Panasonic

Impact Dot Matrix Printer

Operating Instructions

Model No. **KX-P1131**

Please carefully read this manual and keep this documentation in a safe place for future reference.

Thank you for purchasing the Panasonic KX-P1131 Impact Dot Matrix Printer.

This printer is a versatile, high quality 24-pin dot matrix printer which is designed to meet the needs of your office. This printer has been factory set to operate with the most popular software packages. Your application software should control the printer functions. In most cases, there will be no need to change the factory settings.

The serial number of the unit may be found on the label on the rear of the unit. For your convenience, note this number below, and retain this book, along with your proof of purchase, to serve as a permanent record of your purchase in the event of a theft, or for future reference.

MODEL NO. __**KX-P1131**__   NAME OF DEALER _____

SERIAL NO. _____   DATE OF PURCHASE _____

As an ENERGY STAR® Partner, Panasonic has determined that this product meets the ENERGY STAR® guidelines for energy efficiency. ENERGY STAR is a U.S. registered mark.

FOR USERS IN UNITED STATES

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there in no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

The user may find the booklet "Something About Interference" available from FCC local regional offices helpful.

FCC Warning: To assure continued FCC emission limit compliance, the user must use the recommended shielded interfacing cable when connecting to a host computer. Also, any unauthorized changes or modifications to this equipment would void the user's authority to operate this device.

Technical Support Calls

If you have read this manual and tried the troubleshooting procedures and you are still having difficulty, please contact the reseller from which the unit was purchased. You may also call the end user technical support telephone number which is operational during East Coast business hours (9:00 AM to 7:00 PM).
The end user technical support number is 1-800-222-0584.
This number is available within the U.S. only.

Helpful Phone Numbers

To locate your nearest sales dealer   CALL 1-800-742-8086
To order operating instructions/manuals/consumables   CALL 1-800-833-9626
To locate your nearest authorized service center   CALL 1-800-222-0584
For technical support   CALL 1-800-222-0584
Automated 24-hour support via Fax back   CALL 1-800-222-0584
Electronic bulletin board   CALL 1-201-863-7845
World Wide Technical & Driver Support   http:\\www.panasonic.com/alive

End-User License Agreement

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4. LIMITED WARRANTY:
Within ninety (90) days of your receipt of the SOFTWARE, Panasonic warrants that the storage media on which the SOFTWARE are furnished is free from defect in materials and workmanship under normal use, and that it will repair or at its option replace any defective media at no charge to you, provided that such defective media is returned to Panasonic within such ninety (90) days period.

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EXCEPT AS STATED ABOVE, NEITHER PANASONIC NOR PANASONIC'S SUPPLIER MAKES OR PASSES ON TO YOU OR OTHER THIRD PARTY, ANY WARRANTY OR REPRESENTATION INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, NEITHER PANASONIC NOR PANASONIC'S SUPPLIER WARRANTS THAT THE SOFTWARE WILL BE ERROR-FREE OR THAT IT WILL MEET YOUR REQUIREMENTS. NEITHER PANASONIC NOR PANASONIC'S SUPPLIER SHALL BE LIABLE FOR ANY DAMAGE SUFFERED BY YOU INCLUDING, BUT NOT LIMITED TO, CONSEQUENTIAL, INCIDENTAL SPECIAL OR PUNITIVE DAMAGES. THE ABOVE LIMITATIONS SHALL APPLY REGARDLESS OF THE FORM OF ACTION WHETHER IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT PRODUCT LIABILITY OR OTHERWISE, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

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For Your Safety

General

> ### Warning
> • To prevent fire or shock hazard, do not expose this product to rain or any type of moisture.

> ### Caution
> • Do not attempt to repair the unit yourself. Refer servicing to qualified personnel.

Power Source

> ### Warning
> • The power source voltage of this unit is listed on the nameplate. Only plug the unit into an outlet with the proper voltage.
> • When you operate this equipment, the outlet should be near the equipment and accessible.
> • To ensure safe operation the three-prong plug supplied must be inserted only into a standard three-prong AC outlet which is effectively grounded (earthed) through the normal wiring.
> • Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Improperly wired extension cords are a major cause of fatalities.
> • The fact that the equipment operates satisfactorily does not imply that the power point is grounded (earthed) and that the installation is completely safe. For your safety, if in any doubt about the effective grounding (earthing) of the power point, consult a qualified electrician.
> • If the plug cannot be inserted into the AC outlet, contact a licensed electrician to replace the outlet with properly grounded (earthed) one. Do not defeat the purpose of the grounding (earthing) plug (ex. do not use a conversion plug).

Cautions

To avoid machine malfunction, do not use the equipment under the following conditions:

• Direct exposure to sunlight
• Extremely high or low temperature [temperature range: 10˚C to 35˚C (50˚F to 95˚F)]
• Extremely high or low humidity (humidity range: 30% to 80% RH)
• Condensation due to rapid change of temperature
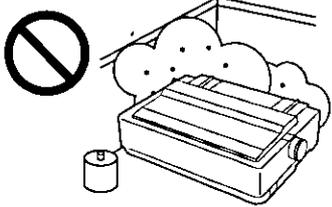
• Areas of poor ventilation
• Areas of high dust or chemical fume concentration (solvent etc.)
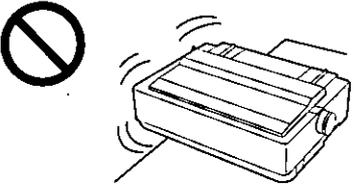
• Unstable or unlevel surface
• Areas with extreme vibration
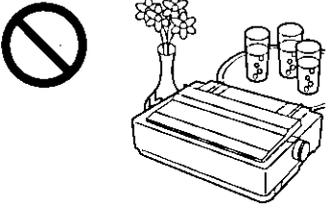
• Liquids near the equipment
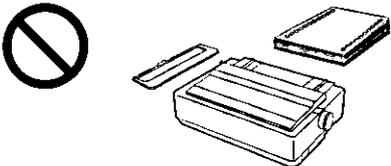
• Without paper and a ribbon cassette installed when the printer is operating
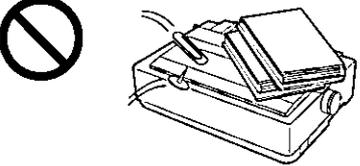
• Books, paper or other items on top of the printer
• Obstruction of the printhead movement while the printer is operating
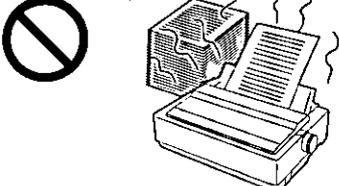
• Prolonged use without allowing the printhead time to cool

■Static Electricity Damage

To prevent static electricity damage to parallel/serial interface and printhead, touch a grounded metal surface, such as the screw on the plate cover of an electrical outlet prior to touching the interface or printhead. (However, do not touch the printhead when it is hot.)

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Unpacking

Having unpacked the printer, make sure none of the contents shown below are missing or damaged.
Report damages or shortages to the store from which the unit was purchased.

Note:
* Save the original carton and packing materials for future shipping and transporting of the unit. They have been specifically designed to protect the equipment during shipment.
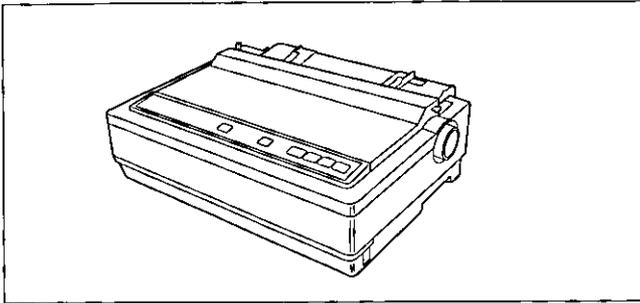
Printer (KX-P1131)
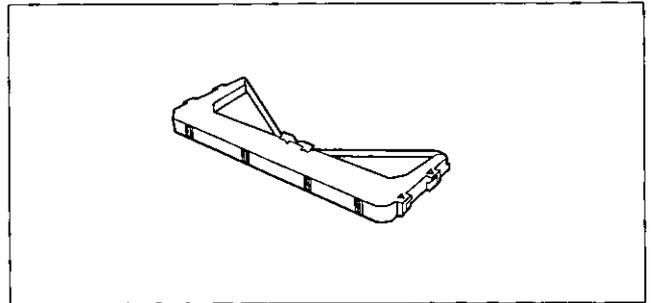
Ribbon Cassette (KX-P180)
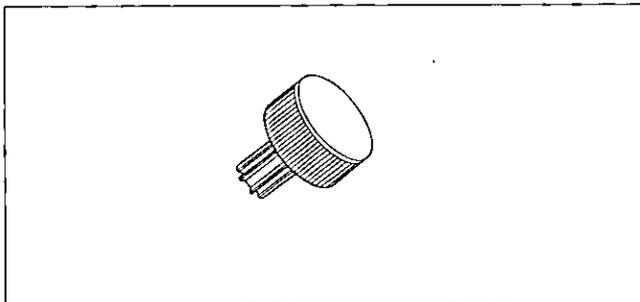
Platen Knob
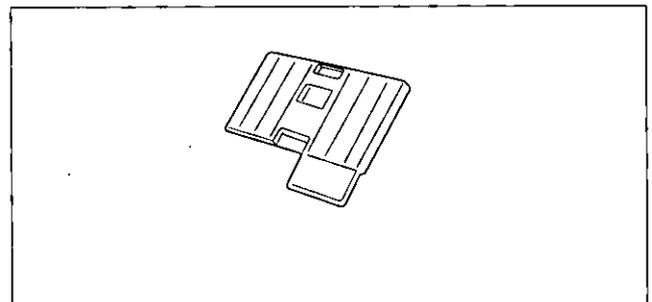
Extension Plate
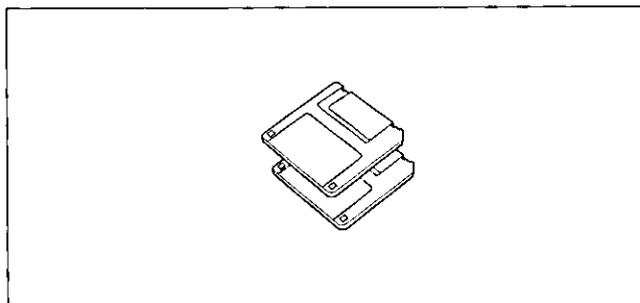
Setup Disks
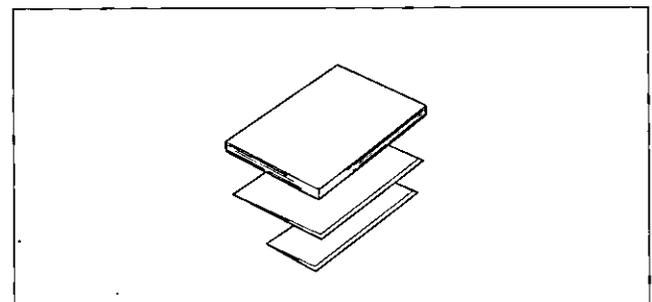
Operating Instructions
Quick Start Guide
Warranty Card

- Extension Plate is used for fanfold paper (☞P. 14).
- To use these Setup Disks, you need to have an IBM-PC or a compatible computer with 3.5″ floppy disk drive.
- The Setup Disks contain the following programs and informations.
  Please refer to this manual how to use.

