

BJC-50

**USER'S
MANUAL**

Canon

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Chapter 1

Congratulations on your purchase of the Canon BJC-50 Bubble Jet Printer. We appreciate you choosing this printer to meet your printing needs. The BJC-50 is compact, lightweight, and offers excellent color print quality. We hope you will be satisfied with this advanced Bubble Jet technology.

How to use this manual

The user's manual contains basic information about the printer, such as initial setup procedures, basic operation, the use of supplies and options, daily maintenance, troubleshooting, character sets, printer commands, and so on. Read this manual carefully in order to get the most out of your printer. The manual consists of eight sections.

Chapter 1 Introduction

Introduces the features, options, and supplies available for the printer.

Chapter 2 Setting Up the Printer

Gives instructions for setting up the printer and managing the printer features. It also describes the printer's components and gives advice on caring for your printer.

Chapter 3 Paper Handling

Explains how to select the appropriate paper or special media and how to load paper into the printer. It also gives precautions necessary for handling print media.

Chapter 4 Performing Test Prints

Explains how to perform all the test prints.

Chapter 5 color Printing and Black-and-White Printing

Provides helpful hints on getting optimum results for color printing with the Color BJ Cartridge BC-11e and for black-and-white printing with the Black BJ Cartridge BC-10





Chapter 6 Maintaining the Printer

Explains how to replace ink cartridges and BJ Cartridges, clean the print head and printer, and describes the proper procedures for printer transportation and storage. Also describes installation of the optional Color Image Scanner Cartridge IS-12.

Chapter 7 Troubleshooting

Gives detailed instructions for solving common problems. If you have any difficulties, refer to this section.

Appendices

Lists paper specifications, character set tables, printer commands, accessories and specifications.

Conventions

This manual employs the following conventions to alert you to information that will help you use the printer safely and efficiently.



CAUTIONS ABOUT ACTIONS THAT COULD DAMAGE YOUR HARDWARE OR YOUR SOFTWARE.



Advice or suggestions.

(p12)

A number preceded by this mark and enclosed in parentheses tells you the page number where you can find more information about the previous sentence or paragraph

Read This First!

As you unpack the box check each item against this sheet to make sure that you have everything. This sheet also shows you how to remove the tape and packing material from the printer.

Quick Start Guide

The Quick Start Guide summarises the steps for setting up the printer and installing the Windows printer driver. If you are familiar with computers and printers, follow the steps in this illustrated guide to get set up as quickly as possible.





Features and benefits

This section summarises the features and benefits of the BJC-50.

Compact portable design

The printer's extremely compact design and light weight allow it to fit easily into a briefcase. Despite its small size the printer has full color printing capability on plain paper and a variety of other media. The rechargeable lithium-ion battery pack allows you to operate the printer without connecting the AC adapter. The battery pack will print up to 100 pages of normal black text at 1,500 characters per page.

Excellent print quality and speed in both color and black and white

With the Windows Printer Driver, your printer can print color at 720 x 360 dpi (horizontal x vertical) resolution. In addition, the new Color BJ Cartridge BC-11e can generate two sizes of ink droplets. This feature delivers superior print quality, especially with graphic images.

High quality ink

The BJ Cartridges contain high quality inks. The Black BJ Cartridge BC-10 is used for black-and-white printing and the Color BJ Cartridge BC-11e is used for color printing. An advanced ink formula eliminates many problems common to ink jet printers. These inks are not easily affected by light. They dry quickly, look great on plain paper, and are extremely smudge-resistant.

Quiet Printing

The BJC-50's non-impact printing operates quietly.

Simple Maintenance

The BJC-50 uses removable print head units so it needs little maintenance. The Color BJ Cartridge BC-11e has three main parts: a color ink cartridge, a black ink cartridge, and a print head unit. The Black BJ Cartridge BC-10 has two main parts: one black ink cartridge and a print head unit.





