

User's Guide

ML3320

ML3321

ML3390

ML3391



PREFACE

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

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

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

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Other product names and brand names are registered trademarks or trademarks of their proprietors.



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

Note: Not comply (when employing Network Interface Card).



This product complies with the requirements of the Council Directives 2004/108/EC (EMC), 2006/95/EC (LVD) and 2011/65/EU (ROHS) as amended where applicable on the approximation of the laws of the member states relating to electromagnetic compatibility, low voltage and restriction of hazardous substances.

This product complies with EN55022 Class B. However, when fitted with the optional network interface card, RS-232 C serial interface card or optional cut-sheet feeder, compliance to EN55022 is class A. In a domestic environment this configuration may cause radio interference, in which case the user may be required to take adequate measures.

The following cables were used to evaluate this product to achieve EMC directive 2004/108/EC compliance and configurations other than this may affect that compliance.

CABLE TYPE	LENGTH (METRE)	CORE	SHIELD
Power	1.8	x	x
USB	5.0	x	✓
Serial	1.5	x	✓
Parallel	5.0	x	x
Lan	2.1	x	✓

MANUFACTURER

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

ENVIRONMENTAL INFORMATION



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NOTES, CAUTIONS AND WARNINGS

NOTE

A note provides additional information to supplement the main text.

CAUTION!

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

WARNING!

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

For the protection of your product, and in order to ensure that you benefit from its full functionality, this model has been designed to operate only with genuine original ribbon cartridge. Any other ribbon cartridge may not operate at all, even if it is described as "compatible", and if it does work, your product's performance and print quality may be degraded.

Use of non-genuine products may invalidate your warranty.

Specifications subject to change without notice. All trademarks acknowledged.

INTRODUCTION

Congratulations on purchasing this printer!

This printer series is designed to provide highly reliable letter quality printing and high resolution graphics for the desktop/office printing environment. It combines state-of-the-art, 9-pin (ML3320ECO/ML3321ECO) and 24-pin (ML3390ECO/ML3391ECO), serial impact dot matrix printing technology with advanced materials and superior construction to provide high performance and versatility in a desktop sized unit. Careful attention to ergonomics and application needs provides user friendly operation for operators of varying technical capabilities.

ABOUT THIS GUIDE

This manual is your user's guide (check the web site, www.okiprintingsolutions.com, for the most up-to-date version) for your printer and forms part of the overall user support listed below:

- > **Installation Safety booklet:** provides information as to safe use of the printer.
This is a paper document that is packaged with the printer and should be read before setting up your printer.
- > **Set-up guide:** to describe how to unpack, connect and turn on your printer.
This is a paper document that is packaged with the printer.
- > This **User's Guide:** to help you to become familiar with your printer and make the best use of its many features. Also included are guidelines for troubleshooting and maintenance to ensure that it performs at its best.
This is an electronic document stored on the manuals CD.
- > **Network Configuration Guide:** to provide detailed technical information for network administrators to configure the optional accessory network interface.
This is an electronic document stored on the CD that accompanies the network interface card optional accessory.
- > **On-line Help:** on-line information accessible from the printer driver and utility software.

ON-LINE USAGE

This guide is intended to be read on screen using an Adobe Acrobat Reader. Use the navigation and viewing tools provided in Acrobat.

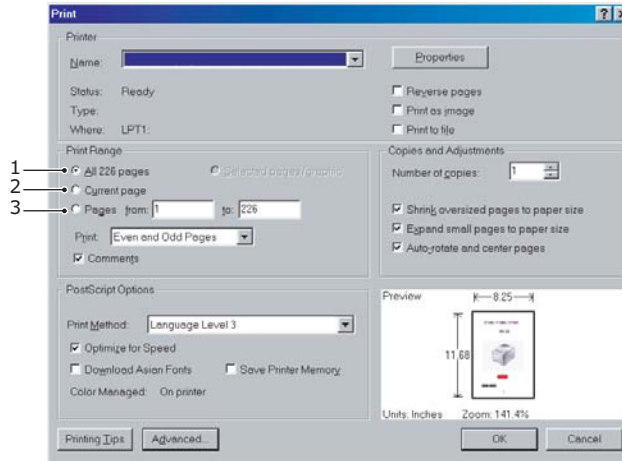
You can access specific information in two ways:

- > In the list of bookmarks down the left hand side of your screen, click on the topic of interest to jump to the required topic. (If the bookmarks are not available, use the ["Contents" on page 4.](#))
- > In the list of bookmarks, click on Index to jump to the Index. (If the bookmarks are not available, use the ["Contents" on page 4.](#)) Find the term of interest in the alphabetically arranged index and click on the associated page number to jump to the page containing the term.

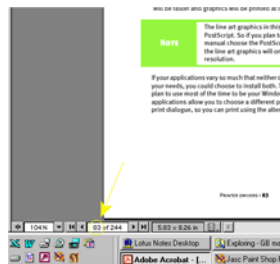
PRINTING PAGES

The whole manual, individual pages, or sections may be printed. The procedure is:

1. From the toolbar, select **File**, then **Print** (or press the **Ctrl + P keys**).
2. Choose which pages you wish to print:
 - (a) **All pages**, (1), for the entire manual.
 - (b) **Current page**, (2), for the page at which you are looking.
 - (c) **Pages from and to**, (3), for the range of pages you specify by entering their page numbers.



- (c) **Pages from and to**, (3), for the range of pages you specify by entering their page numbers.



3. Click on **OK**.

GETTING STARTED

WARNING!

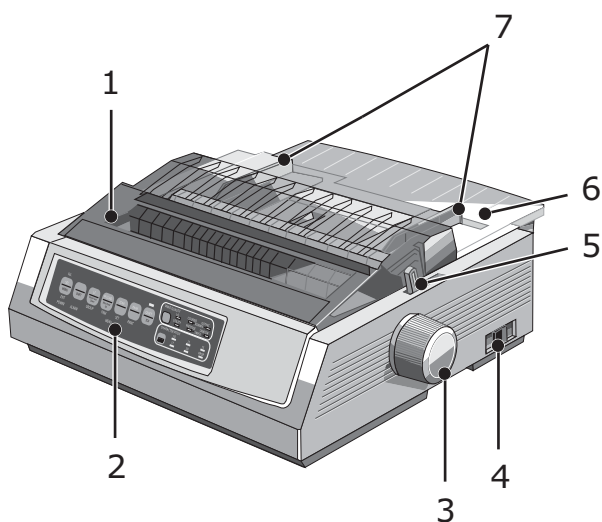
If you have not already done so, familiarise yourself with the content of the Installation Safety booklet supplied with your printer.

RETAINING PACKING MATERIALS

After setting up your printer according to the instructions in the Set-up Guide, retain your packing materials and container in case you ever need to ship or transport your printer.

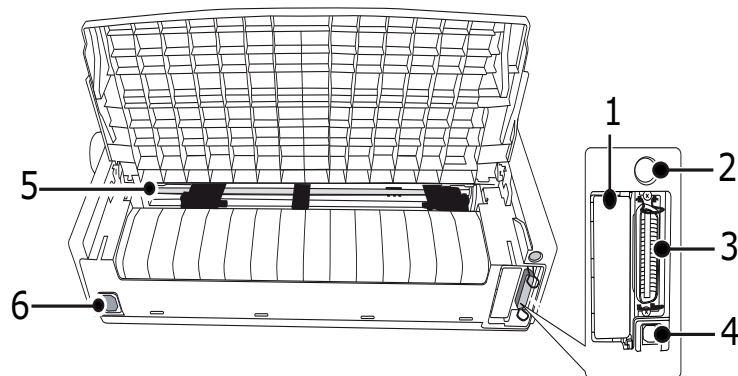
IDENTIFYING COMPONENT PARTS

FRONT VIEW



- 1.** Access cover: open and close for access, for example when changing a ribbon cartridge. Keep closed for noise reduction.
- 2.** Control panel: contains button switches and indicators (described in detail later) that allow you to operate the printer.
- 3.** Platen knob: turn to move or eject the paper.
- 4.** Power switch: to turn the printer ON/OFF.
- 5.** Paper lever: set according to the type of paper used - cut sheet or continuous forms.
- 6.** Paper separator: to hold cut sheet paper for use by the printer (one sheet at a time).
- 7.** Paper guides: adjust to suit the width of the cut sheet paper.

REAR VIEW



1. Optional connector position: connect to optional accessory serial interface card or 100Base-TX/10Base-T network card.
2. Cut-sheet feeder/ Roll Paper stand connector: connect the optional cut-sheet feeder or the roll paper stand.
3. Parallel connector: connect to parallel interface connector.
4. USB connector: connect to USB interface cable.
5. Pin Tractor: to load and feed continuous forms.
6. Power connector: connect to printer power cable.

