PT390

User's Guide

OKI

PREFACE

Every effort has been made to ensure that the information in this document is complete, accurate, and up-to-date. The manufacturer assumes no responsibility for the results of errors beyond its control. The manufacturer also cannot guarantee that changes in software and equipment made by other manufacturers and referred to in this guide will not affect the applicability of the information in it. Mention of software products manufactured by other companies does not necessarily constitute endorsement by the manufacturer.

While all reasonable efforts have been made to make this document as accurate and helpful as possible, we make no warranty of any kind, expressed or implied, as to the accuracy or completeness of the information contained herein.

The most up-to-date drivers and manuals are available from:
http://www.okiprintingsolutions.com

CE This product complies with the requirements of the Council Directives 2004/108/EC (EMC), 2006/95/EC (LVD) and 2009/125/EC (ErP) as amended where applicable on the approximation of the laws of the member states relating to electromagnetic compatibility, low voltage and energy using products.

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT FOR UNITED STATES USERS

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

NOTICE TO CANADIAN USERS

This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

NOTICE

The contents of this manual may be revised without prior notice.

No part of this manual may be reproduced in any form without permission.

MANUFACTURER/IMPORTER TO THE EU/AUTHORISED REPRESENTATIVE

Oki Europe Limited (trading as Oki Printing Solutions)

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Surrey, TW20 0HJ
United Kingdom

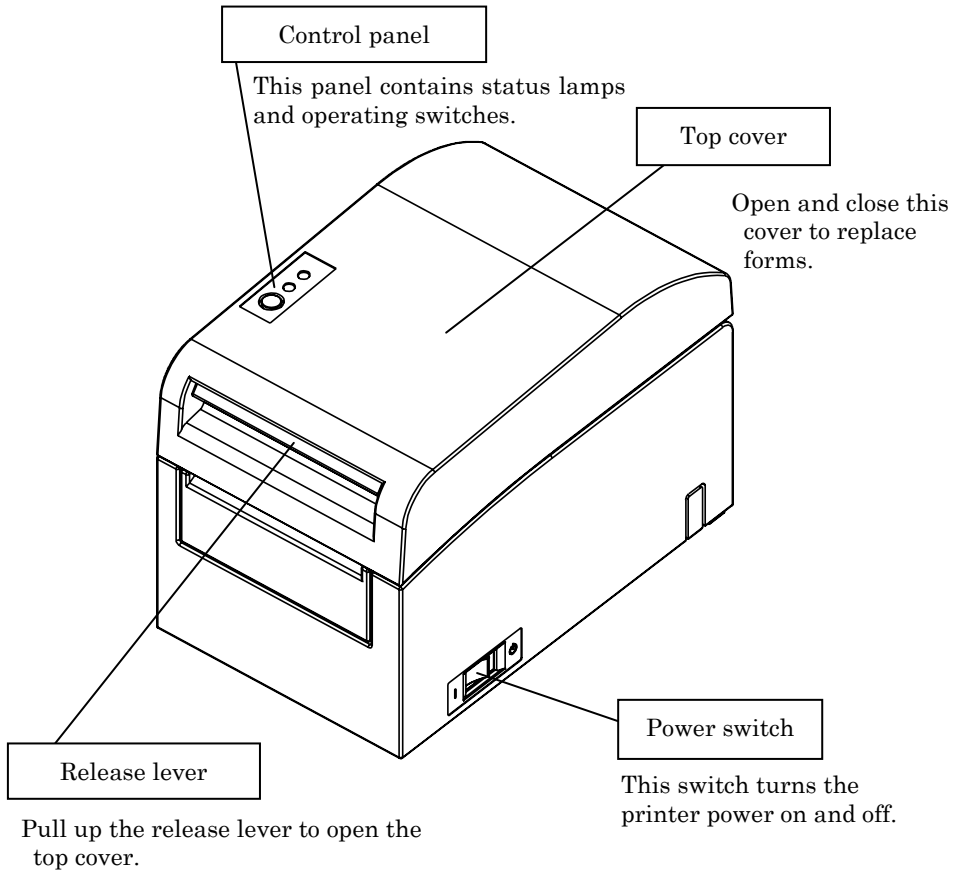For all sales, support and general enquiries contact your local distributor.

ENVIRONMENTAL INFORMATION

TABLE OF CONTENTS

1. Appearance and Names of Components

Control panel

This panel contains status lamps and operating switches.

Top cover

Open and close this cover to replace forms.

Release lever

Pull up the release lever to open the top cover.

Power switch

This switch turns the printer power on and off.

Appended goods
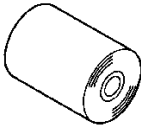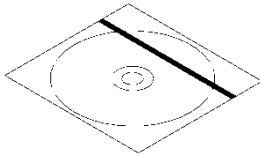
Thermal paper	CD

MANUAL
PRINTER DRIVER
UTILITY SOFT
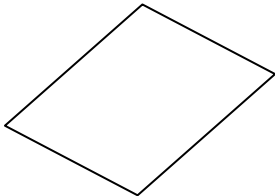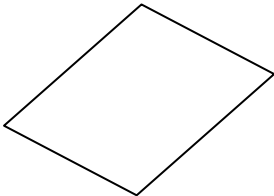
Instruction sheet	Safety warranty sheet
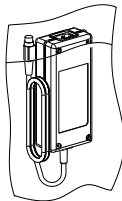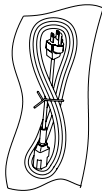
AC adapter	Power cable

2. AC Adapter and Thermal Roll Paper

2-1. AC adapter

Only use the AC adapter specified below.

Model name: KA02951-0120
Input: 100 to 240V AC, 50/60Hz-
Output: DC24V±5%, 1.5A

⚠ Caution: Only use authorized AC adapters.
⚠ Caution: Do not use the bundled AC adapter and Power cable for any electrical equipment other than this printer.

2-2. Paper specification (Thermal paper)

Be sure to use thermal roll paper that conform to the following specifications.

- Paper width: For paper 83mm wide, $83^{0}_{-1.0}$mm 80mm wide, $80^{0}_{-1.0}$mm

  For paper 60mm wide, $60^{0}_{-1.0}$mm 58mm wide, $58^{0}_{-1.0}$mm
- Outside diameter: For paper 75 to 90μm thick, ϕ102mm or less
  For paper 90 to 150μm thick, ϕ90mm or less
- Core diameter: For paper 75 to 90 μm thick, ϕ12±0.5mm (inside)
  /ϕ18±0.5mm (outside)
  For paper 90 to 150μm thick, ϕ25.4±0.5mm (inside)
  /ϕ32±0.5mm (outside)
- Printed surface: Outside of the roll
- Treatment of end of paper: The roll paper must not be glued to the core. The end of the paper must also not be folded back.

  Note: Do not use rolls that have rough sides or sides from which pieces of paper extrude. Using such rolls could cause a printer failure.

2-3. Recommended Thermal Paper

Manufacturer	Product name	Quality characteristics	Paper thickness	Density specification
Oji Paper Co., Ltd.	PD160R	Monochrome thermal paper (high-grade preservation type)	75µm	100%
	PD190R	Monochrome thermal paper (mid-grade preservation type)	75µm	100%
Nippon Paper Industries Co., Ltd.	HD75	Monochrome thermal label paper (normal type)	150µm	130%
Mitsubishi Paper Mills Limited	P220AE-1	Monochrome thermal paper (normal type)	150µm	100%
	PB670	Two-color thermal paper (red/black: normal type)	75µm	105%
	PB770	Two-color thermal paper (blue/black: normal type)	75µm	100%

Note: A recommended type of paper must be used. If a type of paper other than a recommended one is used, head damage, printing irregularities, or similar problems may occur.

Note: To use two-color thermal paper, set the print color to two colors from the printer setup menu or using the setup tool contained on the CD-ROM provided with the printer.
(See "C-3 Setting Up the Printer" in Appendix C, "Special Modes.")
* By setting the appropriate property (use Color on the Graphics tab) for printing with this printer driver, you can easily print in two-color mode without having to change the printer setup.

Note: Ruled lines or characters containing fine lines (e.g. a serif typeface) tend to have dull colors when they are printed on two-color thermal paper. For printing on two-color thermal paper, a thick font (e.g., a sans serif font) is recommended.

Note: Red or blue printing on two-color thermal paper has an inferior preservation characteristic that is equivalent to that of normal thermal paper.

Note : Printouts on label paper or thick paper may contain blurs or voids, depending on the humidity and other environmental conditions. Adjust the print speed and print density as appropriate for the type of paper used. (See "C-3 Setting Up the Printer" in Appendix C, "Special Modes.")
In particular, note that the paper transport accuracy may be negatively affected by printing a barcode in the top margin at the beginning of paper transport or in the Lower margin at the end of paper transport.

3. Preparations

No printer cable is provided with the product. Obtain a printer cable suitable for the product interface. If you have any questions, consult your dealer. Before connecting or disconnecting cables, make sure of the following:

1) The power to the printer and all other devices connected to the printer is turned off.
2) The AC adapter power cable has been unplugged from the outlet.

3-1. Connecting Interface Cable

Open the connector cover at the rear of the printer by pulling it up, and connect the interface cable to its rear connector socket. Close the cover after connecting the cable.

Note: If cables are arranged so that they extend from the rear or from the rear on the right side, remove the inserts in the connector cover or the cover with nippers or a similar tool. Unless the inserts are removed in this case, the cables may be damaged and cause a failure.

For a unit with parallel interfaces

Connector cover
Insert

Parallel interface cable
* Secure the connector with
  clasps after making the
  connection.

Insert

DK   DC24V

Interface connector
(Parallel interface)

Power connector

Drawer kick connector
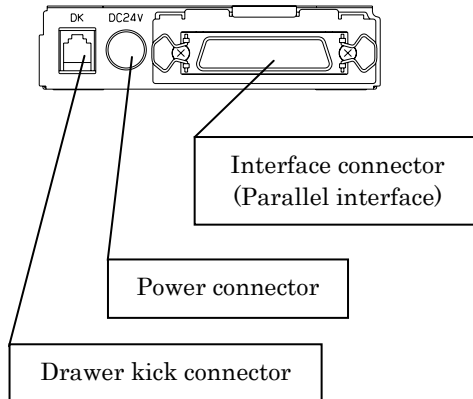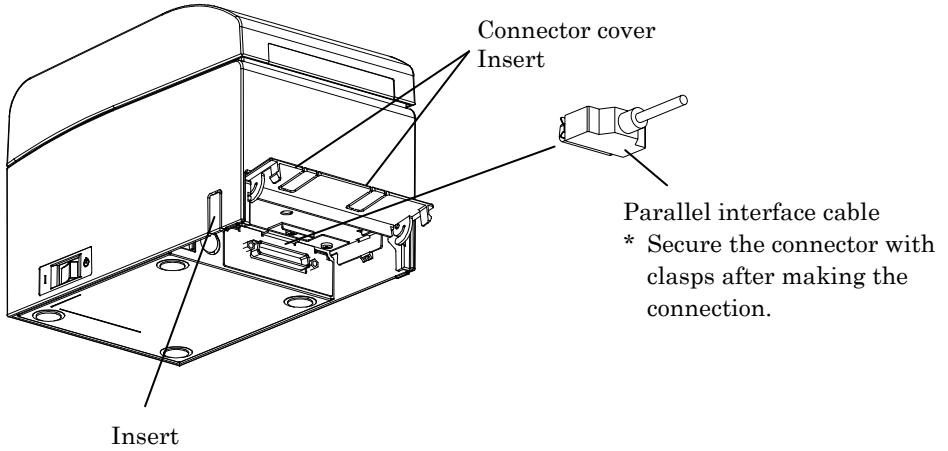
For a unit with Dual interface

Connector cover
Insert

USB Interface Cable
Type-B
* Connect the printer to a PC
through this connector.

Serial interface cable
* Secure the connector with
  screws after making the
  connection.

Insert

DK   DC24V

Interface connector
(Serial interface)

Power connector

Interface Connector
(USB Interface Type-B)
* Connect the printer to a PC
through this connector.

Drawer kick connector

For a unit with LAN interface

Connector cover
Insert

LAN interface cable

Insert

DIP Switch

DK   DC24V

Interface connector
(LAN interface)

Power connector

Drawer kick connector
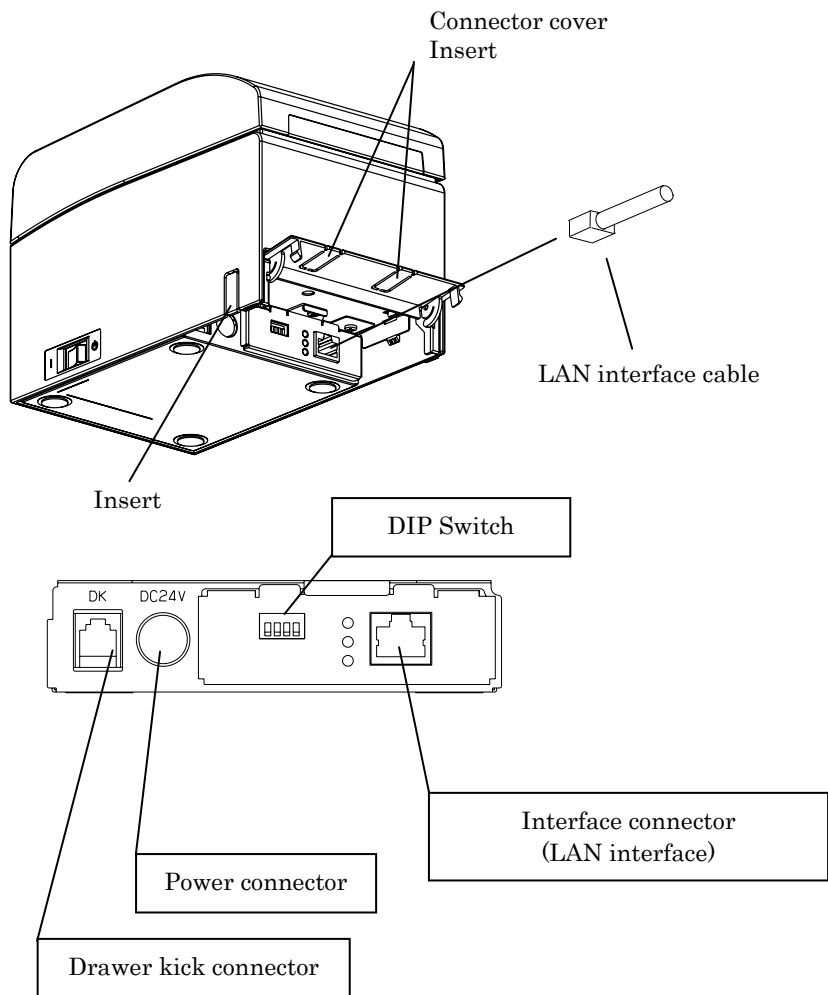
⚠ Caution: Do not touch the DIP switches during normal use. This may
change the network settings, disabling normal printing.
⚠ Caution: If the device is installed vertically, the LAN cable may not usable
due to its shape. Please check before installing.
⚠ Caution: The LAN interface cable must use the shield type.

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3-2. Connecting the drawer kick cable

Open the connector cover at the rear of the printer by pulling it up, and connect the drawer kick cable to its rear connector socket. Close the cover after connecting the cable.

Note：If the cable is arranged so that it extends from the rear, remove the inserts in the connector cover with nippers or a similar tool. Unless the inserts are removed in this case, the cable may be damaged and cause a failure.

Note：The drawer kick cable must not be used for a purpose other than for control of the drawer.

Connector cover
Insert

Drawer kick cable
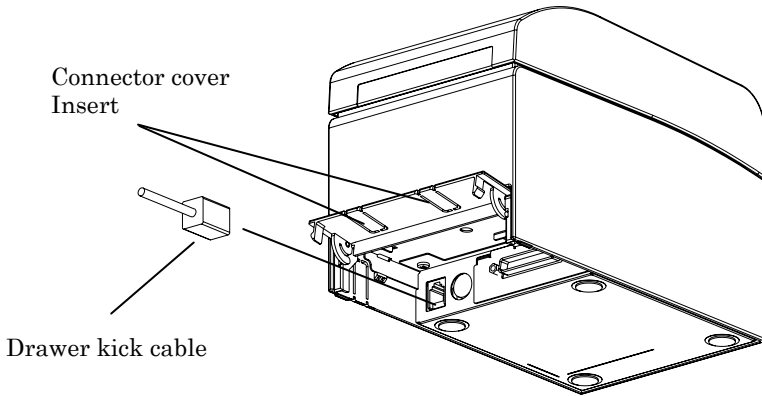
3-3. Connecting the AC Adapter

(1) Connect the AC adapter to the AC adapter power cable.

Note: To connect or disconnect the AC adapter, turn off the power switches of the printer and all the devices to be connected to the printer. Then, unplug the plug of the AC adapter power cable from the electrical outlet.

Note: Use only the specified AC adapter and specified AC adapter power cable.

