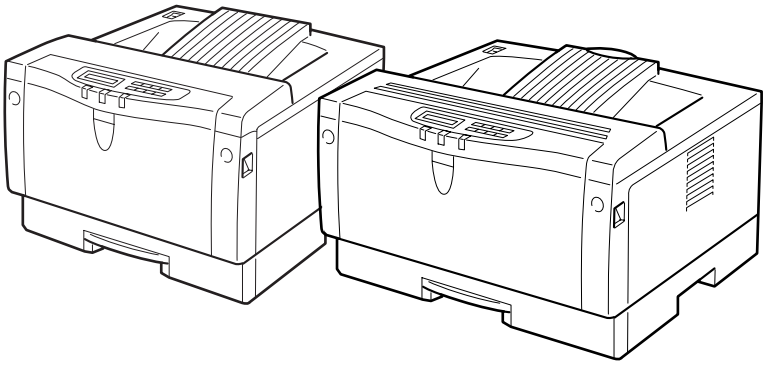
RICOH

RICOH LASER
AP1400/AP2000

OPERATING INSTRUCTIONS



Read this manual carefully before you use this product and keep it handy for future reference.
For safety, please follow the instructions in this manual.

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RICOH CORPORATION

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RICOH LASER OPERATING INSTRUCTIONS

Model number: G031–17, G032–17
Printed in Japan
UE (USA) G031-8607A

Introduction

This manual contains detailed instructions on the operation and maintenance of this machine. To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.

Please read the Safety Information before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Notes:

The model names of the machines do not appear in the following pages. Check the model name of your machine before reading this manual. (For details, see P.2 *"Type 1 Printer"*, P.5 *"Type 2 Printer"*.)

Descriptions in this manual	Model name
Type 1 Printer	**RICOH LASER AP2000**
Type 2 Printer	**RICOH LASER AP1400**

Descriptions without the note for identifying the type of the printer are common for both models. Certain types might not be available in some countries. For details, please contact your local dealer.

Power Source

RICOH LASER AP2000: 120 V, 60 Hz, 8.0 A or more

RICOH LASER AP1400: 120 V, 60 Hz, 6.0 A or more

Please be sure to connect the power cord to a power source as above.

Operator Safety:

This machine is considered a CDRH class I laser device, safe for office/ EDP use. The machine contains 5-milliwat, 760 - 800 nanometer wavelength, GaAIAs laser diode. Direct (or indirect reflected) eye contact with the laser beam might cause serious eye damage. Safety precautions and interlock mechanisms have been designed to prevent any possible laser beam exposure to the operator.

Laser Safety:

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical unit in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement or the optical subsystem is required.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Caution:

Use of controls or adjustment or performance of procedures other than those specified in this manual might result in hazardous radiation exposure.

Do not attempt any maintenance or troubleshooting other than that mentioned in this manual. This machine contains a laser beam generator and direct exposure to laser beams can cause permanent eye damage.

Two kinds of size notation are employed in this manual. With this machine refer to the Inch version.

Ricoh shall not be responsible for any damage or expense that might result from the use of parts other than genuine Ricoh parts in your Ricoh office product.

For good copy quality, Ricoh recommends that you use genuine Ricoh toner.

Note to users in the United States of America

Notice:

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

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

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

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

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

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution (in case of 100BaseTX environment):

Properly shielded and grounded cables (STP) and connectors must be used for connections to host computer (and/or peripheral) in order to meet FCC emission limits.

Declaration of Conformity

Product Name: Printer

Model Number: G031–17, G032–17

Responsible party: Ricoh Corporation

Address: 5 Dedrick Place, West Caldwell, NJ 07006

Telephone number: 973-882-2000

This device complies with part 15 of FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received,

including interference that may cause undesired operation.

Properly shielded cables must be used for connections to host computer (and/or peripheral) in order to meet FCC emission limits.

Network interface cable with ferrite core must be used for RF interference suppression.

Note to users in Canada

Note:

This Class B digital apparatus complies with Canadian ICES-003.

Remarque concernant les utilisateurs au Canada

Avertissement:

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

In accordance with IEC Standard 417, this machine uses the following symbols for the main power switch:

| means POWER ON.

○ means POWER OFF.

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Introduction

This manual contains detailed instructions on the operation and maintenance of this machine. To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.

Please read the Safety Information before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Notes:

The model names of the machines do not appear in the following pages. Check the model name of your machine before reading this manual. (For details, see P.2 *"Type 1 Printer"*, P.5 *"Type 2 Printer"*.)

Descriptions in this manual	Model name
Type 1 Printer	**SAVIN SLP20**
Type 2 Printer	**SAVIN SLP14**

Descriptions without the note for identifying the type of the printer are common for both models. Certain types might not be available in some countries. For details, please contact your local dealer.

Power Source

SAVIN SLP20: 120 V, 60 Hz, 8.0 A or more

SAVIN SLP14: 120 V, 60 Hz, 6.0 A or more

Please be sure to connect the power cord to a power source as above.

Operator Safety:

This machine is considered a CDRH class I laser device, safe for office/ EDP use. The machine contains 5-milliwat, 760 - 800 nanometer wavelength, GaAIAs laser diode. Direct (or indirect reflected) eye contact with the laser beam might cause serious eye damage. Safety precautions and interlock mechanisms have been designed to prevent any possible laser beam exposure to the operator.

Laser Safety:

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical unit in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement or the optical subsystem is required.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Caution:

Use of controls or adjustment or performance of procedures other than those specified in this manual might result in hazardous radiation exposure.

Do not attempt any maintenance or troubleshooting other than that mentioned in this manual. This machine contains a laser beam generator and direct exposure to laser beams can cause permanent eye damage.

Two kinds of size notation are employed in this manual. With this machine refer to the Inch version.

Savin shall not be responsible for any damage or expense that might result from the use of parts other than genuine Savin parts in your Savin office product.

For good copy quality, Savin recommends that you use genuine Savin toner.

Note to users in the United States of America

Notice:

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

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

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

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

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

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution (in case of 100BaseTX environment):

Properly shielded and grounded cables (STP) and connectors must be used for connections to host computer (and/or peripheral) in order to meet FCC emission limits.

Declaration of Conformity

Product Name: Printer

Model Number: G031–17, G032–17

Responsible party: Ricoh Corporation

Address: 5 Dedrick Place, West Caldwell, NJ 07006

Telephone number: 973-882-2000

This device complies with part 15 of FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received,

including interference that may cause undesired operation.

Properly shielded cables must be used for connections to host computer (and/or peripheral) in order to meet FCC emission limits.

Network interface cable with ferrite core must be used for RF interference suppression.

Note to users in Canada

Note:

This Class B digital apparatus complies with Canadian ICES-003.

Remarque concernant les utilisateurs au Canada

Avertissement:

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

In accordance with IEC Standard 417, this machine uses the following symbols for the main power switch:

| means POWER ON.

○ means POWER OFF.

Introduction

This manual contains detailed instructions on the operation and maintenance of this machine. To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.

Please read the Safety Information before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Notes:

The model names of the machines do not appear in the following pages. Check the model name of your machine before reading this manual. (For details, see P.2 *"Type 1 Printer"*, P.5 *"Type 2 Printer"*.)

Descriptions in this manual	Model name
Type 1 Printer	**Gestetner P7020**
Type 2 Printer	**Gestetner P7014**

Descriptions without the note for identifying the type of the printer are common for both models. Certain types might not be available in some countries. For details, please contact your local dealer.

Power Source

Gestetner P7020: 120 V, 60 Hz, 8.0 A or more

Gestetner P7014: 120 V, 60 Hz, 6.0 A or more

Please be sure to connect the power cord to a power source as above.

Operator Safety:

This machine is considered a CDRH class I laser device, safe for office/ EDP use. The machine contains 5-milliwat, 760 - 800 nanometer wavelength, GaAIAs laser diode. Direct (or indirect reflected) eye contact with the laser beam might cause serious eye damage. Safety precautions and interlock mechanisms have been designed to prevent any possible laser beam exposure to the operator.

Laser Safety:

The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical unit in the field. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment. The laser subsystem is replaceable in the field by a qualified Customer Engineer. The laser chassis is not repairable in the field. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement or the optical subsystem is required.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Caution:

Use of controls or adjustment or performance of procedures other than those specified in this manual might result in hazardous radiation exposure.

Do not attempt any maintenance or troubleshooting other than that mentioned in this manual. This machine contains a laser beam generator and direct exposure to laser beams can cause permanent eye damage.

Two kinds of size notation are employed in this manual. With this machine refer to the Inch version.

Gestetner shall not be responsible for any damage or expense that might result from the use of parts other than genuine Gestetner parts in your Gestetner office product.

For good copy quality, Gestetner recommends that you use genuine Gestetner toner.

Note to users in the United States of America

Notice:

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

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

Reorient or relocate the receiving antenna.

Increase the separation between the equipment and receiver.

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

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

Warning

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Caution (in case of 100BaseTX environment):

Properly shielded and grounded cables (STP) and connectors must be used for connections to host computer (and/or peripheral) in order to meet FCC emission limits.

Declaration of Conformity

Product Name: Printer

Model Number: G031–17, G032–17

Responsible party: Ricoh Corporation

Address: 5 Dedrick Place, West Caldwell, NJ 07006

Telephone number: 973-882-2000

This device complies with part 15 of FCC Rules.

Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received,

including interference that may cause undesired operation.

Properly shielded cables must be used for connections to host computer (and/or peripheral) in order to meet FCC emission limits.

Network interface cable with ferrite core must be used for RF interference suppression.

Note to users in Canada

Note:

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Avertissement:

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In accordance with IEC Standard 417, this machine uses the following symbols for the main power switch:

| means POWER ON.

○ means POWER OFF.

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IPS-PRINT™ Printer Language Emulation© Copyright 1988-1997, XIONICS DOCUMENT TECHNOLOGIES, INC., All Rights Reserved

Other product names used herein are for identification purposes only and might be trademarks of their respective companies. We disclaim any and all rights in those marks.

Notes:

Some illustrations might be slightly different from your machine.

Certain options might not be available in some countries. For details, please contact your local dealer.

Note

The proper names of the Windows operating systems are as follows:

- Microsoft® Windows® 95 operating system
- Microsoft® Windows® 98 operating system
- Microsoft® Windows® for Workgroups operating system Version 3.11
- Microsoft® Windows NT® Server network operating system Version 4.0
- Microsoft® Windows NT® Workstation operating system Version 4.0

Safety Information

When using your equipment, the following safety precautions should always be followed.

Safety During Operation

In this manual, the following important symbols are used:

⚠ ***WARNING:***
Indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

⚠ ***CAUTION:***
Indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.

⚠ ***WARNING:***

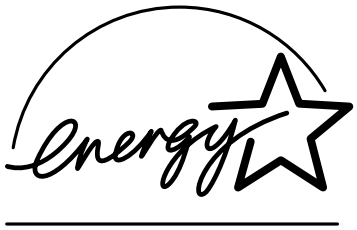
- ***Connect the power cord directly into a wall outlet and never use an extension cord.***
- ***Disconnect the power plug (by pulling the plug, not the cable) if the power cable or plug becomes frayed or otherwise damaged.***
- ***To avoid hazardous electric shock or laser radiation exposure, do not remove any covers or screws other than those specified in this manual.***
- ***Turn off the power and disconnect the power plug (by pulling the plug, not the cable) if any of the following conditions exists:***
  - ***You spill something into the equipment.***
  - ***You suspect that your equipment needs service or repair.***
  - ***Your equipment's cover has been damaged.***
- ***Do not incinerate spilled toner or used toner. Toner dust might ignite when exposed to an open flame.***
- ***Disposal can take place at our authorized dealer or at appropriate collection sites.***
- ***If you dispose of the used toner containers yourself, dispose of them according to your local regulations.***

⚠ *CAUTION:*

- *Protect the equipment from dampness or wet weather, such as rain, snow, and so on.*
- *Unplug the power cord from the wall outlet before you move the equipment. While moving the equipment, you should take care that the power cord will not be damaged under the equipment.*
- *When you disconnect the power plug from the wall outlet, always pull the plug (not the cable).*
- *Do not allow paper clips, staples, or other small metallic objects to fall inside the equipment.*
- *Do not eat or swallow toner.*
- *Keep toner (used or unused) and toner cartridge out of reach of children.*
- *For environmental reasons, do not dispose of the equipment or expended supply's wastes at a household waste a collection point. Disposal can take place at our authorized dealer or at an appropriate collection site.*
- *Our products are engineered to meet the highest standards of quality and functionality. When purchasing expendable supplies, we recommend using only those specified by an authorized dealer.*
- *The inside of the machine could be very hot. Do not touch the parts with a label indicating the “hot surface”. Otherwise, it could cause a personal burn.*

ENERGY STAR Program

ENERGY STAR®



As an ENERGY STAR Partner, we have determined that this machine model meets the ENERGY STAR Guidelines for energy efficiency.

The ENERGY STAR Guidelines intend to establish an international energy-saving system for developing and introducing energy-efficient office equipment to deal with environmental issues, such as global warming.

When a product meets the ENERGY STAR Guidelines for energy efficiency, the Partner shall place the ENERGY STAR logo onto the machine model.

This product was designed to reduce the environmental impact associated with office equipment by means of energy-saving features, such as Low-power mode.

The ENERGY STAR Guidelines intend to establish an international energy-saving system for developing and introducing energy-efficient office equipment to deal with environmental issues, such as global warming.

This product was designed to reduce the environmental impact associated with office equipment by means of energy-saving features, such as Low-power mode.

❖ Low-power mode (Energy Saver mode)

This printer automatically lowers its power consumption 30 minutes after the last operation has been completed. To exit Low-power (Energy Saver) mode, press any key on the operation panel. To change the setting of the Energy Saver mode, see P.125 *"Making Printer Settings with the Operation Panel"*.

❖ Specifications

		Type 1 Printer *1	Type 2 Printer *1
Lower-power mode (Energy Saver mode)	Power Consumption	30 W or less	
	Default Time	30 minutes	
	Recovery Time	39 seconds or less	39 seconds or less

*1 Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Recycled Paper

Please contact your sales or service representative for recommended recycled paper types that may be used in this machine.

Manuals for Your Printer

Manuals for Your Printer

There are two manuals that describe the procedures separately for the installation of your printer and for the operation and maintenance of your printer and its optional equipment.

To enhance safe and efficient operation of your printer, all users should read and follow the instructions contained in the following manuals.

❖ **Quick Installation Guide**
Describes the procedures for installing your printer.

❖ **Operating Instructions**
Describes the procedures and necessary information on setting up and using your printer and its optional equipment. (This Manual)

How to Read this Manual

Symbols

In this manual, the following symbols are used:

⚠ ***WARNING:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

⚠ ***CAUTION:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.

* The statements above are notes for your safety.

Important
If this instruction is not followed, paper might be misfed, originals might be damaged, or data might be lost. Be sure to read this.

Preparation
This symbol indicates the prior knowledge or preparations required before operating.

Note
This symbol indicates precautions for operation, or actions to take after misoperation.

Limitation
This symbol indicates numerical limits, functions that cannot be used together, or conditions in which a particular function cannot be used.

Reference
This symbol indicates a reference.

[ ]
Keys that appear on the machine's panel display.

Keys and buttons that appear on the computer's display.

【】
Keys built into the machine's operation panel.

Keys on the computer's keyboard.

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1. Getting Acquainted

Features of Your Printer

Your printer is designed especially for office work groups, both for shared usage within network environment, and for one-to-one usage by being connected directly to your computer.

❖ Time Saving

Superior features save time you spend on your print tasks.

- Fast Print Speed [*1] : 20 ppm (Type 1 printer) and 14 ppm (Type 2 printer)
  [*1] A4, $8^1/_2$" × 11", maximum printing speed from a standard paper tray.
- All Front Operation: From the front side, you can replace the toner cartridge, check indicators, and clear a paper misfeed if it occurs.

❖ Compact Body

Its compact body requires minimum space to place it on your desk or desk side.

❖ Network Connectivity

Your printer is network ready with the optional Network Interface Board Type 2000.

❖ Major Specifications

	Type 1 Printer [*1]	**Type 2 Printer** [*1]
Printing Speed	20 pages per minute [*2]	14 pages per minute [*3]
Maximum Print Quality	True 1200 × 1200dpi resolutions (PCL 6, PS)	
Emulations	PCL 5e, PCL 6, PostScript® Level 2	
Maximum Input Paper Size	Paper Tray and Bypass Tray: A3, 11" × 17"	Paper Tray: A4 ▯, $8^1/_2$" × 11" (Letter) ▯ Bypass Tray: A4 ▯, $8^1/_2$" × 14" (Legal) ▯
Standard Memory Size	8MB	4MB
Maximum Memory Size with Optional Memory	40MB	36MB

[*1] Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.
[*2] A4▭, $8^1/_2$" × 11"▭
[*3] A4 ▯, $8^1/_2$" × 11" ▯

Guide to the Printer

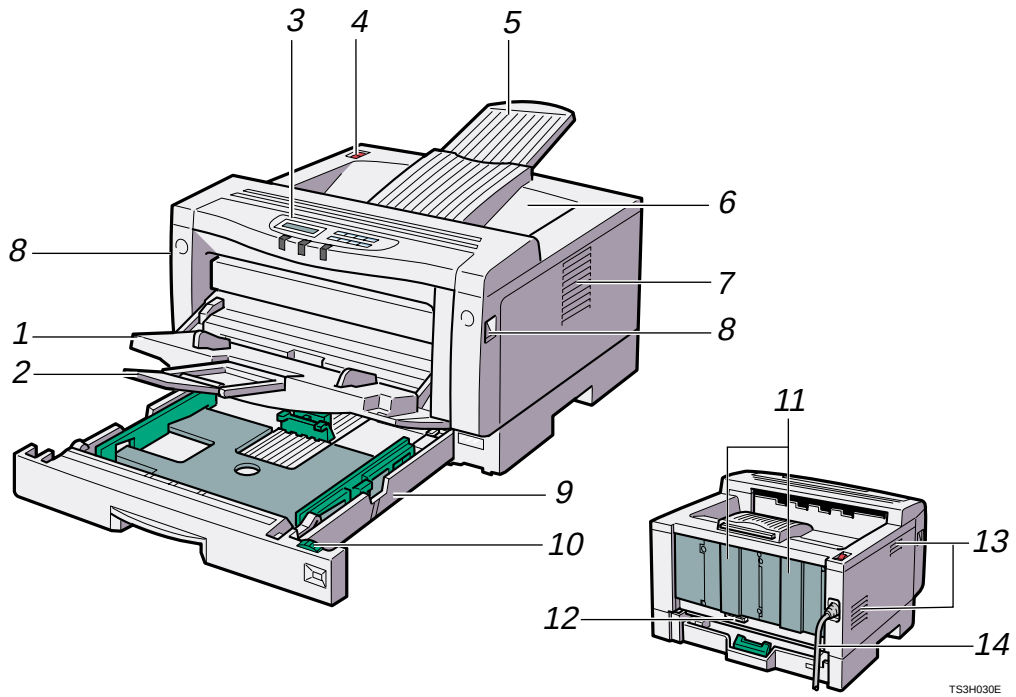
1

Type 1 Printer

Type 1 Printer: Exterior

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.



1. Bypass tray

Use to print onto thick paper, OHP transparencies, adhesive labels, custom size paper, and envelopes as well as plain paper. When printing on custom paper size, printer driver's settings are required.

Up to 100 sheets of plain paper (80 g/m^2, 20 lb) can be loaded.

⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

⇒ P.81 *"Type 1 Printer: Loading Paper in the Bypass Tray"*

2. Bypass Tray Extender

Pull out this extender to load paper into the bypass tray when its length is longer than A4▭ or 8$^1/_2$" x 11"▭.

3. Operation Panel

Contains keys for printer operation and a panel display that shows the printer status.

4. Power Switch

Use this switch to turn the printer power on and off.

5. Output Tray Extender

Pull out this extender when printing on long paper.

6. Output Tray

Printed output is stacked here with the print side face down.

7. Ventilator

These holes help to keep components inside the printer from overheating.

Important

❒ Do not leave the ventilator obstructed or blocked. Doing so creates the danger of malfunction due to overheating.

8. Front Cover Release Buttons

Use these buttons to open the front cover.

9. Paper Tray

Loads up to 250 sheets of plain paper (80 g/m^2, 20 lb) into this tray for printing.

⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

10. Paper Size Dial

Adjust this dial to match the size and feed direction of the paper loaded in the paper tray.

11. Back Plates

Remove to install some options.

12. Parallel Interface Connector

Plug into the interface cable that connects the printer to your computer.

13. Ventilators

These holes help to keep components inside the printer from overheating.

Important

❒ Do not leave the ventilators obstructed or blocked. Doing so creates the danger of malfunction due to overheating.

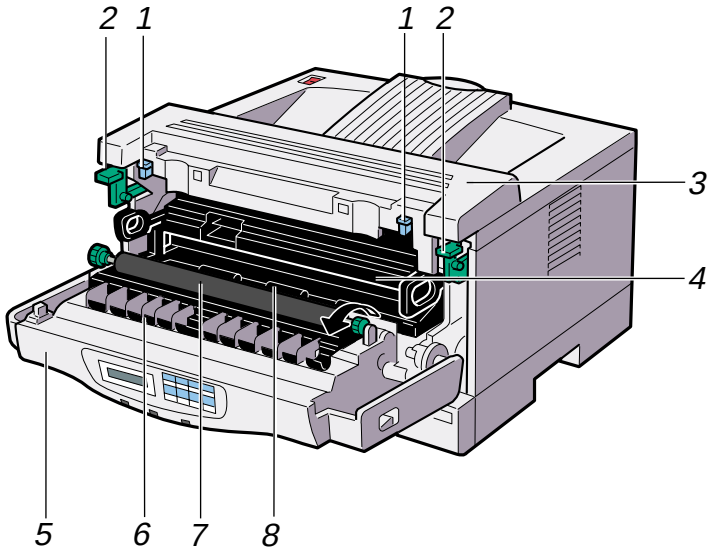
14. Power Cord

Plug this cord into a wall outlet.

Type 1 Printer: Interior

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.



1. Pressure Release Levers (blue)

Push down these levers when removing misfed paper.

2. Fusing Unit Lock Levers (brown)

Push down these levers when replacing the fusing unit.

3. Fusing Unit

Fuses the image onto the paper.

When "Replace Maintenance Kit" appears on the panel display, replace this unit.

4. Toner Cartridge

Includes toner and a photoconductor unit.

5. Front Cover

Open this cover when accessing the inside of the printer.

6. Transfer Roller Cover

Open this cover when replacing the transfer roller.

7. Transfer Roller

When "Replace Maintenance Kit" appears on the panel display, replace this roller.

8. Registration Roller

Feeds the paper. If it becomes dirty, clean it.

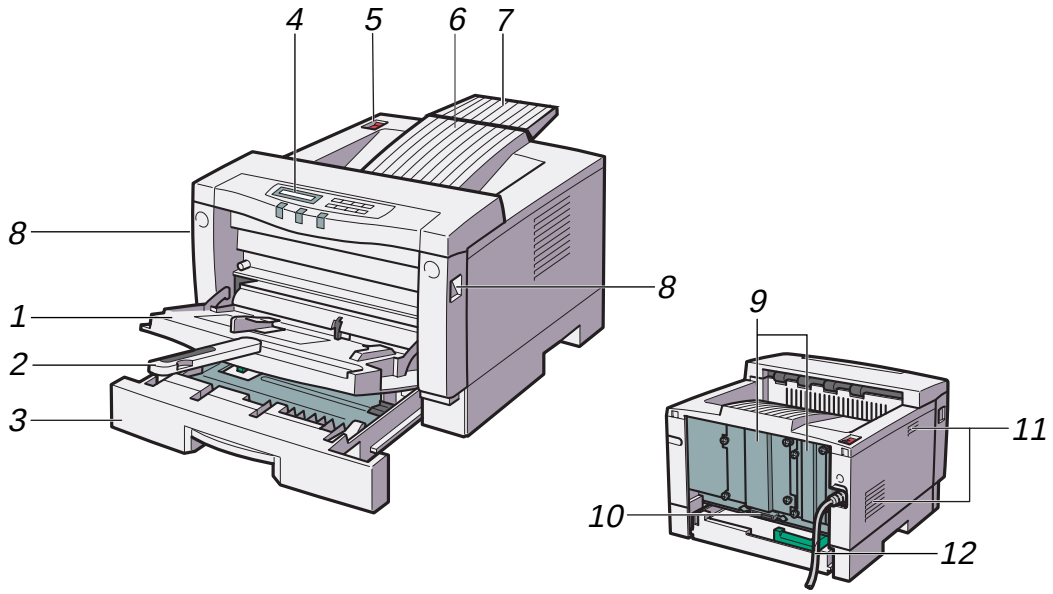
⇒ P.122 *"Cleaning the Registration Roller (Type 1 Printer only)"*

Type 2 Printer

Type 2 Printer: Exterior

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.



TS4H031E

1. Bypass Tray

Use to print onto thick paper, OHP transparencies, adhesive labels, custom size paper, and envelopes as well as plain paper. When printing on custom paper size, printer driver's settings are required.

Up to 100 sheets of plain paper (80 g/m^2, 20 lb) can be loaded.

⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

⇒ P.89 *"Type 2 Printer: Loading Paper in the Bypass Tray"*

2. Bypass Tray Extender

Pull out this extender to load paper into the bypass tray when its length is longer than B5 ▯ or $5^1/_2$" x $^1/_2$" ▯.

3. Paper Tray

Loads up to 250 sheets of plain paper (80 g/m^2, 20 lb) into this tray for printing.

⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

4. Operation Panel

Contains keys for printer operation and a panel display that shows the printer status.

5. Power Switch
Use this switch to turn the printer power on and off.

6. Output Tray
Printed output is stacked here with the print side face down.

7. Output Tray Extender
Printed output is stacked here with the print side face down.

8. Front Cover Release Buttons
Use these buttons to open the front cover.

9. Back Plates
Remove to install some options.

10. Parallel Interface Connector
Plug into the interface cable that connects the printer to your computer.

11. Ventilators
These holes help to keep components inside the printer from overheating.

Important

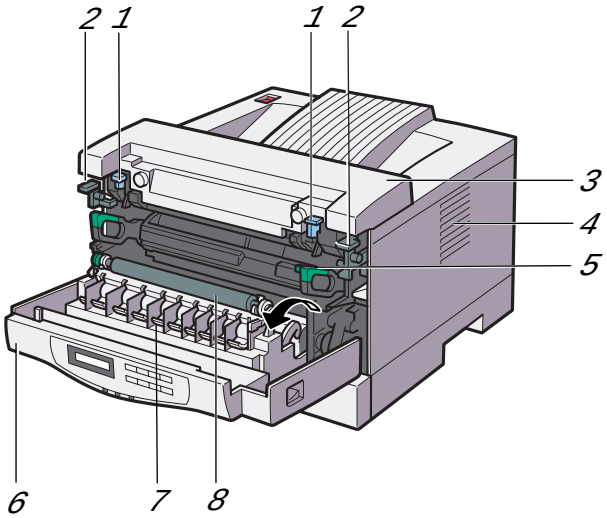
❒ Do not leave the ventilators obstructed or blocked. Doing so creates the danger of malfunction due to overheating.

12. Power Cord
Plug this cord into a wall outlet.

Type 2 Printer: Interior

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.



TS4H050J

1. Pressure Release Levers (blue)
Push down these levers when removing misfed paper.

2. Fusing Unit Lock Levers (brown)
Push down these levers when replacing the fusing unit.

3. Fusing Unit

Fuses the image onto the paper.

When "Replace Maintenance Kit" appears on the panel display, replace this unit.

4. Ventilator

This hole helps to keep components inside the printer from overheating.

Important

❒ Do not leave the ventilator obstructed or blocked. Doing so creates the danger of malfunction due to overheating of components inside the printer.

5. Toner Cartridge

Includes toner and a photoconductor unit.

6. Front Cover

Open this cover when accessing the inside of the printer.

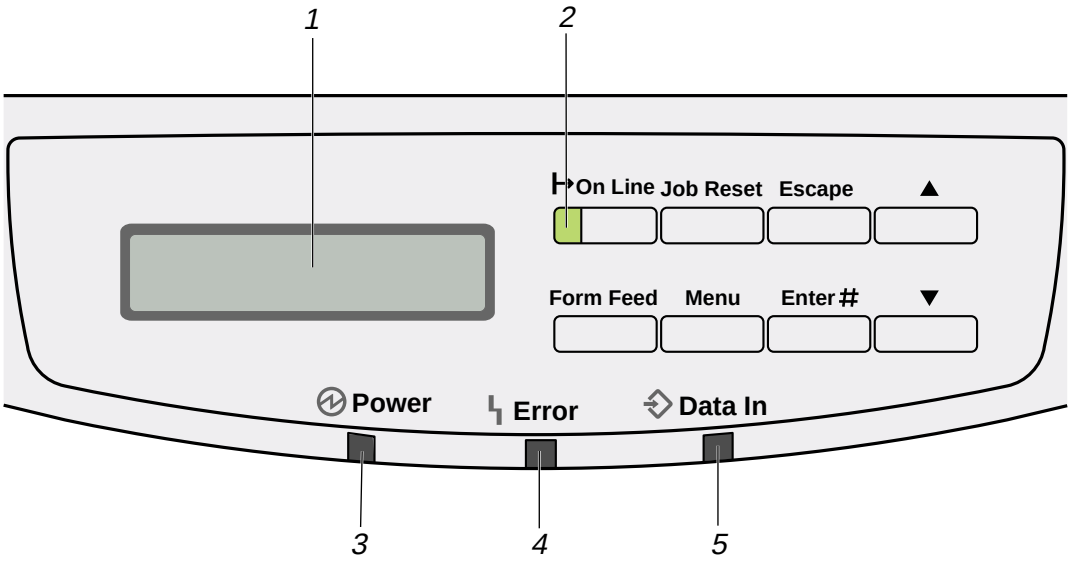
7. Transfer Roller Cover

Open this cover when replacing the transfer roller.

8. Transfer Roller

When "Replace Maintenance Kit" appears on the panel display, replace this roller.

Operation Panel



TS3S010E

1. Panel Display

The display shows the current status of the printer and error messages.

⇒ P.97 *"Error & Status Messages on the Operation Panel"*

2. On Line indicator

Tells you whether the printer is on-line or off-line.

Stays on while the printer is on-line (a state in which the printer can receive data from the computer).

Stays off when the printer is off-line (a state in which printer can not receive data).

3. Power indicator

Stays on while the printer power is on. Stays off when the power is turned off or while the printer is in the Energy Saver save mode.

4. Error indicator

Blinks or lights up whenever any printer error occurs. A message describing the cause of the error also appears on the panel display.

⇒ P.97 *"Error & Status Messages on the Operation Panel"*

5. Data In indicator

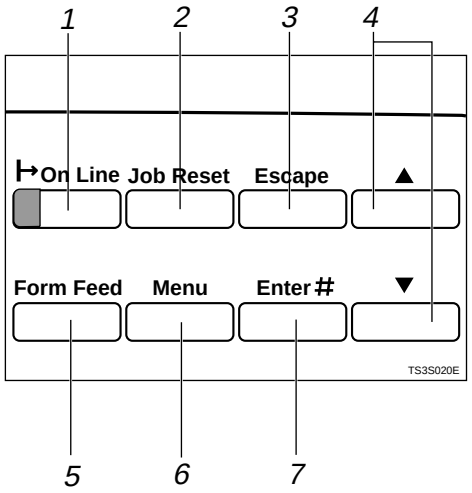
Blinks while the printer is receiving data from a computer.

Stays on if there is data to be printed.

Keys

Important

❒ Pressing any operation key while the **Data In** indicator is blinking or stays on may cause data in the printer to be lost.



1. 【On Line】key

Press this key to switch the printer between on-line and off-line conditions.

2. 【Job Reset】key

Pressing this key when the printer is on-line cancels the ongoing print job. ⇒ P.61 *"Canceling a Print Job"*

3. 【Escape】key

Press this key to return to the previous condition on the panel display.

4. 【▲】【▼】keys

Use these keys to increase or decrease values on the panel display when making settings.

5. 【Form Feed】key

Pressing this key during the off-line condition prints out all the data left in the printer's input buffer.

Note

❒ This is doesn't work in the on-line condition.

6.【Menu】key

Press this key to make and check the current printer settings. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*

7.【Enter】key

Press this key to execute menu items selected on the panel display.

Press this key to clear some errors.⇒ P.97 *"Troubleshooting"*

2. Installing Options

⚠ ***CAUTION:***

- *Make sure to turn off the printer and wait for about 30 minutes before installing options. Not waiting for the printer to cool down can result in a burn.*
- *When lifting the machine, use the inset grips on both sides of the machine. Otherwise, the machine might fall and cause personal injury.*
- *When you move the machine, unplug the power cord from the wall outlet to avoid a fire or an electric shock.*

❖ Option List

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

	Type 1 Printer	Type 2 Printer
Paper Feed Unit (DLT) Type 2000 *1	❍	
Paper Feed Unit (LT) Type 2000 *1	❍	
Paper Feed Unit Type 1400 *2		❍
Envelope Feeder Type 2000 *3	❍	
Envelope Feeder Type 1400 *4		❍
Network Interface Board Type 2000	❍	❍
Memory Unit Type 204 (16MB)	❍	❍
Memory Unit Type 204 (32MB)	❍	❍

❍ : This option can be installed.

*1 Type 1 Printer: You can install any combination of these units. Up to two paper feed unit can be installed to your printer at a time.

*2 Type 2 Printer: Only one paper feed unit can be installed at a time.

*3 This requires the installation of the Paper Feed Unit Type 2000.

*4 This requires the installation of the Paper Feed Unit Type 1400.

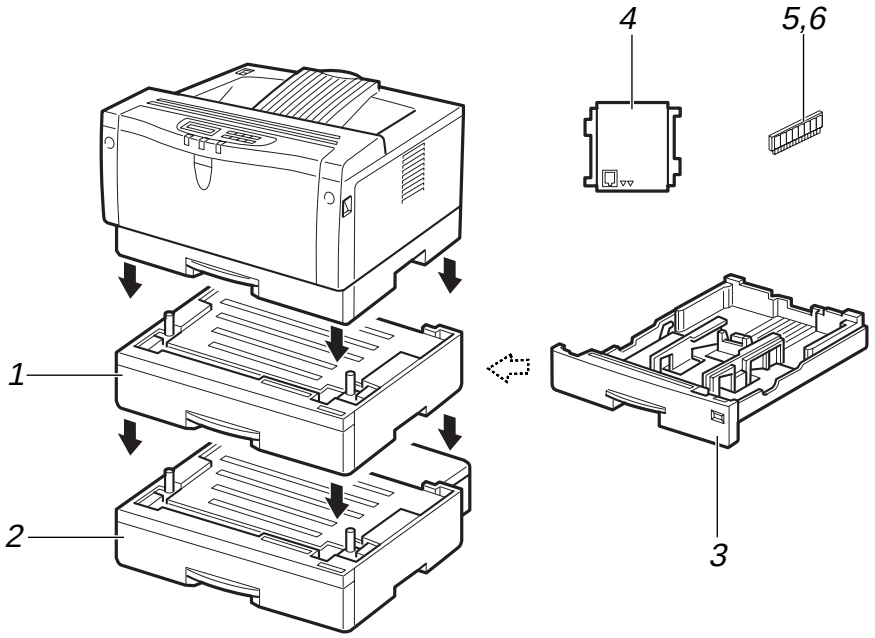
Available Options

The following options can be installed to your printer.

❖ **For Type 1 Printer**

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.



1. **Paper Feed Unit (LT) Type 2000**

2. **Paper Feed Unit (DLT) Type 2000**

3. **Envelope Feeder Type 2000**

4. **Network Interface Board Type 2000**

5. **Memory Unit Type 204 (16MB) (SIMM)**

6. **Memory Unit Type 204 (32MB) (SIMM)**

Note

❒ It is impossible to install more than two paper feed units to your printer at a time.

❒ Any combination of Paper Feed Unit (LT) Type 2000 and Paper Feed Unit (DLT) Type 2000 is available.

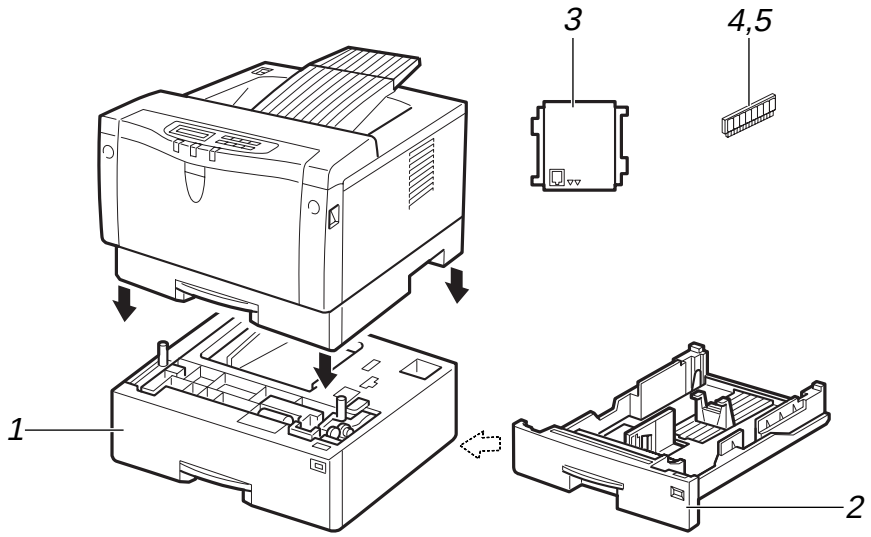
❒ The envelope feeder is a tray that slides into the optional paper feed unit. Without the optional paper feed unit, the envelope feeder cannot be used.

❒ The Type 1 Printer can have two optional paper feed units installed at a time. However the envelope feeder should be used in the top-most optional paper feed unit (tray 2). It cannot be used in the bottom-most paper feed unit (tray 3).

❖ For Type 2 Printer

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.



1. **Paper Feed Unit Type 1400**

2. **Envelope Feeder Type 1400**

3. **Network Interface Board Type 2000**

4. **Memory Unit Type 204 (16MB) (SIMM)**

5. **Memory Unit Type 204 (32MB) (SIMM)**

Note

❒ It is impossible to install more than one paper feed unit to your printer at a time.

Type 1 Printer: Installing Options

Type 1 Printer: Installing the Paper Feed Unit (DLT) Type 2000

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ Do not slide more than one paper tray out at a time. Having more than one paper tray filled with paper in a fully extended position could cause the machine to tilt forward.

❒ To make the printer recognize the installed option, you should set up the option with the printer driver.

1 **Check the contents of the box for the following items.**

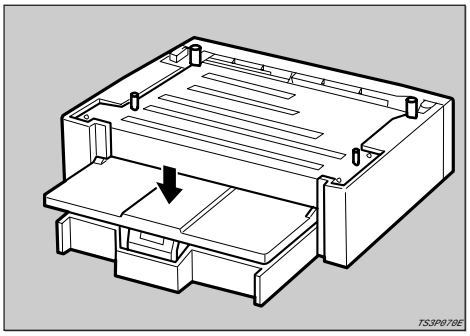
- **Paper feed unit (including a paper tray)**
- **Tray cover**
- **Installation Guide**

2 **Be sure to check the following points:**

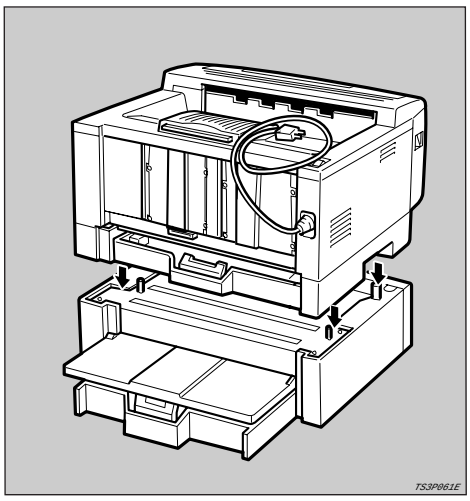
- **The printer's power switch is turned off.**
- **The power cord is unplugged from the wall outlet.**
- **The interface cable is unplugged from the printer.**
- **The bypass tray and front cover are closed.**

3 **At the front of the paper feed unit, tape on the left and right sides is used to hold the tray in place. Remove both pieces of tape.**

4 **Attach the tray cover to the top of the paper tray as shown in the illustration.**

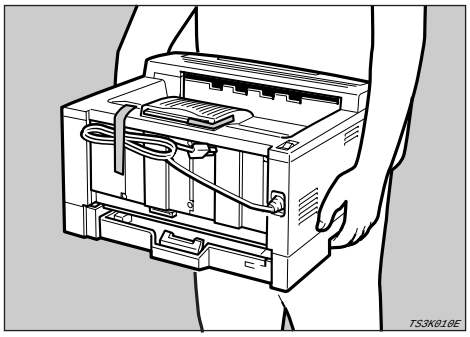


5 **There are four pins on the top of the paper feed unit that point straight up. On the bottom of the printer are four holes. Align the holes over the pins and lower the printer gently onto the paper feed unit.**



⚠ ***CAUTION:***

- *When lifting the printer, use the inset grips on both sides.*



Type 1 Printer: Installing the Paper Feed Unit (LT) Type 2000

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ Do not slide more than one paper tray out at a time. Having more than one paper tray filled with paper in a fully extended position could cause the machine to tilt forward.

❒ To make the printer recognize the installed option, you should set up the option with the printer driver.

1 **Check the content of the box for the following items.**

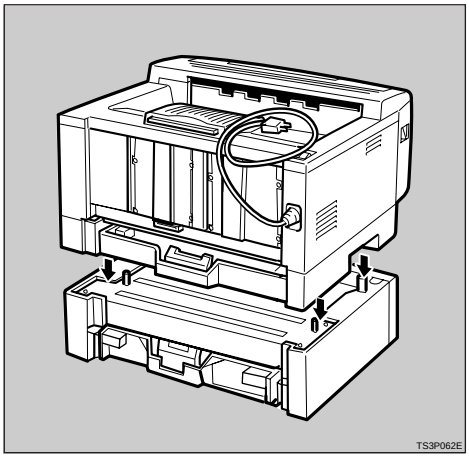
- **Paper feed unit (including a paper tray)**
- **Installation Guide**

2 **Be sure to check the following points:**

- **The printer's power switch is turned off.**
- **The power cord is unplugged from the wall outlet.**
- **The interface cable is unplugged from the printer.**
- **The bypass tray and front cover are closed.**

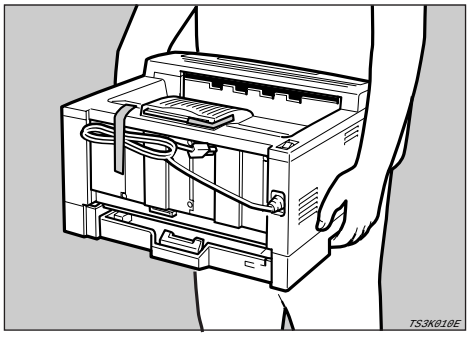
3 **At the front of the paper feed unit, tape on the left and right sides is used to hold the tray in place. Remove both pieces of tape.**

4 **There are four pins on the top of the paper feed unit that point straight up. On the bottom of the printer are four holes. Align the holes over the pins and lower the printer gently onto the paper feed unit.**



⚠ ***CAUTION:***

- *When lifting the printer, use the inset grips on both sides.*



Type 1 Printer: Installing the Envelope Feeder Type 2000

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ This unit is a tray that slides into the optional paper feed unit. Without the optional paper feed unit, this envelope feeder cannot be used.

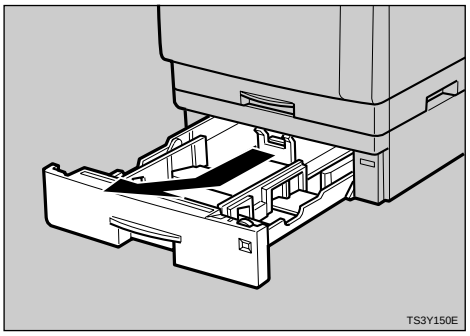
❒ The Type 1 Printer can have two optional paper feed units installed at a time. However, the envelope feeder should be used in the top-most optional paper feed unit (tray 2). It can not be used in the bottom-most paper feed unit (tray 3).

❒ Do not slide more than one paper tray out at a time. Having more than one paper tray filled with paper in a fully extended position could cause the machine to tilt toward.

1 **Check the content in the box for the following items.**

- **Envelope feeder**
- **Installation Guide**

2 **Pull out the 2nd paper tray (tray 2) of the optional paper feed unit until it stops. After that, lift it slightly, then pull it out.**



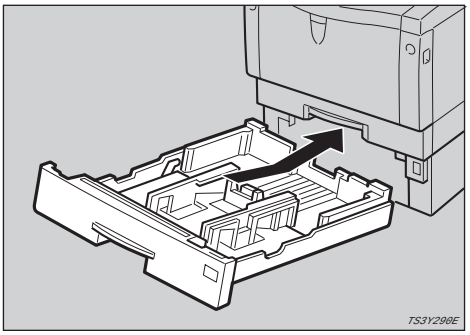
Important

❒ The envelope feeder should be used in the top-most optional paper feed unit (tray 2).

Note

❒ Keep the paper tray with paper in a cool and dry place.

3 **While lifting the front side of the envelope feeder, place the feeder into the printer. Then slide it into the printer until it stops.**



Note

❒ When loading envelopes, see P.84 *"Type 1 Printer: Loading Envelopes"*.

Type 1 Printer: Installing the Network Interface Board Type 2000

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

❒ Use the shielded twisted-pair (STP) network interface cable.

❒ The network interface board can be attached to either the left or the right side of the back of your printer. This procedure is for attaching to the left side.

❒ You cannot install two network interface boards at a time.

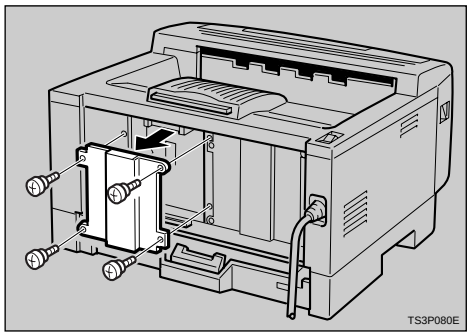
1 Check the contents of the box for the following items.

- **Network interface board**
- **CD-ROM**
- **Ferrite Core**
- **Installation Guide**
- **Quick Configuration Guide**
- **Additional Documentation**

2 Be sure to check the following points:

- **The printer's power switch is turned off.**
- **The power cord is unplugged from the wall outlet.**

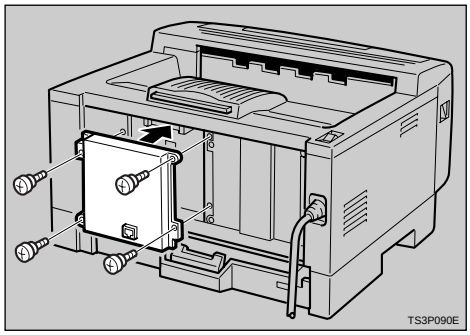
3 Remove the back plate.



Note

❒ A coin can be used to remove the screws.

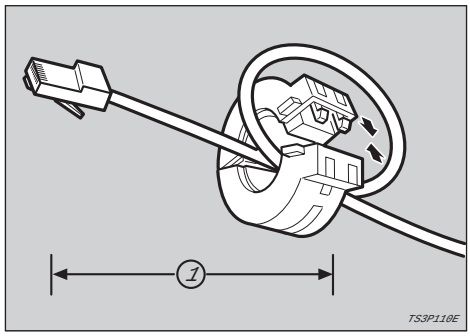
4 Align the screw holes of the network interface board over the screw holes where the back plate used to be. Make sure that the board is aligned so that the jack is facing out and is on the bottom. Press the board firmly against the printer. The interface connectors on the printer and the board should align and offer a slight resistance before popping into place.



Note

❒ Use a coin to reattach the screws.

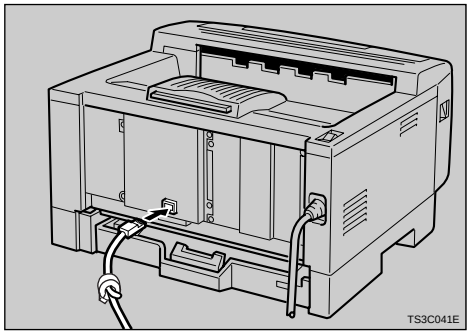
5 Loop the network interface cable and attach the ferrite core as shown in the illustration.



Note

❒ The network interface cable loop should be about 15 cm (6") (①) from the end of the cable (on the end closest to the printer). The ferrite core at the end of the cable should be a ring type ferrite core.

6 Attach the network interface cable to the jack on the board as shown in the illustration.



7 Connect the other end of the network interface cable to the network.

8 Plug the printer's power cord back into the wall outlet and turn on the printer's power switch.

The configuration page of the network interface board will be printed automatically. Check the configuration of the network interface board with it.

Important

❒ After installing the network interface board properly, set up the printer's network environment using the operation panel. See P.25 *"Configuring the Printer for the Network with the Operation Panel"*.

Type 1 Printer: Installing the Memory Unit (SIMM)

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ The memory unit can be damaged by small amount of static electricity. Before touching it, touch something metal to remove static electricity from you.

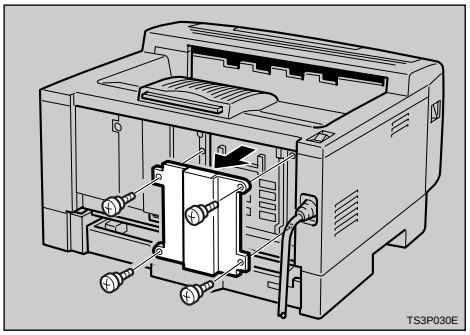
❒ To make the printer recognize the installed option, you should set up the option with the printer driver.

❒ This printer has one slot for a SIMM, and you can install one SIMM at a time.

1 Be sure to check the following points:

- **The printer's power switch is turned off.**
- **The power cord is unplugged from the wall outlet.**

2 Remove the back plate.

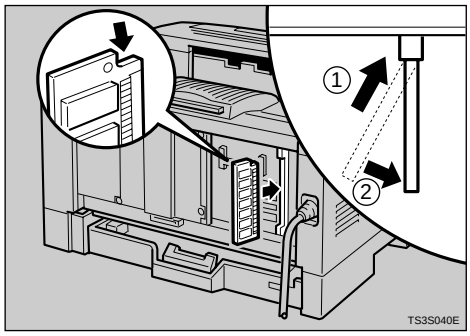


Note

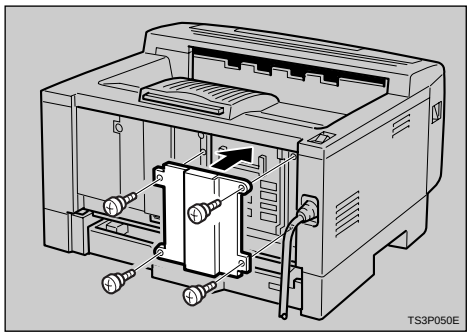
❒ A coin can be used to remove the screws.

3 Make sure that the notch of the memory unit should be upward as shown in the illustration. Tilt the memory unit to the left so that it is in 45 degrees from perpendicular to the slot, and slide it into the slot (①). Tilt the memory unit so that it is perpendicular to the

slot (②). It should make an audible click as it pops into place.



4 Attach the back plate to its original position.



Note

❒ A coin can be used to attach the screws.

5 Turn on the printer's power switch.

6 Print a configuration test sheet to confirm that the memory unit is properly installed.

Reference

⇒ P.125 *"Making Printer Settings with the Operation Panel"*

Type 2 Printer: Installing Options

Type 2 Printer: Installing the Paper Feed Unit Type 1400

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ Do not slide more than one paper tray out at a time. Having more than one paper tray filled with paper in a fully extended position could cause the machine to tilt forward.

❒ To make the printer recognize the installed option, you should set up the option with the printer driver.

1 **Check the contents of the box for the following items.**

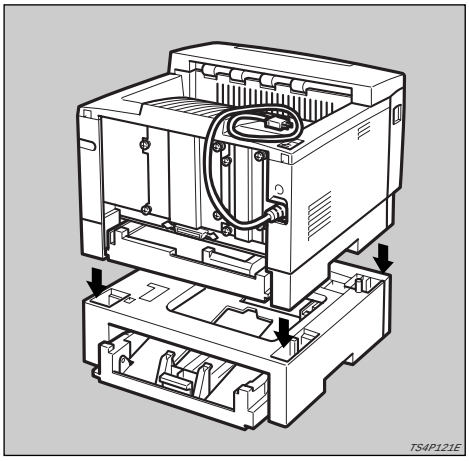
- **Paper feed unit (including a paper tray)**
- **Installation Guide**

2 **Be sure to check the following points:**

- **The printer's power switch is turned off.**
- **The power cord is unplugged from the wall outlet.**
- **The interface cable is unplugged from the printer.**
- **The bypass tray and front cover are closed.**

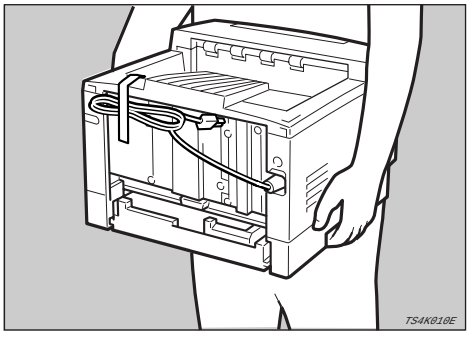
3 **At the front of the paper feed unit, tape on the left and right sides is used to hold the tray in place. Remove both pieces of tape.**

4 **There are four pins on the top of the paper feed unit that point straight up. On the bottom of the printer are four holes. Align the holes over the pins and lower the printer gently onto the paper feed unit.**



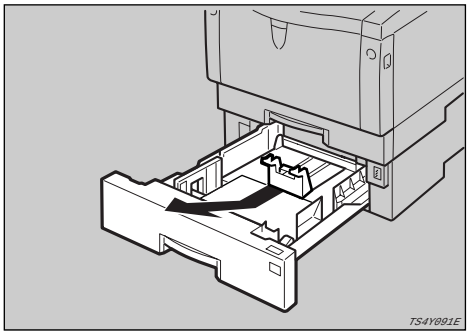
⚠ ***CAUTION:***

- *When lifting the printer, use the inset grips on both sides.*



5 **Pull the paper tray out until it stops. After then, lift it slightly,**

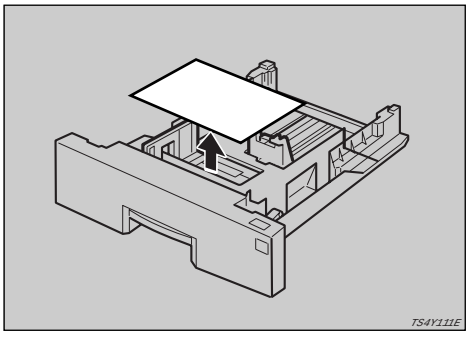
then pull it out of the printer. Place it on a flat surface.