Wireless Connection

The BJC-50 has a built-in infra-red IrDA interface which enables a wireless interface with a suitably equipped computer. If your computer has an IrDA interface, this gives improved portability.

Scanner feature

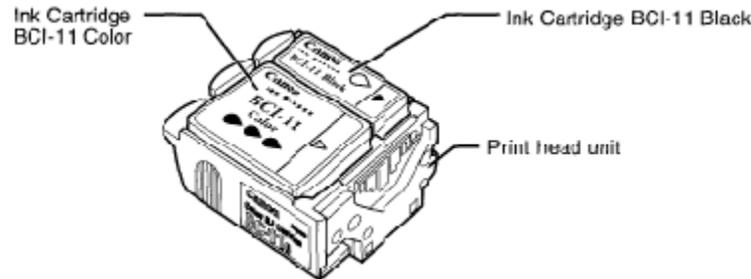
By switching the black or color BJ Cartridge with the optional Color Image Scanner Cartridge IS-12, you can turn the printer into a color image scanner.

Options and supplies

Canon offers the following options and supplies. Whenever you need any of these replaceable items, contact a local Canon Authorised Dealer or your Canon marketing representative.

BJ Cartridges and ink cartridges

Color BJ Cartridge BC-11e



This cartridge incorporates a Bubble Jet print head unit and two replaceable ink cartridges: BCI-11 Color and BCI-10 Black as described below.

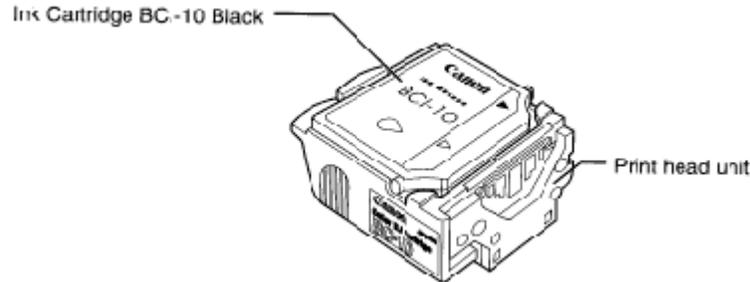
- **BCI-11 Black:** This is a replacement for the black ink cartridge used in the Color BJ Cartridge BC-11e.
- **BCI-11 Color:** This is a replacement for the three-color ink cartridge used in the Color BJ Cartridge BC-11e.





Black BJ Cartridge BC-10

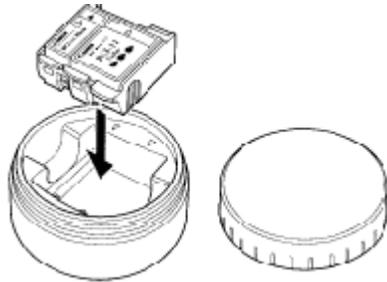
This cartridge contains both a print head unit and replaceable black ink cartridge. This cartridge is more cost-effective for black-and-white printing and enables faster output.



- **BCI-10 Black:** This is a replacement for the black ink cartridge used in the Black BJ Cartridge BC-10.

BJ Cartridge Storage Container SB-10

This is an optional extra storage container, like the one you received with your printer, for storing a partially used Color BJ Cartridge BC-11e or Black BJ Cartridge BC-10.



Color Image Scanner Cartridge IS-12

This optional Scanner Cartridge turns your printer into a color scanner. To use the printer as a scanner, you must have the optional Color Image Scanner Cartridge IS-12, Windows 95, and a Canon Printer Cable BJFC-50 (the IrDA interface is not recommend for this function) to connect the printer and the computer. The Color Image Scanner Cartridge IS-12 drops into the position normally occupied by the BJ Cartridge.



Note

You must install and use the IS 1.20 scanner driver or higher. Earlier versions of this scanner driver do not work correctly with the BJC-50.





Print media

To extend the capabilities of your printer, Canon offers several types of special print media.