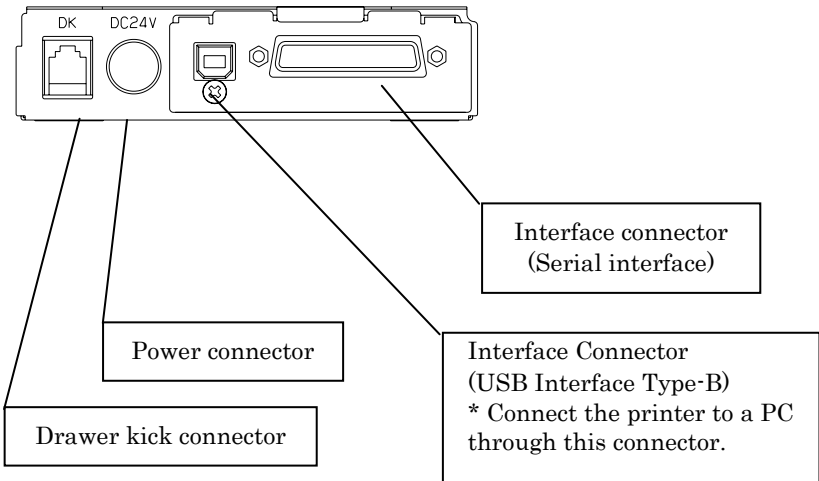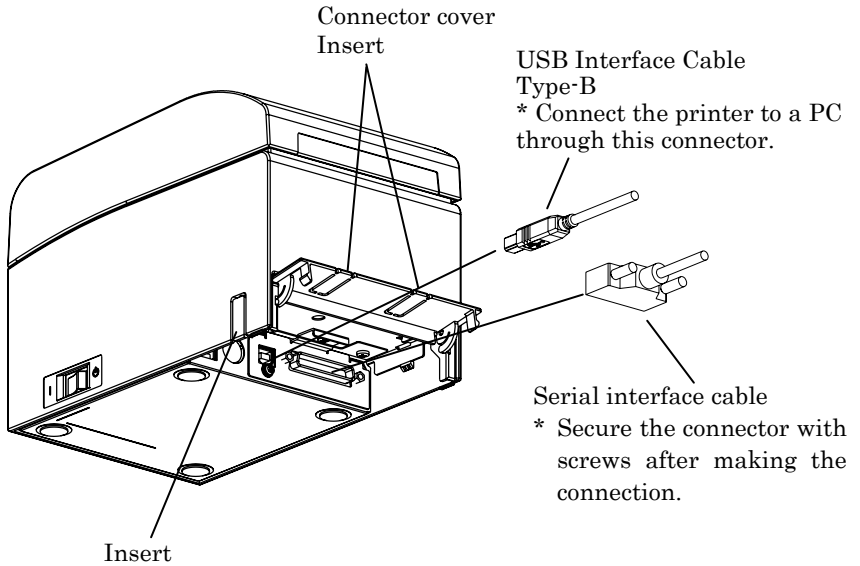(2) Open the connector cover at the rear of the printer by pulling it up, and connect the AC adapter cable to the power socket.
Close the cover after connecting the cable.

Note: To connect the AC adaptor, place the printer on its side to make the connection operation easier to perform.

**Note: Remove notch of connector cover with Nipper, to maintain the space for the cable of AC adapter.
Otherwise, the cable may be damaged and it way cause a failure.**

Connector cover
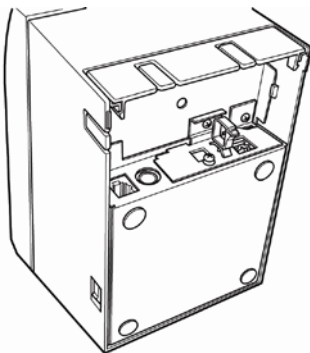
Printer placed on its side   Power connector

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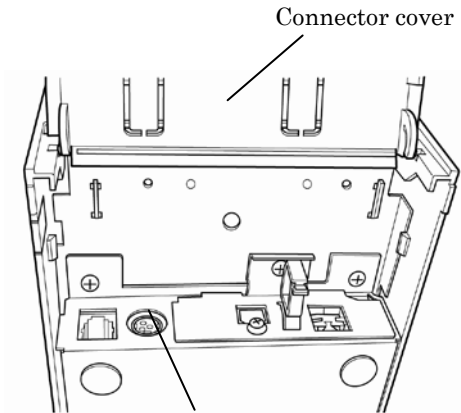
Note: To prevent the adaptor from slipping out, the connector section is designed to be tight to fit. When inserting, (1) pinch the base of the cable, (2) while sliding the outer section of the connector upwards, (3) and insert the connector until it locks in place with a "click" sound.

Base of the cable

Outer section of the connector
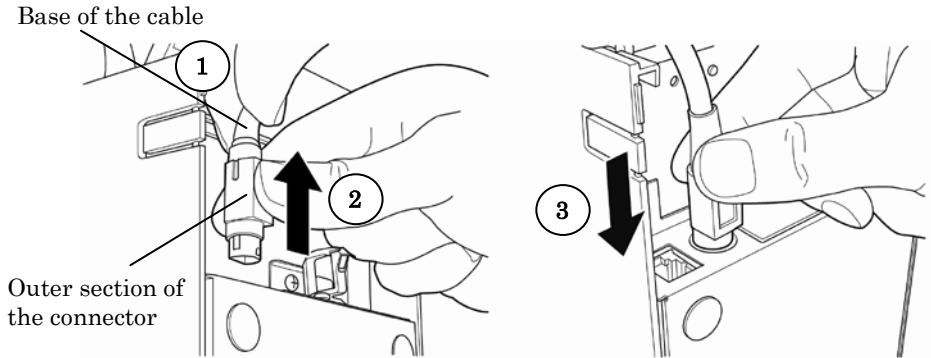
(3) Connect the plug of the power cable to electrical outlet.
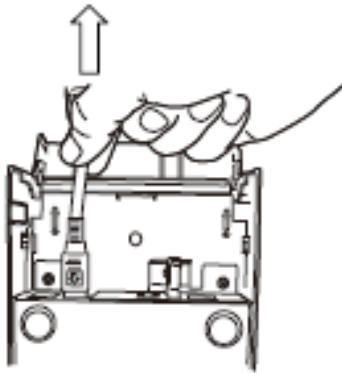
(4) Plug the other end of the power cord into the power outlet.

3-4. Disconnecting the AC Adapter

To unplug the AC adapter cable, grasp the connector as shown in the picture below and pull it out. The lock mechanism of the connector will then disengage, and the cable can be unplugged easily. Conversely, forcibly pulling on the cable itself may damage the connector.
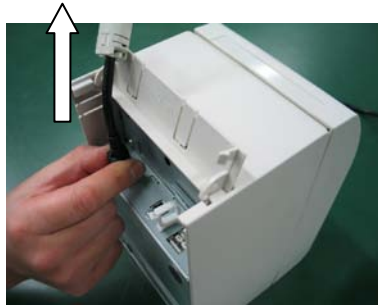
Note: Before disconnecting the AC adapter, switch off the printer and all devices connected to the printer, and also disconnect the power cable of the AC adapter from the outlet.

3-5. Turning on the Power

After the AC adapter is connected, turn on the power switch at the side of the printer. The POWER lamp on the control panel lights.

Control panel

Power switch
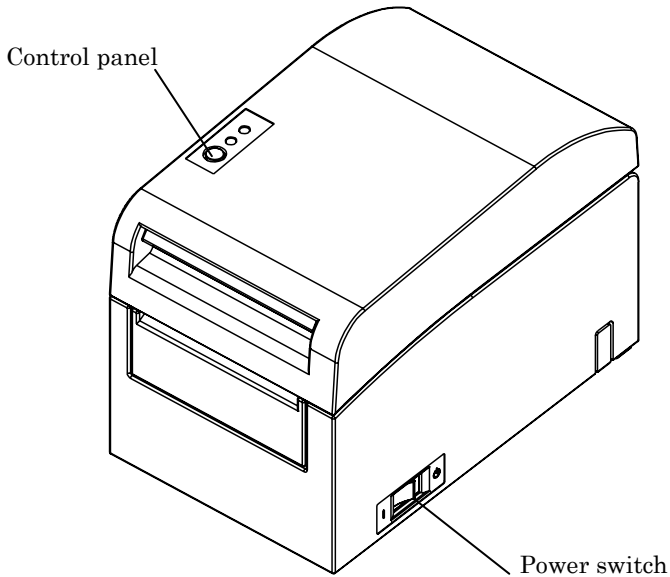
3-6. Installing the Printer Software

Referring to the "Installation Guide"
(\Manuals\PT390_InstallGuide1_en.pdf) contained on
the CD-ROM provided with the printer, install the printer driver and
utility software.

4. Inserting Paper for Printing

4-1. Replacing paper

(1) Grasp the top cover, pull up the cover release lever, and
open the top cover.

Top part of the top cover

Bottom part of the cover
release lever
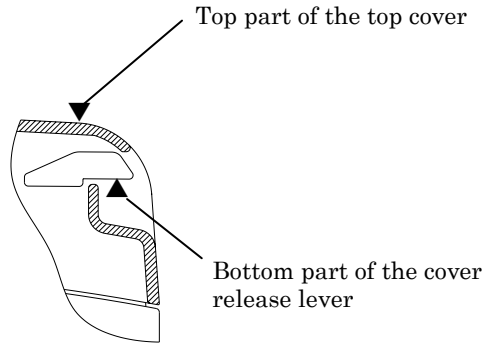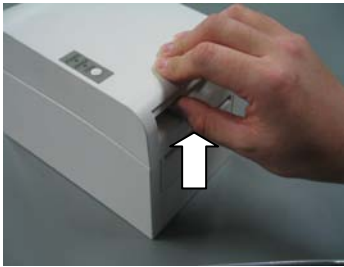
(2) When manipulating the top cover, note that the cover seems to
lock in position before it is open completely. Make sure that the
cover is really open completely as shown in the picture below.
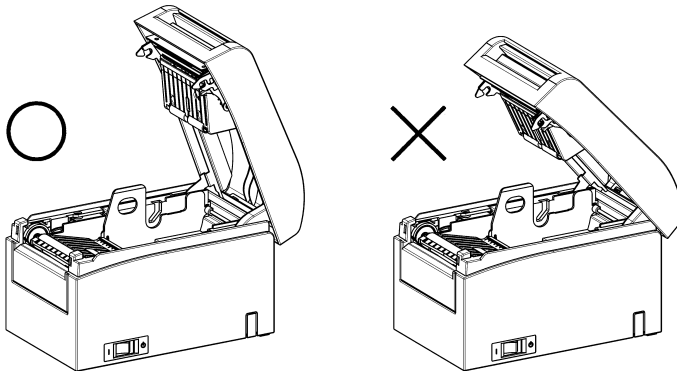
Note: If the top cover is not open completely during maintenance, it may close
inadvertently.

Note: Do not touch the thermal head. Doing so may result in damage from static electricity.

Release lever

Top Cover

Thermal head

Roll holder
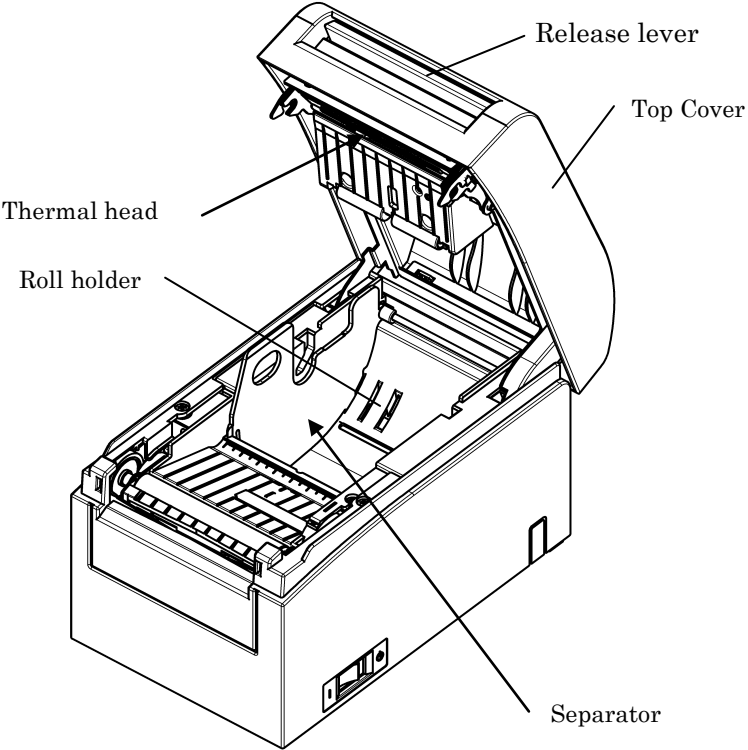
Separator

(3) Adjust the separator to the width of the roll paper. For roll paper with a width of 80 mm, the separator need not be removed. For roll paper with a width of 70, 60, or 58 mm, remove the separator and attach it again at the correct width. For roll paper with a width of 83 mm, remove the separator completely.

Note: At the time of shipment from the factory, the separator is set at a position appropriate for a paper width of 80 mm.

How to remove the separator

From the location indicated by A, lift the separator.

Rear hook for the axis
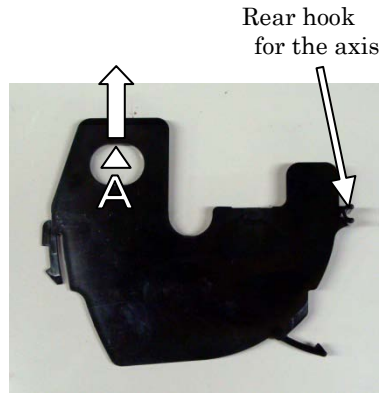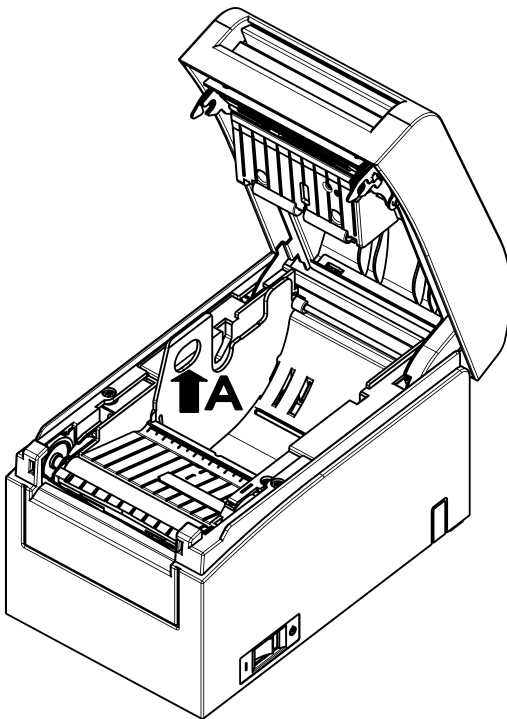
Separator

(4) Set the separator to a position appropriate for the width of the roll paper, as shown below.

60 mm 58 mm

70 mm

80 mm

80 70 60 50 40 30 20 10
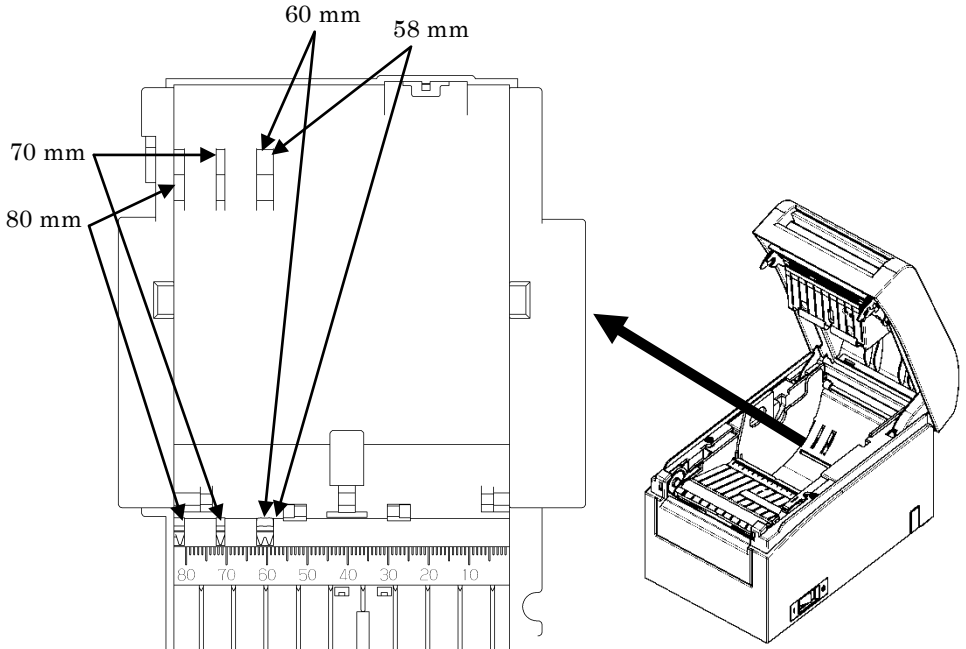
Separator setting in detail

Note : Adjust the separator to the width of the roll paper. To use roll paper with a width of 83 mm, remove the separator.
Note : When using roll paper with a width of 58 or 60 mm, take care not to set the separator at an angle.
Note : When replacing the separator, set a paper width appropriate to the print area, referring to Appendix C, "Special Modes."
(See "C-3 Setting Up the Printer" in Appendix C, "Special Modes.")
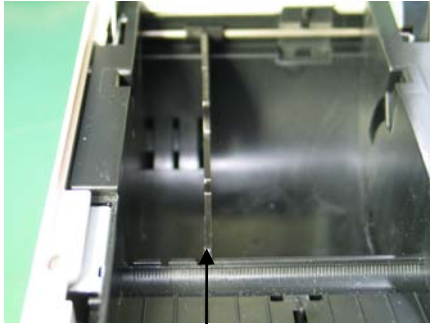
58 mm setting groove

Roll paper width of 58 mm
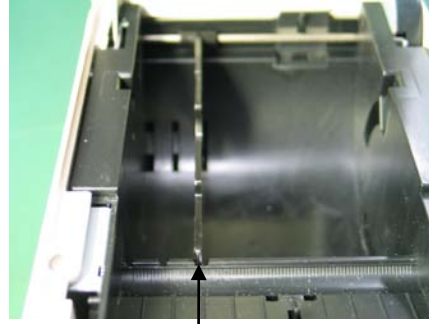
60 mm setting groove

Roll paper width of 60 mm
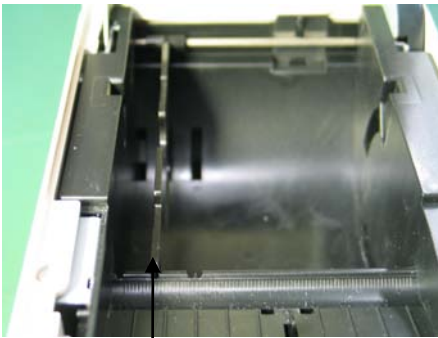
70 mm setting groove

Roll paper width of 70 mm
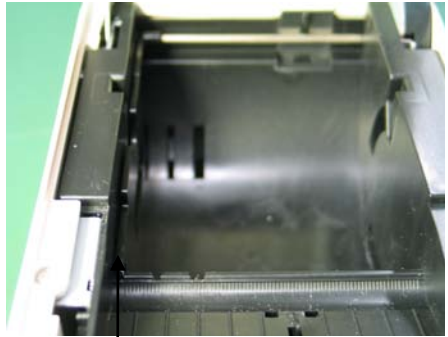
80 mm setting groove

Roll paper width of 80 mm

How to attach the separator

Attach the separator at the rear hook for the axis.

