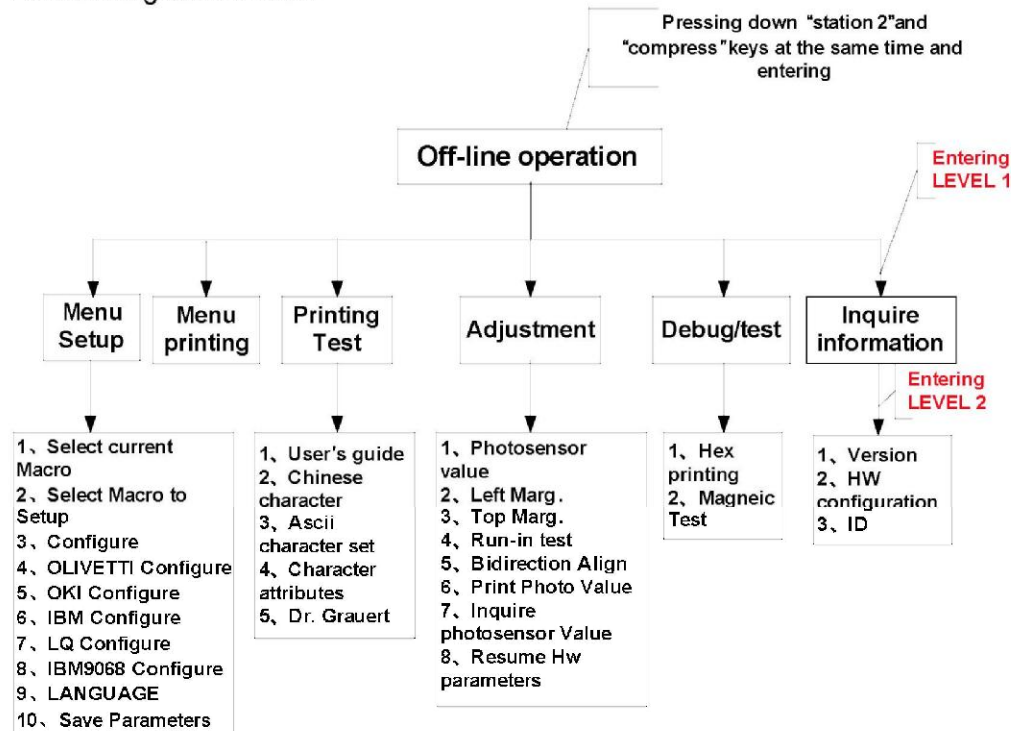
3.3 OPERATING PROCESS

During the Menu Mode the key's definition is as following:

[FEED/EJECT ▲]   upwards; it may cycle to the previous item from the first one.

[COMPRESS ▼]   downwards; it may cycle to the following item from the last one.

[STOP ■]   accept the selected item or value.

[STATION 2]   go back to the previous menu level or back to the top level.

3.3.1   MENU SETUP

Notes:

➢ Menu setup was classified into 10 modules (SELECT CURRENT MACRO, SELECT MACRO TO SETUP, CONFIGURATION, OLIVETTI MENU, OKI MENU, IBM MENU, LQ MENU, IBM9068 MENU, LANGUAGE, SAVE PARAMETERS), modify various module's parameters you should enter corresponding module.

➢ Because the printer can provide different macros selection, you should make sure which macro you want to modify. That means you should enter "Select macro to setup" and select which macro to setup, if not, the modification of set-up you made will be the current macro.

➢ The modified parameters of macro can be valid except the macro is not current macro.

➢ The operator can select the language condition of printer when entering the module "LANGUAGE", and you can select "CHINESE " or "ENGLISH"

➢ The content the LCD displays on the first line is the current level, and these on the second line is the next level.

➢ If you have pressed the STOP■ key to confirm "save parameter" item , the parameters will be save into the FLASH and the printer will be reset automatically. Otherwise, the parameters will be saved in the RAM, which will not be valid. If restart the printer or exit the off-line operation, all the modification you have made will be invalid.

➢ If modified parameter but not save it, before you exit off-line operation, the LCD will show:

SAVE PARAMETERS
STOP=ACCEPT ST2=IGNORE

Pressing STOP■ key to save parameters, other keys will be ignored.

➢ WARNING: All operation should accord the LCD shows.

3.3.1.1 SELECT MODULE

Entering the menu setup, the LCD shows:

MENU SETUP
SELECT CURRENT MACRO

You can begin to select module of menu setup

➢ If Pressing STOP■ key, enter the module "SELECT CURRENT MACRO",

LCD shows:

SELECT CURRENT MACRO
MACRO1

➢ If Pressing COMPRESS▼ key, LCD shows:

MENU SETUP
SELECT MACRO TO SETUP

➢ If pressing STATION2 key, it will return to the upper level directly, LCD will show:

OFF-LINE MODE
MENU SETUP

If pressing FEED/EJECT▲ key, enter saving parameter, LCD will show:

MENU SETUP
SAVE PARAMETERS

✓ If pressing STOP■ key, saving parameters , LCD will show:

SAVING, PLEASE WAIT

After saving, the printer will reset automatically, and the modified parameters will be saved into the Flash.

✓ If pressing COMPRESS▼ key, the printer will do not save the modified

parameter and it will enter the next item, the LCD will show:

MENU SETUP
SELECT CURRENT MACRO

✓ If pressing FEED/EJECT▲ key, the modified parameter will do not be
saved and it will return to the upper item, the LCD will show:

MENU SETUP
LANGUAGE

3.3.1.2 Flow Chat
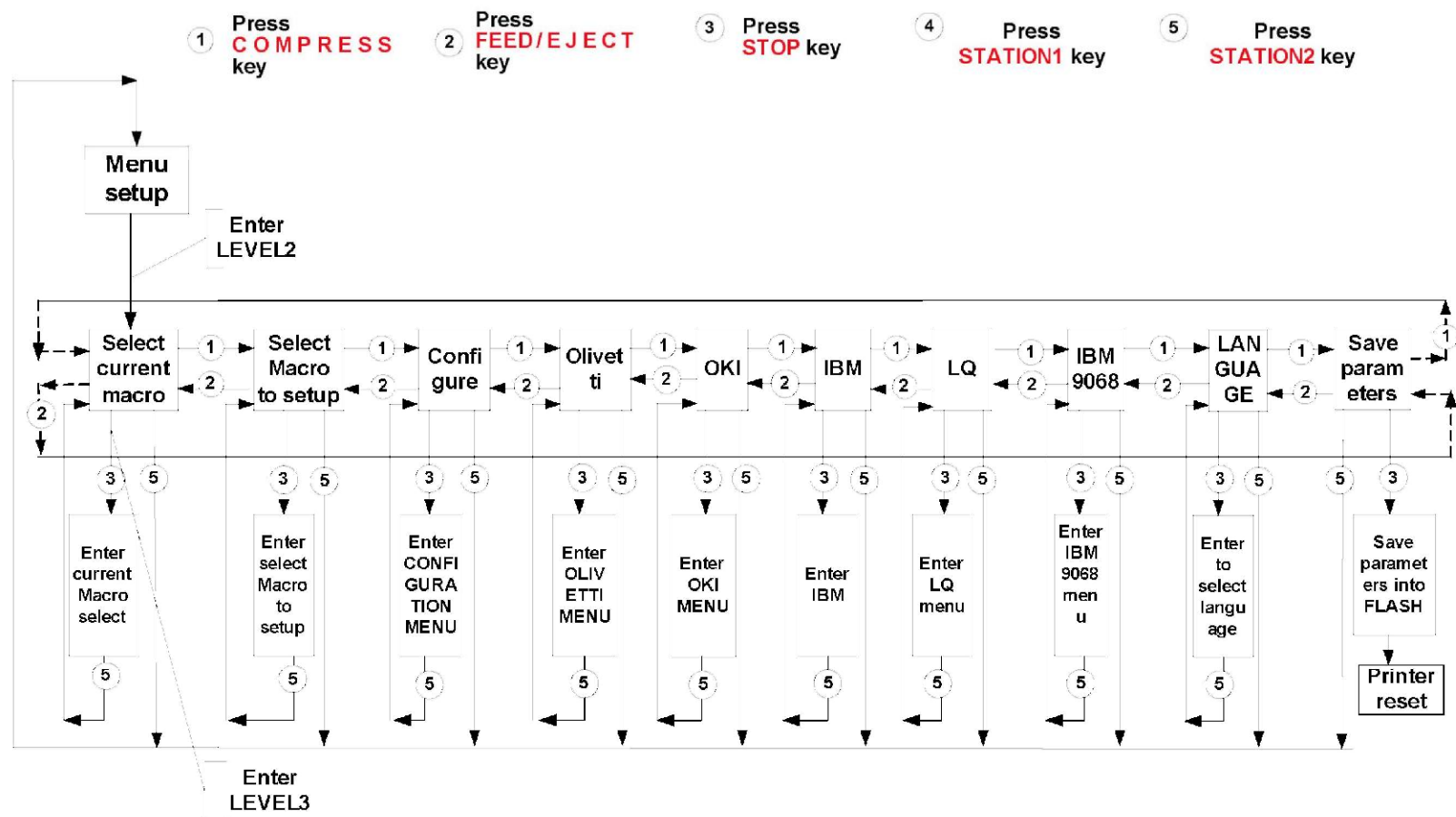
3.3.1.3 EXAMPLES

For example, we will modify 15CPI of OLIVETTI emulation.
After module selected, it will enter the OLIVETTI module, LCD shows:

OLIVETTI CONFIGURE
EMULATION

Pressing $\boxed{\text{COMPRESS▼}}$ key, until the LCD shows:
   CPI

Pressing $\boxed{\text{STOP■}}$ key, the LCD will shows:

CPI
12(or current CPI)

Pressing $\boxed{\text{COMPRESS▼}}$ key, until the LCD shows:

CPI
15

Pressing $\boxed{\text{COMPRESS▼}}$ key, until the LCD shows:
   CPI

After pressing $\boxed{\text{COMPRESS▼}}$ + $\boxed{\text{STATION 2}}$ key ,the LCD shows:
SAVE PARAMETERS
■=ACCEPT   ST2=IGNORE

 If you want save the modified parameter into the Flash , pressing $\boxed{\text{STOP■}}$ key ,the
printer will save the modified parameters (into the RAM) and return to the upper level,
LCD show:
SAVING, PLEASE WAIT
After parameters saved, the printer will reset automatically.

3.3.2   MENU PRINT

   NOTE:
   ➢   Menu print will print all the macros' menu parameters, the current macro will be
        remarked by the sign "*".
   ➢   Menu printing just print the configuration and the emulation that selected by
        current macro.
   ➢   To the interface, PNS and other relative items' parameter, it will remarked by
        the "—-" to indicate that these items are not selected by the macros except the
        current macro.
   ➢   Using shortcut key to print menu: Pressing $\boxed{\text{STATION 2}}$ key and hold it down
        then power on the printer, after it resets. Insert the A4 sheet, the printer will
        print current menu parameters.

3.3.2.1 DESCRIPTION

   Entering the off-line operation, selecting Menu PRINTING, LCD will show:

   Pressing $\boxed{\text{STOP■}}$ key to accept, LCD shows:

MENU PRINTING
INSERT A4 SHEET

After the paper inserted, the printer will feed the paper automatically, LCD shows:

```
MENU PRINTING
PRINTING, WAITING…
```

After printing finished, the paper will be ejected automatically, LCD shows:

MENU FRETTING
FINISH, PRESS STAT2
And now, if you insert A4 sheet again, it will print menu again; if pressing STATION
   key, it will exit the Menu printing and enter the sort selection of off-line operation,
LCD shows:
OFF-LINE MODE
MENU PRINTING

Now you can select other operations you want.

The sample of Menu printing:

PR9/K10-P   VER2.09   FPGA. 2.4 CCG. GB18030   CG. 001
PRINTER ID: 00000AEE616201 |||||i 00000AEE616201
Hill Hill Hill Hill ||||| Ulli

NEEDLES TEST:


```
                   1 1    1111     1112 2 2 2 2      0 E
12 3 4 5 6  7 8 9 0 1    3 4 5 6 7 8 9 0 1 2 3 4    D V
```

CURRENT USER: MACROI

	MACROI*	MACRO2	MACR03
CONFIGURE			
INTERFACE:	DUAL INTERFACE	DUAL INTERFACE	DUAL INTERFACE
RS1 EMULATION:	OLIVETTI	OLIVETTI	OLIVETTI
BAUD RATE(RS1):	9600	9600	9600
BITS/CHARACTER(RS1):	8	8	8
PARITY(RS1):	NONE	NONE	NONE
STOP BITS(RS1):	1	1	1
DSR(RS1):	NO	NO	NO
CX EMULATION:	OKI	OKI	OKI
CX STROBE EDGE:	RISING EDGE	RISING EDGE	RISING EDGE
CHINESE CODE STD:	GB18030	GB18030	GB18030
DRAFT SPEED:	NORMAL	NORMAL	NORMAL
LQ TYPE:	NLQ1	NLQ1	NLQ1
NEEDLES SWITCH:	YES	YES	YES
SPECIAL FORMS:	NO	NO	NO
BIM DIRECTION:	UNIDIRECTION	UNIDIRECTION	UNIDIRECTION
NEEDLE COMPENSATION:	NO	NO	NO
PNS #2000K:	SINGLE SHEET	SINGLE SHEET	SINGLE SHEET
PNS #2001K:	400	400	400
PNS #2002K:	NO	NO	NO
PNS #2003K:	NO	NO	NO
PNS #2004K:	205mm	205mm	205mm
OLIVETTI CONFIGURE			
EMULATION:	PR9	PR9	PR9
TOF PR40 LIKE:	NO	NO	NO
PRINTING MODE:	CHINESE	CHINESE	CHINESE
ASCII CHARACTER SET:	OPTION 1	OPTION 1	OPTION 1
HIGH SPEED PRINTING:	YES	YES	YES
CPI:	12	12	12
LPI:	6	6	6
CHARACTER DEFINITION:	LQ	LQ	LQ
LF+CR:	NO	NO	NO
LEFT MARG.(1/60"):	0	0	0
TOP MARG.(1/60"):	0	0	0
CHARACTER SET:	OLIVETTI	OLIVETTI	OLIVETTI
OLI CHARACTER SET:	ST15INT	ST15INT	ST15INT
BIM DEFAULT DPI:	96	96	96
VERT. RESOLUTION:	1/240	1/240	1/240
LINE LENGTH:	94	94	94
RESET WHEN EJECT:	NO	NO	NO
COMPRESS:	16.6	16.6	16.6
OKI CONFIGURE			
AUTO COMPRESSION:	NO	NO	NO
LINE LENGTH COMPRESS:	NO	NO	NO
COMPRESS PROPORTION:	108/LINE(80%)	108/LINE(80%)	108/LINE(80%)
FAN FOLD LEFT MARG.:	0	0	0
PAPER EMPTY WARNING:	YES	YES	YES
ONE BYTE BUFFER:	NO	NO	NO

```
PRINTING MODE:          CHINESE           CHINESE           CHINESE
ASCII CHARACTER SET:    ROMAN             ROMAN             ROMAN
HIGH SPEED PRINTING:    YES               YES               YES
LPI:                    6                 6                 6
CHARACTER DEFINITION:   DRAFT             DRAFT             DRAFT
LF+CR:                  YES               YES               YES
CR+LF:                  NO                NO                NO
LEFT MARG.(1/60"):      0                 0                 0
TOP MARG.(1/6"):        0                 0                 0
TOP MARG.(1/60"):       0                 0                 0
LINE LENGTH:            94                94                94
RESET WHEN EJECT:       NO                NO                NO
```

3.3.3 PRINTING TEST

After entering printing test, LCD shows:

> PRINTING TEST
> USER'S GUIDE

Start to PRINTING TEST item selection.

3.3.3.1 Printing PR9 Brief User's Guide

After   entering printing test classification, LCD shows:

> PRINTING TEST
> USER'S GUIDE

Pressing   STOP■ key to accept, LCD shows:

> USER'S GUIDE
> INSERT A4 SHEET

After inserting the paper, it will feed the paper automatically, and begin printing, LCD shows:

> USER'S GUIDE
> PRINTING, WAITING···

After finishing printing, the paper will be ejected automatically, LCD shows:

> USER'S GUIDE
> FINISH, PRESS STAT2

And now, if you insert paper again, the printer will print document again; if pressing STATION 2| key, it will exit the User's Guide printing and enter the item selection of Printing Test, LCD shows:

> PRINTING TEST
> USER'S GUIDE

Now you can select other operations you want.