LOCATING YOUR PRINTER

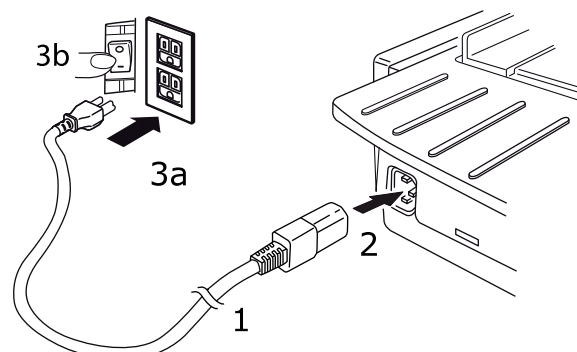
- > Select a firm solid surface on which to site your printer.
- > Allow enough space around your printer (e.g. at least 60cm from any wall) for easy access to the platen knob and the various paper feed paths.
- > Make sure a grounded power outlet is available nearby.

POWERING ON YOUR PRINTER

WARNING!

Operations of this equipment are not warranted when the equipment is connected to UPS (Uninterruptible Power Supply) and/or inverter. Doing so may result in damage of this equipment. Do not use an UPS and/or inverter.

1. Ensure that your printer power switch is set to OFF.
2. Connect the power cable connector (1) to the A/C Input (2) on the printer.



3. Connect the power cable to a 220/240 V A/C power outlet (3a) and switch on the outlet power (3b).

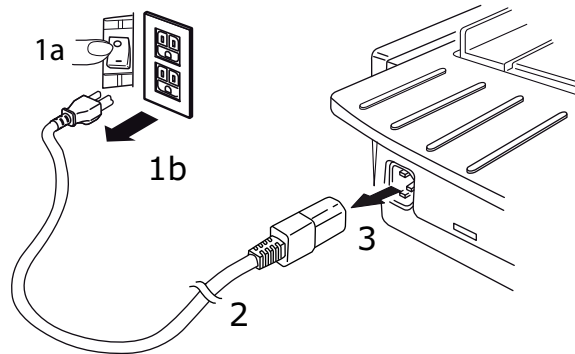
WARNING!

Be careful when inserting a three-pronged AC plug. Before plugging it in, check the position of the FG terminal. Incorrect insertion may cause damage not only to the printer main body but also peripheral devices and electric shock, smoke and ignition.

4. Turn the printer power switch ON.
5. Check that the power indicator on the control panel illuminates.

POWERING OFF YOUR PRINTER

1. Turn the printer Power Switch to OFF.
2. Switch off the outlet power (1a) and then unplug from the power outlet (1b).



3. Unplug the power cable connector (2) from the printer (3).

CONNECTING TO YOUR PRINTER

INTERFACES

Your printer is equipped with two standard data interfaces:

CAUTION!

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

- > Parallel: for direct connection to a PC. This port requires a bi-directional (IEEE 1284 compliant) parallel cable.
- > USB: for connection to a PC running Windows 2000 or above. This port requires a shielded cable 5m long conforming to USB version 2.0.

NOTE

Interface cables are not supplied with your printer.

The following interfaces are available as optional accessories and are described in their accompanying installation documentation:

- > RS232 C Serial interface
- > 100Base-TX/10Base-T network connection

NOTE

- > *Refer to the Network Configuration Guide for setting up the network connection.*
 - > *It is not recommended that you use either the Parallel or USB port when the RS-232 C or Network Interface option is installed in this printer.*
-

INTERCONNECTION

1. Ensure that both printer and computer are turned OFF.
2. Connect the required interface cable, USB, Parallel, Serial or Network to the printer and then to the computer.
3. Turn ON the printer and then turn ON the computer.

PRINTER DRIVERS

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

IBM PROPRINTER III	EPSON FX	MICROLINE STANDARD
ML3320/1 IBM	ML3320/1 Epson	Microline 320/321
IBM Proprinter III	Epson FX286e	Microline 320/321
IBM Proprinter II	Epson FX 850/1050	Microline 320/321
IBM Proprinter	Epson FX 86/286	Microline 292/293
IBM Graphics Printer	Epson FX	Microline 192/193
	Epson FX800/1000	Microline 182/183

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 Setup.exe and click OK.

1. Select your **Language**.
2. Click I agree to accept the terms of the Software Licence Agreement.
3. When the Menu Installer window appears, click the **Install Driver** button.
4. Follow the on-screen instructions.

Emulations

The factory default emulation for your printer is:

MODEL	EMULATION (DEFAULT)
ML3320ECO/ML3321ECO	IBM PPR
ML3390ECO/ML3391ECO	EPSON LQ

If you wish to change to other emulations, see ["Selecting an emulation" on page 21](#).

PRINTING FROM A COMPUTER

When printing to your printer from, for example, a Windows application on your computer, make your printing selections from the driver windows that appear on screen. These driver windows have been designed to be easy to use and intuitive while supplementary on-line help is available by clicking each window help button.

OKI DIPUS

The **OKI DIPUS** utility allows you remote access to the printer settings using the available applications. You can access DIPUS from **Start > All Programs > Okidata > OKI DIPUS**.

CONTROLLING THE PRINTER USING DIPUS

There are four utilities available within **OKI DIPUS**. Each utility provides access to the printer settings from your computer. Using these utilities you can change the button settings, menu settings, top of form settings and also view the current status of the printer. Any changes made can then be uploaded to the printer and it will be saved to the printer as new settings. These utilities are an alternative to the printer operator panel.

Button setup utility

Using this utility you can activate or deactivate buttons on your printer operator panel. Each button and its function is described in a message view.

Menu setup utility

Using this utility you can view and change your printers' Menu settings.

Status monitor

The Status Monitor utility allows you to view your printers' current status for example, On-line, On-line (power saving) and so on. In the event of a printer error occurring, a warning message is also displayed.

TOF setup utility

Using this utility you can now set the first line of print (TOF) for each page. This utility allows you to treat each print job individually.

For detailed information on each utility and the different settings contained within, refer to the on-line help, by clicking each window Help button.

LOADING PAPER

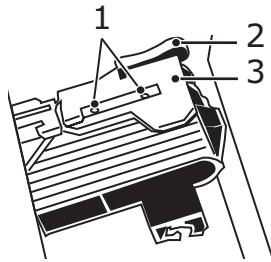
LOADING CONTINUOUS FORMS (REAR FEED)

We recommend the rear-feed path for printing reports, etc., on single-thickness, continuous-form paper. For graphics or charts, it's best to use the single-sheet path (top feed).

NOTE

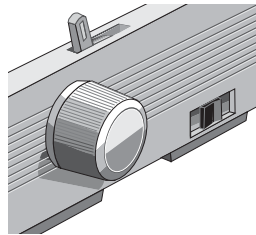
If you have paper in the paper path, be sure to remove it before installing rear-feed paper.

Tractor terms

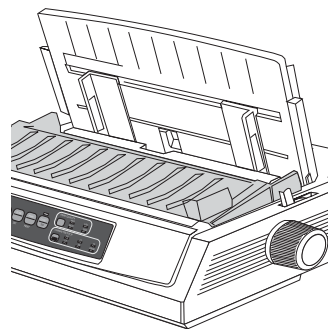
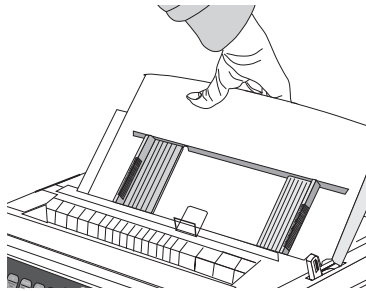


- 1. Pins
- 2. Lock lever
- 3. Tractor cover

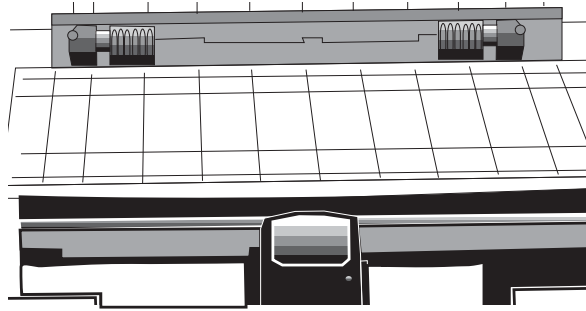
1. Move the paper lever to the position marked "REAR."



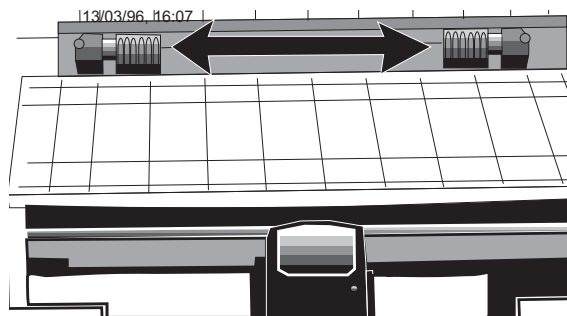
2. Grasp the paper separator, lift it slightly, pull back on it, then swing it forward.



