ML5520/21

USER'S GUIDE

OKI

PREFACE

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

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

The most up-to-date drivers and manuals are available from the Oki Europe website: http://www.okieurope.com

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As an Energy Star Program Participant, the manufacturer has determined that this product meets the Energy Star guidelines for energy efficiency.

This product complies with the requirements of the Council Directives 89/336/EEC (EMC) and 73/23/EEC (LVD) as amended where applicable on the approximation of the laws of the member states relating to electromagnetic compatibility and low voltage.

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NOTES, CAUTIONS AND WARNINGS

NOTE

A note appears in this manual like this. A note provides additional information to supplement the main text which may help you to use and understand the product.

CAUTION!

A caution appears in this manual like this. A caution provides additional information which, if ignored, may result in equipment malfunction or damage.

WARNING!

A warning appears in this manual like this. A warning provides additional information which, if ignored, may result in a risk of personal injury.

INTRODUCTION

- Extremely reliable, durable operation: 20,000 hours Mean Time Between Failures (MTBF) at 25% duty cycle and 35% page density.
- Advanced paper handling, with built-in rear push tractor and zero-tear forms capability.
- Very high print speeds:
  - High Speed Draft (HSD) Mode: **507 cps**
  - Utility Mode: **380 cps**
  - Near Letter Quality (NLQ) Mode: **95 cps**
  - Super Speed Draft (SSD) Mode: **570 cps**
- This rugged 9-pin printer can meet the needs of harsh and demanding environments.

FEATURES / TIPS

Forms Tear-Off

The Forms Tear-Off feature allows a printed continuous forms page to be torn off without wasting paper or adjusting the printer.

When printing stops, Forms Tear-Off automatically moves the paper to align the perforation with the tear bar (located under the access cover), after a time interval which you select through the menu.

Paper remains in the tear-off position until the printer receives more data. Then, the paper moves back down for printing.

This feature has to be enabled.

Paper Park

Your printer's paper park feature allows you to print a single sheet (cut-sheet) page without removing continuous feed paper from the printer.

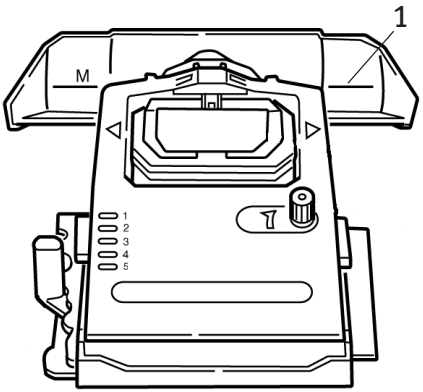
For more information, see "Paper Park" in "Using your Printer".

Top of Form (TOF)

Top of Form (TOF) sets the print start position. The factory default is 1" from the top.

The TOF can be changed in increments of 1/144", for a single print job or set to a new default. The overall amount of adjustment is limited to avoid paper jams.

The first line prints at the red line of the plastic paper shield (1) on the printhead.



For more information, see “Top of Form (TOF)” in “Using your Printer”.

NOTE

The **Forms Tear-Off** and the **Top of Form** settings interact. For more information, see “Top of Form (TOF) and Forms Tear-Off” in “Using your Printer”.

Turning the Platen Knob

Always turn the printer off before turning the platen knob! If you turn the platen knob when the printer is on, the Top of Form will misalign.

Controlling Access to the Printer

- You can control access to the printer by changing the setting for the Operator Panel Function in the Menu from Full Operation (the factory default) to Limited Operation.
- When Limited Operation is selected, the PRINT QUALITY and CHARACTER PITCH keys don't work. This prevents these settings from being changed from the control panel when several people are using the printer.

For more information, see "Changing the Menu Settings" in "Using your Printer".

PRINTER DRIVERS

EMULATIONS

The factory default emulation for your printer is IBM PPR.

If you wish to change to one of the Epson or Microline emulations, see “Using your Printer”.

PRINTER DRIVERS

The Oki driver for your printer is provided on the CD included with the printer. You can either load the Oki driver or select one of the compatible drivers listed below in your software application.

1. Insert the CD into your CD-ROM drive.

NOTE

If the CD does not AutoPlay, click Start → Run → Browse, then browse to your CD-ROM drive, double-click Install.exe and click OK.

2. Select your **Language**.
3. When the Menu Installer window appears, click the **Driver Installation** button.
4. Follow the on-screen instructions.

INSTALLING THE DRIVER

NOTE

Installation of the Oki USB driver is only required for Windows 98. You may be called upon for your original Windows 98 CD. Please have this available.

1. When the [Add Printer] window appears, click [Next].
2. Select the directory on the CD where the drivers are located. on the Oki CD they are situated in:
   X:\Drivers\WinVer\CodePage where *X:* is CD drive letter;

WinVer is the Windows versions, and *CodePage* is the selected option.

NOTE

To find out more about Code pages, see Help on the Oki CD Browser.

3. After files have finished copying, click [Finish].
4. Switch your printer ON.

USING A COMPATIBLE DRIVER

The drivers below are listed by decreasing compatibility with your printer. Use one as close to the top of the list as possible.

IBM Proprinter III

- IBM Proprinter III — *factory setting*
- IBM Proprinter II
- IBM Proprinter

Epson FX

- Epson FX 286e
- Epson FX 850/1050
- Epson FX 800/1000

INTERFACES - GENERAL

Your printer is equipped with a selection of data interfaces:

Under no circumstances attempt to use both parallel and USB ports simultaneously.

1. **Parallel** – For direct connection to a PC. This port requires a bi-directional (IEEE 1284 compliant) parallel cable.
2. **USB** – For connection to a PC running Windows 98 or above (not Windows 95 ***upgraded*** to Windows 98) or Macintosh. Windows NT 4.0 *does not* support USB. Administrator

privileges are necessary for Windows 2000 and Windows XP installations.

This port requires a cable conforming to USB version 1.1 or above. A genuine cable displays the Trident symbol on both connectors.

Using an inferior cable can cause printing problems and special cables are needed for longer runs than five metres.

The operation of a printer is not assured if a USB compatible device is connected concurrently with other USB compatible machines.

When connecting multiple printers of the same type, they appear as *****, ***** (2), ***** (3), etc. These numbers depend on the order of connecting or turning on each printer.

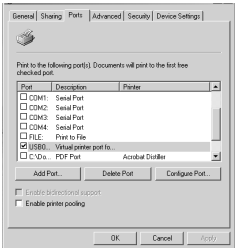
CONNECTING THE USB CABLE

Due to the number of possible variants of operating systems it is not possible to describe every combination.

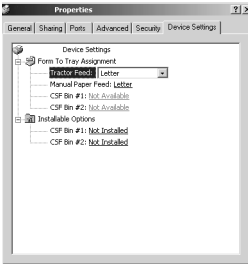
Terminology may vary between Windows operating systems and some knowledge is assumed. If you are unsure how to proceed, you should consult your computer documentation or system manager for details. This example uses Windows 2000 Professional.

1. Ensure the printer and computer are easily accessible and turn both units off. This is not strictly necessary but may prevent any problems being caused by the accidental dislodging of power or other cables.
2. Plug the Series A male connector (a) into the the computer's USB port or into a suitable USB hub.
3. Plug the Series B Male connector (b) into the printer's USB port.
4. Switch on both the computer and printer.

5. The printer will be identified immediately by the New Hardware Wizard and install itself in the Printer folder. An additional item, USB Printing Support will also appear in the Device Manager each time the printer is switched **ON** and connected.



6. Check that the default paper size has been correctly set by looking at the settings in the Settings › Printers folder. Under the printer's Properties › General tab, the current paper selection is shown. The printer picks up its initial setting from the Locale settings on the host computer. The paper size can be altered by using the drop down arrow and selecting an alternative size.



7. If the printer had formerly been used as a parallel or serial device and there is no output from the printer once a USB cable has been connected, check to see that the correct port has been selected. This information can also be found in the Properties folder but under the Ports tab. Amend as necessary.

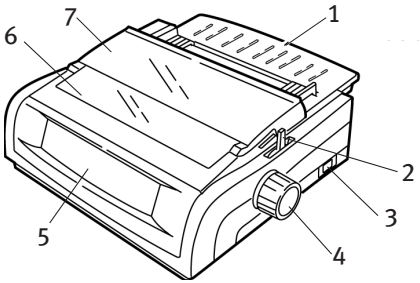
8. If there are printing problems, check to see whether there is a USB connection active in the Control Panel. If there is no USB connection shown, you must install the hub.

9. Alternatively, there may be a problem if the printer is connected via a USB hub. Disconnect the printer cable from the hub and connect it directly to the computer.

USING YOUR PRINTER

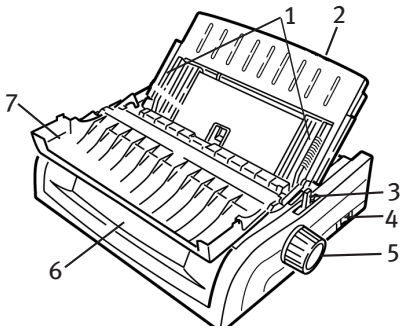
COMPONENTS: REAR FEED (CONTINUOUS FORMS)

The serial number of your printer is on a label fixed to the back of the printer.



1. Sheet Guide
2. Paper Lever
3. ON-OFF Switch
4. Platen Knob
5. Control Panel
6. Acoustic Cover
7. Access Cover

COMPONENTS: TOP FEED (SINGLE SHEETS)



1. Paper Guides
2. Sheet Guide
3. Paper Lever
4. ON-OFF Switch
5. Platen Knob
6. Control Panel
7. Acoustic Cover

NOTE

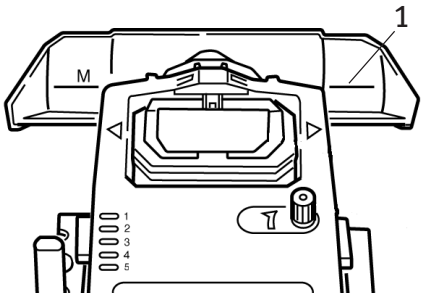
For single-sheet printing, the paper lever must be in the middle position.

TOP OF FORM (TOF)

Top of Form (TOF) sets the print start position. The factory default is 1" from the top.

The TOF can be changed in increments of 1/144", for either a single print job, or all print jobs. The overall amount of adjustment is limited to avoid paper jams.

The first line prints at the red line of the plastic paper shield (1) on the printhead.



CAUTION!

If you turn the platen knob when the printer is not at Top of Form, the TOF will misalign. Always feed the paper to TOF before turning the platen knob.

NOTE

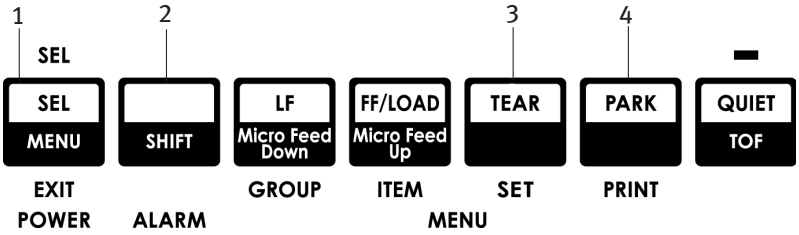
- Your software may print the first line of print above or below where TOF is set. You may need to adjust the TOF to meet your software's requirements.
- The Top of Form and Forms Tear-Off settings of your printer interact. How you set the Top of Form depends on whether **Forms Tear-Off** is ON (set to 500 ms, 1 sec, or 2 sec) or OFF (the factory default setting).

FORMS TEAR-OFF

There are two ways to determine the status of the Forms Tear-Off menu setting:

- Print the Menu.
- Use the TEAR key.

To print the Menu:



1. Make sure paper is loaded.
2. Hold **SHIFT** (2), then press **SEL** (1) to enter the Menu Mode.
3. Press **PARK** (4) to print the menu.
4. Look for the Form Tear-Off setting in the paper feed group you are using (Rear Feed, Bottom Feed or Top Feed—Forms Tear–Off appears in the Top Feed group only if the optional Roll Paper Stand is installed).

To use the TEAR key:

1. Make sure paper is loaded and wait 2 seconds.
2. Press **TEAR** (3).
   - If the paper moves *up*, Forms Tear-Off is *OFF*.
   - If the paper moves *down*, Forms Tear-Off is *ON*.

SETTING TOP OF FORM (TOF)

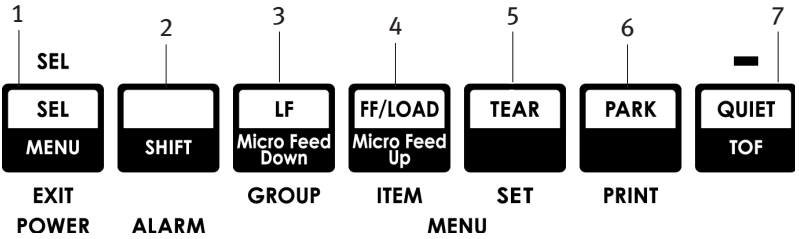
CAUTION!

Do not use the platen knob to change the Top of Form. If you turn the platen knob when the printer is not at Top of Form, the TOF will misalign. Always feed the paper to TOF before turning the platen knob.

The first line prints at the red line of the plastic paper shield on the printhead.

Forms Tear-Off set to OFF - (default)

With paper loaded and the printer ON:



1. Press **PARK** (6) to park the paper.
2. Press **FF/LOAD** (4) to load the paper.
3. If the printer is ON line, press **SEL | MENU** (1) to take the printer **OFF** line.
   The SEL light goes out.
4. Press and hold **SHIFT** (2), then:
   - Press **LF | Micro Feed Down** (3) to set the TOF *higher* (the paper moves down).
   - Press **FF/LOAD | Micro Feed Up** (4) to set the TOF *lower* (the paper moves up).

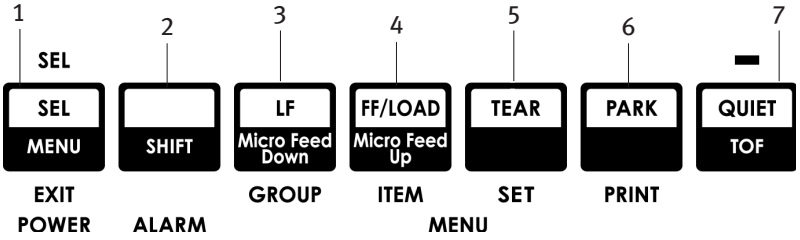
(When you begin pressing the Micro Feed key, the printhead will move to the right).