The sample of printing user's guide:

PR9 Brief User's Guide

NOTES: Keys definition in off-line operation mode
  ① Pressing down "STATION2" and "COMPRESS▼" keys simultaneously, printer will enter or exit off-line mode.
  ② In off-line mode:
    FEED/EJECT▲ = upwards or leftwards   COMPRESS▼ = downwards or rightwards
    STOP ■ = confirm the selection   STATION2 = return to higher level
  ③ Please follow the instructions displayed on LCD for further information.

Pressing down "STATION2" and "COMPRESS▼" keys at the same time, entering off-line mode

```
            ▼           ▼           ▼           ▼           ▼           ▼
MENU  ←――――PRINTING←――――TEST   ←――――       ―――――      TEST   ←――――INQUIRE
SETUP ――――――――→MENU ――――――→PRINTING――――→ADJUSTMENT―――――→DEBUG ―――――→INFO
            ▲           ▲           ▲           ▲           ▲
  ■           ■           ■           ■           ■           ■
```

1.SELECT CURRENT MACRO	INSERT	1.USER'S GUIDE	1.PHOTOSENSOR VALUE	1.HEX PRINTING	1.FW version
2.SELECT MACRO TO SETUP	A4	2.CHINESE	2.LEFT MARGIN	2.READ MAGNETIC	2.HW
3.CONFIGURATION	SHEET	CHARACTER	3.TOP MARGIN	STRIPE	CONFIGURATION
4.OLIVETTI MENU		3.ASCII	4.RUN IN TEST		3.ID
5.OKI MENU		CHARACTER SET	5.BIDIRECTION ALIGN		
6.IBM MENU		4.CHARACTER	6.PRINT PHOTO VALUES		
7.LQ MENU		ATTRIBUTES	7.INQUIRE PHOTO VALUES		
8.IBM9068 MENU		5.Dr.Grauert	8.RESUME HW PARAMETERS		
9.LANGUAGE					
10.SAVE PARAMETERS					

Explanation of some functions:

1. Menu Setup: When entering off-line mode, select "Menu setup" to start modification of set-up configuration parameters. If modified parameters need to be saved as default, "SAVE PARAMETERS" option of "SETUP MENU" can be selected and confirmed or when exit off-line mode, pressing down "STOP■" key for confirmation when LCD displays "SAVE PARAMETERS" information. Printer will save parameters then restart.

2. Using shortcut key to print menu: pressing STATION2 key and hold it down then power on printer, after the printer resets, insert A4 sheet, the printer will print current menu parameters.

3. Using Shortcut key to print User's Guide: pressing STATION1 key and hold it down then power on printer, after the printer resets, insert A4 sheet, the printer will print PR9 Brief User's Guide.

4. Adjustment: This menu option is used for adjusting PR9 hardware parameters. These parameters have been adjusted suitably for each PR9 printer in factory. Any adjustment of these parameters is suggested to be carried out with support of professional technical engineers.

5. HEX printing: Mainly used for customer's application program developing and debugging, or for trouble shooting when the printed result is not consistent as expectation.
   There are two modes in HEX PRINTING. In these two modes, mode II is recommended since under this mode there is no disturbance to the printing of original documnets.
   ☆ Mode I: When entering off-line mode, selecting "Directly Dump" of HEX PRINTING, the printer will print all the receiving data in HEX format after A4 sheet is inserted. Press the "feed/eject" key to eject the sheet after printing;
   ☆ Mode II: When entering off-line mode, selecting "Data backup" of HEX PRINTING, the printer can be used for normal operation while all the codes received will be preserved. After the normal transaction having been treated, entering off-line mode again, and selecting "Printing backup Data" of HEX PRINTING, put A4 sheet into the printer, all the previously transacted data will be printed in HEX format. More sheets are needed if there are too much data. Sheet will be automatically ejected after printing.

6. SELECT CURRENT MACRO: PR9 offers three macros, each with a different contents of parameters setting in order to match client's different application. Only one macro can be active at the same time. After entering "SETUP MENU" , select a macro in "select current macro" , and this macro will be active after it is saved.

7. Using printer in Windows Operating System: PR9 printer can be used as normal printer in Windows OS.
                    IBM emulation is suggested to be used
   ☆ First of all, ensuring PR9 and PC have same communication interface. Parallel interface is suggested to be used to speed up data transfer;
   ☆ Adding "IBM Proprinter X24" printer as default printer in Windows OS;
   ☆ Setting "IBM" emulation for corresponding printer interface. Setting "IBM X24" as default emulation and "YES" as the value of "AGM" option;
   ☆ PR9 now can be used in Windows OS with these parameters' corresponding configuration.

If you need help, you are welcomed to contact us with following information:
☆ TELEPHONE: +86 871 3369904   E-MAIL: ntpr@nantian.com.cn   WEB SITE: www.nantian.com.cn

3.3.3.2. CHARACTER SET PRINTING

After entering printing test classification, LCD shows:

PRINTING TEST
USER'S GUIDE

Pressing COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows:

PRINTING TEST
CHARACTER SET

Pressing STOP■ key to accept, LCD shows:

PRINTING TEST
INSERT A4 SHEET

After inserting the paper, it will feed the paper automatically and begin printing, after finishing printing, the paper will be ejected automatically, LCD shows:

PRINTING TEST
FINISH, PRESS STAT2

And now, if you insert paper again, the printer will print it again; if you press STATION 2 key, it will exit the ASCII Character set Printing and enter the item selection of Printing Test, LCD shows:

PRINTING TEST
CHARACTER SET

Now you can select other operations you want.

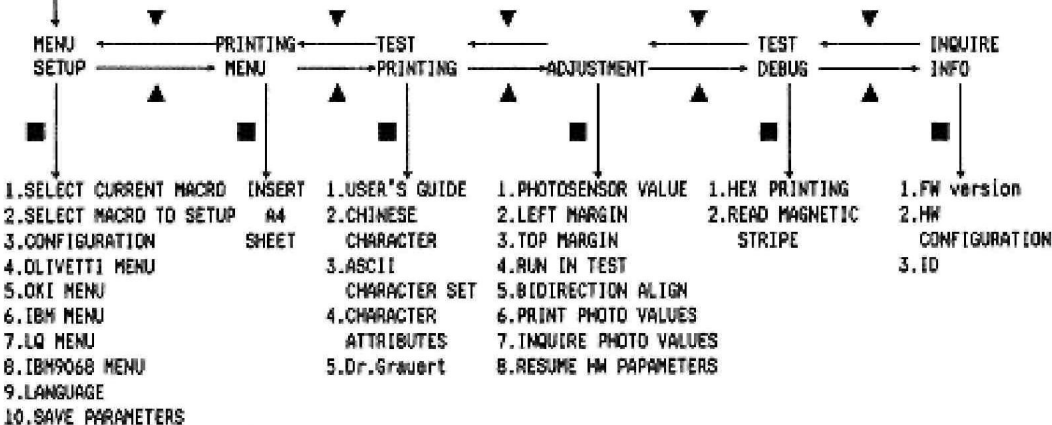The sample of ASCII Character set printing test:

ASCII CHARACTER SET

GB

H	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	¥	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}		
8	€															

ROMAN

H	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	¥	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}		
8	€															

自选1

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	¥	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}		
8	€															

自选2

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	¥	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}		
8	€															

INT437

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}		

CANADIAN FRENCH

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	$	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}		

OCRA

H	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2			"	£	#	%	&	'	{	}	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	♪	=	┤	‡
4		A	B	C	D	E	F	G	H	I	J	K		M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z			Ұ		
6																
7														I		
8	€															

OCRB

H	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
2		!	"	#	¤	%	&	'	(	)	*	+	,	-	.	/
3	0	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?
4	@	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
5	P	Q	R	S	T	U	V	W	X	Y	Z	[	\	]	^	_
6	`	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o
7	p	q	r	s	t	u	v	w	x	y	z	{			}		
8	€															

3.3.3.3. Dr. Grauert PRINTING

After entering printing test classification, LCD shows:

```
PRINTING TEST
USER' S  GUIDE
```

Pressing COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows:

```
PRINTING TEST
Dr. Grauert
```

Pressing STOP■ key to accept, LCD shows:

```
PRINTING TEST
INSERT A4 SHEET
```

After inserting the paper, it will feed the paper automatically and begin printing, after finishing printing, the paper will be ejected automatically, LCD shows:

```
PRINTING TEST
FINISH, PRESS STAT2
```

And now, if you insert paper again, the printer will print it again; if you press STATION 2 key, it will exit Dr. Grauert Printing and enter the item selection of Printing Test, LCD shows:

```
PRINTING TEST
Dr. Grauert
```

Now you can select other operations you want.
The sample of ASCII Character set printing test:

Eilzustellung

Norddeutsche Farbenwerke KG
Herrn Dr. Grauert
Große Elbstraße 64

2000 Hamburg 4

Org. Ill 5/37   H-A   4 34   22.04.75
17.04.75   Volkmann

Vordruckgestaltung für den allgemeinen Schrift-
verkehr, für das Bestell- und Rechnungswesen   Eilt

Sehr geehrter Herr Dr. Grauert,

Sie können das Schreiben der Briefe, Bestellungen, Rechnungen usw.
sowie das Bearbeiten des Schriftguts rationalisieren, wenn die
Vordrucke Ihres Unternehmens den folgenden Normen entsprechen:

        DIN 676 Geschäftsbrief; Vordrucke A4
        DIN 677 -; Vordruck A5
        DIN 679 Geschäftspostkarte; Vordrucke A6

        DIN 4991 Vordrucke im Lieferantenverkehr; Rechnung
        DIN 4992 -; Bestellung (Auftrag)
        DIN 4993 -; Bestellungsannahme (Auftragsbestätigung)
        DIN 4994 -; Lieferschein/Lieferanzeige
        DIN 4998 Entwurfsblätter für Vordrucke

Diese Normen enthalten alle Einzelheiten für den sinnvollen und
zweckmäßigen Aufdruck. Wenn dazu bei der Beschriftung genormter
Vordrucke DIN 5008 "Regeln für Maschinenschreiben" beachtet wird,
entstehen übersichtliche und werbewirksame Schriftstücke.

Die beigefügten 6 Mustervordrucke zeigen, daß das Beachten der
Normen die künstlerische und werbewirksame Gestaltung der Vor-
drucke nicht ausschließt.

Da wir uns auf die Herstellung genormter Vordrucke spezialisiert
haben, können wir besonders billig liefern. Eine Probebestellung
wird Sie und Ihre Geschäftsfreunde von den Vorteilen überzeugen.

Mit bester Empfehlung

NORAG
Druckerei und Verlagshaus KG

Herrmann

Anlagen

6 Mustervordrucke

3.3.4 ADJUSTMENT: ONLY FOR PROFESSIONAL ENGINEER

Entering the off-line operation and selecting adjustment, LCD will show:

ADJUSTMENT
PHOTOSENSORE VALUE

Start to adjustment items selection.

3.3.4.1. RESET PHOTOSENSORS VALUE AND PRINT

After entering adjustment, LCD shows:

ADJUSTMENT
PHOTOSENSORE VALUE

Pressing STOP■ key to accept, LCD shows:

PHOTOSENSORE VALUE
INSERT SHEET,PRESS ■

After the paper inserted, and pressing STOP■ key to accept, the printer will feed the paper automatically and begin to setup the photosensor.
After finishing, the paper will be ejected automatically, and the current modified value will be saved, LCD shows:

PHOTOSENSOR VALUE
END. PRESS ■ TO PRIN

➢ If you want to print the current photosensor value, pressing STOP■ key to accept and LCD shows:

PHOTOSENSOR VALUE
INSERT A4 SHEET

When you insert the paper, the printer will feed the paper automatically and begin to print the photosensor
After   finished, the paper will be ejected automatically and LCD shows:
And now, if you insert paper again, it will print it again

➢ If press STATION 2 key , leaving the photosensor value print, LCD shows:

ADJUSTMENT
PHOTOSENSORE VALUE

Now you can select other operations you want.

The sample of photosensor value printing:

Sensor	No Paper	Paper	Ref. Level	Current	Valid
Paper Pres. 1	1023	0001	0341	0040	Y
Paper Pres. 2	1023	0001	0341	0040	Y
Paper AllIn. 1	1023	0058	0379	0040	Y
Paper AllIn. 2	1023	0015	0351	0040	Y
Paper AllIn. 3	1023	0015	0351	0040	Y
Paper AllIn. 4	1023	0014	0350	0040	Y
Paper Edge	0955	0045	0348	0120	Y

3.3.4.2. LEFT MARGIN SETUP:

NOTE:
➢ Press FEED/EJECT▲ key means to reduce the current value (moving leftwards),
   Press COMPRESS▼ key means to increase the current value (moving rightwards)
➢ The value of adjustment is within a range. That is, there is a maximum value to increase and a minimum value to reduce.
Entering the adjustment, LCD shows:

ADJUSTMENT
PHOTOSENSORE VALUE

Press COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows:

ADJUSTMENT
LEFT MARGIN

Press STOP■ key to accept, LCD shows:

LEFT MARGIN   016
▲=LEFT   ▼=RIGHT

If you want to see the print effect, insert A4 sheet, the printer will feed the paper automatically, print the current margin and eject the sheet automatically, LCD shows:

LEFT MARGIN   016
▲=LEFT   ▼=RIGHT

Now you can adjust the left margin according your requirement. Press _____ key means reduce based on current value (moving leftwards). Press COMPRESS▼ key means increase based on the current value (moving rightwards). If you want to check the print effect. Insert a sheet, it will print it, the LCD show:

LEFT MARGIN   020
▲=LEFT   ▼=RIGHT

After selecting the value you want, you must press STOP■ key to save, and the printer will exit the left margin setup and enter the classified selection of adjustment, LCD shows:

ADJUSTMENT
LEFT MARGIN

Now you can select other operations you want.

3.3.4.3. TOP MARGIN SETUP:

➢ Press FEED/EJECT▲ key means reduce based on current value (moving upwards) .Press COMPRESS▼ key means increase based on the current value (moving downwards;

➢ The value of adjustment is within a range. That is, there is a maximum value to increase and a minimum value to reduce.
Entering the adjustment, LCD shows:

```
ADJUSTMENT
PHOTOSENSORE VALUE
```

Press COMPRESS▼I key or FEED/EJECT▲ key until the LCD shows:

```
ADJUSTMENT
TOP MARGIN
```

Press STOP■ key to accept, LCD shows:

```
TOP MARGIN          036
▲=LEFT        ▼=RIGHT
```

If you want to see the print effect, insert A4 sheet, the printer will feed the paper automatically, print the current margin and eject the sheet automatically, LCD shows:

```
TOP MARGIN          036
▲=LEFT        ▼=RIGHT
```

Now you can adjust the top margin according your requirement. Press FEED/EJECT▲ key means reduce based on current value (moving upwards). Press COMPRESS▼ key means increase based on the current value (moving downwards). If you want to check the print effect. Insert a sheet, it will print it, the LCD show:

```
LEFT MARGIN         032
▲=LEFT        ▼=RIGHT
```

After selecting the value you want, you must press STOP■ key to save, and the printer will exit the left margin setup and enter the classified selection of adjustment, LCD shows:

```
ADJUSTMENT
TOP MARGIN
```

If you press STATION2 key, it will leave from the top margin setup and enter the Classified selection of adjustment, LCD shows:

```
ADJUSTMENT
PHOTOSENSORE VALUE
```

Now you can select other operations you want.

3.3.4.4. RUN-IN PRINTING:

Once entering the run-in printing, the printer will insert sheet and not stop print automatically from time to time unless you press STATION2 key or turn off the printer.
Entering the adjustment, LCD shows:

ADJUSTMENT
PHOTOSENSORE VALUE

Press COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows:

ADJUSTMENT
RUN IN TEST

Press STOP■ key to accept, LCD shows:

RUN IN TEST
PLEASE INSERT SHEET

After inserting the paper, it will feed the paper automatically and the run-in printing start, LCD shows:

RUN IN TEST   NO: nnn
printing ,   finish :mm

(nnn means the times of cover open when run-in printing;

mm means the times of run-in printing finished)

You just can skip run-in printing by pressing STATION2 key or turning off the printer.

Press STATION2 key, it will exit the run-in print and enter the classified selection of adjustment,   LCD shows:

Now you can select other operations you want.