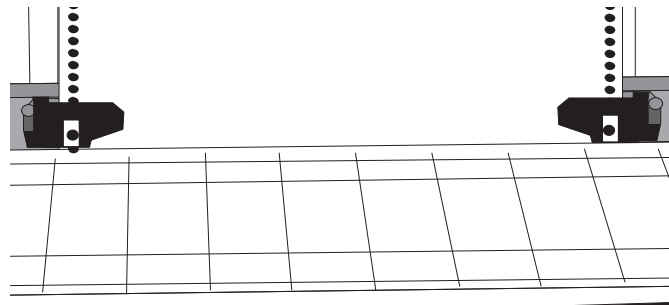
3. Pull up on the lock levers and open the tractor covers.



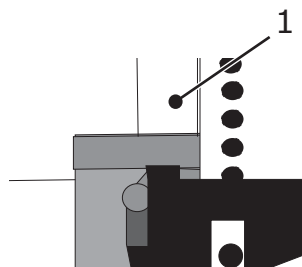
4. Move the right tractor over to fit the width of the paper.



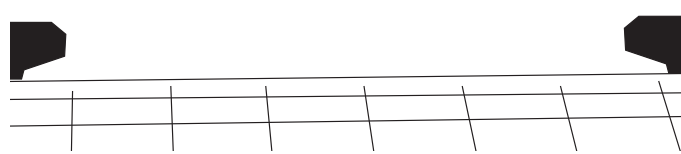
5. Place the first two holes in the paper over the tractor pins on either side and close the tractor covers.



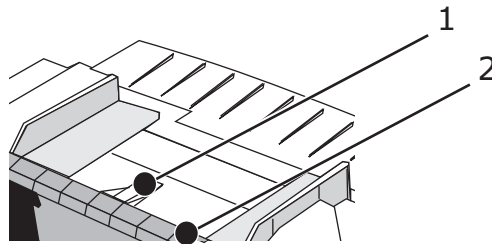
6. Move the left tractor to align the edge of the paper with the appropriate reference mark (1), and push back the lock lever.



7. Adjust the right tractor to centre the paper holes on the pins, and push back the lock lever.



8. Lower the paper separator and place the wire guide (1) on the pull-up roller assembly (2).



9. Press FF/LOAD. The paper feeds into the printer.

NOTE

The standard setting for the Top of Form (where the printing begins) is 2.54cm down from the top of the page. To change the setting, "[Setting the top of form \(TOF\)](#)" on page 19.

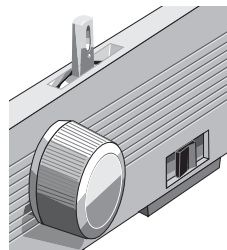
LOADING SINGLE SHEETS (TOP FEED)

Use the single-sheet path for letter head stationery, memos, and individual envelopes. It is recommended for printing graphs and charts because it provides the most accurate control of the paper.

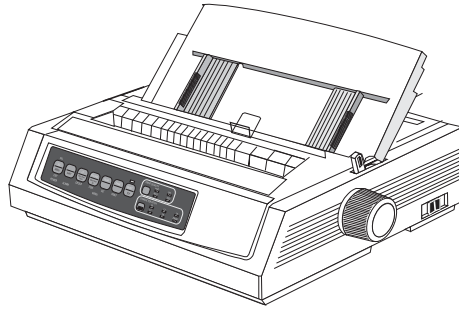
NOTE

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

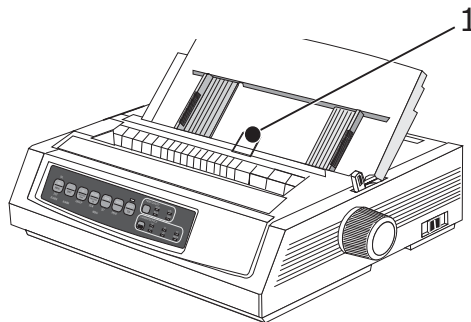
1. Make sure the printer is on and deselected (SEL light off).
2. Place the paper lever in the position marked "TOP".



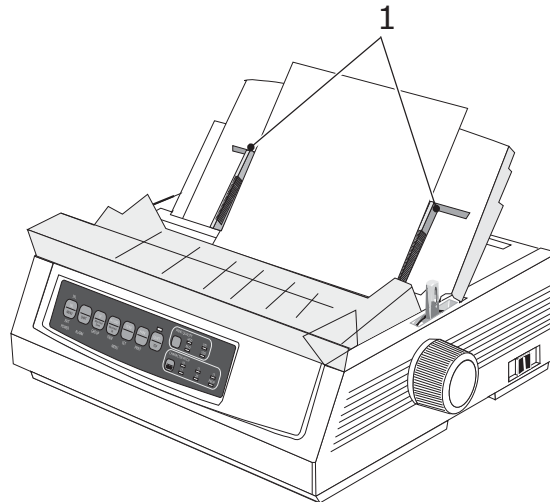
3. Open the carriage cover and lift the paper separator to the single-sheet position.



4. Make sure the wire feed guide (1) is in the paper separator.



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

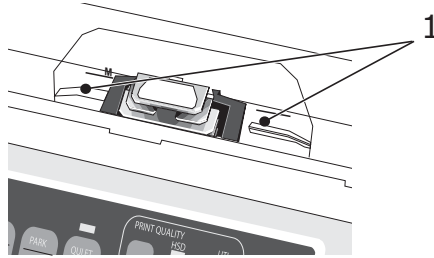


NOTE

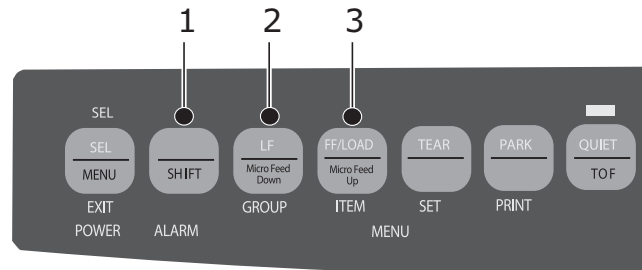
The standard setting for the Top of Form (where the printing begins) is 2.54cm, down from the top of the page. To change the setting, "[Setting the top of form \(TOF\)](#)" on page 19.

SETTING THE TOP OF FORM (TOF)

When setting the Top of Form, use the red line (1) on the paper shield as a reference:



1. Make sure the printer is deselected (SEL light off).
2. Press and hold SHIFT (1), then:
 - (a) Press LF (2) to move Top of Form higher on page
 - (b) Press FF/LOAD (3) to move Top of Form lower on page



3. Press SEL to re-select the printer.



TEMPORARILY CHANGING THE TOP OF FORM SETTING

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

1. Press SEL to deselect the printer.



2. Press LF to change the position of the Top of Form.

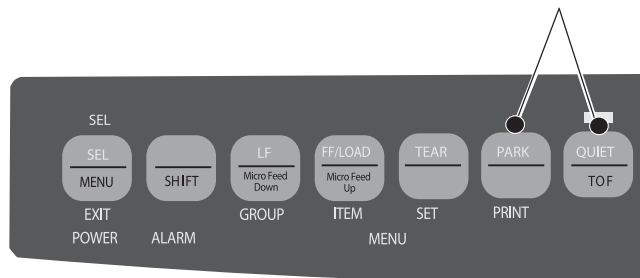


NOTE

This setting will not apply to any following pages.

RESETTING THE TOP OF FORM TO THE STANDARD SETTING

1. Turn the printer off.
2. Hold PARK + QUIET/TOF while turning the printer back on.



Switching paper paths

To switch from continuous-forms to single-sheet feed:

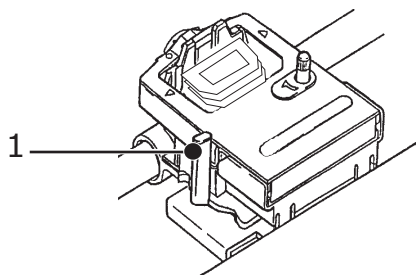
1. Tear off any printed pages.
2. Press PARK.
3. Move the paper separator to the single-sheet feed position.
4. Place the wire feed guide in the paper separator.
5. Move the paper lever to the position marked "TOP."
6. Place a sheet of paper in the paper separator.

To switch from single-sheet feed to continuous forms:

1. Press FF/LOAD to remove the single-sheet paper.
2. Lower the paper separator into the continuous-forms position and swing the wire feed guide over onto the pull-up roller.
3. Move the paper lever to the position marked "REAR" or "BOT," as appropriate.
4. Load continuous-form paper, then press FF/LOAD.

SETTING THE PRINTHEAD GAP

The printhead gap is the distance between the printhead and the platen. To adjust the gap, open the access cover and move the blue lever (1) to the recommended setting from the table below.



NOTE

It is recommended that the printer be switched off prior to removing the access cover.

MEDIA	SETTING
45 - 75g/m ² paper	1
75-90g/m ² bond paper	2
Labels	3 - 4
Envelopes	5
2-part form (w/carbon)	3 - 4
3-part form (w/carbon)	4 - 5
4-part form (w/carbon)	5

RUNNING THE SELF TESTS

Font sample test

To run the test: Turn the printer off, then press and hold LF while turning the printer on.