Rear hook for the axis   Aligned horizontally
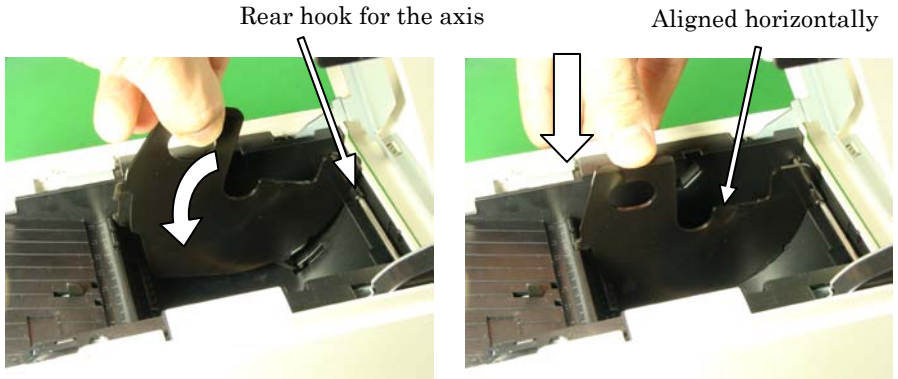
Note : Push the separator down until it engages with an audible click, and confirm that the top of the separator is aligned horizontally.
Note : When using roll paper with a width of 58 or 60 mm, take care not to set the separator at an angle.
Note : When replacing the separator, set a paper width appropriate to the print area, referring to Appendix C-3 Setting Up the Printer" in Appendix C, "Special Modes."

(3) When using a new paper roll, remove the glued portion of the paper as well as the part to which adhesive tape is affixed.

Note: Since the glued portion of the paper should not be printed on, remove about one turn (about 40 cm) of the roll paper from the beginning so that none of the remaining paper has glue on it.
Any adhesive or other matter remaining from the glue may adhere to the thermal head and cause a problem, such as voids on printouts. Therefore, do not forget to remove the glued portion of the paper.

(4) From the front of the printer, pull out the end of the paper as shown below.
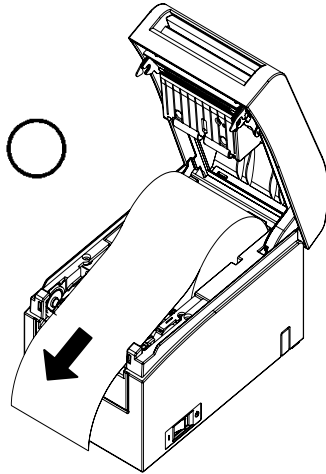
Note:　Pull out the paper until enough of it protrudes past the front cover of the printer.
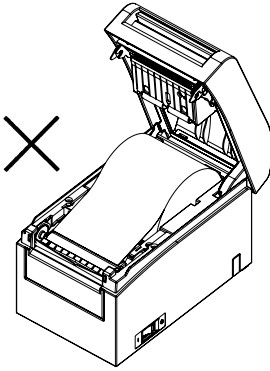
Paper not protruding   Roll paper inserted
from the front cover   upside down

Note : Before loading a new roll, make sure that an old core does not remain in the
       roll holder. Leaving an old core will cause a paper-near-end error condition.

Note : The roll paper must have no deformities. Using roll paper such as that
       shown in the figure below may cause a paper jam, uneven printing, or
       other printing problem.
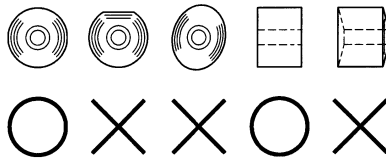
Note : If the loaded roll paper is loose (slack) as shown below, take up the slack
       before printing on the paper. Printing on roll paper that is loose may cause
       a paper jam, uneven printing, or other printing problem, which will
       prevent the printer from detecting paper near end conditions.
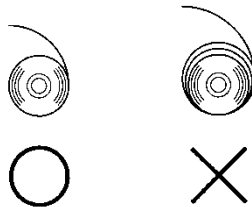
(5) Place the paper in the correct orientation, and carefully close the top cover.
Note : Place the paper in the correct orientation. If the top cover is closed while the paper is not correctly in place, a paper jam or misaligned printing might occur.

Note : To close the top cover, press it down near its center (the location pointed at in the figure below) until you hear the lock engage. If the cover is not completely locked, printing might be impossible.

Press here

Release lever

Top cover
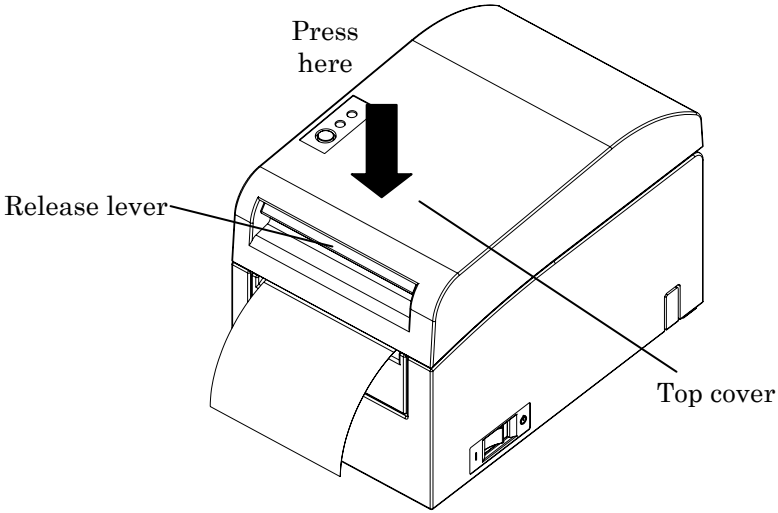
5. Control Panel

5-1. Control Panel

POWER lamp (●)
Lights when the power switch is turned on and power is supplied to the printer.

ERROR lamp (●)
Lights or blinks to indicate errors.

FEED switch
Pressing this switch once advances the paper one line. Holding down this switch advances paper continuously.
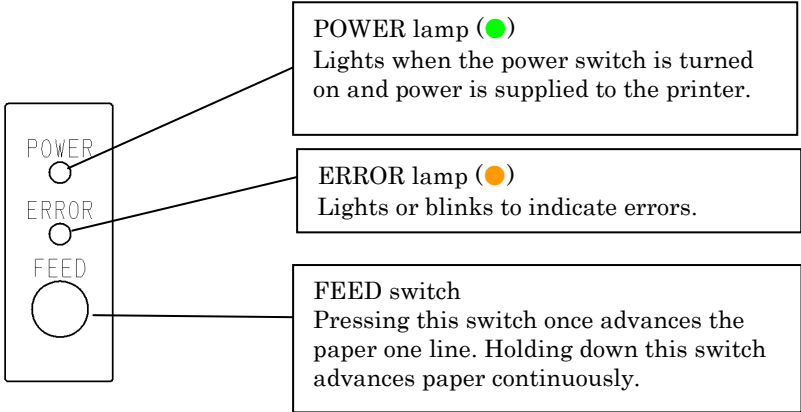
5-2. Error Indications

Recoverable errors

Error condition	LED LAMP	Blinking pattern
No paper (paper end)	POWER (●)	Constantly on
	ERROR (●)	Constantly on
Cover open	POWER (●)	Constantly on
	ERROR (●)	Constantly on
Head hot (*1)	POWER (●)	Constantly on
	ERROR (●)	Constantly on

*1 Printing is suspended because of a high thermal head temperature.

Error condition	LED LAMP	Blinking pattern
Paper near end	POWER (●)	Constantly on
	ERROR (●)	▬▬▬ ▬▬▬
		Repeated blinking of the amber lamp four times in succession
Black mark error (*1)	POWER (●)	Constantly on
	ERROR (●)	▬ ▬
		Repeated blinking of the amber lamp four times in succession

*1 Applicable only if the printer supports sensing of black marks

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Unrecoverable errors

Error condition	LED LAMP	Blinking pattern
Internal error	POWER (🟢)	——🟢—🟢—
	ERROR (🟠)	🟠————————
		Repeated pattern in which the green lamp blinks twice and the amber lamp blinks once
Head not installed	POWER (🟢)	——🟢—🟢—🟢—
	ERROR (🟠)	🟠————————
		Repeated pattern in which the green lamp blinks three times and the amber lamp blinks once
Low voltage	POWER (🟢)	——🟢—🟢—🟢—🟢—
	ERROR (🟠)	🟠————————
		Repeated pattern in which the green lamp blinks four times and the amber lamp blinks once
Over voltage	POWER (🟢)	——🟢—🟢—🟢—🟢—🟢—
	ERROR (🟠)	🟠————————
		Repeated pattern in which the green lamp blinks five times and the amber lamp blinks once
Cutter functioning abnormally	POWER (🟢)	——🟢—🟢—🟢—🟢—🟢—🟢—
	ERROR (🟠)	🟠————————
		Repeated pattern in which the green lamp blinks six times and the amber lamp blinks once
LF motor functioning abnormally	POWER (🟢)	——🟢—🟢—🟢—🟢—🟢—🟢—🟢—
	ERROR (🟠)	🟠————————
		Repeated pattern in which the green lamp blinks seven times and the amber lamp blinks once

6. Preventing and Clearing Paper Jams

6-1. Preventing Paper Jams
Do not touch the paper while the paper is being ejected or cut.
Holding or pulling the paper by hand during ejection might cause
a paper jam, incorrect cutting, or a feed error.

6-2. Clearing a Paper Jam
If a paper jam occurs, remove the jammed paper as follows:
(1) Turn off the printer power by turning off the power switch.
(2) Press the cover open lever down, and open the top cover.
(3) Pull out the jammed paper slowly toward the top while holding down
the printer, as shown in the picture below.
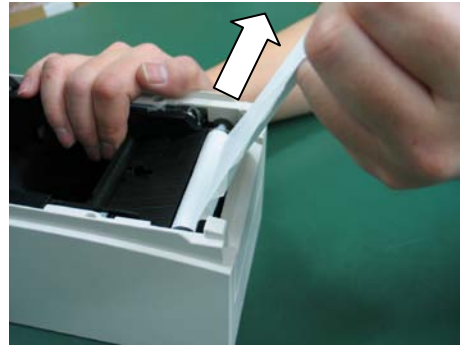
Note: Do not pull the paper with excessive force.
Note: Do not touch the thermal head. Doing so may result in damage from static
electricity.

7. Troubleshooting

This chapter describes the appropriate action to be taken in cases where the printer is not operating correctly or fails to produce clean printouts.

7-1. Power-on Problems and Errors

Symptom	Cause	Corrective action
Although the power has been turned on, the POWER lamp on the control panel does not light and the printer does not start up.	(1) The power cable is disconnected. (2) The connector of the AC adapter is disconnected.	(1) Connect the power cable. (2) Connect the connector of the AC adapter.
The ERROR lamp on the control panel is lit, and the printer does not work.	(1) No paper is inserted. (2) The top cover is not closed completely. (3) The thermal head is at a high temperature.	(1) Insert paper. (2) Close the top cover completely. (3) Wait until the thermal head temperature decreases sufficiently.

7-2. Cutter-related Problems

Symptom	Cause	Corrective action
Paper cannot be cut.	(1) The cutter blade is damaged or worn, or it has been used for too long. (2) Paper fragments or other foreign matter is stuck around the cutter blade or paper chute. (3) Adhesive matter is adhering to the cutter blade because of printing on label paper.	(1) Turn off the power, and ask for repairs. (2) Remove the paper fragments or foreign matter. (3) Clean the cutter blade to remove the adhesive matter.
The cutter does not return to the correct position.	Paper fragments or other foreign matter is stuck around the cutter blade or paper chute.	Remove the paper fragments or foreign matter.

7-3. Printing-related Problems

Symptom	Causes	Corrective action
Printing does not begin.	(1) The interface cable is disconnected or broken. (2) The printer setup is incorrect.	(1) Connect the interface cable correctly, or replace it. (2) Set up the printer correctly. Example: An incorrect baud rate is set. (See "C-3 Setting Up the Printer.")
The printing is too dark or blurry.	(1) The print density setting included in the printer setup is incorrect. (2) The thermal head is damaged.	(1) Adjust the print density and print speed settings of the printer so that they are appropriate to the paper. (See "C-3 Setting Up the Printer.") (2) Turn off the power, and ask for repairs.
Printed characters are thin (faint).	(1) The print density setting included in the printer setup is incorrect. (2) The thermal head is damaged.	(1) Adjust the print density and print speed settings of the printer so that they are appropriate to the paper. (See "C-3 Setting Up the Printer.") (2) Turn off the power, and ask for repairs.
The print density is uneven.	(1) Paper fragments or foreign matter is stuck on the heating elements of the thermal head. (2) The printer setup is incorrect. (3) Foreign matter is adhering to the platen roller. (4) The thermal head is damaged.	(1) Check and clean the thermal head. (2) Adjust the print density and print speed settings of the printer so that they are appropriate to the paper. Set up the printer correctly. (See "C-3 Setting Up the Printer.") (3) Remove the foreign matter from the platen roller. (4) Turn off the power, and ask for repairs.
Vertical marks appear on the printout.	(1) Foreign matter is stuck or caught on the paper transport. (2) Foreign matter is adhering to the thermal head (3) The thermal head is damaged.	(1) Clean the paper transport. (2) Clean the thermal head. (3) Turn off the power, and ask for repairs.

8. Regular Cleaning

Printed characters may not be completely formed if paper residue, dust, or a similar material is present. To ensure proper printing, remove any paper residue and dust on the paper holder, paper transport components, platen roller, and surface of the thermal head. Cleaning is required monthly.

Note: Before starting cleaning, turn off the printer power switch.

8-1. Cleaning the Paper Holder and Paper Transport

With a dry soft cloth, wipe the paper holder and paper transport to remove dust, paper particles, adhesive, and other foreign matter.

8-2. Cleaning the Platen Roller

The cleaning procedure is as follows.

(1) With paper inserted in the printer, turn off the printer power switch once, and turn on the switch again while holding down the FEED switch on the control panel. Then, the data shown below is printed.

```
TEST PRINT
    END
    SAMPLE PRINT
    CUTTER CLEANING
    PLATEN ROLLER CLEAING
    SET UP
    HEX DUMP
    TEST PRINT
                      SELECTION ITEM
    ITEM SELECTION    :FEED switch pushed short.
    ITEM DECSION      :FEED switch pushed short.

    SPECIAL MODE
```