High Resolution Paper HR-101

Use this coated high-grade matt paper to achieve stunning photo images. The coating used on this paper is of a unique formula that ensures full compatibility with your Canon color inks. Use this paper for crisp color on a high-quality, non-glossy paper. A4 and Letter sizes are available.

Bubble Jet Paper LC-301

Specially designed for Canon color Bubble Jet printers, this paper produces sharp and vivid color output with a more natural appearance. This water-resistant plain paper has been developed by Canon for optimum color printing. This excellent value paper offers an affordable alternative to plain paper for everyday use. A4 and Letter sizes are available

Transparencies CF-102

Transparencies (also called Over Head Projection film or OHP film) will produce crisp and professional images and text for overhead presentations. Other transparencies may either not feed correctly into the printer or not allow the inks to dry properly leading to running and smearing of the colors. Canon overhead transparencies are specially designed to avoid these problems. A4 and Letter sizes are available.

Back Print Film BF-102

This unique Glossy Film allows you to print extremely high quality color photographic images and graphics. It can be viewed either using rear illumination, such as a light box, or as a regular print. Back Print Film is a mylar translucent sheet. When viewed with a light box, Back Print Film provides a sharp, bright, and vivid presentation of photographs, portraits, and graphics. It is great for trade show displays and other special presentations. A4 and Letter sizes are available.

Glossy Photo Paper GP-201

The printer can produce sharp and vivid color output on this highgrade Glossy Paper because this medium is water resistant and is fully compatible with Canon color inks. Use this paper for your printed output that requires crisp color rendering on a high-quality Glossy Paper. A4 and Letter sizes are available.





High Gloss Film HG-101

The printer produces sharp and brilliant color output on this high grade gloss film. High Gloss Film is fully compatible with your Canon color inks. Use this film for trade show displays or other special presentations. You can gain sharper and more vivid color output with High Gloss Film than with Coated Paper or Glossy Paper. A4 and Letter sizes are available.

Fabric Sheet FS-101 (241 x 356 mm)

This Fabric Sheet is specially designed for Canon Bubble Jet printers. Use this printable white, cotton fabric to produce your own embroidery designs, pillows, appliques, and so on. For detailed instructions about using this medium, refer to the instruction sheet provided with your packet of Fabric Sheet FS-101

T-Shirt Transfer TR-201 (216 x 279 mm) (TR-101 in the U.S.)

T-Shirt Transfers can be used to transfer a design onto cotton or polyester cotton-blend fabric. For detailed instructions about using this medium, refer to the instruction sheet provided with your packet of T-Shirt Transfers TR-201. T-Shirt Transfers are available in A4 or A3 sizes, but only the A4 size can be used with this printer.

Power supply

Canon Li-Ion Battery LB-S0

A rechargeable, replaceable battery pack is installed inside the printer to power the printer without a mains supply. To recharge the battery pack just connect the AC adapter. The battery pack will recharge while the printer is on or off.

Universal AC Adapter AD-360U

This universal adapter can be used to supply power to the printer from any power source and to recharge the battery pack. Use this AC adapter when travelling to countries where the AC power differs from your country. A power cord appropriate for your country comes with the universal adapter.





Available options

The following options are available for use with this printer. For details, contact your local Canon Authorised Dealer or Canon marketing representative.

Canon Auto Sheet Feeder ASF-50

This optional sheet feeder can be easily and quickly installed on the front of the printer and allows you to stack and feed more than one sheet at a time for multi-sheet print jobs.

Color Image Scanner Cartridge IS-12

Turns your printer into a color scanner.

BJ Cartridge Storage Container SB-10

Use to store partially used BJ Cartridges.