To stop the test: If you wish to stop the test before it is complete, press SEL.

ASCII test

To run the test: Turn the printer off, then press and hold QUIET while turning the printer on.



To stop the test: Press SEL.

SELECTING AN EMULATION

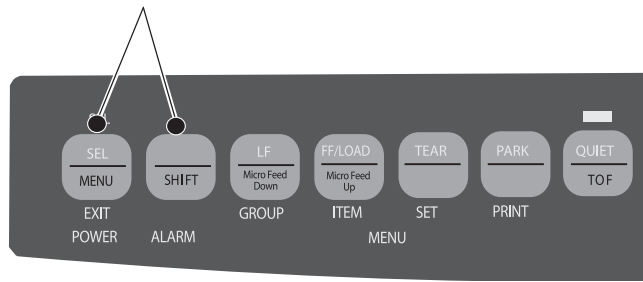
The factory default emulation for your printer is:

MODEL	EMULATION (DEFAULT)
ML3320ECO/ML3321ECO	IBM PPR
ML3390ECO/ML3391ECO	EPSON LQ

To change to one of the other emulations:

1. Make sure paper is loaded.
2. Deselect the printer (SEL light off, press SEL key).

3. Press SHIFT + SEL: the printer will enter the Menu Mode.



4. Press LF.



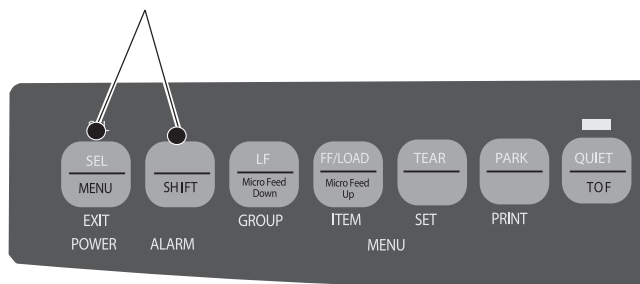
The following line will print:

Printer Control Emulation Mode IBM PPR

5. Press TEAR consecutively until the emulation you wish to select prints in the right-hand column.

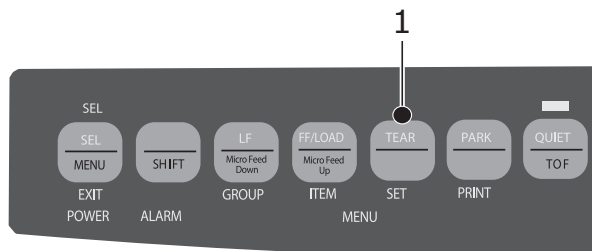


6. Press SHIFT + SEL to save your setting and exit the Menu Mode.



USING THE PRINTER'S FEATURES

TEAR FEATURE



Use this feature to advance continuous-form paper up to the tear position by simply pressing TEAR (1).

NOTE

The Tear Feature can not be used when the optional pull tractor is engaged.

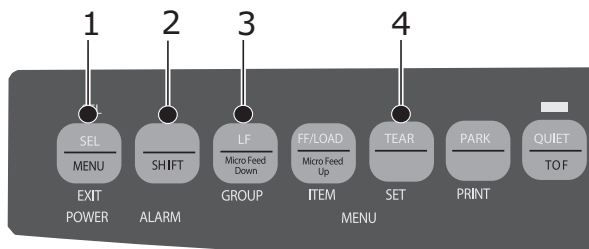
FORMS TEAR-OFF FEATURE

NOTE

Never engage Forms Tear-Off when printing on labels!

The Forms Tear-Off feature automatically moves continuous-form paper up to the tear position after the interval you select, then moves it back down again for printing when the printer receives more data.

This feature is normally turned off. To activate it:



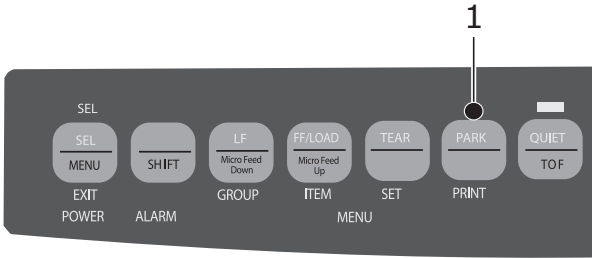
1. Press SHIFT (2) + SEL (1).
2. Press GROUP (3) until one of the following lines appears, depending on which paper feed you are using:

REAR FEED	Form Tear-Off	OFF
BOTTOM FEED	Form Tear-Off	OFF
3. Press SET (4) consecutively until the time interval you wish to select appears in the third column.
4. Press SHIFT (2) + SEL (1) to exit Menu Mode and save the setting.

NOTE

Some programs pause occasionally while sending data. If the pause is too long, the paper will advance to the tear-off position until more data is received. This extra paper movement can cause uneven print registration in graphics. If you have this problem, use the menu to turn off this feature.

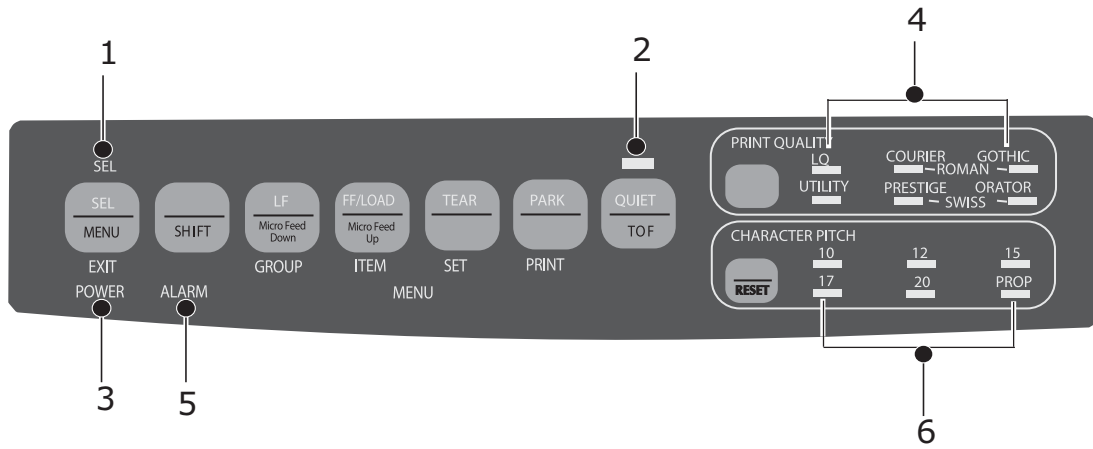
PAPER PARK FEATURE



To retract rear-feed paper form the paper path, press PARK (1).

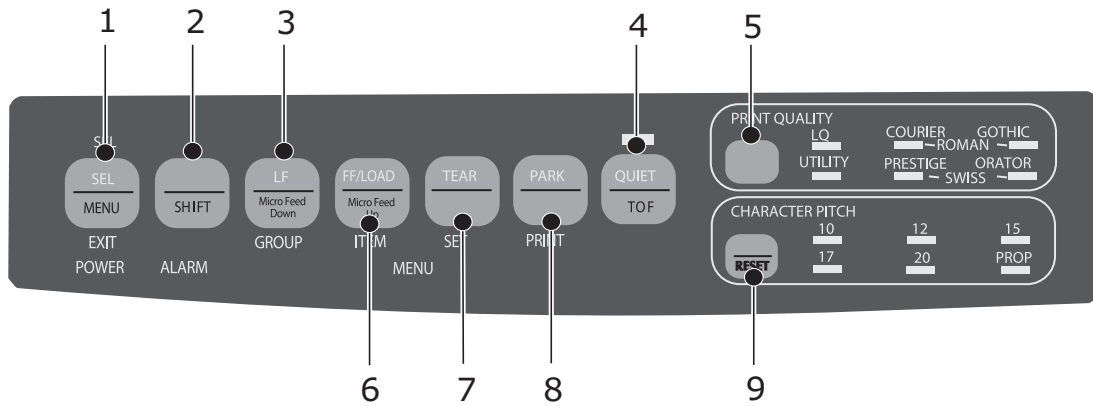
OPERATING INSTRUCTIONS

PRINT MODE: INDICATOR LIGHTS



NO.	INDICATOR	DESCRIPTION
1.	SEL	Glow: printer selected, ready to receive data
		Flashes: printer in Print Suppress Mode
		Not lit: printer deselected (can't receive data)
2.	QUIET	Glow: printer in Quiet state.
3.	POWER	Glow: printer turned on
4.	PRINT QUALITY	Indicate print quality and font selected.
5.	ALARM	Glow: error condition exists: <ul style="list-style-type: none"> > out of paper if no other lights are blinking. > paper jam if 15 cpi light is also blinking > paper lever is set to wrong position if 10 cpi light is also blinking.
		Blinks: error condition. Turn printer off, then on; if the light still flashes, contact your service dealer.
6.	10/12/15/17/20/PROP	Indicate character pitch selected.