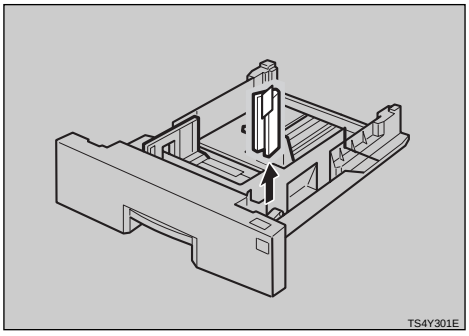
Note

❒ Do not touch the three white pins on the right front side of the paper feed unit.

6 Remove the white protective sheet from inside of the paper tray.



7 Remove the red protective sheet taped on the guide.



8 While lifting the front side of the paper tray, place it into the printer. Then slide it into the printer until it stops.

Type 2 Printer: Installing the Envelope Feeder Type 1400

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

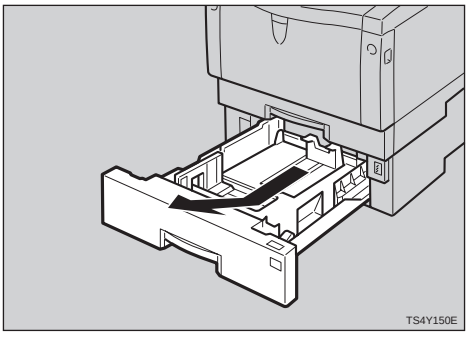
❒ This unit is a tray that slides into the optional paper feed unit. Without the optional paper feed unit, this envelope feeder cannot be used.

❒ Do not slide more than one paper tray out at a time. Having more than one paper tray filled with paper in a fully extended position could cause the machine to tilt toward.

1 Check the content of the box for the following items.

- **Envelope feeder**
- **Installation Guide**

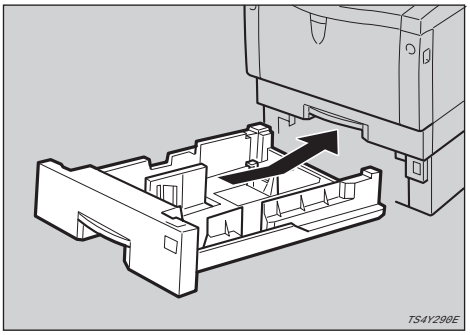
2 Pull out the paper tray of the optional paper feed unit until it stops. After that, lift it sightly, then pull it out.



Note

❒ Keep the paper tray with paper in a cool and dry place.

3 **While lifting the front side of the envelope feeder, place the feeder into the printer. Then slide it into the printer until it stops.**



Note

❒ When loading envelopes, see P.92 *"Type 2 Printer: Loading Envelopes"*.

Type 2 Printer: Installing the Network Interface Board Type 2000

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

❒ Use the shielded twisted-pair (STP) network interface cable.

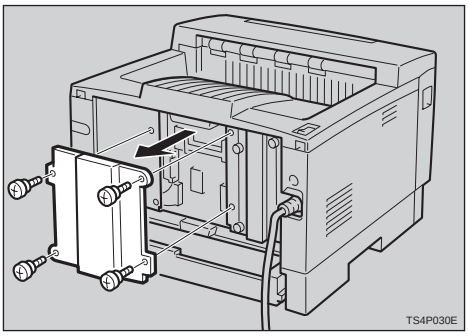
1 **Check the contents in the box for the following items.**

- **Network interface board**
- **CD-ROM**
- **Ferrite Core**
- **Installation Guide**
- **Quick Configuration Guide**
- **Additional Documentation**

2 **Be sure to check the following points:**

- **The printer's power switch is turned off.**
- **The power cord is unplugged from the wall outlet.**

3 **Remove the back plate.**

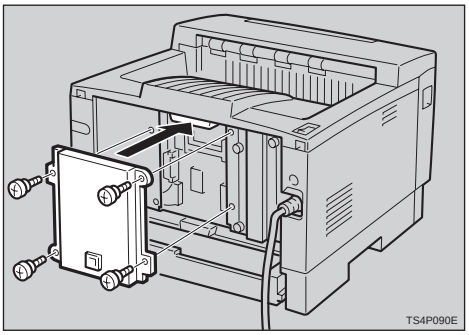


Note

❒ A coin can be used to remove the screws.

4 **Align the screw holes of the network interface board over the screw holes where the back plate used to be. Make sure that the board is aligned so that the jack is facing out and is on the bottom. Press the board firmly against the printer. The interface connectors on the printer and the board should align and offer a slight re-**

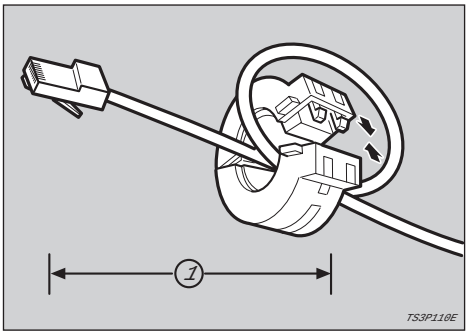
sistance before popping into place.



Note

❒ Use a coin to reattach the screws

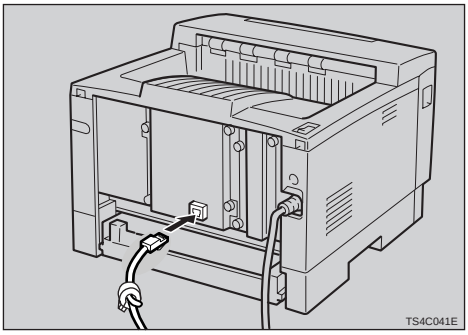
5 **Loop the network interface cable and attach the ferrite core as shown in the illustration.**



Note

❒ The network interface cable loop should be about 15 cm (6") (①) from the end of the cable (on the end closest the printer). The ferrite core at the end of the cable should be a ring type ferrite core.

6 **Attach the network interface cable to the jack on the board as shown in the illustration.**



7 **Connect the other end of the network interface cable to the network.**

8 **Plug the printer's power cord back into the wall outlet and turn on the printer's power switch.**

The configuration page of the network interface board will be printed automatically. Check the configuration of the network interface board with it.

Important

❒ After installing the network interface board properly, set up the printer's network environment using the operation panel. See P.25 *"Configuring the Printer for the Network with the Operation Panel"*.

Type 2 Printer: Installing the Memory Unit (SIMM)

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

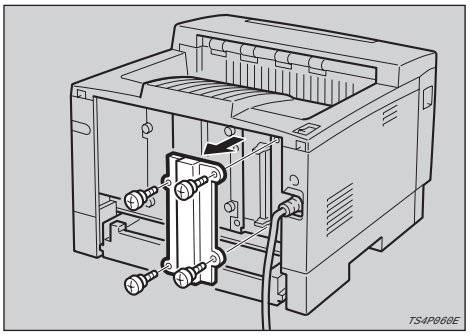
Important

- ❒ The memory unit can be damaged by small amount of static electricity. Before touching it, touch something metal to remove static electricity from you.
- ❒ To make the printer recognize the installed option, you should set up the option with the printer driver.
- ❒ This printer has one slot for a SIMM, and you can install one SIMM at a time.

1 Be sure to check the following points:

- **The printer's power switch is turned off.**
- **The power cord is unplugged from the wall outlet.**

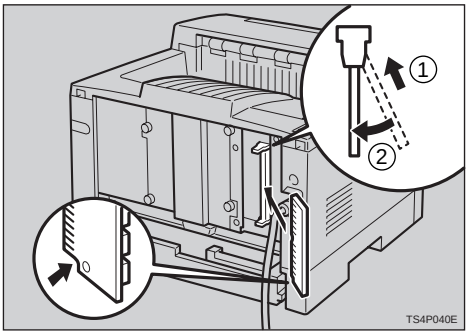
2 Remove the back plate.



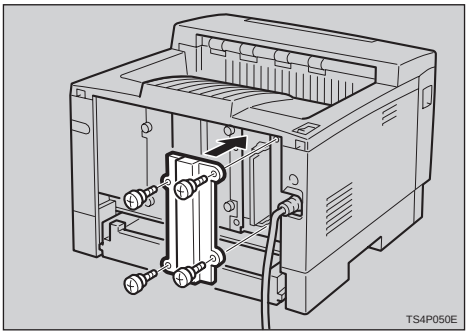
Note

- ❒ A coin can be used to remove the screws.

3 Make sure that the notch of the memory unit should be downward as shown in the illustration. Tilt the memory unit to the right so that it is in 45 degrees from perpendicular to the slot, and slide it into the slot (①). Tilt the memory unit so that it is perpendicular to the slot (②). It should make an audible click as it pops into place.



4 Attach the back plate to its original position.



Note

- ❒ A coin can be used to attach the screws.

5 Turn on the printer's power switch.

6 Print a configuration test sheet to confirm that the memory unit is properly installed.

Reference

⇒ P.125 *"Making Printer Settings with the Operation Panel"*

3. Configuring the Printer for the Network with the Operation Panel

Setting Up the IP Parameters

After installing the optional network interface board, configure it for the network using the printer's operation panel.

Reference

⇒ P.16 *"Type 1 Printer: Installing the Network Interface Board Type 2000"*

⇒ P.22 *"Type 2 Printer: Installing the Network Interface Board Type 2000"*

1 Press【Menu】.

The following message appears on the panel display.

```
Main Menu:      ▲
 Job Control    ▼
```

2 Press【▼】【▲】until the following message appears.

```
Main Menu:      ▲
 Host Interface ▼
```

3 Press【Enter】.

The following message appears on the panel display.

```
Host Interface:▲
1.Printer Lan%.▼
```

4 Press【▼】【▲】until the following message appears.

```
Host Interface:▲
1.Network Setup▼
```

5 Press【Enter】.

The following message appears on the panel display.

```
Network Setup: ▲
1.IP Address   ▼
```

6 Press【Enter】.

The current IP address appears on the panel display. A pointer (▒) blinks on the value to be specified.

```
IP Address: ▲▼→#
 000.000.000.000
```

7 Specify the first (leftmost) 3 digits of the IP address using【▲】【▼】. Use【▲】to increase a value, and【▼】to decrease.

```
IP Address: ▲▼→#
 100.000.000.000
```

8 Press【Enter】.

A pointer (▒) moves to the second 3 digits.

Note

❒ Before pressing【Enter】, you can return the pointer (▒) to the previous (left) 3 digits by pressing【Escape】.

❒ If you press【Escape】when the pointer (▒) is on the leftmost 3 digits, the specified IP address is canceled and you can return to the previous panel display.

9 Repeat steps 7 and 8 to specify the rest of the digits of the IP address.

10 Check if the pointer (▒) is at the rightmost digit, press【Enter】to

register the IP address you specified.

The following message appears on the panel display.

```
Network Setup:
1.IP Address
```

11 Press [▼][▲] until the following message appears.

```
Network Setup:
2.Subnet Mask
```

12 Press [Enter].

The current subnet mask appears on the panel display.

```
Subnet Mask:
 255.000.000.000
```

13 Specify the subnet mask using the same procedure for specifying the IP address.

14 Check if the pointer (▒) is at the rightmost digit, press [Enter] to register the subnet mask you specified.

The following message appears on the panel display.

```
Network Setup:
2.Subnet Mask
```

15 Press [▼][▲] until the following message appears.

```
Network Setup:
3.Gateway
```

16 Press [Enter].

The current gateway address appears on the panel display.

```
Gateway
 000.000.000.000
```

17 Specify the gateway address using the same procedure for specifying the IP address.

18 Check if the pointer (▒) is at the rightmost digit, press [Enter] to register the gateway address you specified.

The following message appears on the panel display.

```
Network Setup:
3 .Gateway
```

19 Press [On Line].

The panel display returns to the ready condition as follows:

```
Ready
```

20 Turn the printer's power switch off and on.

4. Printer Drivers for Your Printer

Printer Drivers for Your Printer

Printing requires installation of a printer driver for your operating system. The following drivers are provided with this printer.

Emulation / Operating system	PCL 5e	PCL 6	PostScript Level2
Windows 95 *4	√	√	√ *1
Windows 98 *5	√	√	√ *1
Windows 3.1x *6	√	√	
Windows NT4.0 *7	√	√	√ *1
Macintosh			√ *1 *2 *3

*1 PPD (PostScript Printer Description) files are included in the CD-ROM.
*2 The optional network interface board is required.
*3 You can use the LaserWriter printer driver. Use the appropriate printer driver that comes with the Macintosh operating system you are using. See the documentation that comes with your Macintosh for details on the LaserWriter functions.
*4 Microsoft® Windows® 95 operating system
*5 Microsoft® Windows® 98 operating system
*6 Microsoft® Windows® for Workgroups operating system Version 3.11
*7 Microsoft® Windows NT® Server network operating system Version 4.0, Microsoft® Windows NT® Workstation operating system Version 4.0

❖ PCL printer drivers

Printer drivers allow the computer to communicate with the printer via a printer language. Two kinds of PCL printer drivers, PCL 6 and PCL 5e, are provided with this printer. We recommend the PCL 6 as your first choice. However, some of your applications might require the installation of the PCL 5e printer driver. In this case, you can install PCL 5e in addition to the PCL 6.

⇒ P.31 *"Windows 95/98 - Installing the PCL 6/5e Printer Driver"*
⇒ P.32 *"Windows 3.1x - Installing the PCL 6/5e Printer Driver"*
⇒ P.34 *"Windows NT4.0 - Installing the PCL 6/5e Printer Driver"*

❖ PostScript Printer Description (PPD) files for Windows

The printer specific functions can be used by installing the PPD file specific for your printer.

⇒ P.39 *"Windows 95/98 - Installing the PostScript Printer Driver"*
⇒ P.41 *"Windows NT4.0 - Installing the PostScript Printer Driver"*

❖ **PostScript Printer Description (PPD) files for Macintosh**

PPD files, in combination with the LaserWriter driver, allow the computer to communicate with the printer. The printer specific functions can be used by installing a PPD file. You can use the LaserWriter printer driver that comes with your Macintosh. Use the appropriate printer driver that comes with the Macintosh operating system you are using. See the documentation that comes with your Macintosh for details on the LaserWriter functions.

⇒ P.44 *"Macintosh - Installing the PPD File"*

5. Installing the PCL 6/5e Printer Driver

Installing the PCL 6/5e Printer Driver

This section provides basic procedures for installing the printer driver. The actual procedure differs somewhat depending on your operating system. Follow the right one of the procedures below.

We recommend the PCL 6 as your first choice. However, some of your application software might require the installation of the PCL 5e printer driver. In this case, you can install the PCL 5e in addition to the PCL 6.

Important

- ❒ When you set the print resolution to 300dpi, you should install the PCL 5e driver.
- ❒ When you set the printer resolution to 1200dpi, you should install the PCL 6 driver.
- ❒ When updating the printer driver by installing the latest version, you should uninstall the former version, if any.

Windows 95/98 - Installing the PCL 6/5e Printer Driver

Installing the printer driver

Follow these steps to install the PCL 6/5e printer driver on your Windows 95/98 system:

1. **Insert the CD-ROM that comes with your printer in the CD-ROM drive.**
2. **Close all applications that are currently running.**
3. **Click [Start] on the task bar.**
4. **Click [Run].**
5. **In the [Run] window, click [Browse].**
6. **Select the CD-ROM Drive.**
7. **Open the folder called [PCL5E] or [PCL6].**
8. **Open the folder called [WIN31_95].**
9. **Open the folder of the appropriate language for your operating system.**
10. **Open the folder called [DISK1].**

11 **Select the file titled [SETUP.EXE].**

12 **Click [Open].**

13 **Click [OK].**

14 **Follow the instructions on the screen.**

15 **If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the installation.**

16 **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

The **[Printers]** window appears.

17 **Select the icon of the printer you installed by clicking it.**

18 **On the [File] menu, click [Properties].**

19 **On the [General] tab, click [Print Test Page].**

5

Important

❒ If your printer is equipped with certain options (ex. paper feed unit or memory unit), you should set up the options with the printer driver.

Setting up options

1 **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

The **[Printers]** window appears.

2 **Select the icon of the printer you want to use by clicking it.**

3 **On the [File] menu, click [Properties].**

The Printer Properties appears.

4 **Click the [Accessories] tab.**

5 **Set up any options you have installed on your printer.**

6 **Click [OK].**

Windows 3.1x - Installing the PCL 6/5e Printer Driver

Installing the printer driver

Follow these steps to install the PCL 6/5e printer driver on your Windows 3.1x system:

1. **Insert the CD-ROM that comes with your printer in the CD-ROM drive.**
2. **Close all applications that are currently running.**
3. **From the [Program Manager], select [Run] from the [File] menu.**
4. **In the [Run] window, click [Browse...].**
5. **Select the CD-ROM Drive in the [Drives] list.**
6. **Open the folder called [PCL5E] or [PCL6].**
7. **Open the folder called [WIN31_95].**
8. **Open the folder of the appropriate language for your operating system.**
9. **Open the folder called [DISK1].**
10. **Select the file titled [SETUP.EXE].**
11. **Click [OK].**
12. **Click [OK].**
13. **Follow the instructions on the screen.**
14. **If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the installation.**

Important

❒ If your printer is equipped with certain options (ex. paper feed unit or memory unit), you should set up the options with the printer driver.

Setting up options

1. **From the [Main] group of the [Program Manager], open [Control Panel] by double-clicking it.**
2. **Double-click the [Printers] icon.**
3. **In the [Installed Printers] list box, click the name of the printer you want to use so its name is highlighted.**
4. **Click [Setup].**
5. **Click the [Accessories] tab.**
6. **Set up any options you have installed on your printer.**
7. **Click [OK].**

8 **Click [Close] to close the [Printers] dialog.**

Windows NT4.0 - Installing the PCL 6/5e Printer Driver

Installing the printer driver

Limitation

❒ Installing the printer driver requires full control access rights. To install the printer driver, log on as an Administrator or a Power Users group member.

1 **Insert the CD-ROM that comes with your printer in the CD-ROM drive.**

2 **Close all applications that are currently running.**

3 **Click [Start] on the task bar.**

4 **Click [Run].**

5 **In the [Run] window, click [Browse].**

6 **Select the CD-ROM Drive.**

7 **Open the folder called [PCL5E] or [PCL6].**

8 **Open the folder called [NT4].**

9 **Open the folder of the appropriate language for your operating system.**

10 **Open the folder called [DISK1].**

11 **Select the file titled [SETUP.EXE].**

12 **Click [Open].**

13 **Click [OK].**

14 **Follow the instructions on the screen.**

15 **If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the installation.**

16 **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

The **[Printers]** window appears.

17 **Select the icon of the printer you installed by clicking it.**

18 **On the [File] menu, click [Properties].**

19 **On the [General] tab, click [Print Test Page].**

Important

❒ If your printer is equipped with certain options (ex. paper feed unit or memory unit), you should set up the options with the printer driver.

Setting up options

1. **Click [Start] on the task bar, point to [Settings], and then click [Properties].**
   The **[Printers]** windows appears.
2. **Select the icon of the printer you want to use by clicking it.**
3. **On the [File] menu, click [Properties].**
   The Printer Properties appears.
4. **Click the [Accessories] tab.**
5. **Set up any options you have installed on your printer.**
6. **Click [OK].**

Uninstalling the PCL 6/5e Printer Driver

This section provides basic procedures for uninstalling the printer driver. The actual procedure differs somewhat depending on your operating system.

Follow one of the procedures below.

Windows 95/98 - Uninstalling the PCL 6/5e Printer Driver

Follow these steps to uninstall the printer driver:

1. **Insert the CD-ROM that comes with your printer in the CD-ROM drive.**
2. **Close all applications that are currently running.**
3. **Click [Start] on the task bar.**
4. **Click [Run].**
5. **In the [Run] window, click [Browse].**
6. **Select the CD-ROM Drive.**
7. **Open the folder called [PCL5E] or [PCL6].**
8. **Open the folder called [WIN31_95].**
9. **Open the folder of the appropriate language for your operating system.**
10. **Open the folder called [DISK1].**
11. **Select the file titled [UNSETUP.EXE].**
12. **Click [Open].**
13. **Click [OK].**
14. **Follow the instructions on the screen.**
15. **If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the uninstallation.**

Windows 3.1x - Uninstalling the PCL 6/5e Printer Driver

Follow these steps to uninstall the PCL 6/5e printer driver on your Windows 3.1x system:

1. **Insert the CD-ROM that comes with your printer in the CD-ROM drive.**
2. **Close all applications that are currently running.**

3. From the [Program Manager], select [Run] from the [File] menu.
4. In the [Run] window, click [Browse...].
5. Select the CD-ROM Drive in the [Drives] list.
6. Open the folder called [PCL5E] or [PCL6].
7. Open the folder called [WIN31_95].
8. Open the folder of the appropriate language for your operating system.
9. Open the folder called [DISK1].
10. Select the file titled [UNSETUP.EXE].
11. Click [OK].
12. Click [OK].
13. Follow the instructions on the screen.
14. If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the uninstallation.

Windows NT4.0 - Uninstalling the PCL 6/5e Printer Driver

Limitation

- Uninstalling the printer driver requires full control access rights. To uninstall the printer driver, log on as an Administrator or a Power Users group member.

1. Insert the CD-ROM that comes with your printer in the CD-ROM drive.
2. Close all applications that are currently running.
3. Click [Start] on the task bar.
4. Click [Run].
5. In the [Run] window, click [Browse].
6. Select the CD-ROM Drive.
7. Open the folder called [PCL5E] or [PCL6].
8. Open the folder called [NT4].
9. Open the folder of the appropriate language for your operating system.
10. Open the folder called [DISK1].

11 **Select the file titled [UNSETUP.EXE].**

12 **Click [Open].**

13 **Click [OK].**

14 **Follow the instructions on the screen.**

15 **If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the installation.**

6. Installing the PostScript Printer Driver

Installing the PostScript Printer Driver

Printing requires installation of a printer driver for your operating system.

This section provides basic procedures for installing the printer driver. The actual procedure differs somewhat depending on your operating system. Follow the right one of the procedures below.

Important

❒ When updating the printer driver by installing the latest version, you should uninstall that of former version, if any.

Windows 95/98 - Installing the PostScript Printer Driver

Installing the printer driver

Important

❒ The Windows 95 or Windows 98 operating system CD-ROM or diskettes are required for installation.

❒ Be sure to install the PPD file for Windows 95/98. Do not install the PPD file for Windows NT4.0 accidently.

1 Close all applications that are currently running.

2 Click [Start] on the task bar, point to [Settings], and then click [Printers].

The **[Printers]** window opens.

3 Double-click [Add Printers] icon.

The **[Add Printer Wizard]** starts up.

4 Click [Next].

5 Check [Local Printer], and click [Next].

A dialog for selecting the printer manufacturer and model name appears.

6 Click [Have Disk].

A dialog for installing the driver from a disk opens.

7 Insert the CD-ROM that comes with your printer into your computer's CD-ROM drive.

8 Click [Browse].

9. **Use the [Drives:] list box to select the CD-ROM drive.**

10. **In the [Folders:] box, double-click [PS] and [WIN95]. Then double-click the folder of the appropriate language for your operating system. Finally, click [OK].**

11. **Click [OK].**

12. **Select the name of the printer whose driver you want to install by clicking it, and then click [Next].**

13. **In the [Available ports:] box, select [Printer Port] by clicking it, and then click [Next].**

14. **Change the name of the printer, if you want, and then click [Next].**

15. **Specify whether or not you want to print a test page, and then click [Finish].**

16. **If you are asked to insert the Windows 95/98 system disk, insert it into your computer, and then click [OK].**

17. **If you are asked to specify the location of the required file for Windows 95/98, do the following:**
    - Select the folder **[WIN95]** or **[WIN98]** in the system disk.
    - Move to the folder where Windows is installed. Then, select the appropriate folder. The location of the appropriate folder may differ depending on the version of your operating system. The following are examples:
      [\WINDOWS\SYSTEM\OPTION\CABS]
      [\WINDOWS\OPTION\CABS]

18. **If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the installation.**

Important

❒ If your printer is equipped with certain options (ex. paper feed unit or memory unit), you should set up the options with the printer driver.

Using the printer driver with the Adobe PageMaker for Windows 95/98

If you use the printer under Windows 95/98 with the Adobe PageMaker, you need to copy the PPD file to the PageMaker directory.

The PPD file is the file with extension ".ppd" under on the directory \PS\WIN95\ENGLISH\, on the CD-ROM that comes with your printer. The last directory, "ENGLISH" may be substituted by appropriate language name. Copy this file to the PageMaker's directory.

For PageMaker 6 default installation, the directory is "C:\PM6\USENGLISH\PPD4", and for PageMaker 6.5 default installation, the directory is "C:\PM65\RSRC\USENGLISH\PPD4". The "USENGLISH" may be different, depending on your language selection.

Setting up options

1. **Click [Start] on the task bar, point to [Settings], and then click [Printers].**
   The **[Printers]** window appears.
2. **Select the icon of the printer you want to use by clicking it.**
3. **On the [File] menu, click [Properties].**
   The Printer Properties appears.
4. **Click the [Device Options] tab.**
5. **In the [Installable Options] group, select the option you have installed to your printer.**
   The current setting is displayed in the **[Change setting for:]** list box.
6. **Use the [Change settings for:] list box to select the appropriate setting for the selected option.**
7. **Click [Apply] to apply the settings you made.**
8. **Repeat steps 5– 7 for all options.**
9. **After making all settings for options, click [OK].**

Windows NT4.0 - Installing the PostScript Printer Driver

Installing the printer driver

Limitation

❒ Installing the printer driver requires full control access rights. To install the printer driver, log on as an Administrator or a Power Users group member.

Important

❒ The CD-ROM containing the Windows NT Server network operating system Version 4.0, or the Windows NT Workstation operating system is required for installing the printer driver.

❒ We recommend that you upgrade your Windows NT4.0 operating system to the latest version before installing the printer driver. Contact your Windows retailer for details about the latest version available.

❒ Be sure to install the PPD file for Windows NT4.0. Do not accidently install the PPD file for Windows 95/98.

1 Close all applications that are currently running.

2 Click [Start] on the task bar, point to [Settings], and then click [Printers].

The **[Printers]** window opens.

3 Double-click the [Add Printers] icon.

The **[Add Printer Wizard]** starts up.

4 After confirming the [My Computer] option is selected, click [Next].

A dialog for selecting the printer port appears.

5 Check the check box of the port you want to use, and then click [Next]

A dialog for selecting the printer manufacturer and model appears.

6 Click [Have Disk].

A dialog for installing the driver from a disk appears.

7 Insert the CD-ROM that comes with your printer into your computer's CD-ROM drive.

8 Change the drive name in the list box to the name of the CD-ROM drive, and then click [Browse].

9 In the [Folders:] box, double-click [PS] and [WINNT4]. Then double-click the folder of the appropriate language for your operating system. Finally, click [Open].

10 Click [OK].

A printer model selection dialog appears.

11 Select the name of the printer whose driver you want to install by clicking it, and then click [Next].

A dialog for changing the printer name appears.

12 Change the name of the printer, if you want, and then click [Next].

13 Click [Next].

14 In the next dialog asking if you want to print a test page, select [No] and then click [Finish].

The installer copies the printer driver files from the CD-ROM to your computer's hard disk.

Note

❒ Perform a test print after completing installation and restarting Windows.

15 **If you are asked to insert the Windows NT4.0 system disk, insert it into your computer, and then click [OK].**

16 **If you are asked to specify the drive of the system disk, specify the drive of the Windows NT4.0 system disk.**

17 **If you are asked to specify the location of the required file, select the appropriate folder. The location of the appropriate folder may differ depending on the version of your operating system. The following is an example:**

- folder named **[i386]** of the Windows NT4.0 system disk.

After installation is completed, the **[Printers]** window appears with the icon of the newly installed printer.

18 **If you are asked if you want to restart Windows, select [Yes]. If you are not asked, restart Windows after completing the installation.**

Important

❒ If your printer is equipped with certain options (ex. paper feed unit or memory unit), you should set up the options with the printer driver.

Using the printer driver with the Adobe PageMaker for Windows NT4.0

If you use the printer under Windows NT4.0 with the Adobe PageMaker, you need to copy the PPD file to the PageMaker directory.

The PPD file is the file with extension ".ppd" under on the directory \PS\WINNT4\ENGLISH\, on the CD-ROM that comes with your printer. The last directory, "ENGLISH" may be substituted by appropriate language name. Copy this file to the PageMaker's directory.

For PageMaker 6 default installation, the directory is "C:\PM6\RSRC\PPD4", and for PageMaker 6.5 default installation, the directory is "C:\PM65\RSRC\USENGLISH\PPD4". The "USENGLISH" may be different, depending on your language selection.

Setting up options

1 **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

The **[Printers]** window opens.

2 **Select the icon of the printer you want to use by clicking it.**

3. **On the [File] menu, click [Properties].**

   The Printer Properties appears.

4. **Click [Device Settings] tab.**

5. **Under [Installable Options], select the option you have installed to your printer.**

   The current setting is displayed in the **[Change Setting]** box in the lower part of the tab.

6. **Use the [Change Setting] list to select the appropriate setting for the selected option.**

7. **Repeat steps 5– 6 for all options.**

8. **After making all settings for options, click [OK].**

Macintosh - Installing the PPD File

You can use the LaserWriter printer driver that comes with your Macintosh when printing from a Macintosh. However, if you use the LaserWriter driver alone, you cannot use the printer specific functions. The printer specific functions can be used by installing the PPD file.

Note

- ❒ The LaserWriter printer driver for Macintosh does not come with this printer. Use the appropriate printer driver that comes with the Macintosh you are using.
- ❒ See the documentation that comes with your operating system for details on the functions of the LaserWriter 8 printer driver.

Installing the PPD File

1. **Start up your Macintosh.**

2. **Double-click the icon of your Macintosh hard disk to open it.**

3. **Open the [Extensions] folder inside the [System Folder] by double-clicking it.**

4. **Insert the CD-ROM that comes with the printer into the CD-ROM drive of your Macintosh.**

   The icon of the CD-ROM appears.

5. **Double-click the CD-ROM icon.**

   The contents of the CD-ROM are displayed.

6 **Double-click the [Printer Descriptions] folder of the CD-ROM, and then double-click the folder having the appropriate language name to open it.**

7 **Drag the PPD file for your printer and drop it into the [Printer Descriptions] folder inside the [Extensions] folder on your Macintosh hard disk.**

The PPD file is installed.

8 **Drag the CD-ROM icon and drop it into [Trash] to eject the CD-ROM.**

This completes PPD file installation.

Setting up the PPD file

Preparation

Confirm that the printer is connected to an AppleTalk network before performing the following procedure.

1 **On the Apple menu, select [Chooser].**

2 **Click the [LaserWriter 8] icon.**

3 **In the [Select a PostScript Printer] list, select the name of the printer you want to use by clicking it.**

4 **Click [Create].**

5 **Select the printer you want to use by clicking it, and then click [Select].**

The PPD file is set up, and the LaserWriter 8 icon appears at the left of the printer name in the list. Next, use the procedure on P.45 *"Setting up options"* to make the option settings, or close the **[Chooser]** dialog.

Setting up options

1 **On the Apple menu, select [Chooser].**

2 **Click the [LaserWriter 8] icon.**

3 **In the [Select the PostScript Printer] list, select the name of the printer you want to use by clicking it, and then click [Setup].**

4 **Click [Configure].**

A list of options appears.

5 **Select the option you want to set up and select the appropriate setting for it.**

Note

❒ If the option you want to set up is not displayed, the PPD file might not be set up correctly. Check the name of the PPD file shown in the dialog.

6 **Click [OK].**

The list of options closes.

7 **Click [OK].**

The **[Chooser]** dialog appears.

8 **Close the [Chooser] dialog.**

Uninstalling the PostScript Printer Driver

Windows 95/98 - Uninstalling the PostScript Printer Driver

1. **Close all applications that are currently running.**
2. **Click [Start] on the task bar, point to [Settings], and then click [Printers].**
   The **[Printers]** window appears.
3. **Select the icon of the printer you want to remove by clicking it.**
4. **On the [File] menu, click [Delete].**

Windows NT4.0 - Uninstalling the PostScript Printer Driver

1. **Close all applications that are currently running.**
2. **Click [Start] on the task bar, point to [Settings], and then click [Printers].**
   The **[Printers]** window appears.
3. **Select the icon of the printer you want to remove by clicking it.**
4. **On the [File] menu, click [Delete].**

7. Installing the Font Manager

Installing the Font Manager

Printing under a Windows system using PCL 6 or PCL 5e requires installation of the Font Manager for your operating system. This section provides basic procedures for installing the Font Manager.

The actual procedure differs somewhat depending on your operating system. Follow the right one of the procedures below.

Windows 95/98 - Installing the Font Manager

1. **Insert the CD that comes with your printer in the CD-ROM drive.**
2. **Close all applications that are currently running.**
3. **Click [Start] on the task bar.**
4. **Click [Run].**
5. **In the [Run] window, click [Browse].**
6. **Select the CD-ROM Drive.**
7. **Open the folder called [FONTMAN].**
8. **Select the file titled [SETUP.EXE].**
9. **Click [Open].**
10. **Click [OK].**
11. **Follow the instructions on the screen.**

Windows 3.1x - Installing the Font Manager

1. **Insert the CD that comes with your printer in the CD-ROM drive.**
2. **Close all applications that are currently running.**
3. **From the [Program Manager], select [Run] from the [File] menu.**
4. **In the [Run] window, click [Browse...].**
5. **Select the CD-ROM Drive in the Drives list.**

6 Open the folder called [FONTMAN].

7 Open the file titled [SETUP.EXE].

8 Click [OK].

9 Follow the instructions on the screen.

Windows NT4.0 - Installing the Font Manager

1 Insert the CD-ROM that comes with your printer in the CD-ROM drive.

2 Close all applications that are currently running.

3 Click [Start] on the task bar.

4 Click [Run].

5 In the [Run] window, click [Browse].

6 Select the CD-ROM Drive.

7 Open the folder called [FONTMAN].

8 Select the file titled [SETUP.EXE].

9 Click [Open].

10 Click [OK].

11 Follow the instructions on the screen.

Uninstalling the Font Manager

This section provides basic procedures for uninstalling the Font Manager. The actual procedure differs somewhat depending on your operating system.

Follow one of the procedures below.

Windows 95/98 - Uninstalling the Font Manager

1. **Click [Start] on the task bar.**
2. **Point to [Settings] and click [Control Panel].**
3. **Double-click the icon titled [Add/Remove Programs].**
4. **Click [AGFA Font Manager] in the list box.**
5. **Click [Add/Remove].**
   A confirmation dialog box appears.
6. **Click [Yes].**
7. **Follow the instructions on the screen.**

Windows 3.1x - Uninstalling the Font Manager

1. **Open the AGFA Font Manager window in the Program Manager.**
2. **Double-click [UnInstallShield].**
3. **Follow the instructions on the screen.**

Windows NT4.0 - Uninstalling the Font Manager

1. **Click [Start] on the task bar.**
2. **Point to [Settings] and click [Control Panel].**
3. **Double-click the icon titled [Add/Remove Programs].**
4. **Click [AGFA Font Manager] in the list box.**
5. **Click [Add/Remove].**
   A confirmation dialog box appears.
6. **Click [Yes].**

7 **Follow the instructions on the screen.**

PCL 6/5e - Accessing the Printer Properties

Windows 95/98 - Accessing the Printer Properties

There are two methods you can use to open the Printer Properties.

Making printer default settings

To make the printer default settings, first open the **[Printer Properties]** dialog from the **[Printers]** window.

Note

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

1. **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

   The **[Printers]** window appears.

2. **Select the icon of the printer whose default settings you want to change by clicking it.**

3. **On the [File] menu, click [Properties].**

4. **Make your settings and click [OK].**

Making printer settings for a specific application

To make the printer settings for a specific application, open the **[Printer Properties]** dialog from that application. The following example describes how to make settings for the WordPad application that comes with Windows 95.

Note

❒ The actual procedures you should follow to open the **[Printer Properties]** differs slightly depending on the application. For details, see the documentation that comes with the application you are using.

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

❒ Any settings you make in the following procedure are valid for the current application only.

1. **On the [File] menu, click [Print].**

   The **[Print]** dialog appears.

2. **Select the printer you want to use from the [Name] list box, and then click [Properties].**

   The Printer Properties appears.

3. **Make your settings, and click [OK].**

4. **Click [OK] to start your printing.**

Windows 3.1x - Accessing the Printer Setting Dialog

There are two methods you can use to open the Printer Setting dialog.

Making printer default settings

To make the printer default settings, open the printer settings dialog from **[Control Panel]**.

Note

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

1. **From the [Main] group of the [Program Manager], open [Control Panel] by double-clicking it.**

2. **Double-click the [Printers] icon.**

3. **In the [Installed Printers] list box, click the name of the printer you want to set up.**

4. **Click [Setup].**

5. **Make your settings and click [OK].**

6. **Click [Close] to close the [Printers] dialog.**

Making printer settings for a specific application

To make the printer settings for a specific application, open the printer setting dialog from that application. The following example describes how to make settings for the Write application that comes with Windows 3.1x.

Note

❒ The actual procedures you should follow to open the **[Printer Properties]** differs slightly depending on the application. For details, see the documentation that comes with the application you are using.

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

❒ Any settings you make in the following procedure are valid for the current application only.

1 On the [File] menu, click [Print Setup].

This opens the **[Print Setup]** dialog.

2 In the [Printer] group, select the printer you want to use.

Note

❒ If the printer you want to use is not specified as the default printer, click **[Specific Printer]** and then find the printer you want to use in the list box.

3 Click [Options].

This opens the printer driver's properties.

4 Make your settings, and click [OK].

5 Click [OK] to close the [Print Setup] dialog.

6 Start your printing operation.

Windows NT4.0 - Accessing the Printer Properties

Making printer default settings - Printer Properties

Limitation

❒ Changing the settings of the Printer Properties requires full control access rights. Log on as an Administrator or a Power Users group member.

1 Click [Start] on the task bar, point to [Settings], and then click [Printers].

This open the **[Printers]** window.

2 Select the icon of the printer you want to use by clicking it.

3 On the [File] menu, click [Properties].

The Printer Properties appears.

4 Make your settings and click [OK].

Note

❒ Setting you make here are used as the default settings for all applications.

Making printer default settings – Default Document Properties

Limitation

❒ Changing the settings of the Default Document Properties requires full control access rights. Log on as an Administrator or a Power Users group member.

1. **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

   The **[Printers]** window opens.

2. **Select the icon of the printer you want to use by clicking it.**

3. **On the [File] menu, click [Document Defaults].**

   The Default Document Properties appears.

4. **Make your settings and click [OK].**

Note

❒ Settings you make here are used as the default settings for all applications.

Making printer settings for a specific application

To make the printer settings for a specific application, open the **[Document Properties]** dialog from that application. The following example describes how to make settings for the WordPad application that comes with Windows NT4.0.

Note

❒ The actual procedures you should follow to open the **[Document Properties]** differs slightly depending on the application. For details, see the documentation that comes with the application you are using.

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

❒ Any settings you make in the following procedure are valid for the current application only.

1. **On the [File] menu, click [Print].**

   The **[Print]** dialog appears.

2. **Select the printer you want to use from the [Name] list box, and then click [Properties].**

   The Document Properties appears.

3. **Make your settings, and click [OK].**

4. **Click [OK] to start your printing.**

PostScript - Setting Up for Printing

Windows 95/98 - Accessing the Printer Properties

There are two methods you can use to open the Printer Properties.

Making printer default settings

To make the printer default settings, first open the **[Printer Properties]** dialog from the **[Printers]** window.

Note

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

1. **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

   The **[Printers]** window appears.

2. **Select the icon of the printer whose default settings you want to change by clicking it.**

3. **On the [File] menu, click [Properties].**

   The Printer Properties appears.

4. **Make your settings and click [OK].**

Making printer settings for a specific application

To make the printer settings for a specific application, open the **[Printer Properties]** dialog from that application. The following example describes how to make settings for the WordPad application that comes with Windows 95.

Note

❒ The actual procedures you should follow to open the **[Printer Properties]** differs slightly depending on the application. For details, see the documentation that comes with the application you are using.

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

❒ Any settings you make in the following procedure are valid for the current application only.

1. **On the [File] menu, click [Print].**

   The**[Print]** dialog appears.

2 **Select the printer you want to use from the [Name] list box, and then click [Properties].**

The Printer Properties appears.

3 **Make your settings, and click [OK].**

4 **Click [OK] to start your printing.**

Windows NT4.0 - Accessing the Printer Properties

Making printer default settings - Printer Properties

Limitation

❒ Changing the settings of the Printer Properties requires full control access rights. Log on as an Administrator or a Power Users group member.

1 **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

This open the **[Printers]** window.

2 **Select the icon of the printer you want to use by clicking it.**

3 **On the [File] menu, click [Properties].**

The Printer Properties appears.

4 **Make your settings and click [OK].**

Note

❒ Setting you make here are used as the default settings for all applications.

Making printer default settings - Default Document Properties

Limitation

❒ Changing the settings of the Default Document Properties requires full control access rights. Log on as an Administrator or a Power Users group member.

1 **Click [Start] on the task bar, point to [Settings], and then click [Printers].**

This open the **[Printers]** window.

2 **Select the icon of the printer you want to use by clicking it.**

3 **On the [File] menu, click [Document Defaults].**

The Default Document Properties appears.

4 **Make your settings and click [OK].**

Note

❒ Settings you make here are used as the default settings for all applications.

Making printer settings for a specific application

To make the printer settings for a specific application, open the **[Document Properties]** dialog from that application. The following example describes how to make settings for the WordPad application that comes with Windows NT4.0.

Note

❒ The actual procedures you should follow to open the **[Document Properties]** differs slightly depending on the application. For details, see the documentation that comes with the application you are using.

❒ With some applications, the printer driver's settings are not used, and the application's own initial default settings are applied.

❒ Any settings you make in the following procedure are valid for the current application only.

1. **On the [File] menu, click [Print].**

   The **[Print]** dialog appears.

2. **Select the printer you want to use from the [Name] list box, and then click [Properties].**

   The Document Properties appears.

3. **Make your settings, and click [OK].**

4. **Click [OK] to start your printing.**

Macintosh - Setting Up for Printing

Making paper settings from an application

1. **Open the file you want to print.**

2. **On the [File] menu, click [Page Setup].**

   The **[LaserWriter 8 Page Setup]** dialog opens.

3. **Make sure that the printer you want to use is shown in [Format for:]. Then, use [Paper] to select the paper size your want to use.**

   Note

   ❒ If your printer is now shown in the **[Format for:]** box, use the pop-up menu to display a list of available printers.

Reference

The actual appearance of the **[Page Setup]** dialog depends on the application you are using. See the documentation that comes with your Macintosh for details.

4 After all the settings are the way you want, click [OK].

Setting up for printing from an application

1 Open the file you want to print.

2 On the [File] menu, click [Print].

The **[Printer]** dialog opens.

3 Make sure that your printer is selected in the [Printer] box, make the printer settings you want.

4 After the settings are the way you want, click [Print].

Canceling a Print Job

Windows 95/98 - Canceling Print Job

1 **Double-click the printer icon on the Windows Task Bar.**

This opens a window that shows all the print jobs that are currently queued for printing. Check the current status of the job you want to cancel.

2 **Click the name of the job you want to cancel so it is highlighted.**

3 **On the [Document] menu, click [Cancel Printing].**

Note

❒ You can also open the print job queue window by double-clicking the printer icon in the **[Printer]** window.

4 **Press the printer's 【Job Reset】.**

The message appears on the operation panel display indicating that the print job is being cancelled.

Important

❒ The above procedure cancels the print job that is currently being processed by the printer. In some cases, the printer may already be processing data for the next print job following the one currently being output. In such a case, the next print job is also canceled when you press **【Job Reset】** key.

❒ When your printer is being shared by multiple computers, make sure you do not accidentally cancel someone else's print job.

Note

❒ You cannot stop printing data that has already been processed internally by the printer. Because of this, printing may continue for a few pages after you press **【Job Reset】**.

❒ A print job that contains a large volume of data may take considerable time to stop.

Windows 3.1x - Canceling a Print Job

1 **In the [Main] group, double-click the [Print Manager] icon.**

This opens a window that shows all the print jobs that are currently queued for printing.

2 **Click the name of the job you want to cancel so it is highlighted.**

3 **On the [Document] menu, click [Delete Document].**

4 **Click [Close] to close the dialog.**

5 **Press the printer's【Job Reset】.**

The message appears on the operation panel display indicating that the print job is being cancelled.

Important

❒ The above procedure cancels the print job that is currently being processed by the printer. In some cases, the printer may already be processing data for the next print job following the one currently being output. In such a case, the next print job is also canceled when you press【Job Reset】.

❒ When your printer is being shared by multiple computers, make sure you do not accidentally cancel someone else's print job.

Note

❒ You cannot stop printing data that has already been processed internally by the printer. Because of this, printing may continue for a few pages after you press【Job Reset】.

❒ A print job that contains a large volume of data may take considerable time to stop.

Windows NT4.0 - Canceling a Print Job

1 **Double-click the printer icon on the Windows Task Bar.**

This opens a window that shows all the print jobs that are currently queued for printing. Check the current status of the job you want to cancel.

2 **Click the name of the job you want to cancel so it is highlighted.**

3 **On the [Document] menu, click [Cancel Printing].**

Note

❒ You can also open the print job queue window by double-clicking the printer icon in the **[Printer]** window.

4 **Press the printer's【Job Reset】.**

The message appears on the operation panel display indicating that the print job is being cancelled.

Important

❒ The above procedure cancels the print job that is currently being processed by the printer. In some cases, the printer may already be processing data for the next print job following the one currently being output. In such a case, the next print job is also canceled when you press【Job Reset】key.

❒ When your printer is being shared by multiple computers, make sure you do not accidentally cancel someone else's print job.

Note

❒ You cannot stop printing data that has already been processed internally by the printer. Because of this, printing may continue for a few pages after you press 【**Job Reset**】.

❒ A print job that contains a large volume of data may take considerable time to stop.

9. Paper and Other Media

Paper and Other Media Supported by Your Printer

Paper Types and Sizes

This section provides the type, size, feed direction, and maximum capacity of paper that can be loaded into each paper tray in this printer.

Important

❒ If you use damp or curled paper, a misfeed might occur. In such a case, try turning over the paper stack in the paper tray. If there is no improvement, change to paper with less curl.

Note

❒ The meaning of the symbols describing paper can be seen in the table below.

In this manual	On the panel display	Meaning
		short-edge feed direction
		long-edge feed direction

❒ It is recommended that you load paper having the size and direction you frequently use in the tray selected with the "Tray Priority". For details on Tray Priority, see P.128 *"Job Control Parameters"*.

❒ When loading paper having the same size in more than one tray, it is recommended that you load paper in the same direction.

Reference

For details on loading each type of paper, see P.79 *"Type 1 Printer: Loading Paper and Other Media"*, and P.88 *"Type 2 Printer: Loading Paper and Other Media"*.

Type 1 Printer

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ Be sure to set the paper size dial to match the actual paper size loaded in the tray. When the actual paper size is not shown on the dial, set the dial to "✳" and specify the paper size using the operation panel.

❒ For Tray 1, 2 and 3, the dial setting overrides the setting made with the operation panel.

❒ The envelope feeder requires the installation of the optional paper unit. When one optional paper unit is installed, the envelope feeder can be exchanged with Tray 2. When two optional paper units are installed, it can be exchanged with Tray 2, not with Tray 3.

Note

❒ The supported paper size varies somewhat depending on the memory size of your printer. ⇒ P.141 *"Memory Capacity and Paper Size"*

❒ Regarding the meanings of the abbreviations, see the notes at the bottom of each table.

❖ Type 1 Printer: Paper Sizes (Metric version)

	Feed direction	Size (mm)	Bypass Tray	Standard Tray (Tray1)	Paper Feed Unit (A4) Type 2000 (Tray2/3)	Paper Feed Unit (A3) Type 2000 (Tray2/3)	Envelope Feeder Type 2000
A3	▯	297 × 420	❍	☆	X	☆	X
B4 JIS	▯	257 × 364	❍	★	X	★	X
A4	▯	210 × 297	❍	☆	☆	☆	X
	▭	297 × 210	❍	☆	☆	☆	X
B5 JIS	▯	182 × 257	❍	X	X	X	X
	▭	257 × 182	❍	★	★	★	X
A5	▯	148 × 210	❍	X	X	X	X
	▭	210 × 148	❍	☆	☆	☆	X
B6 JIS	▯	128 × 182	❍	X	X	X	X
Double Letter (DLT, 11" × 17")	▯	279 × 432	❍	★	X	★	X
Legal (LG, $8^1/_2$" × 14")	▯	216 × 356	❍	★	X	★	X

	Feed direction	Size (mm)	Bypass Tray	Standard Tray (Tray1)	Paper Feed Unit (A4) Type 2000 (Tray2/3)	Paper Feed Unit (A3) Type 2000 (Tray2/3)	Envelope Feeder Type 2000
Letter (LT, $8^1/_2$" × 11")	▯	216 × 279	❍	★	★	★	X
	▭	279 × 216	❍	☆	☆	☆	X
Half Letter (HLT, $5^1/_2$" × $8^1/_2$")	▯	140 × 216	❍	X	X	X	X
Executive (Exec., $7^1/_4$" × $10^1/_2$")	▯	184 × 276	❍	X	X	X	X
	▭	276 × 184	❍	★	★	★	X
Folio ($8^1/_4$" × 13")	▯	210 × 330	❍	★	★	★	X
Foolscap (F4, $8^1/_2$" × 13")	▯	216 × 330	❍	☆	☆	☆	X
F/GL (8" × 13")	▯	203 × 330	❍	★	★	★	X
Com#10 Env ($4^1/_8$" × $9^1/_2$")	▯	104.8 × 241.3	❍	X	X	X	❍
C6 Env (4.49" 6.38")	▯	114 ×162	❍	X	X	X	❍
DL Env (4.33" × 8.66")	▯	110 × 220	❍	X	X	X	❍
Monarch Env ($3^7/_8$" × $7^1/_2$")	▯	98.4 × 190.5	❍	X	X	X	❍
Custom Size (PCL 6/PS only)	—	—	❍*	X	X	X	X

- ❍ means that the size is supported and needs to specify the paper size using the operation panel. (Regarding the bypass tray and envelope feeder, there is no dial on the tray.)
- ☆ means that the size is supported and indicated on the tray dial. Be sure to set the paper size dial to match the actual paper size loaded in the tray.
- ★ means that the size is supported but not indicated on the tray dial. You should set the tray dial to "✱", and specify the paper size using the operation panel.

- ❍* means that the supported size is approximately 98.4 - 297 mm in width, and approximately 148 - 431.8 mm in length. The supported size may differ depending on the printer language you use. Use the printer driver to specify the custom size. Set the custom size setting with the operation panel.
- X means that the size is not supported.

❖ Type 1 Printer: Paper Sizes (Inch version)

	Feed direction	Size (inch)	Bypass Tray	Standard Tray (Tray1)	Paper Feed Unit (LT) Type 2000 (Tray2/3)	Paper Feed Unit (DLT) Type 2000 (Tray2/3)	Envelope Feeder Type 2000
Double Letter (DLT)	▯	11" × 17"	❍	☆	X	☆	X
Legal (LG)	▯	$8^1/_2$" × 14"	❍	☆	X	☆	X
Letter (LT)	▯	$8^1/_2$" × 11"	❍	☆	☆	☆	X
	▭	11" × $8^1/_2$"	❍	☆	☆	☆	X
Half Letter (HLT)	▯	$5^1/_2$" × $8^1/_2$"	❍	X	X	X	X
Executive (Exec.)	▯	$7^1/_4$" × $10^1/_2$"	❍	X	X	X	X
	▭	$10^1/_2$" × $7^1/_4$"	❍	★	★	★	X
A3	▯	11.26" × 16.54"	❍	★	X	★	X
B4 JIS	▯	10.12" × 14.33"	❍	★	X	★	X
A4	▯	8.26" × 5.83"	❍	★	★	★	X
	▭	5.83" × 8.26"	❍	☆	☆	☆	X
B5 JIS	▯	7.17" × 10.12"	❍	X	X	X	X
	▭	10.12″ × 7.17"	❍	★	★	★	X
A5	▯	5.83" × 8.26"	❍	X	X	X	X
	▭	8.26" × 5.83"	❍	★	★	★	X
B6 JIS	▯	5.04" × 7.17"	❍	X	X	X	X

	Feed direction	Size (inch)	Bypass Tray	Standard Tray (Tray1)	Paper Feed Unit (LT) Type 2000 (Tray2/3)	Paper Feed Unit (DLT) Type 2000 (Tray2/3)	Envelope Feeder Type 2000
Folio	⇩	$8^1/_4" \times 13"$	❍	★	★	★	X
Foolscap F4	⇩	$8^1/_2" \times 13"$	❍	☆	☆	☆	X
F/GL	⇩	$8" \times 13"$	❍	★	★	★	X
Com#10 Env	⇩	$4^1/_8" \times 9^1/_2"$	❍	X	X	X	❍
C6 Env	⇩	4.49" 6.38"	❍	X	X	X	❍
DL Env	⇩	$4.33" \times 8.66"$	❍	X	X	X	❍
Monarch Env	⇩	$3^7/_8" \times 7^1/_2"$	❍	X	X	X	❍
Custom Size (PCL 6/PS only)	—	—	❍*	X	X	X	X

- ❍ means that the size is supported and needs to specify the paper size using the operation panel. (Regarding the bypass tray and envelope feeder, there is no dial on the tray.)
- ☆ means that the size is supported and indicated on the tray dial. Be sure to set the paper size dial to match the actual paper size loaded in the tray.
- ★ means that the size is supported but not indicated on the tray dial. You should set the tray dial to "✱", and specify the paper size using the operation panel.
- ❍* means that the supported size is approximately 3.88" - 11.69" in width, and approximately 5.83" - 17.00" in length. The supported size may differ depending on the printer language you use. Use the printer driver to specify the custom size. Set the custom size setting with the operation panel.
- X means that the size is not supported.

❖ Paper weight and number of sheets to be set

	Supported paper weight	Maximum number of sheets (plain paper) *1
Standard Tray	60 - 90 g/m^2 (16 - 24 lb)	250 (80 g/m^2, 20 lb)
Paper Feed Unit (DLT) Type 2000 (option) Paper Feed Unit (A3) Type 2000 (option)	60 - 90 g/m^2 (16 - 24 lb)	500 (80 g/m^2, 20 lb)
Paper Feed Unit (LT) Type 2000 (option) Paper Feed Unit (A4) Type 2000 (option)	60 - 90 g/m^2 (16 - 24 lb)	500 (80 g/m^2, 20 lb)
Bypass Tray	60 - 162 g/m^2 (16 - 42 lb)	100 (80 g/m^2, 20 lb) For other kind of papers, ⇒ P.74 *"Paper types and cautions"*.
Envelope Feeder Type 2000 *2	⇒ P.74 *"Paper types and cautions"*	

*1 Make sure that the top of the stack is not higher than the limit mark indicated on the side fence of the tray.
*2 The envelope feeder requires the installation of the optional paper feed unit.