5. Press **SEL | MENU** (1) to place the printer back on line.

To reset the Top of Form to the factory default, see “Resetting Top of Form to the Factory Default” later in this chapter.

Forms Tear-Off set to ON

With paper loaded and the printer ON and selected:



1. Press **PARK** (6) to park the paper.
   The SEL light goes off and the red alarm light comes on.
2. Press **FF | LOAD** (4) to load the paper.
3. Wait briefly until the paper moves up to the tear position, then press and hold **TEAR** (5).
   The paper moves to the current TOF and the SEL light is illuminated.
4. If the printer is ON line, press **SEL** I **MENU** (1) to take the printer **OFF** line.
   The SEL light goes out.
5. Hold down **SHIFT (2)**, then:
   - Press **LF | Micro Feed Down** (3) to set the TOF *higher* (the paper moves down).
   - Press **FF/LOAD | Micro Feed Up** (4) to set the TOF *lower* (the paper moves up).

(When you begin pressing the Micro Feed key, the printhead will move to the right).

6. Press **SEL | MENU** (1) to save the setting and place the printer back on line.

To reset the Top of Form to the factory default, see the next page.

TEMPORARILY CHANGING THE TOP OF FORM

CAUTION!

Do not use the platen knob to change the Top of Form. If you turn the platen knob when the printer is not at Top of Form, the TOF will misalign. Always feed the paper to TOF before turning the platen knob!

To move the Top of Form position lower *for one page only:*

1. Press **SEL** to deselect the printer.
2. Press **LF** to lower the position of the Top of Form.

RESETTING TOP OF FORM TO THE FACTORY DEFAULT

The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page.

To reset the Top of Form to the factory default:

1. Remove paper from the paper path.
2. Turn the printer off.
3. Press and hold **PARK** + **QUIET | TOF** while turning on the printer.
4. Reload paper.

FORMS TEAR-OFF FEATURE

This feature is normally turned off. To use Forms Tear-Off, you must enter the menu and change the setting to the desired time interval (see “Changing the Forms Tear- Off Settings”).

The Forms Tear-Off feature allows a printed continuous forms page to be torn off without wasting paper or adjusting the printer. It can be used for rear feed continuous forms, bottom feed continuous forms (with the optional push tractor installed), or for top feed roll paper (with optional roll paper stand installed).

When the printer is turned on, the paper feeds to the tear-off position.

When data is received, the paper automatically moves down to the print position (TOF) and printing begins.

NOTE

You can also move the paper down to the print position manually by pressing **TEAR**.

When printing stops, Forms Tear-Off automatically moves the paper to align the perforation with the tear bar (located under the access cover), after the time interval which you selected through the menu.

Paper remains in the tear-off position until the printer receives more data. Then, the paper moves back down for printing.

NOTE

- The status of the Forms Tear-Off menu setting affects how you set the Top of Form: see “Top of Form (TOF) and Forms Tear-Off” earlier in this chapter.
- Do not use Forms Tear-Off with labels or multipart forms!
- Forms Tear-Off cannot be used when the optional pull tractor is engaged.

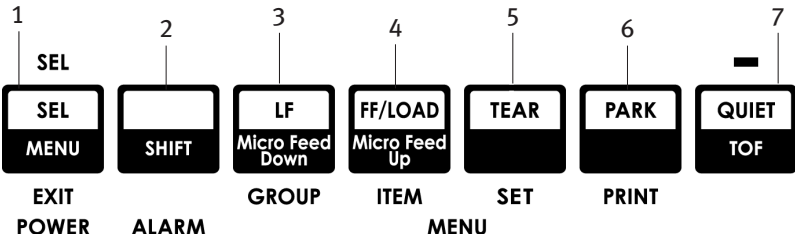
POTENTIAL ISSUES WITH SOFTWARE PACKAGES

If Forms Tear-Off is set to **ON** and the software package you are using “pauses” for a long enough interval while sending data to the printer, Forms Tear-Off may be activated. No data is lost, but this causes uneven print registration due to the paper movement.

If this occurs, use the menu to turn off this feature, then use the TEAR key to move the paper up to the tear position manually (see “Changing the Forms Tear-off Settings”).

CHANGING THE FORMS TEAR-OFF SETTING

The default setting for Forms Tear-Off is **OFF**.



To change the Forms Tear-Off setting:

1. Press **SHIFT** (2) + **SEL** (1).
2. Press **GROUP** (3) repeatedly until the Rear Feed or Bottom Feed group shows in the first column of the printed line, depending on which paper feed you are using,
3. Press **ITEM** (4) repeatedly until Form Tear-Off appears in the second column:

   ```
   Rear Feed        Form Tear-Off    Off
   ```

4. Press **SET** (5) until the time interval you wish to select appears in the third column:

   ```
   Rear Feed        Form Tear-Off    1 Sec
   ```

5. Press **SHIFT** (2) + **SEL** (1) to exit Menu Mode and save the setting.

MANUAL FORMS TEAR-OFF

If you don't wish to engage the Forms Tear-Off feature, you can advance:

- rear-feed continuous forms loaded on the built-in tractor

  or

- bottom-feed continuous forms loaded on the optional push tractor

up to the tear-off position manually by pressing **TEAR** (5).

PAPER PARK

CAUTION!

Never park labels.

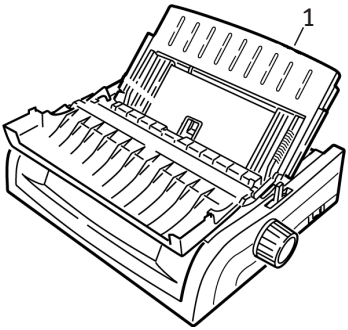
Paper park allows you to switch to single-sheet printing without removing continuous feed paper from the printer.

When you wish to print single sheets, simply press **PARK** (6) to retract the continuous form paper from the paper path, then lift the sheet guide, load the sheet and send the print job.

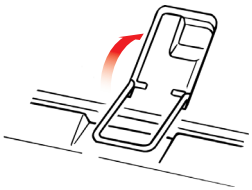
CHANGING PAPER PATHS

CONTINUOUS FORMS TO SINGLE SHEETS

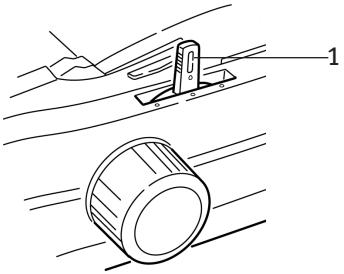
1. Tear off any printed pages, then press PARK.
2. Raise the sheet guide (1) to the single-sheet feed position.



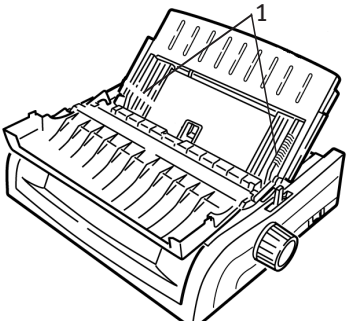
3. Pivot the wire feed guide into the sheet guide.



4. Move the paper lever (1) to the middle position marked “TOP.”

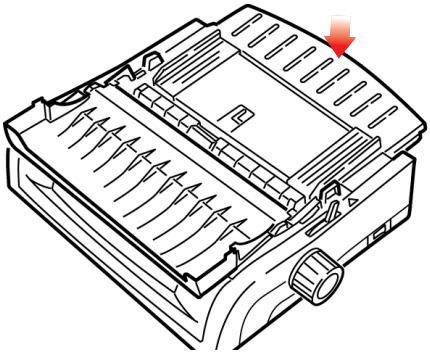


5. Adjust the paper guides (1) for the size of paper you are using, then place a sheet of paper in the sheet guide.

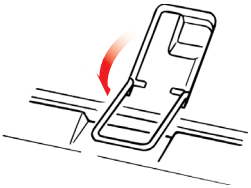


SINGLE SHEETS TO CONTINUOUS FORMS

1. Press **FF/LOAD** to remove the single-sheet paper.
2. Lower the sheet guide into the continuous-forms position.

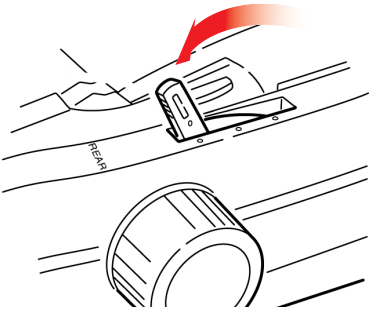


3. Swing the wire feed guide over onto the pull-up roller.

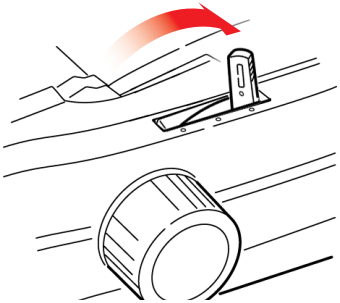


4. Move the paper lever to the appropriate position.

   ⋯ Rear feed:



   ⋯ Bottom feed:



   ⋯ If necessary, load continuous-form paper.

5. Press **FF/LOAD**.

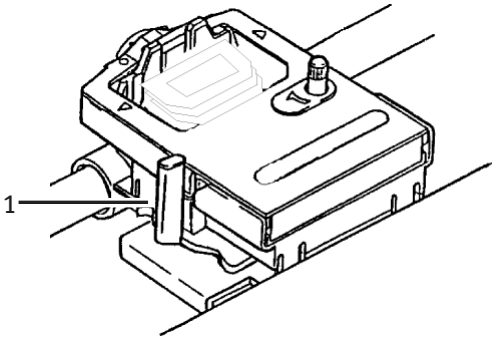
PRINTHEAD GAP

1. The printhead gap is the distance between the printhead and the platen.

CAUTION!

Make sure the printer is turned off before you open the access cover.

To adjust the gap, open the access cover and move the coloured lever (1) to the recommended setting from the table.

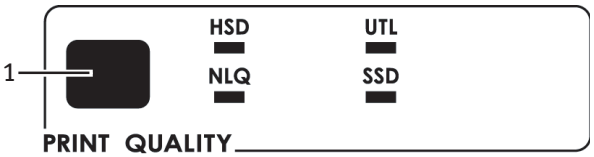


SETTING	MEDIA
1	Standard paper
2	2-part form (with carbon)
3	3-part form (with carbon)
4	4-part form (with carbon)
5	Envelopes or extra thick paper

NOTE

When the head gap is set to 2, 3, 4 or 5, the printer automatically slows down for better print quality with multipart forms.

PRINT QUALITY



Press **PRINT QUALITY** (1) to select:

Utility (UTL)—the default:

- Medium quality, medium speed (380 cps)

  Gothic typeface only

High Speed Draft (HSD):

- Lower quality, higher speed (507 cps)

  Gothic typeface only

Super Speed Draft (SSD):

- Lowest quality, highest speed (570 cps)

  Gothic typeface only

Near Letter Quality (NLQ):

- Highest quality, slowest speed (95 cps)

  Courier or Gothic

NOTE

Front panel settings for print quality and character pitch are normally overridden by software commands.

CHARACTER PITCH

Character pitch determines how many characters will print on each line. You can choose a specific fixed width for each character in characters per inch (cpi), or Proportional. The higher cpi settings are often used for spreadsheets.

Proportional (**PROP**) sets character widths based on the character itself: e.g., the letter i is assigned a narrower width than the letter m. This provides a more polished, typeset appearance.

NOTE

Front panel settings for character pitch are normally overridden when the SI command is received from your software.

EPSON AND IBM EMULATIONS

Set the character pitch by pressing **CHARACTER PITCH** (1) until the light beneath the desired setting is illuminated:

- 10 cpi; 12 cpi; 15 cpi; 17 cpi; 20 cpi or Proportional

MICROLINE Emulation

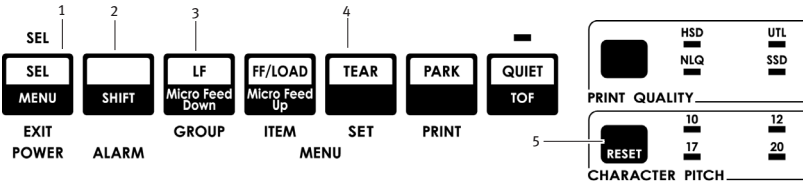
In the MICROLINE emulation, the Character Pitch choices are:

- 10 cpi; 12 cpi; 15 cpi; 17 cpi; 20 cpi, Proportional or non-proportional

To select Proportional, press the **CHARACTER PITCH** key until *both* the cpi value *and* **PROP** lights are illuminated.

To select non-proportional, press the **CHARACTER PITCH** key until the light for the cpi value you wish to use is illuminated.

PRINTER RESET



Clearing some error conditions requires that you reset (reinitialise) the printer. To do this:

1. Press and release **SEL** (1) to take the printer off-line.
   *The **SEL** light goes out.*
2. Press and hold **SHIFT** (2), then press the **RESET**/**CHARACTER PITCH** key (5).

NOTE

Pressing **SHIFT** and **RESET** reinitialises the printer, but does *not* affect any menu settings and does *not* reset the printer to the factory defaults. For information on resetting the printer to the factory defaults, see "Resetting the Menu to the Factory Defaults" later in this chapter.

EMULATIONS

- IBM® Proprinter III — *factory setting*
- Epson® FX
- Oki® MICROLINE®

Changing Emulations

Make sure paper is loaded.

1. Press and hold **SHIFT** (2), then press **SEL** (1).
2. Press **LF** (3).
   The following line will print:

   ```
   Printer Control  Emulation Mode   IBM PPR
   ```

3. Press **TEAR** (4) repeatedly until the emulation you wish to select prints in the right-hand column.
4. Press and hold **SHIFT** (2), then press **SEL** (1) to save your setting and exit the Menu Mode.

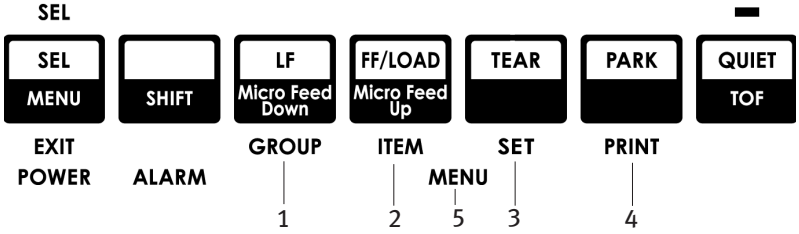
MENU MODE

In Menu Mode, use the front panel keys to change the defaults for the printer parameters. The changes made in the Menu Mode are automatically saved when you exit the Menu Mode and are retained, even when the printer is turned off.