PRINT MODE: CONTROL PANEL KEYS



NO.	KEYS	DESCRIPTION
1.	SEL	Selects/deselects printer. When held on power up, engages the Menu Mode.
2.	SHIFT	Press and hold while pressing another switch to engage the alternate function for that switch (e.g. "Micro Feed Down" for the LF key).
3.	LF	Moves paper up one line: press and hold for repetitive line feeds. When held on power up, activates the Font Test.
4.	QUIET	Turns Quiet Mode on and off. When held on power up, activates the Rolling ASCII Test.
5.	PRINT QUALITY	Selects the print quality and font.
6.	FF/LOAD	Loads/ejects single sheet of paper; moves continuous-form paper to print position.
7.	TEAR	Moves continuous-form paper up for tear-off or back down for printing.
8.	PARK	Retracts continuous-form paper from the path.
9.	CHARACTER PITCH	Selects the character pitch. Used with the SHIFT key to reset the printer.

SELECTING THE PRINT QUALITY AND FONT

NOTE

Front panel settings for print quality and character pitch can be overridden by software commands. The lights will always reflect the printer's state.

ML3320ECO/ML3321ECO



Press PRINT QUALITY to select:

HSD: High Speed Draft	> Lower quantity, faster speed > Gothic font only > Recommended for preliminary drafts
UTL: Utility	> Medium quality, medium speed > Gothic font only > Recommended for internal documents and high-volume data
NLQ: Near Letter Quality	> Highest quality, slowest speed > Courier or Gothic fonts > Recommended for correspondence
SSD: Super Speed Draft	> Lowest quality (12 cpi only), fastest speed > Gothic font only > Recommended for fastest output of preliminary drafts

In order to use Super Speed Draft (SSD), you must enter the Menu Mode and make changes:

1. Press SHIFT + SEL
2. Press GROUP twice.
3. Press ITEM.
4. Press SEL until DRAFT appears as the setting for the Print Mode.
5. Press ITEM.
6. Press SEL (SSD appears as the setting for the DRAFT Mode).
7. Press SHIFT + SEL key to exit the Menu Mode and save your changes.

ML3390ECO/ML3391ECO



Press PRINT QUALITY to select:

LQ: Letter Quality	<ul style="list-style-type: none"> > Highest quality, slowest speed > Seven fonts > Recommended for correspondence
UTILITY	<ul style="list-style-type: none"> > Medium quality, medium speed > Gothic font only > Recommended for internal documents and high-volume data

NOTE

To select High Speed Draft mode, set the Print Quality to UTILITY and the Character Pitch to 15.

When Letter Quality is engaged, the lights indicate which font is selected:



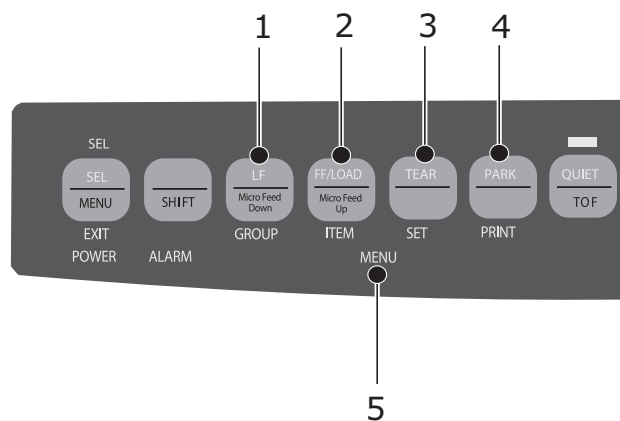
FONT	INDICATOR
Courier	LQ and Courier lights on
Gothic	LQ and Gothic lights on
Orator	LQ and Orator lights on
Prestige	LQ and Prestige lights on
Roman	LQ, Courier and Gothic lights on
Swiss	LQ, Orator and Prestige lights on
Swiss Bold	LQ light on

Selecting the Character Pitch

Press CHARACTER PITCH to select the width of characters in characters per inch:

10 cpi	> Recommended for standard text.
12 cpi	> Yields more text per page. > Recommended for standard text.
15 cpi	> In HSD mode, yields fastest printing. > Recommended for large volumes of data.
17.1 cpi, 20 cpi	> Smallest print > Recommended for spreadsheets.
PROP	> Proportional spacing > Recommended for documents where you want a more polished appearance. > Not available for High Speed Draft.

MENU MODE: CONTROL PANEL



NO.	KEY	FUNCTION
1.	GROUP	Prints the next Group in the Menu. With the SHIFT key, prints the previous Group.
2.	ITEM	Prints the next Item in the Group. With the SHIFT key, prints the previous Item in the Group.
3.	SET	Prints the next Setting for an Item. With the SHIFT key, prints the previous Setting for an Item.
4.	PRINT	Prints a copy of all the Menu settings. With the SHIFT key, prints the current settings for the Group selected.
5.	MENU LIGHT	Glows when the printer is in the Menu Mode.

ENTERING AND EXITING THE MENU MODE

To enter or exit the Menu Mode, hold SHIFT while pressing SEL.

Resetting the Menu

To reset the Menu to the standard settings:

1. Turn the printer off.
2. Press SEL + LF while turning the printer on.

Printing the Menu settings

1. Make sure paper is loaded in the printer.
2. Enter the Menu Mode (SHIFT + SEL).
3. Press PRINT (PARK).

NOTE

To print out a listing of the settings for all menu items, regardless of the emulation selected or the accessories installed, enter the Menu Mode, then press SHIFT + PRINT QUALITY.

Changing the Menu settings

1. Press SHIFT + SEL to enter the Menu Mode.
2. Use the GROUP, ITEM and SET keys to make your changes:
 - > Press GROUP successively until the Group you wish to change appears in the first column.
 - > Press ITEM until the Item you wish to change appears in the second column.
 - > Press SET until the setting you want appears in the third column.
3. Press SHIFT + SEL to exit the Menu Mode and save your settings.