Type 2 Printer

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ Be sure to set the paper size dial to match the actual paper size loaded in the tray.

❒ For Tray 1 and 2, the dial setting overrides the setting made with the operation panel.

❒ The envelope feeder requires the installation of the optional paper unit.

❒ The envelope feeder can be exchanged only with the Tray 2.

Note

❒ The supported paper size varies somewhat depending on the memory size of your printer. ⇒ P.141 *"Memory Capacity and Paper Size"*

❒ Regarding the meanings of the abbreviations, see the notes at the bottom of each table.

❖ Type 2 Printer: Paper Sizes (Metric version)

	Feed direction	Size (mm)	Bypass Tray	Standard Tray (Tray1)	Paper Feed Unit Type 1400 (Tray2)	Envelope Feeder Type 1400
A4	▯	210 × 297	❍	❍	☆	X
B5 JIS	▯	182 × 257	❍	X	X	X
A5	▯	148 × 210	❍	X	X	X
	▭	210 × 148	❍	X	☆	X
B6 JIS	▯	128 × 182	❍	X	X	X
Legal (LG, $8^1/_2$" × 14")	▯	216 × 356	❍	X	X	X
Letter (LT, $8^1/_2$" × 11")	▯	216 × 279	❍	X	☆	X
Half Letter (HLT, $5^1/_2$" × $8^1/_2$")	▯	140 × 216	❍	X	X	X
Executive (Exec., $7^1/_4$" × $10^1/_2$")	▯	184 × 276	❍	X	☆	X
Folio ($8^1/_4$" × 13")	▯	210 × 330	❍	X	X	X
Foolscap (F4, $8^1/_2$" × 13")	▯	216 × 330	❍	X	X	X
F/GL (8" × 13")	▯	203 × 330	❍	X	X	X
Com#10 Env ($4^1/_8$" × $9^1/_2$")	▯	104.8 × 241.3	❍	X	X	❍
C6 Env (4.49" 6.38")	▯	114 ×162	❍	X	X	❍
DL Env (4.33" × 8.66")	▯	110 × 220	❍	X	X	❍
Monarch Env ($3^7/_8$" × $7^1/_2$")	▯	98.4 × 190.5	❍	X	X	❍
Custom Size (PCL 6/ PS only)	—	—	❍*	X	X	X

- ❍ means that the size is supported and needs to specify the paper size using the operation panel. (There is no dial on the tray.) However, it is not necessary to do this for the standard tray (tray 1).
- ☆ means that the size is supported and indicated on the tray dial. Be sure to set the paper size dial to match the actual paper size loaded in the tray. The dial setting overrides the setting made with the operation panel.
- ❍* means that the supported size is approximately 98.4 - 216 mm in width, and approximately 148 - 355.6 mm in length. The supported size may differ depending on the printer language you use. Use the printer driver to specify the custom size. Set the custom size setting with the operation panel.
- X means that the size is not supported.

❖ Type 2 Printer: Paper Sizes (Inch version)

	Feed direction	Size (inch)	Bypass Tray	Standard Tray (Tray1)	Paper Feed Unit Type 1400(Tray2)	Envelope Feeder Type 1400
Legal (LG)	▯	$8^1/_2" \times 14"$	❍	X	X	X
Letter (LT)	▯	$8^1/_2" \times 11"$	❍	❍	☆	X
Half Letter (HLT)	▯	$5^1/_2" \times 8^1/_2"$	❍	X	X	X
Executive (Exec.)	▯	$7^1/_4" \times 10^1/_2"$	❍	X	☆	X
A4	▯	$8.26" \times 5.83"$	❍	X	☆	X
B5 JIS	▯	$7.17" \times 10.12"$	❍	X	X	X
A5	▯	$5.83" \times 8.26"$	❍	X	X	X
	▭	$8.26" \times 5.83"$	❍	X	☆	X
B6 JIS	▯	$5.04" \times 7.17"$	❍	X	X	X
Folio	▯	$8^1/_4" \times 13"$	❍	X	X	X
Foolscap F4	▯	$8^1/_2" \times 13"$	❍	X	X	X
F/GL	▯	$8" \times 13"$	❍	X	X	X
Com#10 Env	▯	$4^1/_8" \times 9^1/_2"$	❍	X	X	❍

	Feed direction	Size (inch)	Bypass Tray	Standard Tray (Tray1)	Paper Feed Unit Type 1400(Tray2)	Envelope Feeder Type 1400
C6 Env		4.49" 6.38"	❍	X	X	❍
DL Env		4.33" × 8.66"	❍	X	X	❍
Monarch Env		$3^7/_8$" × $7^1/_2$"	❍	X	X	❍
Custom Size (PCL 6/PS only)	—	—	❍*	X	X	X

- ❍ means that the size is supported and needs to specify the paper size using the operation panel. (There is no dial on the tray.) However, it is not necessary to do this for the standard tray (tray 1).
- ☆ means that size is supported and indicated on the tray dial. Be sure to set the paper size dial to match the actual paper size loaded in the tray. The dial setting overrides the setting made with the operation panel.
- ❍* means that the supported size is approximately 3.88" - 8.50" in width, and approximately 5.83" - 14.00" in length. The supported size may differ depending on the printer language you use. Use the printer driver to specify the custom size. Set the custom size setting with the operation panel.
- X means that the size is not supported.

❖ Paper weight and number of sheets to be set

	Supported paper weight	Maximum number of sheets (plain paper) *1
Standard Tray	60 - 90 g/m^2 (16 - 24 lb)	250 (80 g/m^2, 20 lb)
Paper Feed Unit Type 1400 (option)	60 - 90 g/m^2 (16 - 24 lb)	500 (80 g/m^2, 20 lb)
Bypass Tray	60 - 162 g/m^2 (16 - 42 lb)	100 (80 g/m^2, 20 lb) For other kind of papers, ⇒ P.74 *"Paper types and cautions"*.
Envelope Feeder Type 1400 *2	⇒ P.74 *"Paper types and cautions"*	

*1 Make sure that the top of the stack is not higher than the limit mark indicated on the side fence of the tray.
*2 The envelope feeder requires the installation of the optional paper feed unit.

Precautions for Paper

Note the following precautions when handling or selecting paper to be used with this printer.

Cautions in loading paper

- Use only the recommended paper types. Print quality cannot be guaranteed if other paper types are used.
- Do not use paper that is already printed on.
- When loading paper into the paper tray, make sure that the top of the stack is not higher than the limit mark inside the tray.
- When loading paper onto the bypass tray, make sure that the paper fits under the side guide.
- When loading paper into the paper tray, make sure that print side is facing *up*.
- When loading paper onto the bypass tray, make sure that print side is facing *down*.

Cautions in storing paper

Paper should always be stored properly. Improperly stored paper might result in poor print quality, paper misfeeds, or printer damage.

Follow the precautions below.

- Avoid storing paper in humid areas.
- Avoid exposing paper to direct sunlight.
- Store on a flat surface.
- Keep open reams of paper in the package in which the paper came.

Paper types and cautions

❖ Plain paper

- If you print on paper heavier than 90 g/m^2 (24 lb), use the bypass tray. The bypass tray can hold paper up to 162 g/m^2 (42 lb) in weight.
- When loading paper heavier than 155 g/m^2 (41 lb) onto the bypass tray, set the printer to the Thick Paper mode using the operation panel. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*
- If paper is curled or bent, correct it before loading.

❖ OHP transparencies

- Load only one OHP transparency at a time onto the bypass tray.
- When loading OHP transparencies onto the bypass tray, set the printer to the Thick Paper mode using the operation panel. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*
- Be careful not to touch the print side of the OHP transparencies. Otherwise, the print side gets dirty or damaged, and results in poor print quality.
- When printing on an OHP transparency that has a print side, load it face down onto the bypass tray.

❖ Translucent paper

- Load only one translucent paper at a time onto the bypass tray.
- When printing on translucent paper that has a print side, load it face down onto the bypass tray.

❖ Adhesive labels

- Load only one adhesive label at a time onto the bypass tray.
- Use adhesive labels in which the whole side can be printed on.
- Avoid using adhesive labels having exposed glue.
- If the print side is coated, the print quality might be reduced, as the toner might not fuse well.

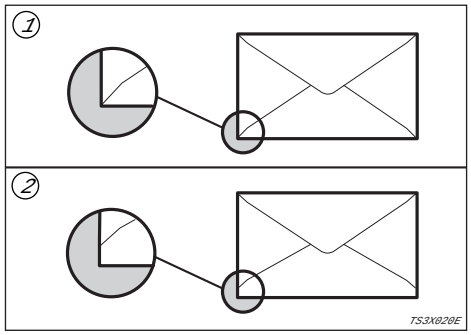
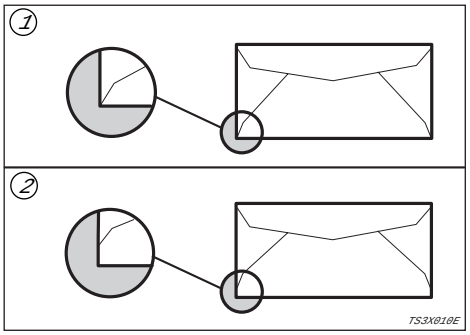
❖ Envelopes

- When printing on envelopes, use the bypass tray or the optional envelope feeder.
- Even when the optional envelope feeder is not installed, you can specify the sizes for the envelopes for tray 2 using the operation panel. However, the envelopes cannot be loaded into tray 2 without the envelope feeder. To use the envelope feeder, the installation of the optional paper unit is required.⇒ P.16 *"Type 1 Printer: Installing the Envelope Feeder Type 2000"*, P.21 *"Type 2 Printer: Installing the Envelope Feeder Type 1400"*.
- Specification of envelopes are as follows:

	Metric version	Inch version
Weight	72 – 90 g/m^2	19 – 24 lb
Recommended weight and size	72 g/m^2, 114 × 162 mm (C6 Env)	24 lb, $3^7/_8$" × $7^1/_2$" (Monarch)

- For the Type 1 printer, you can load up to 10 envelopes (72 – 90 g/m^2, 19 – 24 lb) onto the bypass tray at a time, without forcibly pressing them. However, make sure that the envelopes are not damp, and that the top of the stack is not higher than the limit mark on the side guide. ⇒ P.84 *"Type 1 printer: loading envelopes onto the bypass tray"*

- For the Type 2 printer, you can load up to 5 envelopes (72 – 90 g/m^2, 19 – 24 lb) onto the bypass tray at a time, without forcibly pressing them. However, make sure that the envelopes are not damp, and that the top of the stack is not higher than the limit mark on the side guide. ⇒ P.92 *"Type 2 printer: loading envelopes onto the bypass tray"*
- You can load up to 60 envelopes (72 – 90 g/m^2, 19 – 24 lb) into the optional envelope feeder at a time, without forcibly pressing them. However, make sure that the envelopes are not damp, and that the top of the stack is not higher than the limit mark on the side guide. ⇒ P.85 *"Type 1 printer: loading envelopes into the envelope feeder"* and P.94 *"Type 2 printer: loading envelopes into the envelope feeder"*
- Make sure that print side is facing down when loading onto the bypass tray, and facing up when loading into the optional envelope feeder.
- Load the envelopes with the flaps aligned to the left side fence. The flaps should be securely folded down.
- Make sure that there is no air in the envelopes before loading.
- To get the better print quality, it is recommended that you set the right, left, top, and bottom print margin, to at least 15 mm (0.6") each.
- Do not print on both sides of envelopes.
- Load only one size and type of envelope at a time.
- Before loading envelopes, flatten the leading edges (side being fed into the printer) of them by running a pencil or ruler across them.
- Before loading envelopes, make sure that they are rectangular in shape. Refer to the following illustrations.

Metric version	Inch version
	
① Good construction for envelopes ② Poor construction for envelopes	① Good construction for envelopes ② Poor construction for envelopes

- Avoid using the non-supported envelopes listed on P.77 *"Paper not supported by this printer"*.

Paper not supported by this printer

Avoid using the following types of paper that are not supported by this printer:

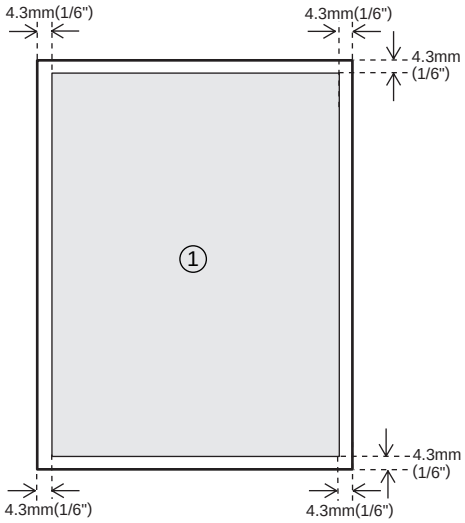
- Paper whose weight is heavier or lighter than the limitation. ⇒ P.65 *"Paper Types and Sizes"*
- Bent, folded, or creased paper
- Curled or twisted paper
- Torn paper
- Wrinkled paper
- Damp paper
- Paper stuck together
- Paper that is dry enough to emit static electricity
- Paper that has already been printed except preprinted letterhead

  Note

  ❒ Ink on paper from an earlier print job, another copier, an inkjet printer or other device could damage the fusing unit of this printer due to a difference in fusing temperatures.
- Coated paper (except the recommended one)
- Special paper like thermal paper, aluminum foil, carbon paper and conductive paper
- Heavily textured paper
- Glued paper
- Label paper on which glue or base paper is exposed
- Paper with clips or stapled
- Paper with tape or ribbons attached
- Envelopes in the following conditions
  - damp
  - excessively curled or twisted
  - stuck together
  - damaged in any way
  - with stamps attached
  - with windows, holes, perforations, cutouts, or embossing
  - with metal clasps, string ties, or metal folding bars
  - designed to be interlocked
  - with nicked edges of bent corners
  - with rough, cockle, or laid finishes
  - with any exposed adhesive, when the flap is in the sealed or closed position

Printable Area

The following shows the printable area for this printer. Be sure to set the print margins correctly.



① : printable area

Note

❒ The printable area may vary depending on paper size, printer language and printer driver settings.

Type 1 Printer: Loading Paper and Other Media

Type 1 Printer: Loading Paper in the Standard Paper Tray

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

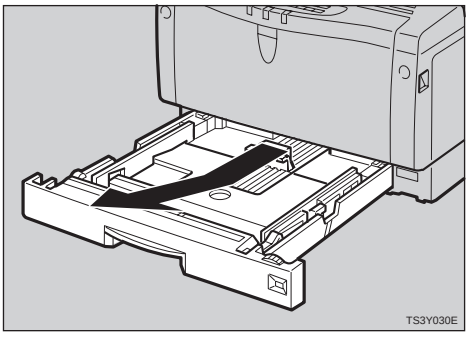
Important

❒ Make sure that the setting of the paper size dial matches the paper size and feed direction of the paper in the tray. Otherwise, the printer might be damaged, or printing problems might occur.

Reference

For more information on the size and feed direction of paper that can be loaded in the tray, see P.65 *"Paper Types and Sizes"*.

1 Pull the paper tray out until it stops. After that, lift it slightly, then pull it out of the printer.



Note

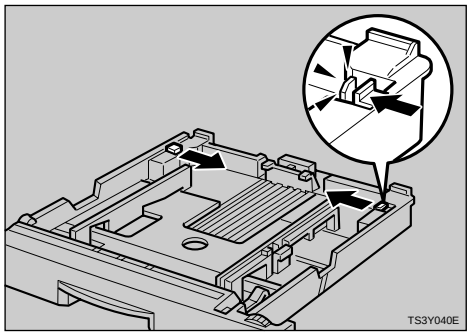
❒ Do not touch the three white pins on the right front side of the printer.

2 If you load the paper of A4 ▯, 8 1/2" × 11" ▯ or larger, you should extend the tray as follows.

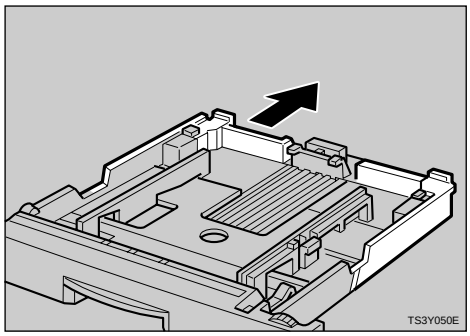
Note

❒ You cannot load paper smaller than A4 ▯ or 8 1/2" × 11" ▯, if the tray is extended. In this case, return the tray to its standard length.

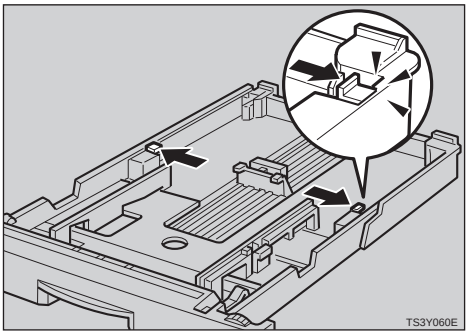
❶ Slide the catches inwards to unlock the re-size tray.



❷ Pull the re-size tray until it stops.



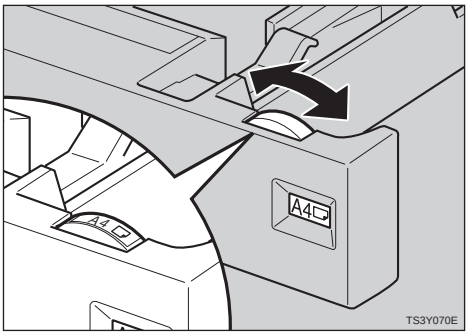
❸ **Return the catches to their original positions.**



Important

❒ Make sure that the catches return to their original positions securely. If they are not locked securely, paper misfeeds might occur.

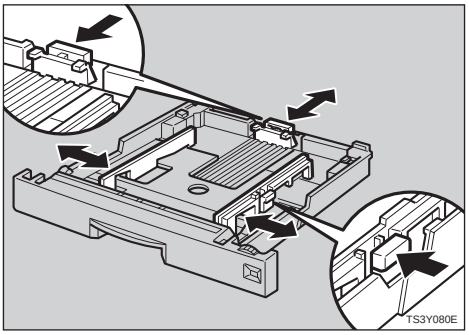
3 **Adjust the paper size dial to match the size and feed direction of the paper in the paper tray.**



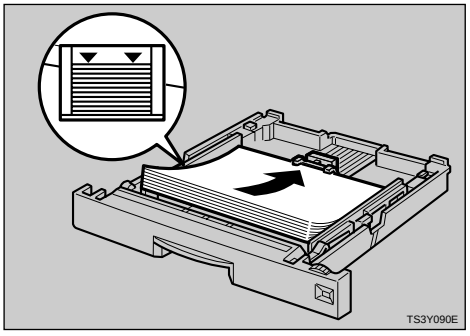
Important

❒ If you want to use paper size and feed direction that are not indicated on the paper size dial, set the dial to "✱". In this case, you should specify the paper size using the operation panel. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*

4 **Adjust the rear and side guides to the paper size you want to load.**



5 **Load paper into the tray with the print side up.**



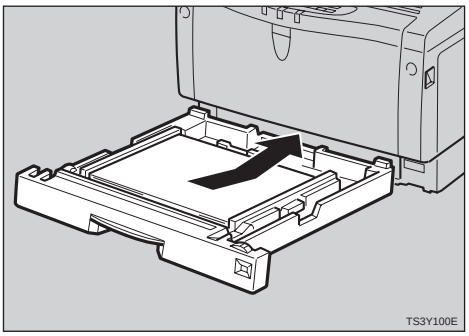
Important

❒ Make sure that the top of the stack is not higher than the limit mark inside the tray.

❒ Make sure the paper fits under the rear guide.

6 **While lifting the front side of the tray, place the tray into the printer. Then slide it into the printer**

until it stops.



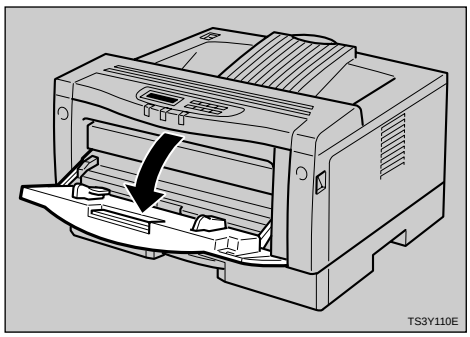
Type 1 Printer: Loading Paper in the Bypass Tray

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

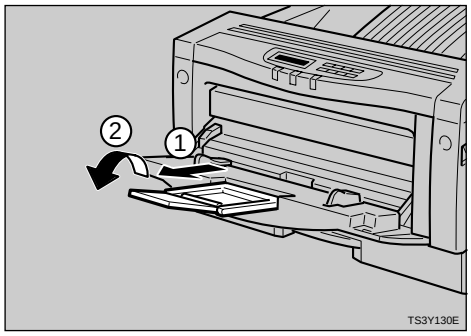
❒ If you set the custom sized paper, you should specify the paper size using the printer driver. Also, use the operation panel to set the custom size setting.

1 Open the bypass tray.

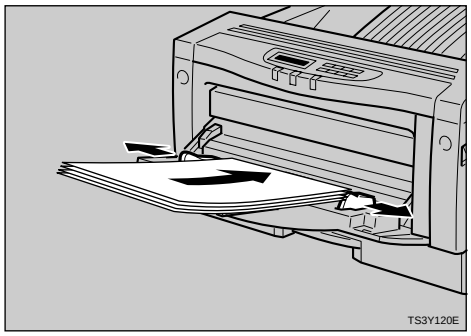


Note

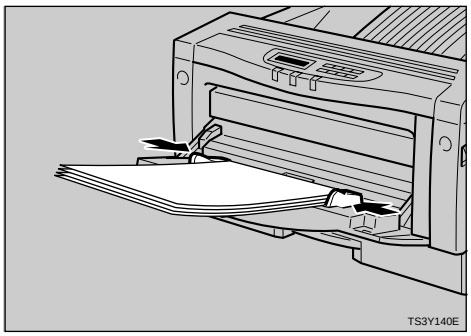
❒ If you load paper of A4 ⬓, $8^1/_2$" × 11" ⬓(Letter) or larger, slide out the bypass tray extender (①) and then flip it open (②).



2 Slide the side guides outwards, and load paper until it stops with the print side down.



3 Adjust the side guides to the paper width.



Important

❒ Make sure the paper fits under the side guides.

4 Specify the paper size and feed direction using the operation panel as follows.

❶ **Press【Menu】.**

The following message appears on the panel display.

```
Main Menu:
 Job Control
```

❷ **Press【Enter】.**

The following message appears on the panel display.

```
Job Control:
1.Paper Input
```

❸ **Press【Enter】.**

The following message appears on the panel display.

```
Paper Input:
1.Tray Priority
```

❹ **Press【▼】twice.**

The following message appears on the panel display.

```
Paper Input:
3.Paper Size
```

❺ **Press【Enter】.**

The following message appears on the panel display.

```
Paper Size:
1.Bypass Tray
```

❻ **Press【Enter】.**

❼ **Select the paper size you have specified for the bypass tray using【▼】【▲】keys.**

❽ **Press【Enter】to execute your setting. Wait for a while.**

❾ **After the panel display changes, press【On Line】.**

The panel display returns to the ready condition as follows:

```
Ready
```

5 **Start the print operation with your computer.**

Type 1 Printer: Loading Paper in the Optional Paper Tray

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

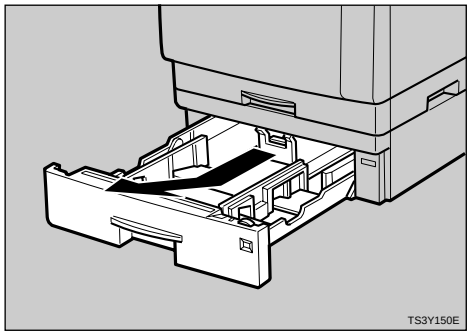
❒ If your printer is equipped with the optional tray(s), do not pull out more than one tray with paper at a time. If you do, the printer might tilt forward.

❒ Make sure that the setting of the paper size dial matches the paper size and feed direction of the paper in the tray. Otherwise, the printer might be damaged, or printing problems might occur.

Reference

For more information on the size and feed direction of paper that can be set in the tray, see P.65 *"Paper Types and Sizes"*.

1 **Pull the paper tray out until it stops. After that, lift it slightly, then pull it out of the printer.**



Note

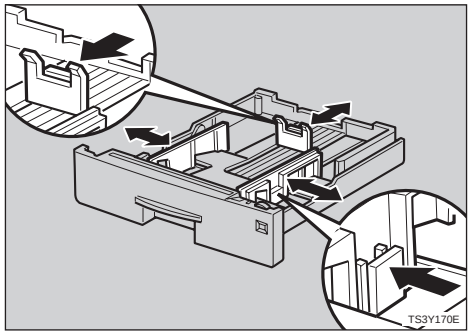
❒ Do not touch the three white pins on the right front side of the printer.

2 **Adjust the paper size dial to match the size and feed direction of paper in the paper tray.**

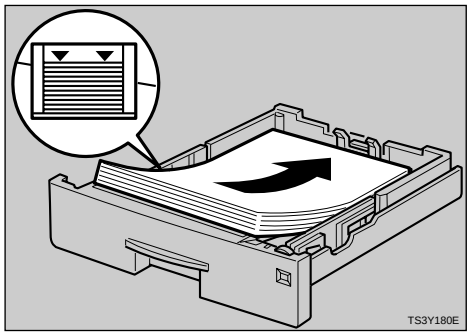
Important

❒ If you want to use paper sizes or feed directions that are not listed on the paper size dial, adjust the dial to "✱". In this case, you should specify the paper size using the operation panel. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*

3 **Adjust the rear and side guides to the paper size you want to load.**



4 **Load paper into the paper tray with the print side up.**



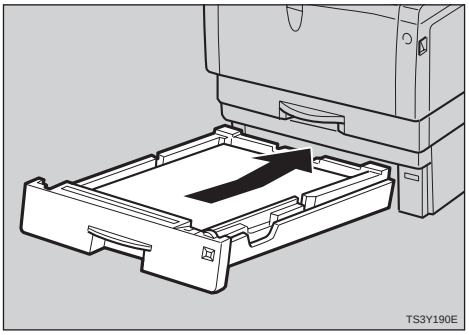
Important

❒ Make sure the top of the stack is not higher than the limit mark inside the tray.

❒ Make sure the paper fits under the rear guide.

5 **While lifting the front side of the tray, place the tray into the print-**

er. Then slide it inside until it stops.



Type 1 Printer: Loading Envelopes

As there are so many kinds of envelopes, be sure to check if those to be used are supported by this printer.

Important

- ❒ Even when the optional envelope feeder is not installed, you can specify the sizes for the envelopes for Tray 2 using the operation panel. However, make sure that the envelopes are not loaded into the tray without the envelope feeder.
- ❒ To install the envelope feeder, the installation of the optional paper unit is required.⇒ P.16 *"Type 1 Printer: Installing the Envelope Feeder Type 2000"*

Reference

For more information on the envelopes, see P.74 *"Paper types and cautions"*.

Type 1 printer: loading envelopes onto the bypass tray

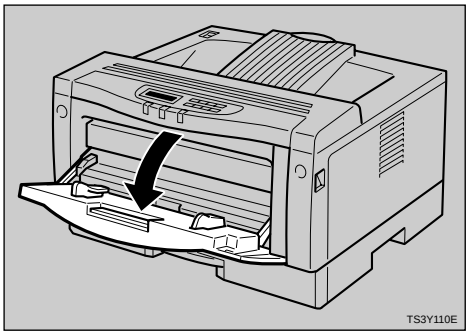
Note

- ❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

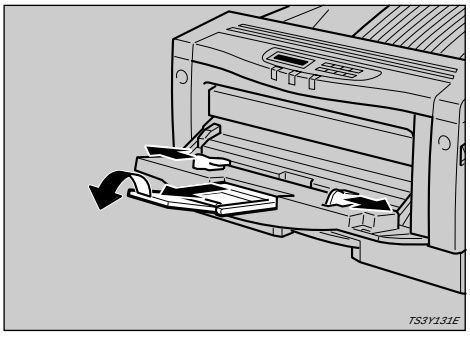
Important

- ❒ With the bypass tray, you can load up to 10 envelopes at a time. For more information on envelopes, see P.74 *"Paper types and cautions"*.

1 Open the bypass tray.

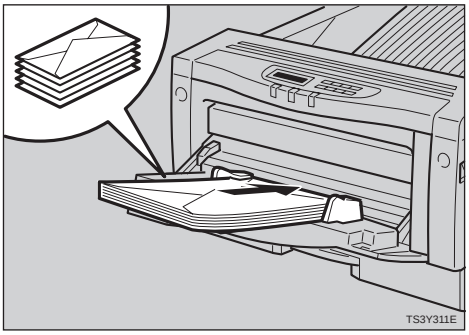


2 Slide the side guides. Slide out the bypass tray extender and flip it open.



3 Load envelopes until it stops, with the print side down and the

sides of the flaps on the right as shown in the illustration.



Important

❒ Make sure that the envelope flaps are securely folded down, and that there is no air inside the envelopes.

Note

❒ Make sure that the top of the stack is not higher than the limit mark on the side guides.

❒ Do not press down on the stack of envelopes with too much force.

4 Slide the side guides against the edge of the envelope stack.

Note

❒ Make sure that the edges of envelopes fit under the side guides.

5 Specify the envelope size and feed direction using the operation panel as follows.

❶ Press【Menu】

The following message appears.

```
Main Menu:
 Job Control
```

❷ Press【Enter】.

The following message appears.

```
Job Control:
1.Paper Input
```

❸ Press【Enter】.

❹ Press【▲】【▼】until the following message appears.

```
Paper Input:
3.Paper Size
```

❺ Press【Enter】.

The following message appears.

```
Paper Size:
1.Bypass Tray
```

❻ Press【Enter】.

❼ Using【▲】【▼】, select the envelope type you want to use.

Reference

For informations on types of envelopes you can select, see P.65 *"Paper and Other Media Supported by Your Printer"*.

❽ Press【Enter】.

❾ After the panel display changes, press【On Line】.

The panel display returns to the ready condition as follows:

```
Ready
```

6 Start the print operation with your computer.

Type 1 printer: loading envelopes into the envelope feeder

Note

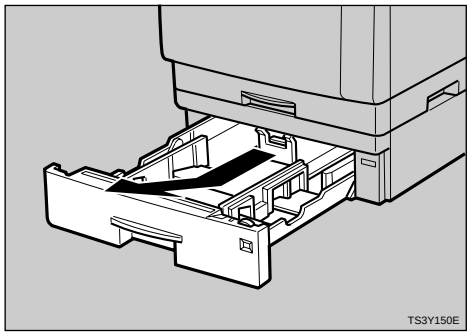
❒ Please refer to the inside of the front cover of this manual to con-

firm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ With the optional envelope feeder, you can load up to 60 envelopes at a time.⇒ P.74 *"Paper types and cautions"*

1 Pull the optional paper tray (tray 2) out until it stops. After that, lift it slightly, then pull it out.

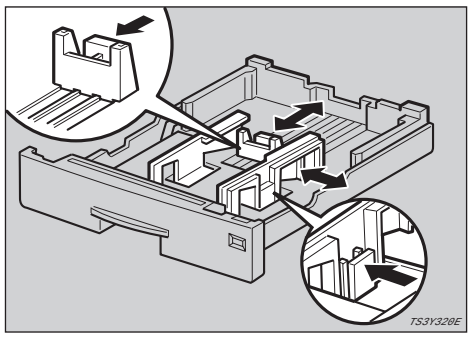


Note

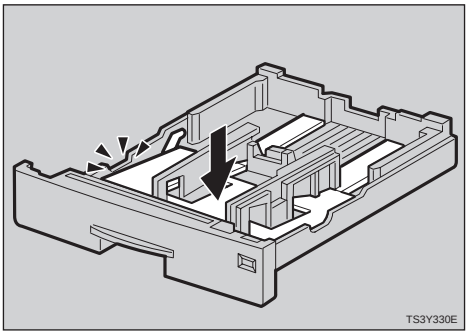
❒ Keep the paper tray with paper in a cool and dry place.

2 Prepare the envelope feeder.

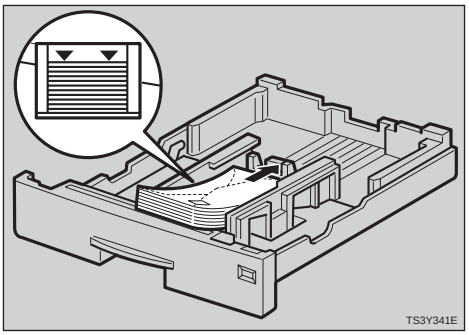
3 Slide the side guides outwards until it stops by pinching them. Slide the rear guide backwards by pinching it.



4 Push the bottom plate down until it locks into place.



5 Load envelopes into the envelope feeder, with the print side up and the sides of the flaps on the right as shown in the illustration.



Important

❒ Make sure that the envelope flaps are securely folded down, and that there is no air inside the envelopes.

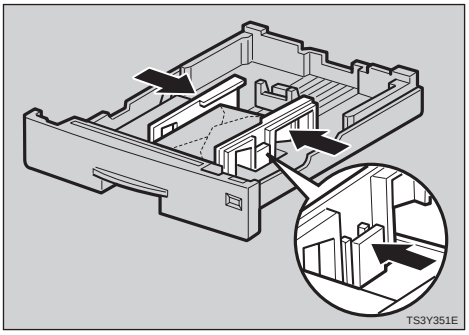
Note

❒ Make sure that the top of the stack is not higher than the limit mark on the side guides.

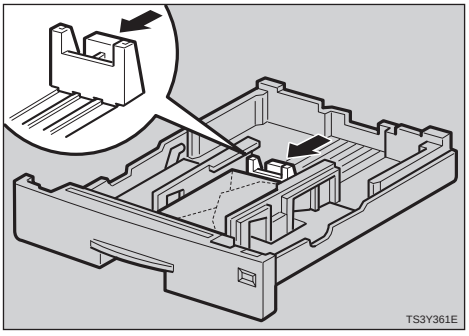
❒ Make sure that the envelopes fit under the side guides.

❒ Do not press down on the stack of envelopes with too much force.

6 Pinching the side guides, slide them against the edge of the envelope stack.



7 Pinching the rear guide, slide it against the edge of the envelope stack.



8 While lifting the front side of the tray, place it into the printer. Then slide it until it stops.

9 Specify the envelope size and feed direction using the operation panel as follows.

❶ Press【Menu】

The following message appears.

```
Main Menu:
 Job Control
```

❷ Press【Enter】.

The following message appears.

```
Job Control:
1.Paper Input
```

❸ Press【Enter】.

❹ Press【▲】【▼】until the following message appears.

```
Paper Input:
3.Paper Size
```

❺ Press【Enter】.

The following message appears.

```
Paper Size:
3.Tray 2
```

❻ Press【Enter】.

❼ Using【▲】【▼】, select the envelope type you want to use.

Reference

For information on types of envelopes you can select, see P.65 *"Paper and Other Media Supported by Your Printer"*.

❽ Press【Enter】.

❾ After the panel display changes, press【On Line】.

The panel display returns to the ready condition as follows:

```
Ready
```

10 Start the print operation with your computer.

Type 2 Printer: Loading Paper and Other Media

Type 2 Printer: Loading Paper in the Standard Paper Tray

⚠ ***CAUTION:***

- *The paper tray does not have a stopper. When pulling it out, be careful not to pull it strongly. If you do, the tray might fall and cause personal injury.*

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

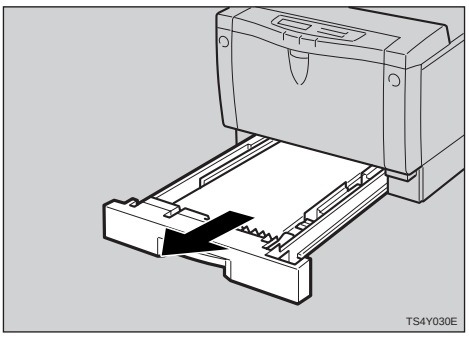
❒ The following size can be loaded in this tray. If you want to load other paper, use the bypass tray or the optional paper tray.

- Metric version: A4 ▯
- Inch version: $8^1/_2$" × 11" ▯

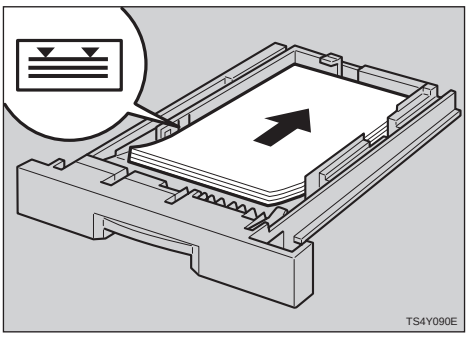
Reference

For more information on the size and feed direction of paper that can be loaded in the tray, see P.65 *"Paper and Other Media Supported by Your Printer"*.

1 Pull the paper tray out of the printer and place it on a flat surface.



2 Load paper into the tray with the print side up.

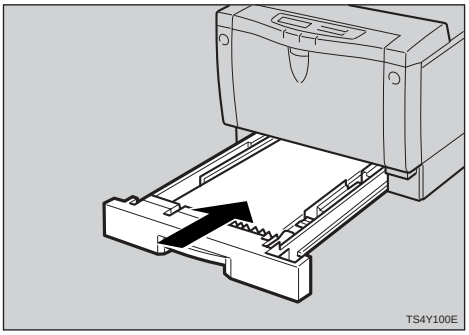


Important

❒ Make sure the top of the stack is not higher than the limit mark inside the tray.

❒ Make sure the paper fits under the rear guide.

3 **Insert the paper tray into the printer until it stops.**



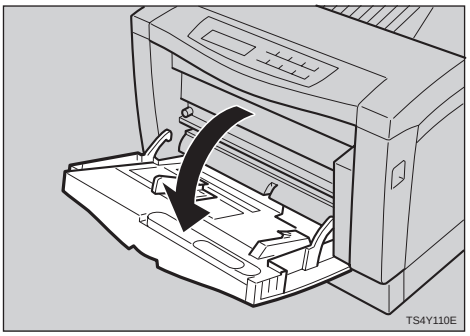
Type 2 Printer: Loading Paper in the Bypass Tray

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

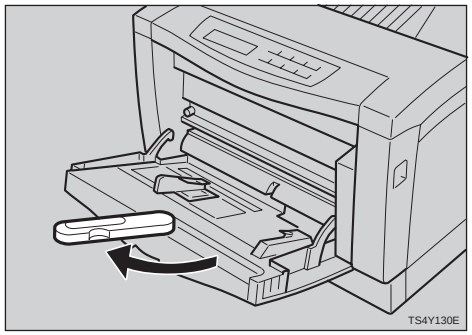
❒ If you set the custom sized paper, you should specify the paper size using the printer driver. Also, use the operation panel to set the custom size setting.

1 **Open the bypass tray.**

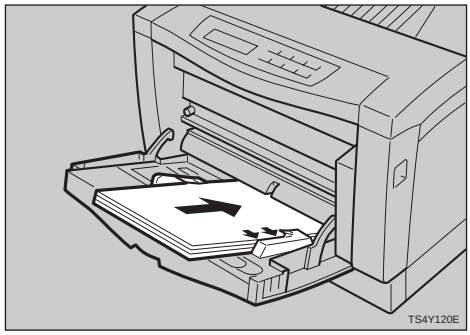


Note

❒ If you load the paper of B5 ▯, $5^1/_2$" × $8^1/_2$" ▯ or larger, pull the bypass tray extender.



2 **Slide the left side guide to the left. Load paper until it stops with the print side down. When loading, the right side of paper stack should be against the right side guide.**



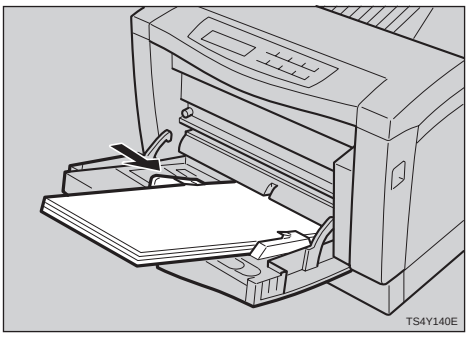
Important

❒ If the paper stack is not against the right side guide correctly, the paper might not be fed correctly.

Note

❒ It is recommended to load A5 or $5^1/_2$" × $8^1/_2$" paper in the ▯ direction.

3 Adjust the left side guide to the paper width. The guide should be against the paper stack.



Important

❒ Make sure the paper fits under the side guides.

4 Specify the paper size and feed direction using the operation panel as follows.

❶ Press [Menu].

The following message appears on the panel display.

```
Main Menu:
 Job Control
```

❷ Press [Enter].

The following message appears on the panel display.

```
Job Control:
1.Paper Input
```

❸ Press [Enter].

The following message appears on the panel display.

```
Paper Input:
1.Tray Priority
```

❹ Press [▼] twice.

The following message appears on the panel display.

```
Paper Input:
3.Paper Size
```

❺ Press [Enter].

The following message appears on the panel display.

```
Paper Size:
1.Bypass Tray
```

❻ Press [Enter].

❼ Select the paper size you have set in the bypass tray using [▼][▲] keys.

❽ Press [Enter] to execute your setting. Wait for a while.

❾ After the panel display changes, press [On Line].

The panel display returns to the ready condition as follows:

```
Ready
```

5 Start the print operation with your computer.

Type 2 Printer: Loading Paper in the Optional Paper Tray

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

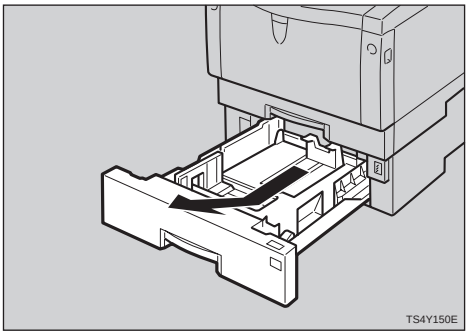
❒ If your printer is equipped with the optional tray, do not pull out more than one tray with paper at a time. If you do, the printer might tilt forward.

❒ Make sure that the setting of the paper size dial matches the paper size and feed direction in the tray. Otherwise, the printer might be damaged, or printing problems might occur.

Reference

For more information on the size and feed direction of paper that can be loaded in the tray, see P.65 *"Paper and Other Media Supported by Your Printer"*.

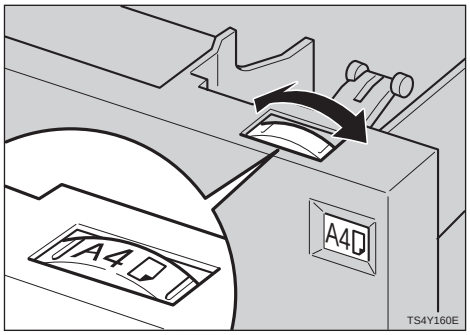
1 Pull the paper tray out until it stops. After that, lift it slightly, then pull it out of the printer.



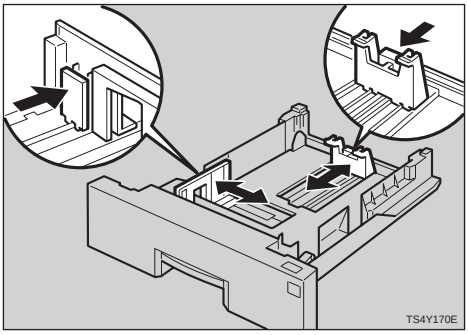
Note

❒ Do not touch the three white pins on the right front side of the printer.

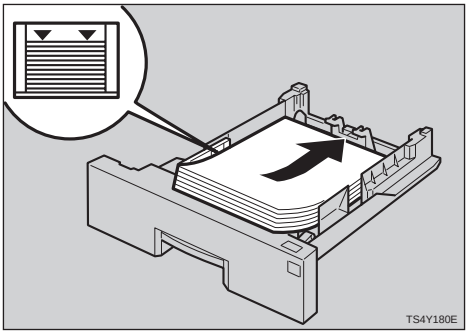
2 Adjust the paper size dial to match the size and feed direction of paper in the paper tray.



3 Adjust the rear and left side guides to the paper size you want to load.



4 Load paper into the paper tray with the print side up.



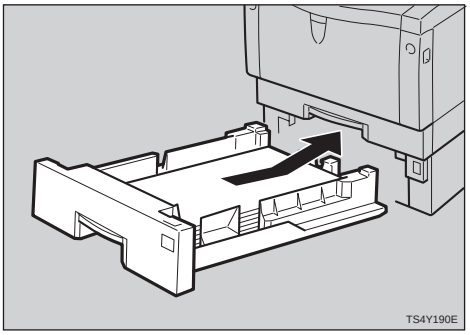
Important

❒ Make sure the top of the stack is not higher than the limit mark inside the tray.

❒ Make sure the paper fits under the rear guide.

5 While lifting the front side of the tray, place the tray into the print-

er. Then slide it inside until it stops.



Type 2 Printer: Loading Envelopes

As there are so many kinds of envelopes, be sure to check if those to be used are supported by this printer.

Important

❒ Even when the optional envelope feeder is not installed, you can specify the sizes for the envelopes for Tray 2 using the operation panel. However, make sure that the envelopes cannot be loaded into the tray without the envelope feeder.

❒ To install the envelope feeder, installation of the optional paper unit is required. ⇒ P.21 *"Type 2 Printer: Installing the Envelope Feeder Type 1400"*

Reference

For more information on envelopes, see P.74 *"Paper types and cautions"*.

Type 2 printer: loading envelopes onto the bypass tray

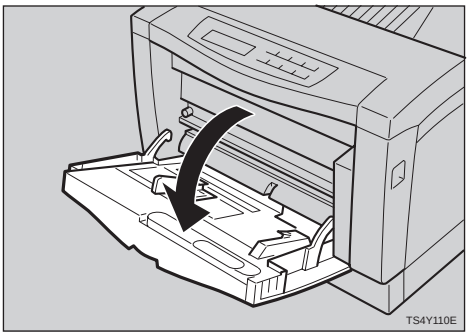
Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

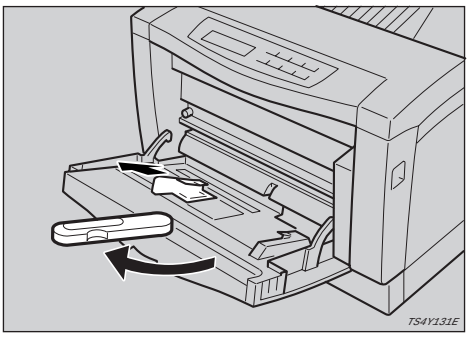
Important

❒ With the bypass tray, you can load up to 5 envelopes at a time. For more information on envelopes, see P.74 *"Paper types and cautions"* .

1 **Open the bypass tray.**

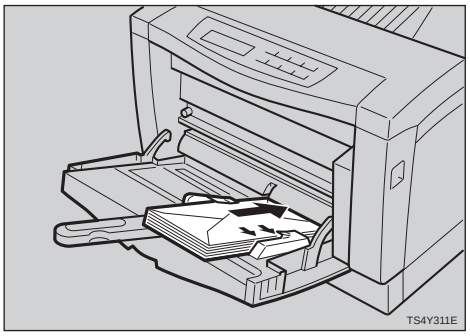


2 **Slide the left side guide to the left and extend the bypass tray extender.**



3 **Load envelopes until it stops, with the print side down and the**

sides of the flaps on the right as shown in the illustration.



Important

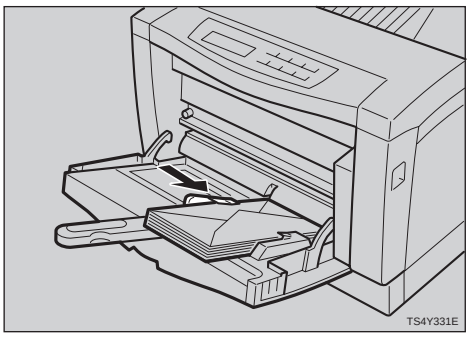
❒ Make sure that the envelope flaps are securely folded down, and that there is no air inside the envelopes.

Note

❒ Make sure that the top of the stack is not higher than the limit mark on the side fence.

❒ Do not press down on the stack of envelopes with too much force.

4 Slide the left side guide against the edge of the envelope stack.



Note

❒ Make sure that the edges of envelopes fit under the side guides.

5 Specify the envelope size and feed direction using the operation panel as follows.

❶ Press [Menu].

The following message appears.

```
Main Menu:
 Job Control
```

❷ Press [Enter].

The following message appears.

```
Job Control:
1.Paper Input
```

❸ Press [Enter].

❹ Press [▲][▼] until the following message appears.

```
Paper Input:
3.Paper Size
```

❺ Press [Enter].

The following message appears.

```
Paper Size:
1.Bypass Tray
```

❻ Press [Enter].

❼ Using [▲][▼], select the envelope type you want to use.

Reference

For informations on types of envelopes you can select, see P.65 *"Paper and Other Media Supported by Your Printer"*.

❽ Press [Enter].

❾ After the panel display changes, press [On Line].

The panel display returns to the ready condition as follows:

Ready

6 **Start the print operation with your computer.**

Type 2 printer: loading envelopes into the envelope feeder

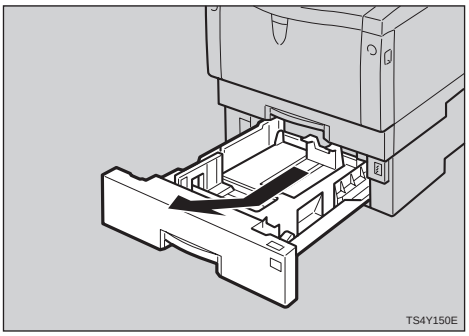
Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

Important

❒ With the optional envelope feeder, you can load up to 60 envelopes at a time. For more information on envelopes, see P.74 *"Paper types and cautions"*.

1 **Pull the optional paper tray out until it stops. After that, lift it slightly, then pull it out.**

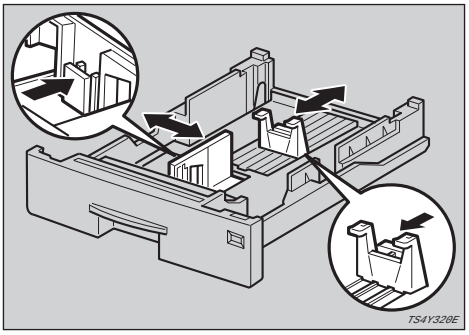


Note

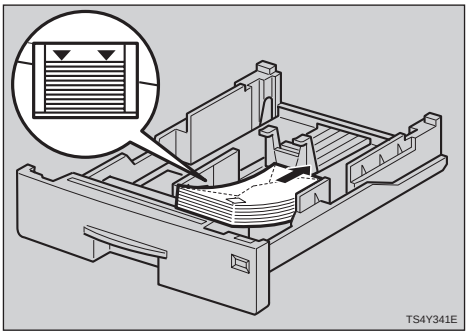
❒ Keep the paper tray with paper in a cool and dry place.

2 **Prepare the envelope feeder.**

3 **Slide the left side guide to the left by pinching it. Slide the rear guide backwards by pinching it.**



4 **Load envelopes into the envelope feeder, with the print side up and the sides of the flaps on the right as shown in the illustration.**



Important

❒ Make sure that the envelope flaps are securely folded down, and that there is no air inside the envelopes.

Note

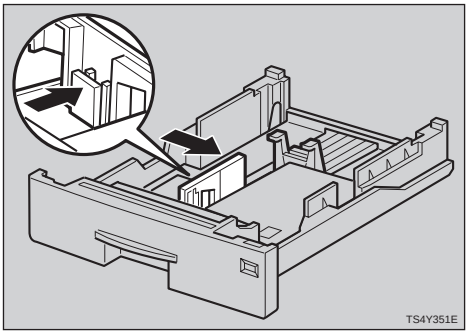
❒ Make sure to align the right edge to the side fence.

❒ Make sure that the top of the stack is not higher than the limit mark on the side fence.

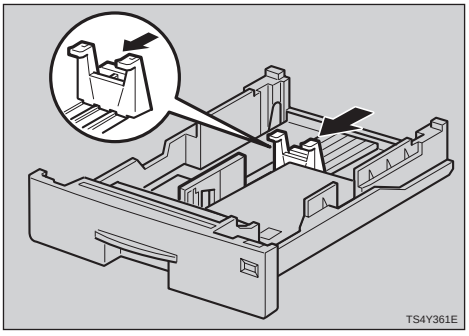
❒ Make sure that the envelopes fit under the side guides.

❒ Do not press down on the stack of envelopes with too much force.

5 Pinching the left side guide, slide it against the edge of the envelope stack.



6 Pinching the rear guide, slide it against the edge of the envelope stack.



7 While lifting the front side of the tray, place it into the printer. Then slide it until it stops.

8 Specify the envelope size and feed direction using the operation panel as follows.

❶ Press【Menu】

The following message appears.

```
Main Menu:
 Job Control
```

❷ Press【Enter】.

The following message appears.

```
Job Control:
1.Paper Input
```

❸ Press【Enter】.

❹ Press【▲】【▼】until the following message appears.

```
Paper Input:
3.Paper Size
```

❺ Press【Enter】.

The following message appears.

```
Paper Size:
2.Env. Feeder
```

❻ Press【Enter】.

❼ Using【▲】【▼】, select the envelope type you want to use.

Reference

For informations on types of envelopes you can select, see P.65 *"Paper and Other Media Supported by Your Printer"*.

❽ Press【Enter】.

❾ After the panel display changes, press【On Line】.

The panel display returns to the ready condition as follows:

```
Ready
```

9 Start the print operation with your computer.

Error & Status Messages on the Operation Panel

Messages	Description	Comments
Check Paper Size Tray XX	The paper size setting of the tray differs from that of actual paper size in the tray.	• Pull out the paper tray and insert it. • Press【Enter】and load the correct size paper into the tray.
Close Front Cover	The front cover is open.	Close the front cover.
Install Tray XX	The tray XX is not set correctly.	Set the tray correctly. ⇒ P.79 *"Type 1 Printer: Loading Paper and Other Media"* ⇒ P.88 *"Type 2 Printer: Loading Paper and Other Media"*

Messages	Description	Comments
Load Bypass Tray {paper size}	There is no paper on the bypass tray. The actual size of paper loaded on the bypass tray does not match the size for which the page was built.	Load {paper size} paper in the specified feed direction onto the bypass tray. Printing will not automatically resume if the paper size and direction setting is incorrect. There are 2 methods to resume printing. ① Use the operation panel to set the correct size and direction of the paper in the bypass tray. ⇒ P.130 *"Paper Input 2/ 2"* ② Press【Enter】to have printing begin, regardless of the size and direction of the paper in the bypass tray. **Note** ❒ When "Auto Select" is specified for the paper source using the printer driver, this message might appear when there is {paper size} paper in a different feed direction in any of the trays. ❒ The page is printed in the incorrect format on the paper loaded on the bypass tray in the following cases. • if you press【Enter】before loading the correct paper. • if the specified period of time has passed with the Auto Continue feature on. In these cases, you can't continue printing due to the paper size error. You should take one of the following actions to clear this error: • Press【Enter】. (Auto Continue feature doesn't work with this error.) • Open and close any of the trays.