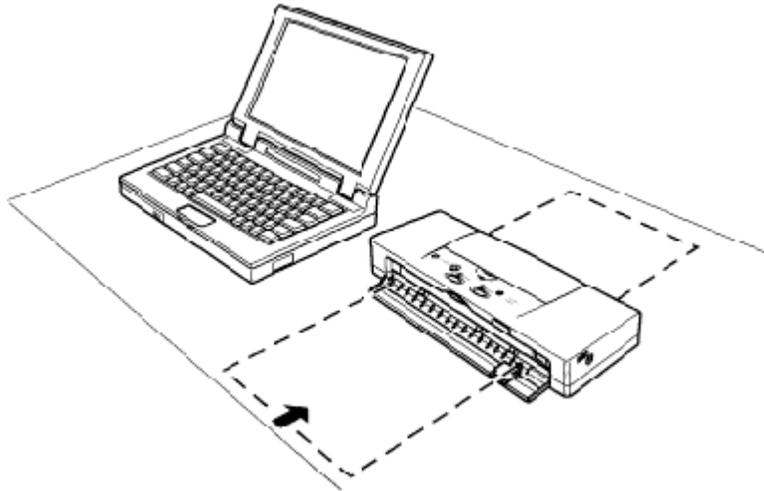
Chapter 2

Setting Up the Printer

This chapter describes how to set up the BJC-50. It offers guidelines on finding a suitable location for the printer, explains how to unpack the printer, and gives an overview of the printer's components. Even if you have already set up the printer by following the instructions in the *Quick Start Guide*, read this section to become familiar with the parts of the printer and how to use them more efficiently.

Selecting a location for your printer

Carefully read the following instructions before setting up your printer in order to choose the best location.



- Choose a flat, sturdy surface with enough space to feed paper into the front of the printer and to handle paper output at the back of the printer.
- Avoid excessive heat or humidity, and avoid direct sunlight. Place the printer where the temperature is stable and comfortable.
- Do not leave the printer in a vehicle, where it may be exposed to extremely high temperatures.

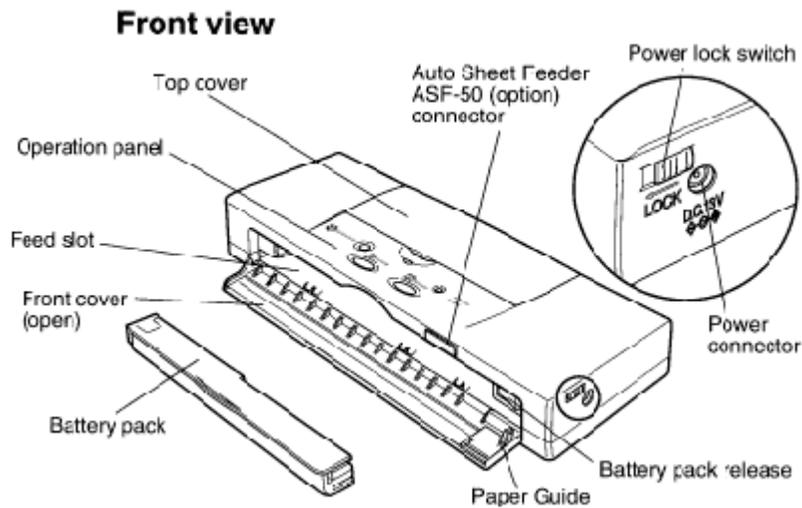




- Do not install the printer near devices which contain magnets or generate magnetic fields.
- Do not subject the printer to strong physical shock or vibration
- Keep the printer clean. Dust accumulation can prevent proper functioning of the printer.
- Do not place objects on the top of the printer.
- The top cover and front cover should be closed when the printer is not being used.

Examining the printer

Familiarise yourself with the printer's parts and functions as described below.



Top cover

Covers the paper and BJ Cartridge during printing. The top cover should remain closed unless you are changing BJ Cartridges or replacing an ink cartridge.





Operation panel

Allows you to operate some functions.

Auto Sheet Feeder ASF-50 connector

Connects the optional Auto Sheet Feeder ASF-50 to the printer.