NOTE

Please print the current Menu Mode settings before you reset or change them. This is the only way to have a record of the settings.

MENU MODE KEYS



GROUP Key

Prints the next Group in the Menu.
With the **SHIFT** key, prints the previous Group.

ITEM Key

Prints the next Item in the Group.
With the **SHIFT** key, prints the previous Item in the Group.

SET Key

Prints the next setting for an Item.
With the **SHIFT** key, prints the previous setting for an Item.

PRINT Key

Prints a copy of all the Menu settings.
With the **SHIFT** key, prints the current settings for the Group selected.

MENU Light

ON when the printer is in the Menu Mode.

ENTERING AND EXITING MENU MODE

Hold down the **SHIFT** key while pressing **SEL**.

RESETTING THE MENU TO THE FACTORY DEFAULTS

1. Turn the printer off.
2. Press **SEL** and **LF** while turning the printer ON.

PRINTING THE MENU SETTINGS

1. Make sure paper is loaded in the printer.
2. Press and hold **SHIFT**, then press **SEL** to enter the Menu Mode.
3. Press **PRINT** (PARK key).

PRINTING ALL MENU SETTINGS

To print out a listing of the settings for all menu items, regardless of the emulation selected or the accessories installed:

Make sure paper is loaded in the printer.

1. Press and hold **SHIFT**, then press **SEL** to enter the Menu Mode.
2. Press and hold **SHIFT**, then press **PRINT QUALITY**.

CHANGING THE MENU SETTINGS

1. Press and hold **SHIFT**, then press **SEL** to enter the Menu Mode.
2. Use the **GROUP**, **ITEM** and **SET** keys to make your changes:
3. Press **GROUP** until the Group you wish to change appears in the first column.
4. Press **ITEM** until the Item you wish to change appears in the second column.
5. Press **SET** until the setting you want appears in the third column.

6. Press and hold **SHIFT**, then press **SEL** to exit the Menu Mode and save your settings.

NOTE

If you turn off the printer without first exiting the Menu Mode, the changes you have made will be lost.

MENU SETTINGS

For a complete explanation of each menu item, see "Explanations of Menu Items" later in this chapter.

The table following shows the items which may appear in the menu. Settings which are engaged at the factory (defaults) are set in ***bold italic***. Some groups or entries will only appear when a specific emulation is engaged, as noted.

Group	Item	Settings
Printer Control	Emulation Mode	***IBM PPR***, Epson FX, ML
Font	Print Mode	***NLQ Courier***, NLQ Gothic, NLQ OCR-B, Utility, HSD
	DRAFT Mode	***HSD***, SSD
	Pitch	***10 cpi***, 12 cpi, 15 cpi, 17.1 cpi, 20 cpi
	Proportional Spacing	***NO***, YES
	Style	***Normal***, Italics
	Size	***Single***, Double

Group	Item	Settings
Symbol Sets	Character Set	***Set I***, Set II [Epson and IBM mode] Standard, Line Graphics, Block Graphics [ML Mode]
	Language Set	***ASCII***, French, German, British, Danish I, Swedish, Italian, Spanish I, Japanese, Norwegian, Danish II, Spanish II, Latin American, French Canadian, Dutch, TRS80, Swedish II, Swedish III, Swedish IV, Turkish, Swiss I, Swiss II, Publisher
	Zero Character	Slashed, ***Unslashed***
	Code Page	***USA***, Canada French, Multilingual, Portugal, Norway, Turkey, Greek_437, Greek_869, Greek_928, Greek_437 CYPRUS, Polska Mazovia, Serbo Croatic I, Serbo Croatic II, ECMA-94, Hungarian CWI, Windows Greek, Windows East Europe Windows Cyrillic, East Europe Latin II - 852, Cyrillic I - 855, Cyrillic II - 866, Kamenicky (MJK), ISO Latin 2, Turkey_857, Windows Turkey, Ukrainian, Bulgarian, ISO Latin 6 (8859/10), Windows Baltic, Baltic_774, KBL-Lithuanian, Cyrillic Latvian, Roman-8, Icelandic-861, Multilingual 858, ISO 8859-15 Greek_737
Rear Feed	Line Spacing	***6 LPI***, 8 LPI
	Form Tear-Off	***Off***, 500 ms, 1 sec, 2 sec
	Skip Over Perforation	***No***, Yes
	Page Width (wide model)	***13.6***", 8"
	Page Length	***11"***, 11-2/3", 12", 14", 17", 5", 3", 3.5", 4", 5.5", 6", 7", 8", 8.5"
Bottom Feed	Line Spacing	***6LPI***, 8 LPI
	Form Tear-Off	***Off***, 500 ms, 1 sec, 2 sec
	Skip Over Perforation	***No***, Yes
	Page Width (wide model)	***13.6"***, 8"
	Page Length	***11"***, 11-2/3", 12", 14", 17", 5", 3", 3.25", 3.5", 4", 5.5", 6", 7", 8", 8.5

Group	Item	Settings
Top Feed	Line Spacing	***6 LPI***, 8 LPI
	Form Tear-Off*	***Off***, 500 ms, 1 sec, 2 sec
	Bottom Margin	***Valid***, Invalid
	Page Width (wide model)	***8"***, 13.6"
	Page Length	***11"***, 11-2/3", 12", 14", 17", 5", 3", 3.25", 3.5", 4", 5.5", 6", 7", 8", 8.5"
	Wait Time	500 ms, ***1 sec***, 2 sec
	Page Length Control	***by Actual Page Length***, by MENU Setting
	** With RollPaper Stand fitted*	
Set-Up	Graphics	***Bi-directional***, Uni-directional
	7 or 8 Bit Graphics*	8, ***7***
	Receive Buffer Size	1 Line, 32K, ***64K***, 128K
	Paper Out Override	***No***, Yes
	Print Registration 1	***0***, range to 0.25 mm to the right or left, set in 0.05 mm increments Press SEL to shift registration to the left;press SHIFT + SEL to shift registration to the right.
	Print Registration 2	***0,*** range to 0.25 mm to the right or left, set in 0.05 mm increments press SEL to shift registration to the left; press SHIFT + SEL to shift registration to the right.
	7 or 8 Bits Data Word*	***8***, 7
	Operator Panel Function	***Full Operation***, Limited Operation
	Reset Inhibit	***No***, Yes
	Print Suppress Effective	No, ***Yes***
	Auto LF	***No***, Yes
	Auto CR**	***No***, Yes
	CSF Bin Select***	***Bin 1***, Bin 2
	Print DEL Code*	***No***, Yes
	SI Select Pitch (10 cpi)**	15 cpi, ***17.1 cpi***
	SI Select Pitch (12 cpi)**	***12 cpi***, 20 cpi
	Time Out Print	***Valid***, Invalid
	Auto Select	***No***, Yes
	Centring Position	***DEFAULT***, MODE 1, MODE 2
	CSF Type***	***Wide***, Narrow
	ESC SI Pitch	***17.1 cpi,*** 20 cpi
	Select Language Set	***Combined***, Code Page Only
	Power Saving	***Enable***, Disable
	Power Save Time	***5 min.***, 10 min., 15 min., 30 min., 60 min.

* *When MICROLINE emulation selected.*
** *When IBM emulation selected.*
*** *When Cut Sheet Feeder fitted.*

Group	Item	Settings
Parallel I/F	I-Prime Pin 18 Auto Feed XT* Bi-Direction *Note:* **When Epson emulation selected.*	***Buffer Print***, Buffer Clear, Invalid +5V, Open ***Invalid***, Valid ***Enable***, Disable
Serial I/F* ** When Serial I/F installed.*	Parity Serial Data 7/8 bits Protocol Diagnostic Test Busy Line Baud Rate DSR Signal DTR Signal Busy Time	***None***, Odd, Even ***8 Bits***, 7 Bits ***Ready/Busy***, X/ON / X/OFF ***No***, Yes ***SSD-***, SSD+, DTR, RTS 19200 bps, ***9600 bps***, 4800 bps, 2400, 1200, 600, 300 bps ***Valid***, Invalid ***Ready On Power Up***, Ready On Select ***200 ms***, 1 sec.
CSF Bin 1** 	Line Spacing Bottom Margin Page Width (Wide model) Page Length	***6 LPI***, 8 LPI ***Valid***, Invalid ***8"***, 13.6" ***11"***, 11-2/3", 12", 14", 17", 5", 3.5", 4", 5.5", 6", 7", 8", 8.5"
*CSF Bin 2*** ** * When Cut Sheet Feeder installed.*	Line Spacing Bottom Margin*V* Page Length	***6 LPI***, 8 LPI ***Valid***, Invalid ***11"***, 11-2/3", 12", 14", 17", 5", 3.5", 4", 5.5", 6", 7", 8", 8.5"

EXPLANATION OF MENU ITEMS

These explanations are in alphabetical sequence to make it easier to look them up. Some items only appear when optional accessories are installed; others appear in several groups in the menu.

7 or 8 Bit Graphics, Default = 7

Change this setting to 8 if your system uses 8-bit graphics.

7 or 8 Bit Data Word, Default = 8

Change this setting to 7 if your system uses 7-bit data word lengths.

Auto CR, Default =No

IBM emulation only. If you want the printer to automatically add a carriage return when a Line Feed is received at the end of a line, change the setting to Yes.

Auto LF, Default = No

If your printout is consistently double spaced, select No; if it overprints, select Yes.

Auto Feed XT, Default = Invalid

Epson emulation only. In the Epson emulation, the XT signal on pin 14 of the parallel interface can control automatic line feed. Some interface cables are wired in such a way that automatic line feed is always in effect: this item eliminates this potential problem. If your system uses pin 14 of the parallel interface to control automatic line feed, change the setting to Valid.

Auto Select, Default = No

Determines whether or not your printer will automatically be selected after you load in paper. With the factory default engaged, the printer will be deselected so that you can set the Top of Form. If you always use the same Top of Form position, change the setting to Yes.

Baud Rate, Default = 9600 bps

Appears only if optional Serial Interface is installed. Set this to match your system's transmission speed.

Bi-direction, Default = Enable

Change this setting if you wish to disable bi-directional transmission (PnP) in Nibble mode.

Bottom Margin, Default = Valid

Change to Invalid if you want the printer to ignore the bottom margin setting.

CAUTION!

Setting the Bottom Margin to Invalid can cause loss of data and damage the printhead by allowing printing without paper.

Busy Line, Default = SSD-

Appears only when the optional Serial Interface is installed. If Ready/Busy protocol (factory default) is selected, you can choose which line your system monitors for a busy signal:

- SSD -9V, select SSD-
- SSD +9V, select SSD+
- DTR -9V, select DTR
- RTS -9V, select RTS

Busy Time, Default = 200 ms

Appears only when the optional Serial Interface is installed. Sets the length of the busy signal when the Ready/Busy protocol (factory default) is engaged.

Centering Position, Default = DEFAULT

Used to limit printhead travel when printing narrow columns.

- Select Mode 1 for the narrow carriage printer.
- Select Mode 1 or Mode 2 for the wide carriage printer.

Character Set, Default = IBM Set II

Epson and IBM emulations only. Use this to switch character sets to IBM Set II.

Character Set, Default = Standard

MICROLINE emulation only. Use this to switch the character set to Line Graphics.

Code Page, Default = USA

Choose the Code Page character set you wish to use:

USA, Canada French, Multilingual, Portugal, Norway, Turkey, Greek_437, Greek_869, Greek_928, Greek_437 CYPRUS, Polska Mazovia, Serbo Croatic I, Serbo Croatic II, ECMA-94, Hungarian CWI, Windows Greek, Windows East Europe, Windows Cyrillic, East Europe Latin II - 852, Cyrillic I - 855, Cyrillic II - 866, Kamenicky (MJK), ISO Latin 2, Turkey_857, Windows Turkey, Ukrainian, Bulgarian, ISO Latin 6 (8859/10), Windows Baltic, Baltic_774, KBL-Lithuanian, Cyrillic Latvian, Roman-8, Icelandic-861, Multilingual 858, ISO 8859-15 Greek_737.

CSF Bin Select, Default = Bin 1

Appears only when the optional Dual-Bin Cut Sheet Feeder is installed. Use this to switch to Bin 2 as the default.

CSF Type, Default = Wide

To avoid paper jams, change this setting to Narrow if you are using the optional Cut Sheet Feeder on the wide model ML5521 printer.

Diagnostic Test, Default = No

Appears only when the optional Serial Interface is installed. Select YES to perform a diagnostic test of the serial interface.

DRAFT Mode, Default = HSD

Applies only when the Print Mode is set to DRAFT. Selects the draft mode to be used: HSD (High Speed Draft) or SSD (Super Speed Draft).

DSR Signal, Default = Valid

Appears only when the optional Serial Interface is installed. Used with the Ready/Busy protocol (factory default) to select the way your system handles the DSR signal.

DTR Signal, Default = Ready On Power Up

Appears only when the optional Serial Interface is installed. Change to Ready On Select if the DTR signal is required when the printer is selected (leave as Ready On Power Up if the DTR signal is required when the printer is turned ON).

Emulation Mode, Default = IBM PPR

Selects the printer command set (emulation) you want to engage.

ESC SI Pitch, Default = 17 cpi

Sets the character pitch used when the ESC SI command is received.

Form Tear-Off, Default = Off

Choose 500 ms, 1 sec, or 2 sec to turn the Form Tear-Off feature ON and to set the time interval for the printer to wait before advancing the paper.

Graphics, Default = Bi-directional

Change to uni-directional graphics for better registration, but slower printing. With this set for bi-directional, you can optimise the registration using the Print Registration setting in the Menu.

I-Prime, Default = Buffer Print

Determines what the printer will do when it receives the I-Prime signal from the software.

- **Buffer Print**: prints out the buffer contents before resetting.
- **Buffer Clear**: dumps the buffer contents immediately.
- **Invalid**: causes the printer to ignore the I-Prime command. Select this setting if you wish to enter settings through the printer's control panel which will not be automatically

overridden by the software's settings when the I-Prime signal is sent.

Language Set, Default = ASCII

Replaces certain standard symbols with special characters used in foreign languages.

Line Spacing, Default = 6 lpi

Change to 8 lines per inch (lpi) to get more lines on a page.