[DOS Utilities & Printer Driver for Windows 3.1, 95 & 98]
 — Printer Driver for Windows 3.1   (☞ P. 18)
 — Printer Driver for Windows 95   (☞ P. 19)
 — Printer Driver for Windows 98   (☞ P. 19)
 — Control Panel Software Program   (☞ P. 24)
 — Command Reference Program   (☞ P. 27)
 — Character Set Table   (☞ P. 27)
 — Proportional Spacing Tables   (☞ P. 27)

[Printer Driver for Windows NT 3.5x & NT 4.0]
 — Printer Driver for Windows NT 3.5x   (☞ P. 20)
 — Printer Driver for Windows NT 4.0   (☞ P. 22)

Chap. 1

Read Me First

Parts of the Printer

Control Panel

	PROGRAM
● ○	Courier
○ ●	Roman
● ●	Sans Serif
● ○	Prestige
○ ●	Script

	PROGRAM
● ○	10 CPI
○ ●	12 CPI
● ○	15 CPI
● ●	17 CPI

ON LINE
HIGH SPEED
POWER
PAPER OUT

FONT PITCH ON LINE LF/FF TEAR OFF LOAD PARK

HIGH SPEED
▲ TOF SET ▼
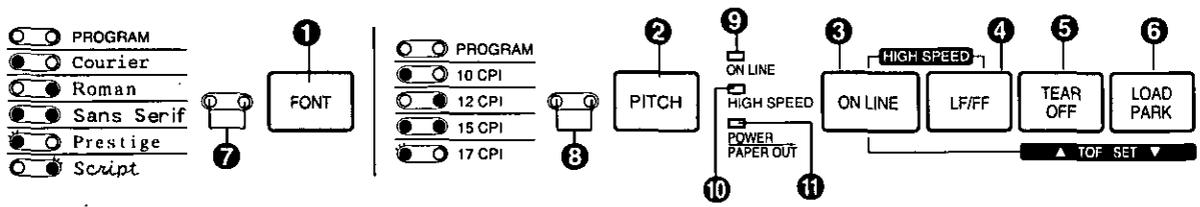
❶ FONT switch (☞ P. 28, 32, 34)
❷ PITCH switch (☞ P. 28, 32, 34)
❸ ON LINE switch (☞ P. 14, 16, 29, 30, 31, 32)
❹ LF/FF switch (☞ P. 17, 29)
❺ TEAR OFF switch (☞ P. 16, 30, 32, 34)
❻ LOAD/PARK switch (☞ P. 14, 30, 31, 32, 34)
❼ FONT indicators (☞ P. 28, 33, 34)
❽ PITCH indicators (☞ P. 28, 33, 34)
❾ ON LINE indicator (☞ P. 14, 16, 32, 33)
❿ HIGH SPEED indicator (☞ P. 29)
⓫ POWER/PAPER OUT indicator (☞ P. 31)

Paper guides (☞ P. 16)

Platen knob

Power switch(☞ P. 12, 13, 15)

Paper support (☞ P. 14, 15)

Smoked plastic cover (☞ P. 12)

Top cover (☞ P. 13, 15)

Paper feed selector (☞ P. 13, 15)

Head gap lever (☞ P. 12, 13, 15)

Tractors (☞ P. 13)

Serial interface connector (☞ P. 11)

Parallel interface connector (☞ P. 11)

AC power cord (☞ P. 11)

10
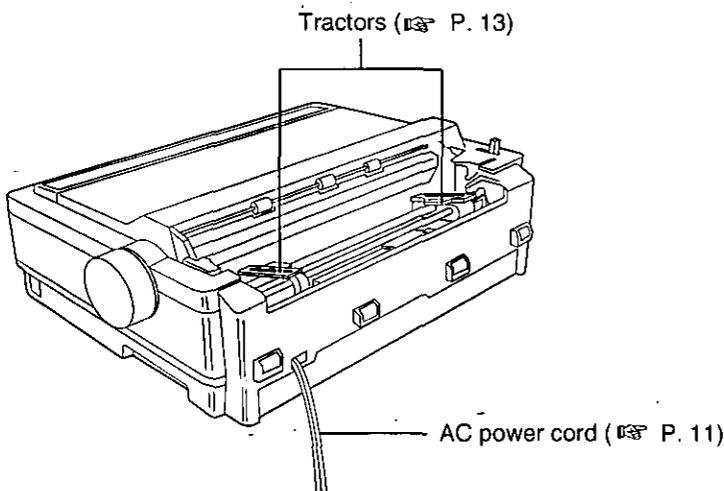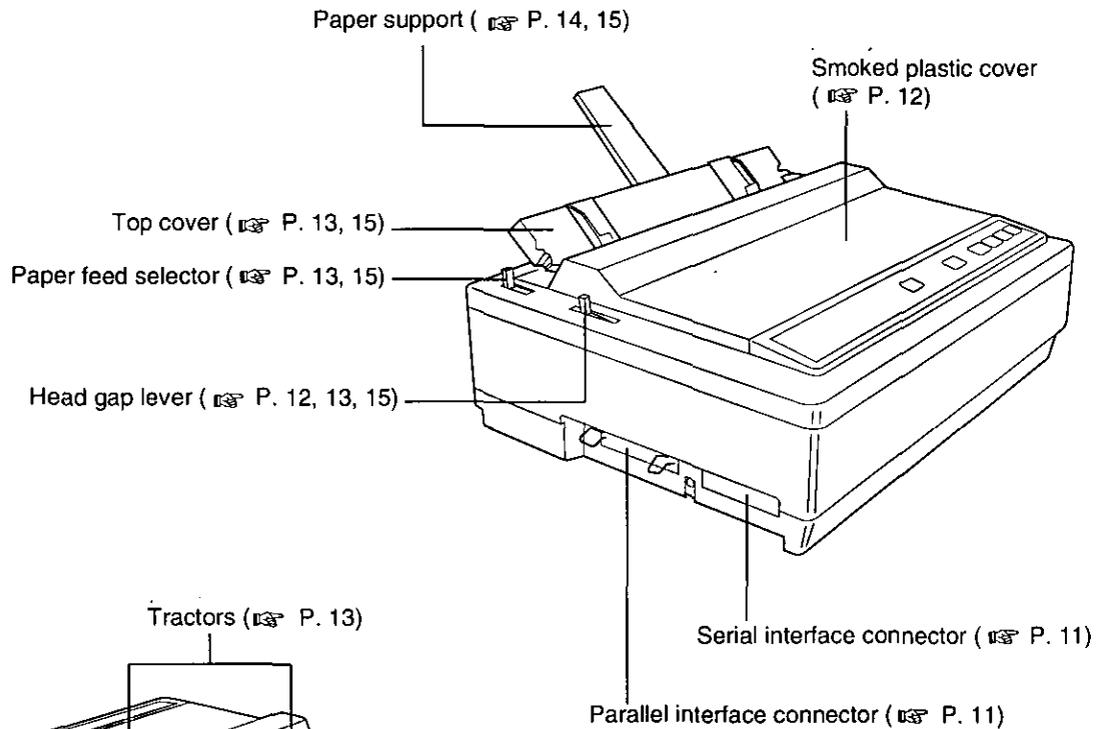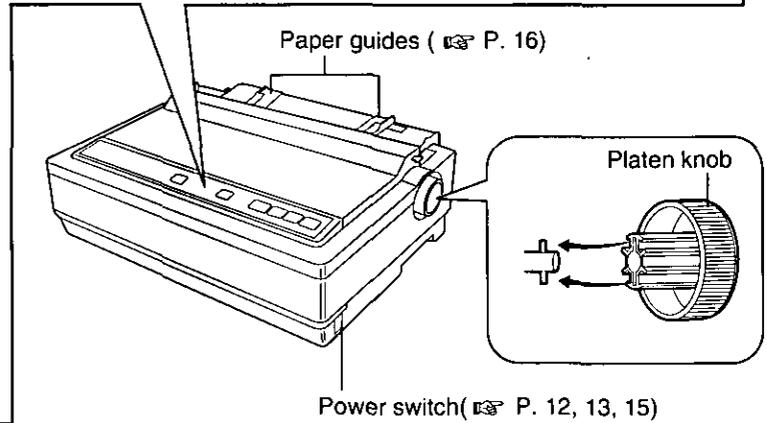
Connecting to a Computer

1 Turn the power off on both the printer and the computer.

2 Attach the other end of the interface cable from your computer.

Parallel interface

Parallel interface connector

Parallel interface cable

Serial interface

Serial interface connector

Serial interface cable

Note:
- Use a shielded cable 1.95 m (6′5″) or less in length for both of parallel and serial.
  If you do not already have a interface cable, you will need to purchase one from your local computer store or dealer. For details, refer to "Interfacing" (☞ P. 40).
- If the cable has a frame ground wire, connect it to the frame ground terminal.

Frame ground terminal

Frame ground wire

3 Connect the AC power cord to a grounded AC socket.

AC socket
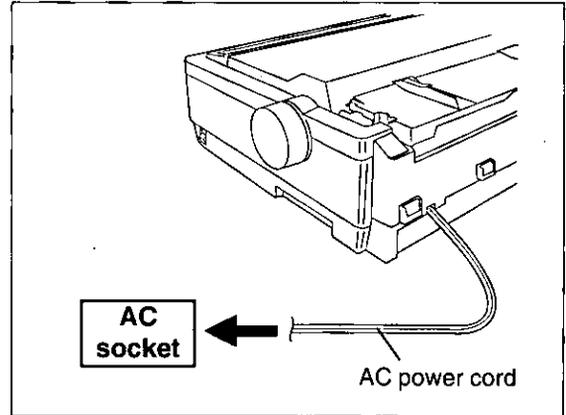
AC power cord

Note:
- If the printer is not going to be used for an extended period, unplug the power cord.
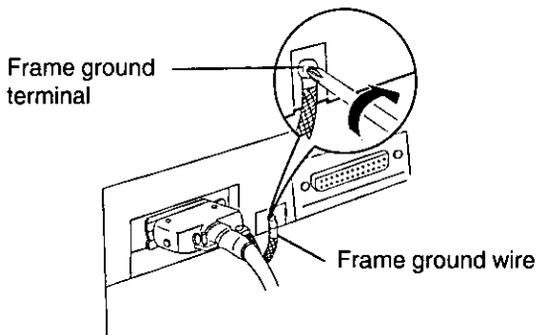
Installing Ribbon Cassette

1
① Turn the power on.
② Open the smoked plastic cover.

Smoked plastic cover

Power switch
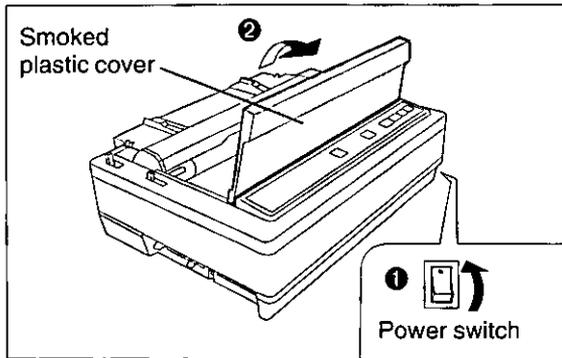
2 Move the head gap lever to position "6".

HEAD GAP

Head gap lever
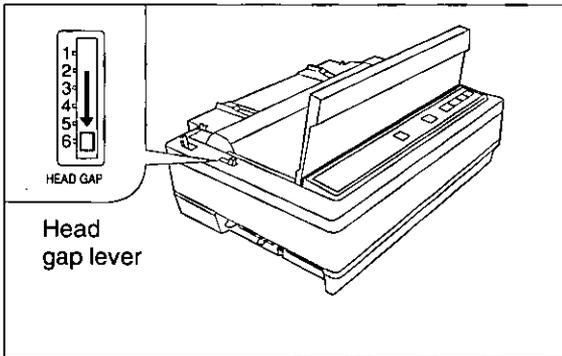
3 Install the ribbon cassette and push down 4 arrows until they click into place.

Arrows
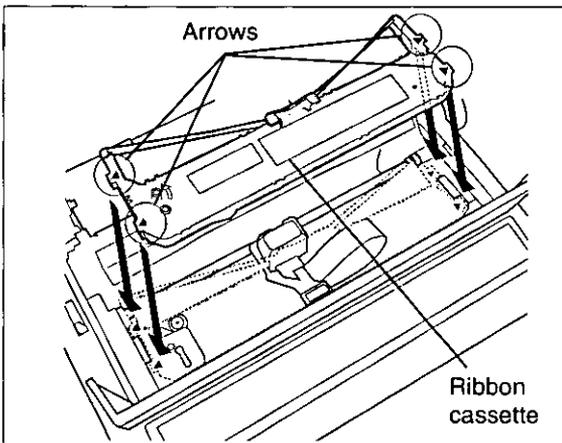
Ribbon cassette

Note:
* Do not take off the blue ribbon guide from the ribbon.

4
① Lift the blue ribbon guide from the ribbon cassette.
② Slide the blue ribbon guide between the printhead nose and the ribbon mask, and push it down.

Blue ribbon guide

Printhead nose

Ribbon   Ribbon mask

CAUTION
HOT SURFACE,
AVOID CONTACT.