Power connector

Connects the printer to the AC adapter.

Power lock switch

After the power lock switch is slid to the right, you can press the **POWER** button to switch the printer on and off. After the power lock switch is slid to the left, you cannot switch the printer on, even if you press the **POWER** button. This prevents the printer from being switched on accidentally while it is being transported. Before transporting the printer, always slide the power lock switch to the left. Otherwise, leave the power switch at the right position so you can operate the **POWER** button normally to switch the printer on and off.

Battery pack

The Canon Li-Ion Battery LB-50 provides power to the printer when the AC adapter is not connected. When the AC adapter is connected, the printer is powered from the AC adapter. When the battery pack requires recharging, the **CHARGE/ERROR** lamp will start flashing green. To recharge the battery pack, connect the AC adapter to the printer and to a power outlet. When the battery pack is fully charged, the **CHARGE/ERROR** lamp will go off.

Battery pack release

Push to the right to release the battery pack so you can remove it. Do not remove the battery pack unless you are going to store the printer for a prolonged period (three months or more).

Front cover

When closed, covers the battery pack. Folds down so you can feed paper and other media to the printer. Open the front cover only when you are feeding paper or other media into the printer.

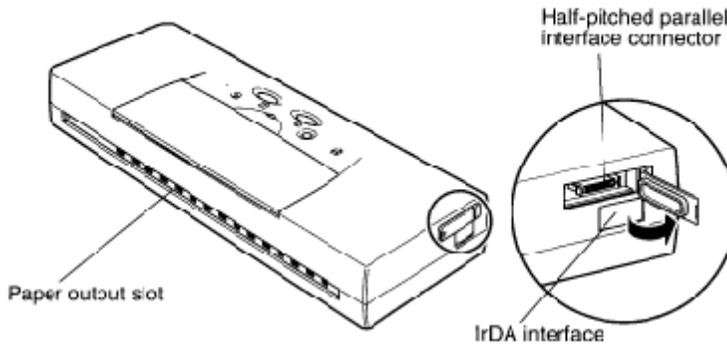
Feed slot

Allows you to feed one sheet of paper or other media for printing. Always align the left edge of the sheet with the left side of the feed slot.





Rear view



Paper output slot

Ejects paper after it is printed. Place the printer on a flat clean surface with enough space to support printed sheets as they are ejected.

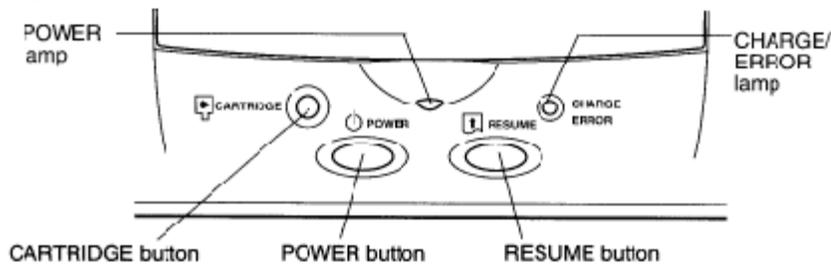
Parallel interface connector

Connects the printer to the computer via the Canon Printer Cable BIFC-50.

IrDA interface

Provides wireless connection between the printer and a computer equipped with an IrDA interface.

Operation panel



CARTRIDGE button

Press to move the cartridge holder to the centre for switching BJ Cartridges or replacing ink cartridges.





POWER button

Press to switch the printer on and off. You can also use the **POWER** button to start test prints by holding down the **POWER** button after you switch the printer on. Count the number of beeps then release to select the type of test print you want to perform. (¶45)

POWER lamp

Flashes for a few moments after power on and then lights and stays on to indicate that the printer is ready for normal operation.