Messages	Description	Comments
Load Tray XX {paper size}	The tray XX is empty. The actual size of paper loaded in the tray XX does not match the size for which the page was built.	Load {paper size} paper in the specified feed direction into tray XX. Printing will not automatically resume if the paper size and direction setting is incorrect. There are 2 methods to resume printing. ① Use the operation panel to set the correct size and direction of the paper in the tray XX. ⇒ P.130 *"Paper Input 2/2"* ② Press 【Enter】 to have printing begin, regardless of the size and direction of the paper in the tray XX. . **Note** ❒ When "Auto Select" is specified for the paper source using the printer driver, this message might appear when there is {paper size} paper in a different direction in any of the trays. ❒ The page is printed in the incorrect format on the paper loaded in the tray XX in the following cases. • if you press 【Enter】 without loading the correct paper. • if the specified period of time has passed with Auto Continue feature on. In these cases, you can't continue printing due to the paper size error. You should take one of the following actions to clear this error: • Press 【Enter】. (Auto Continue feature doesn't work with this error.) • Open and close any of the trays.

Messages	Description	Comments
Memory Overflow	There is not enough memory to print the data.	If the "Auto Continue" feature is set to on, press 【Enter】 to print out the data. To clear this message, change the print resolution from 1200dpi to 600dpi or 600dpi to 300dpi, and try printing again. If the print result is not enhanced, you should increase the memory capacity.
Print Overrun	The data sent to the printer was too complex.	Press 【Enter】 to print out the data sent to the printer. If you don't want to lose any of the transferred data, set the "Page Protect" feature to "On", before printing the job. If you can't clear this message, simplify the print job. **Note** ❒ Make sure to return the "Page Protect" feature to "Off" after the print job. With the "Page Protect" feature "On", the printer performance might be decreased.
Remove Misfeed Front Cover&Tray	There is a misfeed in the printer.	Remove the misfed paper. ⇒ P.110 *"Removing Misfed Paper"*
Remove Misfeed Open Front Cover	There is a misfeed in the printer.	Remove the misfed paper. ⇒ P.110 *"Removing Misfed Paper"*
Replace Fusing unit	The fusing unit is not set correctly.	Set the fusing unit correctly. ⇒ P.113 *"If you uninstall the fusing unit accidentally"*
Replace Maintenance Kit	It is time to replace parts included in the Maintenance Kit.	Replace parts. For more information on the Maintenance Kit, see "Operating Instructions" that comes with the Kit.
Replace Toner Cartridge	The toner cartridge is not set correctly or toner is almost running out.	Set the toner cartridge correctly. Prepare a new toner cartridge. If the image density gets too light, replace the toner cartridge with a new one. ⇒ P.114 *"Replacing the Toner Cartridge"*

Messages	Description	Comments
Reset Tray(s) Correctly	The tray on the paper feeding path is not set correctly when the printer receives the print job.	Set the tray correctly. The printer will re-start printing automatically.
Tray XX Add Paper	Paper runs out in tray XX.	Load paper. ⇒ P.79 *"Type 1 Printer: Loading Paper and Other Media"* ⇒ P.88 *"Type 2 Printer: Loading Paper and Other Media"*
Error SC_320	The toner cartridge may not be installed when the printer tries to start printing.	Open the front cover and check if the cartridge is installed. If not, install the cartridge. ⇒ P.114 *"Replacing the Toner Cartridge"* If the cartridge is installed, close the front cover and turn the printer's power switch off and on. If the message appears again, contact your sales or service representative.
Error SC_2700 Error SC_3200 Error SC_3201	An error has occurred in the optional network interface board.	Remove the network interface board from the printer and turn the printer's main switch off and on. Then, try to perform your print job. **Note** ❒ If you remove the network interface board, you cannot perform your print job over the network. You can send your print job to the printer only via a parallel cable connection.
Error SC_3100	An error has occurred in the optional memory unit (SIMM).	Remove the memory unit from the printer and turn the printer's main switch off and on. Then, try to perform your print job. **Note** ❒ If you remove the memory unit, you might not be able to perform a print job containing the large complex data.

Messages	Description	Comments
Error SC_###	An error has occurred in the printer.	First, turn the printer's power switch off and on. If the message appears again, call your sales or service representative.

Note

❒ If you cannot solve the problem by taking the above actions, turn the printer power off and then back on again. If this does not clear the error message, take a note of the contents and number of the error message and contact your sales or service representative.

Printer Doesn't Print

Possible Cause	Solutions
Is the power on?	Make sure that the cable is securely plugged into the power outlet and the printer. Turn on the printer's power switch.
Does the **On Line** indicator stay on?	Press 【On Line】 to light it up.
Does the **Error** indicator stay red?	Check the error message on the panel display and do the required action.
Is the paper set?	Load paper into the paper tray or on the bypass tray. ⇒ P.79 *"Type 1 Printer: Loading Paper and Other Media"* ⇒ P.88 *"Type 2 Printer: Loading Paper and Other Media"*
Can you print a test page (configuration page)?	If you can't print a test page, it probably indicates printer malfunction. You should contact your sales or service representative. ⇒ P.125 *"Making Printer Settings with the Operation Panel"* If you can print a test page but cannot get the printer to print when you issue a print command from your computer, it probably means there is a problem with your computer. Also keep in mind that large, complex data might take long time for printer process.
Is the interface cable properly connecting the printer to your computer connected securely?	Connect the interface cable properly. If there are any connectors or screws, make sure they are fastened securely.
Are you using a correct interface cable?	The type of interface cable you should use depends on your computer. Be sure to use the correct one. If the cable is damaged or worn, replace it with a new one.

Possible Cause	Solutions
Is the **Data In** indicator blinking or lit after starting the print job?	If not, the data is not being sent to the printer. ❖ **If your printer is connected to the computer using the interface cable** Check if the printer port settings are correct. For a parallel port connection, port LPT1 or LPT2 should be set. • **Windows 95/98** ① Click **[Start]**, point to **[Settings]**, and then click **[Printers]**. ② Select the icon of the printer by clicking it. Next, on the **[File]** menu, click **[Properties]**. ③ Click **[Details]** tab. ④ Check the **[Print to the following port]** box to make sure the correct port is selected. • **Windows 3.1x** ① On the **[Control Panel]**, double-click **[Printers]** icon. ② Confirm that this printer is specified as the default printer. ③ Click **[Connect]**. ④ Check the **[Ports]** box to make sure the correct port is selected. • **Windows NT4.0** ① Click **[Start]**, point to **[Settings]**, and then click **[Printers]**. ② Select the icon of the printer by clicking it. Next, on the **[File]** menu, click **[Properties]**. ③ Click **[Port]** tab. ④ Check the **[Print to the following port]** box to make sure the correct port is selected. ❖ **Network Connection** Contact your network administrator.

Note

❒ If you cannot solve the problem by taking the above actions, contact your sales or service representative.

Other Printing Problems

Status	Possible Causes, Descriptions, and Solutions
Printed side is dirty.	Adjust the image density properly. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*
	If paper is curled, correct it.
	Check if the size specified with the dial matches that specified with the operation panel. If not, specify the correct size that matches the size and feed direction loaded in the tray. If you print something after printing on the paper whose size is smaller than the actual document size, the back side of the next output might get dirty. ⇒ P.79 *"Type 1 Printer: Loading Paper and Other Media"* ⇒ P.88 *"Type 2 Printer: Loading Paper and Other Media"*
Image quality varies when printing on thick paper or on OHP transparencies.	Set to Thick Paper mode. • When toner is not fused enough, set it to "On". • When the image is blurred, set it to "----" ⇒ P.125 *"Making Printer Settings with the Operation Panel"*.
Some parts of the print image are not clear.	Set the image density to darker. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*
	If the Toner Saving mode is specified using the operation panel, the whole image gets lighter.
Print image is not clear.	Due to a sudden change in temperature, condensation might appear inside the machine, reducing the print quality. If this occurs, when you move the printer from a cold room to a warmer room, don't use the printer until it gets used to the temperature.
Nothing is printed on the paper.	Check if the tape of the toner cartridge is completely removed. Be sure to remove the tape completely, when replacing the toner cartridge. ⇒ P.114 *"Replacing the Toner Cartridge"* **Note** ❒ If the printer's power switch is turned on with the tape still attached, the printer might be damaged.

Status	Possible Causes, Descriptions, and Solutions
Multiple pages are fed through the printer at once.	Clean the friction pad, if it is dirty.⇒ P.117 *"Cleaning the Friction Pad"*
	Remove all paper from the tray and fan it gently to get air between the paper. After that, load it back into the tray.
Image is printed on the reverse side of the paper.	Set the paper upside down.
Paper misfeeds occur frequently.	Check the paper size settings. The size specified with the paper size dial might be different from the actual paper size. Make the correct dial setting. ⇒ P.79 *"Type 1 Printer: Loading Paper and Other Media"* ⇒ P.88 *"Type 2 Printer: Loading Paper and Other Media"*
	Use the recommended paper. Avoid using curled, folded, or wrinkled paper, perforated paper, or glossy paper. ⇒ P.77 *"Paper not supported by this printer"*
	Clean the paper feed roller, friction pad, and/or registration roller, if they are dirty. ⇒ P.118 *"Cleaning the Paper Feed Roller"*
Operation panel error message stays on after removing the misfed paper.	Open the front cover of your printer and then close it. ⇒ P.110 *"Removing Misfed Paper"*
Desired tray isn't used for the output.	Check the paper size settings. The size specified with the paper size dial might be different from the actual paper size. Make the correct dial setting. ⇒ P.79 *"Type 1 Printer: Loading Paper and Other Media"* ⇒ P.88 *"Type 2 Printer: Loading Paper and Other Media"*
	When using the bypass tray, specify the paper size using the operation panel. ⇒ P.81 *"Type 1 Printer: Loading Paper in the Bypass Tray"* ⇒ P.89 *"Type 2 Printer: Loading Paper in the Bypass Tray"*
	When you are using a Windows operating system, the printer driver settings overrides those specified using the operation panel. Specify the desired output tray using the printer driver. Refer to the driver's online help file.
The printed image is different from the image in the computer.	When you use some features such as enlargement and reduction, the layout of the image might be different from those shown in the computer display.

Status	Possible Causes, Descriptions, and Solutions
It takes too much time to resume printing.	The data is so large or complex that it takes time to process it. If the **Data In** indicator is blinking, the data processing is being done. Just wait until it resumes.
	Energy Saver mode might be enabled. In Energy Saver mode, it takes time for the machine to warm up.
Image is printed in the wrong orientation.	Specify the correct orientation under the "PCL Menu" with the operation panel. ⇒ P.125 *"Making Printer Settings with the Operation Panel"*
Part of the image cannot be printed.	A paper size which is smaller than those specified in the application is used for printing. Load the correct size of paper. If you can't select the paper size specified in the application, make use of the zooming features.
Network configurations you have made do not become effective.	Turn the printer's power switch off and on. The configuration sheet of the network interface board will be printed automatically. Check the configuration of the network interface board with this sheet.

Note

❒ If the problem cannot be solved, contact your sales or service representative.

Removing Misfed Paper

When a paper misfeed occurs, an error message appears on the panel display. The procedure you should follow to remove the misfed paper depends on the location of the misfeed, which is indicated on the panel display.

⚠ ***CAUTION:***

- *When removing misfed paper, do not touch the fusing section because it could be very hot.*

Important

❒ Check the following points if paper continues to misfeed.

- Make sure that the setting of the paper size dial matches the size and feed direction of the paper loaded in the paper tray.
- If the friction pad or the paper registration roller is dirty, clean it.⇒ P.117 *"Cleaning the Friction Pad"*
- Make sure that the toner cartridge is set correctly.

❒ If misfeeds persist, contact your sales or service representative.

❒ Do not leave any torn scraps within the printer.

Note

❒ Type 1 Printer illustrations are used in this section.

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

❒ When opening the front cover, you can find two brown levers (fusing unit lock levers) and two blue levers (pressure release levers). It is not necessary for you to use the brown levers when removing the misfed paper. Only use the blue levers (pressure release levers). See P.3 *"Type 1 Printer: Interior"* and P.6 *"Type 2 Printer: Interior"* for the positions of these levers.

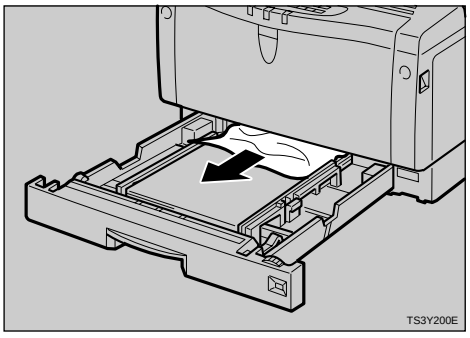
When "Remove Misfeed: Front Cover&Tray" Appears

Note

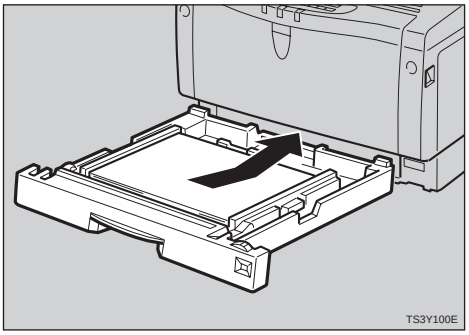
❒ You can apply this procedure for both the standard and optional tray including a tray with the envelope feeder.

❒ To reset the misfeed condition, open and close the front cover.

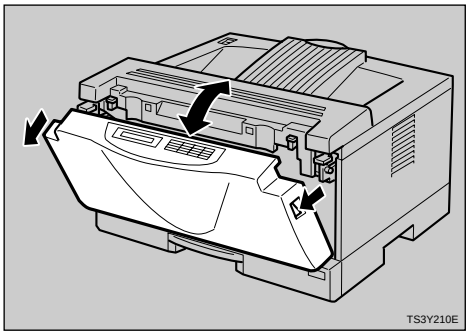
1 Pull out the paper tray gently not to tear the misfed paper, and remove misfed paper.



2 Slide the paper tray back into the printer until it stops.



3 Open the front cover, and then close it to reset the misfeed condition.



Important

❒ If paper is fed from the bypass tray, be sure to remove all the paper from the bypass tray and close it before opening the front cover.

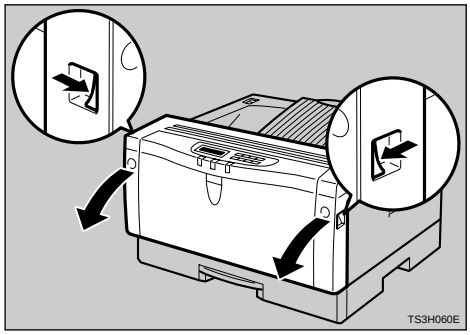
When "Remove Misfeed: Open Front Cover" Appears

Important

❒ Be sure to release the pressure release levers before removing misfed paper. Otherwise, the printer might be damaged.

❒ If you can see the misfed paper when opening the front cover, remove the misfed paper from the front side. If you remove the misfed paper from the output tray, the unfused toner might make the inside of the printer dirty.

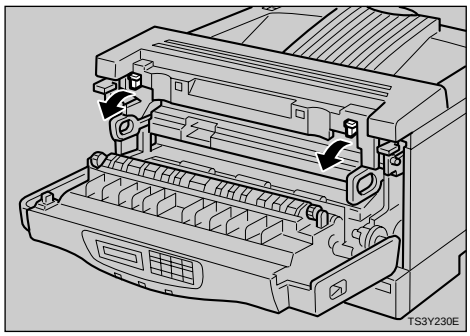
1 Open the front cover by pulling the front cover release buttons.



2 Push the blue pressure release levers marked with (A).

⚠ ***WARNING:***

- ***Be careful not to touch the fusing unit as it could be very hot.***

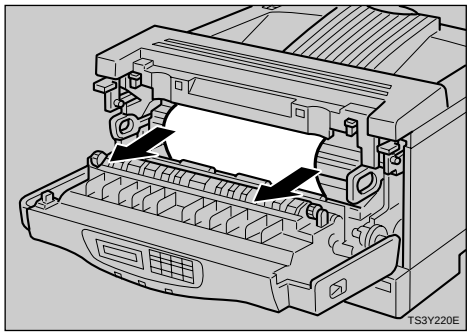


If you cannot find the misfed paper in the output tray

❶ Pull out the misfed paper by holding both sides of the paper.

⚠ ***WARNING:***

- ***Be careful not to touch the fusing unit as it could be very hot.***

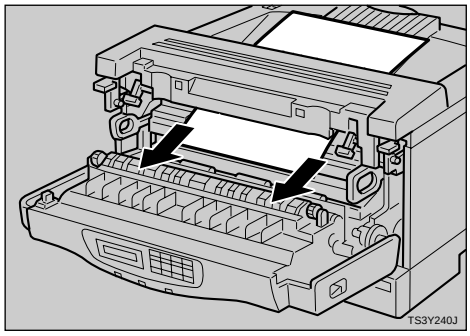


Note

❒ The misfed paper might have the unfused toner on it. Be careful not to stain your hands with toner.

If you can find the misfed paper in the output tray

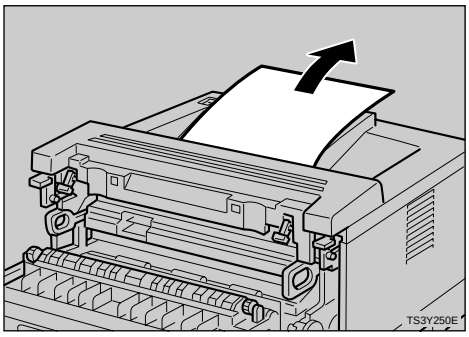
❶ **If you can see the misfed paper inside the printer, pull out the misfed paper by holding both sides of the paper. Be careful not to touch the fusing unit as it could be very hot.**



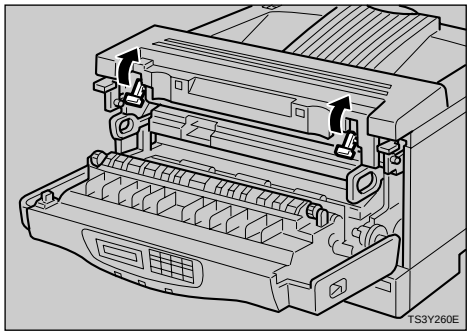
Note

❒ The misfed paper might have the unfused toner on it. Be careful not to stain your hands with toner.

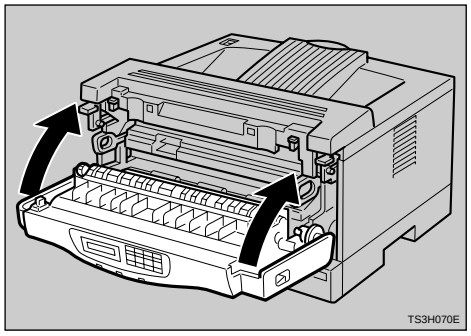
❷ **If you cannot see the misfed paper in the previous step, pull out the misfed paper from the output tray.**



3 **Return the blue pressure release levers marked with (A) to their original positions.**



4 **Close the front cover.**



Note

❒ Do not close the front cover with force. If you cannot close

the front cover easily, check if the pressure release levers are returned to their original positions. If not, return them to their original positions, and try closing the front cover again.

If you uninstall the fusing unit accidentally

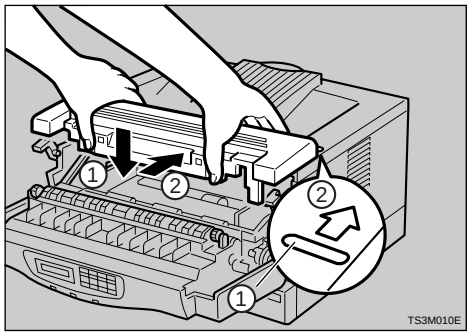
Usually, it is not necessary to remove the fusing unit. Follow these steps to reinstall the fusing unit.

⚠ ***CAUTION:***

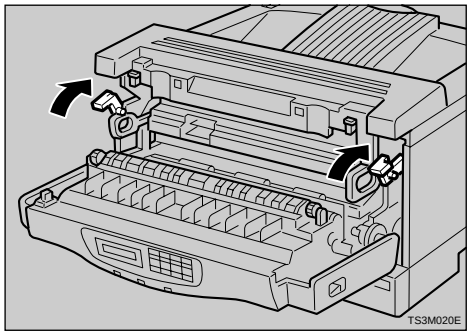
- *The fusing unit could be very hot. When installing the fusing unit, turn off the printer and wait about 30 minutes. After waiting, install the fusing unit. Not waiting for the unit to cool can result in a burn.*

1 **Turn the printer's power switch off.**

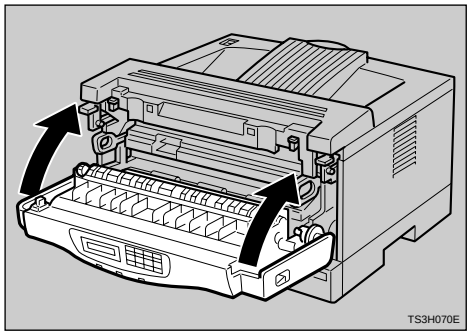
2 **Align the fusing unit with the mark of the printer (①), and then slide it in(②) as shown in the illustration.**



3 **Return the brown fusing unit lock levers to their original positions.**



4 **Close the front cover.**



5 **Turn the printer's power switch on.**

Replacing the Toner Cartridge

⚠ ***WARNING:***

- ***Do not incinerate spilled toner or used toner. Toner dust might ignite when exposed to an open flame.***
- ***Disposal can take place at our authorized dealer or at appropriate collection sites.***
- ***If you dispose the used toner containers yourself, dispose of them according to your local regulations.***

⚠ ***CAUTION:***

- *The inside of the machine could be very hot. Do not touch the parts with a label indicating the "hot surface". Otherwise, it could cause a personal burn.*
- *Do not eat or swallow toner.*
- *Keep toner (used or unused) and toner containers out of reach of children.*
- *Our products are engineered to meet the highest standards of quality and functionality. When purchasing expendable supplies, we recommend using only those specified by an authorized dealer.*

When "Replace Toner Cartridge" appears on the panel display, the toner is almost running out. Prepare a new toner cartridge. If the image density gets too light, replace the toner cartridge with a new one.

Important

❒ Do not expose the toner cartridge to a light for a long time. Do not leave the front cover open for a long time. If the toner cartridge is exposed to a light for a long time, the toner cartridge might be damaged and the print quality might be reduced.

Note

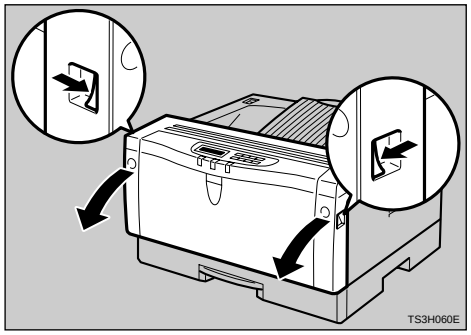
❒ Do not stand or place the toner cartridge upside-down.

❒ The actual number of printed pages you get from a particular toner cartridge depends on the type and size of paper you are using, the contents of your print images, and printing environment conditions. All this means that a toner cartridge might require replacement sooner than the normal life described on P.149 *"Consumables"*.

❒ Type 1 Printer illustrations are used in this section.

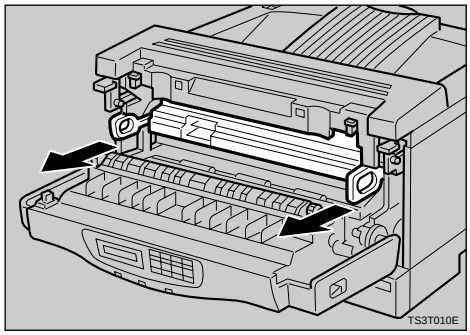
❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

1 Open the front cover by pulling the front cover release buttons.



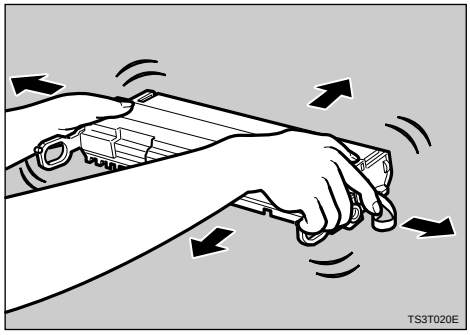
10

2 **Pull the used toner cartridge out of the printer by holding the grips of it.**



3 **Take a new toner cartridge from the box.**

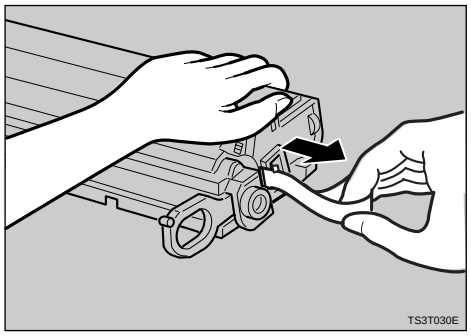
4 **Hold the toner cartridge as shown in the illustration, and shake it side to side about 7 – 8 times.**



Note

❒ If the toner cartridge is not shaken enough, toner might not be evenly distributed in the cartridge. In this case, the print quality might be reduced.

5 **Place the toner cartridge on a flat surface. Pull out the tape inside the unit horizontally while holding the cartridge with one hand as shown in the illustration.**



Note

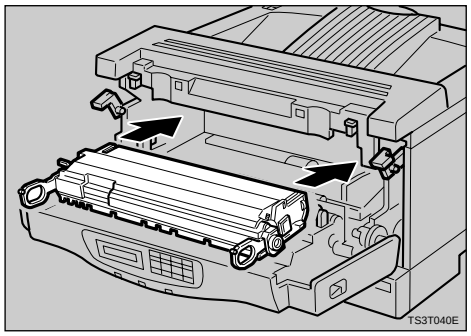
❒ Be sure to remove the tape completely before installing the new toner cartridge. Otherwise, the printer might be damaged.

❒ Be sure to pull the tape horizontally. Pulling it upward or downward causes toner scattering.

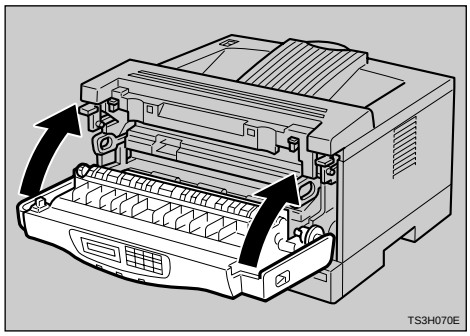
❒ Be careful not to make your cloths dirty with toner.

❒ After pulling out the tape from the cartridge, toner scatters easily. Do not shake or give a shock to the cartridge.

6 **Holding the grips of the cartridge, insert it into the printer until it stops.**



7 Close the front cover.



Important

- ❒ Do not close the front cover with force. If you cannot close the cover easily, pull out the toner cartridge from the printer and insert it again. After that, close the front cover again.
- ❒ After installing the new toner cartridge, the first few pages might be printed with light density. If the density does not become darker, see P.107 *"Other Printing Problems"*.

Cleaning the Printer

Cleaning the Friction Pad

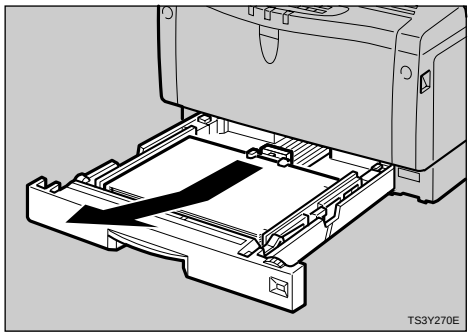
If the friction pad becomes dirty, misfeeds or multi-feeds of paper might occur. In this case, clean the pad as follows:

Type 1 printer

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

1 Pull the paper tray until it stops. After that, lift it slightly, then pull it out of the printer.

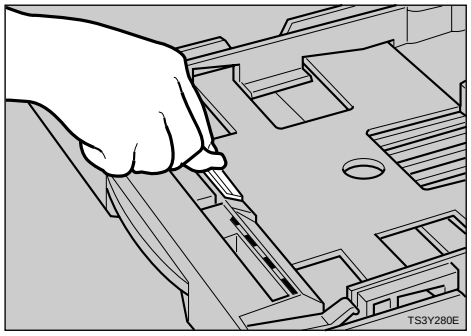


Note

❒ Do not touch the three white pins on the right front side of the printer.

2 Place the tray on a flat surface. Remove paper from the paper tray.

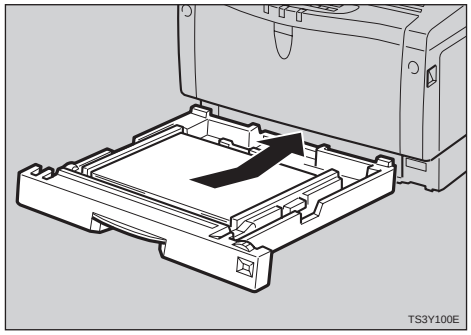
3 Clean the friction pad (gray or brown part) with a soft damp cloth. After wiping it with a damp cloth, wipe it with a dry cloth to remove the water.



Important

❒ Do not use chemical cleaner or organic solvent such as thinner or benzene.

4 Load paper with the print side up into the paper tray. While lifting the front side of the tray, insert the paper tray into the printer. Then push it until it stops.



Note

❒ If misfeeds or multi-feeds of paper occur after cleaning the friction pad, contact your sales or service representative.

❒ Follow the same procedure to clean the friction pad of the optional tray and the envelope feeder.

Type 2 printer

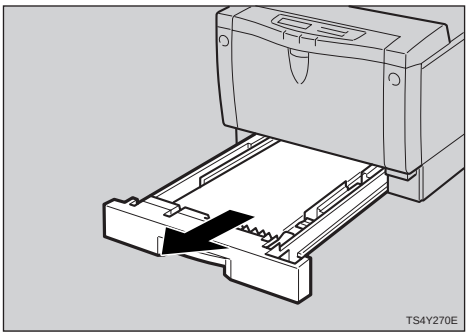
⚠ ***CAUTION:***

- *The paper tray does not have a stopper. When pulling it out, be careful not to pull it strongly. If you do, the tray might fall and cause personal injury.*

Note

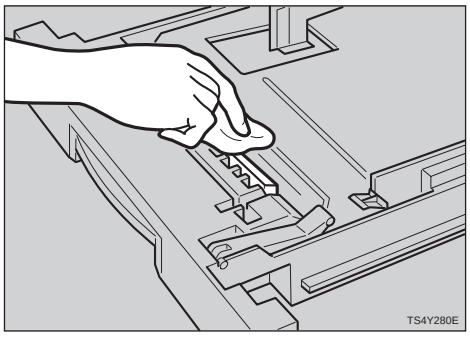
❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

1 **Pull the paper tray out of the printer.**



2 **Place the tray on a flat surface. Remove paper from the paper tray.**

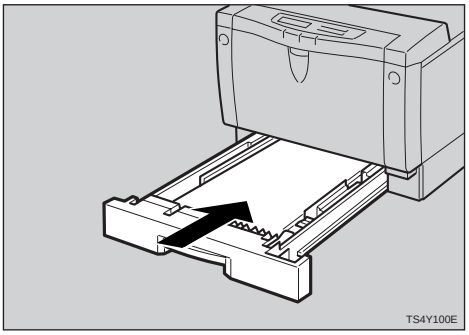
3 **Clean the friction pad (gray or brown part) with a soft damp cloth. After wiping it with a damp cloth, wipe it with a dry cloth to remove the water.**



Important

❒ Do not use chemical cleaner or organic solvent such as thinner or benzene.

4 **Load paper with the print side up into the paper tray. Insert the paper tray into the printer until it stops.**



Note

❒ If misfeeds or multi-feeds of paper occur after cleaning the friction pad, contact your sales or service representative.

❒ Follow the same procedure to clean the friction pad of the optional tray and the envelope feeder.

Cleaning the Paper Feed Roller

If the paper feed roller becomes dirty, misfeeds might occur. In this case, clean the roller as follows:

⚠ ***CAUTION:***

- *When lifting the printer, use the grips on both sides of the printer. Otherwise, the printer might fall and cause personal injury.*
- *When you move the machine, unplug the power cord from the wall outlet to avoid a fire or an electric shock.*
- *When you pull out the plug from the socket, grip the plug to avoid damaging the cord and causing a fire or an electric shock.*

Type 1 printer

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

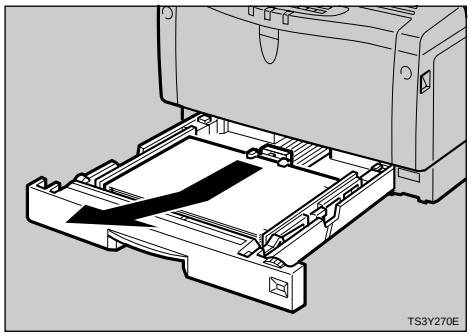
1 **Turn the printer's power switch off.**

2 **Pull out the plug from the socket. Remove all the cables from the printer.**

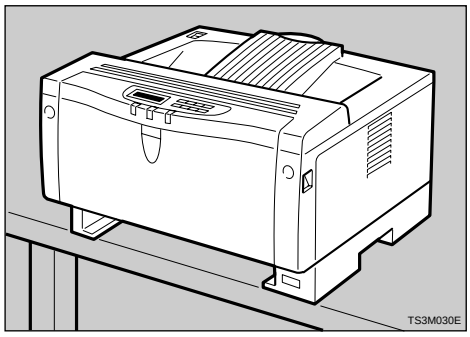
Note

❒ Do not touch the three white pins on the right front side of the printer.

3 **Pull the paper tray until it stops. After that, lift it slightly, then pull it out of the printer.**



4 **Move the printer to the edge of a stable table or desk.**



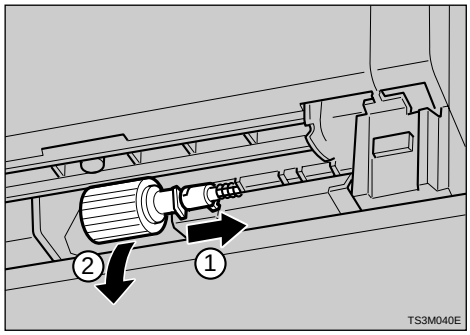
Important

❒ Do not put the printer on an unstable or tilted surface.

❒ If the optional tray unit is equipped with your printer, do not move the printer and the unit together as they are not securely attached.

❒ When lifting the printer, make sure that the optional tray unit is not attached to the printer.

5 **Slide the green lock lever to the right (①), so that the paper feed roller can be released (②).**

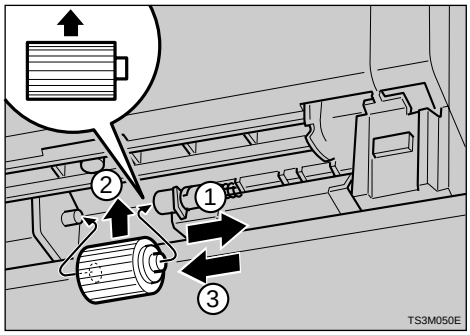


6 **Clean the rubber part of the roller with a soft damp cloth. After wiping it with a damp cloth, wipe it with a dry cloth to remove the water.**

Important

❒ Do not use chemical cleaner or organic solvent such as thinner or benzene.

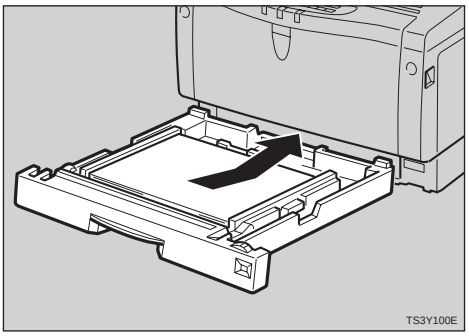
7 **While sliding the green lock lever to the right (①), set the paper feed roller to its original position (②). After that, return the green lock lever to its original position (③).**



Note

❒ Make sure that the green lock lever secures the roller correctly by confirming that the roller rotates smoothly.

8 **Move the printer to the place where it was placed. Set the paper tray into the printer while lifting the front side of the tray, then push it in until it stops.**



9 **Insert the plug of the power cord into the wall socket securely. Connect all the cables that were removed in step 2.**

Note

❒ Follow the same procedure to clean the paper feed roller of the optional tray unit.

10 **Turn the printer's power switch on.**

Type 2 printer

⚠ ***CAUTION:***

- *The paper tray does not have a stopper. When pulling it out, be careful not to pull it strongly. If you do, the tray might fall and cause personal injury.*

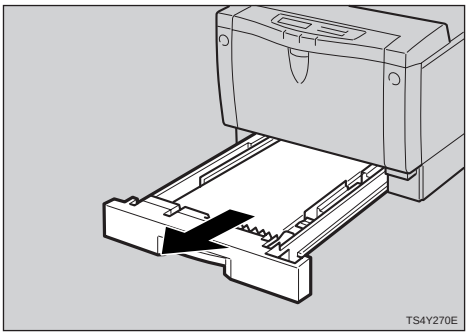
Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

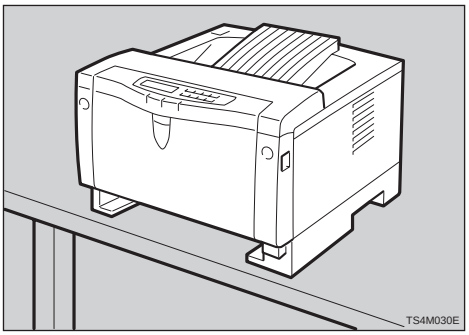
1 **Turn the printer's power switch off.**

2 **Pull out the plug from the socket. Remove all the cables from the printer.**

3 **Pull the paper tray out of the printer.**



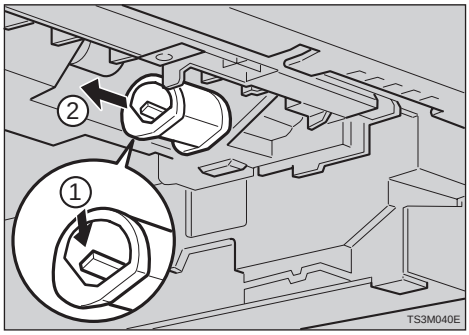
4 **Move the printer to the edge of a stable table or desk.**



Important

- ❒ Do not put the printer on an unstable or tilted surface.
- ❒ If the optional tray unit is equipped with your printer, do not move the printer and the optional tray unit together as they are not securely attached.
- ❒ When lifting the printer, make sure that the optional tray unit is not attached to the printer.

5 **Pick the stopper inside the roller with your fingers (①), slide it to the left, so that the paper feed roller can be released (②).**

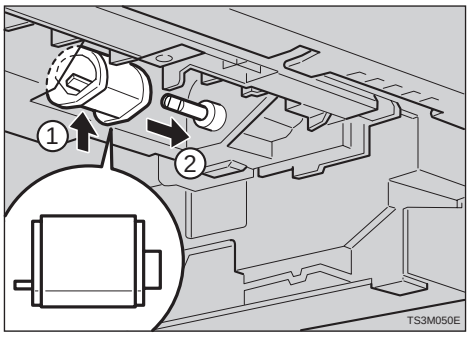


6 **Clean the rubber part of the roller with a soft damp cloth. After wiping it with a damp cloth, wipe it with a dry cloth to remove the water.**

Important

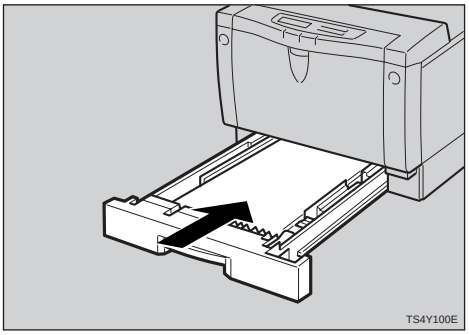
- ❒ Do not use chemical cleaner or organic solvent such as thinner or benzene.

7 **With the round part of the roller up (①), insert the roller into the shaft until the roller clicks (②).**



8 **Move the printer to the place where it was installed. Insert the**

paper tray into the printer until it stops.



9 **Insert the plug of the power cord into the wall socket securely. Connect all of cables that were removed in step 2.**

Note

❒ Follow the same procedure to clean the paper feed roller of the optional tray unit.

10 **Turn the printer's power switch on.**

Cleaning the Registration Roller (Type 1 Printer only)

If the registration roller becomes dirty, misfeeds might occur. In this case, clean the roller as follows:

⚠ ***WARNING:***

- ***Make sure to turn off the printer's power switch and wait for about 30 minutes before cleaning the registration roller. Not waiting for the printer to cool down can result in a burn.***

⚠ ***CAUTION:***

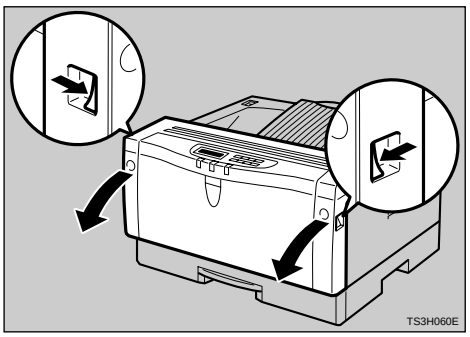
- *The inside of the machine could be very hot. Do not touch the parts with a label indicating the "hot surface". Otherwise, it could cause a burn.*

Note

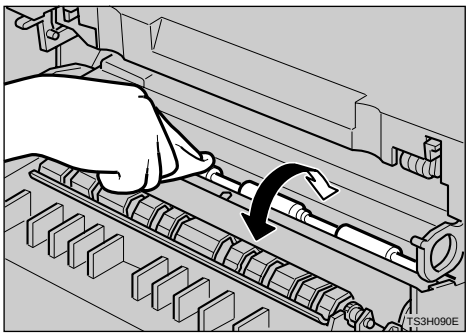
❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

1 **Turn the printer's power switch off.**

2 **Open the front cover by pulling the front cover release buttons.**



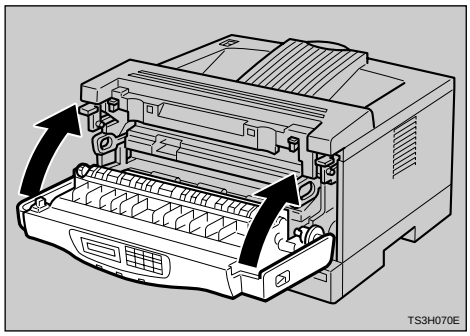
3 **Clean the three rubber parts of the rollers with a soft damp cloth. After wiping them with a damp cloth, wipe them with a dry cloth to remove the water.**



Important

❒ Do not use chemical cleaner or organic solvent such as thinner or benzene.

4 **Close the front cover.**

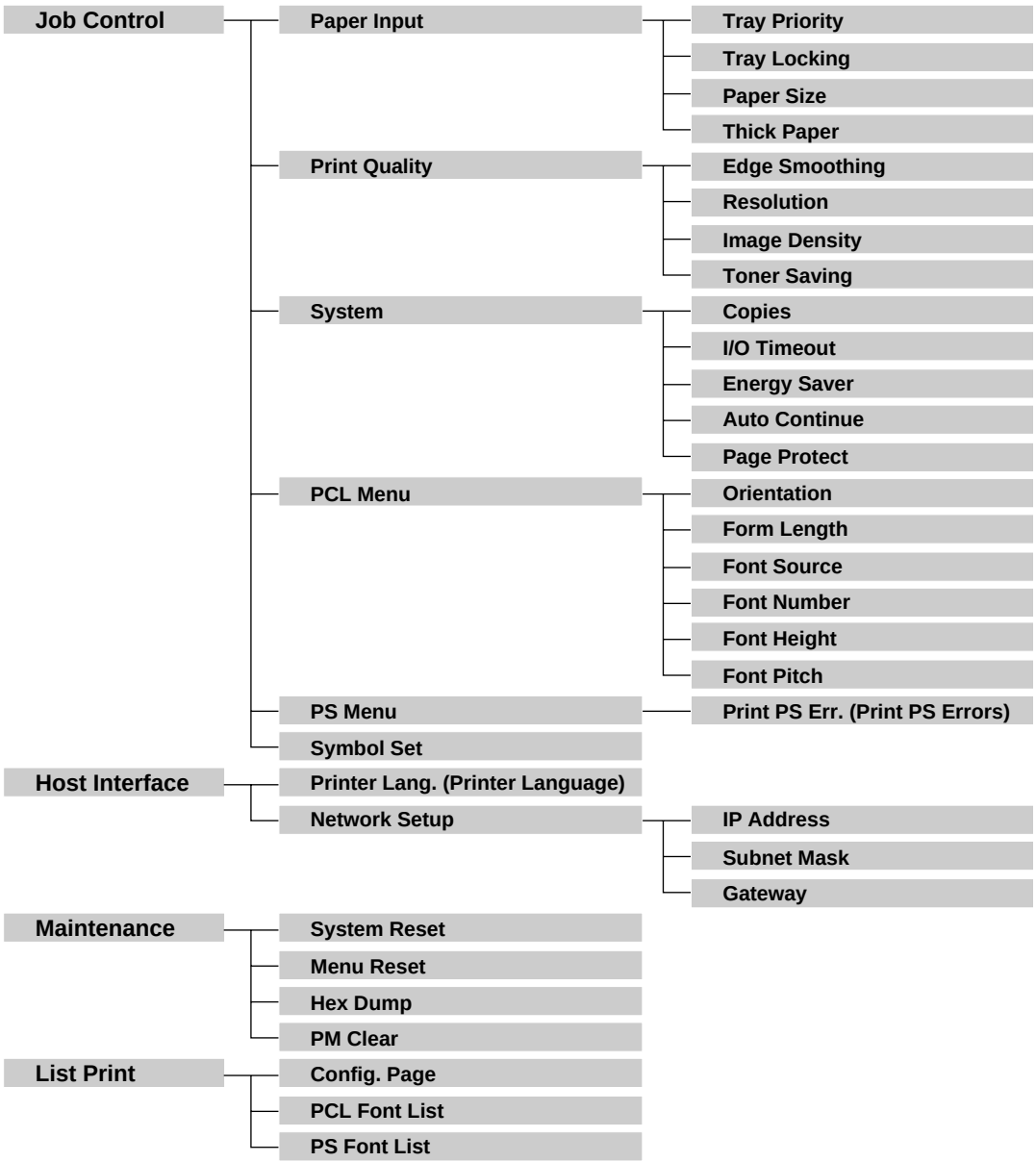


5 **Turn the printer's power switch on.**

11. Making Printer Settings with the Operation Panel

Menu Chart

This section describes how to change the default settings of your printer and provides information on the parameters included in each menu.



Accessing the Main Menu

Press【**Menu**】, and the Main menu appears.

The Main menu has the following four menu items, which can be displayed one by one using【▲】or【▼】.

- Job Control
- Host Interface
- Maintenance
- List Print

Note

❒【▼】: Press to go to the next page.

❒【▲】: Press to go back to the previous page.

❒ After making the printer's settings, be sure to return to the previous menu by pressing【**Escape**】.

❒ After making the printer's settings, press【**On Line**】to return to the ready condition.

❒ The revised settings are not canceled even if the printer's power switch is turned off.

Making Printer Settings with the Operation Panel

1. **Press [Menu].**

   The Main Menu appears.

2. **Search for the desired menu with [▲] or [▼].**

   The desired menu item appears.

3. **Press [Enter].**

4. **Search for the desired menu with [▲] or [▼].**

   The desired menu item or parameter appears.

   Note

   ❒ "▶" shown in front of the tray name indicates the tray that is currently specified.

5. **Press [Enter].**

   The specified item will be displayed in the panel display.

6. **If necessary, repeat steps 4 and 5 until you complete the desired settings.**

   Note

   ❒ **[Escape]**: Press to return to the previous menu. If you press this key before pressing **[Escape]**, the adjusted data is canceled.

Job Control Menu

There are 6 menu items in the Job Control Menu.

- Paper Input
- Print Quality
- System
- PCL Menu
- PS Menu
- Symbol Set

Job Control Parameters

❖ Paper Input 1/2

Menu	Description
Tray Priority	You can specify which tray should be searched first when "Auto Select" is specified in the Paper Source selections using the printer driver. In DOS printing, the tray specified here is used, when no tray is specified for a print job. Bypass Tray, Tray1, Tray 2, Tray 3 **Note** ❒ Default: *Tray1* ❒ Only the installed trays appear on the panel display. ❒ It is recommended that you load paper having the size and direction you frequently use in the tray selected with the "Tray Priority".

Menu	Description
Tray Locking	If you use several different kinds of paper, you can lock a tray to prevent printing on wrong paper, such as letterhead or colored paper. When "Auto Select" is specified in the Paper Source selections using the printer driver, the locked tray will not be used. None, Bypass Tray, Tray1, Tray 2, Tray 3 **Note** ❒ Default: *None* ❒ Only the installed trays appear on the panel display. ❒ You can't lock multiple trays at once. ❒ When "Auto Select" is specified without specifying the paper size using the printer driver, the printer searches for a tray that has the same paper size as that of the priority tray. If the priority tray is locked, the printer searches for another tray that has the same paper size. ❒ When a locked tray is specified using the printer driver, the printer doesn't search for any other tray.

❖ Paper Input $^{2}I_{2}$

Menu	Description
Paper Size	You should specify the paper size for the bypass tray, optional envelope feeder, and for those not indicated on the paper size dials of the Tray 1, Tray 2 and Tray3. When you specify the sizes that are not indicated on the paper size dial of Tray 1, Tray 2, or Tray 3, you should set the dial to "✳" and then specify the paper size here. The dial settings override settings made here. **❖ Bypass Tray** For information on paper sizes that can be set in the bypass tray, see P.65 *"Paper and Other Media Supported by Your Printer"*. **❖ Tray1** For information on paper sizes that can be set in Tray 1, see P.65 *"Paper and Other Media Supported by Your Printer"*. **❖ Tray 2 (option)** For information on paper sizes that can be set in Tray2, see P.65 *"Paper and Other Media Supported by Your Printer"*. **Note** ❒ When the optional envelope feeder is not installed, you should not specify the size for envelopes. **❖ Tray 3 (option, Type 1 Printer only)** For information on paper sizes that can be set in Tray 3, see P.65 *"Paper and Other Media Supported by Your Printer"*.
Thick Paper	You can enhance the image quality for printing on thick paper. When the toner is not fused enough, set this feature to "On". If the image is blurred, set it to "----" . • Off • On • ---- **Note** ❒ Default: *Off* ❒ You don't have to set this feature to "On" or "----" every time you use thick paper. Try printing with this feature off, and if you want to enhance the image quality, adjust it using this feature.

❖ Print Quality

Menu	Description
EdgeSmoothing	You can specify whether the Edge Smoothing feature is enabled. • On • Off **Note** ❒ Default: *On* ❒ If "Toner Saving" is "On", "EdgeSmoothing" is ignored even if it is "On". ❒ "EdgeSmoothing" is not effective when 1200dpi resolution is selected.
Resolution	You can specify the print resolution in dots per inch. • 300dpi (PCL 5e, PS) • 600dpi (PCL 5e, PCL 6, PS) • 1200dpi (PCL 6, PS) **Note** ❒ Default: *600dpi* ❒ The resolution specified with the printer driver overrides the one specified here.
Image Density	You can specify the print image density. Very Light, Light, Normal, Dark, Very Dark **Note** ❒ Default: *Normal*
Toner Saving	You can specify whether or not the Toner Saving feature is enabled. • Off • On **Note** ❒ Default: *Off* ❒ If the "Toner Saving" is "On", the "EdgeSmoothing" is ignored even if it is "On".

❖ System 1/2

Menu	Description
Copies	You can specify how many copies are printed. 1- 999 **Note** ❒ Default: *1*
I/O Timeout	You can specify for how many seconds your printer should wait before ending a print job. If data from other ports often appear in the middle of your print job, you should increase the timeout value. 15 seconds, 30 seconds, 60 seconds, 180 seconds, 300 seconds **Note** ❒ Default: *30 seconds*
Energy Saver	You can specify how any minutes or hours the printer wait before switching to Energy Saver mode. Energy Saver mode reduces electric power consumption. Off, 15 minutes, 30 minutes, 1 hour, 2 hours, 3 hours **Note** ❒ Default: *30 minutes* ❒ If there is an error in your printer, the printer will not turn into the Energy Saver mode. ❒ When the printer switches to Energy Saver mode, the **Power** indicator turns off, while the **On Line** indicator stays on.

❖ System 2/2

Menu	Description
Auto Continue	You can specify whether or not Auto Continue feature is enabled. When it is set to "On", the printing continues even if the following error messages appear on the display. "Load Tray XX {paper size}" / "Load Bypass Tray {paper size}"/ "Print Overrun" / "Memory Overflow" • Off • On **Note** ❒ When it is "On", and certain type of error occurs, the current job might be canceled, and the machine automatically resumes the next job. ❒ Default: *Off*
Page Protect	When a "Print Overrun" message appears on the panel display, set this feature to "On", and press 【Enter】 for all pages to be printed. • Auto • On **Note** ❒ Default: *Auto*

❖ PCL Menu

Menu	Description
Orientation	You can specify the page orientation. • Portrait • Landscape **Note** ❒ Default: *Portrait*
Form Length	You can specify the number of lines per page. 5-128 **Note** ❒ Default: *60*

Menu	Description
Font Source	You can specify the location of the default font. • Internal • Download **Note** ❒ Default: *Internal*
Font Number	You can specify the value for the default font you want to use. • 0 to 50 (for Internal) • 1 to 50 (for Download source) **Note** ❒ Default: *0 (for Internal)*
Font Height	You can specify the value for the point size you want to use for the selected font. 4.00 to 999.75 by 0.25 **Note** ❒ Default: *12.00*
Font Pitch	You can specify the number of characters per inch you want to use for the selected font. 0.44 to 99.99 by 0.01 **Note** ❒ Default: *10.00*

❖ PS Menu

Menu	Description
Print PS Err. (Print PS Errors)	You can specify whether the PS error sheet should be printed out. • On • Off **Note** ❒ Default: *Off*

❖ Symbol Set

Menu	Description
Symbol Set	You can specify the set of print characters for the selected font. The available options are as follows. Roman8, ISO L1, ISO L2, ISO 15, ISO 6, PC-8, PC-8 dn, PC-850, PC-852, PC-8 tk, PC-775, PC-1004, Win L1, Win L2, Win L5, Win BALT, Desktop, PS Text, MS Publ, Math-8, PS Math, Pifont, ISO 4, ISO 6, ISO 11, ISO 15, ISO 17, ISO 21, ISO 60, ISO 69, Win 3.0, MS Text **Note** ❒ Default: *Roman8*

Host Interface Menu

There are 2 menu items in the Host Interface Menu.

- Printer Lang.(Printer Language)
- Network Setup ⇒ P.25 *"Configuring the Printer for the Network with the Operation Panel"*

Note

❒ This "Network Setup" menu appears only when you are using the optional network interface board.