Paper feed direction
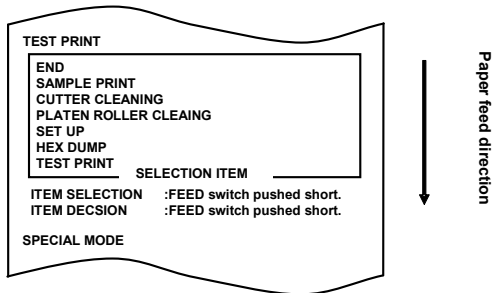
(2) Press the FEED switch briefly (one second or less) three times to move to "PLATEN ROLLER CLEANING."
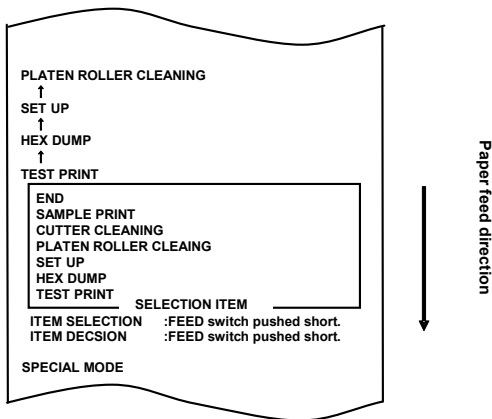
```
PLATEN ROLLER CLEANING
       ↑
SET UP
       ↑
HEX DUMP
       ↑
TEST PRINT
    END
    SAMPLE PRINT
    CUTTER CLEANING
    PLATEN ROLLER CLEAING
    SET UP
    HEX DUMP
    TEST PRINT
                    SELECTION ITEM
    ITEM SELECTION    :FEED switch pushed short.
    ITEM DECSION      :FEED switch pushed short.

    SPECIAL MODE
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection. The printer enters platen roller cleaning mode. The printer prints the following and cuts the paper when it enters platen roller cleaning mode:

PLATEN ROLLER CLEANING MODE

1. Open Cover, and remove Roll Paper.

2. Push FEED switch to move
   Platen Roller to the cleaning position.

3. When cleaning is completed, set
   Roll Paper, and close Cover

Paper feed direction
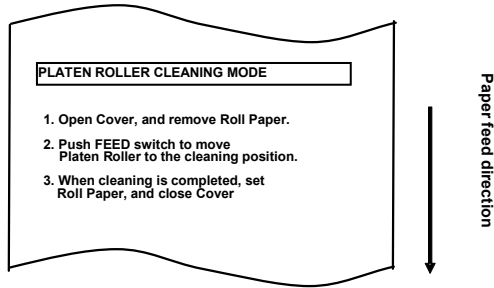
(3) Open the top cover, and remove the roll paper.

(4) Press the FEED switch to rotate the platen roller to a position that will facilitate cleaning, and then wipe the platen roller with a dry soft cloth to remove paper particles, adhesive, and other foreign matter from the surface of the platen roller.
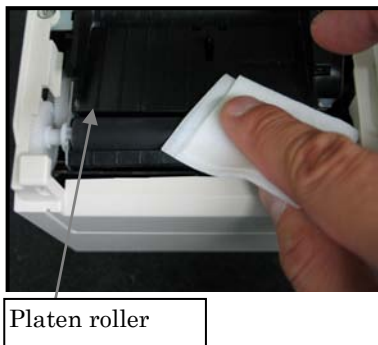
Platen roller

(5) After completing cleaning, reposition the roll paper, and close the
    top cover.

Note：Take care not to dent or otherwise damage the platen roller.
    A dent on the platen roller may result in incomplete printing or line feed
    errors.
Note：Each time that the FEED switch is pressed, the platen roller is rotated by
    1/12 of a turn.

8-3. Cleaning the Thermal Head
  (1) Before attempting to clean the thermal head, be sure to turn off the
    printer power switch.
  (2) Open the top cover.
  (3) Using an alcohol solvent, remove black paper particles and other
    residue from the surface of the thermal head. If the printer printed
    on label paper, any adhesive matter adhering to the surface of the
    thermal head must be removed.
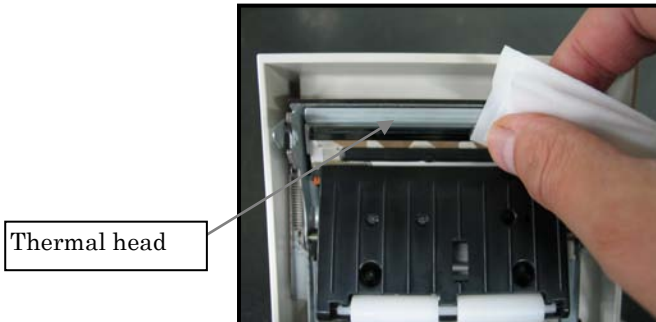
Thermal head

 Note：The thermal head is susceptible to damage. When cleaning it, use a soft
    cloth and be especially careful not to damage the head.
 Note：Immediately after printing, the thermal head is hot. Before cleaning the
    head, allow the head enough time to cool.
 Note：Because the thermal head is susceptible to damage by static electricity,
    take precautions to prevent the generation of static electricity.
 Note：Do not turn on the printer until all alcohol has dried.
 Note：Do not use a solvent other than ethyl or isopropyl alcohol.

8-4. Cleaning the Cutter Blade and Frame

If the printer printed on full-sheet label paper, any adhesive matter adhering to the cutter blade and frame must be removed.

Even when label paper has been cut normally, clean the cutter blade at an interval of about once a month to ensure stability in cutting.

Note: Although the edge of the cutter blade is not as sharp as the edges of utility knives generally used in offices, there is a risk of injury to a hand or finger that is moved while pressed against the cutter blade edge. Take care to avoid injury when cleaning the cutter blade.

Items required for cleaning
- Flathead screwdriver (small)   Cleaning sheet
- General-purpose utility knife   (Product No.: 0631260)

The cleaning procedure is as follows.

(1) With paper inserted in the printer, turn off the printer power switch once, and turn on the switch again while holding down the FEED switch on the control panel. Then, the data shown below is printed.

Note: If you have passed the item that you want to select, repeatedly press the FEED switch briefly until you return to the first item.

```
TEST PRINT

  END
  SAMPLE PRINT
  CUTTER CLEANING
  PLATEN ROLLER CLEAING
  SET UP
  HEX DUMP
  TEST PRINT          SELECTION ITEM

  ITEM SELECTION    :FEED switch pushed short.
  ITEM DECSION      :FEED switch pushed short.

  SPECIAL MODE
```
Paper feed direction
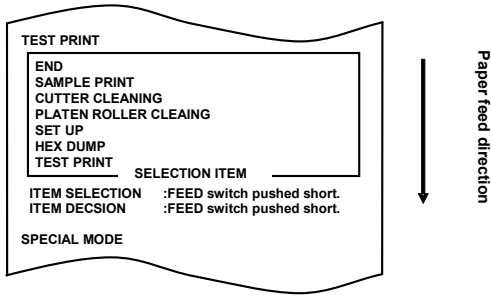
(2) Press the FEED switch briefly (one second or less) four times to move to "CUTTER CLEANING."

```
CUTTER CLEANING
  ↑
PLATEN ROLLER CLEANING
  ↑
SET UP
  ↑
HEX DUMP
  ↑
TEST PRINT

  END
  SAMPLE PRINT
  CUTTER CLEANING
  PLATEN ROLLER CLEAING
  SET UP
  HEX DUMP
  TEST PRINT          SELECTION ITEM

  ITEM SELECTION    :FEED switch pushed short.
  ITEM DECSION      :FEED switch pushed short.