The sample of RUN-IN test:
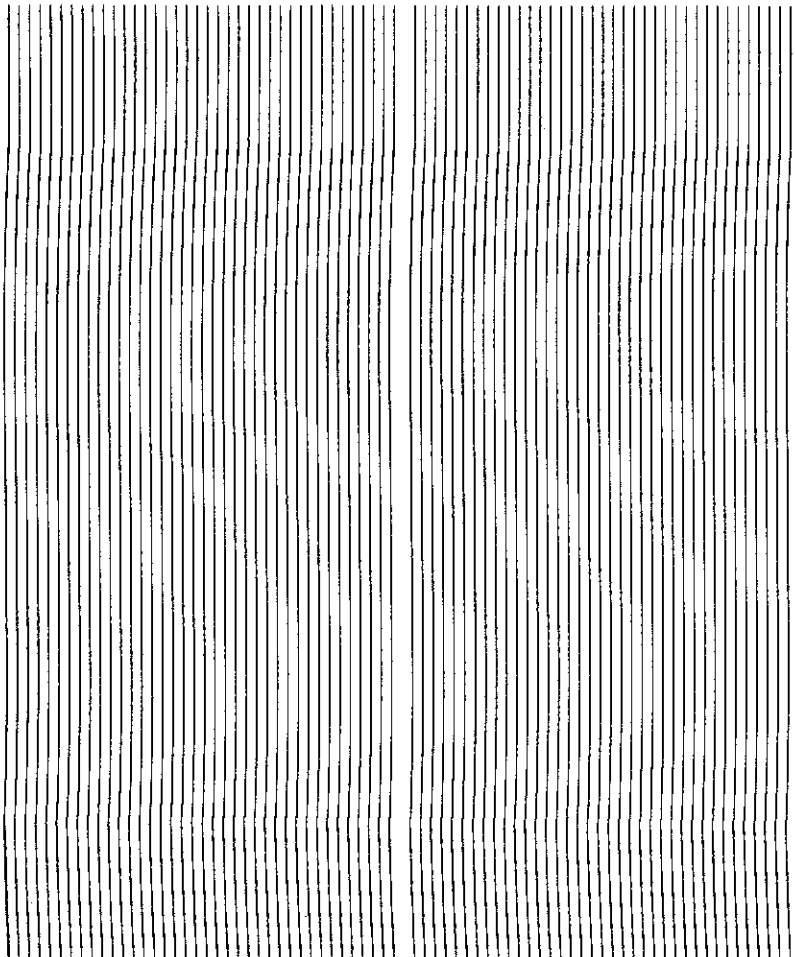
3.3.4.5. BIDIRECTION ALIGNMENT ADJUSTMENT:

You can select different CPI and quality for adjusting in the bidirection alignment print.
➢ Classification :
RESULT OF ALL SPEED

HSD	10CPI
DRAFT	10CPI
DRAFT	12CPI
HSD	17.1CPI
DRAFT	17.1CPI
NLQ	10CPI
NLQ	12CPI
LQ	10CPI

➢ **NOTICE** :
Before adjusting bidirection, you'd better select the "RESULT OF ALL APEED",
print all the result of all modes and check it, then do the adjustment according
your requirement.

Entering   the adjustment, LCD shows:

Press   COMPRESS▼ key or key FEED/EJECT▲ until the LCD shows:

ADJUSTMENT
BIDIRECTION ALIGN

Press STOP■ key to accept, LCD shows:

BIDIRECTION ALIGN
RESULT OF ALL SPEED

Press COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows the CPI and

Quality which you want to align, press STOP■ key to accept, and LCD shows:

BIDIRECTION ALIGN000
▲=LEFT   ▼=RIGHT

If you want to see the print effect, insert A4 sheet, the printer will feed the paper
automatically, print the effect and eject the sheet automatically. You can select
according your requirement by pressing COMPRESS▼ key (means moving
leftwards) and FEED/EJECT▲ key (means moving rightwards), then you can start
to adjust, the LCD will show :

BIDIRECTION ALIGN003
▲=LEFT   ▼=RIGHT

After select the value you want.
➢ Press STOP■ key to accept, it will be saved , LCD show :

BIDIRECTION ALIGN
DRAFT 17.1CPI

Now you can select other operations you want.

>   Press STATION2 key, it will leave from the bi-direction align printing and enter
The classified selection of adjustment, LCD shows :

ADJUSTMENT
BIDIRECTION ALIGN

Now you can select other operations you want.

NOTICE:
➢ Press FEED/EJECT▲ means reduce based on current value (move leftwards^.
   Press COMPRESS▼ key means increase based on the current value (move rightwards)
➢ The adjustment is limited during a range. That is, there is a maximum value to the increase and a minimum to the reduce

The sample of "RESULT OF ALL SPEED" printing:

```
>>> Alignment Adjustment Procedure <<<
```

```
                    HSD  10CPI (000)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
                    DRAFT  10CPI (-002)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
                    DRAFT  12CPI (-001)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
                    HSD 17.1CPI (-001)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||
                   DRAFT 17.1CPI (000)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||
                    NLQ  10CPI (001)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
                    NLQ  12CPI (001)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
                    LQ  10CPI (002)
||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
```

3.3.4.6. PRINT PHOTOSENSOR VALUES:

Entering the adjustment, LCD shows:

```
ADJUSTMENT
PHOTOSENSORE VALUE
```

Press COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows:

```
ADJUSTMENT
PRINT PHOTO VALUES
```

Press STOP■ key to accept, LCD shows:

```
PRINT PHOTO VALUES
INSERT A4 SHEET
```

After inserting the paper, the printer will feed the paper automatically.
It will print it and eject the sheet automatically, LCD shows:

```
PRINT PHOTO VALUES
FINISH ,PRESS  STAT2
```

Press STATION2 key, it will exit the photosensor values printing and enter the Classifieds election of adjustment, LCD shows:

ADJUSTMENT
PRINT PHOTO VALUES

Now you can select other operations you want.
The sample of PRINT PHOTOSENSOR VALUE:

Sensor	Ref. Level	Current	Valid
Paper Pres. 1	0341	0040	Y
Paper Pres. 2	0341	0040	Y
Paper Allin. 1	0372	0048	Y
Paper Allin. 2	0348	0040	Y
Paper Allin. 3	0351	0040	Y
Paper Allin. 4	0341	0040	Y
Paper Edge	0347	0120	Y

3.3.4.7. INQUIRE PHOTOSENSOR VALUES:

NOTICE:
➢ The inquiry of the photosensor can be classified into "FOTO VALUE-SET" and "FOTO VALUE-ACTUAL".
➢ You can inquire 7 class photosensor values :
　　Paper Introl
　　Paper Intro2
　　Paper Alline 1
　　PaperAlline2
　　Paper Alline 3
　　Paper Alline 4
　　PAP EDGE
➢ You can check each photosensor's value by pressing COMPRESS▼ key (means move downwards) or FEED/EJECT▲ key (means upwards)
Entering the adjustment, LCD shows:

ADJUSTMENT
PHOTOSENSORE VALUE

Press COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows:

ADJUSTMENT
INQUIRE PHOTO VALUES

Press STOP■ key to accept, LCD shows:

If you want to inquire the photosensor values. Press STOP■ key to accept, LCD shows:

INTRO1　　CUR
VOL.0260

Press COMPRESS▼ key (means move downwards) or key FEED/EJECT▲
(means upwards) to check various values .If you want to exit, pressing STATION2
key , The LCD shows :

```
INQUIRE PHOTO VALUES
FOTO VALUE-SET
```

Now you can select other operations you want.

3.3.4.8. RESUME HARDWARE PARAMETER:

➢ This adjustment mainly used to resume the default value of the following
   hardware parameters:
   Left margin
   Top margin
   Bi-direction alignment
➢ Once this item was selected, then the correspondent value will be replaced by
the default value and saved into the Flash.
Entering the adjustment, LCD shows:

```
ADJUSTMENT
PHOTOSENSORE VALUE
```

Press   COMPRESS▼ key or FEED/EJECT▲ key until the

```
ADJUSTMENT
   RESUME HW PARAMETER
```

LCD shows:
Press   STOP■ key to accept, LCD shows:

```
RESUME HW PARAMETER
■ ACCEPT ST2=IGNORE
```

If you want to resume the hardware parameter. Press STOP■ key to accept, after
finishing resume, LCD shows:

```
ADJUSTMENT
RESUME HW PARAMETER
```

Now you can select other operations you want.

3.3.5 DEBUG/TEST:

Entering the offline-operation, select the Debug-test, the LCD shows:

```
DEBUG/TEST
HEX PRINT
```

Start to select the debug/test

3.3.5.1. CLASSFICATION

3.3.5.1.1.   HEX printing: can classified into "Data backup", "Printing backup data"
          and   "Directly Dump".

3.3.5.1.2.   MAGNEITC TEST: can be classified into "READ MAGNEITC" and

```
INQUIRE PHOTO VALUES
FOTO VALUE-SET
```

3.3.5.2. HEX PRINTING

NOTICE: HEX printing can classified into "Data bacl<up'\   "Printing bacl<up data" and   "Directly Dump"

➢ "Data backup": The printer can be used for normal operation while all the codes received will be preserved in RAM.

➢ "Printing backup data": After the normal transaction having been treated ,if you need print all saved data in Hex format, entering off-line mode again, and selecting "Printing backup data of HEX printing, put A4 sheet into the printer, all the previously transacted data will be printed in Hex format(NOTE: the first two bytes are the length of the data), if finished, the printer will enter "Data backup" automatically

\> "Direct DUMP": The printer will print all the receiving data in Hex format after A4 sheet in inserted.

NOTE: More sheets are needed if there are too much data. Sheet will be automatically ejected after printing.

Entering the debug/test, LCD shows:

```
DEBUG/TEST
HEX PRINT
```

Press STOP■ key to accept it, LCD shows:

```
HEX PRINTING
DATA BACKUP MODE
```

➢ If you want to backup all received codes under the normal operation. Press STOP■ key to accept it, LCD shows :

```
HEX PRINTING
WAITING FOR DATA...
```

During the normal operation, LCD shows the current interface and emulation; After the normal transaction having been treated, if you want to print backup data, entering off-line mode again, select "PRINTING SAVED DATA", LCD shows :

```
HEX PRINT
PRINTING SAVED DATA
```

Press   STOP■ key to accept it, LCD shows:

```
HEX PRINT
INSERT A4 SHEET
```

After inserting the paper, the printer will print the data saved in RAM in HEX format, during the process, LCD show:

```
HEX PRINT
PRINTING , WAITING···
```

If the sheet is not long enough, it will be eject automatically.
If printing finished, the sheet will be ejected automatically:

```
HEX PRINTING
POWER OFF OR OTHERS
```

Now the printer will enter "Data backup" automatically
It can start new data copy in HEX, but it is noticed that the new data will cover the old data every time which was saved last time.

➢ Now , if it is need to print all the receiving data in HEX format.   Press COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows :

```
HEX PRINT
DIRECT DUMP
```
Press _____ STOP█ key to accept, LCD shows:
```
HEX PRINT
INSERT A4 SHEET
```
After inserting the paper, the printer will print all the receiving data in HEX format, at the same time, LCD show:
```
HEX PRINT
PRINTING , WAITING···
```
If the sheet is not long enough, it will be ejected automatically.
If printing finished, the sheet was did not ejected automatically, you have to press
FEED/EJECT▲ to eject the sheet, LCD shows:
```
HEX PRINT
POWER OFF OR OTHERS
```
Then, the printer id still in the "Directly DUMP" statue unless the printer is turned off or enter the off-line operation.
The sample of HEX printing:

```
00000   00 B5 7F 1B 6C 1B 26 30 30 1B 6C 1B 6E 1B 51 32   0↓0←1←&00←1←n←Q2
00010   20 20 32 35 1B 5A 1B 54 30 37 30 1B 2E 07 1B 55    25←Z←T070←.←←U
00020   61 1B 6A 1B 6A 1B 6A 1B 6A 1B 6A 1B 6A 1B 6A 1B   a←j←j←j←j←j←j←
00030   61 16 6A 1B 6A 1B 4C 30 30 30 1B 6A 1A 3D 1B 3E   a.j←j←L000←j→=←>
00040   1A 23 30 31 1B 49 31 30 30 1B 26 30 31 1B 48 30   →#01←I100←&01←K0
00050   3B 3B 1B 6C 20 20 20 20 20 20 20 20 20 20 39 30   ;;←l              90
00060   32 4F 20 43 50 48 20 20 20 20 32 30 30 34 2F 31   20 CPH      2004/1
00070   30 20 31 30 26 20 20 20 30 35 3A 31 31 3A 32 35   0 10&      05:11:25
00080   22 2E 30 30 3A 36 20 20 21 20 D6 D5 B6 C8 C1 F7   ".00:6  !  πⱤ
00090   C8 A0 BA C5 3B 20 30 20 20 20 20 20 38 30 30 30   →Å╫: 0          8000
000A0   30 3B 31 0D 10 26 20 31 1B 49 30 34 37 1B 20 20   0B1/*& 1←I047←
000B0   20 20 20 20 20 20 20
```

3.3.5.3. MAGNEITC TEST: This test just will be valid when there is the optional magnetic stripes exist.

Entering the debug/test, LCD shows:
```
DEBUG/TEST
HEX PRINT
```

Press COMPRESS▼ key or FEED/EJECT▲ key until the LCD shows:
```
DEBUG/TEST
MAGNETIC TEST
```

Press STOP█ key to accept, LCD shows:
```
MAGNETIC TEST
READ MAGNETIC
```

And now, you can select read or write magnetic stripe in different track and BPI

3.3.6 INQUIRY INFORMATION

Entering the off-line operation, LCD shows:

```
INFO INQUIRING
FW VERSION
```

Then you can start to inquiry.

3.3.6.1. INSTRUCTION

❑ **FW VERSION:** version, special emulation, (such as: IBM9068, SHINKO, HITACHI etc), special version ID and FPGA version.

⎯ **HARDWARE CONFIGURE:** Chinese character set, horizontal magnetic stripe, USB card, parallel card, SPROCKET, SCANCER etc.

D **PRINTER ID:** there is a unique identify ID for each printer.

EXIT the off-line operation:
If you want to exit the off-line operation, pressing down "STATI0N2" and "COMPRESS " keys simultaneously, printer will enter the on-line mode.

NOTE:
➢ If selecting "SAVE PARAMETERS" in "MENU SETUP" and confirming, the printer will finish saving and restart
➢ If having entered "ADJUST", when you exit off-line operation, the printer will restart also.

3.3.7 SCANNER'S CIS CALIBRATION

After entering adjustment, LCD shows:

```
ADJUSTMENT
SCANNER CALIBRATION
```

Press STOP■ to accept, LCD shows:

```
ADJUSTMENT
INSERT WHITE REF.DOC
```

Because CIS's width is 216mm，so we need to cut THREE **clean** A4 sheets （210*297mm）to size of 210*240mm。Align the 3 white sheets to the left side and insert them to the printer (with the long side 240mm forward)，printer will feed the sheets automatically and begin calibrating. After about 3 minutes, calibration is finished, the sheets is ejected automatically, LCD shows:

```
ADJUSTMENT
SCANNER CALIBRATION
```

Then you can select other operations.

Note:
l   the scanner's CIS has been calibrated in factory. Don't do this calibration unless needed.
l   The A4 sheet isn't the specific module to do scanner calibration, it's just a replacement, please make sure the A4 sheets are clean and without any printing.