Host Interface Parameters

❖ Printer Lang. (Printer Language)

Menu	Description
Printer Lang. (Printer Language)	You can specify the printer language you want to use for the print jobs. When "Auto Sense" is specified, the printer will automatically switch from one language to the right one. • Auto Sense • PCL • PS **Note** ❒ Default: *Auto Sense*

❖ Network Setup

Menu	Description
IP Address	You can specify the IP Address. **Note** ❒ Default: *All zero*
Subnet Mask	You can specify the Subnet Mask. **Note** ❒ Default: *255.000.000.000*
Gateway	You can specify the Gateway Address. **Note** ❒ Default: *All zero*

Maintenance Menu

There are 4 menu items in the Maintenance Menu.

- System Reset
- Menu Reset
- Hex Dump
- PM Clear

Maintenance Parameters

❖ Maintenance

Menu	Description
System Reset	You can initialize the printer.
Menu Reset	You can reset the menu settings to the factory defaults.
Hex Dump	You can specify to isolate the source of a print job problem. With this feature "On", all data sent to the printer is printed in hexadecimal character representation. • On • Off **Note** ❒ Default: *Off*
PM Clear (Type 2 Printer printer only)	After replacing the parts included in the Maintenance Kit, perform this setting to clear the "Replace Maintenance Kit" message on the panel display.

List Print Menu

There are 3 menu items in the List Print Menu.

- Config. Page
- PCL Font List
- PS Font List

List Print Parameters

❖ List Print

Menu	Description
Config. Page	You can print a Configuration Page.
PCL Font List	You can print a PCL Font List.
PS Font List	You can print a PS Font List.

Interpreting the Configuration Page

Reference

❖ **Firmware Version**
This shows the version number of the printer PCL firmware.

❖ **Engine version**
This is the number assigned to the printer board by its manufacturer.

❖ **Pages Printed**
This is the total number of pages printed by the printer to date.

❖ **Maintenance Counter**
This is the counter used for the scheduled maintenance.

❖ **Total Installed RAM**
This is the total amount of memory (SIMM) installed on the printer.

❖ **Network Card**
This item appears when the optional network interface board is installed.

Paper Input

Shows the settings you make with the "Paper Input" of the "Job Control" menu.

Reference
For details on the "Paper Input", see P.128 *"Paper Input 1/2"* and P.130 *"Paper Input 2/2"*.

Print Quality

Shows the settings you make with the "Print Quality" of the "Job Control" menu.

Reference
For details on the "Print Quality", see P.131 *"Print Quality"*.

System

Shows the settings you make with the "System" of the "Job Control" menu.

Reference
For details on the "System", see P.133 *"System 2/2"*.

PCL Menu

Shows the settings you make with the "PCL Menu" of the "Job Control" menu.

Reference

For details on the "PCL Menu", see P.133 *"PCL Menu"*.

Host Interface

❖ **Printer Lang. (Printer Language)**

Shows the printer languages specified with the "Printer Lang." of the "Host Interface" menu.

Reference

For details on the "Printer Lang.", see P.136 *"Printer Lang. (Printer Language)"*.

❖ **Network Setup**

This item appears when the optional network interface board is installed. Shows the configuration specified with the "Network Setup" of the "Host Interface" menu.

Reference

For details on the "Network Setup", see P.26 *"Setting Up the IP Parameters"*or P.136 *"Network Setup"*.

Ethernet

This item appears when the optional network interface board is installed. Shows the network configuration you specified and other optional network interface board information.

PostScript

Shows the version of PostScript on your printer. Also you can see the settings of the "PS Menu" of the "Job Control" menu.

Reference

For details on the "PS Menu", see P.134 *"PS Menu"*.

Memory Capacity and Paper Size

The following table shows the typical memory requirements for each printer language.

Note

❒ Memory requirement depends on your print data and printing environment.

❖ **Metric version**

	PCL 5e		PCL 6(XL)		PostScript		
	300dpi	600dpi	600dpi	1200dpi	300dpi	600dpi	1200dpi
A4 Text Only	4MB	4MB	4MB	8MB	4MB	4MB	8MB
A4 Text and Graphics	4MB	4MB	4MB	8MB	4MB	4MB	8MB
A4 Full Bitmap	4MB	8MB	8MB	20MB	4MB	12MB	36MB
A3 Text Only	8MB	8MB	8MB	16MB	8MB	8MB	8MB
A3 Text and Graphics	8MB	8MB	8MB	16MB	8MB	8MB	8MB
A3 Full Bitmap	8MB	16MB	16MB	40MB	8MB	16MB	40MB

❖ **Inch version**

	PCL 5e		PCL 6(XL)		PostScript		
	300dpi	600dpi	600dpi	1200dpi	300dpi	600dpi	1200dpi
$8^1/_2$" × 11" Text Only	4MB	4MB	4MB	8MB	4MB	4MB	8MB
$8^1/_2$" × 11" Text and Graphics	4MB	4MB	4MB	8MB	4MB	4MB	8MB
$8^1/_2$" × 11" Full Bitmap	4MB	8MB	8MB	20MB	4MB	12MB	36MB
11" × 17" Text Only	8MB	8MB	8MB	16MB	8MB	8MB	8MB
11" × 17" Text and Graphics	8MB	8MB	8MB	16MB	8MB	8MB	8MB
11" × 17" Full Bitmap	8MB	16MB	16MB	40MB	8MB	16MB	40MB

Moving and Transporting the Printer

⚠ ***CAUTION:***

- *When lifting the machine, use the inset grips on both sides of the machine. Otherwise, the machine might fall and cause personal injury.*
- *When you move the machine, unplug the power cord from the wall outlet to avoid a fire or an electric shock.*
- *When you pull out the plug from the socket, grip the plug to avoid damaging the cord and causing a fire or an electric shock.*

Repack the printer in its original packing materials for transporting.

Important

❒ Be sure to disconnect all cables from the printer before transporting it.

❒ The printer is a precision piece of machinery. Take care to avoid damage during shipment.

Specifications

Mainframe

Note

❒ Please refer to the inside of the front cover of this manual to confirm which printer (Type 1 Printer or Type 2 Printer) you have.

❖ **Configuration:**
Desktop

❖ **Print Process:**
Laser beam scanning & Electrophotographic printing
Monocomponent development

❖ **Printing Speed:**
Type 1 Printer:
Maximum 20 pages per minute (A4⬓, $8^1/_2$" × 11"⬓)
Type 2 Printer:
Maximum 14 pages per minute (A4 ⬓, $8^1/_2$" × 11"⬓)

❖ **Parallel Interface:**
Interface
Standard 36–pin printer cable and a parallel port on the host computer
IEEE 1284 I/F(Compatible, ECP, Nibble)
- Do not use a cable more than 2.5 meters (8.2 feet) long.

❖ **Resolution:**
1,200 × 1,200 dpi (PCL 6, PS)
600 × 600 dpi (PCL 5e, PCL 6, PS)
300 × 300 dpi (PCL 5e, PS)

❖ **Printer Language:**
PCL 5e Emulation, PCL 6(5e+XL) Emulation, PostScript® Level2 Emulation, Auto Sense

❖ **Fonts:**
PCL 5e, PCL 6
35 Intellifonts, 10 True Type fonts, and 1 Bitmap font
Font Manager available, plus 61 additional fonts ⇒ P.49 *"Installing the Font Manager"*
PostScript
35 Adobe Type 1 fonts

❖ **Paper size:**
⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

❖ **Paper Weight:**
⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

❖ **Power Source:**
⇒ inside of the front cover of this manual

❖ **Power Consumption:**

	Type 1 Printer	Type 2 Printer
Maximum	795 W or less	600 W or less
Printing	480 W or less	380 W or less
Energy Saver	30 W or less	30 W or less

❖ **Noise Emission (Sound Power Level):**

	Type 1 Printer Full system	Type 2 Printer Full System
Printing	64 dB (A)	59 dB (A)
Stand-by	48 dB (A)	48 dB (A)

Note

❒ The above measurements are made in accordance with ISO7779.

❒ Full system : printer with all options

❖ **Dimensions:**

❖ **Type 1 Printer** *1

	Width	Depth	Height
Printer only (tray not extended)	450 mm (17.7")	420 mm (16.6")	270 mm (10.6")
Printer only (tray extended)	450 mm (17.7")	555 mm (21.9")	270 mm (10.6")
With one optional feed unit	450 mm (17.7")	420 mm (16.6")	392 mm (15.4")
With two optional feed units	450 mm (17.7")	420 mm (16.6")	513 mm (20.2")

*1 Measurement conditions: With paper tray, bypass tray and output tray extender closed.

❖ **Type 2 Printer** *1

	Width	Depth	Height
Printer only	360 mm (14.2")	490 mm (19.3")	270 mm (10.6")

	Width	Depth	Height
With one optional feed unit	360 mm (14.2")	490 mm (19.3")	395 mm (15.6")

*1 Measurement conditions: With paper tray and bypass tray closed.

❖ **Weight:**

Type 1 Printer
Approximately 15 kg (33 lb) (toner cartridge and power cord included)
Type 2 Printer
Approximately 12 kg (27 lb) (toner cartridge and power cord included)

❖ **Warm-up Time:**

Type 1 Printer
Less than 39 seconds (23°C)
Type 2 Printer
Less than 39 seconds (23°C)

❖ **Paper Capacity:**

❖ **Type 1 Printer**

Standard paper tray	250 sheets *1
Bypass tray	100 sheets *1
Optional paper feed unit × 2	500 sheets × 2 *1
Optional envelope feeder *2	60 envelopes *3

*1 Paper weight: 80 g/m^2, 20 lb
*2 To use the envelope feeder, the optional paper feed unit is required. The paper tray of the feed unit can be replaced with the envelope feeder.
*3 For more information on envelopes, see P.74 *"Paper types and cautions"*.

❖ **Type 2 Printer**

Standard paper tray	250 sheets *1
Bypass tray	100 sheets *1
Optional paper feed unit	500 sheets *1
Optional envelope feeder *2	60 envelopes *3

*1 Paper weight: 80 g/m^2, 20 lb
*2 To use the envelope feeder, the optional paper feed unit is required. The paper tray of the feed unit can be replaced with the envelope feeder.
*3 For more information on envelopes, see P.74 *"Paper types and cautions"*.

❖ **Paper Output Capacity:**
250 sheets (80 g/m^2, 20 lb)

❖ **Memory:**
Type 1 Printer
Standard 8MB, up to 40MB (with optional SIMM module)
Type 2 Printer
Standard 4MB, up to 36MB (with optional SIMM module)

❖ **Network (optional network interface board required):**
Topology: Ethernet (10BaseT/100BaseTX)
Protocol: TCP/IP, IPX/SPX, AppleTalk

❖ **Optional Equipment:**
Unique for Type 1 Printer
- Paper Feed Unit (DLT) Type 2000 (For Inch version only)
- Paper Feed Unit (LT) Type 2000 (For Inch version only)
- Paper Feed Unit (A3) Type 2000 (For Metric version only)
- Paper Feed Unit (A4) Type 2000 (For Metric version only)
- Envelope Feeder Type 2000

Unique for Type 2 Printer
- Paper Feed Unit Type 1400
- Envelope Feeder Type 1400

Common for Type 1 Printer and Type 2 Printer
- Network Interface Board Type 2000
- Memory Unit Type 204 (16MB)
- Memory Unit Type 204 (32MB)

Options

Paper Feed Unit (DLT) Type 2000 and Paper Feed Unit (A3) Type 2000

❖ **Dimensions (W×D×H):**
450 × 552 × 125 mm (17.7" 21.7" × 4.9")
(without pins on the unit)

❖ **Paper Weight:**
60 – 90 g/m^2 (16 – 24 lb)

❖ **Paper Size:**
⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

Paper Feed Unit (LT) Type 2000 and Paper Feed Unit (A4) Type 2000

❖ **Dimensions (W×D×H):**
450 × 417 × 125 mm (17.7" 16.4" × 4.9")
(without pins on the unit)

❖ **Paper Weight:**
60 – 90 g/m^2 (16 – 24 lb)

❖ **Paper Size:**
⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

Envelope Feeder Type 2000

❖ **Dimensions (W×D×H):**
450 × 552 × 91 mm (17.7" 21.7" × 3.6")

❖ **Paper Weight:**
72 – 90 g/m^2 (19 – 24 lb)

❖ **Paper Size:**
⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

Paper Feed Unit Type 1400

❖ **Dimensions (W×D×H):**
360 × 421 × 123 mm (14.2" 16.6" × 4.8")
(without pins on the unit)

❖ **Paper Weight:**
60 – 90 g/m^2 (16 – 24 lb)

❖ **Envelope Size:**
⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

Envelope Feeder Type 1400

❖ **Dimensions (W×D×H):**
360 × 421 × 119 mm (14.2" 16.6" × 4.7")

❖ **Paper Weight:**
72 – 90 g/m^2 (19 – 24 lb)

❖ **Envelope Size:**
⇒ P.65 *"Paper and Other Media Supported by Your Printer"*

Network Interface Board Type 2000

❖ **Topology:**
Ethernet (10BaseT/100BaseTX)

❖ **Protocols:**
TCP/IP, IPX/SPX, AppleTalk

❖ **Interface Connector:**
RJ45

❖ **Required Cable:**
STP (Shielded Twisted-Pair) cable
Category/Type5 or better
*A cable is not enclosed with this option.

Memory Unit Type 204 (16MB) and Memory Unit Type 204 (32MB)

❖ **Module Type:**
SIMM (Single In-Line Memory Module)

❖ **Memory Type:**
EDO (Extended Data Output) DRAM

❖ **Number of Pins:**
72 pins

❖ **Access Time:**
60 ns

Consumables

⚠ ***CAUTION:***

- *Our products are engineered to meet the highest standards of quality and functionality. When purchasing expendable supplies, we recommend using only those specified by an authorized dealer.*

❖ Toner Cartridge

	Average printable number of pages per cartridge [*1] 1
Toner Cartridge Type 2000 (For Type 1 Printer)	14,000 pages
Toner Cartridge Type 1400 (For Type 2 Printer)	8,500 pages

[*1] A4 5% test chart

Note

❒ The actual number of printed pages you get from a particular toner cartridge depends on the type and size of paper you are using, the contents of your print images, and printing environment conditions. All this means that a toner cartridge might require replacement sooner than the normal life described above.

❒ The average number of printable pages that can be expected from the starter toner cartridge included in the printer (both Type 1 and Type 2 printers) is about 3,000 pages (A4, 5% chart).

❖ Maintenance Kit

Maintenance Kit Type 2000 (for Type 1 Printer)
Maintenance Kit Type 1400 (for Type 2 Printer)

Reference

For more information on the Maintenance Kit, see the "Operating Instructions" included in the Maintenance Kit.

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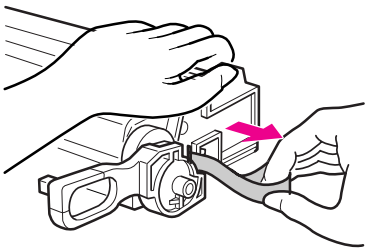
IMPORTANT

Be sure to pull the tape out of the toner cartridge completely before turning on the printer's power switch.

If you install the toner cartridge without pulling the tape, the printer might be damaged.

Be sure to pull the tape **horizontally**.

Pulling the tape upward or downward causes toner scattering.



Place the toner cartridge on a flat surface. Pull out the tape inside the unit **horizontally** while holding the cartridge with one hand as shown in the illustration.

For more infomations on installing the toner casstte, see the "Replacing the Toner cartridge" in the "Operating Instructions".

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QUICK INSTALLATION GUIDE <G031-8617>

Please read the Safety Information in the "Operating Instructions" before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

1 UNPACKING THE PRINTER AND CHECKING THE CONTENTS OF THE BOX

1 Check the contents of the box according to the following list. If one or some items are missing, please contact your sales or service representative.

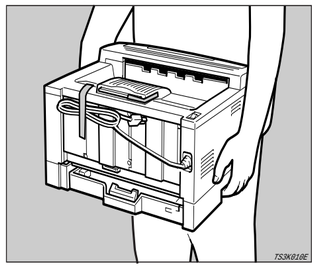
Important

- ❒ **The interface cable is not included in the box. It is your responsibility to provide the interface cable appropriate for the computer that you are using.**

- ☑ Quick Installation Guide (this sheet)
- ☐ Operating Instructions
- ☐ CD-ROM
- ☐ Additional Documentation

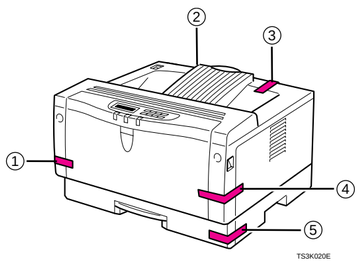
2 Remove the plastic bag. Lift the printer and move it to the place where you want to install it.

When lifting the printer, use the inset grips on both sides of the printer.



TS3K010E

3 Remove the five pieces of adhesive tape from the printer as shown in the illustration.



TS3K020E

2 WHERE TO PUT YOUR PRINTER

Your printer's location should be carefully chosen because environmental conditions greatly affect its performance.

⚠ Warning

- Make sure that the wall outlet is near the machine and freely accessible, so that in event of an emergency, it can be unplugged easily.

⚠ Warning

- Only connect the machine to the power source described on this sheet.
- Avoid multi-wiring.
- Do not damage, break or make any modifications to the power cord. Do not place heavy objects on it, pull it hard or bend it more than necessary. These actions could cause an electric shock or fire.

⚠ Caution

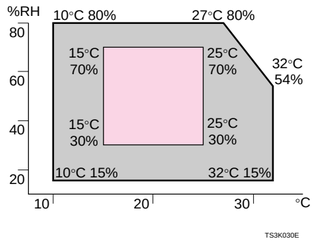
- Keep the machine away from humidity and dust. A fire or an electric shock might occur.
- Place the machine on a strong and level surface. Otherwise, the machine might fall and cause personal injury.

⚠ Caution

- If you use the machine in a confined space, make sure there is a continuous flow of air.

1 Optimum Environmental Conditions

The recommended temperature and humidity



TS3K030E

Possible operation range Recommended range

The machine must be level within 5 mm, 0.2" both front to right and left to right.

2 Environments to Avoid

Important

- ❒ **Locations exposed to direct sunlight or strong light**
- ❒ **Dusty areas**
- ❒ **Areas with corrosive gases**
- ❒ **Areas excessively cold, heat, or humid**
- ❒ **Locations near an air conditioner or humidifier**
- ❒ **Locations near other electronic equipment**
- ❒ **Locations where the printer might be subjected to frequent strong vibration**

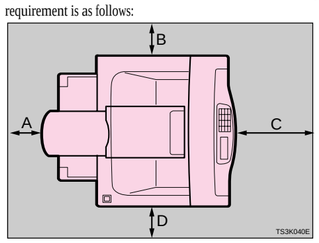
3 Power Connection

Connect the power cord to a power source with a following specifications:

- ❒ **120V, 60Hz, 8A or more**

4 Space Required for Installing the Printer

Leave enough space around the printer. This space is necessary to operate the printer. The recommended (or minimum) space requirement is as follows:



TS3K040E

A: more than 10 cm (4.0")

B: more than 10 cm (4.0")

C: more than 100 cm (40.0")

D: more than 10 cm (4.0")

3 INSTALLING THE TONER CARTRIDGE

⚠ Warning

- Do not incinerate spilled toner or used toner. Toner dust might ignite when exposed to an open flame.
- Disposal can take place at our authorized dealer or at an appropriate collection site.
- If you dispose of the user toner containers yourself, dispose of them according to your local regulations.

⚠ Caution

- Do not eat or swallow toner.
- Keep toner (used or unused) and toner cartridge out of reach of children.

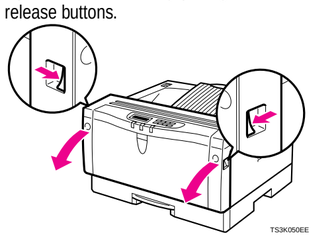
⚠ Caution

- Our products are engineered to meet the highest standards of quality and functionality. When purchasing expendable supplies, we recommend using only those provided by an authorized dealer.

Important

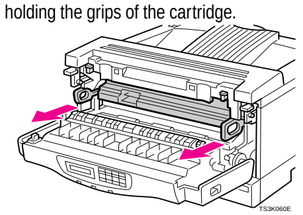
- ❒ **Do not expose the toner cartridge to a light for a long time. If you do, the toner cartridge will be damaged and the print quality might be reduced.**

1 Open the front cover by pulling the front cover release buttons.



TS3K050EE

2 Pull the toner cartridge out of the printer by holding the grips of the cartridge.

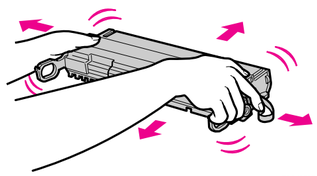


TS3K060E

Note

- ❒ **Do not hold the toner cartridge upside down or stand it vertically.**

3 Hold the toner cartridge as shown in the illustration, and shake it side to side, about 7 - 8 times.

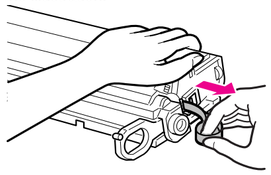


TS3K070E

Note

- ❒ **If the toner cartridge is not shaken enough, toner might not be evenly distributed in the cartridge. In this case, the print quality might be reduced.**

4 Place the toner cartridge on a flat surface. Pull out the tape inside the unit horizontally while holding the cartridge with one hand as shown in the illustration.

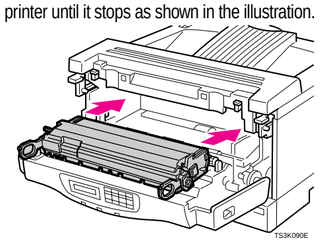


TS3K080E

Important

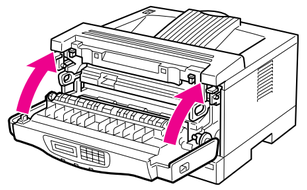
- ❒ **Be sure to pull the tape completely before installing the toner cartridge. Otherwise, the printer might be damaged.**
- ❒ **Be sure to pull the tape horizontally. Pulling it upward or downward causes toner scattering.**
- ❒ **Be careful not to make your cloths dirty with toner.**
- ❒ **After pulling out the tape from the cartridge, toner scatters easily. Do not shake or give a shock to the cartridge.**

5 Holding the grips of the cartridge, insert it into the printer until it stops as shown in the illustration.



TS3K090E

6 Close the front cover.



TS3K100E

Important

- ❒ **Do not close the front cover with force. If you cannot close the cover easily, pull out the toner cartridge from the printer and insert it again. After that, close the front cover again.**

4 INSTALLING THE PAPER TRAY

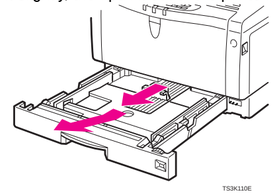
The default settings of the paper size are as follows:

- Metric version: A4 ▭ (long-edge feed)
- Inch version: $8^1/_2$" x 11" ▭ (long-edge feed)

For settings other than the default paper size, see "Loading Paper and Other Media" in the "Operating Instructions".

For more information about the paper sizes that can be set in the paper tray, see "Paper and Other Media Supported by Your Printer" in the "Operating Instructions".

1 Pull the paper tray out until it stops. After that, lift it slightly, then pull it out of the printer.



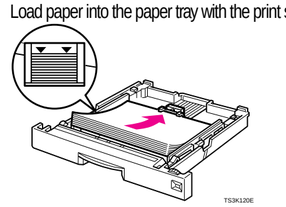
TS3K110E

Note

- ❒ **Do not touch the three white pins on the right front side of the printer.**

2 If necessary, adjust the front and side guides to the paper size you want to use.

3 Load paper into the paper tray with the print side up.

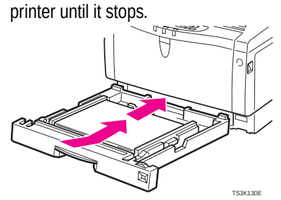


TS3K120E

Important

- ❒ **Make sure that the top of the stack is not higher than the limit mark inside the tray.**
- ❒ **Make sure the paper fits under the rear guides.**

4 While lifting the front side of the tray, place the paper tray into the printer. Then slide it into the printer until it stops.



TS3K130E

Important

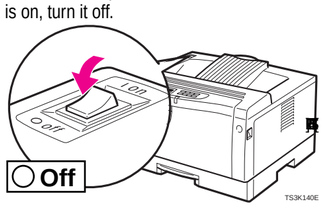
- ❒ **Make sure that the setting of the paper size dial matches the size and feed direction of the paper in the tray. Otherwise, the printer might be damaged or printing problem might occur.**

5 CONNECTING THE POWER CORD

⚠ Caution
- When you pull the plug out of the socket, grip the plug to avoid damaging the cord and causing a fire or an electric shock.

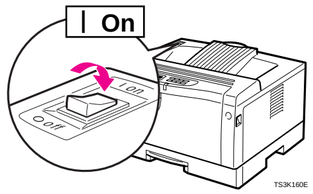
⚠ Caution
- It is dangerous to handle the plug with wet hands. Doing this may result in receiving an electric shock.

1 Check that the power switch is turned off. If it is on, turn it off.



2 Insert the plug of the power cord into the wall socket securely.

3 Turn the power switch on.



6 PRINTING THE TEST PAGE

You can check if the printer works properly by printing a test page (configuration page).

However, you cannot check the connection between the printer and your computer by printing the test page.

1 Check that the power switch is turned on.

2 Press the **Menu** key.

The following message appears on the panel display.

```
Main Menu:     ▲
 Job Control   ▼
```

3 Press the ▲▼ keys until the following message appears on the panel display.

```
Main Menu:     ▲
 List Print    ▼
```

4 Press the **Enter** key.

The following message appears on the panel display.

```
List Print:    ▲
1.Config. page ▼
```

5 Press the **Enter** key.

The following message appears on the panel display.

```
Config. page:  ▲
 Press Enter key
```

6 Press the **Enter** key.

In a short time, the test printing will start.

Important

- ❒ **If you cannot complete the test printing correctly, check if an error message appears on the panel display. For more information about error messages, see "Troubleshooting" in the "Operating Instructions".**
- ❒ **After installing the new toner cartridge, the first few pages might be printed with light density. If density does not become darker, see "Troubleshooting" in the "Operating Instructions".**

7 CONNECTING THE PRINTER TO A COMPUTER

Connect the printer to your computer using a parallel port.

Important

- ❒ **The parallel interface cable is not provided with the printer. It is your responsibility to provide the interface cable appropriate for the computer that you are using.**
- ❒ **The printer's parallel connection is a standard bi-directional interface. It requires a standard 36-pin parallel cable compliant with IEEE1284 and a parallel port available on your computer.**
- ❒ **To avoid electrical interference, use the shielded cable.**

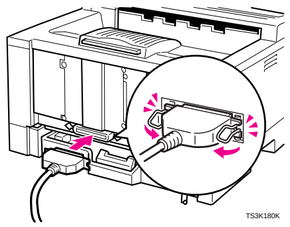
Note

- ❒ **Do not use a parallel cable more than 2.5 meters (8.2 feet) long.**

1 Turn off the printer's power switch.

2 Turn your computer off.

3 Attach the interface cable to the interface connector of the printer. Secure the cable with the metal fittings as shown in the illustration.



4 Attach the other end of the interface cable to the interface connector of the computer. Secure the cable.

8 SETTING UP FOR PRINTING

Printing requires installation of a printer driver for your operating system.

See "Printer Drivers for Your Printer" in the "Operating Instructions".

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UE

QUICK INSTALLATION GUIDE <G032-8617>

Please read the Safety Information in the "Operating Instructions" before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

1 UNPACKING THE PRINTER AND CHECKING THE CONTENTS OF THE BOX

1 Check the contents of the box according to the following list. If one or some items are missing, please contact your sales or service representative.

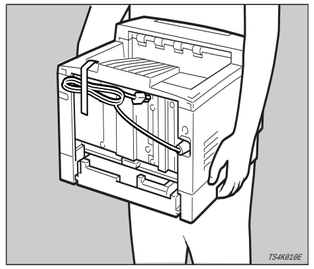
Important

❒ **The interface cable is not included in the box. It is your responsibility to provide the interface cable appropriate for the computer that you are using.**

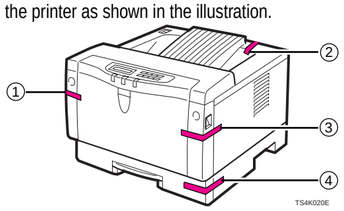
- ☑ Quick Installation Guide (this sheet)
- ☐ Operating Instructions
- ☐ CD-ROM
- ☐ Output Tray Extender
- ☐ Additional Documentation

2 Remove the plastic bag. Lift the printer and move it to the place where you want to install it.

When lifting the printer, use the inset grips on both sides of the printer.



3 Remove the four pieces of adhesive tape from the printer as shown in the illustration.



4 Install the output tray extender to the output tray.

ILLUSTRATION

2 WHERE TO PUT YOUR PRINTER

Your printer's location should be carefully chosen because environmental conditions greatly affect its performance.

⚠ Warning

- Make sure that the wall outlet is near the machine and freely accessible, so that in event of an emergency, it can be unplugged easily.

⚠ Warning

- Only connect the machine to the power source described on this sheet.
- Avoid multi-wiring.
- Do not damage, break or make any modifications to the power cord. Do not place heavy objects on it, pull it hard or bend it more than necessary. These actions could cause an electric shock or fire.

⚠ Caution

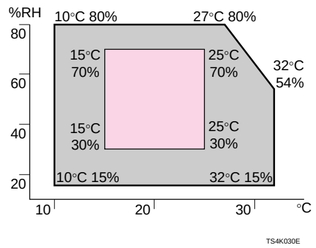
- Keep the machine away from humidity and dust. A fire or an electric shock might occur.
- Place the machine on a strong and level surface. Otherwise, the machine might fall and cause personal injury.

⚠ Caution

- If you use the machine in a confined space, make sure there is a continuous flow of air.

1 Optimum Environmental Conditions

The recommended temperature and humidity



Possible operation range Recommended range

The machine must be level within 5 mm, 0.2" both front to right and left to right.

2 Environments to Avoid

Important

❒ **Locations exposed to direct sunlight or strong light**
❒ **Dusty areas**
❒ **Areas with corrosive gases**
❒ **Areas excessively cold, heat, or humid**
❒ **Locations near an air conditioner or humidifier**
❒ **Locations near other electronic equipment**
❒ **Locations where the printer might be subjected to frequent strong vibration**

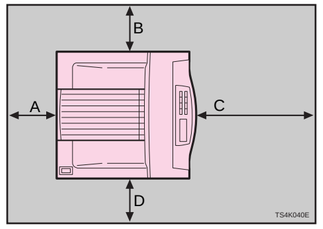
3 Power Connection

Connect the power cord to a power source with a following specifications:

❒ **120V, 60Hz, 6 A or more**

4 Space Required for Installing the Printer

Leave enough space around the printer. This space is necessary to operate the printer. The recommended (or minimum) space requirement is as follows:



A: more than 10 cm (4.0")
B: more than 10 cm (4.0")
C: more than 100 cm (40.0")
D: more than 10 cm (4.0")

3 INSTALLING THE TONER CARTRIDGE

⚠ Warning

- Do not incinerate spilled toner or used toner. Toner dust might ignite when exposed to an open flame.
- Disposal can take place at our authorized dealer or at an appropriate collection site.
- If you dispose of the user toner containers yourself, dispose of them according to your local regulations.

⚠ Caution

- Do not eat or swallow toner.
- Keep toner (used or unused) and toner cartridge out of reach of children.

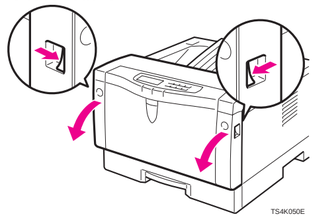
⚠ Caution

- Our products are engineered to meet the highest standards of quality and functionality. When purchasing expendable supplies, we recommend using only those provided by an authorized dealer.

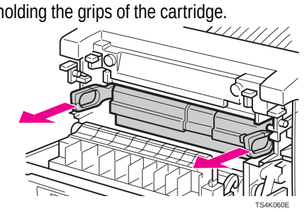
Important

❒ **Do not expose the toner cartridge to a light for a long time. If you do, the toner cartridge will be damaged and the print quality might be reduced.**

1 Open the front cover by pulling the front cover release buttons.



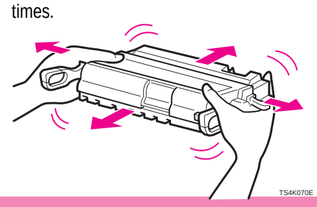
2 Pull the toner cartridge out of the printer by holding the grips of the cartridge.



Note

❒ **Do not hold the toner cartridge upside down or stand it vertically.**

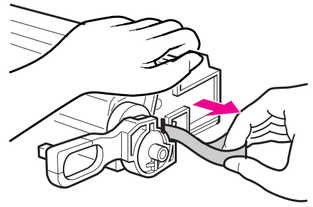
3 Hold the toner cartridge as shown in the illustration, and shake it side to side, about 7 - 8 times.



Note

❒ **If the toner cartridge is not shaken enough, toner might not be evenly distributed in the cartridge. In this case, the print quality might be reduced.**

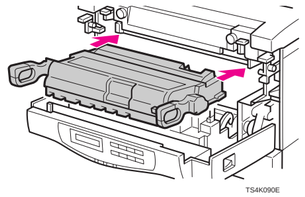
4 Place the toner cartridge on a flat surface. Pull out the tape inside the unit horizontally while holding the cartridge with one hand as shown in the illustration.



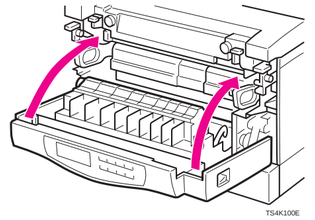
Important

❒ **Be sure to pull the tape completely before installing the toner cartridge. Otherwise, the printer might be damaged.**
❒ **Be sure to pull the tape horizontally. Pulling it upward or downward causes toner scattering.**
❒ **Be careful not to make your cloths dirty with toner.**
❒ **After pulling out the tape from the cartridge, toner scatters easily. Do not shake or give a shock to the cartridge.**

5 Holding the grips of the cartridge, insert it into the printer until it stops as shown in the illustration.



6 Close the front cover.



Important

❒ **Do not close the front cover with force. If you cannot close the cover easily, pull out the toner cartridge from the printer and insert it again. After that, close the front cover again.**

4 CONNECTING THE POWER CORD

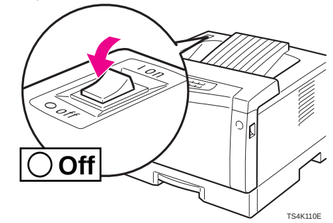
⚠ Caution

- When you pull the plug out of the socket, grip the plug to avoid damaging the cord and causing a fire or an electric shock.

⚠ Caution

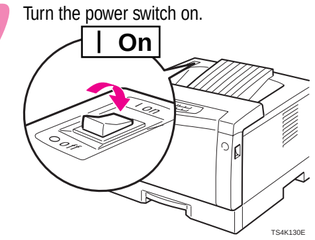
- It is dangerous to handle the plug with wet hands. Doing this may result in receiving an electrical shock.

1 Check that the power switch is turned off. If it is on, turn it off.



2 Insert the plug of the power cord into the wall socket securely.

3 Turn the power switch on.



5 INSTALLING THE PAPER TRAY

⚠ Caution

- The paper tray does not have a stopper. When pulling it out, be careful not to pull it strongly. If you do, the tray might fall and cause personal injury.

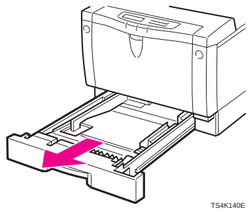
The default settings of the paper size as follows:

- Metric version: A4 ▯ (short-edge feed)
- Inch version: $8^1/_2$" x 11" ▯ (short-edge feed)

If you want to use other sizes, set paper in the optional tray.

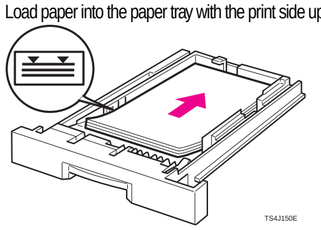
For more information about the paper sizes that can be set in the paper tray, see "Paper and Other Media Supported by Your Printer" in the "Operating Instructions".

1 Pull the paper tray out of the printer. Place it on a flat surface.



TS4K140E

2 Load paper into the paper tray with the print side up.

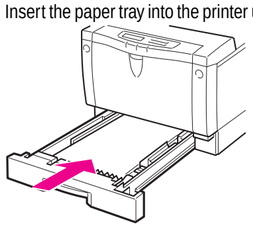


TS4J150E

Important

- ❒ **Make sure that the top of the stack is not higher than the limit mark inside the tray.**
- ❒ **Make sure the paper fits under the rear guides.**

3 Insert the paper tray into the printer until it stops.



TS4K160E

6 PRINTING THE TEST PAGE

You can check if the printer works properly by printing a test page (configuration page).

However, you cannot check the connection between the printer and your computer by printing the test page.

1 Check that the power switch is turned on.

2 Press the **Menu** key.

The following message appears on the panel display.

```
Main Menu:     ▲
 Job Control   ▼
```

3 Press the ▲▼ keys until the following message appears on the panel display.

```
Main Menu:     ▲
 List Print    ▼
```

4 Press the **Enter** key.

The following message appears on the panel display.

```
List Print:    ▲
1.Config. page ▼
```

5 Press the **Enter** key.

The following message appears on the panel display.

```
Config. page:
 Press Enter key
```

6 Press the **Enter** key.

In a short time, the test printing will start.

Important

- ❒ **If you cannot complete the test printing correctly, check if an error message appears on the panel display. For more information about error messages, see "Troubleshooting" in the "Operating Instructions".**
- ❒ **After installing the new toner cartridge, the first few pages might be printed with light density. If density does not become darker, see "Troubleshooting" in the "Operating Instructions".**

7 CONNECTING THE PRINTER TO A COMPUTER

Connect the printer to your computer using a parallel port.

Important

- ❒ **The parallel interface cable is not provided with the printer. It is your responsibility to provide the interface cable appropriate for the computer that you are using.**
- ❒ **The printer's parallel connection is a standard bi-directional interface. It requires a standard 36-pin parallel cable compliant with IEEE1284 and a parallel port available on your computer.**
- ❒ **To avoid electrical interference, use the shielded cable.**

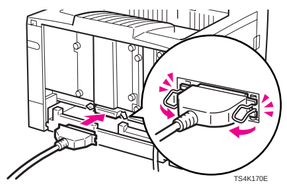
Note

- ❒ **Do not use a parallel cable more than 2.5 meters (8.2 feet) long.**

1 Turn off the printer's power switch.

2 Turn your computer off.

3 Attach the interface cable to the interface connector of the printer. Secure the cable with the metal fittings as shown in the illustration.



TS4K170E

4 Attach the other end of the interface cable to the interface connector of the computer. Secure the cable.

8 SETTING UP FOR PRINTING

Printing requires installation of a printer driver for your operating system.

See "Printer Drivers for Your Printer" in the "Operating Instructions".

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UE

MAINTENANCE KIT TYPE2000

OPERATING INSTRUCTIONS

Read this manual carefully before you use this product and keep it handy for future reference.
For safety, please follow the instructions in this manual.

OPERATING INSTRUCTIONS

Printed in Japan
UE (USA) G517-8600

Introduction

This manual contains detailed instructions on the maintenance of this machine. To get maximum use from this machine, all operators should carefully read and follow the instructions in this manual.

Please read the Safety Information in the “Operating Instructions” before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Supplier shall not be responsible for any damage or expense that might result from the use of parts other than genuine supplier's parts in your supplier's office product.

Notes:

Some illustrations might be slightly different from your machine.

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How to Read this Manual

Symbols

In this manual, the following symbols are used:

⚠ ***WARNING:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

⚠ ***CAUTION:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.

* The statements above are notes for your safety.

Important
If this instruction is not followed, paper might be misfed, originals might be damaged, or data might be lost. Be sure to read this.

Preparation
This symbol indicates the prior knowledge or preparations required before operating.

Note
This symbol indicates precautions for operation, or actions to take after misoperation.

Limitation
This symbol indicates numerical limits, functions that cannot be used together, or conditions in which a particular function cannot be used.

Reference
This symbol indicates a reference.

[ ]
Keys that appear on the machine's panel display.

Keys and buttons that appear on the computer's display.

【】
Keys built into the machine's operation panel.

Keys on the computer's keyboard.

TABLE OF CONTENTS

1. What is the Maintenance Kit?

Checking the Contents of the Box 1
Replacement Parts 2

2. Replacing Parts

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Replacing the Paper Feed Rollers 7
Replacing the Transfer Roller 8
Replacing the Fusing Unit 9
Printing the Test Page 10

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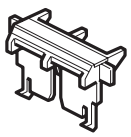
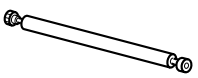
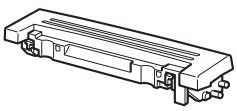
1. What is the Maintenance Kit?

The maintenance kit includes parts necessary for maintaining the printer. When "Replace Maintenance Kit" appears on the panel display, install the replacement parts included in the maintenance kit.

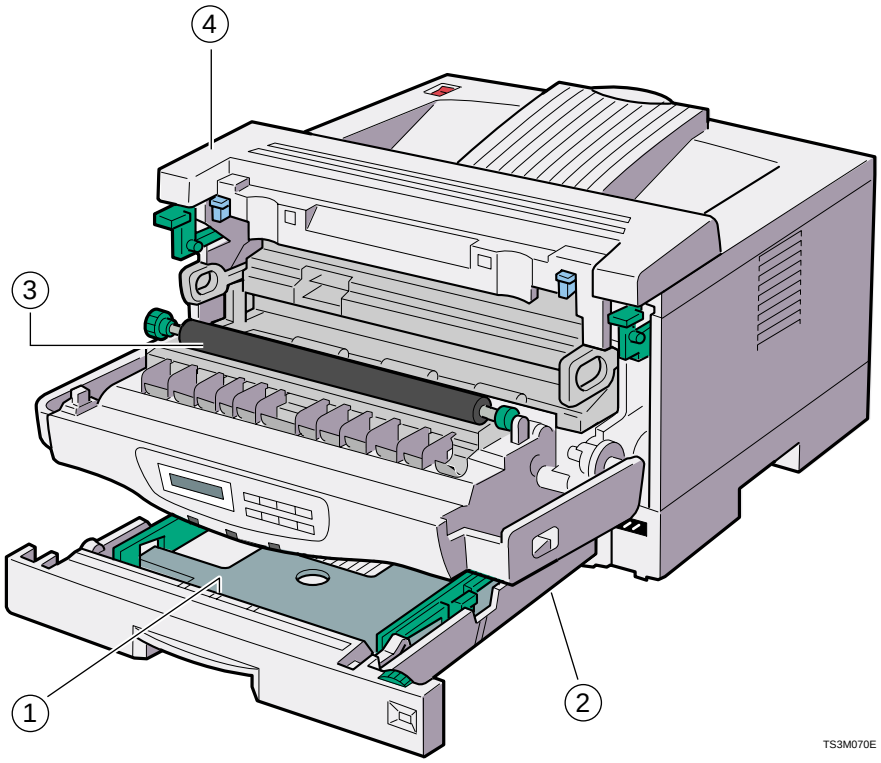
Checking the Contents of the Box

Check the contents of the box according to the following list. If one or more of the items are missing, please contact your sales or service representative.

Description	Quantity		
Friction pad	1 pc		⇒ P.5 *"Replacing the Friction Pad"*
Paper feed roller	3 pcs		**Note** ❒ One is for the standard tray, and the rest for the trays of the optional paper feed units. ⇒ P.7 *"Replacing the Paper Feed Rollers"*
Transfer roller	1 pc		⇒ P.8 *"Replacing the Transfer Roller"*
Gloves	1 pair		
Fusing Unit	1 pc		⇒ P.9 *"Replacing the Fusing Unit"*

Replacement Parts

You should replace all the parts included in the maintenance kit at the same time. Be sure to replace them in the following order:



① Friction pad
② Paper feed roller
③ Transfer roller
④ Fusing unit

2. Replacing Parts

⚠ ***WARNING:***

- ***It is dangerous to handle the plug with wet hands. Doing this may result in receiving an electric shock.***
- ***If you dispose of the used parts yourself, dispose of them according to your local regulations.***

⚠ ***CAUTION:***

- *The inside of the machine could be very hot. Do not touch the parts with a label indicating the "hot surface". Otherwise, it could cause a personal burn.*
- *When you pull out the plug from the socket, grip the plug to avoid damaging the cord and causing fire or electric shock.*
- *Make sure to turn off the printer and wait for about 30 minutes before replacing parts. Not waiting for the printer to cool down can result in a burn.*

Preparing to Replace the Parts

Important

❒ Be sure to follow the steps below before replacing the parts.

1 Turn the printer's power switch off.

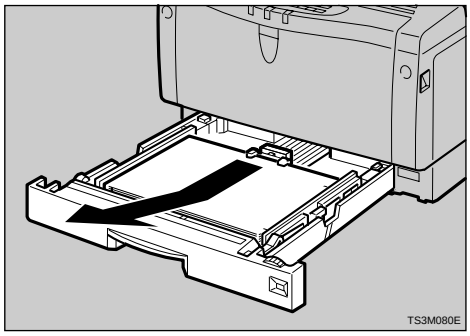
2 Pull the plug out of the wall socket.

3 Remove the interface cable from the printer.

Replacing the Friction Pad

Replace the friction pad of the standard tray (tray 1). It is not necessary to replace the friction pad of the optional paper tray(s).

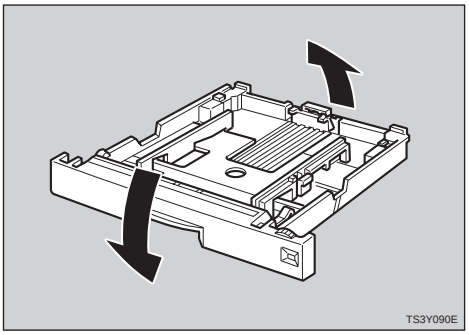
1 **Pull the tray until it stops. After that, lift it slightly, then pull it out of the printer.**



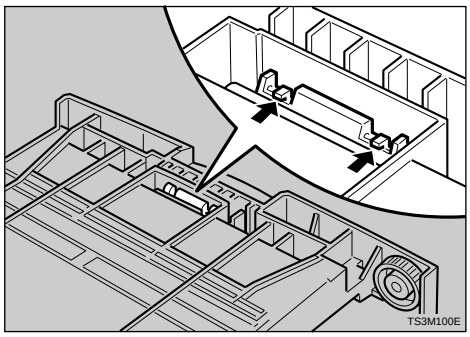
Note

❒ Do not touch the three white pins on the right side of the printer.

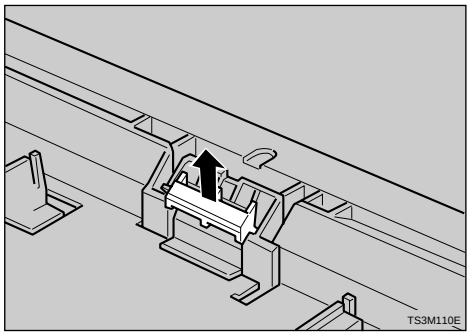
2 **Remove paper from the paper tray. Turn the tray upside down and place it on a flat surface.**



3 **Release the two black catches, that lock the friction pad, using a sharp-pointed item such as a ballpoint pen.**



4 **Turn the paper tray to the original position, and remove the friction pad from the tray.**



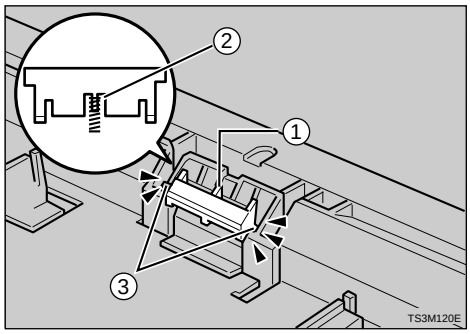
5 **Insert the new friction pad in the paper tray. When inserting, note the following:**

❶ The three triangular projections should be facing toward the front side of the tray as shown in the illustration.

❷ Align the center projection of the new friction pad to the spring of the paper tray.

❸ Also, align the projections of both sides of the friction pad to the holes of the paper tray as

shown in the illustration.



6 Push the friction pad until it locks securely.

Important

❒ To be sure the friction pad is set correctly, gently push it a few times. If the friction pad rebounds with the force of the spring, the pad has been set correctly.

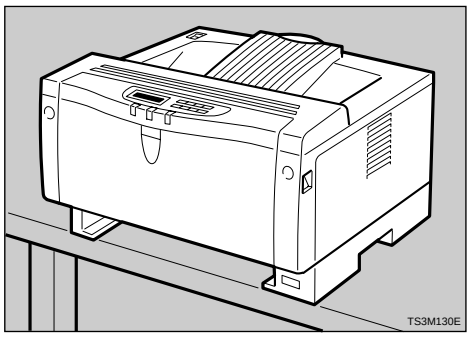
7 Leave the paper tray pulled out and go to P.7 *"Replacing the Paper Feed Rollers"*.

Replacing the Paper Feed Rollers

⚠ ***CAUTION:***

- *When lifting the machine, use the inset grips on both sides of the machine. Otherwise, the machine might fall and cause personal injury.*

1 **Move the printer to the edge of a sturdy and stable table or desk.**



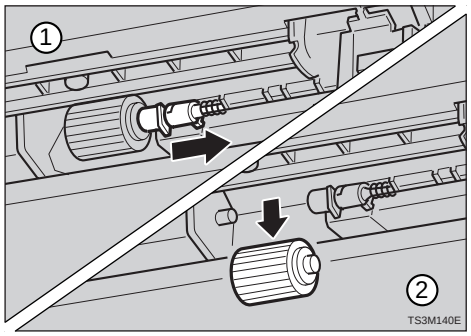
Important

❒ Do not put the printer on an unstable or tilted surface.

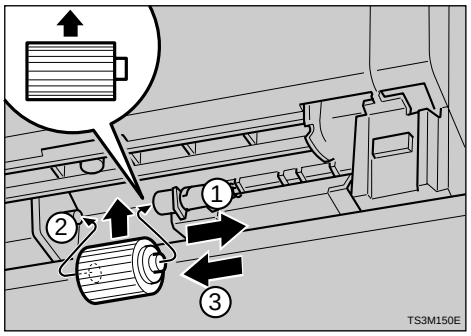
Note

❒ If the optional paper feed unit is equipped with your printer, do not move the printer and the unit together as they are not securely attached.

2 **When looking inside where the paper tray was installed, you can see the paper feed roller. Slide the green lock lever to the right (①), so that the paper feed roller will be released (②).**



3 **Set the new paper feed roller. While sliding the green lock lever to the right (①), set the new roller (②). After that, return the green lock lever to its original position (③).**



Note

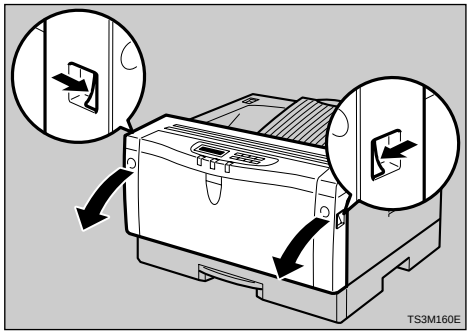
❒ Confirm that the green lock lever secures the roller correctly by checking if the new roller rotates smoothly.

4 **If your printer is equipped with the optional paper feed unit(s), follow the same procedure to replace the paper feed roller of the optional paper feed unit(s).**

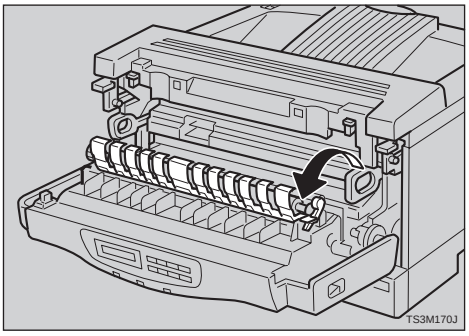
5 **Leave the paper tray pulled out and go to P.8 *"Replacing the Transfer Roller"*.**

Replacing the Transfer Roller

1 **Open the front cover by pulling the front cover release buttons.**

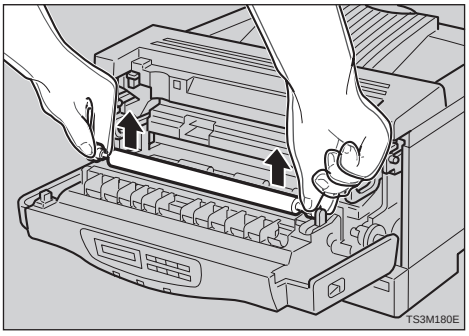


2 **Open the transfer roller cover.**

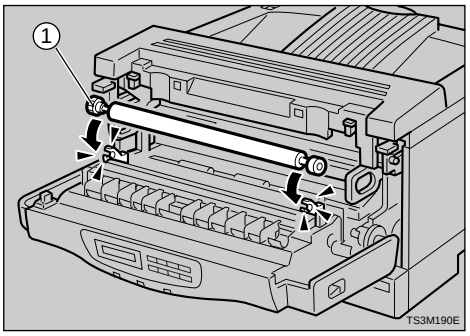


3 **Wear the gloves included in the maintenance kit to avoid making your hands dirty with toner on the transfer roller.**

4 **Hold the both sides of the roller (green parts), and remove the roller from the printer as shown in the illustration.**



5 **Insert the new transfer roller. When placing it, the green gear of the roller should be positioned on the left (①) as shown in the illustration.**



6 **Close the transfer roller cover.**

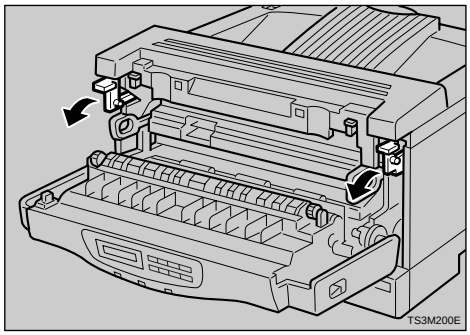
7 **Take gloves off. Leave the paper tray pulled out and the front cover opened, go to P.9 *"Replacing the Fusing Unit"*.**

Replacing the Fusing Unit

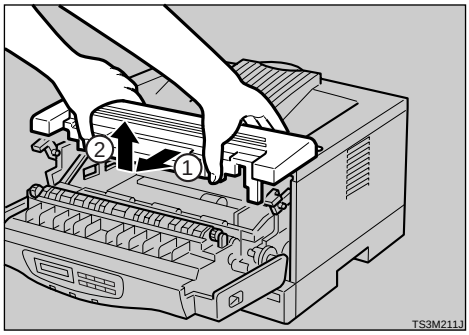
⚠ ***CAUTION:***

- *The fusing unit could be very hot. When installing the new fusing unit, turn off the printer and wait about 30 minutes. After waiting, install the new fusing unit. Not waiting for the unit to cool down can result in a burn.*

1 **Push the brown fusing unit lock levers.**



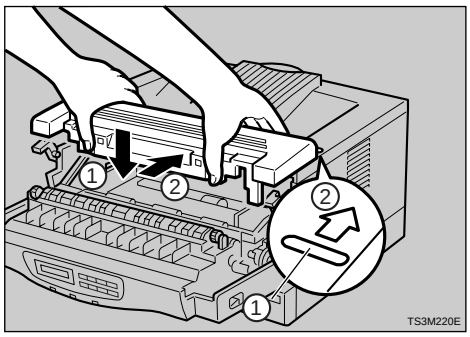
2 **Slide the fusing unit toward you (①), and remove it from the printer (②) as shown in the illustration.**



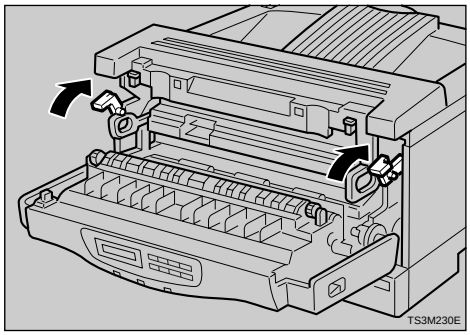
Note

❒ Be careful not to drop the fusing unit.