Printhead nose

Blue ribbon guide
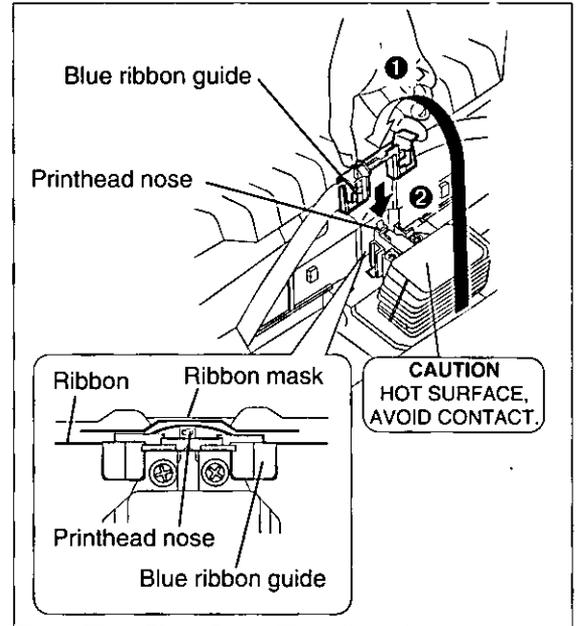
Note:
* If the ribbon does not insert easily between the printhead nose and the ribbon mask, rotate the knob on the ribbon cassette to reduce the slack.

5 Make sure the ribbon is not twisted and rotate the knob to remove any slack.

Knob

Ribbon cassette
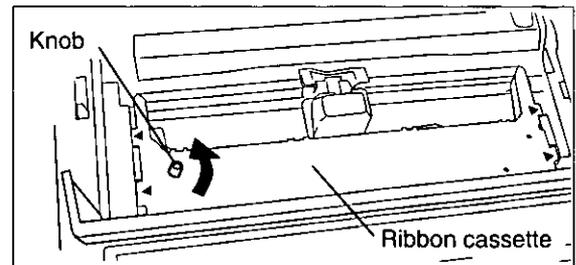
6 Close the smoked plastic cover.

7 Adjust the head gap lever for the thickness of paper you are using.

HEAD GAP
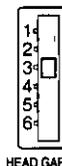
Position	Used for
1 or 2	Thinner sheets
3, 4, 5 or 6	Thick sheets or multi-part forms

Handling Paper

Your Panasonic printer offers two paper feed choices:
—Fanfold paper (Push tractor mode)
—Single sheets and envelopes (Friction mode)

Fanfold Paper (Push Tractor Mode)

1 ❶ **Turn the power on.**

The PAPER OUT indicator will flash indicating that no paper is installed in the printer.

❷ **Adjust the head gap lever for the thickness of paper you are using.**

Position	Used for
1 or 2	Thinner sheets
3, 4, 5 or 6	Thick sheets or multi-part forms

❷ Head gap lever

❶ Power switch

2 Set the paper feed selector to the " [ ] " position.
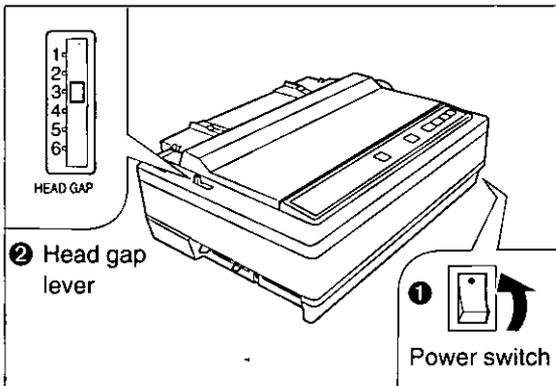
Paper feed selector
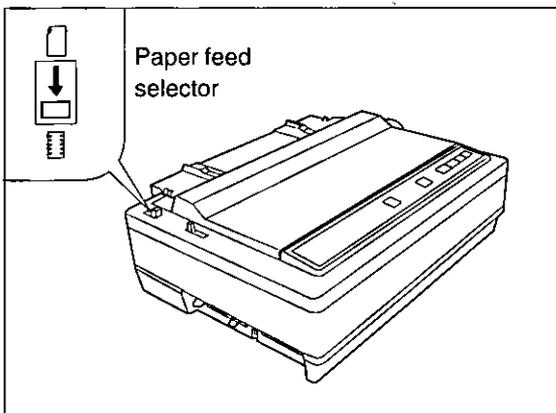
3 Lift off the top cover.

Top cover
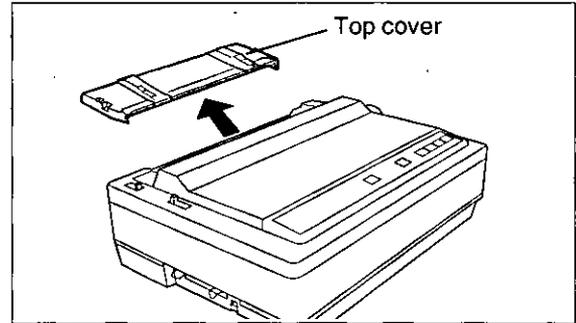
4 ❶ **Unlock the tractors by pulling the tractor clamping levers forward.**
❷ **Slide the tractors to accommodate the approximate width of paper being used.**

Tractor clamping levers
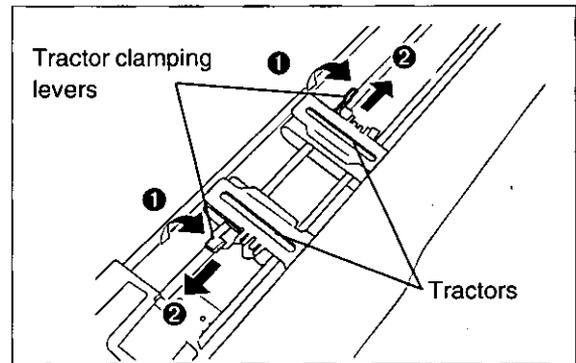
Tractors

5 Raise the tractor covers.

Tractor covers

13
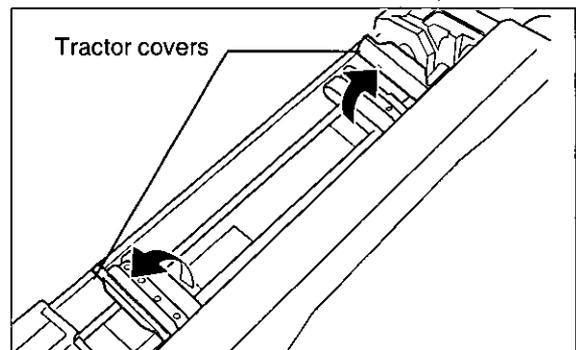
Handling Paper

6 **Align the paper sprocket holes with the tractor pins, then close the tractor cover.**

Tractor covers

Face down

Paper sprocket hole
Tractor pin
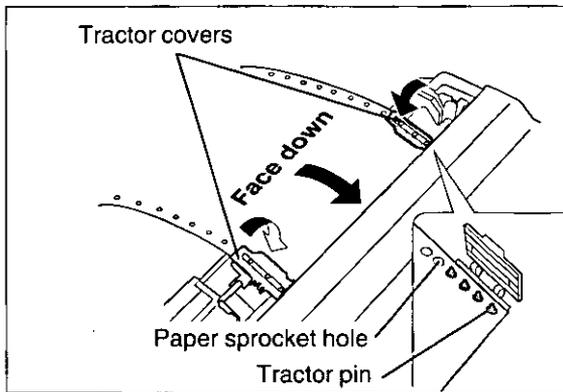
7 **❶ Adjust the tractors to remove any slack.**
❷ Lock the tractor clamping levers.

Tractor clamping levers
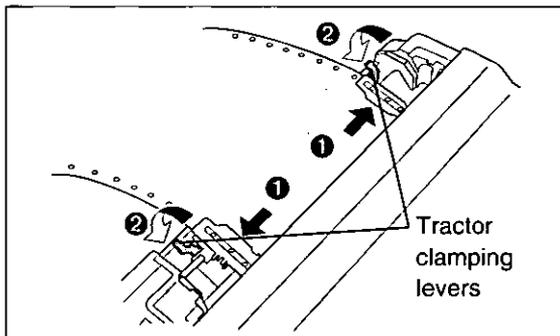
Note:
• Make sure the paper is straight.

8 **Press (LOAD/PARK).**

This will load the paper to the first print line.

9 **Raise the top cover.**

This is done by inserting the side pins of the top cover into the slots in the upper cabinet.

Top cover
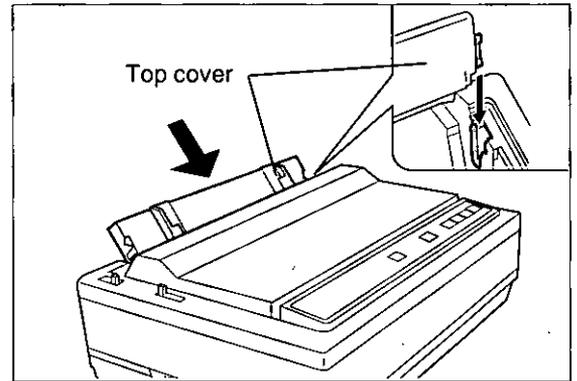
10 **Raise the paper support.**
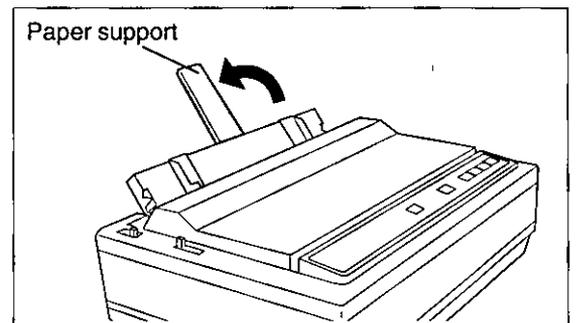
Paper support

11 **Insert the paper support into the slot of the extension plate until it stops.**

Extension plate
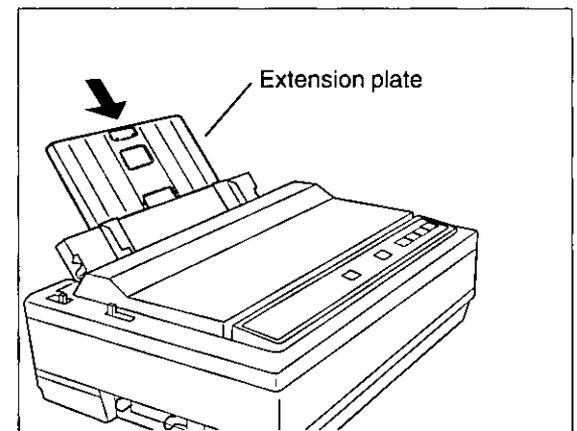
12 **If the ON LINE indicator is not lit, press (ON LINE) to get ready to print.**

Single Sheets and Envelopes (Friction Mode)

1 ❶ **Turn the power on.**

The PAPER OUT indicator will flash indicating that no paper is installed in the printer.

❷ **Adjust the head gap lever for the thickness of paper you are using.**

Position	Used for
1 or 2	Thinner sheets
3, 4, 5 or 6	Thick sheets or envelopes

❷ Head gap lever

❶ Power switch
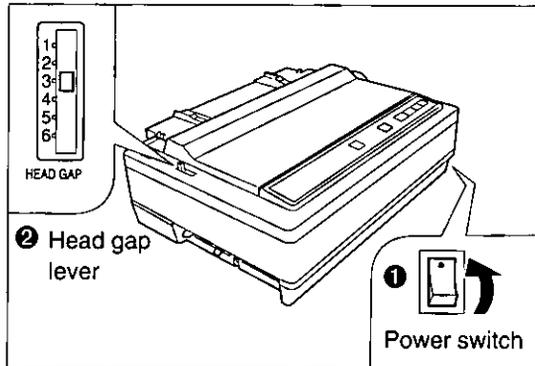
2 **Set the paper feed selector to the "☐" position.**

Paper feed selector
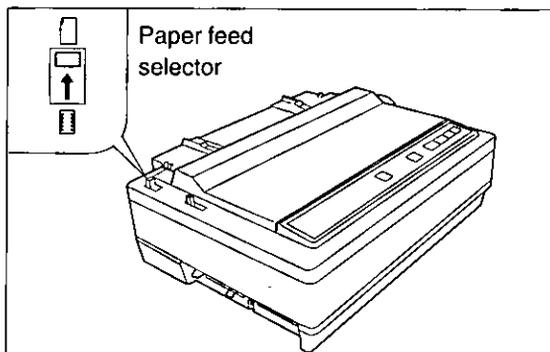
3 **Raise the top cover.**

This is done by inserting the side pins of the top cover into the slots in the upper cabinet.