3.4 PR9 MENU PARAMETERS

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
CONFIGU RE	RESUME DEFAULT VALUE	**NO** YES	Select resume default value or not, If select "YES", jump to "SAVE PARAMETERS", the parameters will be resumed the default value if pressing "STOP" to confirm.	**This option is mainly used to resume the default value when the menu parameters are be changed in disorder**
	INTERFACE	DUAL INTERFACE SERIAL1 CX	Select interface you want to use	"DUAL'or "CX'will be selected only if optional interface card is installed
	RS1 EMULATION	**OLIVETTI** OKI IBM LQ1600K IBM9068	SELECT RS1 EMULATION	
	MODIFY RS1 CONFIG	**NO** YES	SELECT MODIFY RS1 CONFIGURE OR NOT(BAUD RATE, BITS/CHARACTER, PARITY, STOP BITS, DSR)	
	BAUD RATE- RS1	2400 4800 **9600** 19200	Select data send/accept rate for printer's COM2 should be set in state as same as computer's	
	BITS/CHARAC TER-RS1	**8** 7	Define the data bit of RS1, it must be accorded with the host's	
	PARITY-RS1	**NONE** EVEN ODD	Set the parity type of RS1	

MODULE CONFIGURE	PARAMETER	OPTION	EXPLAIN	NOTE
	STOP BITS - RS1	2 **1**	Select the stop bits of RS1.	
	DSR-RS1	**NO** YES	SERIAL1 handle the DSR signal or not	
	CX EMULATION	OLIVETTI **OKI** IBM LQ1600K IBM9068	Select CX emulation (CX present and it has been selected)	
	CX STROBE EDGE	FAILING EDGE **RISING EDGE**	Select the trig mode of the printer strobe signal(CX present and it has been selected)	
	SB CURRENCY SYMBOL	NO **YES**		**This parameter is effective under Chinese mode**
	CHINESE CODE STD	**GB18030** GBK GB2312		PNS4003 of PR2E **This parameter is effective only under Chinese mode**
	DRAFT SPEED	**NORMAL** HIGH SPEED	Select printer speed in draft mode	
	LQ TYPE	**NLQ1** NLQ2 LQ2	Select printer type in LQ mode	
	NEEDLES SWITCH	NO **YES**		
	SPECIAL FORMS	**NO** YES	"YES": Reduce the speed of paper handling, and add some special management to support special forms(e.g. thin paper, paper with different thickness)	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
CONFIGURE	BIM DIRECTION	**UNDIRECTION** BIDIRECTION	Select printing direction for graphics	
	IGNORE COVER OPEN	**NO** YES	Ignore cover open or not	**This parameter is not effect for English version(always "NO")**
	NEEDLE COMPENSATION	**NO** YES	Select needle compensation or not when the needle is broken	
	HIGH SPEED COMPENSATION	**NO** YES	HIGH SPEED COMPENSATION or not	
	BROKEN NEEDLE NO.	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	Choose the one needle from 1 to 24 for Compensation	
	PNS SELECTION	NO **YES**	PNS selection or not. when selected "YES" , you can select the PNS options as follows	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
CONFIGURE	PNS #2000K	SINGLE SHEET 205MM 220MM	The selection will influence ejection **"205MM":** If the paper width exceeds 205MM, OxOC is treated as FORM FEED command; otherwise OxOC is treated as ejecting paper **"220MM":** If the paper width exceeds 220MM, OxOC is treated as FORM FEED command; otherwise, OxOC is treated as ejecting paper "SINGLE SHEET": OxOC is treated as ejecting paper	PNS4002K of PR2E
	PNS#2001 K	200 300 **400** 500 600 700 800 900 1000	DIGITAL FILTER (CX STB)	
	PNS #2002K	**NO** YES	reserved	
	PNS #2003K	**NO** YES		

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
CONFIGURE	PNS #2004K	NO **145mm** 205mm YES	Printhead moves out of paper with vertical movement or not "NO": the print head never moves out of paper edge; "145MM"/"205MM" : The print head moves out of the paper if the paper width is less than 145MM or 205MM; "YES": the print head always moves out of the paper	
	PNS #2005K	**NO** IGNORE ERROR SPACE CHAR1 CHAR2		
OLIVETTI CONFIGURE	EMULATION	**PR9** PR40+		
	TOP PR40 LIKE	**NO** YES	Selecting the top margin. "NO": the physical top margin (adjustable) "YES": 7.4mm	The default physical top margin is 4.23mm
	PRINTING MODE	**CHINESE** LATIN BIG-5 UNICODE		
	ASCII CHARACTER SET	GB MINCHO ROMAN **0PTI0N1** 0PTI0N2 LATIN	Selecting the font of ASCII characters, when the print mode is Chinese.	**This parameter is effective only under Chinese mode**

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
OLIVETTI CONFIGURE	HIGH SPEED PRINTING	NO A4 SHEET FAN FOLD PAPER **YES**	Selecting high speed printing mode: "NO": Forbid auto high speed printing. "A4 SHEET": the print mode is forced as draft when the paper is A4 sheet. "FAN FOLD PAPER": the print mode is forced as draft when the paper is fan fold paper. "YES": the print mode always is forced as draft	
	CPI	10 12 12.9 15 16.6 17.1 18 20 30		
	LPI	5 6 8		
	CHARACTER DEFINITION	DRAFT LQ OCR-A OCR-B	Selecting font. " DRAFT": draft "LQ": letter quality "OCR-A": "OCR-B":	
	LF+CR	**NO** YES	"NO": LF = LF "YES": LF = LF+CR	
	LEFT MARG. (1/60")	-6 -5 -4 -3 -2 -1 **0** 1 2 3 4 5 6	Adjusting left margin in unit of 1/60 inch.(about 0.4mm)	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
OLIVETTI CONFIGURE	TOP MARG. (1/60")	-6 -5 -4 -3 -2 -1 **0** 1 2 3 4 5 6	Adjusting top margin in unit of 1/60 inch (about 0.4mm)	
	CHARACTER SET	IBM/PC **OLIVETTI**	Selecting the character set as IBM/PC or OLIVETTI.	
	IBM CHARACTER SET	**PC** ISO	Selecting the IBM character set as PC or ISO.	
	PC CHARACTER SET	**437(INT)** 210 (GR) 220 (E) 850(LATIN 1) 851 (GREEK) 852 (LATIN 2) 855(CYRILLIC) 857(LATIN 5) 858(LATIN EURO) 860(P) 862 (IL) 863(CAN. FR.) 864(ARABIC) 865(NORDIC) 866(CYRILLIC) DK/N DK 1252(PC-WIN LATIN 1) 1250(PC-WIN LATIN2) CHINA CHN2 990(pc-886-BG) 991(PC-GBR)	Selecting the code page of the PC character set.	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
	ISO CHARACTER SET	**CPOLUNIX** ISO 8859/15 ISO 8859/1 ISO 8859/2 ISO 8859/5 ISO 8859/6 ISO 8859/7 ISO 8859/8 ISO 8859/9	Selecting the code page of the ISO character set.	
OLIVETTI CONFIGU RE	OLI. CHARACTER SET	ST15CND ST15CIBC ST15DK/N ST15IL ST15F ST15UK ST15D ST15GR **ST15INT** ST15ITA ST15P ST15USSR ST15SDC ST15E ST15E2 ST15S/SF ST15CH ST31 ST15TR ST15USA ST15YU ST15ARABIC	Selecting the code page of the OLIVETTI character set.	
	BIM DEFAULT DPI	72 96	Setting the default DPI (dot per inch) of the graphic printing under 8 needles graphics.	
	VERT. RESOLUTION	1/216 **1/240**	Setting the vertical resolution as 1/216 inch or 1/240 inch.	
	LINE LENGTH	**80** **90** **94**	Selecting the line length in unit of chars' number of 10 CPI.	
	RESET WHEN EJECT	**NO** YES	Whether PR9 reset, when eject.	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
	COMPRESS	**16.6** **17.1**	Setting the CPI which command "ESC >" sets. "16.6": 16.6CPI "17.1": 17.1CPI	
	PNS SELECTION	**NO** YES	Whether the following PNS items is valid.	
	PNS #2020K	**NO** YES	"NO": Normal passbook printer mode« "YES": Journal printing mode.	Relative with the PNS7010K of PR2E
OLIVETTI CONFIGU RE	PNS #2021K	**NO** YES	Process of invalid code "NO": Command error if invalid code is received "YES": Ignore the invalid code.	Relative with the PNS7011K of PR2E
	PNS #2022K	**NO** YES	Process of bof "NO": normal mode "YES": PR9 feed paper to the max position when the current vertical position is right for the bottom limit, but the feed paper value exceed the bottom limit. And PR9 report "ESC r X" when it receive the command "ESC j".	Relative with the PNS7015K of PR2E

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
	PNS #2023K	**NO** YES	Selecting the special function of the command "ESC ! sp nnn" "NO": same as PR2, the space setting of the full corner characters is same as half corner characters. "YES": the space setting of the full corner characters is double as half corner characters.	Relative with the PNS7014K of PR2E
	PNS #2024K	**NO** YES	"NO": normal mode "YES": ASCII characters printing and the graphic printing in a same line are enabled.	Relative with the PNS7016K of PR2E
	PNS #2025K	**NO** YES		
	PNS #2026K	**NO** YES		
	STANDARD	DIN/ISO ANSI **IBM3604** IBM4746 IS07811 HT-2751-C1Z IS08484	Selecting the magnetic record standard.	It is used for PR9/K V1.07 T9 and later version.
	DUPLICATE	**NO** YES	Selecting the magnetic record is duplicate.	It is used for PR9/K V1.07 T9 and later version.
	END SENTINEL	**C** F	Selecting the end sentinel of the magnetic record.	It is used for PR9/K V1.07 T9 and later version.

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
OPTION **HOR.** **MSRW.**	DISPLACEMENT	**STANDARD** **+10** **+20**	Selecting the position displacement of magnetic record.	It is used for PR9/K V1.07 T9 and later version.
	POSITION ADJUST	**-7** **-6** **-5** **-4** **-3** **-2** **-1** **0** **1** **2** **3** **4** **5** **6** **7**	Selecting the adjust value for the position of magnetic record when read magnetic stripe.	It is used for PR9/K V1.07 T9 and later version.
	RETRY	**1** **3** **5**	Selecting the retry number for reading magnetic stripe.	It is used for PR9/K V1.07 T9 and later version.
	STRIPE HANDLE	**NORMAL** FAST	Selecting stripe handle mode. "NORMAL": measure the width of passbook when read magnetic stripe every time. "FAST": measure the width of passbook only one time, next time using the width.	It is used for PR9/K V1.07 T9 and later version.
	AUTO COMPRESSION	**NO** YES	Determine whether automatically condense current line for printing, when current line length exceed the allowed line length.	
	LINE LENGTH COMPRESS	**NO** YES	Determine whether to compress by line width	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
OKI CONFIGU RE	COMPRESS PROPORTION	101/LINE **(85%)** **108/LINE(80%)** 115/LINE(75%) 123/LINE(70%) 133/LINE(65%) 144/LINE(60%) 157/LINE(55%) 170/LINE(50%)	Select the proportion of automatically on the condensation mode	
	FAN FOLD LEFT MARC.(1/10")	**0** 1 2 3 4 5 6 7	Select the left margin for the columns fan fold paper in n/10 inch	
	PAPER EMPTY WARNING	**NO** YES	Determine whether block parallel port when there is no paper in PR9 or not	
	ONE BYTE BUFFER	**NO** YES	Determine whether set parallel port receiving buffer into 1 byte or not	
	PRINTING MODE	**CHINESE** LATIN BIG-5 UNICODE		**This parameter only effect on Chinese Version**
	ASCII CHARACTER SET	GB MINCHO **ROMAN** GW LATIN		**This parameter only effect on Chinese Version**
	HIGH SPEED PRINTING	NO A4 SHEET FAN FOLD PAPER **YES**	Determine whether always use Draft quality to print upon to the paper width.	
	LPI	5 **6** 8		

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
OKI CONFIGURE	CHARACTER DEFINITIONS	**DRAFT** **LQ**	Select default character quality	
	LF+CR	**NO** **YES**	"No": LF=LF "YES": LF=LF+CR	
	CR+LF	**NO** YES	"No": CR=CR "YES": CR=CR+LF	
	LEFT MARC. (1/60")	**-6** **-5** **-4** **-3** **-2** **-1** **0** **1** **2** **3** **4** **5** **6**	Aadjust left margin in unit of 1/60 inch	
	TOP MARG. (1/6")	**-1** **0** **1** **2** **3** **4** **5** **6**	Adjust top margin in unit of 1/6 inch	
	TOP MARG (1/60")	**-5** **-4** **-3** **-2** **-1** **0** **1** **2** **3** **4** **5**	Adjust top margin in unit of 1/60 inch	
	LINE LENGTH	**80** **90** **94**	Set line length in unit of characters number of 10CPI	
	RESET WHEN EJECT	**NO** YES		

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
OKI CONFIGU RE	PNS SELECTION	**NO** YES	Select PNS or not, if select YES for PNS, you can select the following items	
	PNS #2060K	**NO** YES	**Process of command ESC % 9 n1 n2:** **"NO":** when n2=0 set line spacing to zero "YES": when n2=0 ignore this command	Relative with the PNS7020K of PR2E
	PNS #2061K	**NO** YES	**Process of command HT(09):** **"NO":** execute LF+CR If H-TAB is not valid . "YES": ignore this command If H-TAB is not valid	Relative with the PNS7021K of PR2E
	PNS #2062K	**NO** YES	Determine whether to reset automatically line condensation when Form Feed command executed "NO": reset "YES": not reset	
	PNS #2063K	**NO** YES	Determine whether to ignore all the code 0x20 at the end of line "NO": Ignore 0x20 "YES": not ignore any code	
	EMULATION	IBM PPII **IBM X24**		
	AGM	**NO** YES	Whether the AGM graphic printing is valid.(it is only using for IBM X24)	
	PRINTING MODE	**CHINESE** LATIN BIG-5 UNICODE		**This parameter only effect on Chinese Version**

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
IBM CONFIGURE	ASCII CHARACTER SET	GB MINCHO ROMAN **0PTI0N1** 0PTI0N2 LATIN		**This parameter only effect on Chinese Version**
	HIGH SPEED PRINTING	NO A4 SHEET FAN FOLD PAPER **YES**	Selecting high speed printing mode: "NO": Forbid auto high speed printing. **"A4 SHEET":** the print mode is forced as draft when the paper is A4 sheet. **"FAN FOLD PAPER":** the print mode is forced as draft when the paper is fan fold paper. "YES": the print mode always is forced as draft.	
	CPI	10 **12** 15 17.1 20		
	LPI	5 **6** 8		
	CHARACTER DEFINITION	**DRAFT** **LQ**	Selecting the printing quality	
	LF+CR	**NO** **YES**	"No": LF=LF "YES": LF=LF+CR	
	CR+LF	**NO** YES	"No": CR=CR "YES": CR=CR+LF	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
IBM CONFIGU RE	LEFT MARG. (1/60")	**-6** **-5** **-4** **-3** **-2** **-1** **0** **1** **2** **3** **4** **5** **6**	Adjusting left margin in unit of 1/60 inch.	
	TOP MARG. (1/60")	**-6** **-5** **-4** **-3** **-2** **-1** **0** **1** **2** **3** **4** **5** **6**	Adjusting top margin in unit of 1/60 inch.	
	IBM CHARACTER SET	**PC** **ISO**	Selecting the IBM character set as PC or ISO.	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
IBM CONFIGURE	PC CHARACTER SET	**437(INT)** 210 (GR) 220 (E) 850(LATIN 1) 851 (GREEK) 852 (LATIN 2) 855(CYRILLIC) 857(LATIN 5) 858(LATIN EURO) 860(P) 862 (IL) 863(CAN. FR.) 864(ARABIC) 865(NORDIC) 866(CYRILLIC) DK/N DK 1252(PC-WIN LATIN 1) 1250(PC-WIN LATIN2) CHINA CHN2 990(PC-866-BG 991 (PC-GER)	Selecting the code page of the PC character set.	
	ISO CHARACTER SET	**CPOLUNIX** 8859/15 8859/1 8859/2 8859/5 8859/6 8859/7 8859/8 8859/9	Selecting the code page of the ISO character set.	
	PC TABLE	TABLE1 **TABLE2**	Selecting the PC table 1 or table 2	
	BOF IBM-PP LIKE	NO **YES**	Setting the bottom margin. "N0"= 2.3mm "YES"= 10mm	
	TOP IBM-PP LIKE	NO **YES**	Setting the top margin. "NO": the physical top margin (adjustable) "YES": 7.4mm	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
IBM CONFIGU RE 1	ZERO S1_ASH	**NO** YES	Determines the printout of '0' (0x30) "YES": '0' will be printed with a slash on it	
	LINE LENGTH	**80** **90** **94**	Setting the line length in unit of character of 10CPI.	
	INSERET IVIODE	**DIRECT** PR2 LIKE	Selecting the insert mode. "DIRECT": PR9 insert paper directly when paper alignment. "PR2 LIKE": PR9 insert paper when printing data is received, it is same as PR2.	
	PAGE LENGTH	11 **12**	Setting the page length in unit of inch	
	RESET WHEN EJECT	**NO** YES	Whether PR9 reset, when eject.	
	COIVIPRESS	16.6 **17.1**	Setting CPI which command "SI" set. "16.6": 16.6CPI "17.1": 17.1CPI	
	PNS SELECTION	**NO** YES	Whether the following PNS items is valid.	
	PNS #2080K	**NO** YES	"NO": Double height printing and bold printing are valid in any print pitch. "YES": The print pitch is forced to 10 CPI or 12 CPI when Double height printing or bold printing.	Relative the PNS4001K of PR2E
	PNS #2081K	**NO** YES		**This parameter only effect on Chinese Version**