3 **Align the new fusing unit with the mark on the printer (①), and then slide it in (②) as shown in the illustration.**



4 **Return the brown fusing unit lock levers to their original positions.**

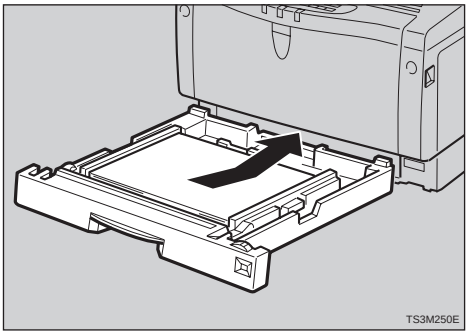


5 **Close the front cover.**

Printing the Test Page

You can confirm that the printer works properly by printing a test page (configuration page).

1 Load paper with the print side up into the paper tray. While lifting the front side of the tray, place the paper tray into the printer. Then, slide it into the printer until it stops.



Note

❒ If you have optional paper trays, repeat the above procedure for those trays.

2 Move the printer to the place where it was installed. If you have the optional paper feed unit(s), place the printer securely on the unit(s).

3 Insert the plug of the power cord securely into the wall socket. Turn the printer's power switch on.

4 Print the test page following the procedure below:

❶ Press [Menu].

The following message appears on the panel display.

```
Main Menu:
 Job Control
```

❷ Press [▲][▼] until the following message appears on the panel display.

```
Main Menu:
 List Print
```

❸ Press [Enter].

The following message appears on the panel display.

```
List Print:
1.Confiｇ. Paｇe
```

❹ Press [Enter].

The following message appears on the panel display.

```
Confiｇ. Paｇe:
 Press Enter Key
```

❺ Press [Enter].

In a short time, the test printing will start.

5 If you can complete the test printing completely, turn off the printer's power switch.

Note

❒ If you cannot complete the test printing completely, confirm that all of the parts are installed correctly referring to the mentioned procedures.

6 Attach the interface cable to the interface connector of your printer. Turn on the printer's power switch.

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MAINTENANCE KIT TYPE1400

OPERATING INSTRUCTIONS

Read this manual carefully before you use this product and keep it handy for future reference.
For safety, please follow the instructions in this manual.

OPERATING INSTRUCTIONS

Printed in Japan
UE (USA) G517-8620

Introduction

This manual contains detailed instructions on the maintenance of this machine. To get maximum use from this machine, all operators should carefully read and follow the instructions in this manual.

Please read the Safety Information in the “Operating Instructions” before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Supplier shall not be responsible for any damage or expense that might result from the use of parts other than genuine supplier's parts in your supplier's office product.

Notes:

Some illustrations might be slightly different from your machine.

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How to Read this Manual

Symbols

In this manual, the following symbols are used:

⚠ ***WARNING:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, could result in death or serious injury.

⚠ ***CAUTION:***
This symbol indicates a potentially hazardous situation which, if instructions are not followed, may result in minor or moderate injury or damage to property.

* The statements above are notes for your safety.

Important
If this instruction is not followed, paper might be misfed, originals might be damaged, or data might be lost. Be sure to read this.

Preparation
This symbol indicates the prior knowledge or preparations required before operating.

Note
This symbol indicates precautions for operation, or actions to take after misoperation.

Limitation
This symbol indicates numerical limits, functions that cannot be used together, or conditions in which a particular function cannot be used.

Reference
This symbol indicates a reference.

[ ]
Keys that appear on the machine's panel display.

Keys and buttons that appear on the computer's display.

【】
Keys built into the machine's operation panel.

Keys on the computer's keyboard.

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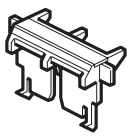
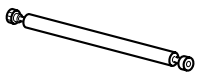
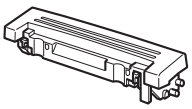
1. What is the Maintenance Kit?

The maintenance kit includes parts necessary for maintaining the printer. When "Replace Maintenance Kit" appears on the panel display, install the replacement parts included in the maintenance kit.

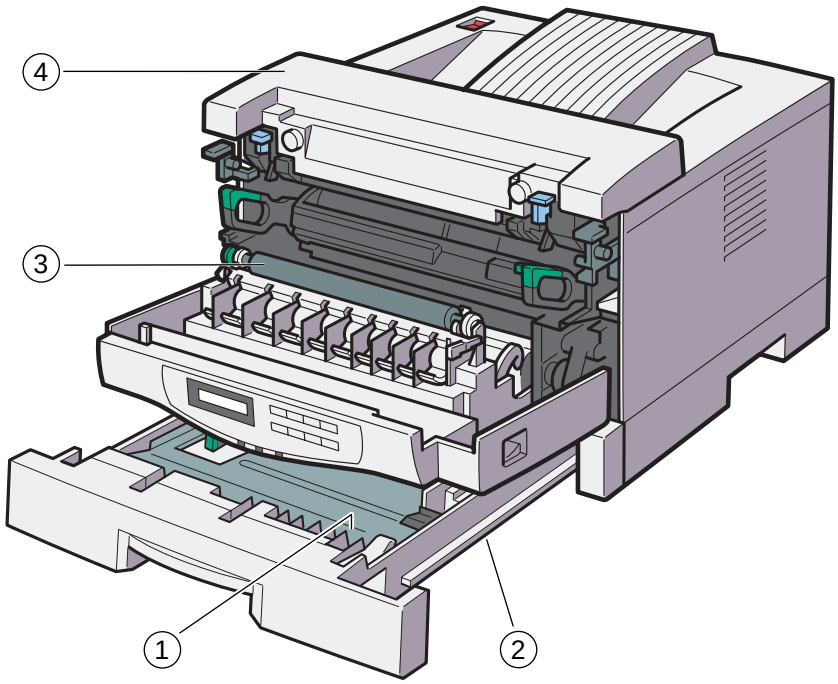
Checking the Contents of the Box

Check the contents of the box according to the following list. If one or more of the items are missing, please contact your sales or service representative.

Description	Quantity		
Friction pad	1 pc		⇒ P.7 *"Replacing the Friction Pad"*
Paper feed roller	1 pc		⇒ P.9 *"Replacing the Paper Feed Roller"*
Transfer roller	1 pc		⇒ P.10 *"Replacing the Transfer Roller"*
Gloves	1 pair		
Fusing Unit	1 pc		⇒ P.11 *"Replacing the Fusing Unit"*

Replacement Parts

You should replace all the parts included in the maintenance kit at the same time. Be sure to replace them in the following order:



TS4M070E

① Friction pad
② Paper feed roller
③ Transfer roller
④ Fusing unit

2. Replacing Parts

⚠ ***WARNING:***

- ***It is dangerous to handle the plug with wet hands. Doing this may result in receiving an electric shock.***
- ***If you dispose of the used parts yourself, dispose of them according to your local regulations.***

⚠ ***CAUTION:***

- *The inside of the machine could be very hot. Do not touch the parts with a label indicating the "hot surface". Otherwise, it could cause a personal burn.*
- *When you pull out the plug from the socket, grip the plug to avoid damaging the cord and causing fire or electric shock.*
- *Make sure to turn off the printer and wait for about 30 minutes before replacing parts. Not waiting for the printer to cool down can result in a burn.*
- *The paper tray does not have a stopper. When pulling it out, be careful not to pull it strongly. If you do, the tray might fall and cause personal injury.*

Preparing to Replace the Parts

Important

❒ Be sure to follow the steps below before replacing the parts.

1 Turn the printer's power switch off.

2 Pull the plug out of the wall socket.

3 Remove the interface cable from the printer.

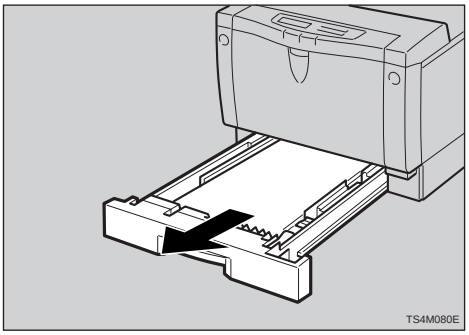
Replacing the Friction Pad

Replace the friction pad of the standard tray (tray 1). It is not necessary to replace the friction pad of the optional paper tray(s).

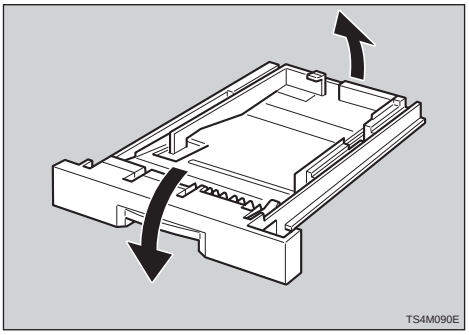
⚠ ***CAUTION:***

- *The paper tray does not have a stopper. When pulling it out, be careful not to pull it strongly. If you do, the tray might fall and cause personal injury.*

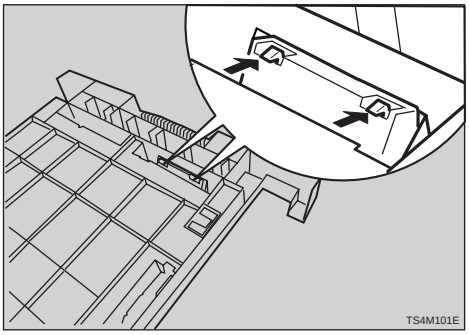
1 **Pull the tray out of the printer.**



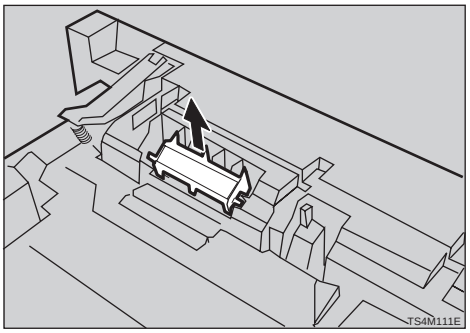
2 **Remove paper from the paper tray. Turn the tray upside down and place it on a flat surface.**



3 **Release the two black catches, that lock the friction pad, using a sharp-pointed item such as a ballpoint pen.**



4 **Turn the paper tray to the original position, and remove the friction pad from the tray.**



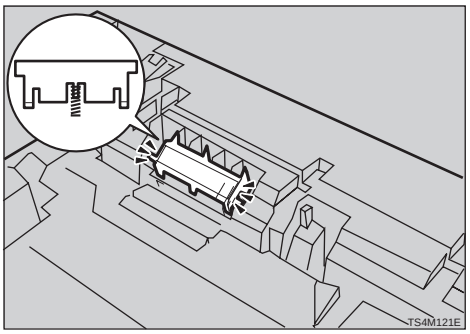
5 **Insert the new friction pad in the paper tray. When inserting, note the following:**

❶ The three triangular projections should be facing toward the front side of the tray as shown in the illustration.

❷ Align the center projection of the new friction pad to the spring of the paper tray.

❸ Also, align the projections of both sides of the friction pad to

the holes of the paper tray as shown in the illustration.



6 **Push the friction pad until it locks securely.**

Important

❒ To be sure the friction pad is set correctly, gently push it a few times. If the friction pad rebounds with the force of the spring, the pad has been set correctly.

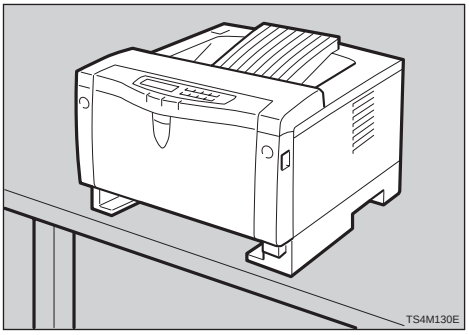
7 **Leave the paper tray pulled out and go to P.9 *"Replacing the Paper Feed Roller"*.**

Replacing the Paper Feed Roller

⚠ ***CAUTION:***

- *When lifting the machine, use the inset grips on both sides of the machine. Otherwise, the machine might fall and cause personal injury.*

1 **Move the printer to the edge of a sturdy and stable table or desk.**



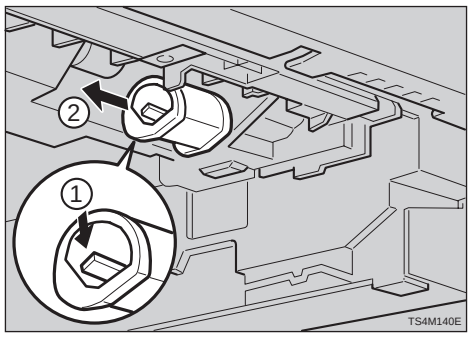
Important

❒ Do not put the printer on an unstable or tilted surface.

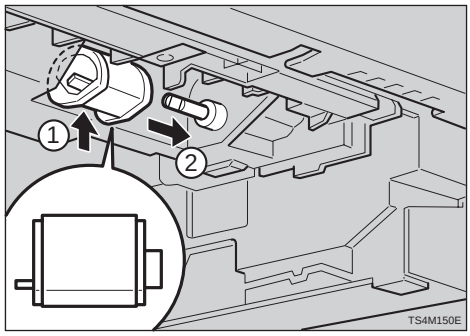
Note

❒ If the optional paper feed unit is equipped with your printer, do not move the printer and the unit together as they are not securely attached.

2 **When looking inside where the paper tray was installed, you can see the paper feed roller. While pinching the stopper inside the roller with fingers (①), slide it to the left, so that the paper feed roller can be released (②).**



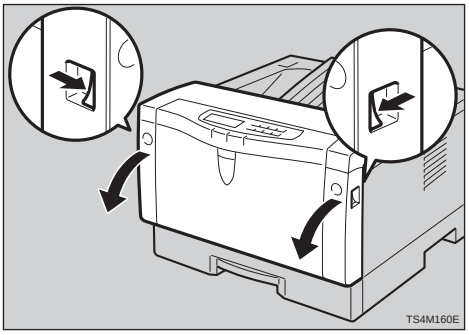
3 **Set the new paper feed roller. With the round part of the roller facing up (①), insert the roller into the shaft until the roller clicks into position (②).**



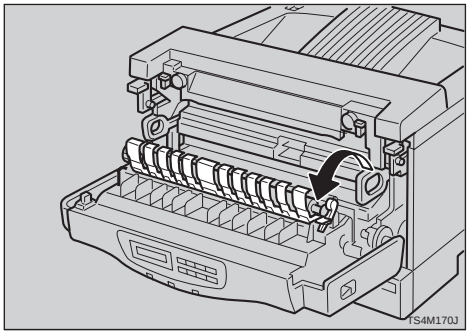
4 **Leave the paper tray pulled out and go to P.10 *"Replacing the Transfer Roller"*.**

Replacing the Transfer Roller

1 **Open the front cover by pulling the front cover release buttons.**

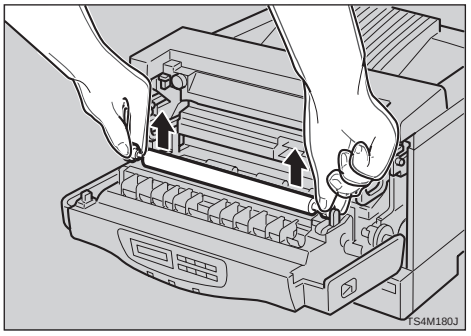


2 **Open the transfer roller cover.**

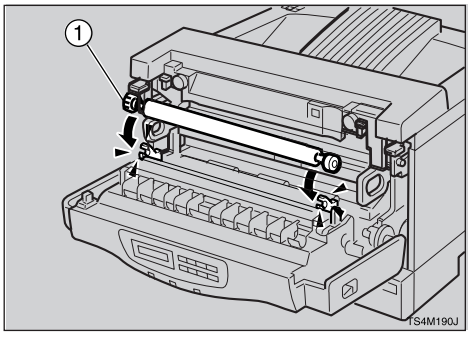


3 **Wear the gloves included in the maintenance kit to avoid making your hands dirty with toner on the transfer roller.**

4 **Hold the both sides of the roller (green parts), and remove the roller from the printer as shown in the illustration.**



5 **Insert the new transfer roller. When placing it, the green gear of the roller should be positioned on the left (①) as shown in the illustration.**



6 **Close the transfer roller cover.**

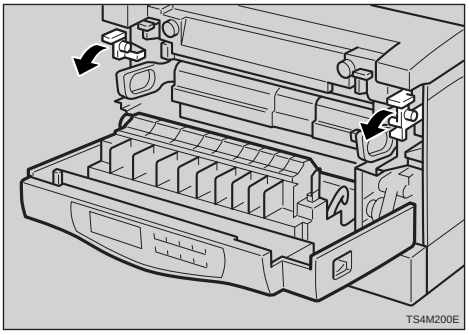
7 **Take gloves off. Leave the paper tray pulled out and the front cover opened, go to P.11 *"Replacing the Fusing Unit"*.**

Replacing the Fusing Unit

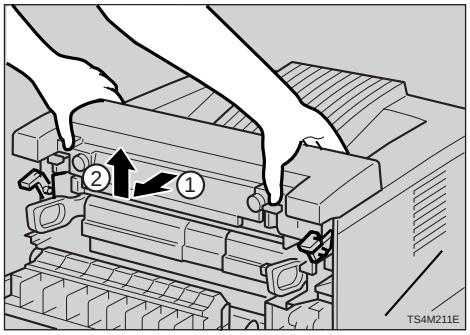
⚠ ***CAUTION:***

- *The fusing unit could be very hot. When installing the new fusing unit, turn off the printer and wait about 30 minutes. After waiting, install the new fusing unit. Not waiting for the unit to cool down can result in a burn.*

1 **Push the brown fusing unit lock levers.**



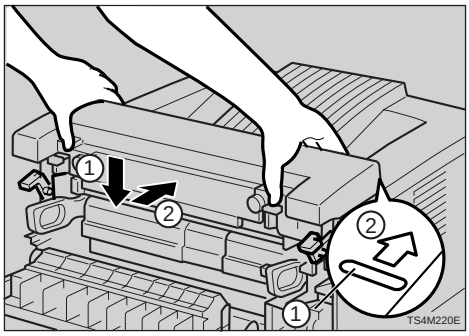
2 **Slide the fusing unit toward you (①), and remove it from the printer (②) as shown in the illustration.**



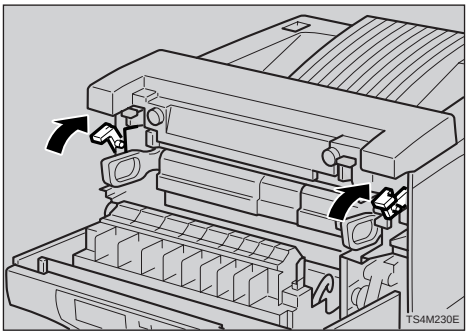
Note

❒ Be careful not to drop the fusing unit.

3 **Align the new fusing unit with the mark on the printer (①), and then slide it in (②) as shown in the illustration.**



4 **Return the brown fusing unit lock levers to their original positions.**



5 **Close the front cover.**

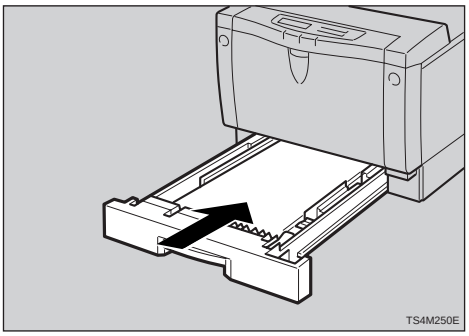
Printing the Test Page

You can confirm that the printer works properly by printing a test page (configuration page).

2

1 Insert the plug of the power cord securely into the wall socket. Turn the printer's power switch on.

2 Load paper with the print side up into the paper tray. Slide the paper tray into the printer until it stops.



Note

❒ If you have an optional paper feed unit, repeat the above procedure for the tray.

3 Move the printer to the place where it was installed. If you have the optional paper feed unit, place the printer securely on the unit.

4 Print the test page following the procedure below:

❶ Press [Menu].

The following message appears on the panel display.

```
Main Menu:
 Job Control
```

❷ Press [▲][▼] until the following message appears on the panel display.

```
Main Menu:
 List Print
```

❸ Press [Enter].

The following message appears on the panel display.

```
List Print:
1.Confi&. Pa&e
```

❹ Press [Enter].

The following message appears on the panel display.

```
Confi&. Pa&e
 Press Enter Key
```

❺ Press [Enter].

In a short time, the test printing will start.

5 If you can complete the test printing completely, turn off the printer's power switch.

Note

❒ If you cannot complete the test printing completely, confirm that all of the parts are installed correctly referring to the mentioned procedures.

6 Attach the interface cable to the interface connector of your printer. Turn on the printer's power switch.

Clearing the Maintenance Condition

After replacing all of the parts, follow the steps below to clear the "Replace Maintenance Kit" message on the panel display.

1 Make sure the following message appears on the panel display.

```
Replace
Maintenance Kit
```

2 Press [Menu].

The following message appears on the panel display.

```
Main Menu:      ▲
 Job Control    ▼
```

3 Press [▲][▼] until the following message appears on the panel display.

```
Main Menu:      ▲
 Maintenance    ▼
```

4 Press [Enter].

The following message appears on the panel display.

```
Maintenance:    ▲
1.System Reset  ▼
```

5 Press [▼] until the following message appears on the panel display.

```
Maintenance:    ▲
4.PM Clear      ▼
```

6 Press [Enter].

The following message appears on the panel display.

```
PM Clear:       ▲
 Yes=#          ▼
```

7 Press [Enter] to clear the maintenance condition. Wait for a while.

The following message appears on the panel display after about three seconds.

```
Maintenance:    ▲
4.PM Clear      ▼
```

8 Press [On Line].

The following message appears on the panel display.

```
Ready
```

INDEX

Network Interface Board

Type2000

For Novell NetWare®, Apple Talk, and TCP/IP Networks

Owner's Manual

Important

No title to or ownership of the software described in this document or any of its parts, including patents, copyrights and trade secrets, is transferred to customers. It is against the law to decipher, de-compile, or develop source code for the software described in this document, or knowingly allow others to do so.

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Part Number

UE GB

A855-7500

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Warning

United States: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the owner's manual, may 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/her own expense.

Canada: This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communication.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques (de la class A) prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

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Appendix A A-1

A.1 Network Interface Board A-1
A.2 10BaseT/100BaseTX/STP Cables A-2

Chapter 1 Introduction

The Network Interface Board is an optional device, which is installed into compatible printers to provide Ethernet network connectivity. The Network Interface Board has the following features:

- Automatic selection of 10BaseT/100BaseTX Ethernet connection.
- Fully transparent AppleTalk printing support for the Macintosh, including support for binary PostScript printing.
- Peer-to-Peer (serverless) discovery and printing from Windows 95/98 or Windows NT (4.0 or higher) workstations, without a Novell file server present and without using IP.
- Novell NetWare PSERVER on both bindery based and Novell Directory Services (NDS).
- lpr/lpd over TCP/IP for UNIX platforms and Microsoft's Windows.
- Raw sockets support over selectable TCP/IP port with filters for selected UNIX environments.
- IP and IPX SNMP support of MIB-2 and proprietary NIC MIB.
- SNMP support of standard MIB and proprietary printer MIBs on compatible printers.
- Integral HTTP Server to allow monitoring and management of your Network Interface Board from a standard IP Web Browser program.
- Management Access Program (MAP) to allow Windows-based HTML viewing for monitoring and management of your Network Interface Board.

1.1 What's in Your Package

The Print Server contains the following:

- Network Interface Board
- Quick Configuration Guide booklet for the Network Interface Board
- 1 CD-ROM that contains the following
  - This Manual (Serial number A855-7500)
  - Management Access Program (MAP)
  - IPX Peer-to-Peer Windows Redirector
  - IP Peer-to-Peer Windows Redirector
  - NetWare and Print Server Configuration Program (NWSetup)

The MAP directory contains the programs BOOTPL16 for Windows 3.1x and BOOTPL32 for Windows 95/98 and Windows NT 4.0 (to assist entering IP parameters in a Windows environment)

Each directory may contain a README file containing the latest information about the installation and operation. Check for these files before going any further with installation.

1.2 Hardware/NOS Requirements

The Network Interface Board hardware and software require the following:

Version of Protocol or NOS	Novell NetWare Version 3.x, or 4.x.
	Macintosh System 7.x, 8.x
	UNIX, Windows, or LAN Server systems supporting lpr over TCP/IP.
	Novell NetWare printing requires NetWare Capture, NPRINT and PCONSOLE (later than 1.0) utilities.
Software	The IP Peer-to-Peer utility requires Windows NT 4.0 or later; Windows 95 or Windows 98
	The IPX Peer-to-Peer utility requires Windows NT 4.0 or later; Windows 95 or Windows 98
	The MAP utility requires Windows NT 4.0 or later, Windows 95 or Windows 98. MAP also requires a browser such as Microsoft Internet Explorer (later than 3.02) or Netscape Navigator.
	AppleTalk printing requires printer PPD appropriate to the printer.
	TCP/IP setup and maintenance may be done with Telnet. Monitoring and maintenance with HTTP requires a suitable internet Web Browser program supporting HTML such as Microsoft Internet Explorer 3 or Netscape Navigator.
Hardware	Support for 10 megabit Ethernet networks: 10BaseT (shielded twisted pair) cables and hardware.
	Support for 100 megabit Ethernet networks: 100BaseTX (shielded twisted pair) cables and hardware.
	CD-ROM drive on the workstation to accept Windows utilities.

1.3 Conventions Used in this Document

Through out this document there are instructions. When referring to keys on the keyboard that need to be pressed all caps are used. e.g. Press the **ENTER** key.

Dialog boxes that appear on the screen are referred to using square brackets. e.g. Click on the [**OK**] button.

References are made to the **ENTER** key, this is the same as the **RETURN** key on some keyboards.

Chapter 2 Preparing for Network Connection

2.1 Preparing the Printer

You should generate a status page of the printer before you begin. This will give you detailed information on the identification and configuration of your printer, as well as ensuring that the printer is properly set up and operating.

2.2 Powering Up the Printer

Use the following procedures to power up the printer. Do this before the printer is attached to the network to verify the physical installation of the Network Interface Board.

1. Plug in the power cord.
2. Turn on the power and wait for the printer to warm up.
   The Network Interface Board provides a print job to the printer which contains the Network Interface Board status information.
   ⇨ Refer to 8.2 Status Report, for more information.
3. Check the Network Interface Board status report. Record the serial number and the Network address or save the status report.
   You need this information when you configure the printer for your network.
4. Power down the printer.

Connect the network cable between the Network Interface Board and a network drop.
⇨ Refer to 2.3 Connect the Network to Network Interface Board: Ethernet, for network connection information.

Chapter 3
Using the Management Access Program or a Standard Web Browser

MAP has the following requirements:

- The Microsoft TCP/IP protocol stack, the Microsoft IPX protocol stack, or Novell NetWare 32-bit IPX protocol stack must be installed on this PC.
- A web browser must be installed on this PC. Both Netscape Navigator and Microsoft Internet Explorer (3.02 or later) are supported.

The Management Access Program (MAP) uses a Windows-based HTML viewer program linked with a proprietary bi-directional IPX/IP channel program to allow access to the Network Interface Board's HTML-based monitoring and maintenance capabilities. An IP Web Browser also provides access to this capability directly. Either program allows you to:

- Configure your network protocols for the Network Interface Board.
- Reset the Network Interface Board remotely to either clear an error condition, or return the print server to its factory default settings.
- Troubleshoot problems in the Network Interface Board.
- Enable or disable the status sheet printout.
- Access a context-sensitive help menu that fully explains how to use each Management Access Program feature.
- Access the online help that explains how to use the many features of this program.

Note: *Some functions provided with the Management Access Program or the Web Browser require a password. The factory default password is "sysadm".*

3.1 Where to Place the MAP

The utility can be installed on any workstation hard drive or network drive.

3.2 How to Install MAP

The Management Access Program must be installed from Windows 95/98 or NT 4.0, it **CANNOT** be installed from DOS or Windows 3.1x.
Use the following procedures to install:

1. Start Windows on your PC or workstation.
2. Insert the supplied CD-ROM into the CD-ROM drive.
3. Select **RUN** from the **Start** menu.
4. At RUN, type <Drive>:\MAP\SETUP (where <Drive> is your CD-ROM) and click on the [**OK**] button.
5. Read the information on the MAP setup program screen.
   - ➔ Click on [**Cancel**] to quit setup and then close any programs you have running.
   - ➔ Click on [**Next**] to continue with the setup program.
6. Identify a path for the program. The path default is C: \Program Files\MAP. You can change the path or use the default. The installation begins.

3.3 Using the MAP Program

When you start MAP program from the Start menu, the program will automatically enters Microsoft Internet Explorer, Netscape Navigator, or your default browser and prompt you with a list of IPX print servers listed by their SAP identification and IP print servers by their IP addresses.
Click on the URL of the unit you want to configure to access the unit's HTTP Server. The program will setup a link to the print server and obtain HTML code describing the home page. Once the HTTP Server home page appears, you can configure or reconfigure your unit.

3.4 Configure the MAP Program

Once you install the program, you can Configure MAP to look for IP-based Printer Servers, IPX-based Print Servers and the maximum number of hops to serarch for IP-based Print Servers. The default hop count is 2.

The hop count number determines how many subnetworks the program will search to find units. An entry of 0 on the screen searches only the current subnet. An entry of 2 would

search the wire directly connected to the workstation, and, all networks accessible through two routers. Entries of 15 or higher will automatically search every connected network (this number is not recommended due to the amount of traffic it will generate).

Once the search parameters and a hop count is entered, click on OK.

3.5 Web IP Browser

Once you have assigned an IP address to your Network Interface Board, you may use an IP browser, such as Netscape, to access the HTTP Server and the HTML code allowing Network Interface Board monitoring and maintenance. To access the HTTP Server screens from your browser, do the following:

1. Open up your browser by clicking on its icon.
2. For the URL, type in the IP address of the Network Interface Board (ex. http://123.456.789.123). The HTTP Server screens should appear.
   If you have problems, check to make sure you are using the correct IP address.

Chapter 4
NetWare Configuration

Use this chapter if you will be printing from a Novell NetWare NOS. This chapter is divided into the following sections:

- Configuring NetWare 3.x describes how to configure the Network Interface Board for use with Version 3.x.
  Use PCONSOLE to set up the print server function.
- Configuring NetWare 4.x in Bindery Emulation describes how to configure the Network Interface Board for use with Version 4.x Bindery Services.
  Use PCONSOLE to set up the print server function.
- Configuring NetWare Directory Services describes how to configure the Network Interface Board for use with Version 4.x Directory Services.
  Use NetWare Administrator or PCONSOLE to set up the print server function.
- Network Interface Board Setup Parameters describes the parameters accessible via MAP or an IP Browser used to configure the Print Server for NetWare.
- Using NetWare Utilities explains how to use standard Novell NetWare utilities to make changes to the configuration of the Print Server function.
- NWSetup: NetWare and Print Server Configuration Program describes how to install the program and how to configure the Network Interface Board and NetWare file servers without using Novell NetWare utilities.

4.1 Configuring NetWare 3.x

Before configuring NetWare, you must determine if the Network Interface Board has its desired name. If you change the name, use MAP or an IP Browser to change the name.

The following steps are the general procedure for configuring the Network Interface Board. You must have supervisor privileges to do this configuration. These steps are covered in detail in the following paragraphs:

1. Start PCONSOLE and select the file server you want to use.
2. Create the print queues.
3. Specify the <print server> card as a print server.
4. Configure the print server and printer.
5. Assign the print queues.
6. Set up the NOTIFY options.
7. Repeat the procedure for other file servers.

When you are finished, turn the printer off and on again. The printer creates a status report that indicates the file servers to which the unit is attached and the queues which it services.

Before you begin:

- Verify that you have supervisor privileges on the file servers on which the Network Interface Board print server is to be entered.
- Verify that your version of PCONSOLE is later than 1.0.

4.1.1 Start PCONSOLE and Select File Server

Follow these steps to start PCONSOLE:

1. Log in to the network, type **PCONSOLE** and press the **ENTER** key.
2. Choose **Change Current File Server** from the **Available Options** menu. A list of file servers is displayed.
3. Select the file server on which you want to install the print server and press the **ENTER** key.
   If the name of the file server you want is not displayed, press the **INSERT** key to get a list of file servers.
4. Log in to the file server.
5. Press the **ESC** key to return to the Available Options menu.

4.1.2 Create Print Queues

The print server must be assigned to at least one print queue on the file server.

- If the print queue that you want the <print server> card to service already exists, and you know the name of this queue, go to 4.1.3 Enter the Print Server Name .
- If you do not know the name of the queue, or it does not exist, use the following procedure:

1. Choose **Print Queue Information** from the **Available Options** menu, and press the **ENTER** key. A list of existing queues is displayed.
2. To create a new queue, press **INSERT**. Enter the name of the queue and press the **ENTER** key. You do not need to enter any more information at this time.
3. Press the **ESC** key to return to the **Available Options** menu.

4.1.3 Enter the Print Server Name

A print server takes the print jobs from queues and sends them to the printer. Use this procedure to specify the name of the print server:

1. Choose **Print Server Information** from the **Available Options** menu, and press the **ENTER** key.

   A list of existing print servers is displayed.
2. Press the **INSERT** key.

   The New Print Server Name box is displayed.
3. Type the name of the print server into the entry box. The Novell print server name is printed under Novell NetWare information on the status sheet.

Note: *If desired, this name can be changed using MAP or Web Browser utilities.*

4. Press the **ENTER** key to add the print server name to the Print Servers list.

4.1.4 Configure the Print Server

1. Use the following procedures to configure the Print Server's function:

   Choose the print server name from the **Print Servers** list and press the **ENTER** key.

   The **Print Server** Information menu appears.

2. Choose **Print Server Configuration** from the menu and press the **ENTER** key.

3. Choose **Printer Configuration** from the menu and press the **ENTER** key.

   The **Configured Printers** menu appears.
   Since this is a new Print Server entry, all printers are labeled "Not Installed".

4. Choose the printer and press the **ENTER** key.

   The **Printer 0 Configuration** screen appears with a title of Printer 0.

5. If you choose to, change default in the Name field on this form to something that helps you identify the printer, for example, LASER_PRINTER. The print server uses this name in its message back to the users on the Notify list. Select **Name**, enter a name, and then press the **ENTER** key.

6. Select **Type** and press the **ENTER** key.

   A list of printer types is displayed.

7. Choose **Remote Other/Unknown** and press the **ENTER** key.

   This creates default entries in the other fields.
   These defaults are usually optimal, so do not change them without specific knowledge of the effects.

8. Press the **ESC** key.

   At the prompt, choose to save your changes.

9. Press the **ESC** key to return to the **Print Server Configuration** menu.

4.1.5 Assign Print Queues to the Printer

When you assign queues to the defined printer, you authorize the print server to service these queues.

Note: *Do not assign the same queue to two different print servers. If a queue is assigned to multiple print servers, print jobs may not go to the intended printer.*

---

1. Choose **Queues Serviced by Printer** from the Print Server Configuration menu.

2. Select the printer name from the list of defined printers.

3. Press the **ENTER** key to display the **Available Queues** list for the printer.

4. Select the queue you want and then assign a priority level from 1 to 10. It is recommended that you accept the default priority level.

5. Press the **ENTER** key.

   The queue appears on the list for the printer.

6. Press the **ENTER** key again to assign additional queues.

7. When you finish assigning queues, press the **ESC** key and then save your changes. Continue to press the **ESC** key to return to the Print Server Configuration menu. If you want to set Notify options, go to Section. 4.1.6. If you are finished, continue to press the **ESC** key and then save your changes.

4.1.6 Set Up Notify Options for the Printer (Optional)

To enable the print server to notify users or user groups if a problem occurs with the printer, set up the Notify options. The print server supports the enhanced NOTIFY options for printers, including informing users when the printer:

- Is the printer opened or off-line, paper jammed, or out of paper
- Requires a manual paper feed or a form change
- Has had an engine failure

1. Choose **Notify List for Printer** on the Print Server Configuration menu.
2. Select the printer from the **Defined Printers** list.

   The screen appears (which is blank for an initial installation).
3. Press the **ENTER** key to view a list of **Notify Candidates**.
4. Select the user or group from the list.
5. Set the **First** and **Next** intervals in the Notify Intervals screen.

   It is recommended that you use the defaults.

   ➔ The **First** interval is the number of seconds the network waits before it notifies candidates about a print job problem.

   ➔ The **Next** interval specifies how often in seconds candidates are notified. Enter a number for each interval and press the **ENTER** key.
6. Press the **ESC** key and then choose Save Changes. Press the **ESC** key at each screen until you reach the Print Server Configuration menu. If you have finished the configuration, press the **ESC** key and then save the changes.

4.1.7 Installing the Print Server on Multiple File Servers

To install the print server on more than one file server, perform the procedures described in Sections 4.1.1 through 4.1.6 for each file server. You must use the same name and password for the print server (or no password) on all file servers. You set the password for the Network Interface Board using the MAP program (⇨ refer to 4.3 Configuring the Network Interface Board in NetWare Directory Services). If you use a password, specify it on each file server using the **Change Password** option on the Print Server Information menu of the PCONSOLE utility.

When the Network Interface Board comes up, it automatically searches for and attaches to the file servers that are no more than four hops and have no more than eight ticks propagation delay. For extremely large or complex networks, this allows a bounded search time on start-up. If the print server must attach to file servers beyond this range, or, if you wish to accelerate start-up by eliminating the need to search all file servers in the four hops/eight ticks radius, the file servers with which the print server is to operate may be entered into the Print Server Configuration of a primary file server. The primary file server can be any file server within the four hops/eight ticks propagation time limits, but ideally is as close as possible to the print server. Once the print server locates the primary file server and

the list of file servers to be serviced, the automatic search is dropped and the print server will go directly to those file servers listed (and to no others).

4.1.8 Primary File Server

To use the primary file server option, use the following procedure on a file server close to the printer:

1. List the file servers to be serviced by the primary file server by **selecting File Server To Be Serviced** option from the **Print Server Configuration Menu**.
2. Press the INSERT key to display the **Available File Servers** list.
3. Select the name of each file server to be serviced and press the **ENTER** key to add it to the **File Servers To Be Serviced** list.
4. When the list is complete, press the **ESC** key to return to the menu.
5. Install the Network Interface Board on each of the primary file servers.

4.1.9 Preferred File Servers

The MAP or Web Browser utilities allow you to identify a preferred file server, to be identified within the Network Interface Board itself. If a preferred file server is listed, the Network Interface Board will attach to this identified file server instead of initiating the automatic search. If the preferred file server is also a primary file server (for example, has file servers listed under file servers to be serviced), the Network Interface Board will connect directly to these file servers.

Note: *The Preferred File Server is only applicable to bindery-based queues. Entering it has no affect on NDS queues.*

4.2 Configuring NetWare 4.x Bindery Emulation

Novell's NetWare 4.x can operate in two modes NetWare Directory Services (NDS) and Bindery Services Emulation. For Directory Services, ⇨ refer to 4.3 Configuring the Network Interface Board in NetWare Directory Services.
These services run simultaneously and transparently to each other. The Network Interface Board may be configured to operate with Bindery Services mode only (this section), or to operate under NDS (⇨ 4.3 Configuring the Network Interface Board in NetWare Directory Services). When configured under NDS, the Network Interface Board will also service older file servers operating in bindery mode.

Note: *If the Network Interface Board is not properly set up for NDS and the Bindery Services mode is not running, the Network Interface Board can not find its file servers, and the status page indicates the Novell NetWare protocol is not active.*

4.2.1 Confirm Bindery Context

Before installing the Network Interface Board on a Novell NetWare 4.x server in Bindery Emulation mode, check that the server has a Bindery Context (name for the server under Bindery Services mode). If the server does not have Bindery Context, it may be preferable to install in NDS mode. If the Network Interface Board must be installed in the Bindery

Emulation mode, the server must have Bindery Context. Perform the following steps to confirm the server has Bindery Context:

1. Go to the 4.x server and at the system console type: load install
2. Select **Maintenance/Selective Install** from the menu.
3. Select **NCF Files Options** from the menu.
4. Select **Edit AUTOEXEC.NCF** from the menu.
5. Search the file to see if you have a statement similar to the following included:

   `SET BINDERY CONTEXT=0U=ENG`

   Where **=0U=ENG** is an example of a name for the file server context. Use your own file server context in place of **=0U=ENG**.

6. At the console prompt, type the **SET BINDERY CONTEXT** statement that you entered in the **AUTOEXEC**.NCF file.

Note: *The command at the console prompt takes effect immediately. The definition in the file takes effect when the server is shut down and then restarted.*

4.2.2 Configure in Bindery Mode with PCONSOLE

Once you confirm the server has Bindery Context, use the following procedures to configure the Network Interface Board.

1. Log into the network as ADMIN.
2. Type **PCONSOLE** and press the **ENTER** key.

   The following screen appears.

Available Options
Print Queues
Printers
Print Drivers
Quick Setup
Change Context

3. When the **Available Options** menu appears, press the F4 key (for the Bindery Mode).

Note: *If you receive a message asking you to login to a server with Bindery connections, the server you are attached to does not have Bindery Mode enabled. Follow the procedures in 4.2.1. Confirm Bindery Context or log onto a server with Bindery Services activated.*

4. From the **Available Options** screen, select **Quick Setup** and press the **ENTER** key.
5. Use **Quick Setup** to connect your print server, print queue and printer correctly. You can modify these later if you need to.
6. Select **Print server** and press the **F8** key to modify the entry.

7. Enter the name of the **print server** in the Print server field and press the **ENTER** key.

   Note: *The print server name is printed under the Novell Network Information on the Status and Configuration report. The factory default name is RDP_XXXXXX (XXXXXX is the serial number of the unit).*

8. Press the **ESC** key to move to the **New printer** field. Enter a name and press the **ENTER** key.

9. Press the **ESC** key to move to the **New printer queue** field. Enter a name and press the **ENTER** key.

10. Press the **ESC** key to move to the **Printer type** field and press the **ENTER** key. From the list of printer types, select **Other/Unknown** and press the **ENTER** key.

11. When you are finished, press the **F10** key to save the configuration.

12. Repeat steps 5 through 10 for each file server that the printer server services.

13. To view, add, delete, or modify print servers or queues after the initial setup, select either the **Print Queues** or **Print Servers** option on the **Available Options** screen.

4.3 Configuring the Network Interface Board in NetWare Directory Services

NetWare Directory Services (NDS) offers a different, more advanced approach to network management than previous NetWare versions. Generally, it stores and tracks all network objects. As a rule, all 4.x servers must have NDS loaded in order to function. In this way, every NetWare 4.x server is a Directory server, because it services named Directory objects such as printers, print servers and print queues. With the appropriate privileges, you can create a print server object, which, once configured in its context (or location) on the network, eliminates the cumbersome setup of print servers on every network server. NDS provides true enterprise networking based on a shared network database rather than a individually defined physical sites. The result is greatly improved print server setup and management.

The Directory Information Base (DIB) is used to store information about servers and services, users, printers, gateways, etc. It is a distributed database, allowing access to data anywhere on the network wherever it is stored. Pre-4.x NetWare versions provide the same data found in the DIB but the data is stored in the NetWare Bindery. The DIB was designed with more flexible access, more specific security, and, since it is distributed, it was designed to be partitioned. The Directory uses an object-oriented structure rather than the flat-file structure of the Bindery, and offers network-oriented access, rather than server-oriented access found in the Bindery.

The Directory is backward-compatible with the NetWare Bindery through Bindery emulation mode. Section 4.2 describes Print Server Operation with a 4.x NetWare system in bindery emulation mode. When Bindery emulation is enabled, Directory Services will accept Bindery requests and respond just as if a Bindery existed on the NetWare server being accessed. Be aware that information obtained from the Bindery query may not be stored in the server since the Directory is a partitioned and distributed database. Even though the NetWare 4.x server is not operating from a Bindery, the applications making Bindery requests will not know the difference.

You may use NetWare Administrator NWADMIN or PCONSOLE to configure the printer in NDS. Prior to printing, NDS must be set up as follows and the Network Interface Board must be set up with NDS Context and Tree. See Section 4.4. The steps below describe the use of NWADMIN configuration to create printer, print server, and print queue objects. Then, you will assign, or associate those objects with each other.

If you wish to keep Bindery resources on any server, you can under NetWare 4.x if you declare a SET BINDERY CONTEXT statement in your AUTOEXEC.NCF file.

For those who prefer, NetWare does offer PCONSOLE as an alternative to NWADMIN. PCONSOLE can be used to set up static information about print servers such as: which queues to service, and whom to notify in the event of a problem. See Novell NetWare documentation for more information about the use of PCONSOLE for NDS.

4.3.1 Create Printer Object

1. Launch NetWare Administrator. The NetWare Administrator window will appear. To bring up your Directory Tree, open a Browser window by clicking on the Tools menu item and, the **Browse** item.

2. Highlight the Organizational Unit or Organization where you want to create the print service in the Directory Tree, select the **Object** item from the menu and choose **Create**.

   Note: *If you wish, you can create objects another way in NWADMIN by: selecting an Organizational Unit, clicking on the right mouse button (which produces a pop-up menu), and clicking on* ***Create...*** *use the left mouse button to bring up the* ***New Object*** *window). From this point, the procedure continues as described.*

3. When the **New Object** window appears, scroll down the **Class of New Object** icon list, select the Printer icon and click on the [**OK**] button.

4. When the **Create Printer** window appears, type a value in the **Printer Name** field and click on the [**Create**] button.

4.3.2 Create Print Server Object

1. Again, highlight the Organizational Unit, select the Object item from the menu and choose **Create**.

2. At the **New Object** window, scroll down the **Class of New Object** icon list, select the Print Server icon, and click on the [**OK**] button.

3. At the **Create Print Server** window, type a value in the **Print Server Name** field and click on the [**Create**] button.

4.3.3 Create Print Queue Object

1. Once again, highlight the Organizational Unit, select the **Object** item from the menu and choose **Create**.

2. At the **New Object** window, scroll down the **Class of New Object** icon list, select the Print Queue icon, and click on the [**OK**] button.

3. At the **Create Print Queue** screen, click on the **Directory Service Queue** button, then type in values for **Print Queue Name** and **Print Queue Volume** and click on the

[Create] button. If you don't know the **Print Queue Volume** name (the hard drive you will be accessing), click on the icon to the right of the volume field. The Select Object window will appear with the volume listed in **Objects**. If the volume is not listed, scroll the **Directory Context** items until you find the volume where you want the queue to reside.

4. Click on the object (hard drive) of your choice and it will appear in the **Selected Object**: field. Click on the [**OK**] button.

5. The full volume will now appear in the Print Queue Volume field. Finally, click on the **[Create]** button.

4.3.4 Assign Printer Object

1. Go to the **Directory Tree**. Double click on the printer object just created and bring up the **Printer** window. See below. Find the **Assignments** button on the right-side of the window and click on the [**Add**] button.

2. When the **Select Object** window appears, find the print queue object just created among the choices listed in the **Objects** box and select it.

3. Click on the [**OK**] button and the print queue just created is added to **the Print Queues**: box in the Printer: window.

4. Click on the [**OK**] button again.

4.3.5 Assign Print Server Object

1. At the **Directory Tree**, double click on the print server object you just created and bring up the **Print Server** window.

2. At the **Print Server**: window, click on the [**Assignments**] button and [**Add**] button to bring up the **Select Object** window.

3. Select the printer object just created from the Objects: box and click on the [**OK**] button. Now the printer (with its context) appears in the Printers: box of the Print Server window. Click on the [**OK]** button.

4.3.6 Check Assignments

At the **Directory Tree**, double click on the **Print Queue** object you just created. At the Print Queue window, click on the [**Assignments**] button.

If you configured the print queue and printer correctly they will appear in the proper boxes on the **Print Queue** window. Press the [**Cancel**] button.

4.3.7 Set Up and Reset the Printer

NWADMIN configuration is complete. Before you can begin printing, though, be sure to set up and reset (power cycle) the printer.

4.4 Network Interface Board Configuration

The MAP utility or an IP Web Browser must be used to define the context and tree of the Print Server. It is also used to change the Print Server name, set a password, modify scan and frame search parameters, and set bindery-mode specific values.

Use the MAP utility or IP Web Browser (⇨ refer to Chapter 3) to access the Setup pages of the Network Interface Board. Once you have accessed the Network Administration pages or the Main Menu, do the following:

1. Select **Setup NetWare** under **Protocols**.
2. Click on **Enable NetWare**.

   If it is not selected, the NetWare protocols will not come up, the Network Interface Board will not appear as an advertised device, and the NIB will not be accessible using **IPX SNMP**.
3. The default name for the NetWare Print Server is RDP_123456, 123456 is the serial number of the Network Interface Board. This is also the name of the printer in peer-to-peer mode. If you want to change the default Print Server name, type this name in the **Print Server Name** space. Leave the space blank if the default name is to be used.
4. If you want the Network Interface Board login with a password, this password may be entered in the **Print Server Password** field, and again in the **Password Retype** field. If a password is used, this password must be the same password for all bindery-based and NDS-based Print Server entries.
5. Enter the name of a preferred bindery-based file server in **the Preferred File Server** field.

   The Preferred File Server entry is significant only for bindery or bindery emulation based operations. ⇨ Refer to 4.1.9 Preferred File Servers for the significance of a Preferred File Server. The Print Server must be configured on the preferred file server. Incorrect setup of a Preferred File Server can interfere with NetWare printing.
6. If the Print Server is to be operated under Novell Directory Services, type in a **Context** entry and **Preferred NDS Tree** entry in the appropriate fields. Be sure to give the whole context, whether typed or typeless, and do not begin your context path with a trailing period (.). If you don't know your tree, type: whoami at the DOS command line. A typed context name example is:

   `ou=standard.ou=organization_1`
7. In the default mode, the Print Server scans each queue which it is to service once per second. If you prefer a longer scan rate, you may enter the time between scans in seconds in the Print Queue Scan Rate field.
8. The Network Interface Board will normally monitor the network to determine which frame type is being used for Novell.

   When it recognizes a type, it will assume the same frame type. Once it selects a frame type, the Network Interface Board will only operate over that Novell frame type. Monitoring normally starts looking for IEEE 802.3, then Ethernet II, then 802.3 SNAP, etc. If your network is using multiple frame types for Novell, you should bias the frame search to the desired type by setting the button next to the designation under **Ethernet Frame Type**.
9. You can **Disable Bindery** mode on the Print Server if it is operating in NDS mode only. To do so, click on that box. If you disable Bindery, the Network Interface Board will not support Print Servers on a Bindery file server.

10. Once you have selected all desired settings and entered the desired NetWare information, you may cause this information to be entered in the Network Interface Board NV RAM by clicking on **Accept Settings**.

    As with all value changes, if you have not entered the Network Interface Board Management Password before, you must enter it in the appropriate space before clicking on **Accept Settings**.

11. Entered values do not take effect until the Network Interface Board is reset or power cycled. You may reset from MAP or the Web Browser by returning to the Home or Network Administration page, and click on **Reset** under **System**.

    Now click on Reset Unit. Alternatively, you may power cycle the printer. The new NetWare values should now be in effect.

4.5 Using the Novell PCONSOLE Utility

This section explains how to use the PCONSOLE utility to perform the following tasks:

- Attach and select a file server
- Select or delete queues for the print server
- Set-up the Notify function

See the NetWare Print Server Manual for detailed information on this utility.

Note: *You must have Supervisor privileges to perform many PCONSOLE operations.*

4.5.1 Changing the File Server

You can specify a file server as the current one.
To change the file server, use the following procedures:

1. Log into the current file server and start the PCONSOLE utility.
2. Select **Change Current File Server** from the **Available Options** menu.
3. Press the **INSERT** key to display the available file servers.
4. Select the file server you want as the current one and press the **ENTER** key.
5. Enter your username and press the **ENTER** key. If the username requires a password, the **Password** screen is displayed. Enter the password and press the **ENTER** key.
6. Select **Change Current File Server** from the **Available Options** menu. A list of the attached file servers is displayed.
7. Select the current file server from the **File Server/Username** screen.

4.5.2 Changing Print Queues

When you print a file, your system sends the file to a print queue. The print server assigned to that queue extracts the print job and sends it to the assigned printer. If a print server is servicing queues on multiple file servers, you must assign queues to the printer on each file server. To change the print queues, use the following procedures:

1. Start the **PCONSOLE** utility.
2. Select **Print Server Information** from the **Available Options** menu.

3. Select the print server from the list.
4. Select **Print Server Configuration** from the menu.
5. Select **Queues Serviced by Printer** from the menu.
6. Select a printer from the **Defined Printers** list.
7. Press **INSERT** at the **File Server/Queue/Priority** screen.

   The **Available Queues** list appears.
8. Select a queue from the list.
9. Press the **ENTER** key at the Priority screen to leave the priority setting at 1.
10. The highest priority queue is 1; 10 is the last. To change the priority of a queue, press the **ENTER** key at the **File Server/Queue/Priority** screen to display the **Priority** setting screen.
11. Press the back-arrow key to delete the current setting. Type a new number from 1 to 10 and press the **ENTER** key.
12. Repeat steps 7, 8, and 9 to assign additional queues to the printer.
13. Press the **ESC** key and save all changes.

4.5.3 How to Set Up Notify

You can specify users or groups of users that are notified if a problem occurs when a print job is sent to the printer. If the print server is servicing queues on multiple file servers, you must set up a NOTIFY list for each file server. To set up NOTIFY, use the following procedures:

1. Start the **PCONSOLE** utility.
2. Select **Print Server Information** from the **Available Options** menu.
3. Select the **print server** from the menu.
4. Select **Print Server Configuration** from the menu.
5. Select **Notify List for Printer** from the menu.
6. Select the printer from the **Defined Printers** menu.
7. Press the **ESC** key at the File Server/Notify Name/Notify Type/First/Next screen.

   The Notify Candidates screen appears.
8. Select the user or user group from the **Notify Candidates** screen.

   The Notify Intervals screen displays.
9. Set the **First** and **Next** intervals for notifying users about printer problems.

   ➔ The **First** interval is the number of seconds the network waits before it notifies users about a print job problem.