Top cover
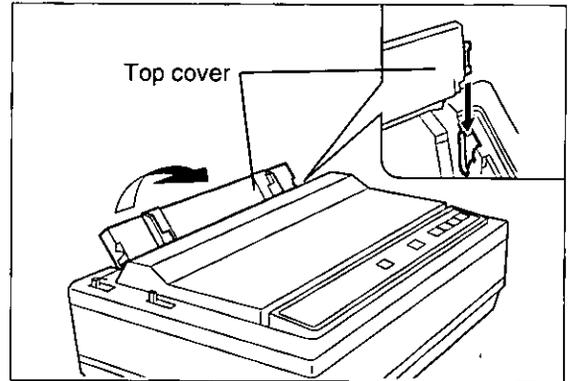
4 **Raise the paper support.**

Paper support
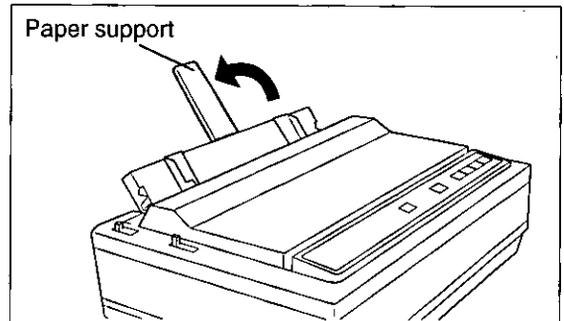
Note:
* If the extension plate is already installed (☞ P. 14), it does not need to be removed.

Handling Paper

5

❶ **Separate the paper guides to the approximate width of your paper or envelope.**

> **Note:**
> • To predetermine your left most print position, move the left paper guide until it clicks into place.

❷ **Insert a sheet of paper through the paper guides.**

The paper will be automatically loaded to the first print line.

Paper guides
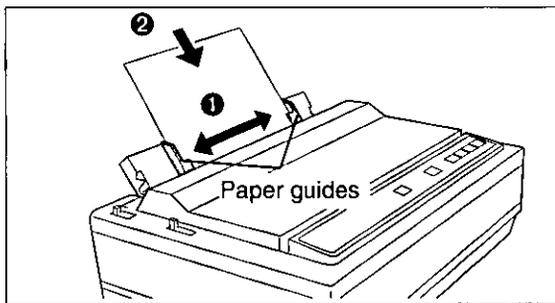
> **Note:**
> • To disable Auto Loading, turn it OFF in the INSTALL Menu on your Setup Disk (☞ P. 24-26) or by using the Control Panel (☞ P. 32-33).
> • If Auto Loading is disabled, you must press (LOAD/PARK) to load paper.
> • If you need to align the paper horizontally or vertically, set the paper feed selector to " [ ] ". This releases the paper and allows the paper to be positioned manually as required. Set the selector back to " [] " before printing.

6

If the ON LINE indicator is not lit, press (ON LINE) to get ready to print.

Tearing off Paper

With fanfold paper installed, this function allows you to advance your paper to the tear position. After tearing off the page you can return your paper to the first printer line by pressing (TEAR OFF) again. If (TEAR OFF) is not pressed a second time, the printer will automatically reverse to the first print line upon receiving data from the computer.

1 Press (TEAR OFF) to advance the paper to the tear position.

2 Tear off the page.

TEAR OFF

3 Press (TEAR OFF) to reverse the paper back to the first print line.

16
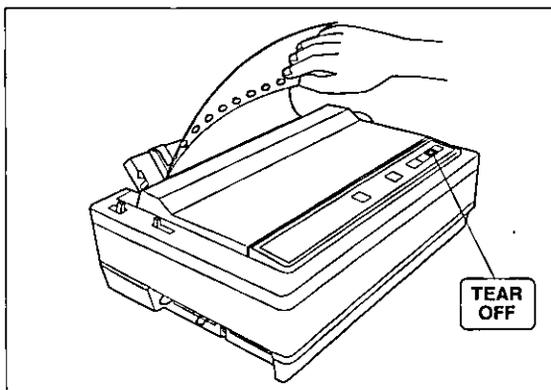
Self Test / Printer Driver Selection

Self Test

The printer has a self test feature which allows you to test the printer. When activated, this feature will print 5 lines of each resident font. When complete, it will return to the draft font and continue for approximately 20 minutes.

1 Install the ribbon cassette and paper, then turn the power off (☞ P. 12-16).

2 While pressing (LF/FF) , turn the power on, then release.

·A sample printout will begin, which serves as a self test.

3 Once you see that the printer is functioning properly, you may turn the power off during the self test, or you may run the entire test.

Printer Driver Selection

This procedure is the final step before printing and is performed in your application software program.
The steps will vary, depending on the software program. Consult your software package for proper procedures.
The Panasonic KX-P1131 will be your first choice. However, if the Panasonic KX-P1131 printer is not listed in your software, you must select an alternative from the following table.

> **Note:**
> • If using Microsoft Windows 3.1, Windows 95, Windows 98, Windows NT 3.5x or Windows NT 4.0, you will need to install a Windows printer driver. These drivers are located on the Setup Disks supplied with your printer. Proceed to Installing the Setup Disk on pages 18-22 for the installation procedure.

Printer Selections (in order of priority)

Panasonic KX-P1131
Epson LQ-300
Panasonic KX-P1121
Panasonic KX-P2023
Panasonic KX-P1123
Panasonic KX-P1124
Epson LQ series
IBM Proprinter X24E *
IBM Proprinter X24 *

* If selecting the IBM Proprinter X24E or X24 in your software, printer emulation must also be changed through the Setup Disk (☞ P. 24-26) or using the Control Panel (☞ P. 32-33).

Installing the Software

These Setup Disks (DOS Utilities & Printer Driver for Windows® 3.1, 95 & 98 disk, Printer Driver for Windows NT® 3.5x & 4.0) can only be used in an IBM-PC or a compatible computer with a 3.5" floppy disk drive.

Before using the Setup Disk, it is recommended that you make a back-up copy and store the original in a safe place.

The following steps will automatically create a directory called P1131 and copy Control Panel Software (CPS1131.EXE) and Command Reference utility (CMDREF.EXE) from the DOS Utilities & Printer Driver for Windows® 3.1, 95 & 98 disk to your C Drive. (You can change the directory and drive.)

Note:
- Control Panel Software and Command Reference utility cannot be installed on Windows NT.

DOS

Program	Function
Control Panel Software	Allows you to view and change the printer settings on the computer screen.
Command Reference utility	Allows you to access a detailed explanation of each software command on the computer screen.

Follow the steps below for installation.

1 Insert the DOS Utilities & Printer Driver for Windows® 3.1, 95 & 98 disk into drive A (or B).

2 Type A: (or B:) and press (Enter).

3 Type SETUP and press (Enter).

4 Follow the instructions on your computer screen.

Windows 3.1

Program	Function
Printer Driver	A printer driver is the part of the software that allows the software to communicate with the printer via the interface in use.
Control Panel Software	Allows you to view and change the printer settings on the computer screen.
Command Reference utility	Allows you to access a detailed explanation of each software command on the computer screen.

Follow the steps below for installation.

1 Insert the DOS Utilities & Printer Driver for Windows® 3.1, 95 & 98 disk into drive A (or B).

2 Click (File) from the Program Manager window.

3 Click (Run...) .

4 Type A:\SETUP (or B:\SETUP) and then press (Enter) (or click (OK)).

5 Follow the instructions on your computer screen.

Windows 95 / Windows 98

Printer Driver

Program	Function
Printer Driver	A printer driver is the part of the software that allows the software to communicate with the printer via the interface in use.

Follow the steps below for installation.

1 Insert the DOS Utilities & Printer Driver for Windows® 3.1, 95 & 98 disk into drive A (or B).

2 Click [Start], point to "Settings" and "Printers", then click.

3 Double click [Add Printer], and click [Next].

4 When the option "Local printer" or "Network printer" appears, select [Local printer] then [Next].

5 Click [Have Disk], [OK].

6 Select your Panasonic printer model.

7 Click [Next].

8 Click [Next] to set up.

9 Select "Yes" and click [Next].

10 Click [Finish].

11 Follow the instructions on your computer screen.

Utilities

Program	Function
Control Panel Software	Allows you to view and change the printer settings on the computer screen.
Command Reference utility	Allows you to access a detailed explanation of each software command on the computer screen.

Follow the steps below for installation.

1 Click [Start], point to "Run..." and click.

2 Type A:\SETUP (or B:\SETUP)and then press (Enter) (or click [OK]).

3 Follow the instructions on your computer screen.

Installing the Software

Windows NT 3.5x

Program	Function
Printer Driver	A printer driver is the part of the software that allows the software to communicate with the printer via the interface in use.

Single Users

If you do not have a network connection or do not plan to share the printer with others on the network, perform the following.

1 Double click the Main icon in the Program Manager to display the "Main" window.

2 Double click the Print Manager icon to display the "Print Manager" window.

3 Click "Printer" menu, and "Create Printer...".

4 Enter the printer name (ex. "Panasonic KX-P1131") in the "Printer Name" box.

```
┌─────────── Create Printer ───────────┐
│                                        │
│ Printer Name:  Panasonic KX-P1131      │  [    OK    ]
│ Driver:                            [±] │  [  Cancel  ]
│ Description:                           │  [  Setup...  ]
│ Print to:      LPT1:               [±] │  [  Details...  ]
│                                        │  [  Settings...  ]
│ ☐ Share this printer on the network    │  [   Help   ]
│ Share Name:                            │
│ Location:                              │
└────────────────────────────────────────┘
```

5 Click the "Driver" box, and "Other...".

6 Insert the Printer Driver for Windows NT® 3.5x & NT® 4.0 disk into disk drive A.

7 Click OK.

8 Click OK.

9 Click OK.

10 Click OK.
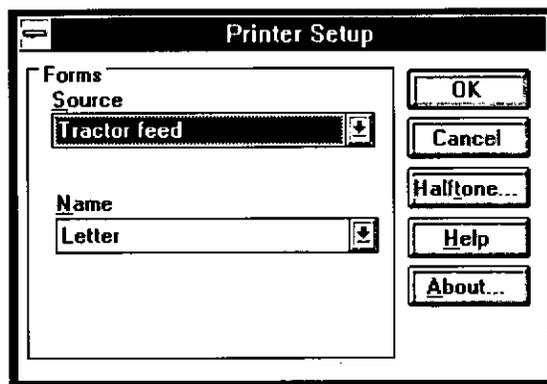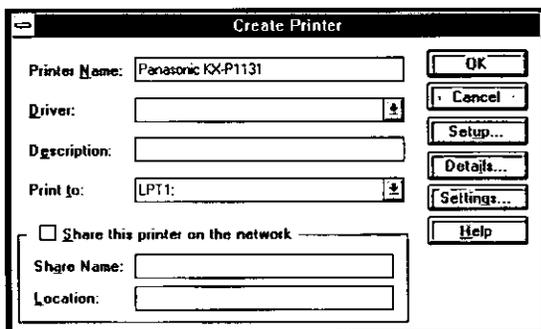
```
┌─────────── Printer Setup ───────────┐
│ ┌─ Forms ──────────────┐            │
│   Source                  [    OK    ]
│   [Tractor feed      ±]              │
│                           [  Cancel  ]
│                                      │
│   Name                    [ Halftone... ]
│   [Letter            ±]              │
│                           [   Help   ]
│                                      │
│                           [  About...  ]
└──────────────────────────────────────┘
```

Printer in the Network Environment

■Share the Printer as Server

To share the printer with the client computer, perform the following:

1 Install the Printer Driver to your computer (☞ P. 20).

2 Double click the Main icon.

3 Double click the Print Manager icon.

4 Select the Panasonic KX-P1131 printer.

5 Click "Printer" menu and "Properties...".

6 Select "Share this printer on the network" by clicking the check box, and enter the printer name (ex. "KX-P1131").

7 Click OK.

■Use the Printer as Client

To use the printer connected to the server computer, perform the following:

1 Double click the Main icon.

2 Double click the Print Manager icon.

3 Click "Printer" menu and "Connect to Printer...".

4 Select the Panasonic KX-P1131 printer in the "Shared Printers" box.

5 Click OK.
If the server computer does not have the Printer Driver for Windows NT 3.5x, the install dialog will be displayed on the screen. Then insert the Printer Driver for Windows NT® 3.5x & NT® 4.0 disk into disk drive A and click OK.