Operator Panel Function, Default = Full Operation

Change to Limited Operation to deactivate the **PRINT QUALITY** and **CHARACTER PITCH** buttons, so that these features can only be controlled through your software. This prevents these from being changed from the control panel when several people are using the printer.

NOTE

This feature also prevents access to the Menu. To access the Menu in these circumstances, turn the printer off, then hold down the **SEL** key while turning ON the printer.

Page Length, Default = 11-2/3" or 1/2"

Selects the length of the paper you are using. This enables the printer to keep track of the initial printing position (TOF) on each page.

Page Length Control, Default = by Actual Page Length

If you wish to use the Paper End sensor to detect the actual paper end, use **Actual Page Length** setting. If you use "by Menu Setting", the printer will disregard the Paper End (PE) and use the page length as set by the menu.

Page Width, Default = 13.6"

Wide carriage model only.

Paper Out Override, Default = No

Senses when less than 1" (25 mm) of paper remains and stops printing. Change to Yes to override the sensor and print closer to the bottom of the page.

CAUTION!

Engaging Paper Out Override can cause loss of data and damage the printhead by allowing printing without paper.

Parity, Default = None

Appears only when the optional Serial Interface is installed. Selects the type of parity your system uses: None, Odd or Even.

Pin 18, Default = +5V

Sets the signal on pin 18 to +5 volts or open.

Pitch, Default = 10 cpi

Choose the character width in characters per inch (cpi).

Power Save Time, Default = 5 min.

Sets the interval the printer waits for more data before it goes into the power save mode. Power Saving must be set to Enable (the factory default) for this to be effective.

Power Saving, Default = Enable

Change to Disable if you wish to prevent the printer from entering the Power Save mode after the selected interval.

Print Mode, Default = Utility

Choose the quality and typeface of printing. Switch to NLQ Courier or NLQ Gothic for Near Letter Quality printing. If you are printing draft-type documents, select DRAFT, then select either HSD or SSD under DRAFT Mode. Both of these Items are in the Font Group.

Print Registration, Default = 0

Change the setting as required to obtain the best registration for bi-directional printing.

Print Suppress Effective, Default = Yes

If your system uses the DC1 and DC3 codes for something other than the print suppress mode, change the setting to **No**.

Proportional Spacing, Default = No

Change the setting to Yes to engage proportional spacing of characters.

Protocol, Default = Ready/Busy

Appears only if the optional Serial Interface is installed. Change to X-ON / X-OFF if that is the type of protocol your system uses.

Receive Buffer Size, Default = 64K

Selects the amount of memory devoted to holding received data. Choosing 1 Line will tie up your computer while printing, but if you abort the print job, the printer will stop much sooner.

Reset Inhibit, Default = No

Select Yes if you wish the printer to ignore the reset command sent by software. This prevents your software from changing the settings you make through the front panel controls or through printer commands.

NOTE

This will also prevent your software from clearing out existing settings when you finish printing one document and switch to another.

Serial Data 7/8 Bits, Default = 8 Bits

Appears only if the optional Serial Interface is installed. Change to 7 Bits if your system uses a 7-bit data format.

SI Select Pitch 10 cpi, Default = 17.1 cpi

IBM emulation only. Sets the pitch to be engaged when the printer control panel is set for 10 cpi and the SI command is received.

SI Select Pitch 12 cpi, Default = 20 cpi

IBM emulation only. Sets the pitch to be engaged when the printer control panel is set for 12 cpi and the SI command is received.

Size, Default = Single

Change to Double for double width and height printing.

Skip Over Perforation, Default = No

Change to Yes if you want the printer to go to the next page when it comes within 1" (25 mm) of the bottom of the page. Keep it set to No if your software has its own page formatting controls.

Style, Default = Normal

Change to Italics if you want the printed characters to be slanted.

Time Out Print, Default = Valid

If your software spends a long time processing between portions of data it feeds to the printer, change the setting to Invalid to keep your printer from dumping the received data while it is waiting for more.

MAINTENANCE

REPLACING THE RIBBON CARTRIDGE

Important!

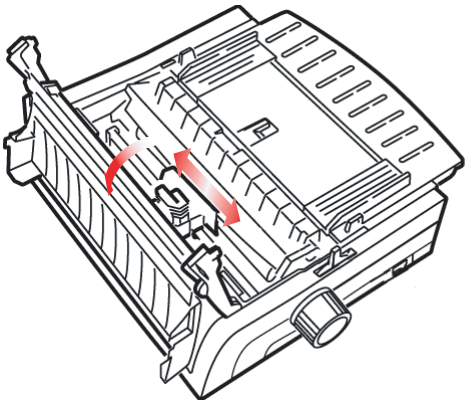
Make sure you have the correct replacement ribbon for your printer. The wrong ribbon will not print when installed in your printer. Look for the printer model number on the ribbon package.

Ribbon Cartridge Handling

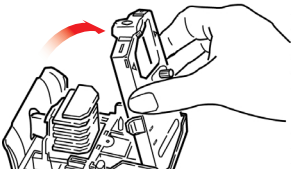
- Leave unused ribbon cartridges in their packages until needed.
- Careful; the ribbon ink may cause permanent stains.
- Ribbon ink on skin or clothing can usually be removed with soap and water.

Make sure the printer is turned OFF.

1. Open the access cover and center the printhead.



2. Swing the used ribbon cartridge up off the printhead, lift it out, and discard it.



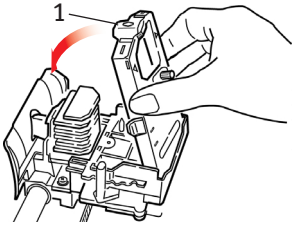
WARNING!

The printhead may be HOT.

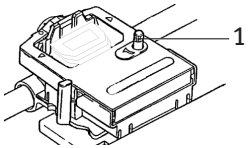
3. Unpack the new ribbon cartridge and install it.

Important!

Do not remove the ribbon shield (1) from the ribbon!



4. Turn the take-up knob (1) in the direction of the arrow to take up any ribbon slack.



5. Close the access cover and turn the printer back on.

If ribbon should contact the eyes:

Flush eyes with large quantities of water for 15 minutes, keeping eyelids open with fingers. Seek medical attention.

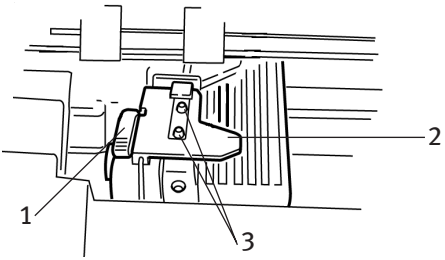
If ribbon should contact the skin

Wash thoroughly with soap and water.

LOADING PAPER

REAR FEED

If you have any paper in the paper path, remove it before installing rear feed paper.



1. Lock Lever

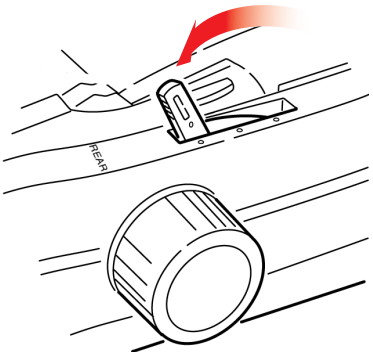
2. Upper Tractor Cover

3. Pins

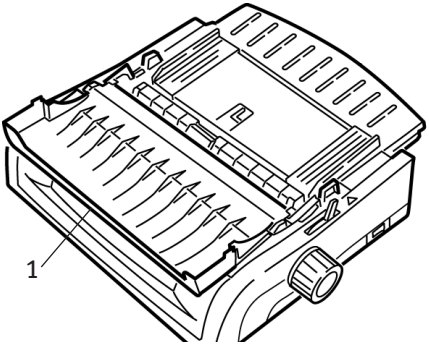
Loading Rear Feed Paper from the *Back* of the Printer

These instructions assume you have ready access to the back of the printer. If you do not, go to "Loading Rear Feed Paper from the Front of the Printer."

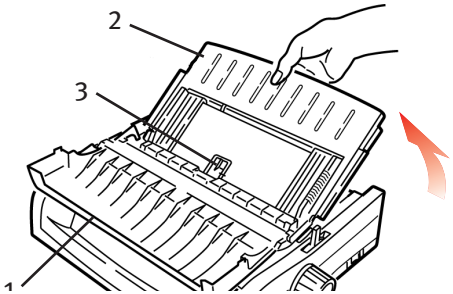
Make sure the paper lever is forward (position marked "REAR").



1. Open the access cover (1).

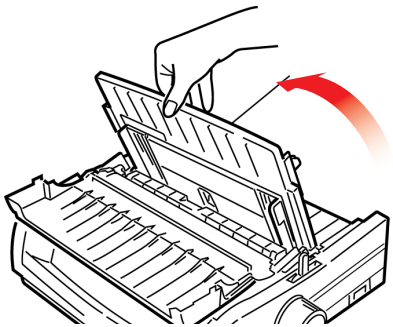


2. Grasp the sheet guide. Lift it slightly, then slide it back.

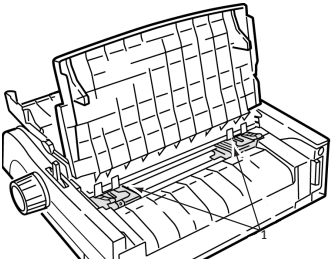


3. Pivot the sheet guide forward and gently rest it against the roller assembly.

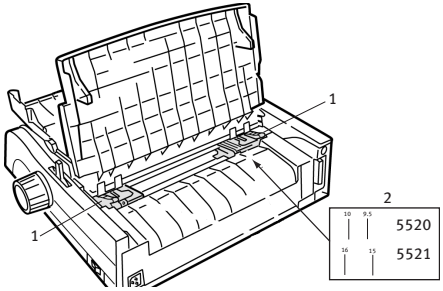
Careful! *If you push the sheet guide too hard against the roller assembly, it may dislodge it. If it does, be sure to reseat the roller assembly before continuing.*



4. From the back of the printer, locate the tractors (1).



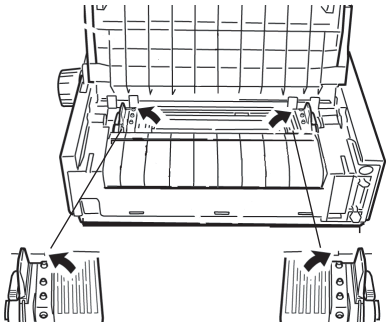
5. Open the lock levers (1) and move the right tractor (*as viewed from the back of the printer*) to the reference mark (2) matching the width of the paper you are loading. Then close the lock lever on the right tractor:



NOTE

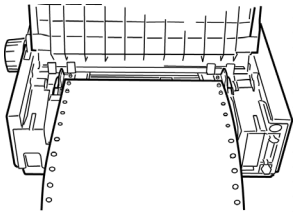
The movement of the right tractor is limited to ensure that the paper covers the paper sensor.

6. Open the tractor covers.

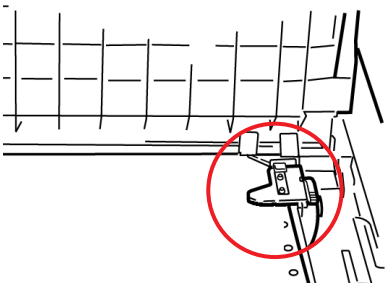


7. Place continuous forms paper on the first two pins of either tractor.

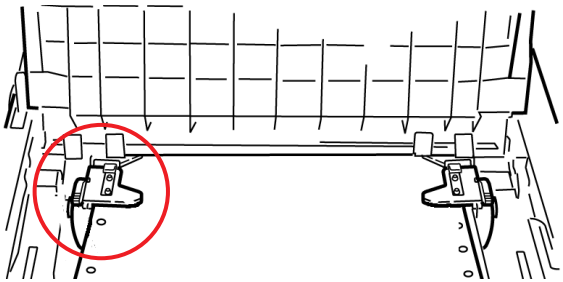
Important! You must keep the number of paper holes engaged on either pin the same. If you don't the paper will skew and jam.



8. Close the right tractor cover.



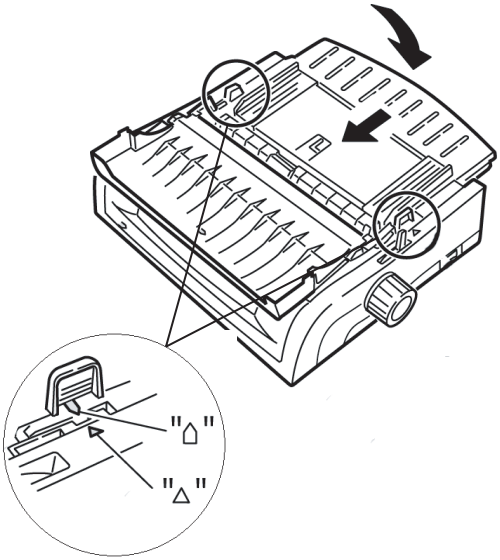
9. Adjust the left tractor until the holes in the paper are centred on the pins then lock the lever and close the left tractor cover.



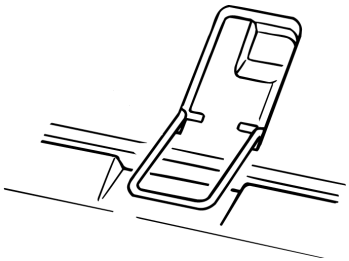
NOTE

If the paper is too loose, or too tight, it can cause jams.

10. Lower the sheet guide and slide it towards the front of the printer until the marks align.



11. Place the wire guide in the sheet guide on the pull-up roller assembly.



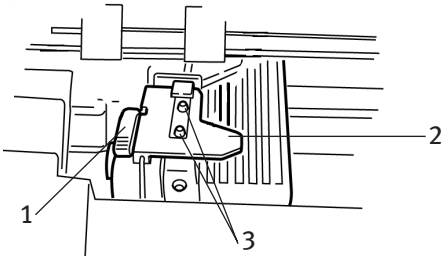
12. Press **FF/LOAD**.

NOTE

The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page. To change the setting, see “Top of Form (TOF)” in the previous chapter.

Loading Rear Feed Paper from the *Front* of the Printer

These instructions assume that you do not have ready access to the back of the printer. If you do, go back to "Loading Rear Feed Paper from the Rear of the Printer" earlier in this chapter.