   ➔ The **Next** interval specifies how often in seconds users are notified. Enter a number for each interval and press the **ENTER** key.

10. Press the **ESC** key and save all changes.
11. Press the **ESC** key until you see the prompt to exit PCONSOLE.
12. Select **Yes** and then press the **ENTER** key.

4.6 NWSetup: NetWare and Print Server Configuration Program

NWSetup lets you do the entire setup procedure for Novell NetWare and your Network Interface Board using only one program. This program combines the following configuration steps:

- Lets you set up the Novell file servers and print servers for NetWare printing, instead of using NetWare utilities.
- Allows you to set up your print server printers fsor network printing.

4.6.1 How To Install

In order to install NWSetup, you must do the following:

1. Place the CD ROM into your CD drive.
2. Click on **CD ROM Table of Contents** when the menu appears.

   Note: *If you do not have Acrobat Reader 3.0x or higher installed, then you should click on "Install Acrobat Reader" first.*

3. Click on **Installation/Configuration Programs**.
4. Click on **NWSetup Software**.
5. Read the information screen. Click where indicated to start the installation.

4.6.2 How To Initiate NWSetup

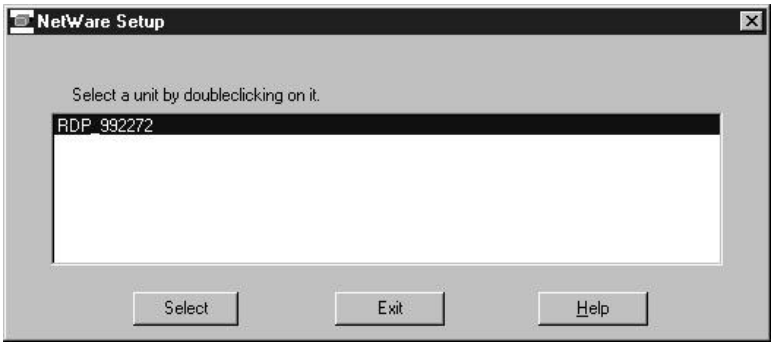
When you install NWSetup, a program icon is placed on your desktop. Click on the NWSetup icon to start the program.

Note: *If you are configuring for NDS (Directory Services), make sure you are logged into the correct tree and context before you initiate this program.*

4.6.3 Using the NWSetup Program

4.6.3.1 Select a Print Server

NWSetup displays a list of all Network Interface Boards available on your network after you initiate the program. The Network Interface Board appears with its serial number. See screen example below:

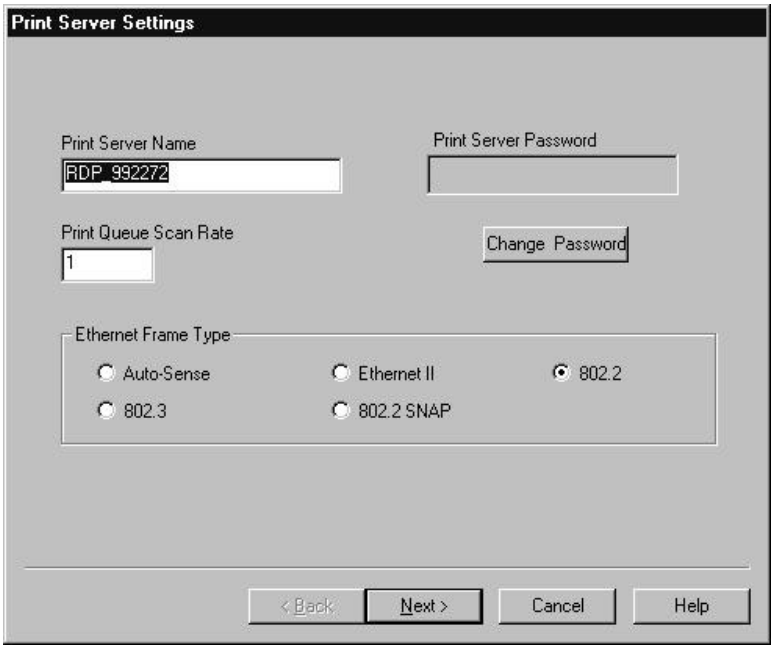


Once you select the Network Interface Board you want to configure, the Print Server Settings screen appears. This screen lets you set up your version of Novell NetWare for the Network Interface Board. See 4.6.3.2 Setup Novell NetWare.

4.6.3.2 Setup Novell NetWare

The Print Server Settings screens are shown below. There are two Print Server Settings screens, which you need to complete to configure the Network Interface Board for Novell NetWare.

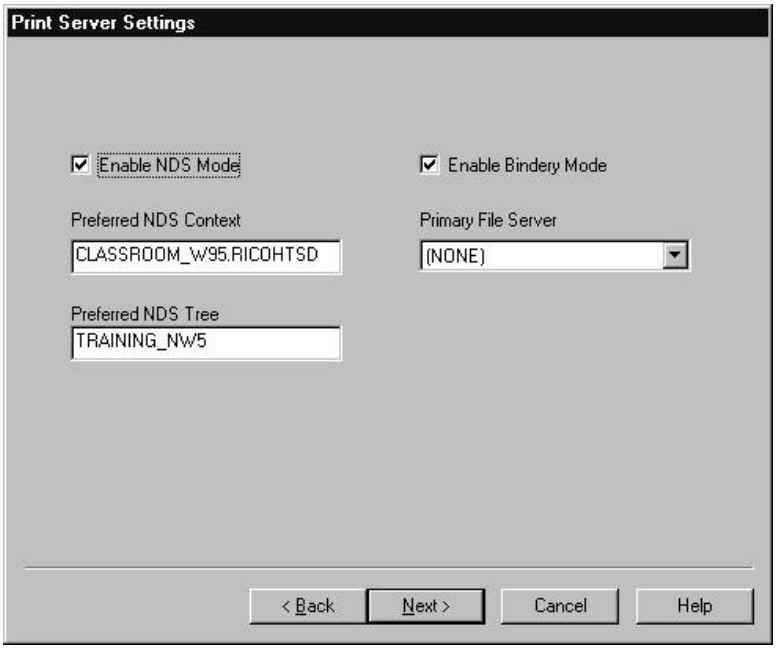
Each screen lets you set up your version of Novell NetWare for the Network Interface Board, including directory and bindery services. A description of the fields immediately follows each screen example.



Field	Description
Enable NetWare Print Server	Indicates whether the NetWare Network Interface Board has been enabled. • If the box is not checked, the Network Interface Board has not been enabled for NetWare. All other fields on the screen will be shaded. • If the box is checked, the Network Interface Board has been enabled for NetWare and you can make entries in the other fields.

Print Server Name	Indicates the NetWare print server name which the Network Interface Board uses to log into NetWare. You can enter a name which does not already exist in the network directory or server bindery. The maximum field length is 48 characters.
Print Queue Scan Rate	Specifies the rate at which a Network Interface board will poll print queues for a new print job. For example, if you place 1 in the field, the Network Interface Board should poll for new print jobs every 1 second. The minimum value for this field is 1 and the maximum is 250.
Print Server Password and Print Server Password Retype	Indicates the password for a Network Interface Board which will be used to log into NetWare. When you change this field, NWSetup will set the password in both NetWare and the Network Interface Board. The maximum length for this field is 32 characters. Both the Password and Password Retype fields must be identical before a user is allowed to Finish this screen.
Ethernet Frame Type	Indicates the Ethernet frame type that should be used by the NetWare protocol stack by default. Only one frame type can be selected.

Below is an example of the second Print Server Settings screen.



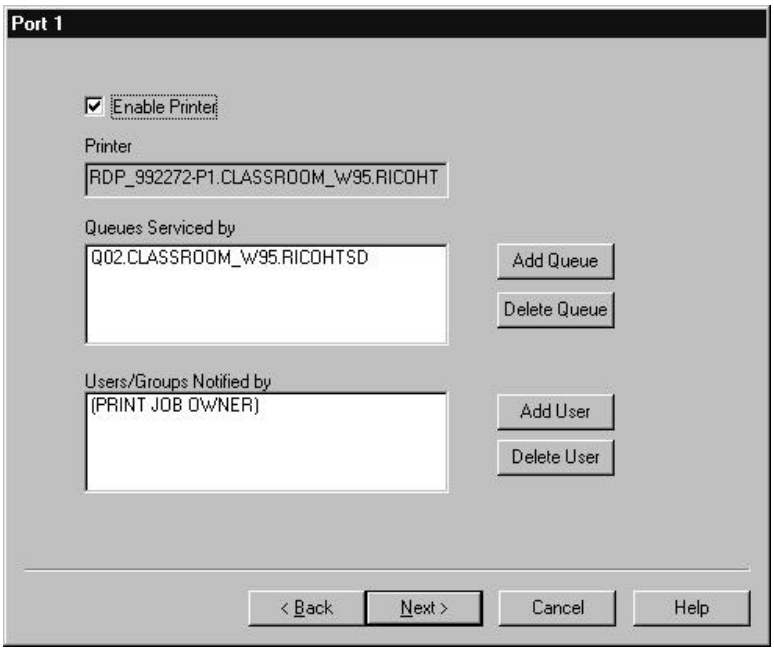
Field	Description
Enable NDS Mode	Indicates whether the Network Interface Board support Directory Services. When the box is checked, Directory Services is supported. If this box is not checked, then all other fields on this screen will not be enabled.
Preferred NDS Context	Enter a text string to set the NDS directory context for which the Network Interface Board will use to login to the network. The

	maximum field length is 128 characters. **NOTE:** *Make sure you enter the whole context, whether typed or typeless.*
Preferred NDS Tree	Enter a text string to set the NDS tree which the Network Interface Board will use to login. The maximum field length is 48 characters.
Enable Bindery Mode	Determines whether the Network Interface Board should attempt to service the NetWare newtork in bindery mode. If this box is checked, then Bindery Mode is enabled. **NOTE:** *If this field is not enabled, then the Primary File Server field will not be enabled.*
Primary File Server	Specifies which NetWare file server that the Network Interface Board should use as the primary file server. If no primary file server has been selected yet, or if a server that is not available is selected, then the first file server in the list is selected.

4.6.3.3 Print Server Settings

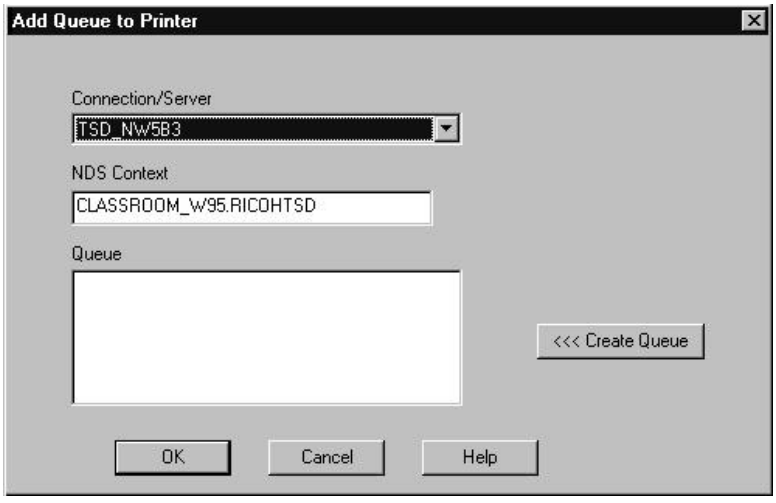
NWSetup lets you set up each Print Server printer. This information is usually entered using NetWare's NWADMIN or PCONSOLE utility. NWSetup eliminates the need for configuring your Network Interface Board printer through any NetWare utility.

The screen on the next page is used to set up a Print Server printer. A description of each field follows the screen example.

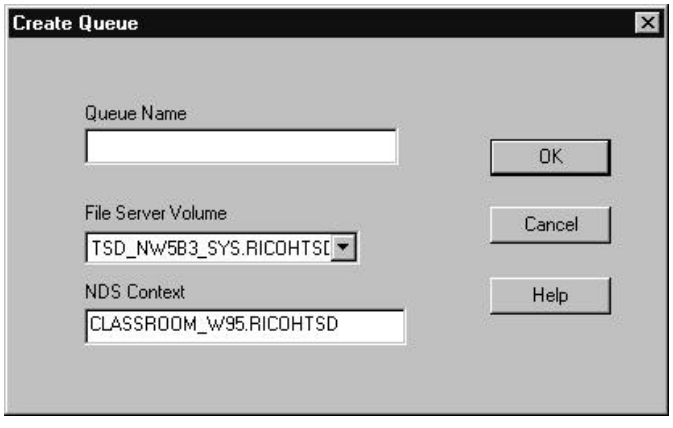


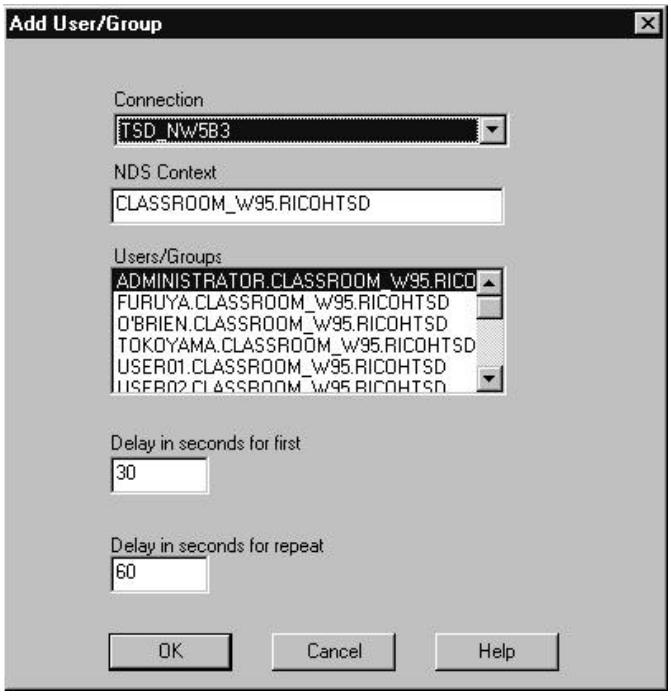
Field	Description
Enable Printer	Indicate whether support for the Network Interface Board and printer is enabled. • If this box is checked, then the printer is enabled.

	• If the box is not checked, then the printer is not enabled. The remaining fields on the screen will not be enabled.
Printer Name	Displays the name of the printer. This is a read-only field.
Queues Serviced by Printer	Lists all the queues which are to be serviced by the printer. • Queues associated with bindery connections are listed in the format bindery server name: queue name. • Queues associated with NDS connections are listed by their distinguished names. Example: If a printer services the queue YOURPTR_Q on the server OLD_SERVER which is a bindery server, then the queues would be listed as OLD_SERVER:YOURPTR_Q. If an NDS server has a distinguished name such as ENGINEERING.CORP and with a queue name ENGINGEERING_Q servicing the printer, then the queue would be listed as ENGINEERING_Q.ENGINEERING.CORP
Users/Groups Notified by Printer	Lists all users and user groups who will be notified when a printer error is detected. • Users and groups associated with bindery connections will be listed in the format bindery server name:user/group name. • Users and groups associated with NDS connections will be listed by their distinguished names. Example: If a user named Susan on the bindery server OLD_SERVER is listed on the printer's notify list, then the user would be listed as OLD_SERVER:SUSAN. If a user named Albert whose NDS context is ENGINEERING.CORP is on the printer's notify list, then the user would be listed as ALBERT.ENGINEERING.CORP • When you double click on an entry in this field, the Notify Settings screen appears. See Configuring the Notify Settings later in this section.



Field	Description
Add Queue/ Delete Queue	Use the Add and/or Delete queue buttons to make changes. **Adding a Queue:**

	When the user clicks on the [Add Queue] button, a dialog box appears (see above) where the user can add a queue to the printer. Below is a description of each field: **Connection/Server**: Use to select a server connection. This list includes the NDS connection and all of the bindery file server connections which the user has. The NDS connection is always the first one listed, by default. When a new connection is selected, the Queue field is automatically updated. **NDS Context**: Specifies an NDS context for the queue. NWSetup lists all the queues within this context or the subcontexts in the Queue field. This field is only enabled when NDS support is enabled. By default, the NDS Context should be set to the preferred NDS context specified in the Print Server Settings screen. **Queue**: Lists all the queues available on the currently selected connection. · If an NDS connection is specified, then a list of all queue names in the selected context and, all subcontexts is displayed. · If a you change the context in the NDS Context field, or, change the connection in the Connection/Server field, then the queue list is refreshed to reflect the new connection or context. · If you double click on a queue in the list, the queue is automatically added to the printer's service and you exit this screen. **Deleting a Queue:** Highlight the queue you want to delete and click on the [Delete Queue] button. A confirmation screen appears which asks if you really want to delete the highlighted queue. Press [Yes] to delete, or, [No] to cancel the deletion. **Note:** *If you delete a queue, you are not physically deleting the object from the file server. In order to delete the queue from a file server, you must use your NetWare utility to remove the queue from the file server queue list.*
Create Queue	When you click on the [<<<Create Queue] button on the Add Queue to Printer screen, the dialog box below appears:  Below is a description of each field: **Queue Name**: Enter the name of the new queue. This field must be completed in order to create a new queue. The maximum field length is 48 characters..

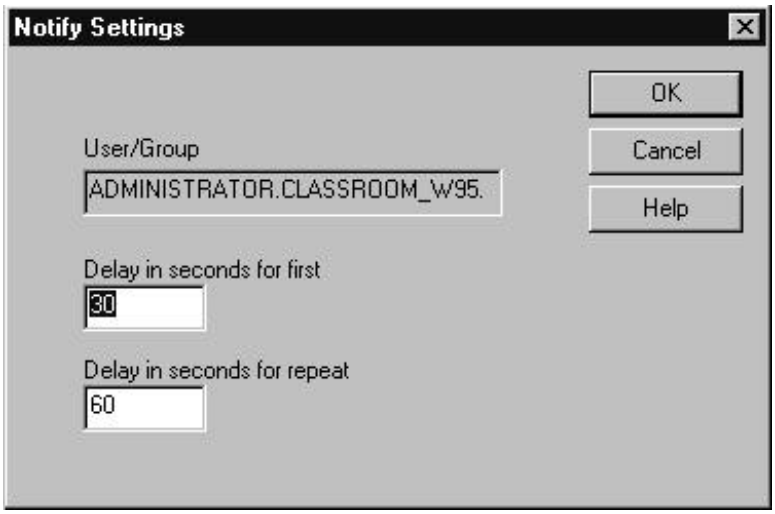
	File Server Volume: Indicates the volume on which the queue should be created. This field is enabled only if the current connection is an NDS connection. When enabled, it contains a list of all available volumes. For bindery services, the default volume name is SYS. **NDS Context**: Specifies the NDS context in which the queue is created. This field is enabled only when an NDS connection is being used. When this field first displays, it will list the NDS context specified in the Add Queue dialog. If you change it, NWSetup verifies that the new context exists on the directory tree. Click on OK to start the verification process.
Add User/Delete User	Press the [Add User] or [Delete User] buttons to add or remove Users/Groups for notification. **Adding Users/Groups:** When you press the [Add User] button, the following screen appears:  **Connection**: Select a connection from this field. This list includes the NDS connection and all of the bindery file servers connections which a user has access to. The NDS connection is always listed first, by default. **NDS Context**. Specifies the NDS context to use when generating a list of users and/or groups. This field is enabled only for NDS connections. When first displayed, this field lists the preferred NDS context specified in the Print Server Settings screen. If you change this value, then NWSetup verifies that it is correct when the user attempts to move to another field or clicks on [OK]. **Users/Groups**: Lists all of the user and groups available on the currently selected connection. Any entry on this list can be added to a printer's service list. The list includes (Print job owner) which refers to the user who sent the job currently being printed. · If an NDS connection is selected, NWSetup generates a list of all

	users and groups in the currently selected context and all subcontexts. • When you double click on an entry in the list, the entry is added to the printer's service list. • The user/group list is updated whenever the Connection or NDS Context fields are changed. **Delay in minutes for first message**: Indicates how long the Network Interface Board should wait before sending a notification message that an error condition has been detected. The field is set to 5 minutes by default. Its minimum value is 1 minute and maximum value is 60 minutes. **Delay in minutes for repeat messages**: Indicates how long the Network Interface Board should wait before sending a repeat notification of an error condition. This field is set to 30 minutes by default. Its minimum value is 1 minute and maximum value is 60 minutes.

4.6.3.4 Configuring the Notify Settings

The Notify Settings screen appears when you double-click on an entry in the Users/ Groups Notified by Printer field on the Print Server screen. Use this screen to set up the notify function for the users or groups.

The following screen appears for setting up Notify. A description of each field follows the screen example.



Below is a description of each field:

Field	Description
User/Group name	Indicates the name of the user or group which is being edited. This field cannot be changed.
Delay in minutes for first message	Indicates how long the Network Interface Board should wait before sending a notification message to the user that an error condition has occurred. The field is set to 5 minutes by default but can be set to any value between 1 to 60 minutes.

Delay in minutes for repeat messages	Indicates how long the Network Interface Board should wait before sending a repeat notification message to a user or group when an error condition has occurred. The field is set to 30 minutes by default but can be set to any value between 1 to 60 minutes.

Chapter 5
Windows Peer-to-Peer Printing

5.1 Windows IPX Peer-to-Peer Printing

Windows Peer-to-Peer printing allows Windows-95/98 workstations and Windows NT 4.0 workstations and servers to print to Network Interface Board printers without an intervening file server and without using IP. The main features of the Windows IPX Peer-to-Peer printing are as follows:

- Runs on Windows 95/98 workstations and on Windows NT 4.0 workstations or servers "out of the box".
- Runs on networks which do not have a NetWare file server, as well as those that do.
- Implements IPX Peer-to-Peer bi-directional printing between Windows workstations and Network Interface Board printers.

5.1.1 Introduction and Preparation

The Peer-to-Peer implementation uses the IPX/SPX stacks for Windows 95/98 and Widows NT 4.0 that are provided by Microsoft and Novell. The redirector software provided will establish a connection with the printers supporting IPX Peer-to-Peer, without using an intermediate file server, whether or not your network uses Novell NetWare.

When configuring the network capabilities for the Windows computer, you must include the "**IPX/SPX Compatible Protocol**". If you are not using NetWare, you do not need to activate any NetWare Client application.

This inclusion of IPX/SPX can also be done after initial Windows installation by going to the Network setup function under Control Panel. To do this, you will need the Windows installation disk(s).

Note: *Because Peer-to-Peer uses the IPX/SPX Protocol, Novell operation must remain enabled on the Network Interface Board, even if traditional Novell printing facilities are not being used. The name of the Peer-to-Peer printer, as it appears in the Windows Port List, is the same as the Novell Print Server name, and may be changed by changing the Novell Print Server name using the Web-based management or MAP utilities.*

On power up, the Network Interface Board sniffs the network to see if there is Novell server activity. If there is, it will use the same frame type and the local network number that it senses. If, in addition, the NIB can log on to a file server, it will assume that Novell is normally used and will store this frame type and new number in NV RAM so that, when it comes up again, it will not have to spend the time sensing (which can take some time). However, if the NIB cannot attach to a file server, it will use the sensed values, but will not store them.

If the NIB does not see any Novell activity, it will use 802.2 on 802.3 as a frame type and will assign itself a network number of 0. The frame type and network number being used is reported on the status and configuration sheet.

If a NIB is being moved from a site that had active Novell to a site that does not, the unit should be reset to factory default to clear the frame type and network number information.

5.1.2 Installation and Operation

Install the Windows IPX Peer-to-Peer redirector as follows:

1. Put the CD-ROM which contains the redirector in your CD-ROM drive.
2. From the Windows main window, click on [**Start**].
3. Click on [**Run**].
4. From the Run screen, select the **Setup** file from the IPX-P2P directory in the CD-ROM that you placed in your CD-ROM drive.
5. Click on [**OK**].
6. At the IPX Peer-to-Peer Setup screen, click on [**Next**].

Note: *If setup detected a previous installation of the IPX Peer-to-Peer Redirector, it will prompt you to have Setup delete the old driver and continue the installation procedure. Click on [Yes] or [No].*

Once the redirector is installed, each printer on the network that supports this peer-to-peer capability will appear as a **Port** under Printer Properties.

To use the Peer-to-Peer connection, create a logical printer using the **Add Printer Wizard** according to the instructions for your printer. Set up the printer as a **LOCAL** printer. Use the driver that came with your printer.

When the Add Printer Wizard asks you to choose the Port, select the name of the Peer-to-Peer printer you wish to print to. (Example: RDP-xxxxxx) When you complete the installation, select the **Print Test Page** option.

5.2 Windows IP Peer-to-Peer Printing

For more detailed information on TCP/IP setup and printing, see Chapter 7.

Windows IP Peer-to-Peer printing allows Windows-95/98 workstations and Windows NT 4.0 workstations and servers to print to Network Interface Board printers without an intervening server and without using IPX. The main features of the Windows
IP Peer-to-Peer printing are as follows:

- Runs on Windows-95/98 workstations and on Windows NT 4.0 workstations or servers "out of the box".
- Implements IP peer-to-peer bi-directional printing between Windows workstations and Network Interface Board printers.

5.2.1 Introduction and Preparation

The Peer-to-Peer implementation uses the TCP/IP stacks that are provided with Windows 95/98 or Windows NT 4.0. The redirector software provided will establish a connection with the printers supporting Peer-to-Peer, using a direct IP connection over the network.

When configuring the network capabilities for the Windows computer, you must include the "**TCP/IP Protocol**". You do not need to activate any TCI/IP Client application.

This inclusion of TCP/IP can also be done after initial Windows installation by going to the Network setup function under Control Panel. To do this, you will need the Windows installation disk(s).

Note: *Because Peer-to-Peer uses the TCP/IP Protocol, TCP/IP operation must remain enabled on the Network Interface Board, and the Network Interface Board must be assigned a valid IP address. The name of the Peer-to-Peer printer, as it appears in the Windows Port List, is the same as the IP Address assigned to the Network Interface Board. The IP Address may be changed by changing the TCP/IP section using the Web-based management or MAP utilities.*

If a NIC is being moved from a site that had active TCP/IP to a site that does not, the unit should be reset to factory default to clear the IP Address and other network information.

5.2.2 Installation and Operation

Install the Windows IP Peer-to-Peer redirector as follows:

1. Put the CD-ROM which contains the redirector in your CD-ROM drive.
2. From the Windows main window, click on [**Start**].
3. Click on [**Run**].
4. From the Run screen, select the **Setup** file from the IP-P2P directory in the CD-ROM that you placed in your CD-ROM drive.
5. Click on [**OK**].
6. At the IP Peer-to-Peer Setup screen, click on [**Next**].

Note: *If setup detected a previous installation of the IP Peer-to-Peer Redirector, it will prompt you to have Setup delete the old driver and continue the installation procedure. Click on [**Yes**] or [**No**].*

Once the redirector is installed, each printer on the network that supports this peer-to-peer capability will appear as a **Port** under Printer Properties.

To use the Peer-to-Peer connection, create a logical printer using **the Add Printer Wizard** according to the instructions for your printer. Set up the printer as a **LOCAL** printer. Use the driver that came with your printer.

When the Add Printer Wizard asks you to choose the Port, select the name of the Peer-to-Peer printer (Example: xxx.xxx.xxx.xxx) you wish to print to. When you complete the installation, select the **Print Test Page** option.

Chapter 6
AppleTalk Configuration

Use this chapter if you will be printing from a Macintosh. This chapter explains how to configure the Network Interface Board using AppleTalk.

6.1 Choosing the Printer

To choose the printer, use the following procedure:

1. Make sure you have loaded the print driver and PPD file appropriate to your printer.
2. Make sure you have selected Ethernet as the AppleTalk connection.
3. Click on the Apple icon.
4. Select Chooser to display the Chooser screen.
5. Select the AppleTalk Zone containing the printer from the list at the lower left of the screen. Select the device driver type corresponding to your printer from those indicated at the upper left of the screen. A list of printers will appear in the display panel at the right of the screen.
6. From the display panel at the right of the screen, choose the name of the printer from the list of printers. The AppleTalk printer name for your printer is printed out on the Status and Configuration report under AppleTalk Connection Information.
7. The options available at this point depend on your printer driver. With a typical driver, you may select SETUP. Then select AUTO SETUP. There will be a series of messages as the Chooser communicates with the printer and locates the proper PPD. The setup screen will return, listing the PPD file selected. Select OK. Then exit from Chooser.

Chapter 7
TCP/IP Configuration

This chapter explains how to configure the Network Interface Board and your network for use with TCP/IP communication in various environments. Independent setup and installation procedures are provided for Windows systems and for most popular UNIX systems. The Network Interface Board TCP/IP capability will also operate with lpr spoolers on other systems, and with spooler/supervisor capabilities that communicate raw print jobs to the Print Server TCP/IP Port. The IP Peer-to-Peer redirector for Windows 95/98 and Windows NT systems, provided with the Network Interface Board, uses this TCP/IP port. The default port number is 10001, but may be changed to any desired number using the Telnet utility, SNMP, or the HTML pages accessible via MAP or a Web Browser. Section 7.5 Running Telnet, describes the interactive setup capability accessible through the Telnet utility on any TCP/IP platform, and is equally applicable to Windows, UNIX, and other TCP/IP environments. The use of MAP or a Web Browser to access HTML management pages in the Network Interface Board is described in Chapter 3.

7.1 Installation in a Windows Environment

The several versions and variations of Microsoft Windows may be used on a NetWare and/or TCP/IP networks, as well as in a native Microsoft Windows network. This flexibility allows various options for setting up the network printing system even though this Network Interface Board does not support NetBEUI. If the Windows workstations are connected to a NetWare 3.x or 4.x network, configure the printer interfaces for NetWare, and use standard Windows/NetWare utilities to provide access to the printer. If NetWare is not to be used, the users may access the printer using TCP/IP. Windows 95/98 and Windows NT 4.0 users can also use the Network Interface Board Peer-to-Peer capability as described in Chapter 5. The following sections describe installation using TCP/IP under Windows for Workgroups, Windows 95/98, and Windows NT.

7.1.1 Windows for Workgroups

Printing with TCP/IP requires that the workstation have TCP/IP capability and the corresponding spooler, lpr; or that the workstation can share an lpr queue on a Windows NT server (for example) that has one. In general, if printers are not shared, an lpr queue must be created on each workstation from which printing is initiated. See the Windows documentation about sharing printers.

Windows for Workgroups does not normally come with TCP/IP. However, a variety of TCP/IP facilities and third party lpr spoolers are available.

You will need the BOOTPL16.exe file if you wish to use the BOOTP Lite program to set up IP parameters. The BOOTPL16.exe file is provided with the Network Interface Board.

7.1.1.1 Installing TCP/IP

Follow the instructions for the TCP/IP package of your choice to set up the TCP/IP on the workstations.

7.1.1.2 Loading the lpr Spooler

Follow the instructions for the lpr spooler of your choice to set up the spooler on the workstations.

7.1.1.3 Setting up the Network Interface Board

The Network Interface Board must be given IP address and routing information to be used with TCP/IP. This can be done with either the ARP procedure or the BOOTP Lite program.

Prior to running these programs, install the Network Interface Board in your printer.

Power-up the printer. Keep the status sheet handy for the Ethernet (MAC) address. It should show that TCP/IP is enabled, but that the Protocol address is not configured. If the unit already has an IP address, these procedures will not work. However, you can use the “User Tools” menu on the operator panel of the printer, Telnet to the unit or use the HTML pages accessed by a Web Browser to change the IP parameters.

7.1.1.4 Assigning IP Address with ARP

The Network Interface Board must be on the same network segment as the workstation that you are using to configure it. The TCP/IP stack must be installed and operating.

Use the procedures in 7.1.1.5 Assigning IP Address with BOOTP Lite, if you prefer to use BOOTP Lite to configure the IP address instead of ARP:

1. From Windows, enter the MS/DOS box.
2. At the command prompt enter:

   `ping XXX.XXX.XXX.XXX`

   XXX.XXX.XXX.XXX: any valid IP address on your network - not the print server

   The identified unit should reply.

   `arp -s YYY.YYY.YYY.YYY 00-40-af-ZZ-ZZ-ZZ`

   YYY.YYY.YYY.YYY: IP address of Network Interface Board
   00-40-af-ZZ-ZZ-ZZ : MAC Address of Network Interface Board

   The entry should be accepted.

   `ping YYY.YYY.YYY.YYY`

   YYY.YYY.YYY.YYY: IP address of Network Interface Board

   Request should time out.
3. Recycle the power on the printer, or let the Network Interface Board reset itself. The Network Interface Board will produce a status page that should include the entered IP address.
4. When the Network Interface Board is up again, type the following at the command prompt:

   `ping YYY.YYY.YYY.YYY`

YYY.YYY.YYY.YYY: IP address of Network Interface Board

Continue until you get a reply.

Note: *This only enters the IP address; you must use the Telnet facility or the HTML pages accessed by a Web Browser to complete the IP setup for networks where subnets are used. See 7.6 Running Telnet, for instructions on how to enter the other IP parameters.*

7.1.1.5 Assigning IP Address with BOOTP Lite

This program uses the BOOTP protocol. The Network Interface Board must be on the same network segment as the workstation that you are using to configure it. The TCP/IP stack must be installed and operating. The BOOTP Lite program will not work in a Windows PC Operating as a DHCP Server.

The BOOTPL16.exe program will work with a 16 Bit TCP/IP stack.

1. Copy the BOOTPL16.exe file to the Windows directory of your workstation.
2. Reset the printer.

Note: *The Network Interface Board issues the BOOTP request for a finite period of time. The print server must be freshly reset for this program to work.*

---

3. From Program Manager under File, select Run \windows\ BOOTPL16.exe.
4. Pull down the Admin menu to Configure option.
5. Enter the IP address that you want to assign to the Network Interface Board, its Subnet Mask (make sure it matches what you are using on your subnet), the Default Gateway (your router's IP address), and the MAC address of the Network Interface Board (Hardware Address, listed on the Status sheet as Ethernet Address). Use colons as delimiters as shown on the status sheet rather than the dashes that Windows uses.
6. Click on Go. You will get a message that the program is Verifying, and then it will tell you whether the unit is active or not.
7. Wait for about five minutes for the Network Interface Board to reset. The Status sheet should report the newly entered IP information.
8. Enter the MS/DOS box. At the command prompt enter:

```
ping YYY.YYY.YYY.YYY
```

YYY.YYY.YYY.YYY: IP address of Network Interface Board

Continue until you get a reply.

If it does not respond, verify that TCP/IP is enabled on the status sheet. If the status sheet does not show the IP information, then repeat the above procedures.

7.1.1.6 Setting up IP and lpr Parameters

The Network Interface Board provides for a setup connection via the standard Telnet port. To be able to make changes to a unit with factory default settings, you must logon as "**sysadm**". The default password is also "**sysadm**" (This password can be changed from the Telnet utility). Section 7.6 Running Telnet, describes the use of the Telnet utility.

1. Telnet to the Network Interface Board (the login and password are both "**sysadm**").

2. Turn off the protocols that you are not utilizing (option 3).

3. Setup the subnet mask and default gateway for the Network Interface Board if applicable (menu option 1). (If you used BOOTP, this will already have been done).

4. Exit, Save and Reset the Network Interface Board.

You can also use the “User Tools” menu on the operator panel, the HTML pages accessible via a Web Browser to setup lpr. The password to change parameters with the HTML pages is the same as the Telnet password.

7.1.1.7 Creating an lpr Queue on the Workstation

Follow the instructions for the lpr spooler of your choice to set up the lpr queue on the workstations. Enter **PORT1** for the Remote Printer Name.

Note: *PORT1 must be entered in capital letters.*

7.1.2 Microsoft Windows 95/98

Windows 95/98 comes with a TCP/IP stack. To print with this protocol, a client also requires an lpr utility. This program is available from various sources. The lpr queue can be created on each workstation or the lpr queue can be created on one workstation and shared on the network. Windows 95/98 workstations can also share a lpr printer installed on an Windows NT server on the network.

If you wish to use the Bootp Lite program, you will also need the **BOOTPL32.exe** provided with this Network Interface Board on the MAP directory of the CD-ROM.

7.1.2.1 Loading the lpr Spooler

Follow the instructions for the lpr spooler of your choice to set up the spooler on the workstations.

7.1.2.2 Setting up the Network Interface Board

The Network Interface Board must be given IP address and routing information to be used with TCP/IP. This can be done with MAP utility. Follow the instructions for MAP, which is documented elsewhere. If you cannot use MAP, you can use either the ARP procedure, or the BOOTPL32 program.

Power-up the printer. Keep the status sheet handy for the Ethernet (MAC) address. It should show that TCP/IP is enabled but that the Protocol address is not configured.

If the unit already has an IP address, these procedures will not work. However, you can use “User Tools” menu on the operator panel, Telnet or the HTML pages accessed by MAP or Web Browser to change the IP parameters.

7.1.2.3 Assigning IP Address with ARP

The Network Interface Board must be on the same network segment as the workstation that you are using to configure it. The TCP/IP protocol stack must be installed and operating.

You can use BOOTPL32 to configure the IP address instead of ARP.

1. From Windows, enter the MS/DOS box. At the command prompt enter:

```
ping XXX.XXX.XXX.XXX
```

XXX.XXX.XXX.XXX: any valid IP address on your network - not the print server

The identified unit should reply.

```
arp -s YYY.YYY.YYY.YYY 00-40-af-ZZ-ZZ-ZZ
```

YYY.YYY.YYY.YYY: IP address of the Network Interface Board
00-40-af-ZZ-ZZ-ZZ: MAC Address of the Network Interface Board

The entry should be accepted

```
ping YYY.YYY.YYY.YYY
```

YYY.YYY.YYY.YYY: IP address of the Networ**k** Interface Board

Request should time out.

2. Recycle the power on the printer, or let the Network Interface Board reset itself.

   The Network Interface Board will produce a status page that should include the entered IP address.

3. When the Network Interface Board is up again, at the command prompt, enter:

   ```
   ping YYY.YYY.YYY.YYY
   ```

   YYY.YYY.YYY.YYY: IP address of the Networ**k** Interface Board

   Continue until you get a reply.

Note: *This only enters the IP address. You must use the Telnet facility, (Section 7. 6 Running Telnet,) to enter the other IP parameters.*

7.1.2.4 Assigning IP Address with BOOTPL32

You may provide the IP address and other IP parameters to the Network Interface Board on 32 Bit TCP/IP Stack (Windows NT & Windows 95/98) using the BOOTPL32.exe program. You will have to store the BOOTPL32.exe file in the Windows directory. The BOOTPL32.exe program will not work if the Windows PC is an active DHCP Server.

This program uses the BOOTP protocol. The Network Interface Board must be on the same network segment as the workstation that you are using to configure it. The TCP/IP stack must be installed and operating.

1. Reset the printer.

   Note: *The Network Interface Board issues the BOOTP request for a finite period of time. The print server must be freshly reset for this program to work.*

   ---

2. Double-click on the **BOOTPL32** icon to start the program.

3. Pull down the **Admin** menu to **Configure** option.

4. Enter the IP address that you want to assign to the Network Interface Board, its Subnet Mask (make sure it matches what you are using on your subnet), Default Gateway (your router's IP address), and the MAC address of the Network Interface Board (Hardware Address, listed on the Status sheet as Ethernet Address). Use colons as delimiters as shown on the status sheet rather than the dashes Windows uses. (eg. 00:40:AF:12:34:23)

5. Click on **[Go]**.

6. Wait about five minutes. The Network Interface Board should recycle and produce a status sheet showing the IP parameters you have just entered.

7. Pull down **Admin** menu to **Verify**. You should get a message back stating that the Unit is Active. If you do not get this message, verify that TCP/IP is enabled on the status sheet.

8. When you get a response that your unit is active, you should be able to ping and Telnet to the Network Interface Board.

7.1.2.5 Setting up IP and lpr Parameters

The Network Interface Board provides for a setup connection via the standard Telnet port. To be able to make changes to a unit at factory default settings, you must logon as sysadm. The default password is also "**sysadm**". (This password can be changed from the Telnet utility.) See 7.6 Running Telnet, for instructions on using Telnet.

1. Telnet to the Network Interface Board (the login and password are both "**sysadm**").

2. Turn off the protocols that you are not utilizing (option 3).

3. Setup the subnet mask and default gateway for the Network Interface Board if applicable (option 1).

4. Exit, Save, and Reset the Network Interface Board.

You can also use the HTML pages accessible via MAP or a Web Browser to set up lpr. The password to change parameters with the HTML pages is the same as the Telnet password.

7.1.2.6 Setting up lpr on the Workstation

Follow the instructions for the lpr spooler of your choice to set up the lpr queue on the workstations. Enter PORT1 for the Remote Printer Name.

Note: *PORT1 must be entered in capital letters.*

7.1.3 Windows NT Instructions

Windows NT (version 3.5 or higher) does come with TCP/IP and lpr capabilities, although these must be installed when the unit is configured. You must install the TCP/IP Protocol, Simple TCP/IP Services, and Microsoft TCP/IP Printing prior to entering the network printer on the workstation.

Note: *Once you have lpr installed on a Windows NT workstation and have allowed printer sharing, other workstations may use the printer through the Microsoft Windows Network without having to have separate lpr queues installed on each workstation. If you wish to use BOOTPL32, you will need the BOOTPL32.exe file. This file is on the MAP directory of the CD-ROM supplied with the Network Interface Board.*

7.1.3.1 Setting Up the Network Interface Board

The Network Interface Board must be given an IP address and routing information to be used with TCP/IP. This can be done with either the ARP procedure or the BOOTPL32 program.

Power-up the printer. Keep the status sheet handy for the Ethernet (MAC) address. It should show that TCP/IP is enabled but that the Protocol address is not configured.

If the unit already has an IP address, these procedures will not work. However, you can TELNET to the unit to change the IP parameters.

7.1.3.2 Assigning IP Address with ARP

The Network Interface Board must be on the same network segment as the workstation that you are using to configure it. The TCP/IP stack must be installed and operating.

You can use BOOTPL32 to configure the IP address instead of ARP.

1. From Windows, enter the MS/DOS box. At the command prompt enter:

   `ping XXX.XXX.XXX.XXX`

   XXX.XXX.XXX.XXX: any valid IP address on your network - not the print server

   The identified unit should reply

   `arp -s YYY.YYY.YYY.YYY 00-40-af-ZZ-ZZ-ZZ`

   YYY.YYY.YYY.YYY: IP address of the Network Interface Board
   00-40-af-ZZ-ZZ-ZZ: MAC Address of the Network Interface Board

   The entry should be accepted.

   `ping YYY.YYY.YYY.YYY`

   YYY.YYY.YYY.YYY: IP address of the Network Interface Board
   Request should time out.

2. Recycle the power on the printer or let the Network Interface Board reset itself. The Network Interface Board will produce a status page that should include the entered IP address.

3. When the Network Interface Board is up again, at the command prompt, enter:

   `ping YYY.YYY.YYY.YYY`

   YYY.YYY.YYY.YYY: IP address of the Network Interface Board
   Continue until you get a reply.

Note: *This only enters the IP address; you must use the Telnet facility or the HTML pages accessed by MAP or Web Browser facility to enter the other IP parameters.*

7.1.3.3 Assigning IP Address with BOOTPL32

You may provide the IP address and other IP parameters to the Network Interface Board on 32 Bit TCP/IP Stack (Windows NT & Windows 95/98) using the BOOTPL32.exe program.

This program uses the BOOTP protocol. The Network Interface Board must be on the same network segment as the workstation that you are using to configure it. The TCP/IP stack must be installed and operating.

This NT system cannot be operating as an active DHCP Server.

1. Reset the Network Interface Board.

Note: *The Network Interface Board issues the BOOTP request for a finite period of time. The print server must be freshly reset for this program to work.*

---

2. Double-click on the **BOOTPL32** icon to start the program.

3. Pull down the **Admin** menu to **Configure** option.

4. Enter the IP address that you want to assign to the Network Interface Board, its Subnet Mask (make sure it matches what you are using on your subnet), Default Gateway (your router's IP address), and the MAC address of the Network Interface Board (Hardware Address, listed on the Status sheet as Ethernet Address). Use colons as delimiters as shown on the status sheet rather than the dashes that Windows uses. (eg. 00:40:AF:12:34:23)

5. Click on **[Go]**.

6. Wait about five minutes. The Network Interface Board should recycle and produce a status sheet showing the IP parameters you have just entered.

7. Pull down **Admin** menu to **Verify**. You should get a message back stating that the Unit is Active. If you do not get this message, check that TCP/IP is enabled on the status sheet.

8. When you get a response that your unit is active, you should be able to ping and Telnet to the Network Interface Board.

7.1.3.4 Setting up IP and lpr Parameters

The Network Interface Board provides for a setup connection via the standard Telnet port. To be able to make changes to a unit at factory default settings, you must logon as sysadm. The default password is also "**sysadm**" (this password can be changed from the Telnet utility). See 7.6 Running Telnet, for instructions on using Telnet.

1. Telnet to the Network Interface Board (the login and password are both "sysadm").

2. Turn off the protocols that you are not utilizing (option 3).

3. Setup the subnet mask and default gateway for the Network Interface Board if applicable (option 1).

4. Exit, Save, and Reset the Network Interface Board.

You can also use “User Tools” menu on the operator panel, the HTML pages accessible via MAP or a Web Browser to set up lpr. The password to change parameters with the HTML pages is the same as the Telnet password.

7.1.3.5 Setting up lpr on the Workstation

The following procedure is used to set up the lpr spooler on the Windows NT server.

1. Open **Control Panel**.

2. Go to **Printers**.

3. Choose **Printer Menu**.

4. Choose **Create Printer**.

5. Enter a **printer name** (For example, lprprinter).

6. Select the proper **printer driver**.

7. Enter a description.

   This is optional.

8. In the **Print To** dialog, choose **Other**.
9. In Print Destinations window, **select lpr port**.

   This leaves you with add lpr compatible printer window.
10. Line 1: Address of host providing lpd (Print server); enter **IP address**.
11. Line 2: Name of printer on that machine - enter **PORT1** (the word PORT MUST be in uppercase).
12. Choose [**OK**] to exit.

Your Network Interface Board is now configured to operate Windows NT. You may print from any application by following the normal print instructions for that application.

7.2 Dynamic Host Configuration Protocol

DHCP is a service much like BootP that provides a method for assignment and maintenance of IP addresses. The Network Interface Board is able to obtain IP information from this service.

There are two user selectable parameters related to the DHCP function. These are accessible in the TCP section of Network Administration, in the HTML pages.

1. Enable DHCP; and
2. IP Address in NVRAM

   ➔ If DHCP is not enabled, the Network Interface Board will make no DHCP requests under any circumstances. If the Network Interface Board does not have an IP address stored, or if "IP Address in NVRAM" is OFF, the Network Interface Board will issue BOOTP requests, etc,

   ➔ If DHCP is enabled, the Network Interface Board will make DHCP requests when the Network Interface Board is reset or on power up, when the Network Interface Board does not have an IP address stored, or when " IP Address in NVRAM" is OFF. These DHCP requests will be in addition to BOOTP requests.

   ➔ If DHCP is enabled, and the Network Interface Board had an IP address in NVRAM, and "IP Address in NVRAM" is ON, then the Network Interface Board will use the IP information from NVRAM and there will be no DHCP activity on the part of the Network Interface Board.

The factory default is with both Enable DHCP - ON and IP Address in NVRAM - ON. In this case, the Network Interface Board will issue DHCP requests if it does not already have IP identification information stored in its NV RAM.

Important: *If DHCP and the Network Interface Board is in the default mode, you must establish a permanent lease or reservation for the Network Interface Board in the DHCP server. Failure to do this may cause the same address to be given out to another host.*

7.3 IP Peer to Peer Printing

This section explains how to setup and use IP Peer-to-Peer Printing. This allows you to set up your print server ports for peer to peer printing for IP, Windows NT4.0 , and Windows 95/98.

7.3.1 How to Install

Place the CD-ROM into a CD-ROM drive.

1. In Windows 95/98, go to START and then RUN.
2. Run the SETUP.EXE program in the IP-P2P directory on the CD-ROM and click on OK when done.
3. Follow the program prompts.

7.3.2 Peer-To-Peer IP Setup

IP Peer-to-Peer printing allows you to print to a network printer for networks without a file server or for networks where you do not want to use the server for printing. Use Peer-to-Peer printing on Windows NT (4.0), and Windows 95/98 systems. Double-click P2P-IP.exe in C:\P2P-IP folder (default) to bring up the Peer-to-Peer printing setup screen. An explanation for each field on the screen is described below.

Max Hops for Search. Once you install the program, you can setup Peer-To-Peer IP with the hop count. The default hop count is 2. The hop count number determines how many networks the program will search to find units. An entry of 0 on the screen searches only the network wire directly connected to the workstation. An entry of 2 would search the wire directly connected to the workstation, and, all networks accessible through two routers. Entries of 15 or higher will automatically search every connected network (this number is not recommended due to the network traffic it would generate).

IP Port Base The starting port number for the print server. The default is 10000 (corresponding to a TCP/IP port of 10001) but you can change it if you need to.

Printer Names. Lets you select how you can view the printer names in the Windows port list.

Based on Serial Number - uses the printer server serial number to identify the printer names. For example, if 991354 is the serial number of the unit, SN_991354-1 would be the printer port.

Based on IP Address - use the IP address to identify the printer names. For example, if 199.99.92.99 is the IP address for the unit, 199.99.92.99-1 would be the printer port.

Based on DNS (Domain Name Server) - uses the DNS name to identify the printer name. For example, <PTR-MKTG.DOMAIN.COM>.

7.3.3 Add Printers for IP Peer To Peer Printing

You can add printers manually whenever you cannot find printers automatically because of router setup or the hop count setting. In general, this should not be necessary.

Step 1: Use P2P-IP to Add Printers

1. Click on the **P2P-IP** menu item in Windows. The Peer-to-Peer IP Setup screen appears.

2. Press the [**Printer...**] button; a new form screen appears.

3. Enter information for the printer in all the fields described on the form.

Field	Description
IP Address	Enter the IP address of the printer you want to add.
Name	Assign a name to the printer. You can enter any name which you feel identifies the printer.
Port Number	The port number of the printer. The default is 10001.
Description	Use this field to describe the printer location or the users who will access the printer.

4. When you have entered all the information, click on the **Add** button. The printer is listed in the **Available Printers** field at the bottom of the screen.

5. Click on [OK] when you have finished adding all the printers you want to add.

Step 2 Use the Add Printers option in Windows (Unset Settings/Printers).

1. Click on the [Add Printer] button.

2. Select Local Printer from the menu.

3. Select the make and model of the printer you want to use.

   A list of printer ports appears. IP peer-to-peer printers will appear in this list.

4. Select the IP printer you want to use.

5. Complete the remainder of the printer setup procedure as you would normally.

7.4 UNIX Printing

The Network Interface Board can support UNIX TCP/IP printing in two modes:

- Host-based lpd where a supplied line printer daemon is run on one or more workstations and print data is communicated to the Network Interface Board via a TCP/IP port or,
- Printer-based lpd where the printer appears as a host running a line printer daemon.

In general, printer-based lpd is easiest to use on BSD UNIX systems, requiring an entry in the printcap file once the Network Interface Board has its IP information. Some UNIX System V systems have restrictions on support of remote lpr/lpd printers, requiring that the host-based lpr/lpd approach be used. For many operating systems, you have the option of using host-resident printing or print server-resident printing. Each mode has certain advantages.

- The host-resident method can print the username and filename on its banner page; the print server-resident method prints a banner page with the host's name.
- The print server-resident method requires you to configure the printer only one time, when you install the print server. The host-resident method requires that a printing daemon be installed on every host that you want to be able to print jobs.

Note: *The Network Interface Board will also operate with other host-resident print supervisor/spooler programs that present a print image to the printer over a TCP/IP port. The base TCP/IP port number can be changed via Telnet, or the Network Interface Board*

HTML setup pages accessed by MAP or a Web Browser. Remember, the actual port is always one higher than the base port number. The Status and Configuration page indicates the actual port number.

7.4.1 Configuring the IP Address on the Network Interface Board

The Network Interface Board must be given IP address and routing parameters. You can configure the IP address for the Network Interface Board in one of the following ways:

- Use MAP, as described in Chapter 3.
- Use the Internet Boot Protocol (BOOTP).
- Use reverse ARP (rarp, Ethernet II frame type only).
- Use arp and ping.

For each method, you will need to provide the Ethernet address of the Network Interface Board. The Ethernet address is the 12-character code that is printed under Network Address on the configuration status report each time the printer is turned on.

You can use the BOOTP, rarp, or ping procedures only when the Print Server is in its factory default state (no IP information entered.) After the Print Server has an IP address, you must use the Telnet utility, the AppleTalk NIManage utility for the Macintosh, or the Network Interface Board HTML management pages accessed through the MAP utility or a Web Browser to change an IP address, Subnet Mask and Default Gateway.

7.4.1.1 Using BOOTP

The BOOTP daemon is a native TCP/IP option for configuring the IP address of a diskless network device. To communicate the IP address, use the following procedure:

1. Turn off the printer.
2. Log in as superuser on a host on the same subnet as the print server. However, if the server resides on another subnet, complete this procedure to store the IP address in the print server. Reconnect the print server anywhere on the network, and then use Telnet or the HTML pages accessed by MAP or a Web Browser utility to change the IP address. See 7.5 Running Telnet, for instructions on using Telnet.
3. Find the Ethernet address of the Network Interface Board. The address is printed on the configuration status report each time you turn the printer on.
4. Edit the hosts file (usually /etc/hosts) or use NIS or DIS to add the IP address and Network Interface Board's node name. See the network administrator for the IP address. For example, a Network Interface Board named printfast with an IP address of 192.9.200.200 has the following entry:

   ```
   192.9.200.200 printfast
   ```

5. Stop the BOOTP daemon if it is running.
6. Edit the /etc/BOOTP tab file and add the following information:

   ```
   nic_host:\
   :ht = hardware type:\
   :ha = ethernet address:\
   :ip = IP address:\
   ```

```
:sm = subnet mask:\
:gw = gateway address:
```

For example, for an RFC 1048 system:

```
printfast:\
:ht = ether:\
:ha = 0040AF03AF6E:\
:ip = 192.9.200.200:\
:sm = 255.0.0.0:\
:gw = 192.9.200.10:\
```

If running with a more recent BOOTP implementation, such as with SCO UNIX, add:

```
:vm = rfc1048:
```

Note: *The :ht = ether command should always be used.*

The same information uses the following format on an RFC 951 "RFC 951" system:

Host	htype	Haddr	iaddr	bootfile
Printfast	1	00:40:af:03:af:6e	192.9.200.200	defaultboot

7. Start the BOOTP daemon by typing:
   bootpd -s
8. Check the printer to verify that the Network Interface Board is connected to the network. Turn on the printer.
9. Wait until the printer powers up and finishes initializing to allow enough time for the IP address to become known and to be saved in non-volatile memory. The Network Interface Board should reinitialize itself.
10. After the Network Interface Board has reinitialize, send a ping command to verify that the print server obtained its IP address. For example:

    ```
    ping 192.9.200.200
    ```

    If the print server has the address, the result is a confirmation message:

    ```
    192.9.200.200 is alive
    ```

11. Remove, or comment out, your changes to the /etc/BOOTP tab file.
12. Stop the BOOTP daemon and, if you want it to run, restart it.