Note:
• The procedures for sharing printer may depend on the version of Widnows NT. Refer to your Microsoft documentation for details, or consult an administrator of the computer network.

Installing the Software

Windows NT 4.0

Program	Function
Printer Driver	A printer driver is the part of the software that allows the software to communicate with the printer via the interface in use.

Single Users

If you do not have a network connection or do not plan to share the printer with others on the network, perform the following.

1 Click ⌐Start⌐, point to "Settings" and click "Printers".

2 Double click the Add Printer icon.

3 Click ⌐Next>⌐.

4 Select "LPT1:" by clicking on the check box.

5 Click ⌐Next>⌐.

6 Click ⌐Have Disk...⌐.

7 Insert the Printer Driver for Windows NT® 3.5x & NT® 4.0 disk into disk drive A.

8 Click ⌐OK⌐.

9 Click ⌐Next>⌐ four times.

10 Click ⌐Finish⌐.
The printer test page will be printed out.

11 Click ⌐YES⌐.

Printer in the Network Environment

■ Share the Printer as Server

To share the printer with the client computer, perform the following:

1 Install the Printer Driver to your computer (☞ P. 22).

2 Double click the My Computer icon.

3 Double click the Printers icon.

4 Select the Panasonic KX-P1131 printer.

5 Click "File" menu and "Sharing...".

6 Click "Shared".

7 Enter the printer name (ex. "KX-P1131").

8 Click [OK].

■ Use the Printer as Client

To use the printer connected to the server computer, perform the following:

1 Double click the Add Printer icon.

2 Select "Network printer server".

3 Click [Next>].

4 Select the Panasonic KX-P1131 printer in the "Shared Printers" box.

5 Click [OK] and follow the instruction on the screen.
If the server computer does not have the Printer Driver for Windows NT 4.0, the install dialog will be displayed on the screen. Then insert the Printer Driver for Windows NT® 3.5x & NT® 4.0 disk into disk drive A and enter the path name "A:\NT40", then click [OK].

Note:
- The procedures for sharing printer may depend on the version of Widnows NT. Refer to your Microsoft documentation for details, or consult an administrator of the computer network.

Chap. 3

Installing and Using the KX-P1131 Software

Using the Software

Control Panel Software Program

The printer allows you to select 42 initial setup items shown in the table below by using the Control Panel Software program.
The printer has been factory set to operate with most of the popular software packages. If no changes are required, you should be ready to print. In most cases there will be no need to change the initial setup items.

You can verify the current settings by pressing (F5) (☞ P. 26) after running the Control Panel Software program. You can also verify the factory and current settings by turning the power on while pressing (PITCH) + (ON LINE).

Menu	Item	Menu	Item
PRINT STYLE	FONT *1	CHARACTER SET	CHARACTER SET
	PITCH		COUNTRY
	POINT SIZE *2		CODE PAGE
EMULATION	EMULATION	INSTALL	AGM/IBM
PAGE FORMAT	LINE/INCH		AUTO CR/IBM
	PAGE LENGTH		AUTO LF
	TOP MARGIN		AUTO LOADING
	BOTTOM MARGIN		PAPER OUT DETECT
	LEFT MARGIN		TEAR OFF
	RIGHT MARGIN		CSF MODE *3
	CTR PRINTHEAD		BUFFER CONTROL *4
PRINT MODE	GRAPHIC DIRECTION		AUTO ON LINE
	TEXT DIRECTION		AUTO FEED XT CONTROL
TEXT ENHANCEMENT	BOLD	INTERFACE	INTERFACE
	DOUBLE HIGH		DATA LENGTH
	DOUBLE STRIKE		BAUD RATE *5
	DOUBLE WIDE		PARITY *5
	ITALICS		PROTOCOL *5
	OUTLINE	T.O.F. (Top of Form) SETTING	TRACTOR
	SHADOW		FRICTION
	ZERO FONT		CUT SHEET FEEDER *3

*1 -SC sequences are displayed only when one of the following CODE PAGE is selected: U.S.A., Multilingual, Portugal, Canada French, Norway, Turkey.
*2 displayed only when - SC sequences are selected in FONT.
*3 operational when using the optional Auto Cut Sheet Feeder (KX-PT12).
*4 Download font function is disabled when ALL is selected.
*5 displayed when AUTO or SERIAL is selected in INTERFACE.

Note:
* **This program communicates between printer and computer. Before running this program under Windows 3.1, Windows 95 or Windows 98, be sure printing is completed.**

To recall the programs, follow the steps below.

<DOS>

1* At your C:\prompt, type CD P1131 and press (Enter).

2 Type CPS1131 and press (Enter).

<Windows 3.1>

1 Select [Run] from the File menu.

2 Type C:\P1131\CPS1131 and press (Enter) (or click [OK]).

<Windows 95 and Windows 98>

1 Click [Start], point to "Run..." and click.

2 Type C:\P1131\CPS1131 and press (Enter) (or click [OK]).

* If you changed the directory when installing utilities for DOS, select your changed directory and press (Enter).

Note:
• If you want to run the Control Panel Software program using the Setup Disk, follow the steps below.

1. Insert your DOS Utilites & Printer Driver for Windows® 3.1, 95 & 98 disk into drive A (or B).

<DOS>
2. ❶ Type A: (or B:) and press (Enter).
   ❷ Type CD DOS and press (Enter).
   ❸ Type CPS1131 and press (Enter).

<Windows 3.1>
2. ❶ Select [Run] from the File menu.
   ❷ Type A:\DOS\CPS1131 (or B:\DOS\CPS1131).
   ❸ Press (Enter) (or click [OK]).

<Windows 95 and Windows 98>
2. ❶ Click [Start], point to "Run..." and click.
   ❷ Type A:\DOS\CPS1131 (or B:\DOS\CPS1131).
   ❸ Press (Enter) (or click [OK]).

---

3 The first screen is an introduction to the operation of the Control Panel Software program. Please read it through and press any key to continue. (If your display is monochrome, press "M" key.)

```
—————— << Control Panel Software (xxxxxxxxxx) >> ——————
 ┌ <Menu> ———————        ┌ <Item> ———
 │ * PRINT STYLE │        │ FONT     │
 │ * EMULATION   │        │ PITCH    │
 │ * PAGE FORMAT │        └──────────┘
 │ * PRINT MODE  │
 │ * TEXT ENHANCEMENT │
 │ * CHARACTER SET │
 │ * INSTALL     │
 │ * INTERFACE   │
 │ * T.O.F. SETTING │
 └───────────────┘

 << COMMENT >> ══════════════════════
 Select print style.

 << KEY OPERATION >> ═════════════════
 [F1=HELP]              [F3=SAVE TO DISK]    [F5=PRINT SETTINGS]     [F6=LIST]
 [F2=FACTORY SETTINGS]  [F4=LOAD FROM DISK]  [F10=SEND TO PRINTER]   [ESC=EXIT]
```
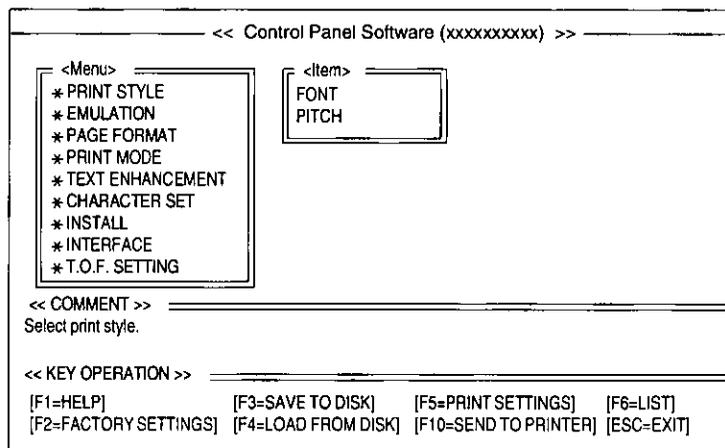
4 The <Menu> window will be highlighted.

Using the Software

F1	HELP	displays explanation of the functions
F2 *1	FACTORY SETTINGS	resets to the factory settings
F3	SAVE TO DISK	saves the setting as a file*2 to the Disk
F4	LOAD FROM DISK	loads your desired setting saved using (F3) from the Disk
F5 *3	PRINT SETTINGS	prints out the current settings
F6	LIST	displays the current setting list
F10 *3	SEND TO PRINTER	sends the settings to the printer
ESC	EXIT	exits the Control Panel Software program

*1 If you want to reset the printer settings to the factory settings when using the Control Panel Software program, press (F2) to recall the factory settings and then press (F10) to send the settings to the printer.

*2 "＊.DAT" appears in the File Name position. Delete the ＊ and enter a file name (up to 8 characters).

*3 When sending the data through the Serial Interface (or Parallel Interface), change the option items (INTERFACE and PORT) to the required setting. (ex; INTERFACE)
  1. Press ⬆ to highlight PARALLEL (or SERIAL) and press (Enter).
  2. Press ⬇ to highlight SERIAL (or PARALLEL) and press (Enter).

Command Reference Program

The Command Reference program allows you to access a detailed explanation of each software command on the screen. Each displayed explanation can be printed out if required.

> **Note:**
> * You can print the **Character Set Tables**. On the SELECT COMMAND screen, press (C). Then select your desired table and press (Enter).
> * If 7 bit is selected for Data Length, you cannot print the command lists and character set tables.
> * There is a list of **Proportional Spacing Tables** after the software commands lists. If you want to see a proportional spacing table, select your desired table and press (Enter).

To recall the programs, follow the steps below.

\<DOS\>

1* At your C:\prompt, type **CD P1131** and press (Enter).

2 Type **CMDREF** and press (Enter).

\<Windows 3.1\>

1 Select [Run] from the File menu.

2 Type **C:\P1131\CMDREF** and press (Enter). (or click [OK]).

\<Windows 95 and Windows 98\>

1 Click [Start], point to "Run..." and click.

2 Type **C:\P1131\CMDREF** and press (Enter) (or click [OK]).

* If you changed the directory when installing utilities for DOS, select your changed directory and press (Enter).

> **Note:**
> * If you want to run the Command Referece program using the Setup Disk, follow the steps below.
>
> 1. Insert your DOS Utilites & Printer Driver for Windows® 3.1, 95 & 98 disk into drive A (or B).
>
> \<DOS\>
>
> 2. ❶ Type **A:** (or **B:**) and press (Enter).
>
> ❷ Type **CD DOS** and press (Enter).
>
> ❸ Type **CMDREF** and press (Enter).
>
> \<Windows 3.1\>
>
> 2. ❶ Select [Run] from the File menu.
>
> ❷ Type **A:\DOS\CMDREF** (or **B:\DOS\CMDREF**).
>
> ❸ Click [OK] (or press (Enter)).
>
> \<Windows 95 and Windows 98\>
>
> 2. ❶ Click [Start], point to "**Run...**" and click.
>
> ❷ Type **A:\DOS\CMDREF** (or **B:\DOS\CMDREF**).
>
> ❸ Click [OK] (or press (Enter)).

3 The first screen is an introduction to the operation of the Command Reference program. Please read it through and press any key to continue. (If your display is monochrome, press "M" key.)

4 Select the desired emulation and press (Enter) (or click [OK]).

The commands list will be displayed.

5 Select the desired command and press (Enter) (or click [OK]).

The detailed explanation of the command will be displayed.