NOTE

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

SUMMARY OF MENU SETTINGS

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

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Printer Control	Emulation Mode	Select emulation mode.	IBM PPR , EPSON FX, ML	EPSON LQ , IBM PPR, IBM AGM
Font	Print Mode	Select quality of ANK characters.	Utility NLQ Courier NLQ Gothic NLQ OCR-B Draft	LQ Courier LQ Roman LQ Swiss LQ Swiss Bold LQ Orator LQ Gothic LQ Prestige LQ OCR- A LQ OCR- B Utility
	Draft mode	Select the draft mode.	HSD SSD	-
	Pitch	Select character pitch.	10 CPI 12 CPI 15 CPI 17.1 CPI 20 CPI	
	Proportional Spacing	Select whether to use proportional spacing or not.	Yes No	
	Style	Select either font style.	Normal Italics	
	Size	Select the character scale size. Selects both double width and double height character or single width and single height characters.	Single Double	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Symbol Sets	Character Set	Select character code table.	Set I Set II Standard (ML mode only) Line Graphics (ML mode only) Block Graphics (ML mode only)	Set I Set II
	Language Set	Select a language character set.	ASCII French German British Danish I Swedish I 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	ASCII French German British Danish I Swedish I Italian Spanish I Japanese Norwegian Danish II Spanish II Latin American French Canadian Dutch Swedish II Swedish III Swedish IV Turkish Swiss I Swiss II Publisher
	Zero Character	Select either print font pattern to receive a zero character located at 30H in ANK code.	Slashed Unslashed	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Symbol Sets cont.	Code Page	Select a 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 Hebrew NC (862) Hebrew OC Turkey_857 Latin 5 (Windows Turkey) Windows Hebrew Ukrainian Bulgarian ISO Latin 6 (8859/10) Windows Baltic Baltic_774 KBL-Lithuanian Cyrillic Latvia Roman-8 Icelandic-861 Multilingual 858 ISO 8859-15 Greek_737 POL 1 Macedonian	USA Serbo Croatic II Canada French ECMA-94 Multilingual Windows East Europe Portugal Windows Greek Norway Latin 5 (Windows Turkey) Baltic 774 Windows Cyrillic East Europe Latin II-852 Cyrillic I-855 Hungarian CWI Turkey 857 Ukrainian Cyrillic II-866 ISO Latin 6 Greek_869 Hebrew NC (862) Kamenicky (MJK) Hebrew OC Greek_437 Windows Hebrew Greek_437 CYPRUS Windows Baltic Turkey Bulgarian Polska Mazovia Greek_928 ISO Latin 2 Serbo Croatic I KBL-Lithuanian Cyrillic Latvia Roman-8 Icelandic-861 Multilingual 858 ISO 8859-15 Greek_737 Asmo 449+ Asmo 708 Arabic 864 Windows Arabic POL1 Macedonian
	Slashed Letter 0	Set whether to convert slashed 0 located at 9BH and 9DH in USA code page or not.	Yes No	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Rear Feed	Line Spacing	Select line feed pitch.	6 LPI 8LPI	
	Form Tear-Off	When printer is idle (0.5, 1.0 or 2.0 sec), paper is advanced from the current print position to the tear position. When data is received, paper is moved to its original printing position.	Off 0.5 sec 1.0 sec 2.0 sec	
	Skip Over Perforation	Select whether to skip over perforation or not. (When a skip over perforation command is received, the received command is given priority.)	No Yes	
	Page Width (Displayed only for ML3321ECO and ML3391ECO)	Change to 8" to print on narrow paper.	345.44 mm (13.6") 203.2 mm (8")	
	Page Length	Select the length of a continuous form.	279.4 mm (11") 296.3 mm (11 2/3") 304.8 mm (12") 355.6 mm (14") 431.8 mm (17") 76.2 mm (3") 82.6 mm (3.25") 88.9 mm (3.5") 101.6 mm (4") 127.0 mm (5") 139.7 mm (5.5") 152.4 mm (6") 177.8 mm (7") 203.2 mm (8") 215.9 mm (8.5")	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Bottom Feed	Line Spacing	Select line feed pitch.	6 LPI 8 LPI	
	Form Tear -Off	When printer is idle (0.5, 1.0 or 2.0 sec), paper is advanced from the current print position to the tear position. When data is received, paper is moved to its original printing position.	Off 0.5 sec 1.0 sec 2.0 sec	
	Skip Over Perforation	Select whether to skip over perforation or not. (When a skip over perforation command is received, the received command is given priority.)	No Yes	
	Page width (Displayed only for ML3321ECO/ ML3391ECO)	Change to 8" to print on narrow paper.	345.44 mm (13.6") 203.2 mm (8")	
	Page Length	Select the length of a continuous form.	279.4 mm (11") 296.3 mm (11 2/3") 304.8 mm (12") 355.6 mm (14") 431.8 mm (17") 76.2 mm (3") 82.6 mm (3.25") 88.9 mm (3.5") 101.6 mm (4") 127.0 mm (5") 139.7 mm (5.5") 152.4 mm (6") 177.8 mm (7") 203.2 mm (8") 215.9 mm (8.5")	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Top Feed	Line Spacing	Select line feed pitch.	6 LPI 8 LPI	
	Form Tear -Off	When printer is idle (0.5, 1.0 or 2.0 sec), paper is advanced from the current print position to the tear position. When data is received, paper is moved to its original printing position.	Off 0.5 sec 1.0 sec 2.0 sec	
	Bottom Margin	Change to Invalid if you want the printer to ignore the bottom margin setting.	Valid Invalid	
	Page width (Displayed only for ML3321ECO/ ML3391ECO)	Change to 8" to print on narrow paper.	345.44 mm (13.6") 203.2 mm (8")	
	Page Length	Select the page length of cut sheet.	279.4 mm (11") 296.3 mm (11 2/3") 304.8 mm (12") 355.6 mm (14") 420.9 mm (16.57") 76.2 mm (3") 82.6 mm (3.25") 88.9 mm (3.5") 101.6 mm (4") 127.0 mm (5") 139.7 mm (5.5") 152.4 mm (6") 177.8 mm (7") 203.2 mm (8") 215.9 mm (8.5")	
	Wait Time	Select the waiting time between setting paper on the tray and feeding it while the printer is waiting for paper to be fed in cut sheet manual feed mode.	0.5 sec 1.0 sec 2.0 sec	
	Paper Length Control	Control the page length of cut sheet.	by MENU setting by Actual Page Length	by MENU setting by Actual Page Length
	Set-up	Graphics	Select the printing direction when double-height print data exists in a line.	Uni-directional Bi-directional
7 or 8 Bits Graphics (Displayed only for ML Emulation)		Select to change graphics settings.	7 8	-

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Set-up cont.	Receive Buffer Size	Select size of the received buffer. When "1 Line" is selected, the receive buffer size is set to 2 k bytes.	1 Line 32 K 64 K 128 K	
	Paper Out Override	Senses when less than 1" (25mm) of paper remains and stops printing. Change to YES to override the sensor and print closer to the bottom of the page.	Yes No	
	Print Registration	Change the setting as required to obtain the best registration for bi-directional printing.	0.25mm Right, 0.20mm Right, 0.15mm Right, 0.10mm, Right, 0.05mm, Right, 0 , 0.05mm Left, 0.10mm Left, 0.15mm Left, 0.20mm Left, 0.25mm Left	
	7 or 8 Bits Data Word	Select data word lengths.	7 8	-
	Operator Panel Function	Select full or limited 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 being changed from the control panel when several people are using the printer.	Full Operation Limited Operation	
	Reset Inhibit	Changing this to Yes prevents a reset signal from the computer from resetting the printer to its defaults.	No Yes	
	Print Suppress Effective	Select whether to enable or disable a print suppress setup command.	No Yes	
	Auto LF	Select whether to perform auto LF operation or not upon receiving a CR code. If your print out is consistently double spaced, select No, if it overprints, select Yes.	No Yes	
	Auto CR (Displayed only for IBM emulation)	Select Yes to add a carriage return when a Line Feed is received at the end of a line.	No Yes	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Set-up cont.	CSF Bin Select	Appears only when the optional Dual-Bin cut Sheet Feeder is installed. Use this to switch to Bin 2 as the default.	Bin 1 Bin 2	
	Print DEL Code (Displayed only for ML Emulation)	Change the setting to Yes to print the DEL code (decimal 27) as a solid box.	No Yes	-
	SI Select Pitch (10 CPI) (Displayed only for IBM emulation)	Select how to handle an SI command received in 10 CPI mode.	17.1 CPI 15 CPI	
	SI Select Pitch (12 CPI) (Displayed only for IBM emulation)	Select how to handle an SI command received in 12 CPI mode.	12 CPI 20 CPI	
	Time Out Print	Select valid or invalid.	Invalid Valid	
	Auto Select	Determines whether or not the printer will automatically be selected after you load in paper. Select No if you want to set the Top of Form position.	Yes No	
	Graphics Speed	Change to High for faster printing when the optimum print quality is not an issue.	High Low	
	Centering Position	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.	DEFAULT Mode 1 Mode 2	
	CSF Type	To avoid paper jams, change the setting to Narrow if you are using the optional Cut-Sheet Feeder on the wide model (ML3321 and ML3391)	Wide Narrow	
ESC SI Pitch (Displayed only for IBM emulation)	Sets the character pitch used when the ESC SI command is received.	17.1 CPI 20 CPI		

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Set-up cont.	Select Language Set	Enable/disable the combination of the code page setting and the language conversion. Combined: Enable the combination of the code page and the language conversion. Code Page Only: Enable the code page only and suppress the language conversion. Changing the language set replaces certain standard symbols with special characters used in foreign languages.	Combined Code Page Only	
	Power Save Time	Sets the interval the printer waits for more data before it goes onto the power save mode.	5 min 10 min 15 min 30 min 60 min	
	Time Out FF	It will feed or eject paper if no data is received during a set period of time.	Invalid 200ms 500ms 1 sec	
Parallel I/F	I-prime	Select whether to print or clear buffer contents upon initialisation by receiving I-PRIME.	Invalid Buffer Print Buffer Clear	
	Auto Feed XT (Displayed only for EPSON emulation)	If your system uses pin 14 of the parallel interface to control automatic line feed, change the setting to Valid.	Valid Invalid	
	Bi-direction	Set whether to return a device ID or not in accordance with IEEE1284.	Enable Disable	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
Serial I/F (Displayed when connected to Serial Interface)	Parity	None: Absence of parity bit Odd: Odd parity Even: Even parity Ignore: Do not convert the character to 0x40 in case of parity error.	None Odd Even Ignore	
	Serial Data 7/8 Bits	Select Serial bit.	8 Bits 7 Bits	
	Protocol	Select an I/F Busy control method.	Ready/Busy X-On/X-OFF Ready/Busy & X-ON/X-OFF	
	Diagnostic Test	Select to perform input/output diagnosis of RS-232C interface signals.	No Yes	
	Busy Line	Select to set the Busy Line.	SSD- SSD+ DTR RTS	
	Baud Rate	Select to set the Baud Rate.	9,600 bps 4,800 bps 2,400 bps 1,200 bps 600 bps 300 bps 19,200 bps	
	DSR Signal	Select the DSR Signal.	Valid Invalid	
	DTR Signal	Select a method to switch a DTR signal of a serial interface.	Ready on Power UP Ready on Select	
	Busy Time	Select the minimum time between BUSY to READY.	0.2 sec 1.0 sec	

GROUP	ITEM	FUNCTION	SETS	
			ML3320ECO/ ML3321ECO	ML3390ECO/ ML3391ECO
CSF Bin 1 (Display- ed when Single-bin Cut-sheet feeder is installed)	Line spacing	Select line feed pitch	6 LPI 8 LPI	
	Bottom Margin	Change to Invalid if you want the printer to ignore the bottom margin setting.	Valid Invalid	
	Page Width (Displayed only for ML3321ECO/ ML3391ECO)	Change to 8 inch to print on letter size paper.	203.2 mm (8") 345.44 mm (13.6")	
	Page Length	Select the length of cut sheet.	279.4 mm (11") 296.3 mm (11 2/3") 304.8 mm (12") 355.6 mm (14") 420.9 mm (16.57") 88.9 mm (3.5") 101.6 mm (4") 127.0 mm (5") 139.7 mm (5.5") 152.4 mm (6") 177.8 mm (7") 203.2 mm (8") 215.9 mm (8.5")	
CSF Bin 2 (Display- ed when Double- bin Cut- sheet feeder is installed)	Line Spacing	Select line feed pitch.	6LPI 8LPI	
	Bottom Margin	Change to Invalid if you want the printer to ignore the bottom margin setting.	Valid Invalid	
	Page Length	Select the length of cut sheet.	279.4 mm (11") 296.3 mm (11 2/3") 304.8 mm (12") 355.6 mm (14") 420.9 mm (16.57") 88.9 mm (3.5") 101.6 mm (4") 127.0 mm (5") 139.7 mm (5.5") 152.4 mm (6") 177.8 mm (7") 203.2 mm (8") 215.9 mm (8.5")	

MAINTENANCE

REPLACING THE RIBBON CARTRIDGE

When the printer image becomes faint or incomplete, replace the ribbon cartridge.