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
LQ CONFIGU RE	AUTO COMPRESSIO N	**NO** YES	Determine whether automatically condense current line for printing, when current line length in fact is exceed the allowed line length.	
	LINE LENGTH COMPRESS	**NO** YES	Determine whether the proportion of automatically line condensation is upon to the current line length or it is fixed by menu	
	COMPRESSIO N PROPORTION	101/LINE **(85%)** **108/LINE (80%)** 115/LINE (75%) 123/LINE (70%) 133/LINE (65%) 144/LINE (60%) 157/LINE (55%) 170/LINE (50%)	Select the proportion of automatically line condensation	
	FAN FOLD LEFT MARC.(1/10")	**0** 1 2 3 4 5 6 7	Select the left margin for the 80 columns fan fold paper in n/10 inch	
	PAPER EMPTY WARNING	**NO** YES	Determine whether block parallel port when there is no paper in PR9 or not	
	PRINTING MODE	**CHINESE** LATIN BIG-5 UNICODE		**This parameter only effect on Chinese Version**

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
LQ CONFIGU RE	ASCII CHARACTER SET	GB MINCHO **ROMAN** 0PTI0N2		**This parameter only effect on Chinese Version**
	HIGH SPEED PRINTING	NO A4 SHEET FAN FOLD PAPER **YES**	Determine whether always use Draft quality to print upon to the paper width.	
	LPI	5 **6** 8	Select default LPI	
	CPI OF CHINESE FONT	5 6 **6.7** 7.5	select Chinese character CPI	
	CPI OF WEST FONT	**10** 12 15 17 20	Select ASCII character CPI	
	CHARACTER SET	**PC** ISO	Determine Western character set (PC or ISO)	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
LQ **CONFIGU** **RE**	PC CHARACTER SET	**437(INT)** 210 (GR) 220 (E) 850(LATIN 1) 851 (GREEK) 852 (LATIN 2) 855(CYRILLIC) 857(LATIN 5) 858(LATIN EURO) 860(P) 862 (IL) 863(CAN. FR.) 864(ARABIC) 865(NORDIC) 866(CYRILLIC) DK/N DK 1252(PC-WIN LATIN 1) 1250(PC-WIN LATIN2) CHINA CHN2 990(PC-866-BG) 991 (PC-GER)	select PC character set	
	ISO CHARACTER SET	**CPOLUNIX** 8859/15 8859/1 8859/2 8859/5 8859/6 8859/7 8859/8 8859/9	Select ISO character set	
	CHARACTER DEFINITION	**DRAFT** **LQ**	Select default character quality	
	LF+CR	**NO** **YES**	"No": LF=LF "YES": LF=LF+CR	
	CR+LF	**NO** YES	"No": CR=CR "YES": CR=CR+LF	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
LQ				
CONFIGU RE	LEFT MARG.(1/60")	**-6** **-5** -4 -3 -2 -1 0 1 2 3 4 5 6	Left margin adjust in n/60inch	
	TOP MARG. (1/6")	**-1** **0** 1 2 3 4 5 6	Top margin adjust in n/6inch	
	TOP MARG MICRO-ADJUS TMENT. (1/60")	**-5** **-4** **-3** -2 -1 0 1 2 3 4 5	Top margin adjust in n/60inch	
	ZERO SLASH	**NO** YES	Determines if O's (zeros) are crossed out with "/"s (slash) when they are printed	
	LINE LENGTH	**80** **90** **94**	Select 10CPI characters per line	
	RESET WHEN EJECT	**NO** YES	Determine whether reset character attribute after paper eject	
	PNS SELECTION	**NO** YES	Determine whether make PNS valid	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
LQ CONFIGURE	PNS#2100K	**NO** YES	Determine whether to reset automatically line condensation when Form Feed command executed "NO": do reset "YES": **not** reset	
	PNS#2101K	**NO** YES	Determine whether to ignore all the code 0x20 in the end of a line **"NO": ignore 0x20** **"YES":** not ignore any code	
	PNS#2102K	**NO** YES	Process of the Horizontal movement command and Vertical movement command (ESC $, ESC \, ESC (V) "NO": ESC/p2 "YES":ESC/p	Note: This PNS is only valid on version 1.08 T6 or upper version:
IBM9006 CONFIGURE	PRINTER ID	**1D** **1E**	Selecting printer ID as required 1D = 4748 1E = 9055-001	
	SERIAL PROTCOL	**EFFECTIVE CTS/FDD** NO CTS/FDD	Selecting serial communication interface with the host system. **EFFECTIVE CTS/FDD** = Honors CTS with Finance Device Driver NO CTS/FDD = Without Finance Device Drive	
	HIGH SPEED PRINT	**NO** YES	Selecting the print mode to be forced as draft.	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
		-6		
		-5		
		-4		
		-3		
		-2		
	LEFT MARG	**-1**	Adjust left margin in	
	(1/60")	**0**	unit of 1/60 inch	
		1	(about 0.4mm)	
		2		
		3		
		4		
		5		
		6		
		-6		
		-5		negative
		-4		value to
		-3		
		-2		
	TOP MARG	**-1**	Adjust top margin in	decrease
	(1/60")	**0**	unit of 1/60 inch	top ,and
		1	(about 0.4mm)	positive
		2		value to
		3		increase top
		4		
		5		
		6		
		-10		
		-9		
		-8		
		-7		
		-6		
IBM9006		**-5**		
		-4		
CONFIGU	BOF ADJUST	**-3**	Adjust the BOF	
RE	(0.5mm)	**-2**	margin in unit of	
		-1	0.5mm	
		0		
		1		
		2		
		3		
		4		
		5		
		6		
		7		
		8		
		9		
		10		

MODULE IBM9006	PARAMETER	OPTION	EXPLAIN	NOTE
CONFIGU RE	FEED ADJUST(1mm/ 10")	**-10** **-9** **-8** **-7** **-6** **-5** **-4** **-3** **-2** **-1** **0** **1** **2** **3** **4** **5**	The adjustment when the form feed IOinch, 0.5mm/inch	The item is not valid now.
	LPI	**5** **6** **8**		
	UNIDIRECTIO N	**EFFICIENCY** IGNORE	Set command to set UNIDIRECTION is valid or not	
	LF+CR	NO **YES**	"No": LF=LF "YES": LF=LF+CR	
	CR+LF	**NO** YES	"No": CR=CR "YES": CR=CR+LF	
	COUNTRY CODE PAGE	**GIG-5** UNICODE IBM-PC GB18030 GBK GB2312		**This parameter only effect on Chinese Version**
	CPI OF COMPRESS	17.1 **18**	17.1 = 17.1CPI in condensed mode 18= 18CPI in condensed mode	
	CPI	**10** 12 15	The printing character numbers per inch	
	LINE LENGTH	82.5 **94**	Select line length in unit of characters number of 10CPI	
	RESET WHEN EJECT	**NO** YES	Whether PR9 reset, when eject.	
	IGNORE ERROR	NO **YES**	"NO": invalid code results in error "YES": ignore the invalid code.	

MODULE	PARAMETER	OPTION	EXPLAIN	NOTE
	BEEP WARNING	BEEP ON **BEEP OFF**	Determines if the alarm sounds when an end of document is detected.	
	PNS SELECTION	**NO** YES	Whether the following PNS items is valid.	
	PNS#2120K	**NO** YES	"NO": Normal bottom margin limit. "YES": Special bottom margin limit.	

4.   FAILURE DIAGNOSE AND PREVENTIVE MAINTENANCE

4.1 MAINTENANCE

The following describes maintenance method for field engineers.

4.1.1   FAULT DETECTION ANALYSIS

The user who detected product malfunction can give information regarding the operating mode the printer was in when the malfunction occurred and the related error indications that were provided. The repetition of the fault, when possible, can help with its identification. For fault diagnosis purposes, it is important to establish whether the fault is repetitive or random.

4.1.2   ANALYSIS OF THE OPERATING CONDITIONS

WORKING ENVIRONMENT:

-   An environment that is too cold, hot or humid could be the cause of certain malfunctions. The machine must not be positioned near air conditioning system vents or exposed to direct sun light. Make sure that the machine's internal ventilation slots are not blocked, especially if the printer is installed in furniture.
-   Forms, documents or office equipment located.
-   Make sure that the accessories installed in the machine are originals and in good condition.
-   Check that the documents inserted in the printer comply with the machine specifications and are in good condition.

PRINTER OPERATING CONDITIONL:
-   Check that the internal parts of the machine have no dirt deposited or residue of paper or ink that could interfere with the performance of the printer's different components.
-   Make sure there is no internal damage caused by the insertion of documents with metal clips, staples, and pins or similar.
-   Ensure that the parts specified are correctly lubricated.

4.1.3   IDENTIFYING THE MALFUNCTION

-   Carefully examine all the information collected (from the Operator, printer error signals, analysis of the documents where the fault has occurred, repetition of the error when the machine is powered on, etc.) to recognize and identify the machine malfunction to be corrected.
-   At times a malfunction is generated by more than one cause: it is important in such cases to isolate the faults and deal with them one at a time.

4.1.4   FINDING THE CAUSE

Using experience together with the information given in this section as a guide, take a logical path to find the fault, starting from the most probable cause through, to the most possibility until malfunction part is found.

4.1.5   SOLVING THE PROBLEM

Repair the machine so that it correctly resumes to operating as normal.

4.2 FAULT CLASSIFICATION

To make the search easier, the faults have been classified as follows:
-   4.3 Power-on faults
-   4.4 Document printout faults
-   4.5 Document handling faults

Each fault classification lists the more probable failures and their possible causes. The classification provided in this chapter cannot cover all the faults that could occur on the machine: if the fault detected is not described herein, refer to the description of a similar fault.

4.3 POWER ON FAULTS

FAILURE / POSSIBLE CAUSE	The printer does not power on	diagnostics indicate a main board failure	diagnostics indicate a mechanical failure	The printer is unable to connect with the host
Incorrect power supply unit	X			
Damaged power cord	X			
Power cord partly inserted	X			
Faulty power supply unit	X			
Faulty main board		X		X
Faulty front photosensors			X	
Faulty carriage photosensor			X	
Printer cover open			X	
Jammed paper			X	
Interface connection problems				X
Interface cable problems				X

Note: Incorrect set-up   **X**

4.4 DOCUMENT PRINTOUT FAULTS

FAILURE / POSSIBLE CAUSE	does not print	Failed printing	Stained printing	Incomplete printing	Incline printing	Deformed printing with irregular spacing
Ribbon cartridge not installed	X	X				
Ribbon to be replaced (finished)		X				
Ribbon cartridge fitted incorrectly	X	X		X		
Incorrect set-up parameters					X	X
Obstruction along the carriage stroke	X					X
Closing levers open	X	X		X	X	
Faulty printhead	X			X		
Faulty paper photosensor	X					
Faulty head flat cable	X					
Carriage Transport motor	X					X
Faulty main board	X			X		
Paper feed belt adjustment					X	
Needle-platen distance adjustment	X	X	X	X		
Ribbon-needle protection fin adjust	X	X	X	X		

Paper photosensor adjustment	X				X	X
Print bar adjustment	X	X				
Front pressure roller adjustment					X	
Carriage movement belt adjustment					X	X

4.5 DOCUMENT HANDLING FAULTS

FAILURE / POSSIBLE CAUSE	The printer does not load/expel the document	The document is moved crookedly	The document is crumpled	The document has irregular line feeds
Document not within specifications	X	X	X	X
Ruined document	X	X	X	X
Closing levers open		X	X	X
Faulty front photosensors	X			
Faulty paper photosensor	X			
Faulty services motor	X			
Faulty paper feed motor	X			X
Faulty main board	X			
Document feed belt adjustment			X	
Needle-platen distance adjustment		X		
Ribbon-needle protection fin adjustment			X	
Paper photosensor adjustment	X		X	
Print bar adjustment			X	
Front pressure roller adjustment	X	X		X

4.6 PREVENTIVE MAINTENANCE

4.6.1 CLEANING

For a correct printer operation, it is suggested that the internal components of the machine be cleaned periodically and whenever the machine is serviced.

4.6.2 CLEANING THE CASE

Power off the machine, unplug it from the electrical outlet and then clean its case using a damp cloth; avoid using corrosive substances such as solvents, alcohol solutions, petrol or abrasive components.

4.6.3 CLEANING THE PAPER PATHS

Clean all the document paths including the paper feed rollers of the front paper feeder, making sure to remove any paper or ribbon residues that are deposited on the parts. Also remove any foreign matter.

4.7 LUBRICATION

Although machine lubrication is not scheduled throughout its entire life span, during each service call you are expected to check the lubrication of the different parts by referring to the lubrication points table indicated below.

DESCRIPTION	GREASE	OIL
Printhead carriage slide shafts		x
Carriage felt		x
Ribbon feed gear	x	
reed support pin	x	
Hole of the contact bushing between roller shaft and strap shaft	x	
Center pressure device in shaft contact area	x	
Bushings in the shaft contact area	x	
Services Motor	x	
Services Motor gear	x	
Pulley toothing	X	
Ribbon feed rotation pin hole with support pin	x	
Belt tightener pin with return pulley	x	
Rubber in the damper assembly hole	x	
Print crosspiece in the following areas	x	
Pin contact left bracket	x	
Guide hole center pin	x	
Inside the crosspiece adjustment screw holes	x	

5. MECHANICAL ADJUSTMENTS

The mechanical adjustments have been divided into:
- **MACHINE CONDITION:** Describes the condition that the printer must be in in order to be able to perform a successful adjustment.
- **OBJECTIVE ADJUSTMENT:** Indicates the points, values and tolerances to be observed to ensure good kinematic operation.

PROCEDURE: Describes the operations to be performed for the adjustment.
Notes: Indicates any reference to adjustment sequences or to tests to be performed once the adjustment is made.