  SPECIAL MODE
```
Paper feed direction
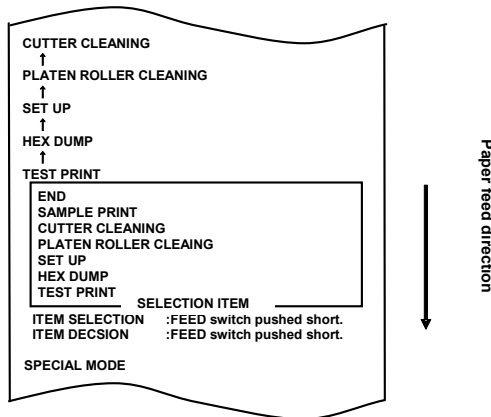
Then, press the FEED switch for one second or longer to accept the selection. The printer enters cutter cleaning mode. The printer prints the following and cuts the paper when it enters cutter cleaning mode:

CUTTER CLEANING

1. Open Cover, and remove Roll Paper.

2. Push FEED switch to move Cutter to the cleaning position.

3. When cleaning is completed, set Roll Paper, and close Cover

Paper feed direction
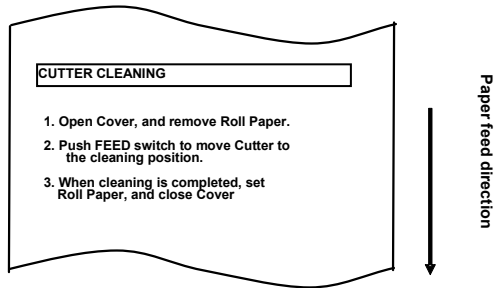
⑷ Press the FEED switch to move the cutter to a position that will facilitate cleaning, and then clean the cutter.

⑸ After completing cleaning, reposition the roll paper, and close the top cover.

- Cleaning the Upper cutter

Using a general-purpose utility knife, flathead screwdriver, or similar tool, remove the adhesive matter adhering to the inner side and edge of the Upper cutter.

Note: Be very careful not to damage the edge of the Upper cutter when handling the utility knife or screwdriver. Also take care not to dent or otherwise damage the platen roller. A dent on the platen roller may result in incomplete printing or line feed errors.

Upper cutter
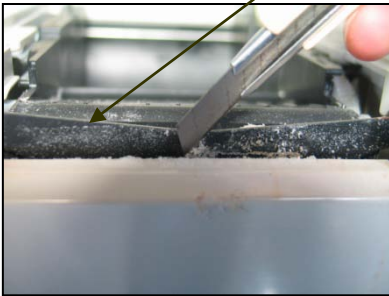
Using the cleaning sheet or a similar material, wipe off the adhesive matter adhering to the Upper cutter.

Upper cutter

Note: Although the edge of the Upper cutter is not as sharp as the edges of the utility knives generally used in offices, there is a risk of injury to a finger that is moved while pressed directly against the edge of the cutter.

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- Cleaning the Lower cutter
Using a general-purpose utility knife, flathead screwdriver, or similar tool, remove the adhesive matter adhering to the surface and edge of the Lower cutter.

**Note: Be very careful not to damage the edge of the Lower cutter when handling the utility knife or screwdriver. Also take care not to dent or otherwise damage the platen roller. A dent on the platen roller may result in incomplete printing or line feed errors.**
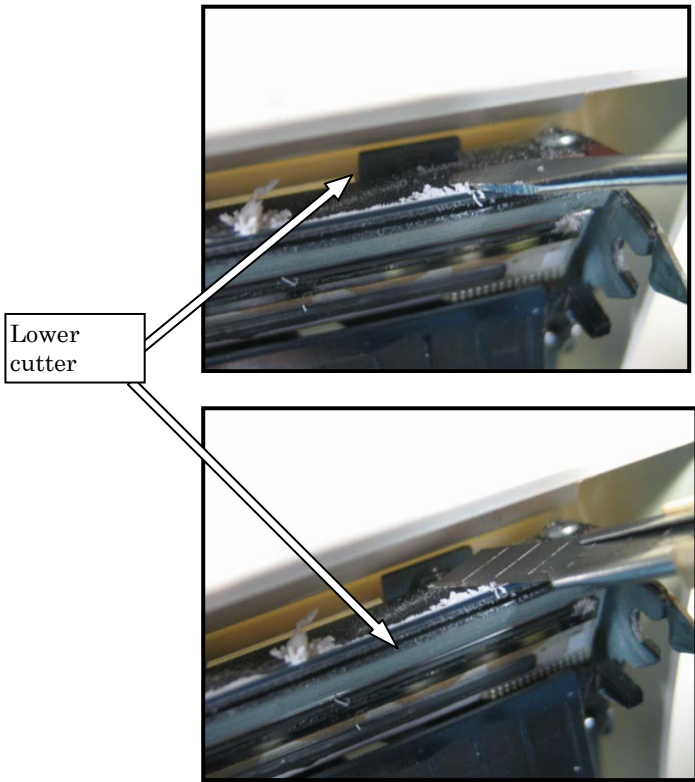
Lower cutter

Using the cleaning sheet or a similar material, wipe off the adhesive matter adhering to the Lower cutter.
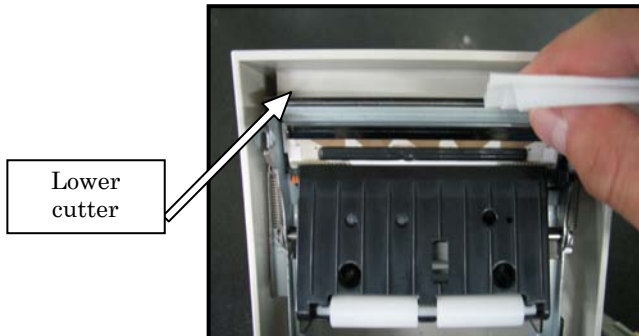
Lower cutter

Note: Although the edge of the Lower cutter is not as sharp as the edges of utility knives generally used in offices, there is a risk of injury to a finger that is moved while pressed directly against the edge of the cutter.

(5) After completing cleaning, reposition the roll paper, and close the Top cover.

Note: Be careful when the printer is in cutter cleaning mode, because the Upper cutter is exposed. After completing cleaning, reposition the roll paper, and close the Top cover.

9. Notes on Use

(1) Printing at a high rate might result in unclear printing. If this problem occurs, adjust the printing rate. Alternatively, adjust the print speed and print density so that there are no blurs.
   (See "Appendix C-3 Setting Up the Printer" in Appendix C, "Special Modes.")

(2) Printing characters from a non-standard character set e.g. in a thin serif font will result in the characters appearing very faint. Use a bold sans serif font.

(3) For quality printing that is free from uneven spacing and condensed or elongated printing after paper is cut or printing is paused, resume printing following a paper feed of at least 1 mm (8 dots).

(4) If the data transfer rate is too low, serial printing may result in uneven print density (vertical white marks may appear on printouts) because of repeated printing and pausing. If priority is placed on print quality, use batch printing mode.
   (See "Appendix C-3 Setting Up the Printer" in Appendix C, "Special Modes.")

(5) The upper margin can be set to 12mm or 4.5mm with a command.   If the upper margin is set to 4.5mm, reverse feeding of the paper takes place before the next printing operation. The paper must therefore be removed after each printing and cutting operation. If the paper is not removed, the part connected to the roll in partial cutting could be torn off, or the part that has been cut could be folded back. Note also that the paper length used per transaction must be at least 30mm.

(6) Printing at a high print density (110% or higher) may cause blurs or uneven print density on printouts under low-temperature conditions, depending on the print pattern. If priority is placed on print quality, use a lower print speed.
   (See "Appendix C-3 Setting Up the Printer" in Appendix C, "Special Modes.")

(7) Since the difference in hue between red and black or blue and black may not be noticeable when two-color thermal paper is used, be sure to confirm in advance the color of the printed characters.

(8) When roll paper with a width of 83 mm is used, characters that are too close to the (left or right) edge of the paper may not be printed because of inaccuracies in tracking. Be sure to set a margin of sufficient width.

(9) Do not switch from narrow paper to wide paper (e.g., from paper that is 58 mm wide to paper that is 80 mm wide) during operation. When narrow paper is used, the thermal head area where there is no paper comes in direct contact with the platen roller, and the resulting wear on the head may lead to a deterioration in print quality. Similarly, if the paper width is changed, the cutter blade will cut at a location that has no paper, and the resulting wear on the blade may lead to improper cuts. To switch from narrow paper to wide paper, exchange the thermal head and the cutter blade.

(10) If label paper is used, adhesive matter adhering to the cutter blade, thermal head, paper transport, or paper holder may cause a cutting error, print error, or paper transport error. Remove adhesive matter periodically (typically on a monthly basis).

(11) If paper is left inserted in the printer for a long time, the paper may become deformed and result in thin (faint) printed characters. Before starting printing in such cases, feed the paper by 20 to 30 mm.

(12) If the type of paper used is other than the recommended ones, the print quality and thermal head life are not guaranteed. In particular, if the type of thermal paper contains Na+, K+, or Cl-, the thermal head life may be significantly shortened.

Notes on using the cutter

(1) In full cutting mode, the length of paper per transaction must be within a range of 58 to 180 mm. If a different paper length is used, the printed paper may not drop from the paper transport, thus causing a cutting error.

(2) The maximum number of successive cuts by the cutter is 30 cuts per minute (at least two seconds per cut). Using the cutter at a higher rate may cause a failure.

(3) Do not pull the paper during cutting. Doing so may cause a paper jam or another problem.

(4) Each time that a sheet of paper is cut in full cutting mode, the sheet of paper must be removed.

Notes on printing of barcodes and two-dimensional codes

(1) Barcodes that are rotated 90 degrees or aligned vertically when printed may not be readable. Verify the readability in advance.

(2) Printouts on label paper or thick paper may contain blurs, depending on humidity and other environmental conditions. Adjust the print speed and print density appropriate for the type of paper used, and verify the readability in advance.
(See "Appendix C-3 Setting Up the Printer" in Appendix C, "Special Modes.")

(3) The recognition ratio of two-dimensional codes (QR codes, PDF417, and DataMatrix) varies depending on various factors, including the module width, print density, ambient temperature, thermal roll paper type, and reader performance. Adjust the print speed and print density appropriate to printing two-dimensional codes, and verify the readability in advance.
(See "Appendix C-3 Setting Up the Printer" in Appendix C, "Special Modes.")

(4) The paper transport accuracy may be negatively affected by printing a barcode in the Upper margin at the beginning of paper transport or in the Lower margin at the end of paper transport. Verify the readability before starting printing.

Notes on using the printer through the USB interface

(1) The printer must be connected directly to the host computer.
(2) Before starting printing, turn on the power to the printer.
(3) If a printer error occurs during printing, recover the printer from the error, and then retry printing.
(4) The host computer should not be set to any of the following modes: standby, sleep, suspend, and pause.
   If the host computer or printer does not work normally after the host computer returns to normal operation mode from one of the above modes, disconnect the USB cable once and then reconnect it, or turn off the printer power switch once and then turn on the switch again. If the host computer or printer cannot be restored to normal operation after the cable is reconnected or power switch is turned on again, restart the host computer.
(5) The USB hub function cannot be used when the power to the printer is off.
(6) If a peripheral device connected to the USB hub is not recognized, perform one of the following operations:
   - Disconnect the USB cable from the peripheral device once, and then reconnect it.
   - Connect the peripheral device to the other port of the USB hub.
(7) The operation of connected USB devices is not guaranteed. Before using a USB device, verify its operation yourself.

Note: Do not turn off the power to the printer during printing.
   If you inadvertently turn off the power to the printer during printing and the printer then fails to work normally, restart the host computer.

Note on installation

(1) The printer must be used indoors. If used outdoors, the printer may fail because of dust.

Note on the modular connector

(1) This product uses a modular connector as a dedicated connector for the cash drawer or customer display terminal. The connector must not be connected with a connector that leads to a public switched line or other such destination.

Note on using the printer in special mode

(1) If a large diameter roll is used, paper may fold or unusual noises may be heard. To prevent these problems, use a roll with a small diameter (ϕ50mm or less). If a Windows PC is used as the host system, a utility program can be used to make settings.

Windows® is a registered trademark of Microsoft Corporation in the United States and/or other countries.

Appendix A: Specifications

A-1.General Specifications
(1) Print method: Direct line thermal printing system
(2) Maximum print speed: 260mm/s (single-color thermal paper)
                            115mm/s (two color thermal paper)
(3) Dot resolution: 8 dots/mm (0.125mm)
(4) Relationship between number of print columns and character size

Body Face

	For paper 58mm wide		For paper 60mm wide
	32 column printing	35 column printing	36 column printing
ANK: Font A	32 columns: 12x24	35 columns: 12x24	36 columns: 12x24
ANK: Font B	38 columns: 10x24 42 columns: 9x24	42 columns: 10x24 46 columns: 9x24	43 columns: 10x24 48 columns: 9x24
ANK: Font C	48 columns: 8x16	52 columns: 8x16	54 columns: 8x16
Kanji: Font A	16 columns: 24x24	17 columns: 24x24	18 columns: 24x24
Kanji: Font B	19 columns: 20x24	21 columns: 20x24	21 columns: 20x24
Kanji: Font C	24 columns: 16x16	26 columns: 16x16	27 columns: 16x16
ANK: Font A Extension Font	32 columns: 12x24	35 columns: 12x24	36 columns: 12x24
ANK: Font B Extension Font	38 columns: 10x24 42 columns: 9x24	42 columns: 10x24 46 columns: 9x24	43 columns: 10x24 48 columns: 9x24

Body Face

	For paper 80mm wide		For paper 83mm wide
	42 column printing	48 column printing	53 column printing
ANK: Font A	42 columns: 12x24	48 columns: 12x24	53 columns: 12x24
ANK: Font B	51 columns: 10x24 56 columns: 9x24	57 columns: 10x24 64 columns: 9x24	64 columns: 10x24 71 columns: 9x24
ANK: Font C	64 columns: 8x16	72 columns: 8x16	80 columns: 8x16
Kanji: Font A	21 columns: 24x24	24 columns: 24x24	26 columns: 24x24
Kanji: Font B	25 columns: 20x24	28 columns: 20x24	32 columns: 20x24
Kanji: Font C	32 columns: 16x16	36 columns: 16x16	40 columns: 16x16
ANK: Font A Extension Font	42 columns: 12x24	48 columns: 12x24	53 columns: 12x24
ANK: Font B Extension Font	51 columns: 10x24 56 columns: 9x24	57 columns: 10x24 64 columns: 9x24	64 columns: 10x24 71 columns: 9x24

(5) Alphanumeric characters (95), extended graphics (128 x 20 pages), international characters (48)
   Kanji JIS-1990 (6879), special characters (845)

(6) Dimensions of fonts

	Body Face		Letter Face	
	(W)x(H) dot	(W)x(H) mm	(W)x(H) dot	(W)x(H) mm
ANK: Font A	12 x 24	1.5 x 3.0	11 x 22	1.375 x 2.75
ANK: Font B	10 x 24 9 x 24	1.25 x 3.0 1.125 x 3.0	9 x 17 9 x 17	1.125 x 2.125 1.125 x 2.125
ANK: Font C	8 x 16	1.0 x 2.0	8 x 13	1.0 x 1.625
Kanji: Font A	24 x 24	3.0 x 3.0	24 x 24	3.0 x 3.0
Kanji: Font B	20 x 24	2.5 x 3.0	18 x 24	2.25 x 3.0
Kanji: Font C	16 x 16	2.0 x 2.0	15 x 15	1.875 x 1.875
ANK: Font A Extension Font	12 x 24	1.5 x 3.0	12 x 24	1.5 x 3.0
ANK: Font B Extension Font	10 x 24 9 x 24	1.25 x 3.0 1.125 x 3.0	9 x 22 9 x 22	1.125 x 2.75 1.125 x 2.75

(7) Outline drawing
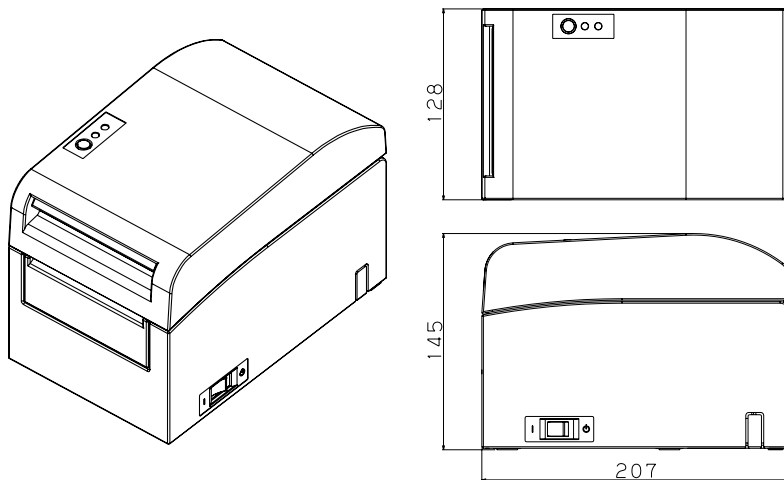
A-2.Cutter Specifications

Cutting method: Partial cutting model

        The paper remains connected at one point

      Partial/full cutting model

        A command for switching between partial cutting and
full cutting is provided for models that support these
two cutting methods.

Note : For printing on label paper, use only partial cutting. If full cutting is used in
such cases, paper cutting performance will deteriorate faster because of the
greater adverse effect of adhesive matter.

Note : Paper cutting performance may deteriorate faster with the use of label
paper because of its adhesive matter. Clean the cutter blade periodically to
remove the adhesive matter.

Note : Full cutting may lead to irregularities at the center of the cutting surface. If
paper fiber remains at these locations, this may eventually lead to
incomplete cutting at these locations.

Note : In full cutting mode, the printed paper must be removed each time that one
sheet is printed. Otherwise, printed paper remains in the automatic cutter
section and may cause a cutting error.

Note : The maximum number of successive cuts by the cutter is 30 cuts per minute
(at least two seconds per cut). Using the cutter at a higher rate may cause a
failure.

A-3.Paper Supply Specifications

(1) Loading method: Rolls are loaded manually.

(2) Paper near end: Detected when only a little paper is left.

Note:This printer supports paper rolls with a core diameter of φ18mm.

A-4.Interface Specifications

(1) Parallel (Complies with IEEE1284: Nibble mode)

(2) Dual (Conforms to USB 1.1 and RS-232C)

(3) LAN (10BASE-T,100BASE-TX)

A-5.Environment Specifications
(1) Temperature

    When operating   : Operation guaranteed from 0°C to 40°C.
                                     Printing guaranteed from 5°C to 35°C.

    When no operating   : -5°C to 60°C

    When being transported or stored   : -20°C to 60°C
    (While packaged)

(2) Humidity

    When operating   : Operation guaranteed from 10% to 95%RH
                         (no condensation)
                         Printing guaranteed from 10% to 85%RH
                         (no condensation)

    When no operating   : 8% to 95% RH (no condensation)

    When being transported or stored   : 5% to 95% RH
    (While packaged)   (no condensation)

(3) Maximum wet bulb temperature   : 29°C or less
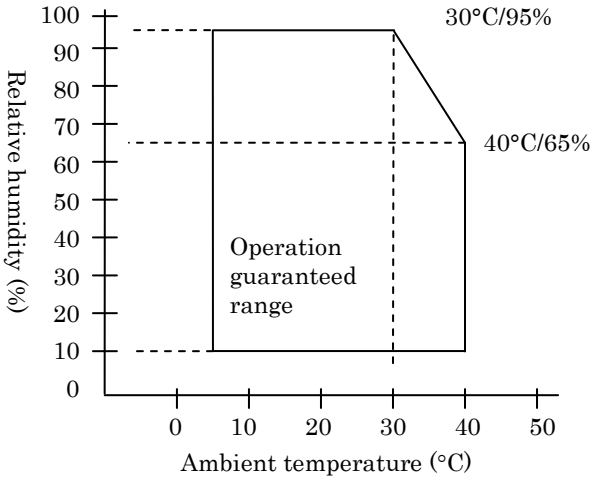
A-6.Specifications of Reliability

(1) Printer life

Feed of 25 million lines (Specified thermal paper) or 5 years

(2) Head

Running life ： 150km (Specified single-color thermal paper)
75km (Specified dual-color thermal paper)
Pulse life ： 150 million pulses

(3) Cutter

- Partial cutting model
2,000,000 cuts (Specified thermal paper 75μm)
500,000 cuts (Specified thick thermal paper 150μm)
300,000 cuts (Specified label thermal paper)

- Partial/full cutting model
With only partial cutting used:
2,000,000 cuts (for paper with a specified thickness of 75 μm)
500,000 cuts (for paper with a specified thickness of 75 to 150 μm)
300,000 cuts (for the specified full-sheet label paper)
With only full cutting used:
1,000,000 cuts (for paper with a specified thickness of 75 μm)
500,000 cuts (for paper with a specified thickness of 75 to 150 μm)

* If both partial cutting and full cutting are used, the cutter life is different
from the above and depends on the conditions of use.

Note ： **Paper cutting performance may deteriorate faster with the use of label
paper because its adhesive matter adheres to the cutter blade. Clean the
cutter blade periodically.**

Appendix B: Interface

B-1.Parallel Interface
(1) Forward channel

Pin No.	Signal name	I/O direction	Pin No.	Signal name	I/O direction
1	*STROBE	Input	19	*STROBE-RET	---
2	DATA1	Input	20	DATA1-RET	---
3	DATA2	Input	21	DATA2-RET	---
4	DATA3	Input	22	DATA3-RET	---
5	DATA4	Input	23	DATA4-RET	---
6	DATA5	Input	24	DATA5-RET	---
7	DATA6	Input	25	DATA6-RET	---
8	DATA7	Input	26	DATA7-RET	---
9	DATA8	Input	27	DATA8-RET	---
10	*ACKNLG	Output	28	*ACKNLG-RET	---
11	BUSY	Output	29	BUSY-RET	---
12	PE	Output	30	*INIT-RET	---
13	SLCT	Output	31	*INIT	Input
14	*AUTOFEEDXT	Input	32	*FAULT	Output
15	N.C.	---	33	SG1	Output
16	SG1	---	34	DK_STATUS	Output
17	FG	---	35	+5V	Output
18	LOGIC-H	Output	36	*SLCTIN	Input

Notes 1: Each -RET is connected to SG.
Notes 2: "*" indicates a negative-logic signal.

(2) Reverse channel

Pin No.	Signal name	I/O direction	Pin No.	Signal name	I/O direction
1	HostClk	Input	19	HostClk-RET	---
2	DATA1	Input	20	DATA1-RET	---
3	DATA2	Input	21	DATA2-RET	---
4	DATA3	Input	22	DATA3-RET	---
5	DATA4	Input	23	DATA4-RET	---
6	DATA5	Input	24	DATA5-RET	---
7	DATA6	Input	25	DATA6-RET	---
8	DATA7	Input	26	DATA7-RET	---
9	DATA8	Input	27	DATA8-RET	---
10	PtrClk	Output	28	PtrClk-RET	---
11	PtrBusy	Output	29	PtrBusy-RET	---
12	AckDateReq	Output	30	*INIT-RET	---
13	Xflag	Output	31	*INIT	Input
14	HostBusy	Input	32	*DataAvail	Output
15	N.C.	---	33	SG1	Output
16	SG1	---	34	DK_STATUS	Output
17	FG	---	35	+5V	Output
18	LOGIC-H	Output	36	1284-Active	Input

Notes 1: Each -RET is connected to SG.
Notes 2: "*" indicates a negative-logic signal.

B-2.Dual Interface

(1) Type B Connector: 4 Pin

Pin No.	Signal name	I/O direction	Signal line name
1	VBUS	Input	+5V
2	D-inB	Input/Output	D-
3	D+inB	Input/Output	D+
4	SG1	---	Ground

(2) Serial interface connector

Pin No.	Signal name	I/O direction	Function
1	FG	---	Frame ground
2	TXD	Output	Send data
3	RXD	Input	Receive data
4	RTS	Output	Send request
5	CTS	Input	Send permission
6	DSR	Input	Data set ready
7	SG	---	Signal ground
8 to 12	N.C.	---	Unused
13	SG2	Input	+24 V ground
14	SG2	Input	+24 V ground
15 to 17	N.C.	---	Unused
18	+24V	Input	Power supply for mechanism drive
19	+24V	Input	Power supply for mechanism drive
20	DTR	Output	Data terminal ready
21 to 24	N.C.	---	Unused
25	INIT	Input	Forced reset

Notes 1: To supply power from the power connector, do not connect the pins shaded (   ) in the above table.
Notes 2: Use inch- screws to secure the connection.
Notes 3: Shielded USB cables must be used.

B-3.LAN Interface

(1) LAN Connector TCP/IP (10BASE-T/100BASE-TX1 Port)

Note 1: Please refer the manual with IP address setting utility for how to set IP address.

Note 2: You can find the MAC address in the side of LAN Connector.

(2) Connector: 8Pins RJ-45 (Printer Side)

No.	Signal	Input / Output	Reference
1	TX+	Output	Output Data
2	TX–	Output	Output Data
3	RX+	Input	Input Data
4	N.C	-	
5	N.C	-	
6	RX–	Input	Input Data
7	N.C	-	
8	N.C	-	
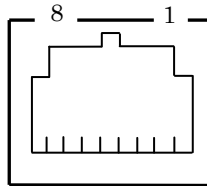
(3) LED

No.	Display	Action contents
3	Status	When receives packet, lights up for 50msec.
2	100BASE-TX Link	When the connection is recognized as 100BASE-TX, lights up.
1	10BASE-T Link	When the connection is recognized as 10BASE-T, lights up.
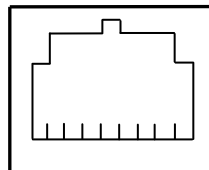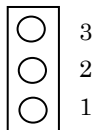
(4) DIP Switch

Note 1: This switch is maintenance use. Please use all switches by OFF setting.

No.	ON	OFF
1	-	Off (Fixed)
2	Settings Initialization	-
3	Settings Information	-
4	Self Test for LAN Board	-
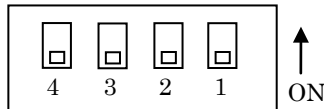
Initialization of settings
1) Turn off the printer.
2) Set the DIP Switch No.2 "ON".
3) Turn on the printer, and wait approximately 5 seconds until completion of initialization.
4) Turn off the printer again.
5) Set the DIP Switch No.2 "OFF".

Self test print of settings
1) Turn off the printer.
2) Set the DIP Switch No.3 and No.4 "ON".
3) Turn on the printer, and Printer prints Self test.
4) Turn off the printer again.
5) Set the DIP Switch No.3 and No.4 "OFF".

Note: Be careful of handling DIP Switches.

B-4.Drawer Kick Connector

Pin No.	Signal name	I/O direction	Signal line name
1	FG	Output	Drawer frame ground signal
2	*DRD1	Output	Drawer kick drive signal 1
3	DRSNS1	Input	Drawer sense signal 1
4	+24V	Output	Drive power
5	*DRD2	Output	Drawer kick drive signal 2
6	SG	Output	Drawer sense ground signal

Notes 1: "*" indicates a negative-logic signal.

Connecting side

<Drawer connection >
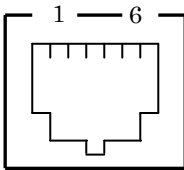
```
Printer  1  ──<──  Drawer   ──────────  FG

         2  ──<──        ┌──┐
                         │  │        Cash Drawer
         4  ──<──        └──┘        Solenoid 1

                         ┌──┐        Cash Drawer
         5  ──<──        └──┘        Solenoid 2

         3  ──<──
                         │  │        Drawer 1
         6  ──<──        └──/        OPEN/CLOSE
```
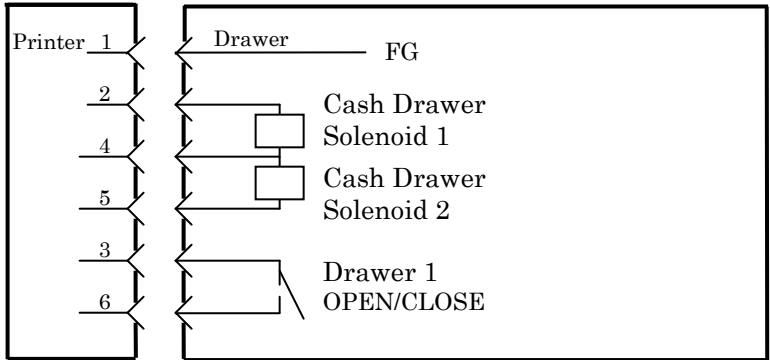
Notes : Use a shielded drawer cable.

Notes : Two drives cannot be driven simultaneously.

Notes : The drawer on/off time must be specified using t1 and t2 in the pulse generation command (ESC p m t1 t2).

Notes : The drawer drive duty must be as follows:
ON-time/(ON-time + OFF-time) $\leq$ 0.2

Notes : The drawer power must always be supplied from the printer power supply unit via connector pin 4.

Notes : The resistance of the drawer kick solenoid must be at least 24Ω. If a solenoid with a lower resistance is used, the solenoid might be destroyed by over current.

Notes : This product uses a modular connector as a dedicated connector for the cash drawer or customer display terminal. The connector must not be connected with a connector that leads to a public switched line or other such destination.

B-5.Specifications of Power Supply

(1) Operating voltage ： DC 24V±10%

(2) Current consumption ：‐ Standby: 4.5W or less/0.2A on average

          Note: Maximum drawer kick drive current: 1A
Two drawer kicks must not be driven simultaneously.

    ‐ Average current consumption Operating: About 44W/1.5A on average
(at 24V, 25°C, print density setting 100%, paper width 80mm, print duty 9%)

Arrangement of power connector pins

Pin No.	Signal name
1	+24 V
2	SG
3	N.C
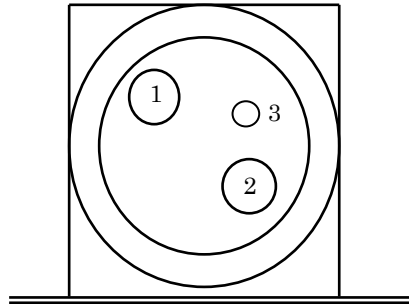
Note : Use our AC adapter to supply power.

Note : If our AC adapter is not used (power supply is supplied by the user), problems such as bad print quality, electromagnetic interference, or circuit noise may occur. In such cases, take note of the following points:

    · Use an AC adapter whose capacity corresponds to the printing rate that will actually be used.

    · Ensure in advance that there are no problems such as static electricity, electromagnetic interference, circuit noise, etc.

Appendix C: Special Modes

C-1.Test Printing

With paper inserted in the printer, turn off the printer power switch once, and turn on the switch again while holding down the FEED switch on the control panel. Then, the data shown below is printed. When "TEST PRINT" is printed, press and hold down the FEED switch for one second or longer to start test printing.

After printing a certain amount of data, the printer automatically cuts the paper and ends the test printing. To terminate test printing in progress, press the FEED switch. Then, the printer cuts the paper and terminates the test printing.

Test printing
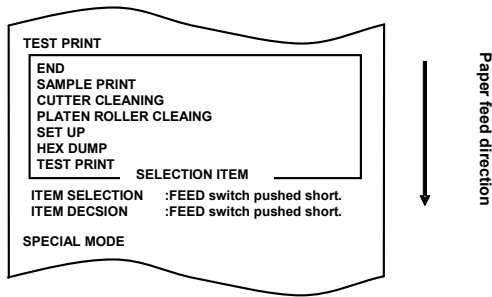
Sample test printout

```
PT390 Ver*.*

123456

POWER ON STATUS        ENABLE
RECEIVE BUFFER         4K BYTE
BUSY CONDITION         BUFFERFULL
RECEIVE ERROR          ?PRINT
AUTO LF                DISABLE
DSR(#6) RESET          DISABLE
                    .
                    .
```

C-2.Hex Dump

With paper inserted in the printer, turn off the printer power switch once. If you turn on the switch again while holding down the FEED switch on the control panel, the data shown in Section C-1 will be printed. If you turn on the switch again and press the FEED switch briefly, the data shown below will be printed.