6 Press (E) to exit Command Reference.

```
<<  Panasonic KX-P1131 command reference utility (xxxxxxxxxx)  >>
- - SELECT EMULATION - -
=================================================================

        EPSON
        IBM




===============================================================
[ ↑ ]/[ ↓ ]        : Select emulation
[Enter]            : Set emulation
[ E ]              : Exit Command Reference
```
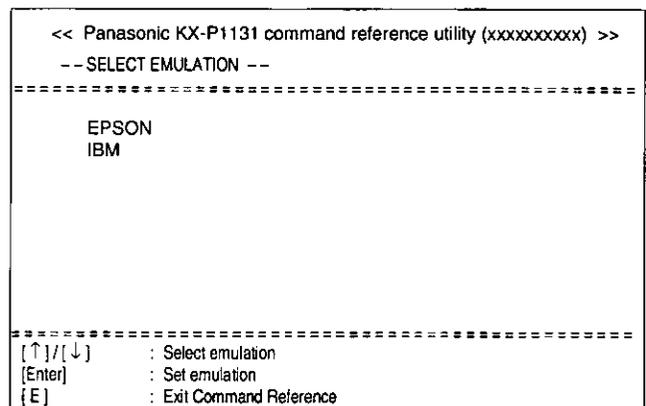
Using the Control Panel

Selecting a Character Font

This printer contains resident fonts which are accessible through the Control Panel.
You can select any one of the character fonts by pressing the FONT switch on the Control Panel.

FONT indicators

○—○ PROGRAM
●—○ Courier
○—● Roman
●—● Sans Serif
●—○ Prestige
○—● Script

• Press and release (**FONT**).

The combination of FONT indicators indicates the current character font selected, as shown on the Control Panel.

○─○ [FONT] = PROGRAM	○─● [FONT] = Roman	●─○ [FONT] = Prestige
●─○ [FONT] = Courier	●─● [FONT] = Sans Serif	○─● [FONT] = Script

●=light is lit   o=light is out   ●=light is blinking

Note:
• You must be in PROGRAM (both FONT indicators are off) to allow your software to control your font selection.

Selecting a Character Pitch

This printer contains resident pitches which are accessible through the control panel.
You can select any one of the character pitches by pressing the PITCH switch on the control panel.

PITCH indicators

○—○ PROGRAM
●—○ 10 CPI
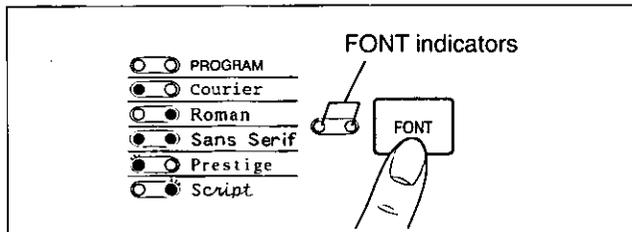○—● 12 CPI
●—● 15 CPI
●—○ 17 CPI

• Press and release (**PITCH**).

The combination of PITCH indicators indicates the current character pitch selected, as shown on the Control Panel.

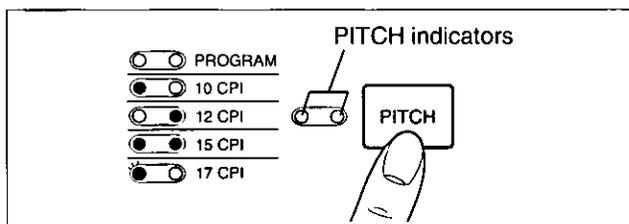|		
○─○ [PITCH] = PROGRAM	○─● [PITCH] = 12 CPI	●─○ [PITCH] = 17 CPI
●─○ [PITCH] = 10 CPI	●─● [PITCH] = 15 CPI	

●=light is lit   o=light is out   ●=light is blinking

Note:
• You must be in PROGRAM (both PITCH indicators are off) to allow your software to control your pitch selection.

High Speed Mode

The High Speed mode is a feature for doubling the print speed only when LQ Font and one of the 120 dpi, 180 dpi or 360 dpi of 24-pin bit image are selected.

> **Note:**
> • When enabled, this feature will lower the print density.

Turning on the High Speed mode:
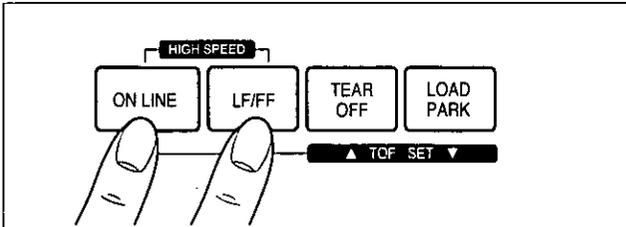
While pressing (ON LINE), press (LF/FF).

The HIGH SPEED indicator is on.

Turning off the High Speed mode:
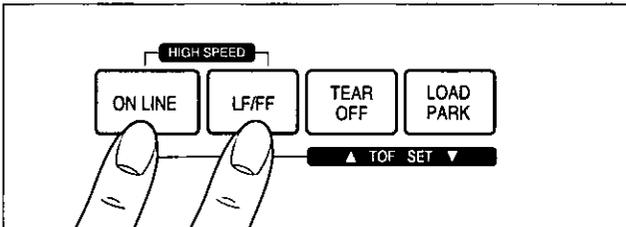
While pressing (ON LINE), press (LF/FF).

The HIGH SPEED indicator is off.

Line Feed / Form Feed (LF/FF)

You can adjust the paper position by using the front panel switches when the printer is in the OFF LINE mode or when the printer is not printing in the ON LINE mode.
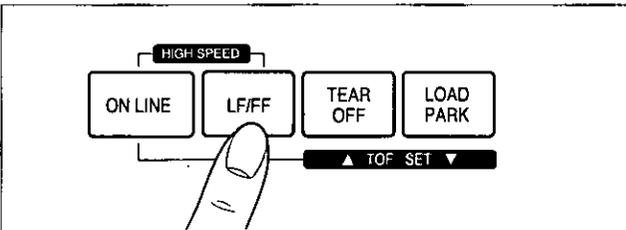
With paper installed, pressing (LF/FF) once advances the paper one line.

With paper installed, holding (LF/FF) moves the printhead to the center and advances the paper to the top of the next page.

> **Note:**
> • When pressing (LF/FF), the amount of paper which is fed is determined by the current setting for lines per inch as specified through the Control Panel Software program, control panel (Initial Setup mode) or your application software.

Using the Control Panel

Top of Form Function (TOF SET)

This printer has a Top of Form (TOF) function which stores the first print line position and loads the paper to the designated position automatically. The first print line position will be stored even after the power is turned off.

You can adjust the Top of Form position through the Control Panel Software program (☞ P. 24), or using Micro Line Feed or Reverse Micro Line Feed (☞ below) from the Control Panel within 125 mm (5") from the top of your paper.

> **Note:**
> * Do not rotate the platen knob, otherwise the printer will not be able to count the number of lines properly.
> * All adjustments must be made on the first sheet. If you decide to change the setting and save it, remove the paper from the tractors, then reset and reload the paper.

1   **If necessary, redefine the page length of the paper you are using through the Control Panel Software program (☞ P. 24-26), Control Panel (☞ P. 32-33) or your application software.**

2   **(Micro Line Feed)**

While pressing [ON LINE] , press [TEAR OFF] .

This advances the paper one micro line [0.14 mm ($\frac{1}{180}$")].
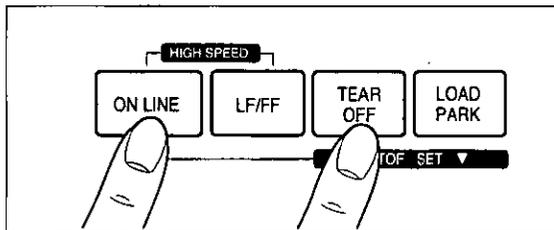
(Reverse Micro Line Feed)

While pressing [ON LINE] , press [LOAD/PARK] .

This reverse the paper one micro line [0.14 mm ($\frac{1}{180}$")].
The printer cannot reverse the paper past the printable area (☞ P. 39 "Printing Area").
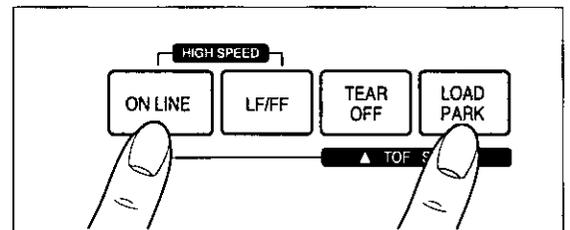
3   **At your desired position within 125 mm (5") from the top of your paper, release the switches.**

The paper position will be stored automatically as the new Top of Form position.

Paper Parking (LOAD/PARK)

This function moves the fanfold paper to the park position, enabling you to use single sheets or envelopes without removing or wasting your fanfold paper.

1 Tear off the printed page(s) of the fanfold paper being used (☞ P. 16).

2 Press (LOAD/PARK) to reverse the fanfold paper to the park position.

3 ❶ Move the paper feed selector to " ☐ " (Friction Mode).

❷ Load single sheets or envelopes.

When you have finished printing, remove the sheet (or envelope) from the printer.
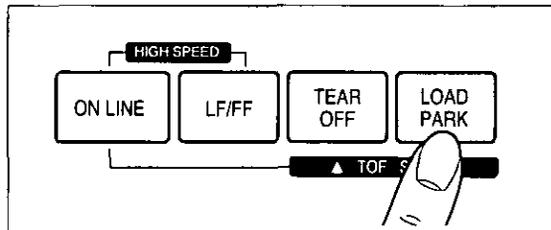
4 Move the paper feed selector to " ☷ " (Tractor Mode).
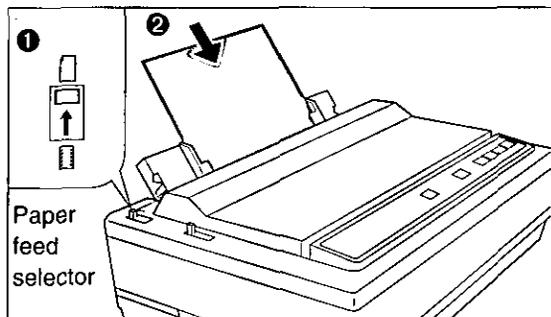
5 Press (LOAD/PARK) to reload the fanfold paper to the first print line.

Paper Out Detector

Your printer has a paper out detector. When an out of paper condition occurs, printing stops, the printer goes to the OFF LINE mode, and the POWER/PAPER OUT indicator starts blinking. To continue printing to the end of the current page, follow the steps below.

1 Press (ON LINE) repeatedly until the page is completed.

2 Insert the new paper (☞ P. 13-16).

3 If the ON LINE indicator is not lit, press (ON LINE).

Note:
- When PAPER OUT DETECT is set to ON (☞ P. 33), printing stops at 1.26 mm (0.5") from the bottom of the paper.
- The paper out detector can be disabled through the Control Panel Software program (☞ P. 24).

Using the Control Panel

Initial Setup Mode

The 19 features (items) can be set in the Initial Setup mode through the Control Panel. For the features and the indicators condition, refer to page 33. These features can also be set through the Control Panel Software program (☞ P. 24).

1 Load a sheet of paper (☞ P. 13-16), and turn the power off.

2 While pressing (LOAD/PARK) , turn the power on to enter the Initial Setup mode.

Both FONT indicators and the HIGH SPEED indicator will be blinking.
The current settings will be printed automatically.
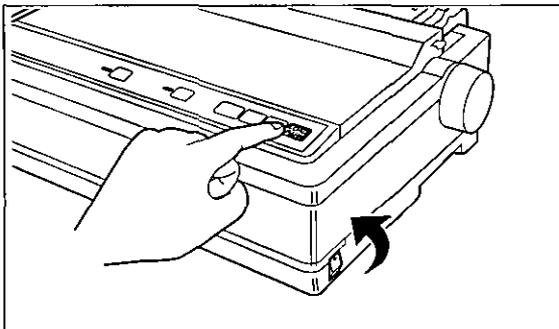
3 Press and release (FONT) and (ON LINE) to select the item.

Each time you press (FONT) and (ON LINE), you will advance to the next item. Select the desired item according to the status of the FONT and ON LINE indicators (on, off, blinking) (☞ P. 33).
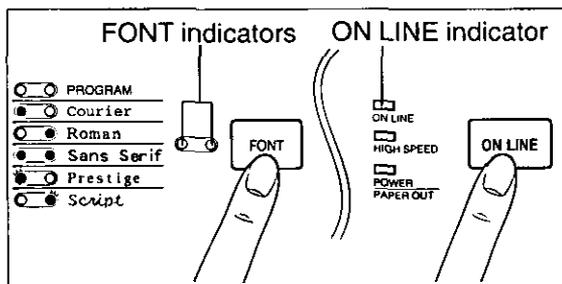
4 Press and release (PITCH) to set the item's status.