5.1 DOCUMENT FEED BELT ADJUSTMENT

MACHINE CONDITION: Unimportant.
OBJECTIVE ADJUSTMENT: The tension of timing belt (1) must sag 2.9 + 2mm when applying 200 gr + 10gr at the center of the lower span.
PROCEDURE: Loosen the motor securing nuts (2), tighten the belt accordingly and then tighten nuts (2) again.
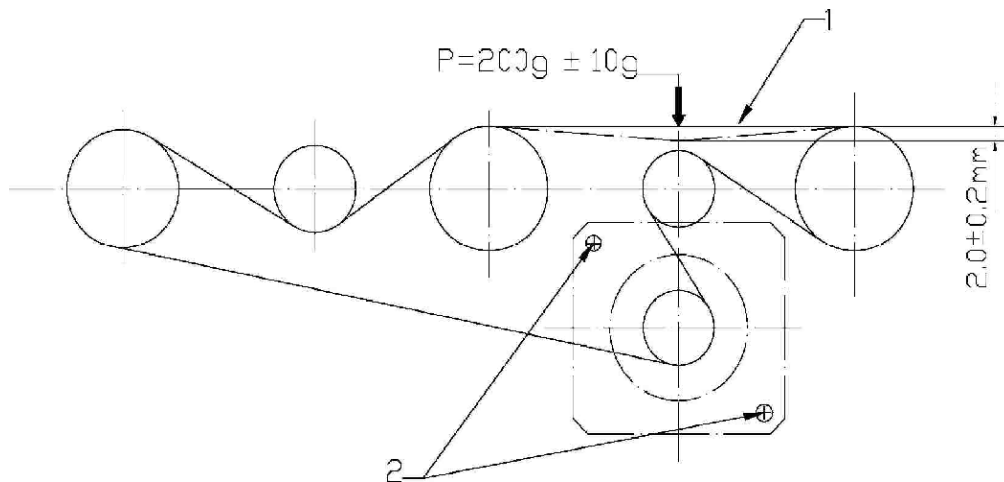
Fig. 5-1

5.2 PRINT BAR ADJUSTMENT

MACHINE CONDITION: Power off the machine and lift the front part of mechanical assembly.
PROCEDURE: While holding the printhead carriage on the axis make sure it vertical justification to the screw (2), adjust screw (2) until the printhead photosensor wheel edge approach to the print bar gently. Repeat this procedure on the other screw located on the opposite side of the frame.
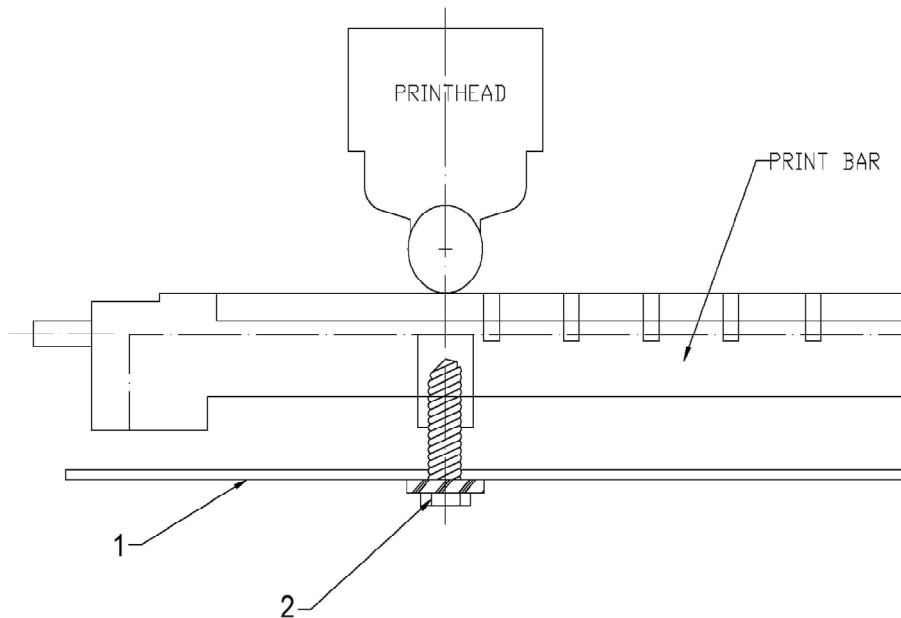
Fig. 5-2

5.3 DISTANCE ADJUSTMENT BETWEEN THE PRINT BAR AND PRINTHEAD

NEEDLES

MACHINE CONDITION: Power off the machine and lift the front part of the
mechanical assembly.
OBJECTIVE ADJUSTMENT: A distance of 0.27/0.32 mm must be measured
between the head of printhead needle and the printhead pressure wheel.
ADJUSTMENT METHOD: Adjust the screw (1), adjust the distance between the
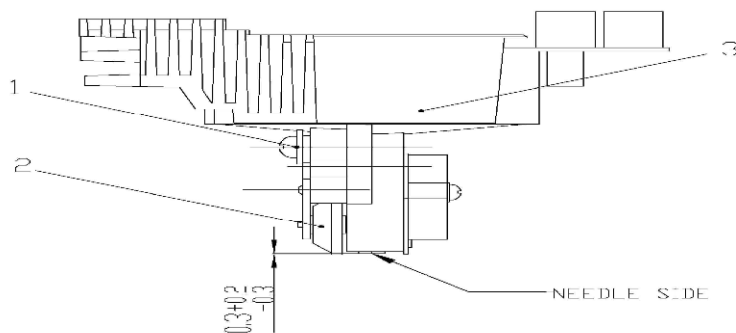head of printhead needle and the printhead pressure wheel, and tighten screw (1)
again.

Fig. 5-3

5.4 CARRIAGE MOVMENT BELT ADJUSTMENT

MACHINE CONDITION: Unimportant.
OBJECTIVE ADJUSTMENT: make sure the belt moved smoothly.
ADJUSTMENT METHOD: Adjust the screw (1).

Fig. 5-6

6.   DISASSEMBLY/REASSEMBLY THE PRINTER

6.1   DISASSEMBLY/REASSEMBLY INTRODUCE

Disassembly/reassembly procedure: Described the sequence of the disassembly.

Notes: recall adjustments that need to be made after reassembly, precautions or warnings to be observed.

6.2   ATTENTIONS OF DISASSEMBLY/REASSEMBLY

-    To ensure maximum safety, before starting any disassembly operation power off the printer and unplug its power cord from the electrical outlet.
-    All operations should be performed in a clean and uncluttered area.
-    Follow the procedures carefully; do not unscrew parts that are not to be disassembled.
-    Store the disassembled parts in a clean place where there is no danger of them getting lost.
-    After replacing the parts, make sure that they have not been deformed during assembly; restore the correct conditions if necessary.

    Reassembly must be performed by following the disassembly procedures in reverse order.

    Before disconnecting the cables make sure to take note of their connections for reassembly.
-    After servicing, lubricate where specified.
-    When replacing the main board, update the firmware to the latest release, run the installation set-up and then perform the electromechanical adjustments from the console.
-    When replacing the power supply assembly, make sure that the line voltage rating of the replacement module corresponds to the value indicated on the printer's electrical data plate.
-    At the end of the service call, run an overall check on the printer to make sure that all failures are corrected.

6.3   DISASSEMBLY/REASSEMBLY OF THE MACHINE

6.3.1   CASE DISASSEMBLY/REASSEMBLY

-    Open the printer's top cover.

    Unplugging the console cable from its connector (1) in the left rear side of the frame.

    Using a flat-blade screwdriver. Unclench the case's two front snap features through inside of the case (2).
-    There is 1 snap features inside the case in each side(left and right).

    Insert a pointed object in the holes at the rear right and left sides of the case and then unclench the 2 rear snap features; partly lift the case off the base and remove the case from the machine.

Fig. 6-1

6.3.2 DISASSEMBLY/REASSEMBLY the console of liquid crystal Display (LCD)

- Open the printer's top cover.

  Unplugging the console cable from its connector (1) in the left rear side of the frame.

  Release the console connector (2) from the top cover by unplugging it gently and then remove the console of liquid crystal display from the top cover by press it lightly.
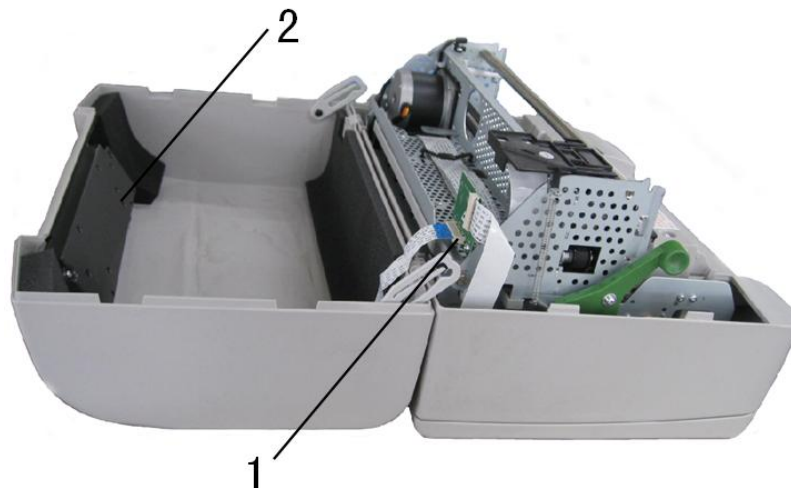

Fig. 6-2

6.3.3 PHOTOSENSOR BOX DISASSEMBLY/REASSEMBLY

- Open the printer's top cover

  Raise the upper part of the mechanical assembly by using the specific green lever (1).

Push the snap features (2) aside and untie the photosensor box (4)

Lift the photosensor box about 30 degree.

  Pull the photosensor box out of slot (3)

INSTRUCTION: The photosensor box contains optical fiber, the front pressure rollers, the upper part of the paper feed roller.
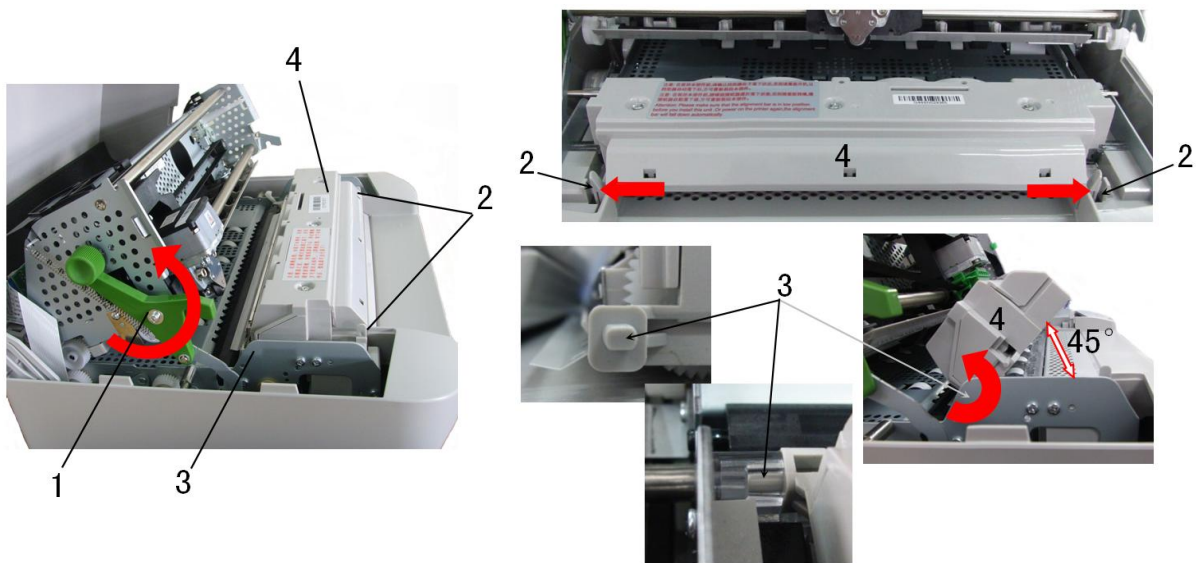
Fig. 6-3

6.3.4 MECHANICAL ASSEMBLY DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1)

Loosen screws and unhooking the securing plates of the mechanical assembly 4 rubber stops.

Remove the console cable by unplugging it connector from the left rear side of the frame.

Lift the front part of the mechanical assembly, partly rotating it until you are able to reach the connectors on the main board.

Remove the soundproofing and unplug all the cables connecting the mechanical assembly to the main board, with the exception of the main board-to-power supply unit connection cable.

Lift the entire mechanical assembly from the base of the printer.

6.3.5   UPPER PART OF THE MECHANICAL ASSEMBLY

DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1)

Loosen 2 screws in the left side and right side and unhooking the securing metal plates of the mechanical assembly rubber stops.

Lift the front part of the mechanical assembly off the base of the printer, partly rotating it until you are able to reach the connectors on the main board.

Unplug the printhead cable, the carriage movement motor cable and the carriage reset photosensor cable from the main board.

Remove the console cable connector (1) from the left rear side of the frame.

Remove the two rear side screws (2) so as to detach the upper part of the mechanical assembly.
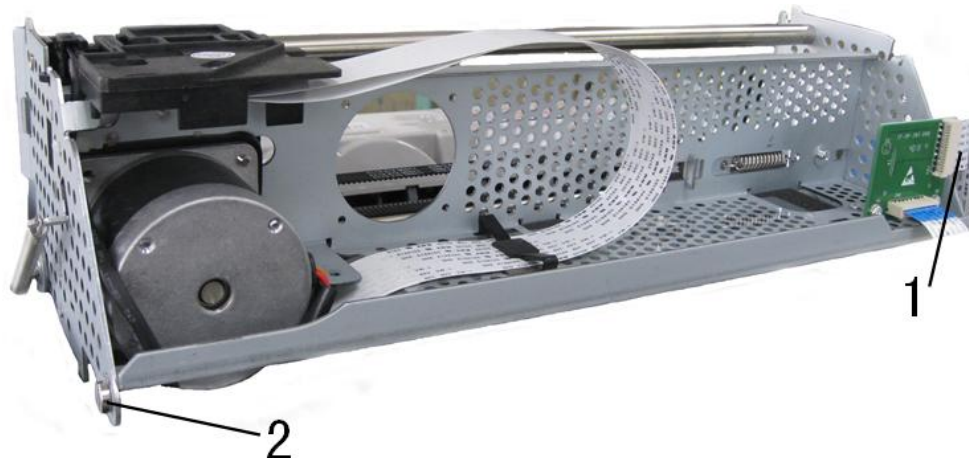
Fig. 6-4

6.3.6 PRINTHEAD DISASSEMBLY/REASSEMBLY

- Open the printer cover and lift the mechanical assembly.

  Remove the ribbon cartridge.

  Unscrew the two screws (1) that secure the printhead.

  Release the two fasteners(2) from the printhead cable support, down the printhead cable support out and insert it into the back of the printhead.

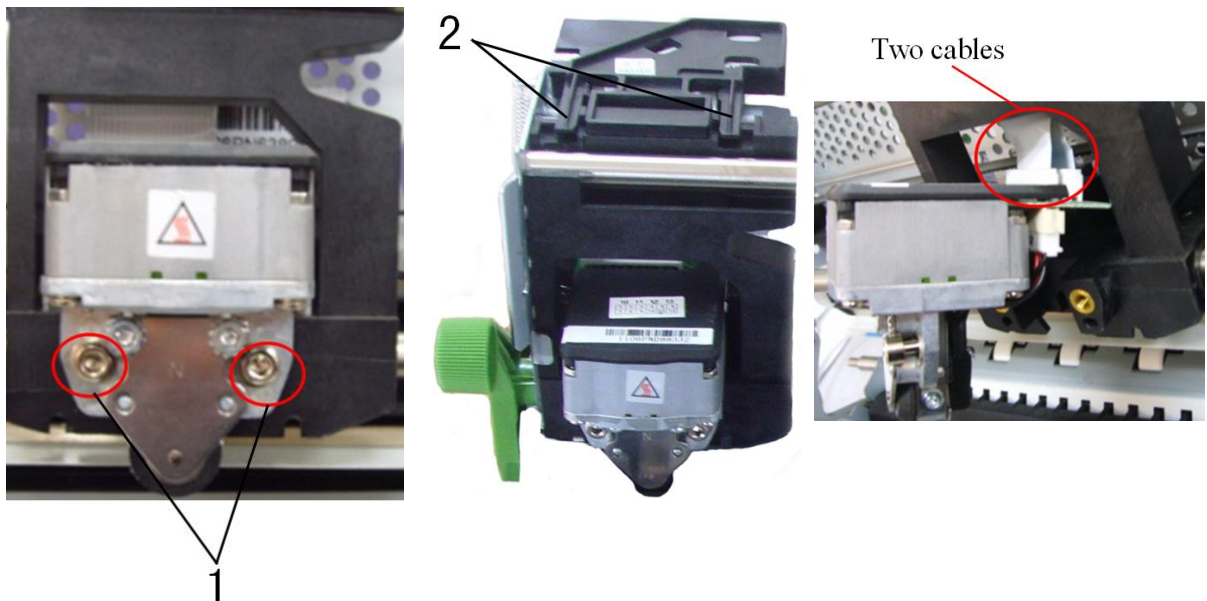 Partly slide off the printhead from the carriage and unplug the two cables from the connectors on the printhead.

Fig. 6-5

6.3.7 PRINTHEAD PHOTOSENSOR DISASSEMBLY/REASSEMBLY

Remove the printhead (section 6.3.6).

Remove screw (1) that secures the printhead photosensor and remove the photosensor from the ribbon protector.

Unplug the photosensor cable from its connector on the printhead.

6.3.8 PRINTHEAD CABLE DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1)

Remove the printhead (section 6.3.6).

Lift the front part of the mechanical and unplug the 2 printhead cables from the main board.

Free the 2 rear cable metal fastener and loose screw, then free the printhead cables gently from underneath the mechanical.

Remove the printhead cable from the cable support.

6.3.9 PAPER FEED MOTOR DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1)

Remove the mechanical assembly (6.3.4).

Loosen the two nuts that secure the motor and then release the document feed belt.