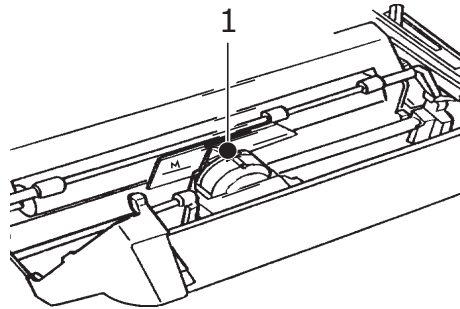
CAUTION!

Only use genuine original consumables to ensure the best quality and performance from your hardware. Non original products may damage your printer's performance and invalidate your warranty.

WARNING!

Do not change the ribbon cartridge with the power switch set to ON.

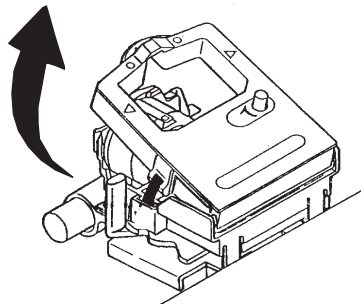
1. Make sure the printer is turned OFF.
2. Centre the printhead (1).



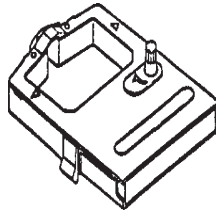
CAUTION!

The printhead may be HOT!

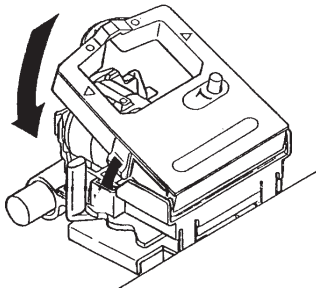
3. Remove and discard the used ribbon cartridge in accordance with your local guidelines.



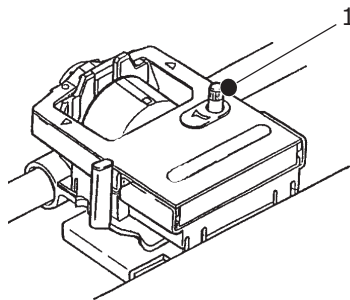
4. Unpack the new ribbon cartridge.



5. Install the new ribbon cartridge.



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



CAUTION!

Do not turn the knob anticlockwise as the ribbon might jam.

CLEANING YOUR PRINTER

To keep your printer in good operating condition, you are advised to clean it regularly.

WARNING!

Set the printer Power Switch to OFF and disconnect the power cable from the printer before cleaning the printer.

PRINTER EXTERIOR

CAUTION!

Keep the access cover closed to avoid the possibility of detergent entering the printer.

Clean the exterior of the printer as required, but at least every six months or 300 hours of operation, whichever comes first.

- > Moisten a piece of cotton cloth with diluted neutral detergent and carefully wipe the printer exterior.

CLEANING THE HOUSING

WARNING!

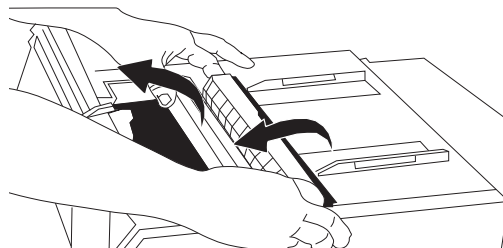
As the print head becomes hot during printing, allow it to cool before carrying out any cleaning inside the printer.
Do not use any flammable solvents for cleaning the printer to avoid any risk of fire or electric shock.

You should clean the printer every six months (or after about 300 hours of operation), whichever comes first.

NOTE

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

1. Turn the printer off, and remove any paper from the path.
2. Open the access cover, remove the pull-up roller assembly.

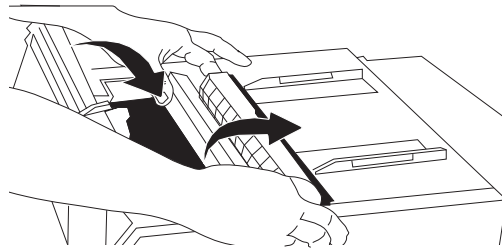


3. Use a clean, dry cloth to dust around the carriage shaft and platen. Remove any loose pieces of paper.

CAUTION!

- > **When you clean the interior of the printer with a vacuum cleaner, do not attempt to clean any parts smaller than the suction nozzle.**
- > **Do not clean any interior working parts with the suction nozzle to avoid possible damage to the printer.**

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



INSTALLING OPTIONS

The following options are available for your printer. Installation instructions are supplied with the accessories.

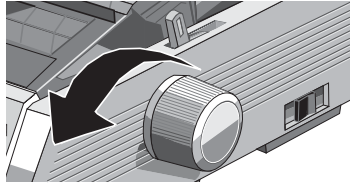
- > 100BASE-TX/10BASE-T-Network Interface
- > RS-232C Serial Interface
- > Cut-sheet Feeder Single Bin
- > Cut-sheet Feeder Dual Bin (for ML3320ECO and ML3390ECO only)
- > Roll Paper Stand (for ML3320ECO and ML3390ECO only)
- > Push Tractor (bottom)
- > Pull Tractor

TROUBLESHOOTING

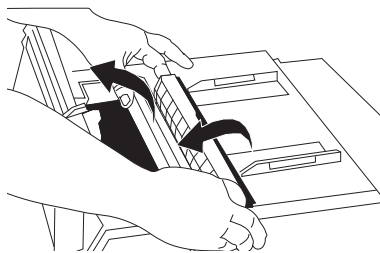
CLEARING PAPER JAMS

REAR-FEED JAMS

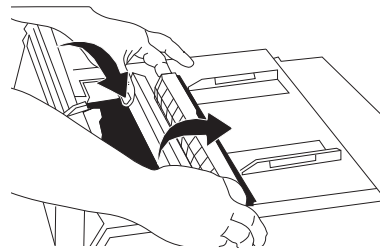
1. Turn the printer OFF and use the platen knob to back the paper all the way out.



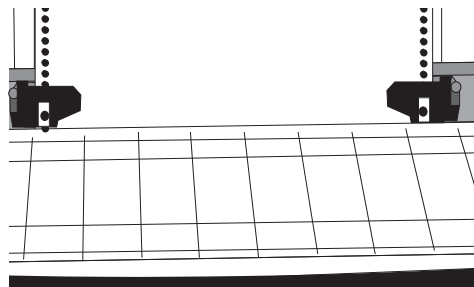
2. Open the access cover, and remove the pull-up roller assembly.



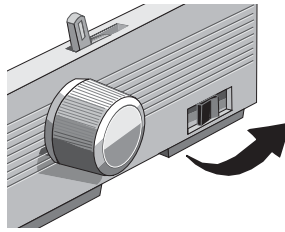
3. Remove any torn pieces of paper.
4. Replace the pull-up roller assembly, and close the access cover.



5. Reload paper.



6. Turn the printer on.



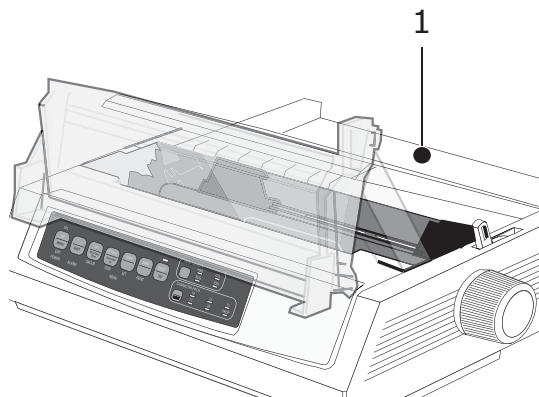
7. Press FF/LOAD.