```
HEX DUMP
  ↑
TEST PRINT
    ┌──────────────────────────────────────┐
    │ END                                  │
    │ SAMPLE PRINT                         │
    │ CUTTER CLEANING                      │
    │ PLATEN ROLLER CLEAING                │
    │ SET UP                               │
    │ HEX DUMP                             │
    │ TEST PRINT                           │
    │              SELECTION ITEM          │
    │ ITEM SELECTION    :FEED switch pushed short. │
    │ ITEM DECSION      :FEED switch pushed short. │
    │                                      │
    │ SPECIAL MODE                         │
    └──────────────────────────────────────┘
```

Paper feed direction
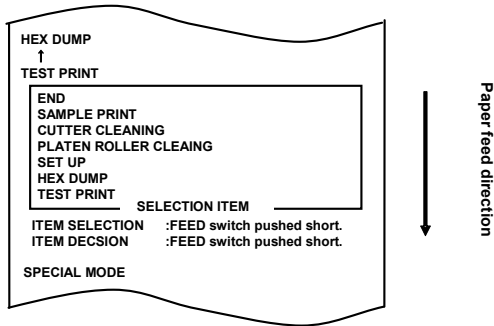
When "HEX DUMP" is printed, press and hold down the FEED switch for one second or longer to place the printer in hex dump mode.
In hex dump mode, all signals sent from the host computer to the printer are printed as hexadecimal codes. The printed data can be used to confirm that the correct control codes have been sent to the printer by a created program.
To reset this mode, turn off the power switch once.

Sample hex dump test printout

```
┌──────────────────────────────────────┐
│       —HEX DUMP PRINTING—            │
│                                      │
│ 000000 1B 40 1B 63 30 02 1B 6F. @. c0..o │
│   ⌣      ⌣                    ⌣      │
│ Address        Hex           ASCII   │
│                  •                   │
│                  •                   │
│                  •                   │
└──────────────────────────────────────┘
```
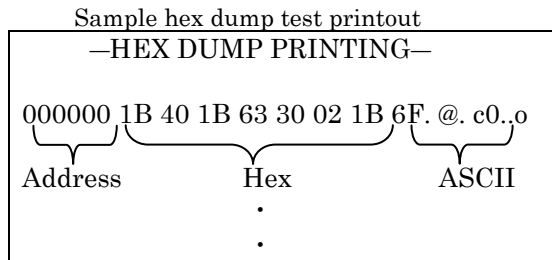
C-3.Setting Up the Printer

This section explains how to set up the printer without using a PC.
With the printer connected to a Windows PC, you can easily change the settings
by using the setup tool contained on the CD-ROM provided with the printer.
For the procedure of installation of the utility, see the "Chapter 3. Installation" in
the "Installation Guide" (\Manuals\PT390_InstallGuide1_en.pdf).

Example (1): Changing the print density to a higher value

   Change from 100% to 130%

The procedure for this setting is as follows.

1. Before starting work for this setting, verify the following conditions of the
   printer:
   (1) The power is off.
   (2) Roll paper is inserted in it.
   (3) The cover is closed.

2. Enter special mode.
   Turn on the power switch on the right side of the printer while
   holding down the FEED switch on the left part of the Top cover.

The printer prints the following when it enters special mode:

```
TEST PRINT
 ┌──────────────────────────────┐
 │ END                          │
 │ SAMPLE PRINT                 │
 │ CUTTER CLEANING              │
 │ PLATEN ROLLER CLEAING        │
 │ SET UP                       │
 │ HEX DUMP                     │
 │ TEST PRINT      SELECTION ITEM
 └──────────────────
 ITEM SELECTION    :FEED switch pushed short.
 ITEM DECSION      :FEED switch pushed short.

 SPECIAL MODE
```

Paper feed direction

3. Enter setup mode from special mode.
   Press the FEED switch briefly (one second or less) twice to move to "SET UP."

```
SET UP
  ↑
HEX DUMP
  ↑
TEST PRINT
 ┌──────────────────────────────┐
 │ END                          │
 │ SAMPLE PRINT                 │
 │ CUTTER CLEANING              │
 │ PLATEN ROLLER CLEAING        │
 │ SET UP                       │
 │ HEX DUMP                     │
 │ TEST PRINT                   │
 └────────── SELECTION ITEM ──────
 ITEM SELECTION    :FEED switch pushed short.
 ITEM DECSION      :FEED switch pushed short.

 SPECIAL MODE
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.

The printer prints the following when it enters setup mode:

```
SETTING

  SAVE&END
  DEFAULT SET
  SETUP PRINT
  SETTING
                SELECTION ITEM

  ITEM SELECTION    :FEED switch pushed short.
  ITEM DECSION      :FEED switch pushed short.

SETUP MODE
```

Paper feed direction

4. In setup mode, select "SETTING."
   Press and hold down the FEED switch for one second or longer to accept the selection.
   The printer prints the following when you accept the selection of "SETTING":

```
MEMORY SWITCH

  PRTURN To SETUP MENU
  OTHER
  SERIAL INTERFACE CONDITION
  CUSTOMIZE VALUE
  MEMORY SWITCH
                SELECTION ITEM
```

Paper feed direction

5. Select "CUSTOMIZE VALUE" as your option.

Press the FEED switch briefly (one second or less) until the item "CUSTOMIZE VALUE" is reached.

```
CUSTOMIZE VALUE
   ↑
MEMORY SWITCH

   PRTURN To SETUP MENU
   OTHER
   SERIAL INTERFACE CONDITION
   CUSTOMIZE VALUE
   MEMORY SWITCH
              SELECTION ITEM
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.

The printer prints the following when you accept the selection of "CUSTOMIZE VALUE":

```
USER NV MEMORY

   RETURN TO SETUP MENU
   RETURN TO UP
   LOW POWER
   MAX SPEED
   BK DENSITY (2COLER)
   PRINT DENSITY
   PRINT COLOR
   PRINT WIDTH
   NV GRAPHIC MENORY
   USER NV MEMORY
           SELECTION ITEM
```

Paper feed direction

6. Select "PRINT DENSITY" as your option.
   Press the FEED switch briefly (one second or less) four times to move to "PRINT DENSITY."

```
PRINT DENSITY
  ↑
PRINT COLOR
  ↑
PRINT WIDTH
  ↑
NV GRAPHIC MENORY
  ↑
USER NV MEMORY

    ┌─────────────────────────────────┐
    │ RETURN TO SETUP MENU            │
    │ RETURN TO UP                    │
    │ LOW POWER                       │
    │ MAX SPEED                       │
    │ BK DENSITY (2COLER)             │
    │ PRINT DENSITY                   │
    │ PRINT COLOR                     │
    │ PRINT WIDTH                     │
    │ NV GRAPHIC MENORY               │
    │ USER NV MEMORY                  │
    │ ──── SELECTION ITEM ────        │
    └─────────────────────────────────┘
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.
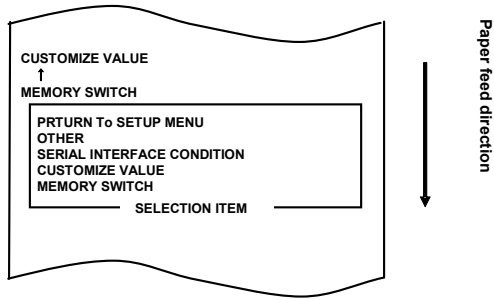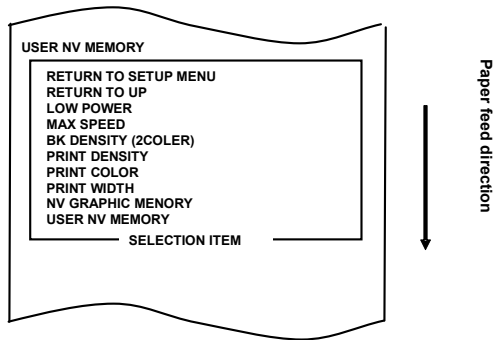The printer prints the following when you accept the selection of "PRINT DENSITY":

```
PRINT DENSITY          100%

    ┌─────────────────────────────────┐
    │ PRINT DENSITY        130%       │
    │ PRINT DENSITY        125%       │
    │ PRINT DENSITY        120%       │
    │ PRINT DENSITY        115%       │
    │ PRINT DENSITY        110%       │
    │ PRINT DENSITY        105%       │
    │ PRINT DENSITY        100%       │
    │ PRINT DENSITY         95%       │
    │ PRINT DENSITY         90%       │
    │ PRINT DENSITY         85%       │
    │ PRINT DENSITY         80%       │
    │ PRINT DENSITY         75%       │
    │ PRINT DENSITY         70%       │
    │ ──── SELECTION ITEM ────        │
    └─────────────────────────────────┘
```

Paper feed direction

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7. Select "130%" as your option.
   Press the FEED switch briefly (one second or less) until the item "130%" is reached.

```
PRINT DENSITY        130%
   ↑
PRINT DENSITY        125%
   ↑
PRINT DENSITY        120%
   ↑
PRINT DENSITY        115%
   ↑
PRINT DENSITY        110%
   ↑
PRINT DENSITY        105%
   ↑
PRINT DENSITY        100%

   PRINT DENSITY        130%
   PRINT DENSITY        125%
   PRINT DENSITY        120%
   PRINT DENSITY        115%
   PRINT DENSITY        110%
   PRINT DENSITY        105%
   PRINT DENSITY        100%
   PRINT DENSITY         95%
   PRINT DENSITY         90%
   PRINT DENSITY         85%
   PRINT DENSITY         80%
   PRINT DENSITY         75%
   PRINT DENSITY         70%
        SELECTION ITEM
```
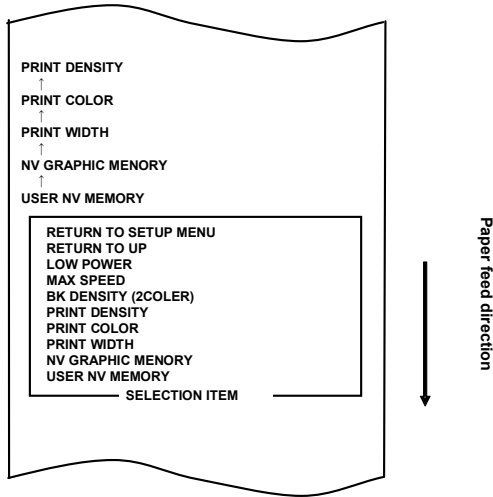
Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.
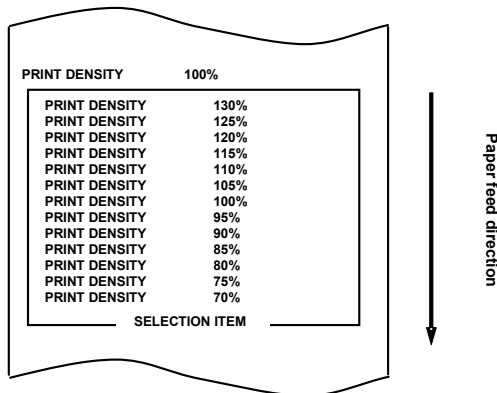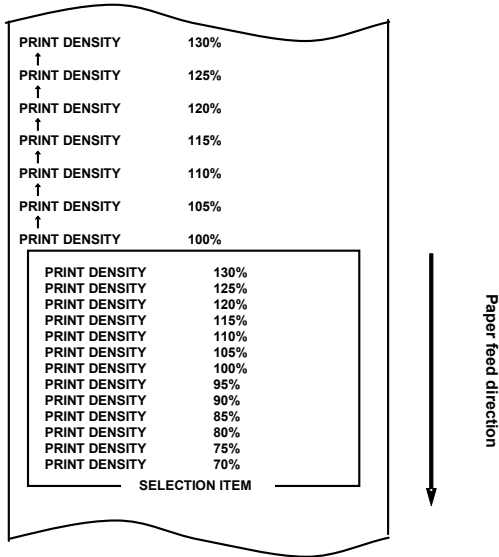The printer prints the following when you accept the selection of "130%":

```
RETURN TO UP

   RETURN TO SETUP MENU
   RETURN TO UP
   LOW POWER
   MAX SPEED
   BK DENSITY (2COLOR)
   PRINT DENSITY
   PRINT COLOR
   PAPER WIDTH
   NV GRAPHIC MEMORY
   USER NV MEMORY
        SELECTION ITEM
```

Paper feed direction

8. Select "RETURN TO UP" as your option.
   Press and hold down the FEED switch for one second or longer to accept the selection.
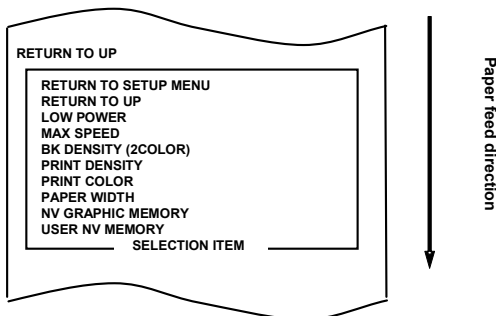   The printer prints the following when you accept the selection of "RETURN TO UP":

```
RETURN TO SETUP MENU

    RETURN TO SETUP MENU
    OTHER
    SERIAL INTERFACE CONDITION
    CUSTOMIZE VALUE
    MEMORY SWITCH
              SELECTION ITEM
```

Paper feed direction

9. Select "RETURN TO SETUP MENU" as your option.
   Press and hold down the FEED switch for one second or longer to accept the selection
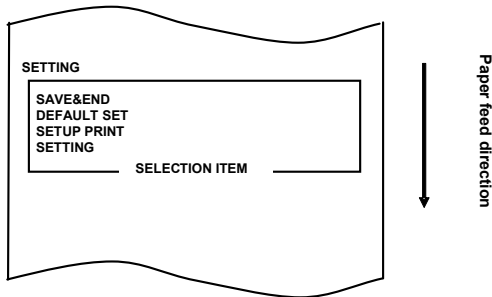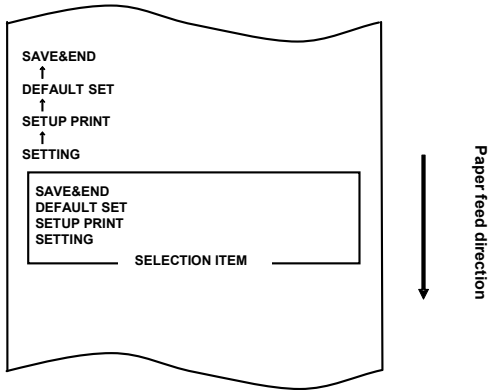   The printer prints the following when you accept the selection of "RETURN TO SETUP MENU":

```
SETTING

    SAVE&END
    DEFAULT SET
    SETUP PRINT
    SETTING
              SELECTION ITEM
```

Paper feed direction

10. Select "SAVE&END" as your option.
    Press the FEED switch briefly (one second or less) until the item "SAVE&END" is reached.

```
SAVE&END
   ↑
DEFAULT SET
   ↑
SETUP PRINT
   ↑
SETTING

┌──────────────┐
│ SAVE&END     │
│ DEFAULT SET  │
│ SETUP PRINT  │
│ SETTING      │
└──────────────┘
      SELECTION ITEM
```

Paper feed direction ↓

Then, press and hold down the FEED switch for one second or longer to accept the selection.
The printer cuts the paper and exits from setup mode when you accept the selection of "SAVE&END."

Note: If you turn off the printer power switch without first selecting "SAVE&END," your setting will be lost.

- Verifying your setting

To verify your setting, execute a test print, referring to Section C-1.
The test printing prints a list of printer settings. Check the list, and verify your setting.

Example (2): Changing the print speed to a lower value

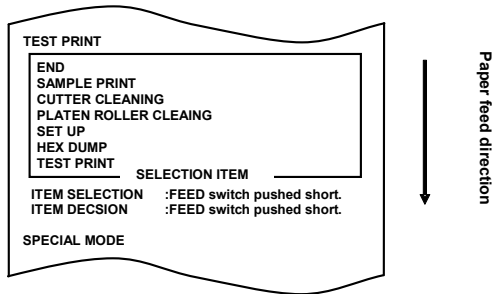Change from 9 (Max. 260 mm/s) to 5 (Max.180 mm/s)

The procedure for this setting is as follows.

1. Before starting work for this setting, verify the following conditions of the printer:
   (1) The power is off.
   (2) Roll paper is inserted in it.
   (3) The cover is closed.

2. Enter special mode.
   Turn on the power switch on the right side of the printer while holding down the FEED switch on the left part of the Top cover.