Remove the paper feed motor

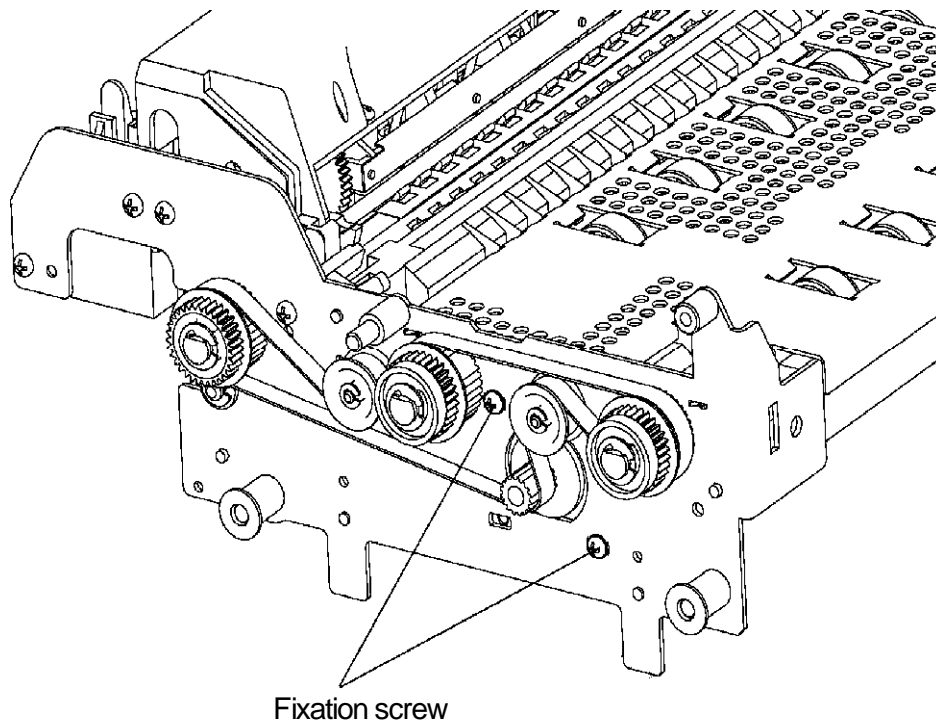**Note:** After reassembly, adjust the tension of the document feed belt.

Fixation screw

Fig. 6-6

6.3.10 PRINTHEAD MOVEMENT MOTOR   DISASSEMBLY/REASSEMBLY

Remove the upper part of the mechanical assembly (6.3.5).

Loosen the screw (1) that secures the return pulley support and then release the carriage movement belt from the motor

Unscrew the two special securing screws (2) and then remove the printhead movement motor being careful to avoid damaging the ribbon feed gears.

Note: After reassembly, correctly reposition ground spring and then adjust the carriage feed belt.
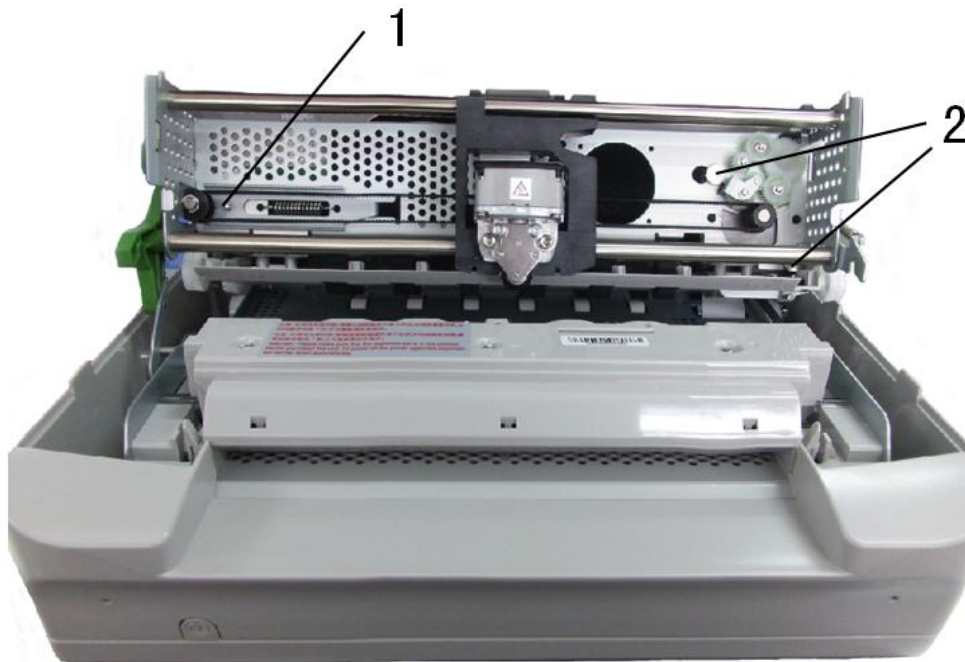

Fig. 6-7

6.3.11 SERVICES MOTOR DISASSEMBLY/ REASSEMBLY

- Remove the printer case (6.3.1)
- The services motor is situated the left side of the mechanical assembly.
- Lift the front part of the mechanical assembly, partly rotating it until you are able to reach the connectors on the main board.
- Unplug the services motor connection cable from the main board.
- Remove the two screws (1) that secure the motor in left-hand side of the frame and remove the services motor from the machine.

6.3.12 PRINTHEAD RESET PHOTOSENSOR DISASSEMBLY/ REASSEMBLY

- Remove the printer case (6.3.1)
- Loosen screws and unhooking the securing plates of the mechanical assembly rubber stops.
- Lift the front part of the mechanical assembly, partly rotating it until you are able to reach the connectors on the main board.
- Unplug the print head reset photo sensor cable from the main board.
- Remove the photo sensor by unscrewing the screw (1).

Fig. 6-8

6.3.13 ROLLER SUPPORT TRAY DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1)

Remove the mechanical assembly (6.3.4)

Remove the upper part of the mechanical assembly (6.3.5).

Remove the six screws and then extract the tray.

6.3.14 MAIN BOARD DISASSEMBLY/REASSEMBLY

Power off the machine and unplug the power cord from the electrical outlet.

Remove the mechanical assembly (6.3.4)

Unplug the power supply cable that connects the main board to the power supply assy.

Remove the optional interface card (if installed).

Remove the five screws that secure the main board to the base.

Unscrew the two connection screws of the standard serial port.

Remove the iron shield.

Extract the main board from the base of the printer.

NOTE: During reassembly, make sure to correctly reposition the connectors.

6.3.15 POWER SUPPLY ASSY DISASSEMBLY/REASSEMBLY

Remove the mechanical assembly (6.3.4)

Unplug the power supply cable (1) from the main board.

Unscrews the four screws that secure the power supply and also remove the ground wires.

Loosen the two screws that secure the switch.

Extract the power supply assy.

Note: During reassembly, make sure that you correctly reposition the ground cables.

6.3.16 FEEDER PHOTOSENSORS DISASSEMBLY/REASSEMBLY

Remove the mechanical assembly.

Unscrews the eight screws that left 4 and right four then Remove the white paper feed platform.

Remove the clasp, the black plate and the white gear that secures the square shaft in left which under the photo sensors and also remove another in the opposite.

Remove the plastic axle sleeve that secures the square shaft.

Remove the clasp that secures the paper feed roller in left and right. Remove the black plate and the gear.

Remove the copper axle sleeve

Remove the pressure sensor cable (blue) connector from the front feeder photo sensors board.

Remove the white plastic cover that covers the front feeder photo sensors after removing its four screws.

Remove the front feeder photo sensors by pulling its paper feed roller and square shaft out, using your left and right hand.

Remove the square shaft. .

Unscrew the four screws that secure the feeder photo sensors board and then remove the feeder photo sensors board, the document stop bar slide-proof fins and paper feed roller.

NOTE:
1. During reassembly, make sure to correctly reposition the two springs.
2. There are two plastic plate the one have notch must assembling inside that secures the paper feed roller however another must out side.

6.3.17 PRINT BAR DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1)

Lift the front part of the mechanical assembly off the base of the printer, partly rotating it until you are able to reach the connectors on the main board.

Unplug all the cables with the exception of the print head cables.

Unscrew the two nuts that secure the print bar and then slide it off from the top.

Note: After reassembly, adjust the distance between the print head and print bar.
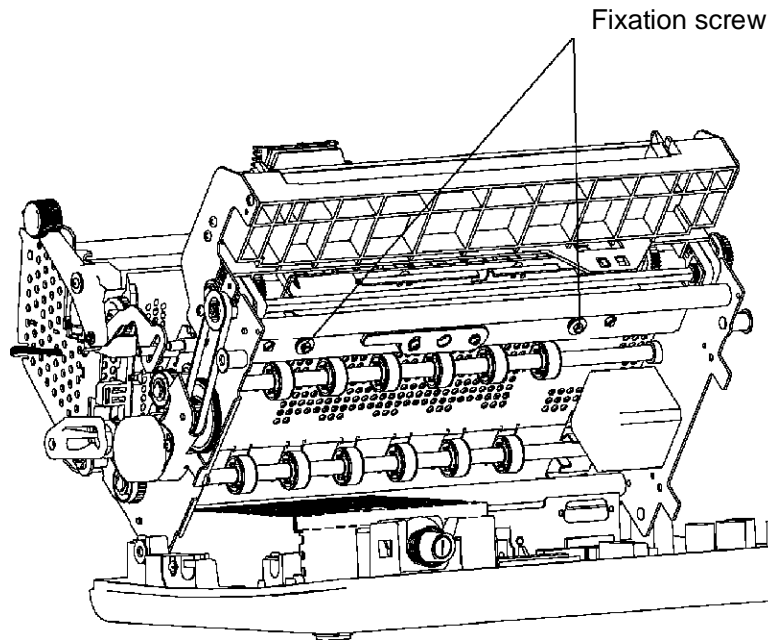
Fixation screw

Fig. 6-9

6.3.18 ROLLER SUPPORT TRAY(SCANNER) DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1);

Remove the mechanical assembly (6.3.4);

Remove the upper part of the mechanical assembly (6.3.5);

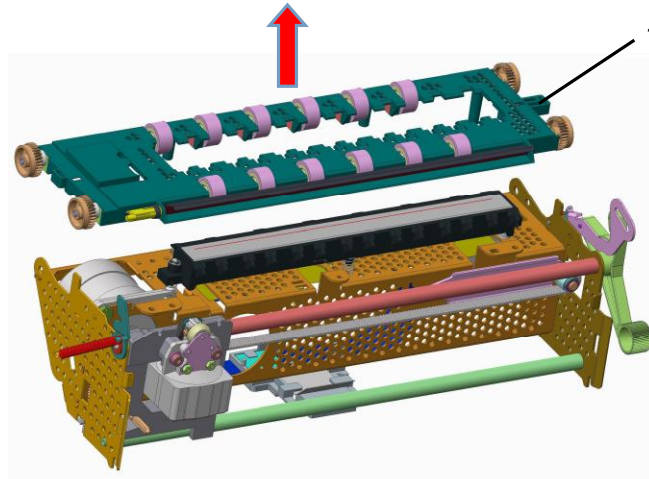Remove the six screws and then extract the tray（1）.

Fig. 6-10

6.3.19 UPPER CIS (SCANNER) DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1);

Remove the mechanical assembly (6.3.4);

Remove the upper part of the mechanical assembly (6.3.5);

Remove the roller support tray(scanner) (6.3.18);

Remove two E-clips and disconnect the cable from CIS, then lift upper CIS（1）,

and not to mislay two spring（2）.

Note: After reassembly, clean the glass of the CIS with a soft cloth, and then
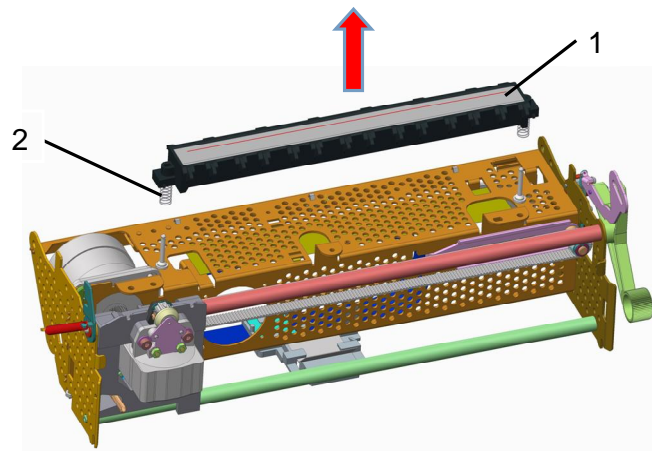carry out calibration of the scanner.

Fig. 6-11

6.3.20 TRANSMISSION SHAFT(SCANNER) DISASSEMBLY/REASSEMBLY
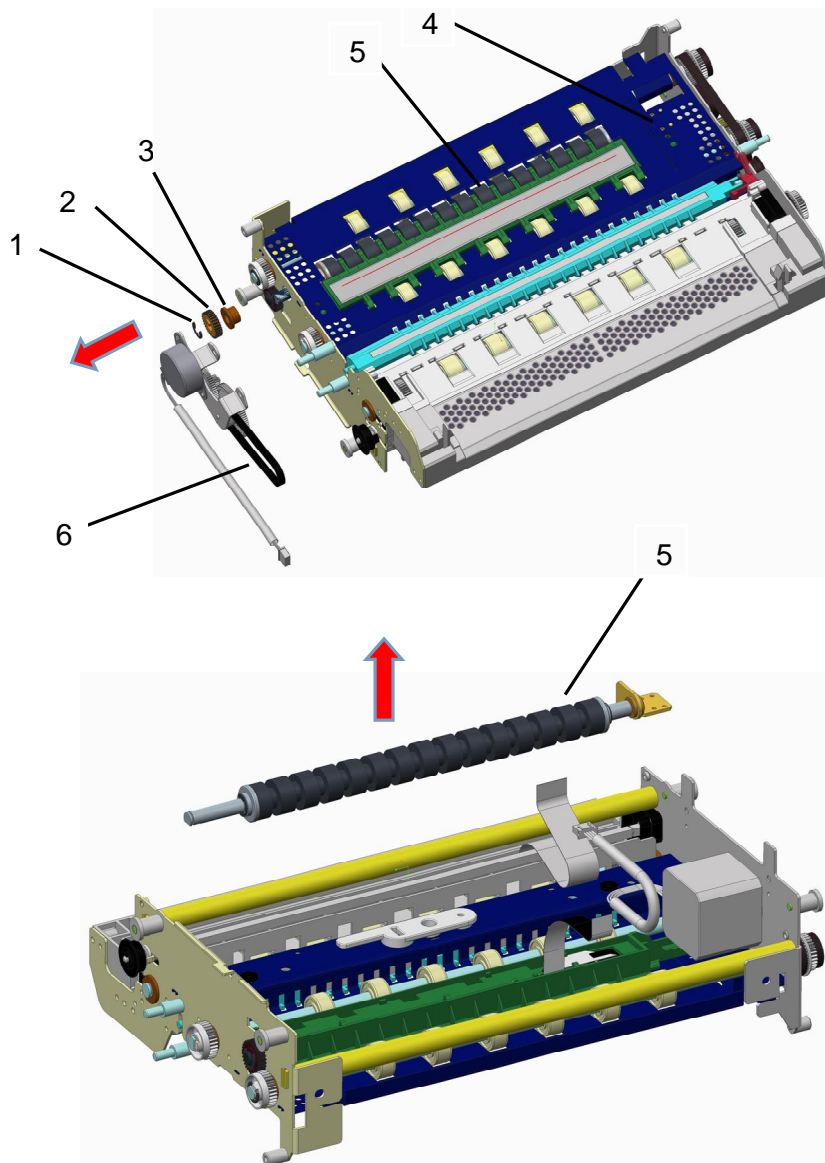
Remove the printer case (6.3.1);

Remove the mechanical assembly (6.3.4);

Remove the service motor (6.3.11);

Remove E-clip(1) ,the driving gear_SC(2), sintering bearing(3);

Remove two screws(4) on the top of the mechanical assembly and then extract the transmission shaft(scanner) (5).

Note: After reassembly,correct tensioning of the alignment timing belt(6).

Fig. 6-12

6.3.21 LOWER CIS (SCANNER) DISASSEMBLY/REASSEMBLY

Remove the printer case (6.3.1);

Remove the mechanical assembly (6.3.4);

Remove the service motor (6.3.11);

Remove the transmission shaft(scanner) (6.3.20);

Remove two screws on the top of the mechanical assembly and then lift the lower CIS(1).