The item's status will change each time you press (PITCH) (☞ P. 33).
To change additional settings, repeat step 3 and 4.

PITCH indicators

PROGRAM	
10 CPI	
12 CPI	PITCH
15 CPI	
17 CPI	
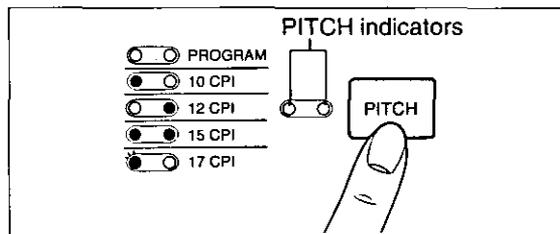
5 Press (LOAD/PARK) to exit the Initial Setup mode.

FONT indicator will go off and the current conditions will print.
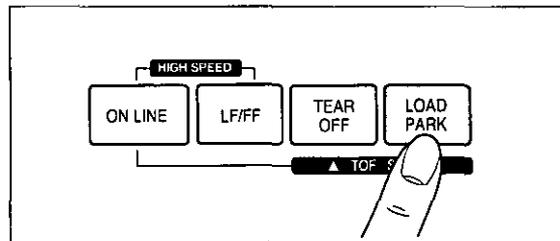
HIGH SPEED			
ON LINE	LF/FF	TEAR OFF	LOAD PARK

FONT indicators   ON LINE indicator

PROGRAM	ON LINE
Courier	
Roman	FONT
Sans Serif	HIGH SPEED
Prestige	POWER
Script	PAPER OUT

Note:
* To return all current settings to the factory settings, follow the steps below.
  1. While pressing (LOAD/PARK), turn the power on, then release.
  2. Press (TEAR OFF).
  3. Press (LOAD/PARK) to exit the Initial Setup mode.

Control panel FONT indicators PITCH indicators ON LINE indicator

```
O  O   PROGRAM
●  O   Courier          FONT          O  O   PROGRAM        ON LINE
O  ●   Roman                           ●  O   10 CPI  PITCH  HIGH SPEED   ON LINE   LF/FF   TEAR   LOAD
●  ●   Sans Serif                      O  ●   12 CPI                                         OFF    PARK
☀  O   Prestige                       ●  ●   15 CPI         POWER
O  ☀   Script                         ☀  O   17 CPI         PAPER OUT          ▲ TOF SET ▼
                                                                          HIGH SPEED
```

Press to select the item. Press to set the item's status. Press to select the item.
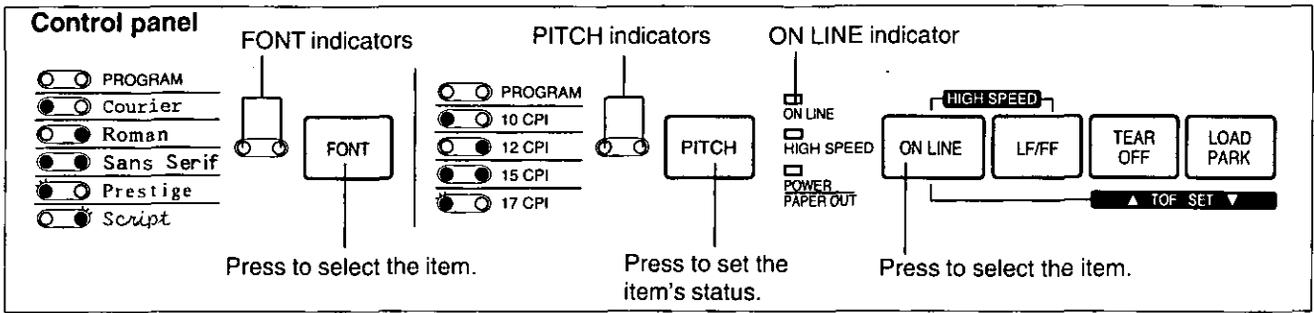
Item			Setting					
	ON LINE indicator (Press ON LINE)	FONT indicators (Press FONT)	PITCH indicators (Press PITCH)					
			O O	O ●	● O	● ●	O ☀	☀ O
EMULATION		O ●	EPSON	IBM	—	—	—	—
G.DIRECTION		● O	BI	UNI	—	—	—	—
CSF MODE		● ●	OFF	ON	—	—	—	—
TEAR OFF	☀	O ☀	MANUAL	AUTO	—	—	—	—
PAGE LENGTH		☀ O	11"	12"	11.66"	14"	8"	8.5"
LINE/INCH		● ☀	6 LPI	8 LPI	3 LPI	4 LPI	7.5 LPI	12 LPI
FONT		● ●	DRAFT	COURIER	ROMAN	SANS SERIF	PRESTIGE	SCRIPT
PITCH		O O	10 CPI	12 CPI	15 CPI	17 CPI	20 CPI	PS
AUTO LF		O ●	OFF	ON	—	—	—	—
AGM/IBM		● O	OFF	ON	—	—	—	—
AUTO CR/IBM		● ●	OFF	ON	—	—	—	—
AUTO LOADING	☐	O ☀	OFF	ON	—	—	—	—
PAPER OUT DETECT		☀ O	OFF	ON	—	—	—	—
AUTO ON LINE		● ☀	OFF	ON	—	—	—	—
BUFFER CONTROL		☀ ●	22 KB	8 KB	0 KB	ALL*1	—	—
ZERO FONT		O O	NORMAL	POINT	SLASH	—	—	—
CHARACTER SET		O ●	ITALIC	GRAPHIC1	GRAPHIC2	—	—	—
COUNTRY*2		● O	U.S.A.	FRANCE	GERMANY	U.K.	DENMARK1	SWEDEN
	■	● ●	ITALY	SPAIN1	JAPAN	NORWAY	DENMARK2	SPAIN2
		O ☀	L.AMERICA	KOREA	SLOVENIA	LEGAL	—	—
CODE PAGE*2		☀ O	U.S.A.	MULTI	PORTUGAL	CANADA F.	NORWAY	TURKEY
		● ☀	BRASCII	ABICOMP	PC855	PC866	USSR GOST	POLISH
		● ●	CZECH	PC852	ISO LATIN2	HUNGARIAN	BULGARIA	ISO 8859-2

Indicators condition:

■ , ● =light is lit   ☐ , O =light is out   ☀ , ☀ =light is blinking

*1 Download font function is disabled when ALL is selected.
*2 If the current Country/Code Page setting is located under the other condition of FONT indicators, the both PITCH indicator will blink.

Chap. 4

Using the Control Panel

Using the Control Panel

Interface Setup Mode

The following items can be set in the Interface Setup mode through the Control Panel: INTERFACE, DATA LENGTH, BAUD RATE, PARITY, PROTOCOL and SIGNAL POLARITY.
You can select and change the desired item according to the status of the FONT/PITCH indicators.

1 Load a sheet of paper (☞ P. 13-16), and turn the power off.

2 While pressing (PITCH), turn the power on to enter the Interface Setup mode.

Both FONT indicators and the HIGH SPEED indicator will be blinking.
The current settings will be printed automatically.

3 Press and release (FONT) to select the item.

Each time you press (FONT), you will advance to the next item. Select the desired item according to the status of the FONT indicators (on, off, blinking).

4 Press and release (PITCH) to set the item's status.

The item's status will change each time you press (PITCH). See the table below to verify desired status.

To change additional settings, repeat steps 3 and 4.

Item		Setting						
	FONT indicators (Press (FONT))	PITCH indicators (Press (PITCH))						
		○ ○	○ ●	● ○	● ●	○ ●	● ○	● ●
INTERFACE	○ ●	AUTO	PARALLEL	SERIAL	—	—	—	—
DATA LENGTH	● ○	8 bit	7 bit	—	—	—	—	—
BAUD RATE	● ●	300	600	1,200	2,400	4,800	9,600	19,200
PARITY	○ ●	NONE	IGNORE	ODD	EVEN	—	—	—
PROTOCOL	● ○	DTR	XON/ XOFF	—	—	—	—	—
SIGNAL POLARITY	● ●	MARK	SPACE	—	—	—	—	—

FONT/PITCH indicators condition:

●=light is lit   ○=light is out   ●=light is blinking

5 Press (LOAD/PARK) to exit the Interface Setup mode.
FONT indicators will go off and the current conditions will print.

Note:
• To return all current settings to the factory settings, follow the steps below.
1. While pressing (LOAD/PARK), turn the power on, then release.
2. Press (TEAR OFF).
3. Press (LOAD/PARK) to exit the Initial Setup mode.

Periodic Maintenance / Troubleshooting

Periodic Maintenance

The printer does not require routine maintenance. However, reasonable care of the printer will extend its life. The following periodic measures are recommended:

- Cleaning the unit is the most important action you can perform.
  The frequency of cleaning is dependent upon the environment.
  — Turn the power off and unplug the AC power cord.
  — Clean the case and covers with a soft cloth. Use any mild commercial cleaner on the cloth, do not spray directly on to the printer.
  — Raise the top cover and pull up the roller cover. Vacuum or dust the inside area of the unit. Be very careful not to damage the printhead ribbon cable or the carriage drive belt.

> **Caution:**
> - The printhead may be hot, use caution when the cover is open.

— The platen should be cleaned with denatured alcohol only.

— The carriage guide bar can be lubricated with a very light oil. Contact your Authorized Panasonic Service Center for advice when lubrication will be needed.

Ribbon Cassette

> **Note:**
> - If the ribbon begins to catch, snag, or tear from the printhead, your printer requires servicing.

Troubleshooting

Most problems associated with the printer can be traced to improper setup, installation, or cabling. The following table will assist you in identifying and correcting some of the more common problems. If you need additional help, contact the reseller from which the unit was purchased or the Panasonic technical support number found in P. 2 of this manual.

Symptom	Possible Cause	Probable Solution
Ink smears	Head gap lever is not in the proper position	Move the lever toward the position "6" until ink doesn't smear (☞ P. 12)
Printout is faint	Head gap lever is not in proper position	Adjust the lever to the proper position (☞ P. 12, 13, 15)
Printhead moves but there is no printing	Ribbon is not installed correctly	Re-insert ribbon (☞ P. 12)
Paper out detector inoperative	PAPER OUT DETECT is OFF	Set PAPER OUT DETECT to ON (☞ P. 24, 31)
Printer does not power up	No AC power	Check AC power cord (☞ P. 11)
Paper slips around platen	Paper feed selector is set to " 🗋 "	Set selector to " 🗋 "
Power is on but printer does not print	Printer is not ON LINE	Press (ON LINE)
	Interface cable is not properly connected	Secure connection (☞ P. 11)
	Out of paper	Install new paper (☞ P. 13-16)
	Printhead has become overheated	Allow the printhead some time to cool down. The printer will automatically resume printing
	Interface setting is incorrectly set	Set interface setting to match the computer's interface (☞ P. 24, 34)
Carriage stops moving, all indicators start blinking	Path of printhead is blocked	Turn the power off, clear the path. Turn the power back on to resume printing

Periodic Maintenance / Troubleshooting

Symptom	Possible Cause	Probable Solution
Paper wrinkles when using tractor feed	No reverse tension on paper	Set paper supply lower than printer
Printer cannot load single sheet through the top	CSF MODE is ON	Set CSF MODE to OFF when not using the cut sheet feeder (☞ P. 24, 33)
	Paper feed selector is set to " 🗎 "	Set paper feed selector to " 🗋 "
Cut Sheet Feeder (KX-PT12) is installed but does not work	CSF MODE is OFF	Set CSF MODE to ON (☞ P. 24, 33)
Unexpected characters appear in printing	EMULATION is set incorrectly	Check printer driver of your software package and set EMULATION accordingly (☞ P. 24, 33)
Fanfold paper is jamming	Paper is not installed correctly in tractor	Set paper feed selector to " 🗎 " and rotate platen knob to remove jammed paper Reinstall paper correctly into tractor (☞ P. 13)
Printout is double-spaced	AUTO LF is ON	Set AUTO LF to OFF (☞ P. 24, 33)
Keeps printing on the same line	Computer is not sending a LF command	Set AUTO LF to ON (☞ P. 24, 33)
Wrong CHARACTER SET prints	Wrong CHARACTER SET is selected	Set the CHARACTER SET as required (☞ P. 24)
Cannot print ASCII characters with code above 127	DATA LENGTH is set incorrectly	Set DATA LENGTH as required (☞ P. 24, 34)
When using serial interface, printer does not print or data loss occurs	Parallel interface is selected on your printer	Set INTERFACE to AUTO or SERIAL (☞ P. 24, 34)
	BAUD RATE, PARITY, PROTOCOL or DATA LENGTH does not match with the computer	Set BAUD RATE, PARITY, PROTOCOL and DATA LENGTH to match the computer (☞ P. 24, 34)
When printing is completed, paper is not advanced automatically	TEAR OFF, PAGE LENGTH, TOP MARGIN and BOTTOM MARGIN are set incorrectly	Set Tear off to AUTO and set Page length, Top margin and Bottom margin to meet your software package (☞ P. 24)
A communication error occured when running the CPS (Control Panel Software) in Windows 95 or Windows 98	Printer Driver of KX-P1131 is spooling the data sent from DOS	1. Select "Printers" from "Settings" in Windows 95 or Windows 98 2. Select "Properties" of the KX-P1131 3. Select "Port Settings" from "Details" and disable "Spool MS-DOS print jobs" by clicking off its check box