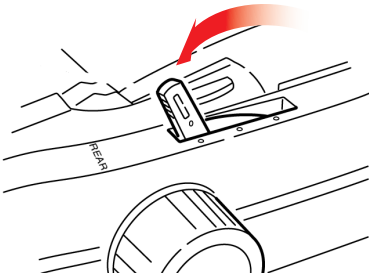


1. Lock Lever

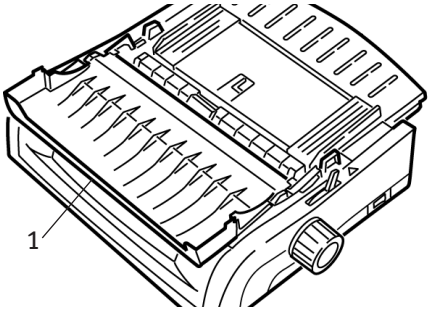
2. Upper Tractor Cover

3. Pins

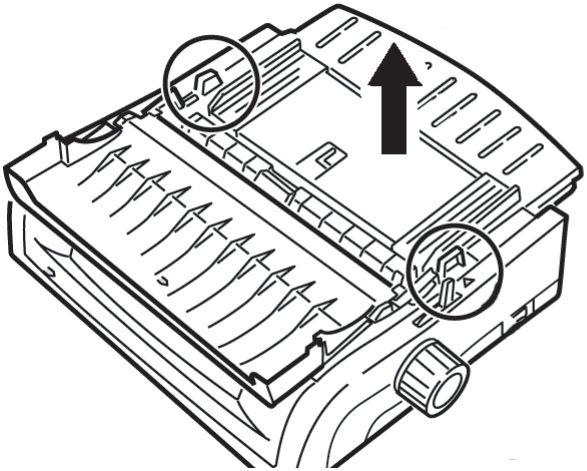
Make sure the paper lever is forward (position marked "REAR").



1. Open the access cover (1).



2. Grasp the tabs and lift off the sheet guide.

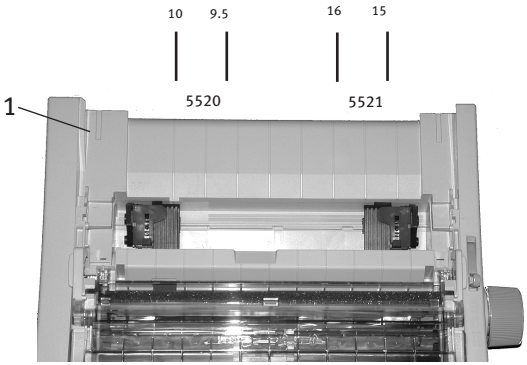


3. Pull up on the lock levers to release them.

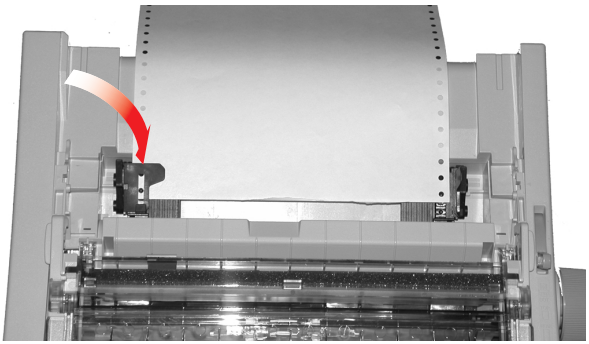
NOTE

The movement of the left tractor (as viewed from the front of the printer) is restricted to ensure that the paper covers the paper out sensor.

4. Move the left tractor to the position to match your paper size and push back on the lever to lock it in place, then move the right tractor to fit the width of the paper. You will find reference marks (1 in illustration below) on the printer for the two most common paper sizes:



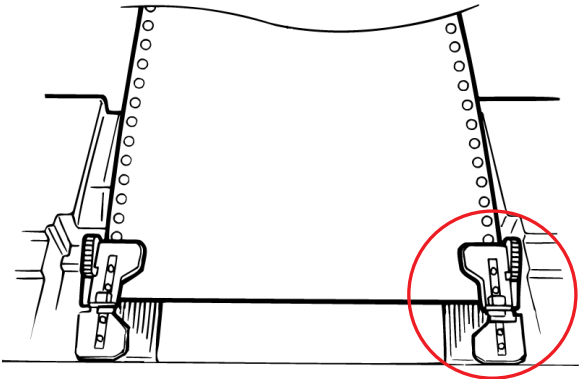
5. Open the tractor covers and place continuous forms paper on the first two pins of either tractor, then close the *left* tractor cover.



NOTE

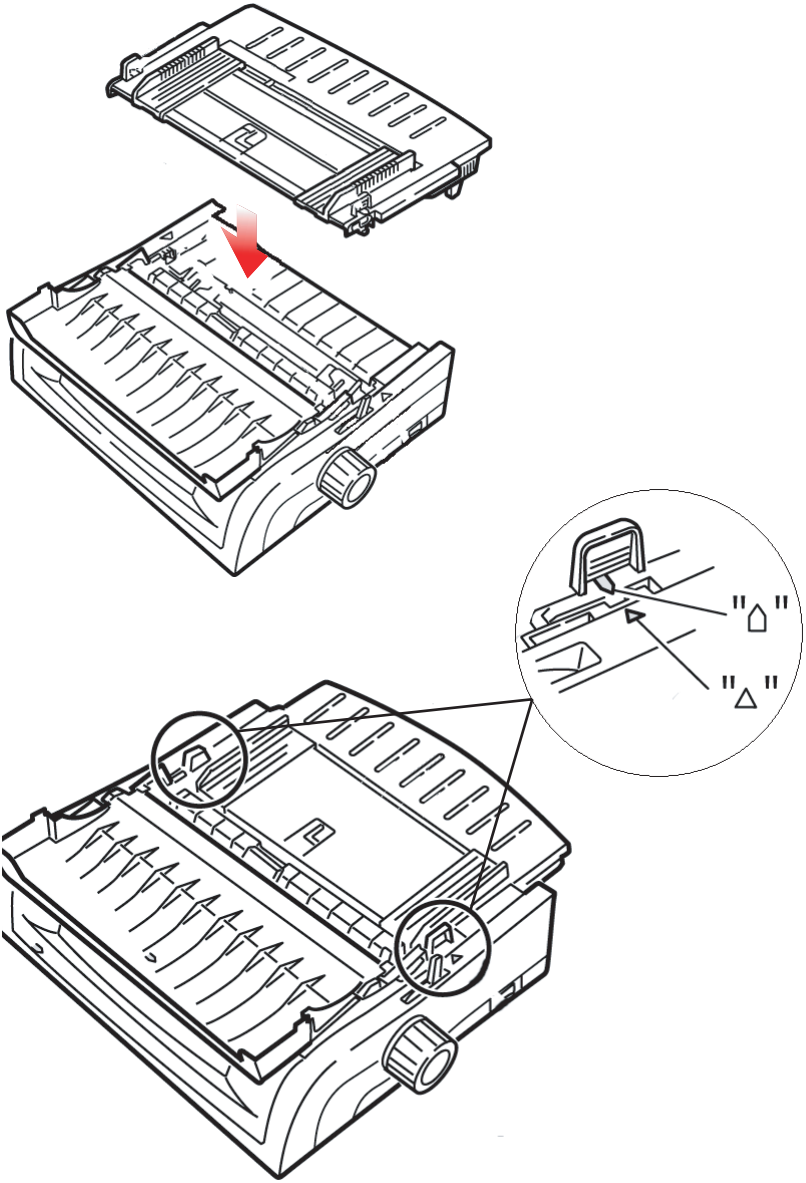
You must keep the number of paper holes engaged on either pin the same. If you don't the paper will skew and jam.

6. Adjust the position of the right tractor to centre the holes in the paper on the pins. Then, close the right tractor cover and push back the lock lever. Do not stretch the paper.

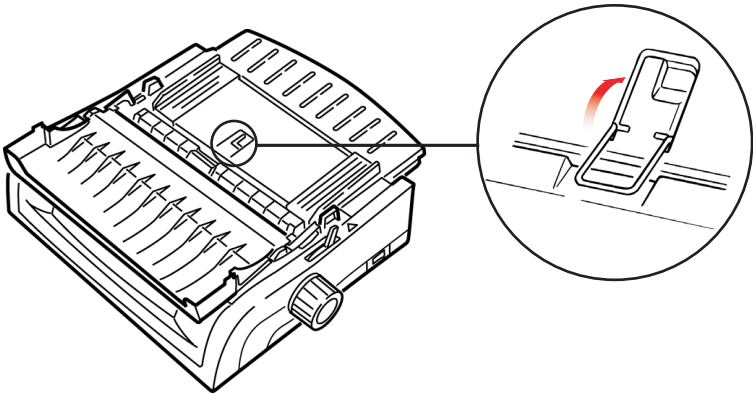


If the paper is too loose or too tight it can cause jams.

7. Reinstall the sheet feeder.



8. Place the wire guide (1) in the sheet guide on the pull-up roller assembly.



9. Press **FF/LOAD**.

NOTE

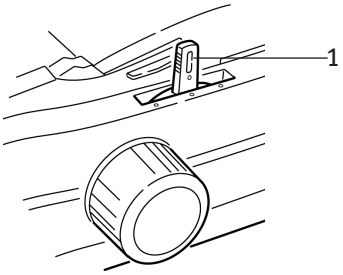
The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page. To change the setting, see “Top of Form (TOF)” in the previous Chapter.

TOP FEED (SINGLE SHEETS)

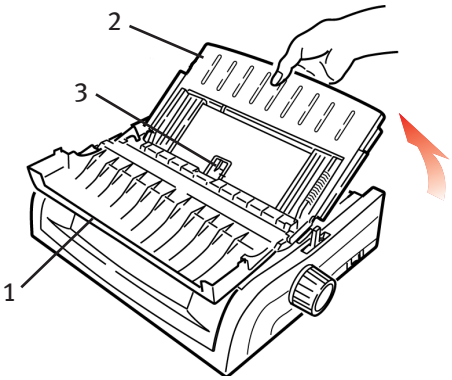
If you have continuous form paper in the path, press **PARK** to remove it before loading single sheets.

Make sure the printer is on and deselected (**SEL** light off).

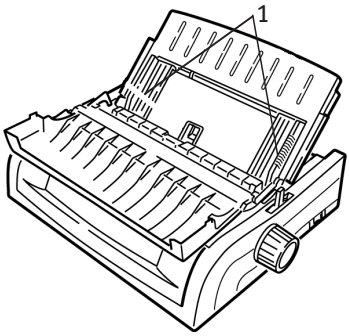
1. Move the paper lever (1) to the centre position (marked "TOP").



2. Open the acoustic cover (1) and raise the sheet guide (2) to the single-sheet position. Pivot the wire feed guide (3) up into the sheet guide.



3. Adjust the paper feed guides (1) for the width of the paper, then place a sheet of paper in the separator. The paper will feed into the printer.



NOTES

› If the paper does not feed in, remove it. Check the paper lever position. Make sure the **ALARM** light is ON: if it is flashing, hold the **SHIFT** key and press the **CHARACTER PITCH**/**RESET** key. Reload the sheet of paper.

› The factory default setting for the Top of Form (where the printing should begin) is 1" down from the top of the page. To change the setting, see “Top of Form (TOF)” in the previous chapter.

CLEARING PAPER JAMS

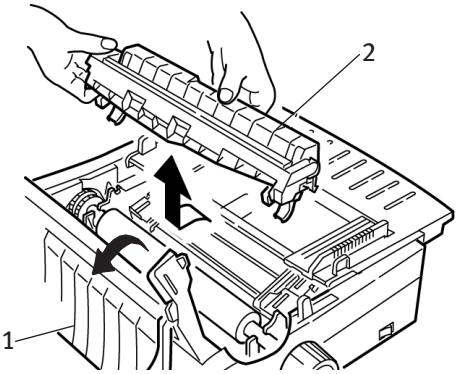
REAR FEED JAMS

1. Turn the printer OFF.
2. Use the platen knob to back the paper all the way out of the printer.

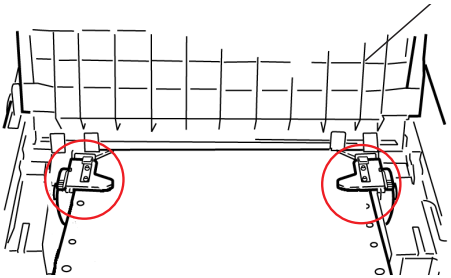
CAUTION!

Make sure the printer is turned OFF before you open the access cover.

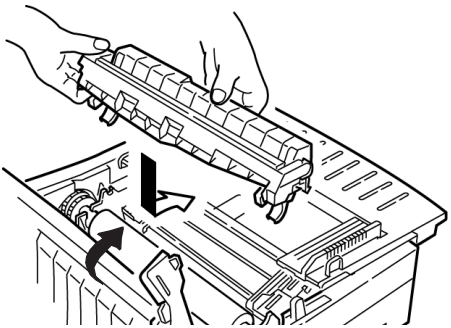
3. Open the access cover (1) and remove the pull-up roller assembly (2). Remove any torn paper.



4. Lift the sheet guide (1) and reload paper. Make sure you lock the tractor covers.



5. Lower the sheet guide, then install the pull-up roller assembly and close the access cover.



6. Turn the printer ON and press **FF/LOAD**.

REAR FEED, REPEATING PAPER JAMS

If the paper keeps jamming, you may have:

- defective paper
- misaligned paper
- bits of paper stuck in the paper path

Defective Paper

Replace the defective paper with a fresh stack.

Misaligned Paper

1. Turn off the printer.
2. Use the platen knob to back the paper all the way out of the printer.
3. Tear off a couple of sheets of paper, leaving a new, clean, square-cut edge.
4. Reload the paper and turn the printer back on.

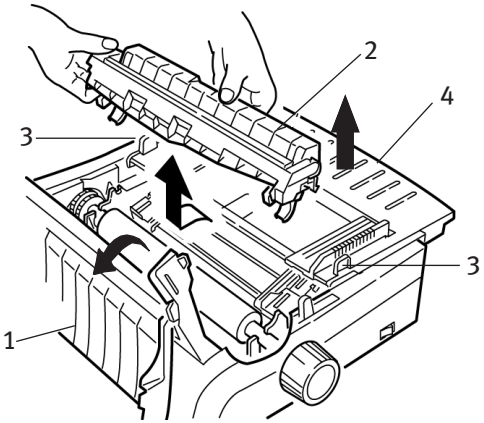
Fragments of Paper in the Paper Path

1. Turn off the printer.
2. Use the platen knob to back the paper all the way out of the printer.

CAUTION!