Note: After reassembly,clean the glass of the CIS with a soft cloth, and then carry out calibration of the scanner.
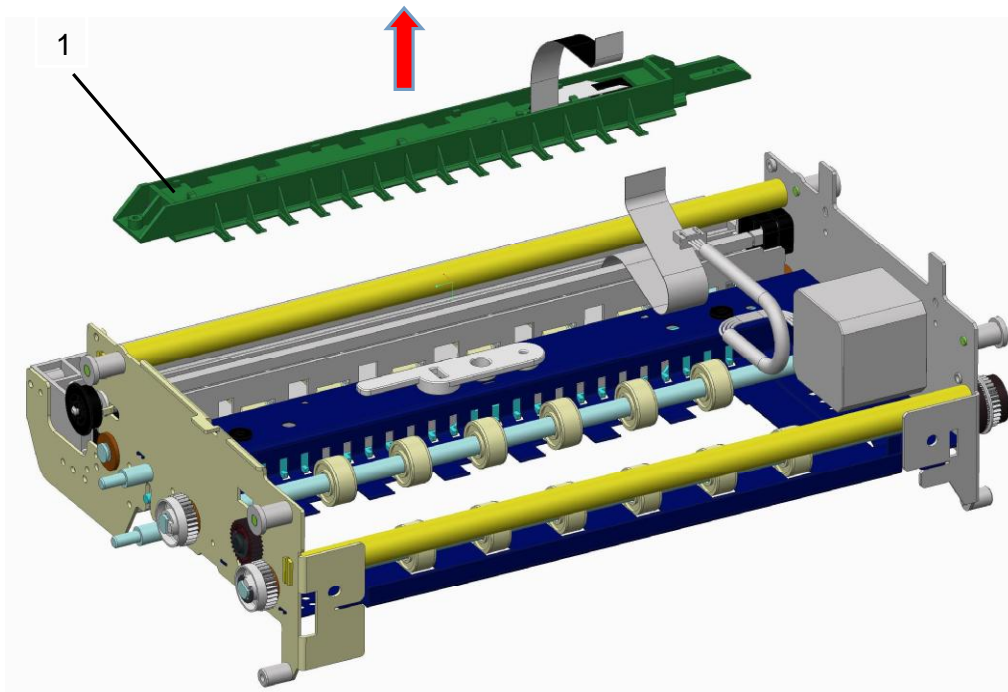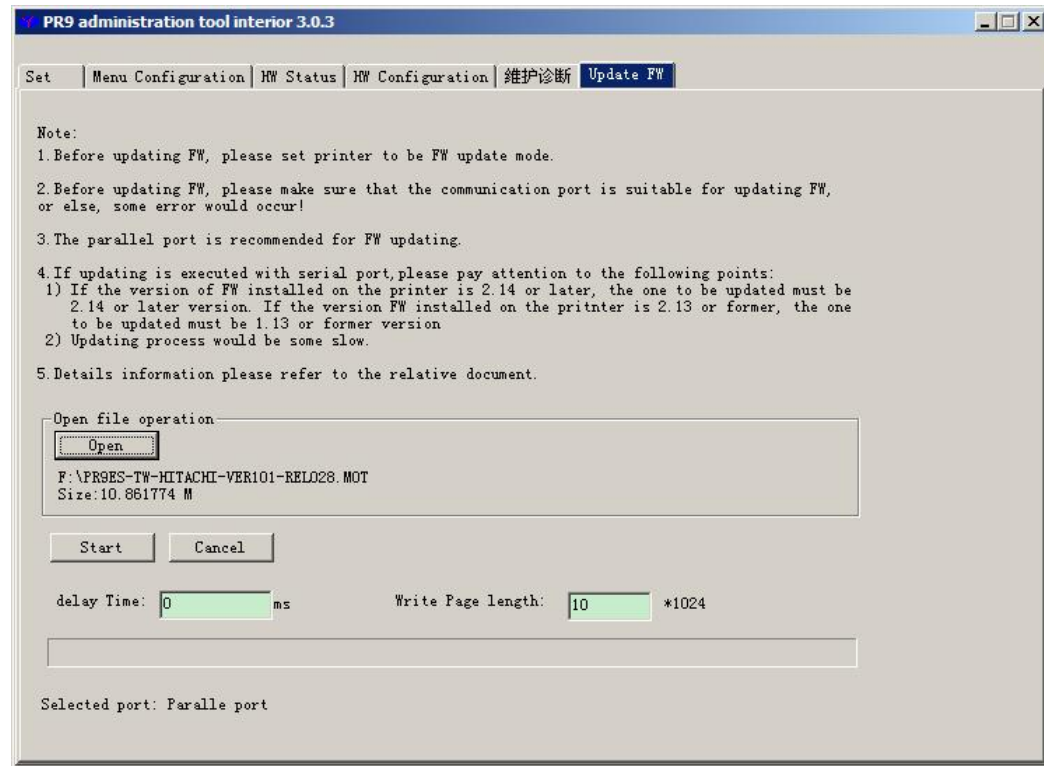

Fig. 6-13

7.   **APPENDIX**

7.1 PR9's FIRMWARE UPDATING OPERATION

7.1.1 Document description

This document FW update method is applicable to the PR9-ES firmware update
PR9 Administration Tool. As shown below:

7.1.2 Firmware download

Firmware download may through the serial/parallel and USB interface. Two kinds of
FW download operation corresponding two kinds of PR9's panels:

7.1.3 Panel of 3 buttons without LCD

The steps as following:
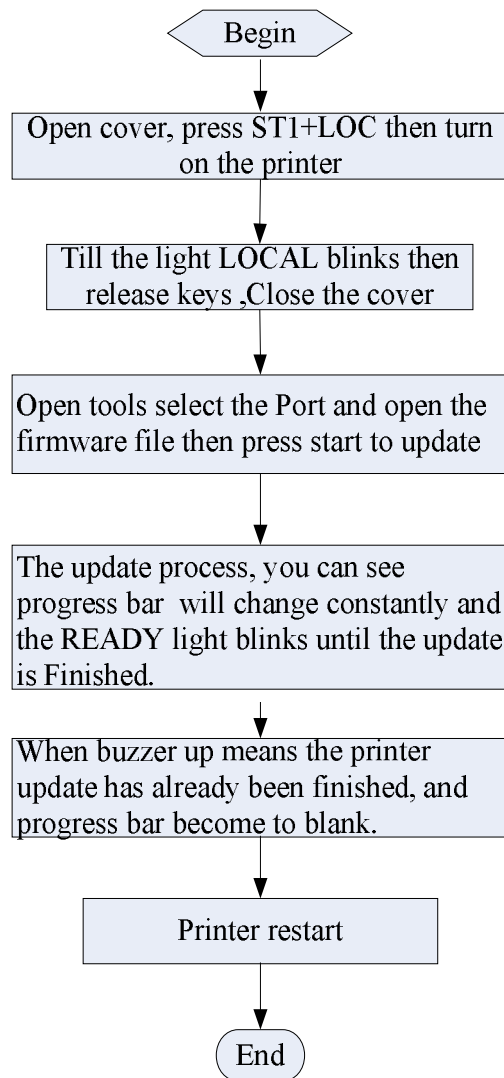
1. Press STATION1 and LOCAL keys with cover open and power on the printer until
the light of LOCAL blinks.

2. Release STATION1 and LOCAL keys, the light of LOCAL turn off then close the
cover.

3. Run PR9 Update Tool (PR9 administrator.exe) on PC

4. Select communication port on the page "Set" of PR9 Update Tool. (Parallel or
USB port is recommended when updating FW because it's fast .)

5. On the page "Update FW" of PR9 Update Tool, open the firmware file and click "Start" button to

start updating.

6. After the updating is finished successfully, PR9 will restart automatically.

(Simple: Open the printer cover→ press and hold the [STATION1+LOCAL] keys→power on the printer→ the light LOCAL blinks→release two keys→closing cover→open the Update tool and select interface→ open the firmware file and start update→Update is finished →printer restart)

Begin

Open cover, press ST1+LOC then turn on the printer

Till the light LOCAL blinks then release keys ,Close the cover

Open tools select the Port and open the firmware file then press start to update

The update process, you can see progress bar will change constantly and the READY light blinks until the update is Finished.

When buzzer up means the printer update has already been finished, and progress bar become to blank.

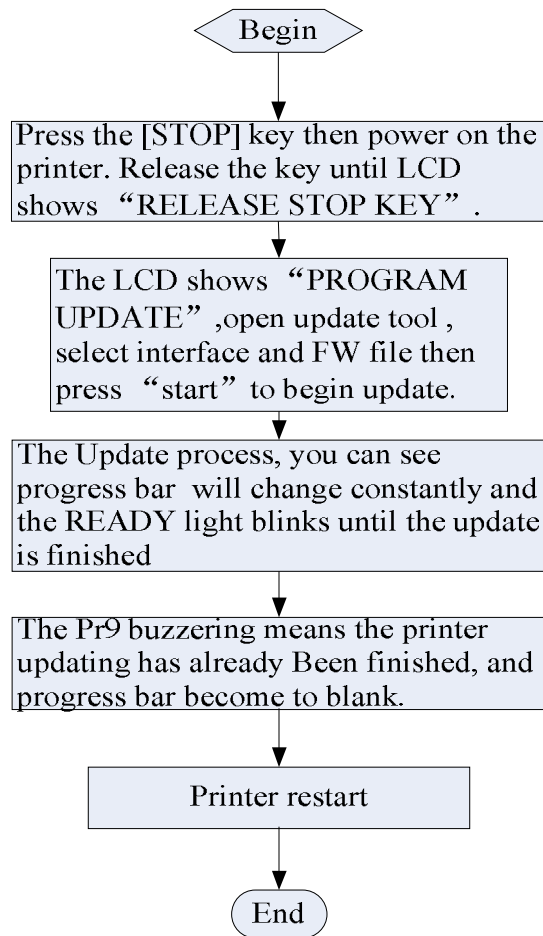Printer restart

End

Panel of 3 buttons update procedure

7.1.4 Panel of 5 buttons with LCD

The steps as following:

1. Press the ■STOP key and power on the printer, release ■STOP key till the PR9's LCD displays "RELEASE STOP KEY". After release STOP key, the PR9's LCD displays "PROGRAM UPDATE".

2. Run PR9 Update Tool (PR9 administrator.exe) on PC

3. Select communication port on the page "Set" of PR9 Update Tool. Parallel or USB port is recommended because it's fast.

4. On the page "Update FW" of PR9 Update Tool, open the firmware file and click "Start" button to start updating.

5. After the updating is finished successfully, PR9's LCD displays "UPDATE O.K.". PR9 will restart automatically.
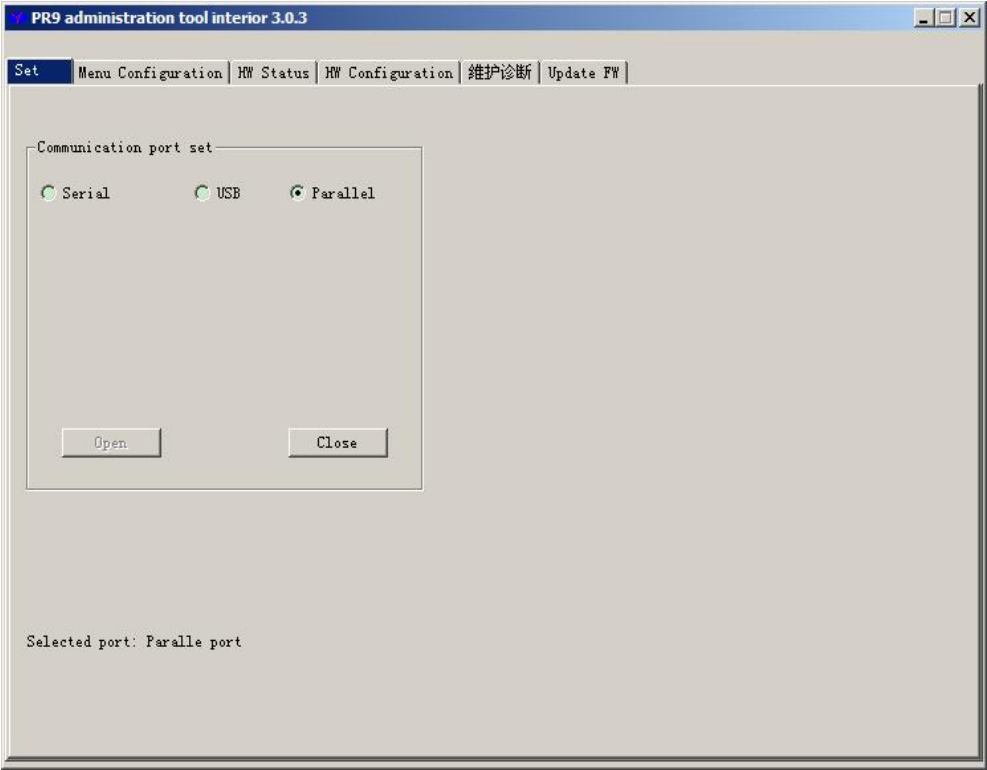

(Simple: Press the [STOP] key à power on the PR9 à LCD displays "RELEASE STOP KEY" à release STOP key à LCD shows "PROGRAM UPDATE" à open the Update tool and select interface à open the firmware file and start update à the update is finished à printer restart)

Flow chart as below:

Begin

Press the [STOP] key then power on the printer. Release the key until LCD shows "RELEASE STOP KEY".

The LCD shows "PROGRAM UPDATE" ,open update tool , select interface and FW file then press "start" to begin update.

The Update process, you can see progress bar will change constantly and the READY light blinks until the update is finished

The Pr9 buzzering means the printer updating has already Been finished, and progress bar become to blank.

Printer restart

End

Panel of 5 buttons with LCD

The interface as following:

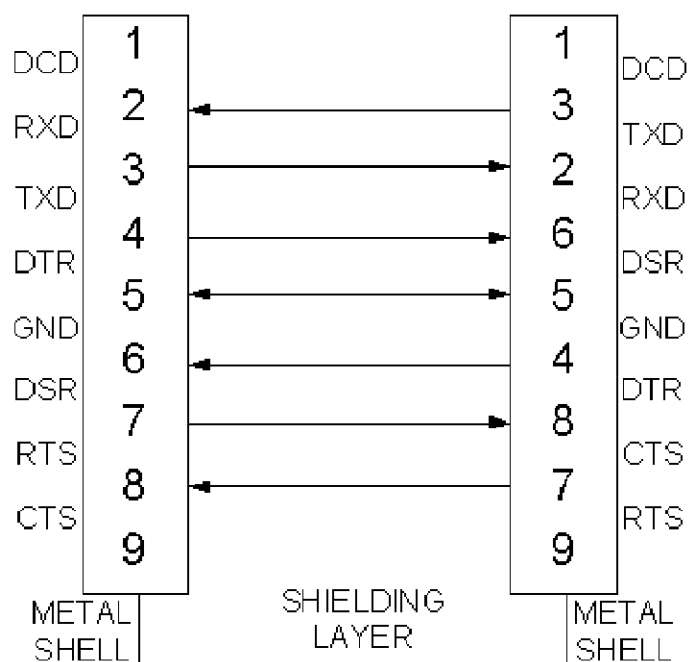### 7.2 PR9 COMMUNICATION CABLE CONNECTION TABLE

1.   9 PINS-— 9PINS<PR-9T9>
2.   25PINS-—25PINS<PR-PRINT>

7.2.1   PR-9T9 COMMUNICATION CABLE TABLE

Application Area: Host with standard 9 pins of RS232 serial port and PR9
communication cable.

HOST: 9 PINS (DB-9S)   **PRINTER: 9 PINS (DB-9S)**

HOST	Pin		Pin	PRINTER
DCD	1		1	DCD
RXD	2	←	3	TXD
TXD	3	→	2	RXD
DTR	4	→	6	DSR
GND	5	←	5	GND
DSR	6	←	4	DTR
RTS	7	→	8	CTS
CTS	8	←	7	RTS
	9		9	
METAL SHELL		SHIELDING LAYER		METAL SHELL

7.2.2 THE PARALLEL COMMUNICATION CABLE TABLE OF PR9 CONNECT
TO THE HOST

Application Area: host with standard Centronics IEEE parallel interface and PR9 communication cable.

HOST 25 PINS	PR9 36 PINS	
1	1	PSTB
18	19	GND
2	2	LPD0
19	20	GND
3	3	LPD1
19	21	GND
4	4	LPD2
20	22	GND
5	5	LPD3
20	23	GND
6	6	LPD4
21	24	GND
7	7	LPD5
21	25	GND
8	8	LPD6
22	26	GND
9	9	LPD7
22	27	GND
10	10	PACK
23	28	GND
11	11	PBUSY
23	29	GND
12	12	PPE
24	30	GND
13	13	PSLCT
25	16	GND
14	14	PAFD
15	32	PERR
16	31	PINIT
17	36	PSLIN