   The printer prints the following when it enters special mode:

```
TEST PRINT

   END
   SAMPLE PRINT
   CUTTER CLEANING
   PLATEN ROLLER CLEAING
   SET UP
   HEX DUMP
   TEST PRINT
                     SELECTION ITEM

   ITEM SELECTION    :FEED switch pushed short.
   ITEM DECSION      :FEED switch pushed short.

   SPECIAL MODE
```

Paper feed direction

3. Enter setup mode from special mode.
   Press the FEED switch briefly (one second or less) twice to move to "SET UP."
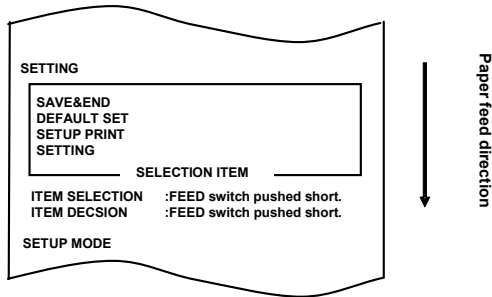
```
SET UP
  ↑
HEX DUMP
  ↑
TEST PRINT
  ┌─────────────────────────────────┐
  │ END                             │
  │ SAMPLE PRINT                    │
  │ CUTTER CLEANING                 │
  │ PLATEN ROLLER CLEAING           │
  │ SET UP                          │
  │ HEX DUMP                        │
  │ TEST PRINT                      │
  └──────────────── SELECTION ITEM ─┘
  ITEM SELECTION    :FEED switch pushed short.
  ITEM DECSION      :FEED switch pushed short.

SPECIAL MODE
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.
The printer prints the following when it enters setup mode:

```
SETTING
  ┌─────────────────────────────────┐
  │ SAVE&END                        │
  │ DEFAULT SET                     │
  │ SETUP PRINT                     │
  │ SETTING                         │
  └──────────── SELECTION ITEM ─────┘
  ITEM SELECTION    :FEED switch pushed short.
  ITEM DECSION      :FEED switch pushed short.

SETUP MODE
```

Paper feed direction
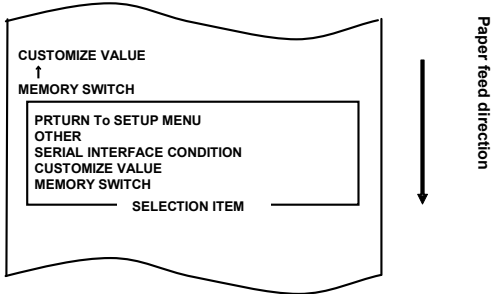
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4. In setup mode, select "SETTING."
   Press and hold down the FEED switch for one second or longer to accept the selection.
   The printer prints the following when you accept the selection of "SETTING":
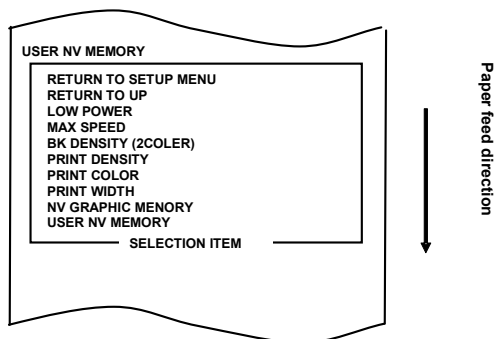

5. Select "CUSTOMIZE VALUE" as your option.
   Press the FEED switch briefly (one second or less) until the item "CUSTOMIZE VALUE" is reached.
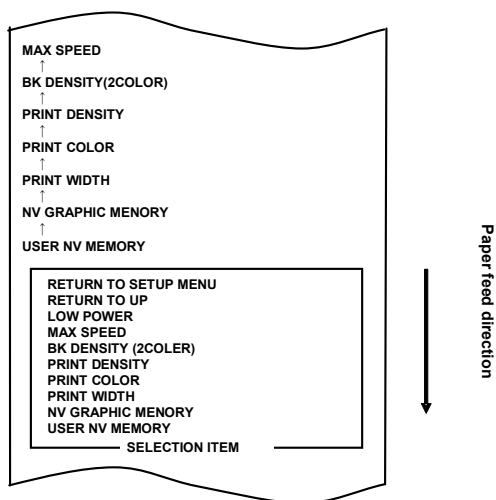
Then, press and hold down the FEED switch for one second or longer to accept the selection.
The printer prints the following when you accept the selection of "CUSTOMIZE VALUE":
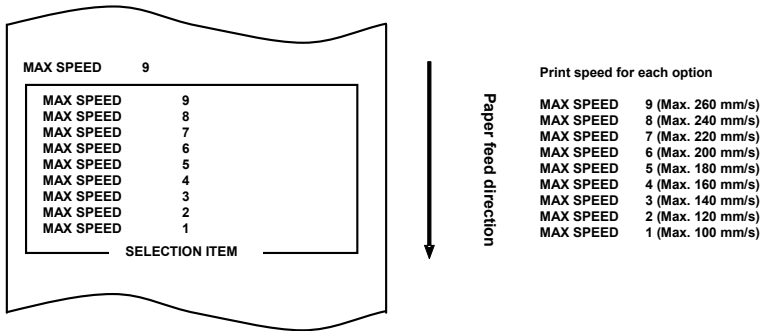
```
USER NV MEMORY

    RETURN TO SETUP MENU
    RETURN TO UP
    LOW POWER
    MAX SPEED
    BK DENSITY (2COLER)
    PRINT DENSITY
    PRINT COLOR
    PRINT WIDTH
    NV GRAPHIC MENORY
    USER NV MEMORY
            SELECTION ITEM
```

Paper feed direction

6. Select "MAX SPEED" as your option.
   Press the FEED switch briefly (one second or less) six times to move to "MAX SPEED."

```
MAX SPEED
   ↑
BK DENSITY(2COLOR)
   ↑
PRINT DENSITY
   ↑
PRINT COLOR
   ↑
PRINT WIDTH
   ↑
NV GRAPHIC MENORY
   ↑
USER NV MEMORY

    RETURN TO SETUP MENU
    RETURN TO UP
    LOW POWER
    MAX SPEED
    BK DENSITY (2COLER)
    PRINT DENSITY
    PRINT COLOR
    PRINT WIDTH
    NV GRAPHIC MENORY
    USER NV MEMORY
            SELECTION ITEM
```
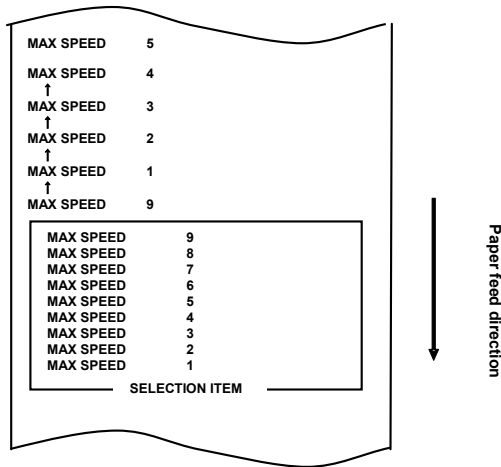
Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection. The printer prints the following when you accept the selection of "MAX SPEED":

```
MAX SPEED      9

  MAX SPEED        9
  MAX SPEED        8
  MAX SPEED        7
  MAX SPEED        6
  MAX SPEED        5
  MAX SPEED        4
  MAX SPEED        3
  MAX SPEED        2
  MAX SPEED        1

      SELECTION ITEM
```

Paper feed direction

Print speed for each option

MAX SPEED   9 (Max. 260 mm/s)
MAX SPEED   8 (Max. 240 mm/s)
MAX SPEED   7 (Max. 220 mm/s)
MAX SPEED   6 (Max. 200 mm/s)
MAX SPEED   5 (Max. 180 mm/s)
MAX SPEED   4 (Max. 160 mm/s)
MAX SPEED   3 (Max. 140 mm/s)
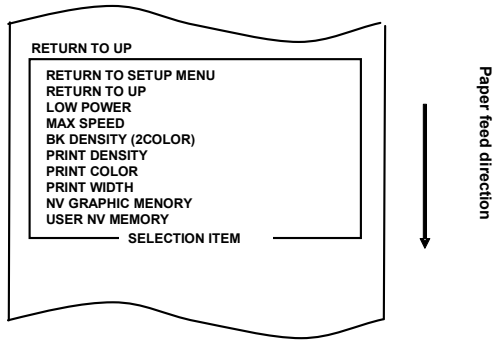MAX SPEED   2 (Max. 120 mm/s)
MAX SPEED   1 (Max. 100 mm/s)

7. Select "5" as your option.
Press the FEED switch briefly (one second or less) until "5" is reached. Then, press and hold down the FEED switch for one second or longer to accept the selection.
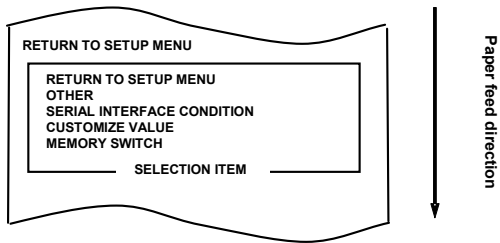
```
MAX SPEED      5

MAX SPEED      4
  ↑
MAX SPEED      3
  ↑
MAX SPEED      2
  ↑
MAX SPEED      1
  ↑
MAX SPEED      9

  MAX SPEED        9
  MAX SPEED        8
  MAX SPEED        7
  MAX SPEED        6
  MAX SPEED        5
  MAX SPEED        4
  MAX SPEED        3
  MAX SPEED        2
  MAX SPEED        1

      SELECTION ITEM
```

Paper feed direction

The printer prints the following when you accept the selection of "5":

```
RETURN TO UP

  RETURN TO SETUP MENU
  RETURN TO UP
  LOW POWER
  MAX SPEED
  BK DENSITY (2COLOR)
  PRINT DENSITY
  PRINT COLOR
  PRINT WIDTH
  NV GRAPHIC MENORY
  USER NV MEMORY
            SELECTION ITEM
```

Paper feed direction

8. Select "RETURN TO UP" as your option.
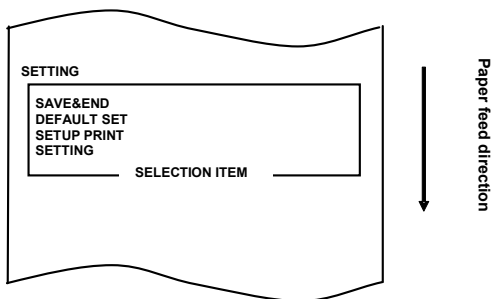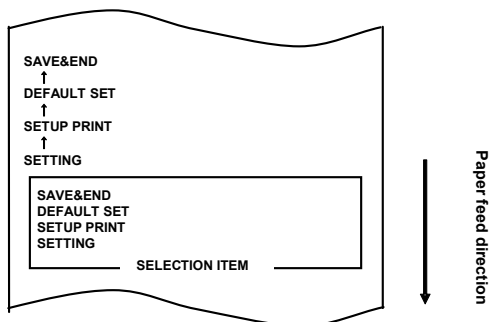   Press and hold down the FEED switch for one second or longer to accept the
   selection.
   The printer prints the following when you accept the selection of "RETURN
   TO UP":

```
RETURN TO SETUP MENU

  RETURN TO SETUP MENU
  OTHER
  SERIAL INTERFACE CONDITION
  CUSTOMIZE VALUE
  MEMORY SWITCH
            SELECTION ITEM
```

Paper feed direction

9. Select "RETURN TO SETUP MENU" as your option.
   Press and hold down the FEED switch for one second or longer to accept the selection.
   The printer prints the following when you accept the selection of "RETURN TO SETUP MENU":

```
SETTING

   SAVE&END
   DEFAULT SET
   SETUP PRINT
   SETTING
                    SELECTION ITEM
```
Paper feed direction

10. Select "SAVE&END" as your option.
   Press the FEED switch briefly (one second or less) until the item "SAVE&END" is reached.

```
SAVE&END
   ↑
DEFAULT SET
   ↑
SETUP PRINT
   ↑
SETTING

   SAVE&END
   DEFAULT SET
   SETUP PRINT
   SETTING
                    SELECTION ITEM
```
Paper feed direction

   Then, press and hold down the FEED switch for one second or longer to accept the selection.
   The printer cuts the paper and exits from setup mode when you accept the selection of "SAVE&END."

   Note: If you turn off the printer power switch without first selecting "SAVE&END," your setting will be lost.

- Verifying your setting

   To verify your setting, execute a test print, referring to Section C-1.
   The test printing prints a list of printer settings. Check the list, and verify your setting.

Example (3): Setting required for using two-color thermal paper

Change of the print color setting (from monochrome to two colors)
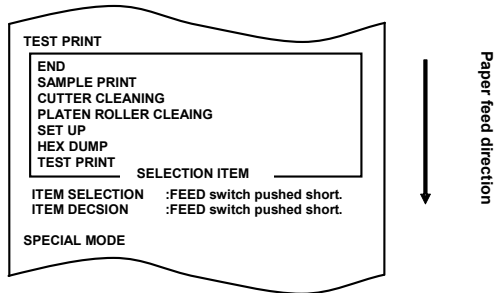
The procedure for this setting is as follows.

1. Before starting work for this setting, verify the following conditions of the printer:
   (1) The power is off.
   (2) Roll paper is inserted in it.
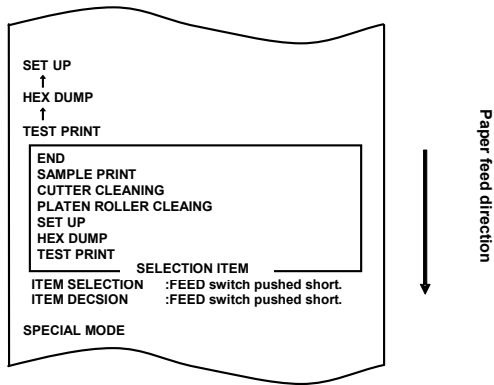   (3) The cover is closed.

2. Enter special mode.
   Turn on the power switch on the right side of the printer while holding down the FEED switch on the left part of the Top cover.

   The printer prints the following when it enters special mode

```
TEST PRINT

   END
   SAMPLE PRINT
   CUTTER CLEANING
   PLATEN ROLLER CLEAING
   SET UP
   HEX DUMP
   TEST PRINT
                      SELECTION ITEM

   ITEM SELECTION    :FEED switch pushed short.
   ITEM DECSION      :FEED switch pushed short.

SPECIAL MODE
```

Paper feed direction

3. Enter setup mode from special mode.
   Press the FEED switch briefly (one second or less) twice to move to "SET UP."

```
SET UP
  ↑
HEX DUMP
  ↑
TEST PRINT
┌─────────────────────────────────────┐
│ END                                  │
│ SAMPLE PRINT                         │
│ CUTTER CLEANING                      │
│ PLATEN ROLLER CLEAING                │
│ SET UP                               │
│ HEX DUMP                             │
│ TEST PRINT                           │
│            SELECTION ITEM            │
└─────────────────────────────────────┘
ITEM SELECTION    :FEED switch pushed short.
ITEM DECSION      :FEED switch pushed short.

SPECIAL MODE
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.
The printer prints the following when it enters setup mode:

```
SETTING
┌─────────────────────────────────────┐
│ SAVE&END                             │
│ DEFAULT SET                          │
│ SETUP PRINT                          │
│ SETTING                              │
│            SELECTION ITEM            │
└─────────────────────────────────────┘
ITEM SELECTION    :FEED switch pushed short.
ITEM DECSION      :FEED switch pushed short.

SETUP MODE
```

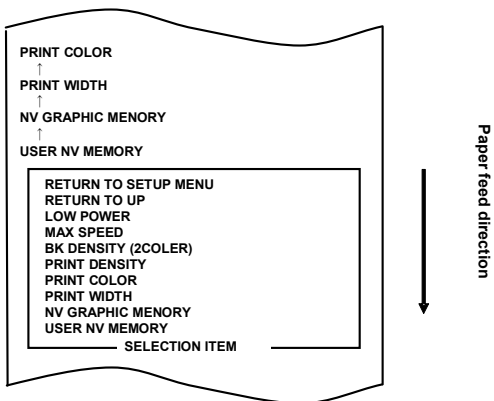Paper feed direction

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4. In setup mode, select "SETTING."
   Press and hold down the FEED switch for one second or longer to accept the selection.
   The printer prints the following when you accept the selection of "SETTING":

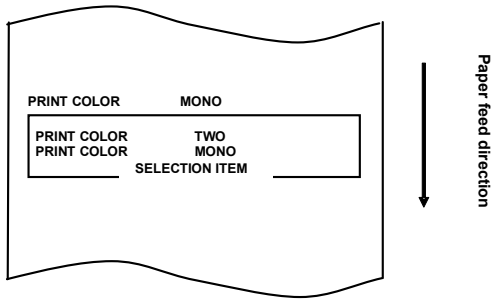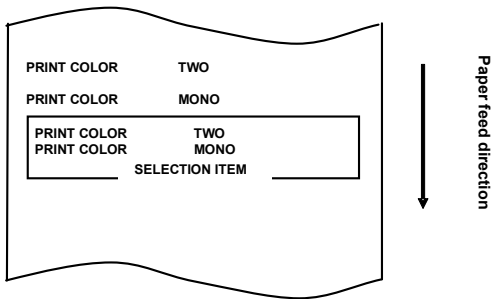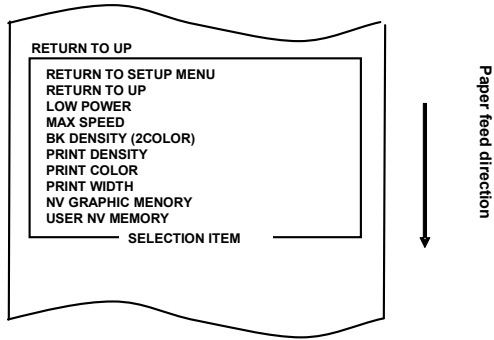MEMORY SWITCH

PRTURN To SETUP MENU
OTHER
SERIAL INTERFACE CONDITION
CUSTOMIZE VALUE
MEMORY SWITCH
            SELECTION ITEM

Paper feed direction

5. Select "CUSTOMIZE VALUE" as your option.
   Press the FEED switch briefly (one second or less) until the item "CUSTOMIZE VALUE" is reached.