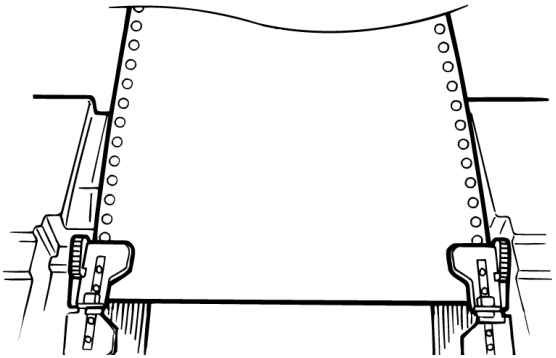
Make sure the printer is turned OFF before you open the access cover.

3. Open the access cover (1) and remove the pull-up roller assembly (2). Then grasp the tabs (3) on the sheet guide (4) and lift it off the printer.



4. Remove any torn pieces of paper.

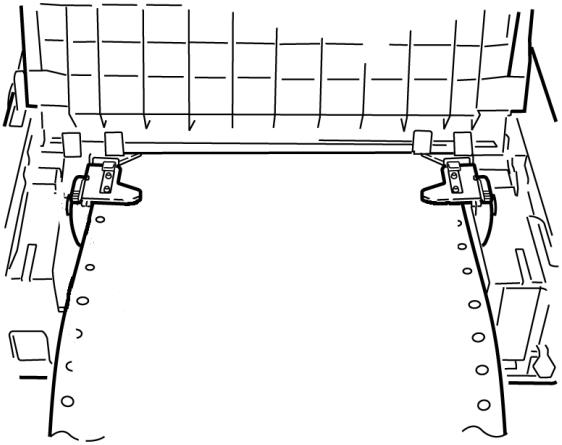
5. Fold some continuous-form paper over three times to make a page four sheets thick. Then, load it on the tractors and close and lock the covers.



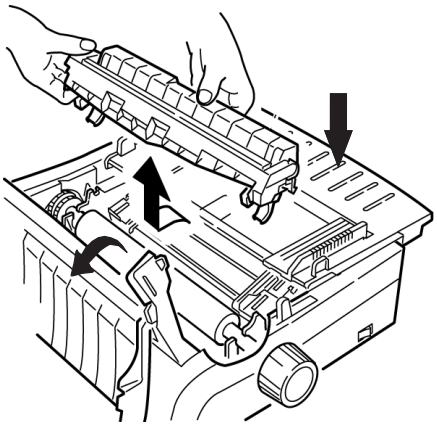
6. Use the platen knob to draw the quadruple-thick page around the platen. This brings out jammed pieces of paper.

7. Remove the paper pieces. Then, use the platen knob to back the paper out.

8. Load standard paper, close and lock the tractor covers.



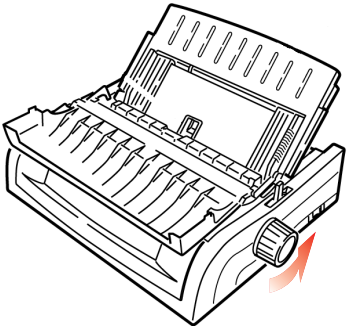
9. Install the sheet guide, then install the pull-up roller assembly and close the access cover.



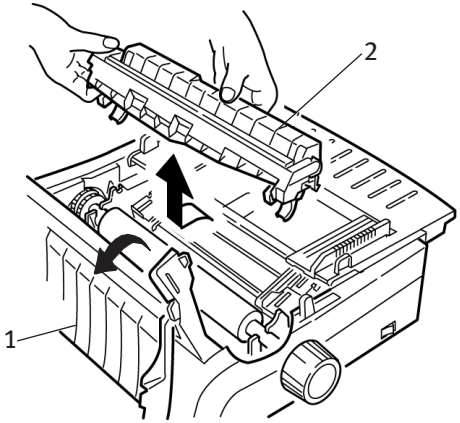
10. Turn the printer on and press **FF/LOAD**.

SINGLE SHEET PAPER JAMS

1. Turn off the printer.
2. Use the platen knob to back the paper out.



3. Open the access cover (1) and remove the pull-up roller assembly (2).



4. Remove any torn pieces from around the carriage.
5. Reinstall the pull-up roller assembly and close the access cover.

CLEANING THE HOUSING

You should clean the printer housing every six months (or after about 300 hours of operation).

CAUTION!

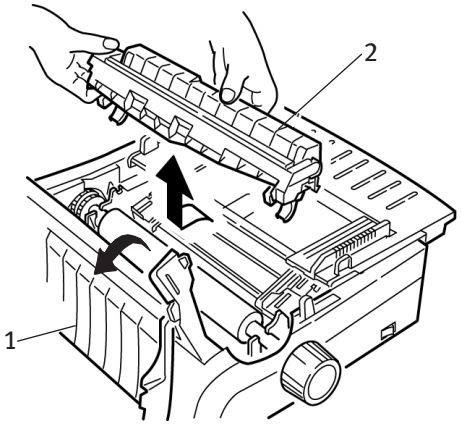
Never use strong solvents or strong detergents on the cabinet—they could damage the housing.

1. Turn off the printer.
2. Use the platen knob to back the paper out of the printer.

CAUTION!

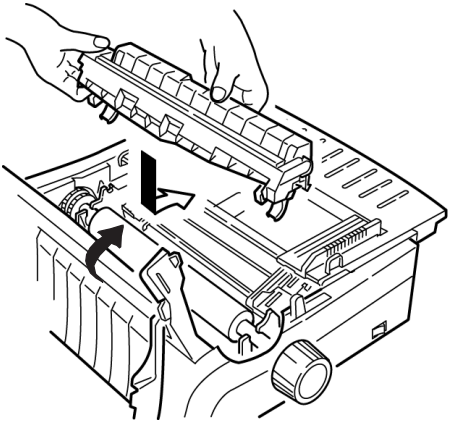
Make sure the printer is turned off before you open the access cover.

3. Open the access cover (1) and remove the pull-up roller assembly (2).



4. Use a clean, dry cloth to dust around the carriage shaft and platen. Remove any loose bits of paper.

5. Reinstall the pull-up roller assembly and close the access cover.



TROUBLESHOOTING

GENERAL INFORMATION

Here are some general things to check before proceeding with detailed troubleshooting.

- Is the printer plugged in and turned ON?
- Are the connections (power and interface) secure?
- Is the product being operated under the proper ambient conditions?
- Does the paper being used meet the specifications for this product?
- Is the paper properly installed?
- Is the ribbon properly installed?
- Is an Oki ribbon being used?
- Is the printhead gap correctly set?
- Are the correct printer drivers being used for the printer?

NOTE

› Settings in your software application will normally override any settings in your printer driver.

› Printer driver settings normally override settings from the printer menu or printer front panel.

Problem

My word processor files do not print the way I have the menu and front panel set.

Solution

Remember:

- Settings in your software application can override settings in your printer driver.

- Your printer driver settings can override any settings from the printer menu or printer front panel.

Before sending a file to the printer, many word processors send either an “initialization string” or an **I-Prime** signal to the printer.

The initialization string contains codes that override the panel and menu settings. To change your printer to ignore the reset code, enter the **Menu Mode**, go to the **Set-Up** group and change the setting for **Reset Inhibit** to **Yes**.

The I-Prime signal will automatically override any front panel settings you have made. To eliminate this problem, enter the **Menu Mode**, go to the **Parallel Interface** group and change the setting for **I-Prime** to **Invalid**.

For more information on changing menu settings, see “Changing the Menu Settings” in Chapter 3.

Problem

Nothing happens when I turn ON the printer.

Solution

Check the power cord connection to the outlet and to the printer. If you are using a power strip, make sure it is turned ON, and that the fuse hasn’t blown or that the circuit breaker hasn’t tripped.

Problem

The printer does not print when the computer sends data.

Solutions

1. Is the **SEL** light on? If not, press the **SEL** key.
2. Check that the interface cable is securely connected to both the printer and the computer.
3. If you have the optional serial interface board installed, check to be sure that it is firmly seated in the printer.

Problem

I'm getting strange symbols, incorrect fonts, etc., when I try to print a document.

Solutions

1. Check to be sure that the printer driver you have selected in your software matches the printer emulation.
2. Press **SHIFT** and **SEL** keys, then press **GROUP** key.

   This will print a line showing the emulation you have selected.
3. If you have embedded any printer commands in your software, check to be sure that you entered them correctly.

Problem

Ink smears on the paper when I print narrow columns.

Solution

This may be caused by excessive printhead travel from the centering position. Enter the Menu and set the Centring Position to **MODE 1**. See "Using Your Printer, Menu Mode."

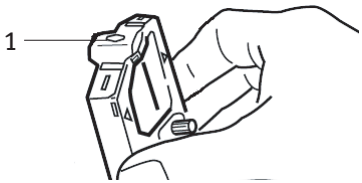
For the wide carriage printer, if MODE 1 doesn't work, try setting the Centering Position to **MODE 2**.

Problem

I've installed a new ribbon and the printing is smeared and streaked.

Solution

The ribbon shield (1) is either loose or missing.



Remove the ribbon cartridge and check the ribbon shield.

If it is loose, secure it.

If it is missing, find it and install it.

Problem

There are dots missing in my printouts.

Solution

The head gap may not be set correctly. Try moving the headgap lever to a lower setting. If that doesn't help, the printhead may be damaged; call for service.

Problem

*The **ALARM** light is flashing.*

Solution

Try turning the printer **OFF** and then back **ON** again. If the light still blinks, call for service.

Problem

*The **ALARM** light is ON and the **Character Pitch 10** light is flashing.*

Solution

This indicates that the paper lever is set at the wrong position for the paper you are trying to use. Move it to the proper setting.

Problem

*The **ALARM** light is ON and the **Character Pitch 15** light is flashing.*

Solution

This indicates a paper jam. Press the **SEL** key and correct the paper jam situation. See "Clearing Paper Jams," in Chapter 3.

Problem

*The printer needs paper. The **ALARM** is not ON and I can't load paper.*

Solution

1. Press and release the **SEL** key.
2. Press and hold the **SHIFT** key and press the **RESET** / **CHARACTER PITCH** key.

The **ALARM** light illuminates and you can now load paper.

Problem

Continuous-form paper sticks to the sheet guide.

Solution

In cold dry weather, static charges can build up and make the paper cling to the sheet guide. Try moving the paper guides together so that the paper rests on the guides rather than on the separator.

Problem

The Print Quality and Character Pitch keys on the front panel don't work.

Solution

The Operator Panel Function in the printer menu can be used to disable these buttons (Limited Function). If the printer is part of a customized system or if it is used by a number of people, the system manager may have used this option to make sure the printer is always set properly.

Check with your system manager before changing any menu settings.

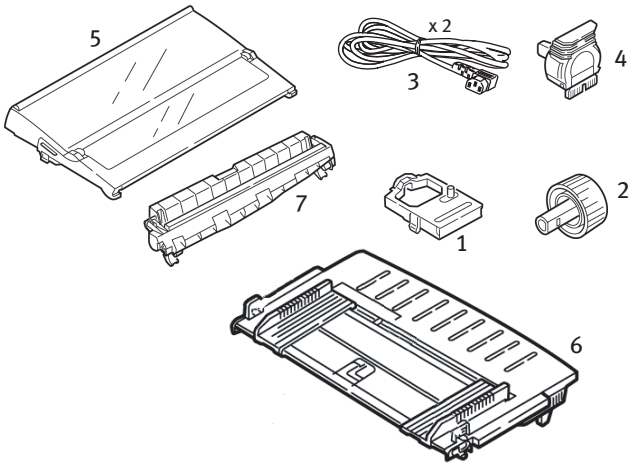
PARTS AND ACCESSORIES

Purchasing Parts & Accessories

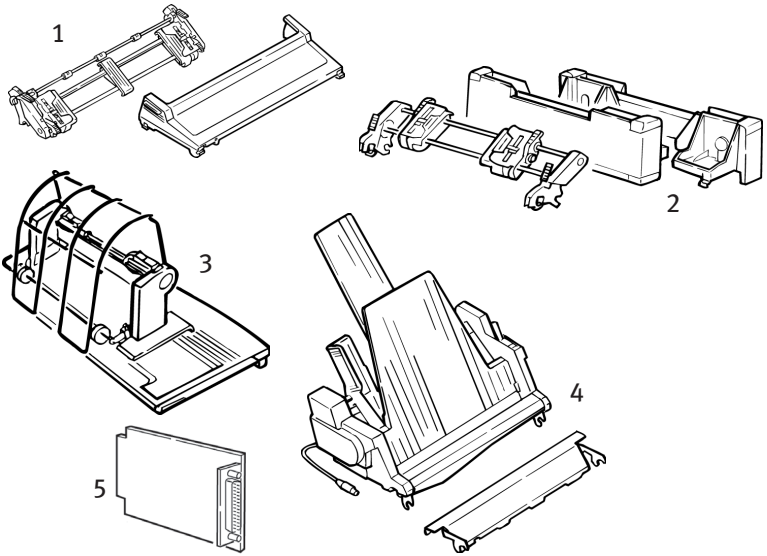
Before you purchase parts and accessories, make a note of your printer model number (see the front of the unit) and have the correct part number and description of the item you wish to purchase. Item descriptions and part numbers are provided in this section.

- Consult the dealer where you purchased your printer.
- Locate an Authorised Oki Reseller by visiting your local Oki web site. Links to all countries are provided on:

http://www.okieurope.com



Item	Part number ML5520	Part number ML5521
Ribbon Cartridge (1)	01126301	01126301
Platen Knob (2)	2PP4025-2871P021	2PP4025-2871P021
Power Cord (3) - Euro UK	YS4011-1272P001 YS4011-1273P001	
Printhead (4)	41923901	41923901
Access Cover (5)	42115401	42115301
Sheet Guide (6)	1PA4094-7305G010	1PA4094-7308G011
Pull-up Roller Assembly (7)	42044701	42045701



Option	Part number ML5520	Part number ML5521
Pull Tractor, Top-Mount (1)	09002365	09002369
Push Tractor, Bottom-Mount (2)	09002366	09002370
Roll Paper Stand (3)	09002332	N/A
Cut Sheet Feeder (4)		
Single Bin	09000691	09000695
Dual Bin	09000692	09000696
Serial Interface RS232C (5)	09002351	09002351

PRINTER CONTROL CODES

This section lists the most commonly used printer control codes.