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Printer Specifications

Power requirements:	Refer to the nameplate located on the rear of the printer.
Frequency:	
Current:	
Interface:	Centronics parallel RS-232C/Serial interface
Print fonts:	3 Draft (Pica, Elite, Micron) 7 Letter Quality (Courier, Bold PS, Prestige, Script, Sans Serif, Roman, OCR-B) 6 Scalable Fonts *1 (Courier, Bold PS, Roman, Sans Serif, Prestige, Script)
Software emulation:	Epson LQ-300 without color IBM Proprinter X24E
Buffer:	Selectable [0 KB / 8 KB / 22 KB (default) / All (54 KB max.)]
Character sets:	EPSON mode ONE Italic and 18 characters set tables 15 International characters and LEGAL Set IBM mode 18 character set tables

Dot configuration:	0.2 mm ($\frac{1}{127}$") dot diameter
	
	                              Draft **LQ**
	Matrix (Hor. × Ver.) 9×24 30×24
	Dot pitch (Hor.) 0.21 mm ($\frac{1}{120}$") 0.07 mm ($\frac{1}{360}$")
	             (Ver.) 0.14 mm ($\frac{1}{180}$") 0.14 mm ($\frac{1}{180}$")

Maximum number of characters per line (cpl):	**Font** **Print line size: 203 mm (8")** Pica [10 cpi (character per inch)] 80 cpl Elite (12 cpi) 96 cpl Micron (15 cpi) 120 cpl Compressed (17 cpi) 137 cpl Elite compressed (20 cpi) 160 cpl
Printing speed [characters per second (cps)]:	**Micron** **Elite** **Pica** **Draft** 300 cps 240 cps 200 cps **Letter Quality** 100 cps 80 cps 66 cps
Printing direction:	Uni-directional / Bi-directional (user selectable)
Line feed time:	Approx. 65 msec [with 4.2 mm ($\frac{1}{6}$") line feeding]
Paper feed:	Push tractor feed (with fanfold paper) Friction feed (with single sheets or envelopes)
Operating environment:	Temperature: 10°C to 35°C (50°F to 95°F) Humidity: 30% to 80% RH (Please allow the printer to stabilize at room temperature within the operating temperature range before operation)
Power consumption:	Max — 180 W Stand by — 10 W Self Test — 55 W
Storage enviroment:	Temperature: –20°C to 60°C (–4°F to 140°F) Humidity: 10% to 90% RH
Head service life:	Approx. 200 million strokes in DRAFT mode

Ribbon:	Endless fabric ribbon
	Black ribbon cassette KX-P180:
	    Life expectancy (in DRAFT mode/rolling ASCII)
	      Approx. 6 million characters

Detectors:	Paper out detector Printhead Overheat detector Overload detector
Dimensions:	434 (W) × 326 (D) × 140 (H) mm [17.1" (W) × 12.8" (D) × 5.5" (H)]
Mass {Weight}:	Approx. 5.2 kg {11.5 lbs.}
CPU:	TOSHIBA CORPORATION TMP90C845AF 16 MHz

*1 Scalable Fonts are available only when one of the following Code Page is selected: U.S.A., Multilingual, Portugal, Canada French, Norway, Turkey.

Appendix

Paper Specifications

Paper which may be used with this unit must be within the specifications provided below.

Fanfold Paper

Width: 102-254 mm (4-10")
Quality and number of sheets:

Type of paper	Sheets	Weight	
		lbs.	g/m²
Fine-quality paper	1	16-24	60-90
Non-carbon	2-5	11-14 (17*)	41-53 (64*)
Multi-layered with carbon	2	11-14 (17*)	41-53 (64*)

(*only for the last sheet)

Note:
* To insure optimum print quality, 60-82.5 g/m² {16-22 lbs.} is recommended for graphic printing.
* In multi-layered paper with carbon, the carbon is equivalent to a sheet of paper.
* "Weight in pounds" represents the weight of 500 [432 × 559 mm (17 × 22")] sheets.
* The printer will handle multipart forms up to 0.36 mm (0.014") thick. Up to 5 copies of 14 lbs. chemical release paper can be used.

Single Sheet

Width: 102-297 mm (4-11.7")
Height: 127-363 mm (5-14.3")
Weight in pounds (g/m²): 53-90 g/m² {14-24 lbs.}

Note:
* Paper should be within operating temperature and humidity ranges at least 24 hours prior to use.
* Due to letter head varying in paper weight and construction, we cannot guarantee print quality and paper handling for all types.

Envelope

#6 and #10 size envelopes are recommended. Since envelopes vary in size, paper weight and construction, we cannot guarantee print quality and paper handling for all types of envelopes.

Note:
* To optimize print quality, printing should not occur in areas where the edges overlap.

Printing Area

Fanfold Paper
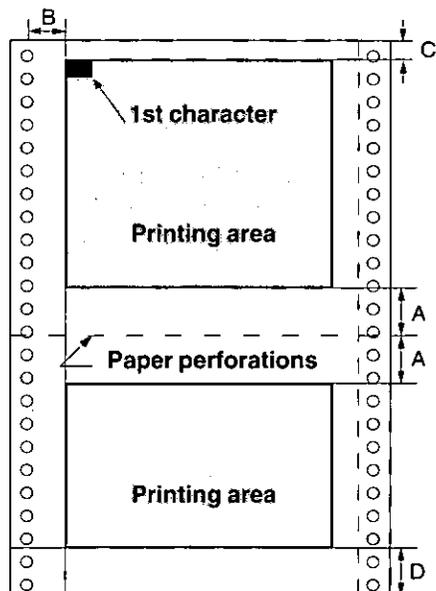
A	25.4 mm (1")
B	17.8 mm (0.7")
C	2 mm (0.08")
D	15 mm (0.6")

A: The area near the paper perforations where the print quality may not be optimum.

B: The minimum distance between the sprockets and first printable character. (When the left tractor is set on the left end and the margin is set to 0.)

C: The area from the top edge of the paper to the top of the first printed character.

D: The area from the bottom edge of the paper where the print quality may not be optimum.

Single Sheet and Envelope
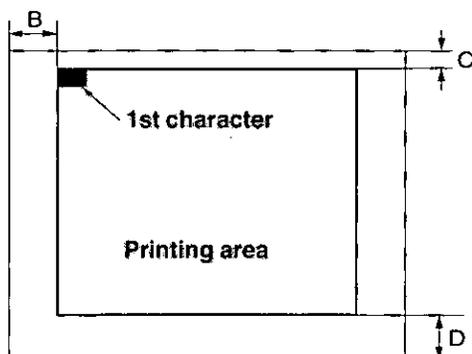
B	3 mm (0.12")
C	2 mm (0.08")
D	15 mm (0.6")

B: The minimum distance between the edge of the paper and first printable character. (When the left paper guide is set to the 0 position and the margin is set to 0.)

C: The area from the top edge of the paper to the top of the first printed character.

D: The position where paper out is detected and printing may not be optimum. (When printing on envelopes, do not print on area where edges overlap. Print quality may not be optimum.)

Appendix

Interfacing

This information should be provided to the company from which you are purchasing the interface cable to ensure the proper wiring of the cable.
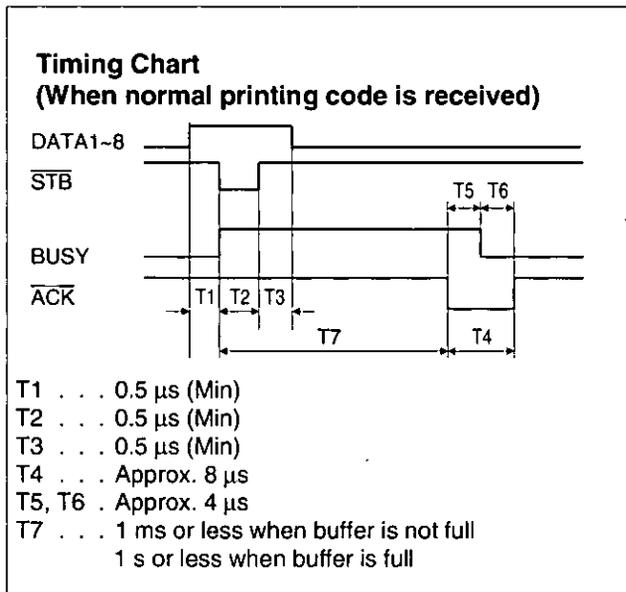
Parallel Interfacing

A method of transferring data from a computer to a printer through a parallel interface is based on the Centronics Standard.

Specifications:

- Data transfer speed: 1000 cps minimum
- Synchronization: External STROBE pulse
- Logic levels: TTL (Transistor-Transistor-Logic) levels
- Handshaking: BUSY and $\overline{ACK}$ signals
- Connector type: 57-30360 (AMPHENOL) or equivalent
- Cable: Use a shielded cable 1.95 m (6'5") or less in length.
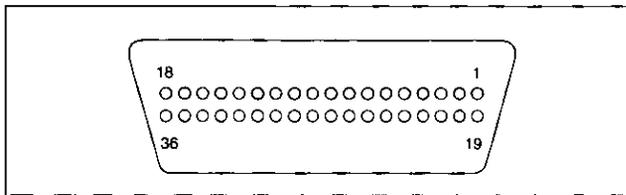
Parallel Interface Connector (printer side)

**Timing Chart
(When normal printing code is received)**

T1 . . . 0.5 µs (Min)
T2 . . . 0.5 µs (Min)
T3 . . . 0.5 µs (Min)
T4 . . . Approx. 8 µs
T5, T6 . Approx. 4 µs
T7 . . . 1 ms or less when buffer is not full
         1 s or less when buffer is full

Timing Diagram

Signal pin	Return side pin	Signal	Direction
1	19	$\overline{STB}$	Input
2	20	DATA 1	
3	21	DATA 2	
4	22	DATA 3	
5	23	DATA 4	
6	24	DATA 5	
7	25	DTAT 6	
8	26	DATA 7	
9	27	DATA 8	
10	28	$\overline{ACK}$	Output
11	29	BUSY	
12		PO	
13		SLCT	
14		$\overline{AUTO\ FEED\ XT}$	Input
15			
16		SG	
17		FG	
18		+5 V	Output
31	30	$\overline{PRIME}$	Input
32		$\overline{ERROR}$	Output
33			
34			
35			
36		$\overline{SLCT\ IN}$	Input

Pin Configuration

Serial Interfacing

- Cable: Use a shielded cable 1.95 m (6'5") or less in length.
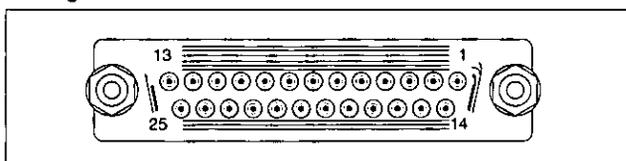
Serial Interface Connector (printer side)

Signal pin	Signal	Direction
1	FG	
2	TXD	OUTPUT
3	RXD	INPUT
7	SG	
20	DTR	OUTPUT

Pin Configuration

Option / Supply

Option

Model Number	Description
KX-PT12	Automatic Cut Sheet Feeder (single bin)

Supply

Model Number	Description
KX-P180	Ribbon Cassette (black)

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