7.4.1.2 Using rarp

The Reverse Address Resolution Protocol (rarp) allows network devices to query a server for their IP addresses on start-up. For this procedure, there needs to be a workstation with a rarp server. To store the IP address, use the following procedure:

1. Turn off the printer.

2. Log in as superuser on the rarp server. However, if the server resides on another subnet, complete this procedure to store the IP address in the print server. Reconnect the print server anywhere on the network, and then use the Telnet or the HTML pages accessed by MAP or a Web Browser to adjust the IP parameters for the subnet on which the Network Interface Board is to operate.

3. Find the Ethernet address of the Network Interface Board. The address is printed on the configuration status report when you power on the printer.

4. Edit the hosts file (usually /etc/hosts) or use NIS or DIS to add the IP Address and Network Interface Board's node name. See the network administrator for the IP address. For example, a print server with the name of printfast has the following entry:

   ```
   192.9.200.200  printfast
   ```

5. Edit the /etc/ethers file or use NIS or DIS to add the Ethernet address. To continue the example, for the printfast card with an Ethernet address of 00:40:c8:00:00:ff, make the following entry:

   ```
   0:40:c8:0:0:ff printfast
   ```

6. If the rarp daemon is running, stop it and restart it. Verify that the daemon is running.

7. Check the printer to see that the print server is connected to the network. Turn on the printer.

8. Wait until the printer powers up and finishes initializing to allow enough time for the IP address to become known and to be saved in non-volatile memory. The Network Interface Board should then reset itself.

9. After the Network Interface Board has reset, send a ping command to verify that the print server obtained its IP address. For example:

   ```
   ping 192.9.200.200
   ```

   If the print server has the address, the result is a confirmation message:

   ```
   192.9.200.200 is alive
   ```

10. Remove, or comment out, your changes to the /etc/ethers file.

11. Stop the rarp daemon and, if you want it to run, restart it.

7.4.1.3 Using ping

Use the following procedure to enter the IP Address:

1. Turn off the printer.

2. Log in as superuser on a host on the same subnet as the print server. However, if the server resides on another subnet, complete this procedure to store the IP address in the print server. Reconnect the print server anywhere on the network, and then use Telnet or the HTML pages accessed by MAP or a Web Browser utility to change the IP address. See 7.5 Running Telnet, for instructions on using Telnet.

3. Find the Ethernet address of the Network Interface Board. The address is printed on the configuration status report each time you turn the printer on.

4. Edit the hosts file (usually /etc/hosts) or use NIS or DIS to add the IP address and [print server's node name. See the network administrator for the IP address. For example, a

print server with a name of printfast and an IP address of 192.9.200.200 has the following entry:

```
192.9.200.200  printfast
```

5. Add an entry to the arp cache for the Print Server's IP address and Ethernet address. For example:

```
arp -s 192.9.200.200 0:40:c8:0:0:ff
```

6. Check the printer to see that the Print Server is connected to the network. Turn on the printer.

7. Send a ping command the Network Interface Board to verify it is running on the network. For example:

```
ping 192.9.200.200 or
ping printfast
```

The Network Interface Board will not respond to this ping command but it will read its IP address from the packets.

8. Turn the printer off and back on again and then send the ping command again to verify that the print server obtained its IP address. If the Print Server has the address, the result is a confirmation message:

```
192.9.200.200 is alive
```

9. Remove the entry from the arp cache using the following command. Specify the Print Server either by its IP address or by its name. For example:

```
arp -d printfast
```

7.4.2 lpd/lpr Printing

lpd/lpr is an implementation of the standard UNIX line printer daemon which lets you print across a TCP/IP network without the need to install software on your workstation with all filtering and banners done by Network Interface Board. Remote printing uses the same commands (lpr, lpq, lpc) as local printing.

The process begins when the lpr call finds a printer on a remote system by looking at the remote (rm) entry in the /etc/printcap file for that printer. lpr handles a print job for a remote printer by opening a connection with the lpd/lpr process on the remote system and sending the data file (followed by the control file containing control information for this job) to the remote system. The printer-based lpd then filters the data and prints the job according to information contained in the control file and its own printcap file.

Network Interface Board lpd recognizes the format of a certain printer emulations and filters the data, if possible, so it can be printed on the printer type you specify. You can indicate to the Network Interface Board lpd what type of printer is attached to by either:

1. Accepting the default port setting (PCL, PostScript and other), or

2. Changing the listed emulations via the Telnet or the HTML pages accessed by MAP or a Web Browser utility.

The following sections give specifics lpd/lpr setup instructions for various systems.

7.4.2.1 Setting Up a BSD Remote Printer to Use lpd/

To set up a remote printer on the host that sends jobs to Network Interface Board using printer resident lpd, add an entry to the /etc/printcap file on your host for each printer you use. The steps are described below.

1. Open the /etc/printcap file. Make an entry naming the Network Interface Board as the remote host and PORT1 as the remote printer name. A typical printcap entry is shown below:

```
<printer_name>\
```

(for example, lprprinter)

```
:lp=:\
:rm=<remote_host>:\
```

(for example, name as entered in /etc/hosts)

```
:rp=PORT1:\
:sd=/usr/spool/lpd/<printer_name>:
```

(for example, spool directory on system used to spool data and control files)

This entry will send jobs spooled at /usr/spool/lpd/<printer_name> to the printer designated <printer_name> to be printed at port 1 (the internal connection to the printer) of the Network Interface Board designated as <remote_host>.

2. Create the spooling directory. For example, type:

```
mkdir /usr/spool/lpd/<printer_name>
```

3. To print via the spooler, use the lpr command. Type:

```
lpr -P<printer_name>  <file_name>
```

Installation and testing is done. You are now ready to print.

7.5 Running Telnet

The Telnet utility uses the standard remote terminal protocol to configure the IP address, lpd/lpr printers, and other parameters on your system. Use the following guidelines to run Telnet. You have the same functionality with the HTML pages accessed by MAP or a Web Browser, as described in Chapter 3.

- Most often, you make selections from menus by toggling between one choice or another, by selecting/deselecting or enabling/disabling an item.
- Press Enter, when not selecting an item. This will return you to a previous menu.
- If you do not make a menu selection for 2 minutes, you get a "Two Minute Warning" that within 2 more minutes your Telnet session will end. This ensures that one user does not leave a session idle for too long.

7.5.1 Making Connection and Main Menu

1. At the prompt, type:
2. **telnet** <Network Interface Board IP address>
3. When login: appears, type **guest** if you are only interested in browsing the menus or sysadm if you want to change the configuration. Press the **ENTER** key.
4. When password: appears, again type **guest** or **sysadm** and press the **ENTER** key.
5. The main menu is displayed. This utility lets you change the IP Parameters, lpd/lpr printers, protocols, restore to factory defaults, and change password. Press the number for the parameter you wish to check or change and press the **ENTER** key.

The Configuration Utility
Unit Serial no. 991398 v2.18
Main Menu
1. IP Parameters
2. LPD Printers
3. Protocols
4. Reset Unit
5. Restore Factory Defaults
6. Change Password
7. Exit
Enter Selection (? for Help) :

To end your Telnet session, type **E** at the Main Menu. If you have made any changes you are prompted to either **Save Changes and Exit** or **Exit Without Saving Changes**. Choose your option and press the **ENTER** key.

Note: *Press **?** to access the Telnet help utility.*

7.5.2 Configure IP Parameters

Although the Network Interface Board must have an IP address before a Telnet Connection can be made, you can use the utility to change the address or the other IP parameters. The Network Interface Board will automatically initiate a soft reset when the IP address change is sensed.

Note: *This will cause the Telnet connection to be broken. It is advisable to make all other desired changes before changing the IP address.*

1. At the Main Menu, type 1 and press the **ENTER** key to bring up the IP Parameters menu (shown on the next page).

2. Type 1 again and press the **ENTER** key. The IP Address submenu will appear:

The Configuration Utility
Unit Serial no. 991398 v2.18 IP Parameters 1. IP Address 2. Subnet Mask 3. Default Gateway 4. Base Port Number Please Enter Selection (? for Help) :

3. Enter a new IP Address and press the **ENTER** key. Repeat the previous steps to change Subnet Mask and Default Gateways.
4. Enter **4** to change the base port number.

Note: *The base port number is one less than the actual TCP/IP port number used by the printer. For example, to set the port number to 9100, enter 9099. You should specify a port number between 1000 and 65530 for compatibility with HTML-based configuration capability, which can be accessed via the MAP or a standard Web Browser.*

7.5.3 Select Printer Languages

Selection 2 in the Main Menu allows you to designate which emulations (printer interpreter languages) the printer supports. This is to allow the resident lpd/lpr to modify files intended for other emulations so that they may be printed. The menu also allows you to enable or disable banners attached to lpd/lpr handled jobs.

The emulation choices are Printer Control Language (PCL), PostScript (PS), ASCII (simple text) and Other (any print job not recognized as PCL, PS, or ASCII). The file modifications and conditions are:

Print Server Setup	Job Detected to be	Action
PCL, (PostScript)	ASCII	<CR> changed to <CR><LF>
PostScript	PCL, Other	PostScript header added
not PostScript	PostScript	Job discarded
PostScript	ASCII	PostScript header added,

		<CR> changed to <CR><LF>
PCL, PS, ASCII	Any	no action

1. To access the LPD Printers menu, type 2 and press the **ENTER** key. For a unit at factory default, the menu shown below will appear.

The Configuration Utility
Unit Serial no. 991398 v2.1X
LPD Printers
1. Printer 1
2. Banners
Please Enter Selection (? for Help) :

2. To change the set of emulations, type 1 and press the ENTER key. The options shown below will appear.

The Configuration Utility
Unit Serial no. 991398 v2.18
Printer 1 PCL OTHER
1. PCL
2. PS
3. ASCII
4. OTHER
Please Enter Selection (? for Help) :

3. To delete an emulation, select the number opposite the language listed. For example, type **1** and press the **ENTER** key to delete PCL. Typing **1** again will again select PCL.
4. From the LPD Printers menu, press **2** to toggle Banners between Enabled/Disabled.

7.5.4 Enable/Disable Network Protocols

To enable network protocols, at the Main menu type **3** and press the **ENTER** key.

You are given the choice of disabling either NetWare or AppleTalk since both network OS's are enabled by default. For example, to disable Appletalk, type **2** and press the **ENTER** key.

7.5.5 Reset Unit

To reset the Network Interface Board, at the Main menu type 4 and press the **ENTER** key. Then you will be asked whether to reset the card or not with a warning message.

7.5.6 Restore Factory

When it is necessary to restore factory defaults on your print server, choose 5 on the Main Menu and press the **ENTER** key. All NVRAM stored parameters will be returned to their factory default values. The factory default values will not take effect until the Telnet program is exited or the unit is power-cycled.

7.5.7 Change Password

When you want to establish a new password, enter 6 from the Main menu. Type up to eight characters after the New Password query and press the **ENTER** key. Retype the same characters at the Retype New Password query and press the **ENTER** key. Use the Save Changes and Exit option. Once you have established your password using Change Password, the password sysadm will be rejected.

Note: *There is a single maintenance access password to the Network Interface Board. This password is used for both Telnet and HTML maintenance programs. This password may be changed from Telnet or from HTML (accessed either via MAP or Web Browser utility.*

7.5.8 Exit Telnet

Use the following procedures to exit Telnet:

1. To end your Telnet session, type **E** at the main menu. If you have made any changes, the following menu will appear:

The Configuration Utility
Unit Serial no. 991398 v2.18
Exit
1. Save Changes and Exit
2. Save Changes and Reset
3. Exit Without Saving Changes
Please Enter Selection (? for Help) :

2. Choose your option and press the **ENTER** key. For example, type **2** and press the **ENTER** key. The program will save your changes and reset the print server so that the changes will take effect.

Chapter 8 Operation and Troubleshooting

This chapter describes normal operation of the Network Interface Board in the printer, and also provides information on how to troubleshoot any problems you might have with the Network Interface Board.

8.1 LED Status Indicator

The Network Interface Board has two LED status indicators: amber and green. The amber LED generally indicates job activity; it flashes when a print job is being communicated to the Network Interface Board; it is off when no activity is occurring.

The green LED indicates the operating condition of the Network Interface Board when it is powered on during normal operation. The following table provides the conditions that this LED may indicate.

LED Patterns	And the printer is...	Then the NIB...	Operating Condition
Green LED is ON solid.	First powered on.	Is performing self-tests.	Normal
	Awaiting print jobs.	Is functioning properly	Normal
Green LED - blinks 3 times and stays on.	Finished with self-tests.	Prints out status report.	Normal.
Green LED blinks rapidly.	Performing self-tests.	Detects a bad RAM chip.	Error. Contact service representative.
Green LED blinks rapidly 4 times then pauses.	Performing self-tests.	Failed the Ethernet hardware self-test. Check the network.	Error. Check the cable connection and restart the printer. If this error occurs often, contact service representative.

Green LED blinks slowly.	Awaiting print jobs sometime after power-on complete.	Some printer interface error.	Error
Green LED blinks rapidly	Awaiting print jobs.	Has lost its NetWare connection to file server.	Error. Check the cable connection and restart the printer.

8.2 Status Report

The Status/Configuration report is sent as a print job to the printer when the print server is powered on. For example, the report on the next page shows the configuration of the print server immediately after the report is printed. Some printers also allow you to use a command from the front panel that will produce a status report.

It is strongly recommended that you review this report immediately after installation and any time the setup has been changed. If the report does not include a protocol that was configured, check that the procedure was done properly.

```
------------------------------------------------------------------------

Unit Serial No: 992819                          Version: 05.28

Network Address: 00:40:af:79:31:98

Network Topology: Ethernet                      Connector: RJ45

Network Speed: 10 Megabits

Novell Network Information                      enabled
   Print Server Name: P4PRT10_819
   Password Defined: No
   Preferred Server Name: NW41
   Directory Services Tree: SALES
   Directory Services Context: DOMESTIC
   Frame Type: Novell 802.3

Peer-to-Peer Information               enabled
   Frame Type: Novell 802.3
   Network ID: 291

TCP/IP Network Information                      enabled
   Frame Type: Ethernet II                      Protocol Address: 133.139.133.132
   Subnet Mask: 255.255.255.0                   Default Gateway:  133.139.133.10
   DNS Address: 0.0.0.0

AppleTalk Network Information                   enabled
   Frame Type: 802.2 SNAP On 802.3
   Protocol Address: Net Number 65384  Node Number 61 Socket Number 129
   Preferred AppleTalk Zone:                    Default Zone

------------------------------------------------------------------------

Novell Connection Information

  Printer Name: Printer: P4PRT10_819P

     File Server: NW41
        Queue: P4PRT10_819Q                     Priority: 1   Attached: Yes
        No Notify Defined

Peer-to-Peer Connection Information
   Printer Name: P4PRT10_819

AppleTalk Connection Information
   AppleTalk Printer Name: (Default Printer Name)

TCP/IP Connection Information
   Port Number: 10001

------------------------------------------------------------------------
```

8.3 Resetting the Print Server to Factory Default

You can make the Network Interface Board restore all parameters to factory default values, so the Network Interface Board appears just as it came from the factory. You may choose to do this when the Network Interface Board is moved to a new location where the environment (AppleTalk network zones, NetWare file servers, IP subnets, and so on) are different.

This process is called "Reset to Factory". It can be done with the standard Telnet or HTML (accessed via MAP or a Web Browser) utility.

Note: *Resetting to factory default means that the print server loses all data such as names and IP addresses. It does not lose its serial number or MAC (Ethernet hardware) address.*
After resetting to factory default, be sure to turn the printer off and on.

8.4 How to Diagnose Problems

Use the following list to determine the cause of printing problems:

1. Verify that the printer is functioning properly.

• Is the printer printing? Make sure the printer is operating properly by causing it to generate a test page. See your printer's owner's manual for instructions on generating a test page.

• Is the printer on-line? Verify that the printer is on-line or else nothing will print.

• Does the control panel display an error message? Review the printer documentation for an explanation of the error messages.

• Did you get a Network Interface Board status page? On power-up, the Print Server sends a status page which may contain information that can be useful for troubleshooting. Keep the status page available until a problem is resolved.

Note: *The start-up Configuration and Status Page from the Network Interface Board may be disabled via the MAP or a Web browser.*

2. Check the Network Interface Board's LED status indicator to ensure that there is no error condition. See 8.1 LED Status Indicator, for more information.
3. Check the status report to see what protocols are enabled and active. See the appropriate chapter to confirm that you have installed and configured your network protocol correctly for the Network Interface Board. See 8.2 Status Report, for an example of the status report.
4. If you added, changed, or removed any new hardware on the network, verify that it was installed correctly.
5. If you added any new software applications, make sure the program is compatible and installed correctly on the network. See your network protocol documentation to confirm.
6. Determine if other users can print. If they can't and they are all on the same NOS, go to the troubleshooting section for that NOS.
7. When you have determined the nature of the problem, use the checklists in the next section.

8.5 Troubleshooting Checklists

Use the checklists in this section to identify and solve problems.

8.5.1 Troubleshooting Network Hardware Connections

- Check that the network connector is plugged into the RJ connector on the Network Interface Board.
- Try another cable to make sure you do not have a bad cable.

8.5.2 Troubleshooting NetWare Protocol

It is recommended you use MAP to get the NetWare setup and parameter values. If you have not resolved the problem after running MAP, go through the checklists in this section.

8.5.2.1 NetWare Checklist

- Is the print server name entered correctly? The factory-default name is RDP-serial number. The serial number label is located on the board.
- Did you assign print queues to the printer? It is recommended you assign each print queues to only one Network Interface Board-connected printer. If print queues are assigned to other network printers, the print jobs may be going to an other network printer.
- Did you assign the printer to the type Remote Other /Unknown?

If the PCONSOLE settings are correct, the connection between the printer and network may have been broken. Turn the printer off and, using PCONSOLE, wait for the status message Not Connected. Turn the printer on and the status should change to Waiting for Job.

8.5.2.2 File Server Checklist

- Is there enough disk space on the file server and is it running?
- Is the correct file server associated with the printer? Use PCONSOLE to check this.
- Did you have the proper rights to configure the printer?
- Are the File Server and the Print Server communicating?

Run NetWare's COMCHECK utility from any network workstation to check this.

- Are there enough user positions on the File Server? The Print Server function logs on as a user.

8.5.2.3 Workstation Checklist

- Is the network loaded onto the workstation? See the NetWare documentation.
- Is the application set up to print to the printer? For instance, are you using the correct driver?
- Is the workstation connected to the correct print queue? Print a file and verify that the file goes to the queue.
- Are the print queues assigned to the Network Interface Board-connected printer also assigned to another network printer? If they are, the print jobs may be going to that printer.
- From PCONSOLE, enter a sample print job directly into an assigned queue. Does the job become Active? Is job printed?
- Is AUTO ENDCAP enabled? Auto Endcap lets you send data to a network printer. Use PRINTCON to check. If not, enable it.

8.5.2.4 Network Interface Board Configuration Checklist

If all your hardware connections are correct, check the following:

- Use MAP to check the status of the print server. The Unit Status screen shows the status for the selected network interface card. This report includes a status of file servers and queues assigned to a printer along with a description of any problems.

- The printer may not be assigned to the correct print queues. Use PCONSOLE to direct print jobs to the correct queues, then check to see if the print job is in the queue.

- If devices were added or changed, use PCONSOLE to make sure you configured the new devices correctly.

- Make sure the Network Interface Board's name has been entered correctly. If you changed the name in MAP, you must also change the name in PCONSOLE before you can print.

- Use PCONSOLE to check the Printer Status. Make sure it is not stopped or paused.

- You cannot use PCONSOLE Version 1.0 to configure the network interface card. Contact Novell for an upgrade.

8.5.2.5 Printer server/file server/printer Checklist

Check the following to see if:

- The Network Interface Board can not log into the file server, or cannot service jobs from a File Server.

- The Print Server name is listed on that File Server, or cannot service jobs from a File Server.

- The password assigned to the Network Interface Board through PCONSOLE matches the password assigned through MAP. Use MAP to update the password stored in the network Print Server's memory.

- The print job is in the print queue and waiting to be printed. Use PCONSOLE to check if the print jobs are being sent to the printer.

8.5.2.6 Workstation to Network Interface Board Connection Checklist

To make sure the workstation is communicating with the Network Interface Board, check the following:

- Print a file from the workstation and make sure the print job gets to the print queue using PCONSOLE. If the print job does get to the queue, the problem is not with the workstation/print server connection.

- Use CAPTURE to send data to the printer from a workstation software application. See your NetWare print server manual for information.

- Make sure another printer is not taking the print jobs from the queues BEFORE the Network Interface Board can service the job. To do this, disable the other printer until you can verify the Network Interface Board-connected printer setup.

8.5.2.7 Network Interface Board Loses Its File Server Connection

If the Network Interface Board loses its connection to the file server, it can take approximately 5 to 10 minutes to reconnect. If the connection is not made after a reasonable amount of time, check the error conditions to troubleshoot the problem.

8.5.2.8 Unable to Print from a Different Context

The Network Interface Board does not support printing from a context different from the context you are installed upon. If you want to do this, you must create an alias queue. See your NetWare Manual for more information.

8.5.3 Troubleshooting AppleTalk Protocol

- Is the Macintosh computer connected to the network through Ethernet, and, has the Macintosh AppleTalk driver been selected? Go to the Control Panel, then go to Networks to check.
- Did you select the correct Network Interface Board and correct zone?
- Is AppleTalk enabled on the Macintosh? Use Chooser to check this.
- If you are on a network with multiple zones, is the zone correct?
- Did you select the correct printer driver in Chooser? You must first select the printer icon and then select the printer name.

Note: *Not all printers will communicate with the default Macintosh driver.*

- If you renamed the printer, did you reselect the printer under its new name?
- If you placed the printer in a new zone, did you reselect the zone?
- Are there other printers with similar names in the Chooser? Make sure you chose the Network Interface Board-connected printer.

Appendix A

Specifications

A.1 Network Interface Board

The following tables provide general specifications for the Network Interface Board.

Size:	120.9 mm length x 89.9 mm height 4.760 in. x 3.540 in.
Weight:	approximately 240 gm. approximately 9.6 oz.
Controls and Indicators:	One green LED and one amber LED
Configuration:	Stored in non-volatile memory
Connectors:	Ethernet: 8-wire RJ-45 10BaseT/100BaseTX

A.2 10BaseT/100BaseTX/STP Cables

Use the following universal Ethernet standard when configuring your 10BaseT/100BaseTX/STP cables to connect to the RJ45 connector on the Network Interface Board. The cable should be Category/Type 5 or better (depending on length).

Pin Number	Color	Ethernet
8	blue/white	
7	blue	
6	orange/white	Receive –
5	green/white	
4	green	
3	orange	Receive +
2	brown/white	Transmit –
1	brown	Transmit +

Supplement for the Network Interface Board Type2000 Owner's Manual – Chapter 3

Chapter 3 - Using the Management Access Program or a Standard Web Browser, 3-5 Web IP Browser

---

Do not use MAP to start up the Web IP Browser in a TCP/IP network environment. Instead, do the following.

1. Click [Start] on the task bar, and launch the WWW browser from the Program group.
2. In the [Address] box, input the IP address of your network interface board followed by "/nic" as follows:

   Example: http://133.139.162.67/nic

3. Press the Enter key on your computer keyboard.

   The "SNMP Printer Card" appears on your browser.

Part Number UE GB XXXX-XXXX
Printed in USA
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Network Interface Board

Type2000 (Option)

Quick Configuration Guide

Read this manual carefully before you use this product and keep it handy for future reference.
For safety, please follow the instructions in this manual.

Type2000 (Option) Quick Configuration Guide

Printed in USA
UE (USA) A919-8600
EE (GB)

Introduction

This manual contains detailed instructions on the operation and maintenance of this machine. To get maximum versatility from this machine all operators should carefully read and follow the instructions in this manual. Please keep this manual in a handy place near the machine.

Please read the Safety Information before using this machine. It contains important information related to USER SAFETY and PREVENTING EQUIPMENT PROBLEMS.

Important

Parts of this manual are subject to change without prior notice. In no event will the company be liable for direct, indirect, special, incidental, or consequential damages as a result of handling or operating the machine.

Trademarks

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

Macintosh® is a registered trademark of Apple Computer, Incorporated.

All other products referenced are trademarks or registered trademarks of their respective companies.

Other product names used herein are for identification purposes only and might be trademarks of their respective companies. We disclaim any and all rights in those marks.

Warning:

Use of controls or adjustment or performance of procedures other than those specified in this manual might result in hazardous radiation exposure.

Notes:

Some illustrations might be slightly different from your machine.

Certain options might not be available in some countries. For details, please contact your local dealer.

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How to Read this Manual

Symbols

In this manual, the following symbols are used:

Important

If this instruction is not followed, paper might be misfed, originals might be damaged, or data might be lost. Be sure to read this.

Note

This symbol indicates precautions for operation, or actions to take after misoperation.

[ ]

Keys that appear on the machine's panel display.

Keys and buttons that appear on the computer's display.

【】

Keys built into the machine's operation panel.

Keys on the computer's keyboard.

Features

The Network Interface Board Type 2000 includes the following features:

- 10/100 Mbps Ethernet Interface
- 10BaseT / 100BaseTX Auto Detection
- Multiple Protocol support
- HTTP Server for Management with a Browser
- DHCP Support for Automatic IP Address Assignment
- SNMP Support

The Network Interface Board Type 2000 enables printers to communicate over an Ethernet network with many different network operating systems, including NetWare, Macintosh, UNIX, and Windows.

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Manuals for this Machine

This Guide's Role

This Quick Configuration Guide provides concise software configuration instructions allowing an experienced system administrator to get the NIB up and running quickly.

For more complete instructions or for printing or configuration options not covered in this guide, please refer to the Owner's Manual.

To ensure safe and efficient operation of the machine, all users should read and follow the instructions contained in the following manuals.

❖ **Quick Installation Guide**
Describes the procedures for installing your printer.

❖ **Operating Instructions**
Describes the procedures and necessary information on setting up and using your printer and its optional equipment. For information on setting IP parameters, see "Configuring the Printer for the Network with the Operation Panel" in this manual.

❖ **Network Interface Board Type 2000 Owner's Manual**
Provides detailed software configuration instructions for the Network Interface Board Type 2000.

❖ **Network Interface Board Type 2000 Quick Configuration Guide**
Provides concise software configuration instructions allowing an experienced system administrator to get the NIB up and running quickly. (This Manual)

- Lesen Sie die im CD-ROM erhaltene Kurzanleitung für die Konfiguration der Netzwerk-Schnittstellenplatine. (Nur in Europa)
- Se référer au fichier sur le CD-ROM fourni avec l'imprimante pour consulter le Guide de Configuration Rapide pour La Carte Interface Réseau en français (Europe uniquement).
- Fare riferimento al file del CD-ROM fornito con la stampante per consultare la Guida rapida di configurazione per la Scheda di interfaccia di rete in italiano (solo in Europa).
- De file van de Configuratiewegwijzer voor de Netwerkinterfacekaart in het Nederlands kunt u vinden op de CD-ROM die bij de printer wordt geleverd (alleen Europa)

- Consulte el archivo en el CD-ROM que se entrega con la impresora para ver la Guía de configuración abreviada para la Tarjeta de interfaz de red en Español (sólo Europa)
- Se filen på den CD-ROM som medföljer skrivaren för snabbguiden för konfigurering av Network Interface Board på svenska. (Enbart Europa)
- Se filen på den CD-ROM som følger med skriveren for konfigurerings-veiledningen for Grensesnittkort for Nettverk på norsk. (gjelder bare Europa)
- For lynguiden til konfiguration af Netværkskort på dansk, se filen på den CD-ROM, der leveres med printeren. (kun Europa)
- Katso kirjoittimen mukana toimitetulta CD-ROMilta verkkokortin konfigurointitietoja suomeksi.(Vain Eurooppa)
- A magyar nyelvü hálózati interfész kártya gyors konfigurációs útmutatóját lásd a nyomtatóhoz tartozó CD ROM file-ban. (Csak Európa)
- Pøeètìte si Struènî návod ke konfiguraci desky sítového rozhraní (v èeçtinì) v souboru na CD-ROM, kterî je souèástí dodávky tiskárny. (Pouze v Evropì)
- Skróconà instrukcjê konfiguracji interfejsu sieciowego w jêzyku polskim znajdziesz na pliku na CD-ROM-ie, który dostarczany jest razem z drukarkà. (Tylko w krajach europejskich)
- Consulte o ficheiro no CD-ROM que vem juntamente com a impressora para ver o (só na Europa).

1. Getting ready for the Software Installation

This CD-ROM contains the support programs for the installation and configuration for your printer's Network Interface Board Type 2000.

You can select any of the programs listed in the Configuration Programs.

Configuration Programs

The CD-ROM includes the following utilities.

❖ **MAP**
Wed-based configuration utility.

❖ **IPX-Peer to Peer**
IPX Peer to Peer printing software

❖ **IP-Peer to Peer**
IP Peer to Peer printing software

❖ **BOOTP Lite**
Used to configure the IP parameters of the NIB

❖ **NWSetup**
NetWare Print Service Configuration

Accessing the Configuration Programs

1 Insert the CD-ROM in the CD-ROM drive.

The main screen appears.

Note

❒ If Adobe Acrobat Reader 3.0 is not installed, click on **[Install Adobe Acrobat Reader 3.0]**.

2 Click on [CD ROM Contents].

The "CD-ROM table of contents" screen appears.

3 Click on [Installation/Configuration Programs].

The "Configuration Programs" screen appears.⇒ P.18 *"Installing Peer to Peer Printing (IP)"* , P.20 *"Installing Peer to Peer Printing (IPX)"*

2. NetWare® Configuration

NWSetup:NetWare Print Server Configuration

NWSetup lets you do the entire setup procedure for Novell NetWare and your NIB using only one program.

Note

❒ Make sure that the printer containing the NIB is on. If the target machine is powered down NWSetup will be unable to see the NIB.

❒ Be sure to turn the printer off and on after changing the network configuration.

This program combines the following configuration steps:

1. **Lets you set up the Novell file servers and print servers for NetWare printing, instead of using NetWare utilities.**
2. **Allows you to set up your printers with NIBs for network printing.**

Install NWSetup

1. **Insert the CD-ROM in the CD-ROM drive.**
2. **In Windows 95/98 or NT4.0, click on [Start] and select [Run].**
3. **Type <Drive>:\Nwsetup\Setup.exe (where <Drive> is your CD-ROM) and click on [OK].**
4. **The setup program installs the necessary files.**

Launch NWSetup

1. **Click on [Start] on the Task bar, point to NwSetup.**
2. **Click on the NWSETUP submenu.**

   A list of Network Interface Boards is displayed.

Select a Print Server

From the list of Network Interface Boards.

⇒ Refer to online help for additional information about the fields on this screen.

1 Double-click on the target NIB.

The first "Print Server Settings" screen appears.

Most of the fields will be configured automatically.

Fill in the following fields with the appropriate information.

❖ **Print Server Name**
The name that the NIB uses to log into NetWare.

❖ **Print Queue Scan Rate**
The number of seconds the NIB waits before polling print queues for a new print job.

❖ **Ethernet Frame Type**
Sets the default frame type that is used by the NetWare protocol stack.

❖ **Print Server Password**
Asterisks in this field indicate that a password is needed to log into NetWare and the Network Interface Board.

❖ **Change Password**
Clicking on this button brings up a dialog box allowing you to set or change the password.

2 Click on [Next] to continue.

The second "Print Server Settings" screen appears.

Again, most of the fields will be configured automatically.

Fill in the following fields with the appropriate information.

❖ **Enable NDS Mode**
Indicates whether or not the NIB supports Directory Services.

❖ **Preferred NDS Context**
The NDS directory context which the NIB uses to login to the network.

❖ **Preferred NDS Tree**
The NDS tree which the NIB uses to login to the network.

❖ **Enable Bindery Mode**
Determines whether the NIB services the network in Bindery mode.

Note

❒ If this field is not enabled, then the Primary Server field will not be enabled.

❖ **Primary File Server**
Specifies the file server that the NIB uses as the primary file server.

3 Click on [Next] to continue.

The "Port 1" screen appears.

Creating and Adding the Print Queues

Most of the fields will be configured automatically.

Edit the following fields with the appropriate information.

⇒ Refer to online help for additional information about the fields on this screen.

1 From the Port 1 screen.

- ❖ **Enable Printer box**
  Click to place a check in this box. If it is not checked, the remaining screens will not be enabled.
- ❖ **Printer Name**
  The name of the printer. Note: this is a read only field.
- ❖ **Queues Serviced by Printer**
  This field contains a list of queues that are serviced by the printer.

2 Click on [Add Queue] to add a queue.

The Add Queue to Printer screen appears.

- ❖ **Connection/Server**
  This list menu is used to select a server connection.
- ❖ **Context**
  This field allows you to specify an NDS context for the queue.
- ❖ **Queue**
  Lists all of the queues available on the currently selected connection.

3 Click on [Create Queue] to create a new queue.

The Create Queue screen appears.

- ❖ **Queue Name**
  Input the name of the new queue.
- ❖ **File Server Volume**
  The volume in which the queue will be created.
- ❖ **NDS Context**
  The context in which the queue will be created.

4 Click on [OK] to finish creating the new queue.

Return to the Add Queue to Printer screen.

5 In the Add Queue to Printer screen in the Queue field you can see the queue that you just created.

6 Select the new queue and click on [OK].

The queue is added and you return to the Port 1 screen.

Add a New User or Group

Most of the fields will be configured automatically.

Fill in the following fields with the appropriate information.

⇒ Refer to online help for additional information about the fields on this screen.

1 In the Port 1 screen, click on [Add User].

The "Add User/Groups" screen appears.

❖ **Connection**
This lists all of the file servers that you can connect to.
Select the appropriate connection.

❖ **NDS Context**
Specifies the NDS context to use when generating a list of users.

❖ **Users/Groups**
Lists the users and groups available on the currently selected connection.
Select the user/group that you want to add.

❖ **Delay in seconds for first message**
Indicates how long the NIB should wait before sending a notification message that an error condition has been detected.

❖ **Delay in seconds for repeat messages**
Indicates how long the NIB should wait before sending a repeat notification of an error condition.

Note

❒ The NIB supports notify function only in Bindery Mode.

2 Click on [OK] to apply the settings.

Return to the Port 1 screen.

The users/groups that you selected will be visible in the Users/Groups Notified by Printer field.

Configure the Notify Settings

Most of the fields will be configured automatically.

Fill in the following fields with the appropriate information.

⇒ Refer to online help for additional information about the fields on this screen.

1 In the Port 1 screen, double-click on an item in the Users/Groups Notified by Printer field.

The Notify Settings screen appears.

Use this screen to set up the notify function for a user or group.

❖ **User/Group name**
This is the name of the current user/group.
This is a read only field.

❖ **Delay in seconds for first message**
Indicates how long the NIB should wait before sending a notification message that an error condition has been detected.

❖ **Delay in seconds for repeat messages**
Indicates how long the NIB should wait before sending a repeat notification of an error condition.

Note

❒ The NIB supports notify function only in Bindery Mode.

2 Click on [OK] to apply these settings.

Return to the Port 1 screen.

3 Click on [Next] to Continue.

The Setup Complete screen appears.

4 Click on [Finish] to apply and save the configuration settings.

PCONSOLE:NetWare Print Server Configuration

NetWare 3.x Configuration

Login as Supervisor and start PCONSOLE.

Note

❒ Be sure to turn the printer off and on after changing the network configuration.

Define the Print Queue

1. **If a Print Queue already exists which will be assigned to the printer skip to step 3.**

   The Available Options menu is the first menu to appear.

2. **Select Print Queue Information and press the [ENTER] key.**

   The Print Queue menu appears.

3. **Press the [INSERT] key.**

4. **Type a name for the new queue to be serviced by the NIB and press the [ENTER] key.**

5. **Press the [ESC] key to return to the Available Options screen.**

Define the Print Server

1. **From the Available Options Menu, select Print Server Information and press the [ENTER] key.**

   The Print Servers screen appears.

2. **Press the [INSERT] key.**

3. **Type the NIB Print Server name and press the [ENTER] key.**

   The Print Servers screen appears.

   Note

   ❒ The default Printer Server name is RDP_ followed by the six-digit serial number of the NIB, e.g. RDP_123456.

   ❒ The serial number is listed on the bottom of the NIB and is displayed on the NIB box.

❒ If the NIB has already been installed, the Novell Print Server Name can be found on the power-up network status page under Novell Network Information.

Define the Printer

1 From the Print Servers screen. Select the name of the new print server and press the 【ENTER】 key.

The Print Server Information screen appears.

2 Select Print Server Configuration menu and press the 【ENTER】 key.

3 Select Printer Configuration and press the 【ENTER】 key.

4 Select Printer 0 and press the 【ENTER】 key.

The Printer 0 configuration screen appears.

5 Select the Type field and press the 【ENTER】 key.

The Printer Types screen appears.

6 Select Remote/Other Unknown and press the 【ENTER】 key.

The Printer 0 configuration screen appears.

7 Press the 【ESC】 key to exit.

8 Select Yes and press the 【ENTER】 key to save the changes.

9 Press the 【ESC】 key to return to the Printer Server Configuration menu.

Assign the Print Queue

1 From the Printer Server Configuration menu select Queues Serviced by Printer and press the 【ENTER】 key.

The Define Printers screen appears.

2 Select the desired printer and press the 【ENTER】 key.

A new screen appears.

3 Press the 【ENTER】 key.

The Available Queues screen appears.

4 Select the queue and press the 【ENTER】 key.

5 Input a priority level. (level 1 is recommended).

6 Press the 【ESC】 repeatedly until the Exit confirmation screen appears.

7 **Select Yes and then press the 【ENTER】 key to exit PCONSOLE.**

NetWare 4.x Configuration

Login as Supervisor and start PCONSOLE.

Note

❒ Be sure to turn the printer off and on after changing the network configuration.

Define Print Queue

1 **From the Available Options Menu, select Print Queues and press the 【ENTER】 key.**

The Print Queues screen appears.

2 **Press the 【INSERT】 key.**

3 **Input the name of the new Print Queue and press the 【ENTER】 key.**

4 **Input the volume name where the print queue will reside and press the 【ENTER】 key.**

If you want to browse for a volume, press the 【INSERT】 key.

5 **A list of volumes appears. Select the volume you want to use and press the 【ENTER】 key.**

You are returned to the Print Queues screen, and the new queue is visible.

6 **Press the 【ESC】 key to return to the Available Options screen.**

Define the Print Server

1 **From the Available Options screen, select Print Servers and press the 【ENTER】 key.**

The Printer Servers screen appears.

2 **Press the 【INSERT】 key.**

3 **Input the NIB print server name and press the 【ENTER】 key.**

Note

❒ The default Printer Server name is RDP_ followed by the six-digit serial number of the NIB, e.g. RDP_123456.

❒ The serial number is listed on the bottom of the NIB and is displayed on the NIB box.

❒ If the NIB has already been installed, the Novell Print Server Name can be found on the power-up network status page under Novell Network Information.

4 You are returned to the Print Servers screen, and the new server name is visible.

5 Press 【ESC】 to return to the Available Options screen.

Define the Printer

1 From the Available Options screen, select Printers and press the 【ENTER】 key.

The Printers screen appears.

2 To add a new printer, press the 【INSERT】 key.

3 Input the name of the new printer and press the 【ENTER】 key.

4 You are returned to the Printers screen, and the name of the new printer is visible.

5 Select the Printer you wish to define and press the 【ENTER】 key.

The Printer configuration screen appears.

Fill in the fields according to the specifications of the printer.

Assign the Print Queue

1 From the Printer configuration screen select Print queues assigned and press the 【ENTER】 key.

The Print Queue screen appears.

2 Press the 【INSERT】 key.

The Object, class screen appears

3 Select the printer queue to be added and press the 【ENTER】 key.

4 You are returned to the Print Queue screen, the printer queue that you selected is now visible on this list.

5 Press the 【ESC】 key repeatedly until the Exit confirmation screen appears.

6 Select Yes and then press the 【ENTER】 key to exit PCONSOLE.

Configuring the IP/IPX MAP Utility

1. **Click on [Start] on the Task bar.**
2. **Point to Programs.**
3. **Point to MAP and select MAP Setup.**
   Map Setup dialog appears.
4. **Select the appropriate boxes to choose IP or IPX based printers.**
5. **Input the maximum number of hops for IP Search.**
6. **Click on [OK] to close this dialog box.**

3. Windows 95/98 Configuration

What is Windows 95/98 Peer to Peer Printing?

The peer to peer printing software that is included with the NIB allows Windows 95/98 PCs to communicate directly with network attached printers. A network server, such as NetWare or Windows NT, is not required for peer to peer printing.

The peer to peer printing software must be installed on each PC that will use peer to peer printing. Once peer to peer printing software is installed, all NIBs on the network automatically appear in the list of available printer ports.

The peer to peer printing software can also be used in networks where servers are present; however, often the server print services are utilized instead. Server based print services offer centralized printing management and spooling and do not require software (other than the printer driver) to be installed on each PC.

Note

❒ Be sure to turn the printer off and on after changing the network configuration.

Reference

For information on setting IP parameters, see "Configuring the Printer for the Network with the Operation Panel" in the Operating Instructions that comes with your printer.

Installing Peer to Peer Printing (IP)

The IP Protocol is required for peer to peer printing.

IP is not installed by default when Windows 95/98/NT is first installed, but it can be easily.

1 Insert the CD-ROM in the CD-ROM drive.

The main screen appears.

Note

❒ If Adobe Acrobat Reader 3.0 is not installed, click on **[Install Adobe Acrobat Reader 3.0]**.

2 Click on [CD ROM Contents].

The "CD-ROM table of contents" screen appears.

3 Click on [Installation/Configuration Programs].

The "Configuration Programs" screen appears.

4 Click on [Windows 95 and NT IP Peer to Peer Printing].

The "Windows 95/98 and NT IP the Peer to Peer Printing" screen appears.

This screen describes the functions of this utility.

5 At the bottom of the screen, click on the blue word "here" to begin installing.

The "Welcome" screen appears.

6 Click on [Next] to continue.

The "Installation Notes" screen appears.

7 Click on [Yes] to continue installation.

The "Choose Destination Directory" screen appears.

8 Click on [Browse] to set a different directory.

The default installation folder is C:\PROGRAM FILES\P2P-IP.

9 Click on [Next] to continue.

The "Select Program Folder" screen appears.

This allows you to set the name of the folder that contains the shortcut links inside the Program Folder.

10 Input the name that you wish to see in the Program Folder and click on [OK].

The files are then copied to your computer in the specified directories.

The "Information" screen appears.

⓫ Click on [OK] to complete the installation.

For manual installation

Follow these steps to install the software on your operating system (Windows95/98 or NT 4.0).

① Insert the CD in the CD-ROM drive.

② Close all the applications that are currently running.

③ Click on **[Start]** on the task bar, and click on **[Run]**.

④ Type <Drive>:\IP-p2p\Setup.exe (where <Drive> is your CD-ROM).

⑤ Click on **[OK]**.
The "Welcome" screen appears.

The remaining steps are identical to ❻- ⓫above. ⇒ P.18 *"Installing Peer to Peer Printing (IP)"*

Installing Peer to Peer Printing (IPX)

The IPX Protocol is required for peer to peer printing.

IPX is not installed by default when Windows 95/98/NT is first installed, but it can be easily.

1 Insert the CD-ROM in the CD-ROM drive.

The main screen appears.

Note

❒ If Adobe Acrobat Reader 3.0 is not installed, click on **[Install Adobe Acrobat Reader 3.0]**.

2 Click on [CD ROM Contents].

The "CD-ROM table of contents" screen appears.

3 Click on [Installation/Configuration Programs].

The "Configuration Programs" screen appears.

4 Click on [Windows 95 and NT IPX Peer to Peer Printing].

The "Windows 95/98 and NT IPX Peer to Peer Printing" screen appears.

This screen describes the functions of this utility.

5 At the bottom of the screen, click on the blue word "here" to begin installing.

The "Welcome" screen appears

6 Click on [Next] to continue.

The "Installation Notes" screen appears.

7 Click on [Yes] to continue installation.

The files are then copied to your computer in the specified directories.

The "Installation Complete" screen appears.

8 Click on [Finish] to complete the installation.

For manual installation

Follow these steps to install the software on your operating system (Windows95/98 or NT 4.0).

① Insert the CD in the CD-ROM drive.

② Close all the applications that are currently running.

③ Click on **[Start]** on the task bar, and click on **[Run]**.

④ Type <Drive>:\IPX-p2p\Setup.exe (where <Drive> is your CD-ROM).

⑤ Click on **[OK]**.
The "Welcome" screen appears.

The remaining steps are identical to **6**- **8** above. ⇒ P.20 *"Installing Peer to Peer Printing (IPX)"*

Select the Printer Port

The peer to peer printing software should be installed on each Windows 95/98/NT 4.0 PC that will use peer to peer printing services.

If the printer driver has not already been installed, please install it before continuing with the following instructions.

Important

❒ The printer driver must be installed before selecting the printer port.

1. **Use the Add Printer Wizard to add a LOCAL printer.**
2. **Use the drivers that come with the printer.**
3. **When the Add Printer Wizard asks you to select a port select the name of the printer that you want to use.**
4. **Select the Print Test Page option when you complete the installation.**

Note

❒ The default name for IPX is in the format RDP_ and the serial number of the NIB, e.g. RDP_167532.

❒ The default name for IP is displayed by the IP address of the NIB.

Peer to peer printing configuration is complete.

Print jobs will now be directed to the NIB when the current printer driver is used.

4. Dynamic Host Configuration Protocol (DHCP)

Dynamic Host Configuration Protocol (DHCP)

The Dynamic Host Configuration Protocol (DHCP) provides a mechanism for delivering IP configuration parameters, including IP address, Subnet mask and default gateway, to devices (hosts) on an IP network. A DHCP server manages the pool of available IP addresses and grants device requests for an IP address.

At power-up, the NIB broadcasts a DHCP request for an IP address. If a DHCP server is present the request will be processed, and an IP address will be returned to the NIB. Upon receipt of the IP address, the NIB resets, and prints a network status page. The network status page will list the new IP address (and Subnet mask and default gateway). Once an IP address has been assigned to the NIB; it will no longer broadcast DHCP requests.

Important

❒ NIB IP address assignment with DHCP will only work when the NIB does not have an existing IP address.

The DHCP server may grant a temporary IP address, called a temporary lease or temporary reservation, which expires after a period, or may grant a permanent or unlimited lease or reservation which does not expire.

Devices that are granted a temporary lease will be notified before the lease expires and asked if they would like to extend the lease. The NIB will continue extending its lease indefinitely (unless prohibited by your DHCP server configuration) and thus maintain a consistent IP address.

Important

❒ If the NIB is not turned on or is not connected to the network during the period when the DHCP server is sending requests to extend the lease, the lease will not be extended. The DHCP server will cancel the lease and may assign the IP address to another device. Therefore, it is highly recommended to explicitly specify the NIB lease as permanent or unlimited in your DHCP server configuration.

If you prefer not to use DHCP for IP address assignment, it may be disabled with the MAP utility or by connecting to the NIB address with a browser. The enable/disable DHCP setting may be found in the Setup TCP/IP section under the Protocols heading.

5. Windows NT Configuration

Windows NT Configuration

There are several options for setting up printing in a Windows NT environment.

- If a NetWare server is present, NetWare print services may be used by following the NetWare Configuration instructions in this guide.
- Peer to peer print services may be used by following the Windows 95/98 instructions in this guide, but are only available for Windows NT 4.x, not for Windows NT 3.51.
- LPR print services may be used via TCP/IP by following the instructions in this section.

Windows NT printing is very flexible. It is possible to configure the individual Windows NT or Windows 95/98 workstations to print using a different protocol than the Windows NT server. For example, a Windows NT server could be configured to print to a NIB via TCP/IP using the instructions in this section. The NIB could then be designated as shared on the NT server, allowing workstations to print via the NT server using a different protocol (such as the default NetBEUI).

The Optimum Windows NT printing configuration depends upon the particular environment and user and administrator experience and preferences. Generally, the LPR printing over TCP/IP covered in the following instructions is the best choice for environments where TCP/IP is already in use.

Note

❒ Be sure to turn the printer off and on after changing the network configuration.

TCP/IP Required Components

The Windows NT system performing the NIB configuration must have the TCP/IP protocol installed. The following steps describe how to check for and, if necessary, add the required TCP/IP components.

Windows NT4.0

1. **Click on the Windows [Start] button; select Settings and Control Panel.**

2. **Double click on Network and select the Protocols tab.**

   If TCP/IP Protocol is not in the list of Network Protocols, click on Add to install it.

3. **Select the Services tab.**

   If either Microsoft TCP/IP Printing or Simple TCP/IP Services is not on the list of Network Services, click on **[Add]** to install them.

4. **Click on [Close] when all protocols and services have been added.**

   If the TCP/IP protocol has just been added, Windows will prompt for the IP address and other TCP/IP parameters.

   The new protocols and services will not be available until the system is restarted.

NIB TCP/IP Configuration

A utility called BOOTPL32 is used to configure the IP parameters on the NIB.

Note

❒ The BOOTPL32 utility does not work on a system configured as a DHCP server.

Reference

For information on setting IP parameters, see "Configuring the Printer for the Network with the Operation Panel" in the Operating Instructions that comes with your printer.

1 Insert the CD-ROM included.

2 In Windows NT 4.0, click on the Windows Start button and select Run.

3 Type <Drive>:\MAP\BOOTPL32.EXE (where <Drive> is your CD-ROM) and click OK to launch the utility.

4 Select Configure from the Admin menu.

❶ Enter the IP parameters.

❷ Enter the IP address to assign to the NIB.

❸ Enter the Subnet mask.

If unsure of the correct Subnet mask and the first number in the IP address is from 192 to 254, then use 255.255.255.0 as the Subnet mask.

❹ Enter the Default Gateway address (the router's IP address) or leave blank.

❺ Enter the Hardware address of the NIB.

This address is listed on the power-up network status page under Network Address, for example, 00:40:AF:12:34:23.

Please enter it as it appears on the status page.

The status pages (a printer status page NIB) may also be printed using the front panel of the printer.

5 Click on Go to send the new settings to the NIB.

After a few minutes (usually between 1 and 2 minutes, but possibly up to 5 minutes on very large or busy networks), the NIB will reset and print its network status page.

The new IP parameters will be listed in the TCP/IP Network Information section of the status page.

If the status page doesn't print, recheck the Hardware Address entry in BOOTPL32.

Once the status page prints, the new IP address may also be verified by selecting Verify from the Admin menu.

Setting Up LPR Printing

If the printer driver has not already been installed, please install it before continuing.

In the following instructions, some field or dialog names may vary depending on the NT release pack in use.

Windows NT4.0

1. **Click on the Windows Start Button and select Settings, and the Printers.**
2. **Right click on the appropriate printer and select Properties.**
3. **On the Ports tab, click on Add Port.**
4. **Double click on LPR Port in the list of available printer ports.**
5. **In the Name or address of host providing lpd: field, enter the IP address of the NIB (that was assigned with BOOTPL32).**
6. **In the Name of printer or print queue on that server: field, enter PORT1 and click on [OK].**
7. **Click on Close to close the Printer Ports dialog.**

   The NIB IP address is now displayed and currently selected on the list of ports.
8. **If the printer is to be shared, click on the Sharing tab, select Shared and enter the Share name.**
9. **Click on [OK] when finished.**

Selecting a Shared Printer

This section briefly describes the steps for setting up client access to a shared printer.

❖ **Windows 95/98**
In the Printer Properties on the Details tab, click the Add Port button and browse the network for the shared printer.

❖ **Windows NT4.0**
Add a new printer (with Add Printer), select Network Printer Server rather than My Computer and choose the shared printer from the shared printers list.

UNIX Configuration

UNIX printing utilizes a line printer daemon (lpd) to direct jobs to the printer. With printer-based lpd, the NIB acts as the line printer daemon host and accepts print jobs directly.

TCP/IP configuration of the NIB is needed for all versions of UNIX. Please refer to the NIB Owner's Manual for lpd configuration.

Note

❒ Be sure to turn the printer off and on after changing the network configuration.

Reference

For information on setting IP parameters, see "Configuring the Printer for the Network with the Operation Panel" in the Operating Instructions that comes with your printer.

Setting the IP Address

The NIB IP address may be initially set in a variety of ways; including with the MAP utility when a NetWare server is present, with the UNIX bootp daemon, with rarp, or with the standard UNIX command line utility, arp.

The following instructions use arp, but the other methods may be used instead, depending on user preference.

For directions on using one of the other methods, please refer to the NIB Owner's Manual.

1 Turn the printer off and then on and wait for the power-up network status page to print.

2 Add an entry to the hosts file (usually etc/hosts) that includes the printer's name and the IP address.

For example, to name the printer and associate it with an IP address of 197.42.211.5, place the following entry in the hosts file:197.42.211.5 <Printer-Name>

3 At the UNIX command prompt,

type: arp -s <desired_IP_address> <NIB_Ethernet_address>

(The Ethernet address is listed on the network status page as Network Address.)

For example, arp -s 197.42.211.5 00:40:AF:13:A2:70

4 At the UNIX command prompt, type: ping <desired_IP_address>

For example, ping 197.42.211.5 The NIB will not respond to this ping command, but will read the IP address.

5 After a few minutes (usually between 1 and 2 minutes, but possibly up to 5 minutes on very large or busy networks), the NIB will reset and print its network status page.

The new IP address will be listed in the TCP/IP Network Information section.

If the status page doesn't print, recheck the NIB's Ethernet address entry in the arp command.

Once the status page prints, the new IP address may also be verifies with the ping command.

Setting Other TCP/IP Parameters

Once the IP address is set, the NIB can be configured via telnet or with a standard web browser.

The following steps describe configuration with a standard browser.

For instructions of configuring via telnet, refer to the NIB Owner's Manual.

1 In the browser, connect to http://<NIB_IP_address>

For example, http://197.42.211.5

2 At the NIB's Home Page, click on Network Configuration.

3 Many of the configuration options are password protected.

The default password is: sysadm

The password is case sensitive.

To change the password, select Change Password in the System column.

4 Select Setup TCP/IP in the Protocols column and change the settings as appropriate.

If unsure of the correct Subnet mask, and the first number in the NIB's IP address is from 192 to 254, then use 255.255.255.0 as the Subnet mask.

5 Type the sysadm password in the appropriate box and click Accept Settings.

After a few seconds, the screen should report that the update was successful.

Click the Back Arrow icon twice to return to the Network Configuration page.

6 Optional: Click on Configure Status Page in the Printer column to define power-up status page settings, e.g. disabling the power-up status page.

7 The changes made to the NIB do not take effect until the unit is reset.

Click on Reset in the System column and click Reset Unit.

After a few seconds the screen should report that the unit was reset.

TCP/IP configuration is now complete.

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