You will find a comprehensive listing of the control codes (English only) on your Printer CD.

To access it:

1. Place the CD in your CD-ROM drive and wait for it to AutoPlay.
2. Select your printer model, then click **Continue**.
3. Click **Documentation** and follow the on-screen prompts to view the file.

IBM PROPRINTER III COMMANDS

IBM Command	ASCII	Decimal
Backspace	BS	8
Carriage Return	CR	13
Character Pitch:		
Select 10 cpi	DC2	18
Select 12 cpi	ESC:	27 58
Select 15 cpi	ESC G	27 103
Select condensed Print	ESC SI, or SI	27 15, OR 15
Character Sets:		
IBM Set I	ESC 7	27 55
IBM Set II	ESC 6	27 54
Publisher	ESC ! Z	27 33 90
Slashed Zero	ESC ! @	27 33 64
Unslashed Zero	ESC ! A	27 33 65
Double Width ON	ESC W 1	27 87 49
Double Width OFF	ESC W 0	27 87 48
Emphasised Printing ON	ESC E	27 69
Emphasised Printing OFF	ESC F	27 70
Enhanced Printing ON	ESC G	27 71
Enhanced Printing OFF	ESC H	27 72
Form Feed	FF	12
Form Length:		
n inches (n = 1 to 255)	ESC C NUL n	27 67 0 n
n lines (n = 1 to 255)	ESC C n	27 67 n
Horizontal Tab, Execute	HT	9

IBM Command	ASCII	Decimal
Italics ON	ESC % G	27 37 71
Italics OFF	ESC % H	27 37 72
Line Feed, Execute:		
w/ Carriage Return	LF	10
n/144" (n = 1 to 127)	ESC % 5 n	27 37 53 n
n/216" (n = 0 to 255)	ESC J n	27 74 n
Reverse	ESC]	27 93
Auto Line Feed ON	ESC 5 1	27 53 49
Auto Line Feed OFF	ESC 5 0	27 53 48
Line Spacing:		
Set Spacing to 1/8"	ESC 0	27 48
Set Spacing to 7/72"	ESC 1	27 49
Set Spacing to n/72"	ESC A n	27 65 n
Store Spacing Set by ESC A n	ESC 2	27 50
Set Spacing to n/144" (n = 1 to 127)	ESC % 9 n	27 37 57 n
Set Spacing to n/216" (n = 0 to 255)	ESC 3 n	27 51 n
Overscore ON	ESC _ 1	27 95 49
Overscore OFF	ESC _ 0	27 95 48
Paper Out Sensor OFF	ESC 8	27 56
Paper Out Sensor ON	ESC 9	27 57
Print Quality, Select HSD	ESC # 0	27 35 48
Print Suppress Mode ON		
ML5520	ESC Q ETX	27 81 3
ML5521	ESC Q SYN	27 81 22
Print Suppress Mode Off	DC1	17
Proportional Spacing ON	ESC P 1	27 80 49
Proportional Spacing OFF	ESC P 0	27 80 48
Reset: Clear Print Buffer	CAN	24
Software I-Prime	ESC } NUL	27 125 0
Stop Printing	ESC j	27 106
Subscript ON	ESC S 1	27 83 49
Superscript ON	ESC S 0	27 83 48
Subscript/Superscript OFF	ESC T	27 84
Top of Form,		
Set at Current Position	ESC 4	27 52
Underline Printing ON	ESC - 1	27 45 49
Underline Printing OFF	ESC - 0	27 45 48
Uni-Directional Print ON	ESC U 1	27 85 49
Uni-Directional Print OFF	ESC U 0	27 85 48
Vertical Tab, Execute	VT	11

EPSON FX COMMANDS

Epson Command	ASCII	Decimal
Backspace	BS	8
Carriage Return Execute	CR	13
Character Pitch:		
Select 10 cpi	ESC P	27 80
Select 12 cpi	ESC M	27 77
Select 15 cpi	ESC g	27 103
Begin 10 cpi	ESC SI, or SI	27 15, OR 15
Cancel Condensed Print	DC2	18
Delete	DEL	127
Double Height ON	ESC w 1	27 119 49
Double Height OFF	ESC w 0	27 119 48
Double Width ON	ESC W 1	27 87 49
Double Width OFF	ESC W 0	27 87 48
Emphasised Printing ON	ESC E	27 69
Emphasised Printing OFF	ESC F	27 70
Enhanced Printing ON	ESC G	27 71
Enhanced Printing OFF	ESC H	27 72
Epson Set 1, Select	ESC t 0	27 116 48
Epson Set 2, Select	ESC t 1	27 116 48
Italics Printing ON	ESC 4	27 52
Italics Printing OFF	ESC 5	27 53
Form Feed	FF	12
Form Length:		
n inches (n = 1 to 22)	ESC C NUL n	27 67 0 n
n lines (n = 1 to 127)	ESC C n	27 67 n
Horizontal Tab, Execute	HT	9
Justification:		
Left	ESC a 0	27 97 48
Center	ESC a 1	27 97 49
Right	ESC a 2	27 97 50
Full	ESC a 3	27 97 51
Line Feed, Execute:		
Select 10 cpi	ESC P	27 80
Select 12 cpi	ESC M	27 77
w/ Carriage Return	LF	10
n/216" (n = 0 to 255)	ESC J n	27 74 n
n/144" (n = 1 to 127)	ESC % 5 n	27 37 53 n
Reverse, n/216	ESC j n	27 106

Epson Command	ASCII	Decimal
Line Spacing.		
Set Spacing to:	ESC % 9 n	27 37 57 n
n/144" (n = 0 to 127)	ESC 3 n	27 51 n
n/216" (n = 0 to 255)	ESC A n	27 65 n
n/72" (n=0 to 85 or 0 to 213)	ESC 2	27 50
1/6"	ESC 0	27 48
1/8"	ESC 1	27 49 n
7/72"		
Paper Out Sensor OFF	ESC 8	27 56
Paper Out Sensor ON	ESC 9	27 57
Print Quality/Font:		
Select HSD/SSD		
(depends on setting for Draft Mode)	ESC (0	27 40 48
Select NLQ	ESC x	27 107 48
Select Courier (NLQ only)	ESC k	27 107 49
Select Gothic (NLQ only)	ESC k 1	27 115 49
Select UTL	ESC x 0	27 115 48
Print Speed:		
Half-Speed ON	ESC s 1	27 115 49
Half-Speed OFF	ESC s 0	27 115 48
Print Suppress Mode ON	DC3	19
Print Suppress Mode OFF	DC1	17
Proportional Spacing ON	ESC p 1	27 112 49
Proportional Spacing OFF	ESC p 0	27 112 48
Reset Printer:		
Clear Buffer & Initialise	ESC @	27 64
Clear Print Buffer	CAN	24
Skip Over Perforation, Cancel	ESC O	27 79
Software I-Prime	ESC } NUL	27 125 0
Subscript ON	ESC S 1	27 83 49
Superscript ON	ESC S 0	27 83 48
Subscript/Superscript OFF	ESC T	27 84
Underline ON	ESC - 1	27 45 49
Underline OFF	ESC - 0	27 45 48
Uni-Directional Printing:		
One Line only	ESC	27 60
ON	ESC U 1	27 85 49
OFF	ESC U 0	27 85 48
Vertical Tab, Execute	VT	11

OKI MICROLINE STANDARD COMMANDS

OKI COMMAND	ASCII	DECIMAL
Backspace	BS	8
Carriage Return	CR	13
Character Pitch:		
Select 10 cpi	RS	30
Select 12 cpi	FS	28
Select 15 cpi	ESC g	27 103
Select 17.1 cpi	GS	29
Select 20 cpi	ESC # 3	27 35 51
Character Sets:		
Standard	ESC ! 0	27 33 48
Block Graphic	ESC ! 1	27 33 49
Line Graphic	ESC ! 2	27 33 50
Publisher	ESC ! Z	27 33 90
Slashed Zero	ESC ! @	27 33 64
Unslashed Zero	ESC ! A	27 33 64
Double Height ON	ESC US 1	27 31 49
Double Height OFF	ESC US 0	27 31 48
Double Width Printing	US	31
Emphasised Printing ON	ESC T	27 84
Emphasised Printing OFF	ESC I	27 73
Enhanced Printing ON	ESC H	27 71
Enhanced Printing OFF	ESC I	27 73
Form Feed	FF	12
Horizontal Tab, Execute	HT	9
Italics ON	ESC ! /	27 33 47
Italics OFF	ESC ! *	27 33 42
Line Feed, Commands:		
w/ Carriage Return	LF	10
wo/ Carriage Return	ESC DC2	27 18
n/144" (n = 1 to 127)	ESC % 5 n	27 37 53 n
Reverse	ESC LF	27 10
Line Spacing:		
Set Spacing to 1/6"	ESC 6	27 54
Set Spacing to 1/8"	ESC 8	27 56
Set Spacing to n/144" (n = 1 to 127)	ESC % 9 n	27 37 57 n
Skip Over Perforation:		
1/3" increments (n = 1 to 9)	ESC g n n	27 71 nn
Default	ESC % S O	27 37 83 48

Oki Command	ASCII	Decimal
Paper Out Sensor OFF	ESC E 1	27 69 49
Paper Out Sensor ON	ESC E 0	27 69 48
Print Quality:		
Select HSD	ESC # 0	27 35 48
Select NLQ Courier	ESC 1	27 49
Select NLQ Gothic	ESC 3	27 51
Select Utility	ESC 0	27 48
Print Speed:		
Set to Full	ESC ›	27 62
Set to Half	ESC ‹	27 60
Print Suppress ON	DC3	19
Print Suppress OFF	DC1	17
Proportional Printing:		
ON	ESC Y	27 89
OFF	ESCZ	27 90
Reset: Clear Print Buffer	CAN	24
Shift-In	SI	15
Shift-Out	SO	14
Software I-Prime	ESC } NUL	27 125 0
Subscript Printing ON	ESC L	27 76
Subscript Printing OFF	ESC M	27 77
Superscript Printing ON	ESC J	27 74
Superscript Printing OFF	ESC K	27 75
Underline Printing ON	ESC - C	27 67
Underline Printing OFF	ESC - D	27 68
Uni-Directional Print ON	ESC -	27 45
Uni-Directional Print OFF	ESC =	27 61
Vertical Tab, Execute	VT	11

SPECIFICATIONS

Item	Specification
Print Method	Impact dot matrix
Printhead	9 pins, 0.30 mm (0.0118") diameter, with thermal protection
Interfaces:	
Standard:	Centronics parallel, IEEE-1284 compliant USB 1.1
Optional:	RS-232C Serial
Receive Buffer Size	Maximum 128K
Reliability	
Ribbon Life	4 million characters, on average, 10 cpi utility
Printhead Life	200 million characters average in 10 cpi utility mode at 25% duty and 35% page density
Mean Time Between Failures (MTBF)	20,000 hours at 25% duty cycle and 35% page density
Mean Time to Repair (MTTR)	15 minutes
Emulations (co-resident)	IBM Proprinter III Epson FX Oki MICROLINE Standard

Print Speed	**Speed***
Super Speed Draft	570 cps
High Speed Draft (HSD)	507 cps
Utility	380 cps
Near Letter Quality (NLQ)	95 cps

* cps = characters per second

Characters per Line (cpl) Setting	**ML5520**	**ML5521**
10 cpi	80 cpl	136 cpl
12 cpi	96 cpl	163 cpl
15 cpi	120 cpl	204 cpl
17.1 cpi	137 cpl	233 cpl
20 cpi	160 cpl	272 cpl

Graphics Resolution	**Density**	**Max. Resolution (dpi)**
IBM, Epson	Single	60 x 216
	Double	120 x 216
	Quadruple	240 x 216
Oki Microline	Single	72 x 72
	Double	144 x 144
	Quadruple	288 x 144

* dpi = Dots per Inch

Item	Specification
Resident Fonts	
Near Letter Quality	Courier, Gothic
Utility	Gothic
High Speed Draft	Gothic
Super Speed Draft	Gothic
Bar Codes	Code 39 UPC A, UPC E EAN 8, EAN 13 Interleaved 2 of 5 Code 128 Postnet
Paper Thickness: Tractor Feed	
Rear Feed:	0.014" (0.36 mm) max.
Bottom Feed*:	0.017" (0.44 mm) max.
*requires optional push or pull tractor.	

Item	Specification
Paper Specifications:	
Single (Cut) Sheets	
Feed:	Top only
Weight:	14 to 24 lb. US Bond (52.6 to 90 g/m^2)
Width Range:	***ML5520***: 7.2" to 8.5" (183 to 216 mm) ***ML5521***: 7.2" to 14.3" (183 to 363.2 mm)
Single-part, continuous forms	
Feed:	Rear, Bottom*
Weight:	12 to 24 lb. US Bond (45 to 90 g/m^2)
Width Range:	***ML5520***: 3" to 10" (76.2 to 254 mm) ***ML5521***: 3" to 16" (76.2 to 406.4 mm)
Carbonless continuous forms (orig. + 4 copies)	
Feed:	Rear, Bottom*
Weight:	9 to 11 lb.
Width Range:	***ML5520***: 3" to 10" (76.2 to 254 mm) ***ML5521***: 3" to 16" (76.2 to 406.4 mm)
Interleaf continuous forms (orig. + 4 copies)	
Feed:	Rear, Bottom*
Weight:	10 to 12 lb. paper, 9 lb carbon
Width Range:	***ML5520***: 3" to 10" (76.2 to 254 mm) ***ML5521***: 3" to 16" (76.2 to 406.4 mm)
Labels	
Feed:	Bottom* only
Weight:	Not applicable
Width Range:	***ML5520***: 3" to 10" (76.2 to 254 mm) ***ML5521***: 3" to 16" (76.2 to 406.4 mm)
Envelopes, single feed	
Feed:	Top only
Weight:	Max. 24 lb.
Width Range:	6.5" to 9.5" (165 to 241 mm)
Envelopes, continuous feed, (non-overlap type)	
Feed:	Bottom* only
Weight:	Max. 24 lb.
Width Range:	6.5" to 9.5" (165 to 241 mm)
Card Stock	
Feed:	Bottom only*
Weight:	Max. 100 lb. Index (180 g/m^2)
Width Range:	Not applicable
	* Bottom feed requires optional pull or push tractor

Item	Specification
Environmental Requirements	
Temperature	
Operating:	41 to 95°F (5 to 36°C)
Storage:	14 to 122°F (-10 to 50°C)
Humidity	
Operating:	20 to 80% RH
Storage:	5 to 95% RH
Electrical Requirements	230 ac, (+15%, -14 %) 50 or 60 Hz (±2%) 58W - typical, 10W - idle
Physical Specifications	
ML5520	
Size (WxDxH*):	17.1" x 16.1" x 6"* (434 x 409 x 153 mm*)
Weight:	16.7 lbs. (7.6 kg)
ML5521	
Size (WxDxH*):	23.1" x 16.1" x 6"* (588 x 409 x 153 mm*)
Weight:	21.1 lbs. (9.6 kg)
	*Height dimensions do not include the acoustic cover.