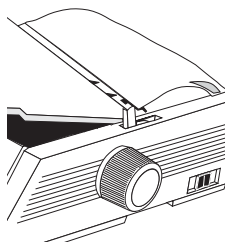
CORRECTING REPETITIVE REAR-FEED JAMS

If the paper keeps jamming, you probably have bits of paper stuck in the paper path.

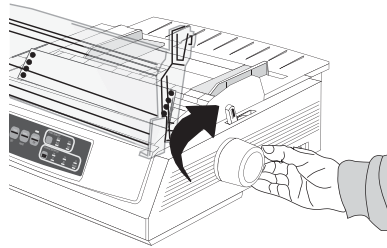
1. Perform steps 1. through 3. under "[Rear-feed jams](#)".
2. Grasp the paper separator (1), lift it slightly, pull back on it, then swing it forward.



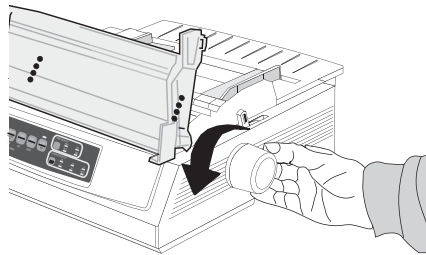
3. Fold some continuous-form paper over three times to make a page four sheets thick, load it on the tractors and close the covers.



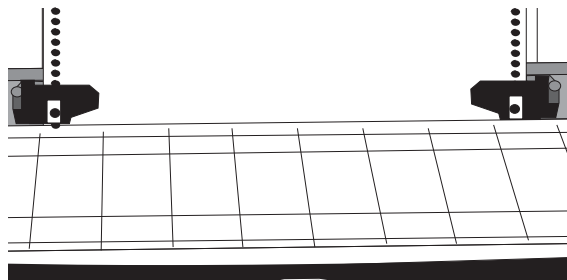
4. Swing the paper separator over, and use the platen knob to draw the quadruple-thick page around the platen: this brings out any jammed bits of paper.



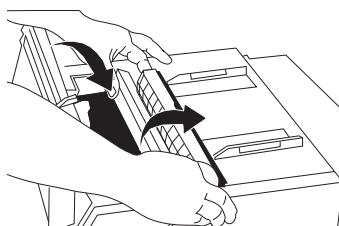
5. Remove the paper pieces, and use the platen knob to back the paper out.



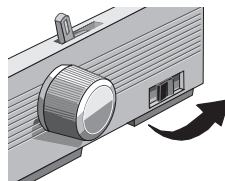
6. Swing the paper separator over, reload regular paper, and lower the paper separator back into place.



7. Replace the pull-up roller assembly, and close the access cover.



8. Turn the printer on.

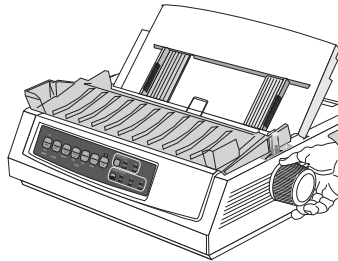


9. Press FF/LOAD.

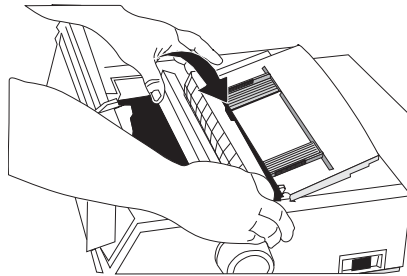


SINGLE-SHEET JAMS

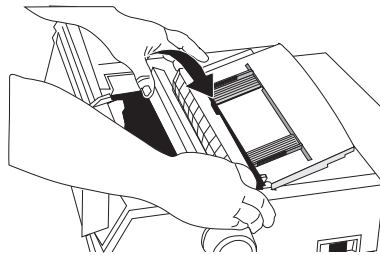
1. Turn the printer off.
2. Use the platen knob to back the jammed paper out.



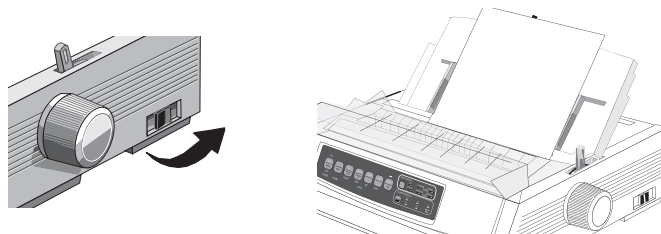
3. Open the access cover and remove the pull-up roller assembly.



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



6. Turn the printer on and reload paper.



RESPONDING TO GENERAL PROBLEMS

PROBLEM	SOLUTION
Nothing happens when I turn on the printer.	Check the power cable connection the outlet and to your printer. If you are using a power strip, make sure it is turned on, and that the fuse has not blown nor the circuit breaker tripped.
The printer does not print when data is sent.	<ol style="list-style-type: none"> 1. Is the SEL light on? If not, press the SEL key. 2. Check that the interface cable is securely connected to both the computer and the printer. 3. If you have the optional serial interface board installed, check to be sure that it is firmly seated in the printer.
I'm getting strange symbols, incorrect fonts, etc., when I try to print a document.	<ol style="list-style-type: none"> 1. Check to be sure that the printer driver you have selected in your software matches the printer emulation. (Press SHIFT and SEL keys, then press GROUP key: this will print a line showing the emulation you have selected.) 2. If you have embedded any printer commands in your software, check to be sure that you entered them correctly.
I've installed a new ribbon and the printing is smeared and streaked.	The ribbon shield is either loose or missing. Remove the ribbon cartridge and check the clear plastic ribbon shield: if it's loose, secure it in place, if it is missing, find it and reinstall it.
The ALARM light is on and the Character Pitch 15 light is flashing.	This indicates a paper jam. Press the SEL key and correct the paper jam situation (" Clearing paper jams " on page 47).
TheALARM light is on and the Character Pitch 10 light is flashing.	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.
The ALARM light is blinking.	Try turning the printer off and then back on again. If the light still blinks, call for service.
The printer needs paper, but the ALARM light is not on and I can't load the paper.	Press and release the SEL key, then hold the SHIFT key and press the RESET (CHARACTER PITCH) key: this resets the printer.
My word processor files don't print the way I have the menu and front panel set.	<p>Before sending a file to the printer, many word processors send either an "initialization string" or an I-Prime signal to the printer.</p> <p>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 down to the Set-Up group and change the setting for Reset Inhibit to Yes ("Changing the Menu settings" on page 30).</p> <p>The I-Prime signal will automatically override any front panel settings you have made. To eliminate this problem, enter the Menu Mode, go down to the Parallel Interface group and change the setting for I Prime to Invalid ("Changing the Menu settings" on page 30).</p>
The Print Quality and Character Pitch keys on the front panel won't work.	The Operator Panel Function in the printer menu can be used to disable these buttons. 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.

PROBLEM	SOLUTION
Continuous-form paper is sticking to the paper separator.	In cold dry weather, static charges can build up and make the paper cling to the paper separator. Try moving the paper guides together so that the paper rests on the guides rather than on the separator.
Ink smears on paper.	This may be caused by excessive printhead travel from the centring position when printing narrow columns. Set Centring Position to MODE 1. On ML3321ECO/ML3391ECO also try MODE 2.

SPECIFICATIONS

MODEL	MODEL NUMBER
ML3320ECO	D22800B
ML3321ECO	D22810B
ML3390ECO	D22820B
ML3391ECO	D22830B

ITEM	SPECIFICATION
Print Method	Impact dot matrix
Printhead ML3320ECO/ML3321ECO ML3390ECO/ML3391ECO	9 pins, 0.34 mm diameter, thermal protection 24 pins, 0.20 mm diameter, thermal protection
Dimensions (W x D x H) (Without platen knob, acoustic cover and paper separator) ML3320ECO/ML3390ECO ML3321ECO/ML3391ECO	398 x 345 x 116 mm 552 x 345 x 116 mm
Weight ML3320ECO/ML3390ECO ML3321ECO ML3391ECO	5.8 kg 7.6 kg 7.7 kg
Power Rating Voltage Frequency	220 - 240V \pm 10% 50/60 Hz \pm 2%
Power Consumption (Without options attached) ML3320ECO/ML3321ECO Operation Powersave mode ML3390ECO/ML3391ECO Operation Powersave mode	Typ. 36W (ISO/IEC10561/Letter/Draft/Range 1) Max. 2.0W Typ. 35W (ISO/IEC10561/Letter/Draft/Range 1) Max. 2.0W
Environmental Requirements	Operating Temperature: 5 to 35C Storage Temperature: -10 to +50C Operating Humidity: 20 to 80%RH (max. wet bulb temp. 30C) Storage Humidity: 5 to 95%RH (max. wet bulb temp. 40C)
Noise Level	The acoustic noise of this product is less than 57dB(A) as measured in accordance with EN ISO7779

Specifications subject to change without notice.

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