CUSTOMIZE VALUE
   ↑
MEMORY SWITCH

PRTURN To SETUP MENU
OTHER
SERIAL INTERFACE CONDITION
CUSTOMIZE VALUE
MEMORY SWITCH
            SELECTION ITEM

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.
The printer prints the following when you accept the selection of "CUSTOMIZE VALUE":

```
USER NV MEMORY
    RETURN TO SETUP MENU
    RETURN TO UP
    LOW POWER
    MAX SPEED
    BK DENSITY (2COLER)
    PRINT DENSITY
    PRINT COLOR
    PRINT WIDTH
    NV GRAPHIC MENORY
    USER NV MEMORY
            SELECTION ITEM
```

Paper feed direction

6. Select "PRINT COLOR" as your option.
   Press the FEED switch briefly (one second or less) three times to move to "PRINT COLOR."

```
PRINT COLOR
    ↑
PRINT WIDTH
    ↑
NV GRAPHIC MENORY
    ↑
USER NV MEMORY
    RETURN TO SETUP MENU
    RETURN TO UP
    LOW POWER
    MAX SPEED
    BK DENSITY (2COLER)
    PRINT DENSITY
    PRINT COLOR
    PRINT WIDTH
    NV GRAPHIC MENORY
    USER NV MEMORY
        SELECTION ITEM
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.
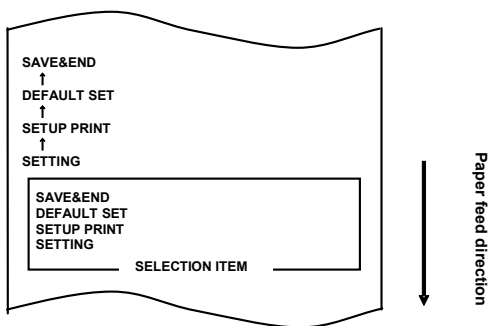The printer prints the following when you accept the selection of "PRINT COLOR":

```
PRINT COLOR          MONO

PRINT COLOR          TWO
PRINT COLOR          MONO
             SELECTION ITEM
```

Paper feed direction

7. Select "TWO" as your option.
   Press the FEED switch briefly (one second or less) until "TWO" is reached.

```
PRINT COLOR          TWO

PRINT COLOR          MONO

PRINT COLOR          TWO
PRINT COLOR          MONO
             SELECTION ITEM
```

Paper feed direction

Then, press and hold down the FEED switch for one second or longer to accept the selection.

The printer prints the following when you accept the selection of "TWO":

```
RETURN TO UP
    ┌─────────────────────────────────┐
    │ RETURN TO SETUP MENU            │
    │ RETURN TO UP                    │
    │ LOW POWER                       │
    │ MAX SPEED                       │
    │ BK DENSITY (2COLOR)             │
    │ PRINT DENSITY                   │
    │ PRINT COLOR                     │
    │ PRINT WIDTH                     │
    │ NV GRAPHIC MEMORY               │
    │ USER NV MEMORY                  │
    │       SELECTION ITEM            │
    └─────────────────────────────────┘
```

Paper feed direction

8. Select "RETURN TO UP" as your option.
    Press and hold down the FEED switch for one second or longer to accept the selection.
    The printer prints the following when you accept the selection of "RETURN TO UP":

```
RETURN TO SETUP MENU
    ┌─────────────────────────────────┐
    │ RETURN TO SETUP MENU            │
    │ OTHER                           │
    │ SERIAL INTERFACE CONDITION      │
    │ CUSTOMIZE VALUE                 │
    │ MEMORY SWITCH                   │
    │       SELECTION ITEM            │
    └─────────────────────────────────┘
```

Paper feed direction

9. Select "RETURN TO SETUP MENU" as your option.
   Press and hold down the FEED switch for one second or longer to accept the selection.
   The printer prints the following when you accept the selection of "RETURN TO SETUP MENU":

```
SETTING

  SAVE&END
  DEFAULT SET
  SETUP PRINT
  SETTING
              SELECTION ITEM
```

Paper feed direction
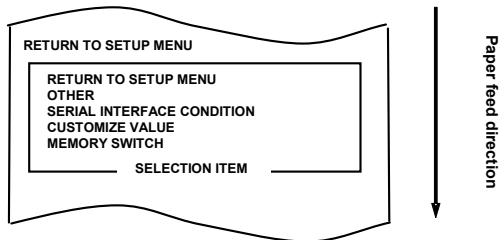
10. Select "SAVE&END" as your option.
    Press the FEED switch briefly (one second or less) until the item "SAVE&END" is reached.
    Then, press and hold down the FEED switch for one second or longer to accept the selection.
    The printer cuts the paper and exits from setup mode when you accept the selection of "SAVE&END."

```
SAVE&END
   ↑
DEFAULT SET
   ↑
SETUP PRINT
   ↑
SETTING

  SAVE&END
  DEFAULT SET
  SETUP PRINT
  SETTING
              SELECTION ITEM
```

Paper feed direction

Note: If you turn off the printer power switch without first selecting "SAVE&END," your setting will be lost.

- Verifying your setting

  To verify your setting, execute a test print, referring to Section C-1.
  The test printing prints a list of printer settings. Check the list, and verify your setting.

C-4.Setup Items

Setup group items

No.	Setup group item	Explanation
1	MEMORY SWITCH	Enters the mode for MEMORY SWITCH-related settings.
2	CUSTOMIZE VALUE	Enters the mode for CUSTOMIZE VALUE-related settings.
3	SERIAL INTERFACE CONDITION	Enters the mode for SERIAL INTERFACE CONDITION-related settings.
4	OTHER	Enters the mode for other types of settings.
5	RETURN TO SETUP MENU	Returns to the setup mode menu.

Setup items and their details

(1) MEMORY SWITCH setup items

No.	Item	Explanation	Detail Setup Item
1	POWER ON STATUS	- Specifies reporting the power-on state.	ENABLE DISABLE
2	RECEIVE BUFFER	- Specifies the capacity of the receive buffer.	45BYTE 4KBYTE
3	BUSY CONDITION	- Status designation when printer turn is busy. BUFFERFULL: Turns busy when receive buffer is full. OFFLINE/BUFFERFULL: Turns busy when receive buffer is full or off-line.	BUFFERFULL OFFLINE/BFUU ERFULL
4	RECEIVE ERROR	- Specifies how to handle receive errors - This item is valid only for the serial interface.	IGNORE ?PRINT
5	AUTO LF	- Specifies automatic line feed using the CR code. - This item is valid only for the Parallel interface.	ENABLE DISABLE
6	DSR(#6) RESET	- Specifies the reset operation using the DSR (#6) signal. - This item is valid only for the serial interface.	ENABLE DISABLE
7	INIT(#25) RESET	- Specifies the reset operation using the INIT (#25) signal. - This item is valid only for the serial interface.	ENABLE DISABLE
8	INIT(#31) RESET	- Specifies reset using the INIT (#31) signal. - This item is valid only for the parallel interface.	ENABLE DISABLE
9	COVER OPEN ERROR	- Specifies how to handle a cover open error during printing. AUTO RECOVERY: When a cover is closed, Printer is recovery automaticity. RECOVERY BY CMND: When a cover is closed, Printer is recovery by command.	AUTO RECOVERY RECOVERY BY CMND
10	BM CHECK AT POW-ON	- Specifies the adjustment of the leading edge of the paper at power-on. - This item is valid only when the black mark detection unit is installed and "BM sensor installed" is set.	ENABLE DISABLE
11	RETURN TO UP	- Returns the menu to the selection mode for setup group items.	-
12	RETURN TO SETUP MENU	- Returns the menu to the setup mode menu.	-

(2) CUSTOMIZE VALUE setup items

No.	Item	Explanation	Detail setup item
1	USER NV MEMORY	- Capacity of the user NV memory.	1KBYTE 64KBYTE, 128KBYTE 192KBYTE
2	NV GRAPHIC MEMORY	- Capacity of the NV graphic memory.	None 64KBYTE 128KBYTE 192KBYTE 256KBYTE 320KBYTE 384KBYTE
3	PAPER WIDTH	- Paper width and number of columns used.	83mm/53 columns 80mm/48 columns 80mm/42 columns 60mm/36 columns 58mm/35 columns 58mm/32 columns
4	PRINT COLOR	- Print colors.	MONO TWO
5	PRINT DENSITY	- Print density. * 70% is the lowest density. 130% is the highest density.	70% 75% 80% 85% 90% 95% 100% 105% 110% 115% 120% 125% 130%
6	BK DENSITY (2COLOR)	- Black density when "TWO" is set for PRINT COLOR. * 70% is the lowest density. 130% is the highest density.	70% 75% 80% 85% 90% 95% 100% 105% 110% 115% 120% 125% 130%
7	MAX SPEED	- Maximum print speed. * 1 (100 mm/s) is the lowest print speed and 9 (260 mm/s) is the highest print speed.	1 2 3 4 5 6 7 8 9
8	LOW POWER	- Setting for reducing power consumption. MODE1:Reduction of about 10% MODE2:Reduction of about 30%	NORMAL MODE1 MODE2
9	BUZZER INTERVAL	-Set a buzzer tone in the print Pushed down FEED switch in a cover opening state and receive a buzzer command, (ESC p 03h t1 t2 t3)the buzzer in the print sounds	PATTERN 1 PATTERN 2 PATTERN 3 PATTERN 4 PATTERN 5
10	BUZZER REPETITION	-A buzzer sets the number of times to sound in print. Pushed down FEED switch in a cover opening state and receive a buzzer command, (ESC p 03h t1 t2 t3)the buzzer in the print sounds	ZERO ONE TWO THREE FOUR FIVE

No.	Item	Explanation	Detail setup item
11	RETURN TO UP	- Returns to the selection mode for the setup group items.	
12	RETURN TO SETUP MENU	- Returns to the setup menu.	

(3) SERIAL INTERFACE CONDITION setup items

No.	Item	Explanation	Detail setup item
1	BAUDRATE	- Baud rate.	2400BPS 4800BPS 9600BPS 19200BPS 38400BPS 57600BPS 115200BPS
2	FORMAT	- Data format.	7EVEN1 7ODD1 8NONE1 8EVEN1 8ODD1
3	PROTOCOL	- Buffer control protocol.	XON/XOFF DSR/DTR
4	RETURN TO UP	- Returns to the selection mode for the setup group items.	-
5	RETURN TO SETUP MENU	- Returns to the setup mode.	-

(4) OTHER setup items

No.	Item	Explanation	Detail setup item
1	ACK PULSE WIDTH	- Specifies the ACK pulse width.	1μs 8μs

2	USB	- Specifies the use of the USB connection.
		  V-COM : Virtual COM class.
		  PRINTER: Printer class.
			V-COM
			PRINTER

3	SERIAL NUMBER	- Specifies the type of Serial Number
		  notification in a USB connection.
		  Generally, specify "DISABLE."
			ENABLE
			DISABLE

4	ERROR	- Specifies the mode for the power-on time and
		  the error recovery time.
		  AUTO RECOVERY:
		    Windows drivers are used.
		  RECOVERY BY CMND:
		    OPOS drivers are used.
			AUTO
			   RECOVERY
			
			RECOVERY BY
			   CMND

5	PROCESS ID	- Specifies a process ID.
		  NORMAL:
		    Responds with the process ID at the end of
		    printing.
		  HI-SPEED:
		    Responds with the process ID at the end of
		    data reception.
			NORMAL
			HI-SPEED

6	PNE DETECT	- Specifies whether to report the Paper-near-end condition.	ENABLE DISABLE

7	FONT B	- Specifies Font B.
		  MODE 1: Font in the standard specifications
		  MODE 2: Other font
			MODE 1
			MODE 2

8	BATCH (COM IF)	- ENABLE:
		    Received data is printed in a batch.
		- DISABLE:
		    Received data is printed serially.
		
		 * This item is valid only with the serial
		 interface.
			ENABLE
			DISABLE

9	BATCH
	   (OTHER IF)
		- ENABLE:
		    Received data is printed in a batch.
		- DISABLE:
		    Received data is printed serially.
		
		 * This item is valid only with the USB, parallel
		 or LAN interface.
			ENABLE
			DISABLE

10	CUTTER MODE	- Specifies the mode for cutter operation. * This item is valid only for models supporting both full cutting and partial cutting.	PARTIAL FULL

No.	Item	Explanation	Detail setup item
11	BM SENSOR	- Specifies whether the BM sensor has been installed. Set "INSTALLED" only when the BM sensor has been installed. (This item is valid only for a device specified to have the BM sensor installed.)	INSTALLED UNINSTALLED
12	BM CHEK WITH CUT	- Specifies the cut operation initiated by the BM sensor. This setting is effective only when "INSTALLED" has been set for BM SENSOR. (This item is valid only for a device specified to have the BM sensor installed.)	ENABLE DISABLE
13	BUZZER	- Specifies whether to sound the buzzer at error occurrence. The buzzer can be sounded by a command even if "DISABLE" is specified. (This item is valid only for a device specified to have a buzzer installed.)	DISABLE ENABLE
14	RETURN TO UP	- Returns to the selection mode for the setup group items.	-
15	RETURN TO SETUP MENU	- Returns to the setup mode menu.	-

C-5.Sample Print

With paper inserted in the printer, turn off the printer power switch once. If you turn on the switch again while holding down the FEED switch on the control panel, the data shown in Section C-1 will be printed. If you turn on the switch again and press the FEED switch briefly, the data shown below will be printed.

```
SAMPLE PRINT
       ↑
CUTTER CLEANING
       ↑
PLATEN ROLLER CLEANING
       ↑
SET UP
       ↑
HEX DUMP
       ↑
TEST PRINT
    ┌──────────────────────────┐
    │ END                      │
    │ SAMPLE PRINT             │
    │ CUTTER CLEANING          │
    │ PLATEN ROLLER CLEAING    │
    │ SET UP                   │
    │ HEX DUMP                 │
    │ TEST PRINT               │
    └────────────── SELECTION ITEM
    ITEM SELECTION   :FEED switch pushed short.
    ITEM DECSION     :FEED switch pushed short.

SPECIAL MODE
```

Paper feed direction
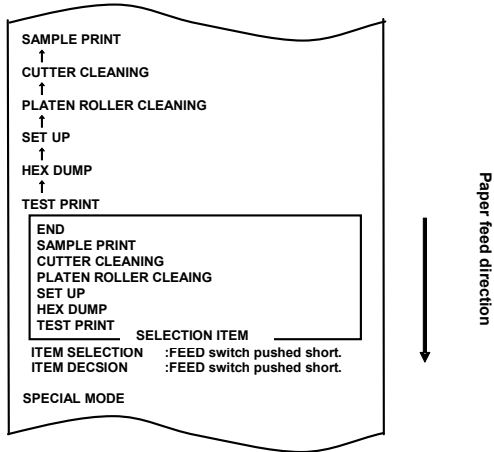
When "SAMPLE PRINT" is printed, press and hold down the FEED switch for one second or longer to place the printer in sample print mode.

The printed pattern is as follows.
   a) Receipt pattern
   b) Coupon pattern
   c) Barcode pattern

When the FEED switch is pressed short, the following pattern is printed.
   "Receipt"→ "Coupon"→ "Barcode"→ "Receipt"→ ・・・・・・
When the FEED switch is pressed long (about one second), the same pattern is printed again.

The printed pattern is changed by setup "Paper Width" setting.
      83mm/53columns -> Pattern 80mm
      80mm/48columns -> Pattern 80mm
      80mm/42columns -> Pattern 80mm
      60mm/36columns -> Pattern 58mm
      58mm/35columns -> Pattern 58mm
      58mm/32columns -> Pattern 58mm

The sample print mode is ended by the printer power supply determination.

Printed result of sample printings

"Receipt" pattern(80mm)

OKI

OKI Supermarket
Tel : 987-654-321

Banana	@2.50	1	$2.50
Beer 350ml	@2.40	6	$14.40
Cake	@2.50	3	$7.50
Slipper	@3.80	5	$19.00
Fairy lamp	@.50	2	$1.00
Candy	@.11	10	$1.10
Strawberry	@2.45	4	$9.80
Pie	@35.00	1	$35.00
Pizza	@20.00	1	$20.00
Socks	@3.30	6	$19.80
Aspirin	@12.80	1	$12.80
Wine	@99.80	1	$99.80

Sub total	$242.70
Tax(5%)	$12.10
Total	**$254.80**

Receipt No. : 9202
Casher : XXXX

XX-XX-20XX

a 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 a

"Coupon" pattern(80mm)

OKI

Coupon 20$ OFF !!

Save 20 dollars on Grape Squash of OKI company.

Issue date : XX.XX.20XX

OKI will give a REAL LIFE to you

a 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 a

NO.1234567890

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"Barcode" pattern(80mm)

"Receipt" pattern (58mm)

OKI

OKI Supermarket
Tel : 987-654-321

Banana	@2.50	1	$2.50
Beer 350ml	@2.40	6	$14.40
Cake	@2.50	3	$7.50
Slipper	@3.80	5	$19.00
Fairy lamp	@.50	2	$1.00
Candy	@.11	10	$1.10
Strawberry	@2.45	4	$9.80
Pie	@35.00	1	$35.00
Pizza	@20.00	1	$20.00
Socks	@3.30	6	$19.80
Aspirin	@12.80	1	$12.80
Wine	@99.80	1	$99.80

Sub total			$242.70
Tax(5%)			$12.10
Total			**$254.80**

Receipt No. : 9202
Casher : XXXX

XX-XX-20XX

a 0 1 2 3 4 5 6 7 8 9 a

"Coupon" pattern (58mm)

"Barcode" pattern (58mm)

***** BarCode *****

UPC-A
4 9 3 3 5 2 4 1 0 0 0 7

UPC-E
9 3 3 5 2 1

EAN8(JAN8)
4 9 3 3 5 2 4 8
4 9 3 3 5 2 4 8

EAN13(JAN13)

Codabar(NW-7)
a 1 2 3 4 5 a

ITF
1 2 3 4 5 6 7 8 9 0

Code39
* A B 1 2 3 4 5 *
* A B 1 2 3 4 5 *

Code93

Code128
1 2 3 4 5 6 7 8 9 0
1 2 3 4 5 6 7 8 9 0

***** Two-dimensional Code *****

QRcode

PDF417

DataMatrix

94

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**0,14€/Minute aus dem dt. Festnetz
der T-Com (Stand 11.2008)

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