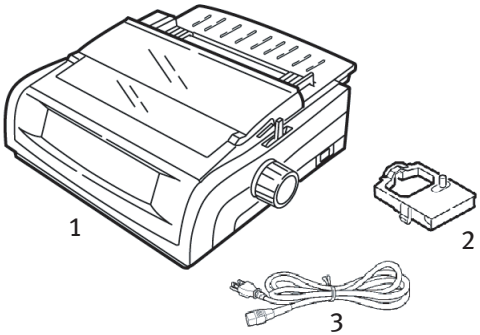
SETTING UP YOUR PRINTER

LOCATION

- Place your printer on a firm, solid surface.
- Allow enough space around the printer to easily access the platen knob and the various paper feed paths.
- Make sure a suitable grounded power outlet is available nearby.

UNPACKING

- If any items are missing, contact your dealer immediately.
- Keep your packing materials and carton in case you ever need to ship or transport the printer.
- Interface cable and paper are sold separately.

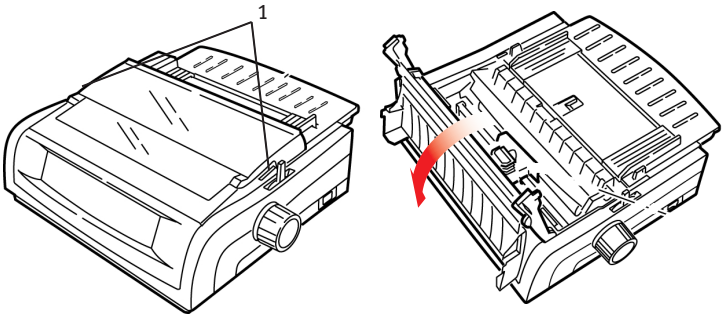


1. Printer

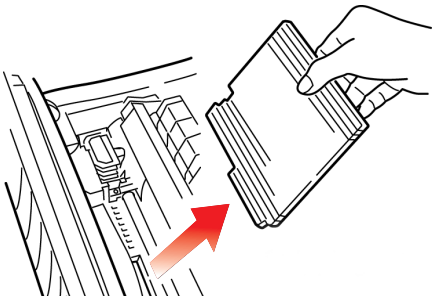
2. Ribbon Cartridge

3. Power Cord

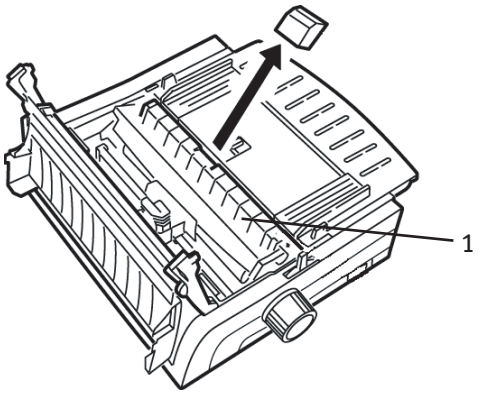
1. Remove any packing tape, then grasp the tabs (1) at either end of the access cover and pivot it towards the front of the printer as far as it will go.



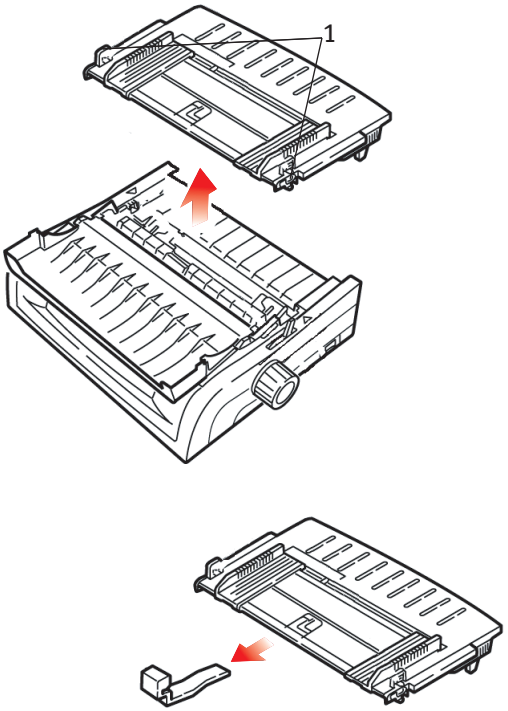
2. Remove the printhead shipping restraint.



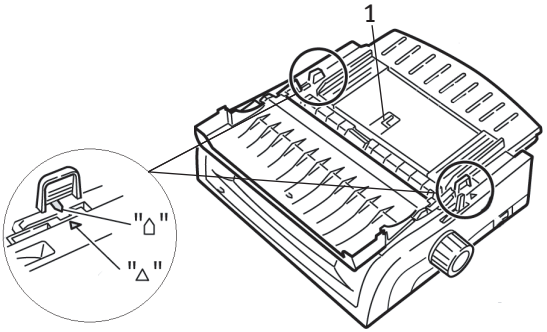
3. Remove the shipping restraint from the pull-up roller assembly (1).



4. Use the tabs (1) to lift and remove the sheet guide, then remove the shipping restraint.



5. Reinstall the sheet guide: insert the clips on either side of the separator into the notches marked with a triangle, then press down to secure the separator in place.



INSTALLING THE RIBBON CARTRIDGE

CAUTION!

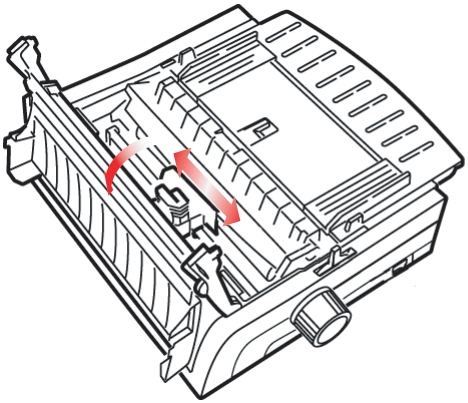
Make sure you have the correct replacement ribbon for your printer. The wrong ribbon will not print when installed in your printer.

RIBBON CARTRIDGE HANDLING

- Leave unused ribbon cartridges in their packages until needed.
- Careful; the ribbon ink may cause permanent stains.
- Ribbon ink on skin or clothing can usually be removed with soap and water.

Make sure the printer is turned OFF.

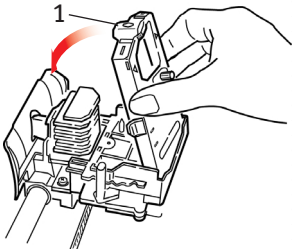
1. Open the access cover and center the printhead (1).



WARNING!

The printhead may be HOT.

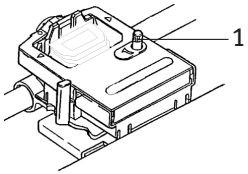
2. Unpack the new ribbon cartridge and install it on the printhead.



CAUTION!

Do not remove the ribbon shield (1) from the ribbon!

3. Turn the take-up knob (1) in the direction of the molded-in arrow to take up any ribbon slack.

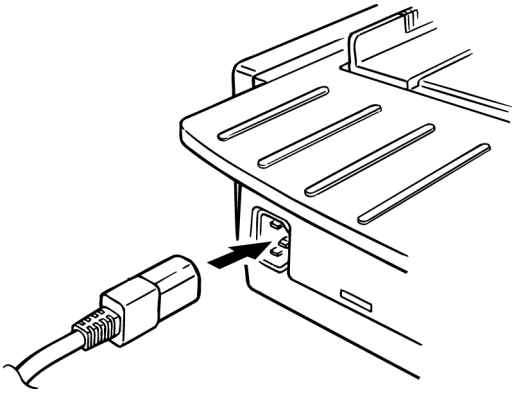


4. Close the access cover and turn the printer ON.

POWER CONNECTION

Make sure both the printer and the computer are switched OFF.

1. Plug the power cord into the back of the printer, then into a grounded outlet.



2. Turn on the printer.

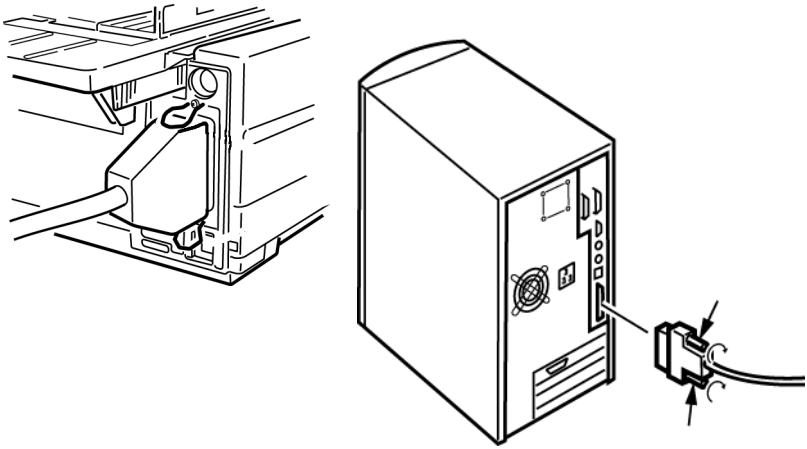
COMPUTER CONNECTIONS

PARALLEL (LPT), IEEE 1284

- Requires a bi-directional cable, max. length 6 ft. (1.8 m), not supplied.
- Printer has a 36-pin socket

Make sure the printer and computer are both turned OFF.

1. Attach a suitable *bi-directional* cable to the parallel connector on the back of the printer. Then attach and secure the cable to your computer.



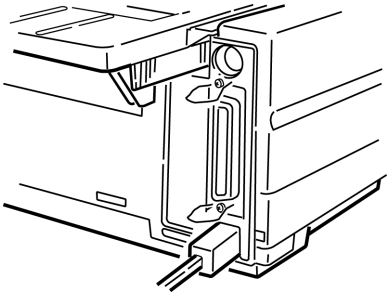
2. Turn the printer and computer back ON.

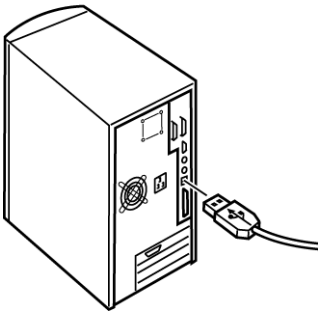
USB, SPECIFICATION 1.1 COMPLIANT

- Requires a USB 1.1 cable, maximum length 19.7 ft. (5 m), not supplied.
- Printer has a USB series “B” receptacle.

Make sure the printer and computer are both turned OFF.

3. Attach a suitable USB cable to the printer. Then attach the cable to your computer.





4. Turn the computer and printer back on.

LOADING PAPER

For instructions on loading paper, see “Loading Paper” in the chapter on “Maintenance”.

TESTING THE PRINTER

- Font Sample Test
- Rolling ASCII Test
- Hexadecimal Dump Mode

Font Sample Test

The Font Sample Test prints a sample of the fonts standard to the printer.

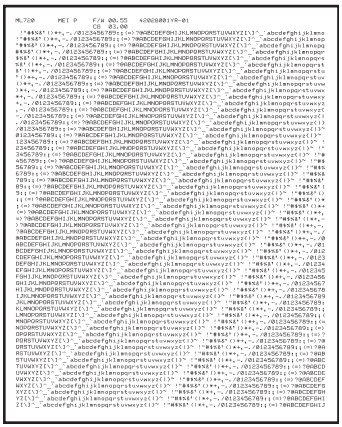
The top of the printout shows the Printer Model, Emulation, Country Code, Interface, and Firmware Revision Level.

Make sure paper is loaded.

1. Turn the printer OFF.
2. Press and hold the **LF** key while turning the printer back ON.

The printer will print a page of font samples and the test ends.

Rolling ASCII Test



CAUTION!

Wide carriage Model ML5521:

If you are using 8.5 inch paper to run the tests, make sure the paper width selection in the printer menu is set to 8.5 inches. Otherwise, printing on the platen may damage the printer. See the chapter on "Menu Mode" for more information.

The Rolling ASCII Print Test produces a continuous printout of all 96 ASCII characters in a rolling pattern in whatever typeface is selected (default = LQ Courier).

The top of the printout shows the Printer Model, Emulation, Country Code, and Firmware Revision Level.

Make sure continuous forms paper is loaded.

1. Turn the printer OFF.
2. Press and hold the **QUIET/TOF** key while turning the printer back ON. (If the printer comes on without starting the Rolling ASCII test print, you did not hold the QUIET/TOF key long enough.)

   The printer prints the rolling ASCII text continuously.
3. Press **SEL** to end the test.

Hexadecimal Dump Mode

When the printer is placed in the Hexadecimal Dump Mode, all data received, including text and printer commands, is printed in both hexadecimal and ASCII formats.

For example, the following line of BASIC code

```
LPRINT CHR$ (27);"0";CHR$ (30);"THIS IS AN EXAMPLE OF A
HEXADECIMAL DUMP."
```

would print like this:

```
1B  30  1E  54  68  69  73  20  69  73  20  61  6E  20  65  78  .0.This is an ex
61  6D  70  6C  65  20  6F  66  20  61  20  68  65  78  61  64  ample of a hexad
65  63  69  6D  61  6C  20  64  75  6D  70  2E  0D  0A          ecimal dump...
```

NOTE

In the ASCII format, all non-printable characters are represented by a period.

To engage the Hexadecimal Dump Mode:

Make sure paper is loaded.

1. Turn the printer OFF.
2. Hold the **SEL** and **FF/LOAD** keys for several seconds while turning on the printer.

To exit the Hexadecimal Dump Mode:

1. Press the **SEL** key.
   or

   Turn the printer off, then on again.

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