The **POWER** lamp flashes in the following situations:

- During print head cleaning after you switch the printer on. The print head is cleaned automatically every time you switch on the printer. When the **POWER** lamp stops flashing, print head cleaning is finished and the printer is ready for operation.
- During print head cleaning or flushing started from the operation panel with the **RESUME** button, from the Windows printer driver.
- When the last page of a print job does not print.
- While you are performing routine print head maintenance such as replacing an ink cartridge, replacing a BJ Cartridge, changing BJ Cartridges, or replacing the BJ Cartridge with the Color Image Scanner Cartridge IS-12.

RESUME button

Press to cancel errors and warnings. The **RESUME** button also performs these important functions:

- **Error recovery.** After an error occurs, press once to return the printer to the normal operation mode.
- **Paper Feed.** If the **POWER** lamp is flashing to signal that data remains to be printed, insert a sheet of paper in the printer and press **RESUME** once to print the remaining page of data.



Do not press the RESUME button when there is no paper in the feed slot.

- **Print head cleaning.** Press and hold down the **RESUME** button for two seconds until the printer beeps twice then release to start print head cleaning. The **POWER** lamp flashes during print head cleaning. (¶80)





- **Print head flushing.** Press and hold down the **RESUME** button for over two seconds until the printer beeps three times then release to start print head flushing. The **POWER** lamp flashes during print head flushing. (80)

CHARGE/ERROR lamp

When the printer is off and the AC adapter is connected to the printer and plugged into the power mains, the **CHARGE/ERROR** lamp lights and stays on while the battery pack inside the printer is recharging. After the battery pack is fully charged, this lamp will go off.

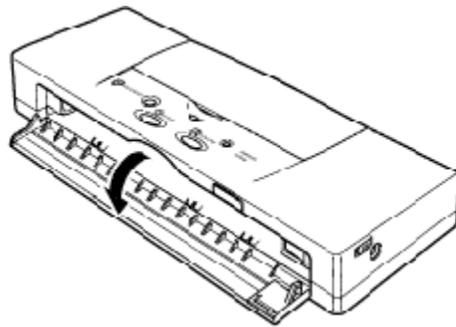
When the printer is on, the **CHARGE/ERROR** lamp lights or flashes orange when an error occurs. Remove the cause of the error then press **RESUME** to resume normal operation. The first time you switch on the printer, the empty cartridge holder will move to the centre. The **CHARGE/ERROR** lamp will flash once and the printer will beep to remind you to install a BJ Cartridge.

Installing the battery pack

Follow this procedure to install the battery pack in the printer.

Install only a Canon Li-Ion Battery LB-50 battery pack. You must install the battery pack and leave it installed in the printer, even if you intend to use the printer only with the AC adapter. If the battery pack is not installed when you switch on the printer, the **CHARGE/ERROR** lamp will light orange and the printer will beep six times.

1. Open the front cover.

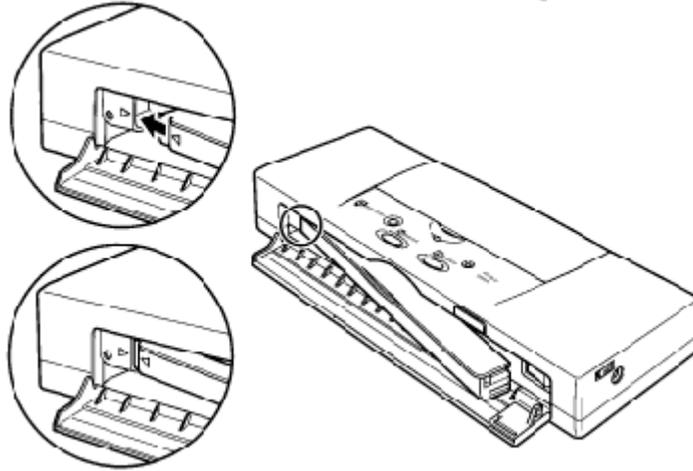


2. If you are installing a new battery pack, remove the battery pack from its package.

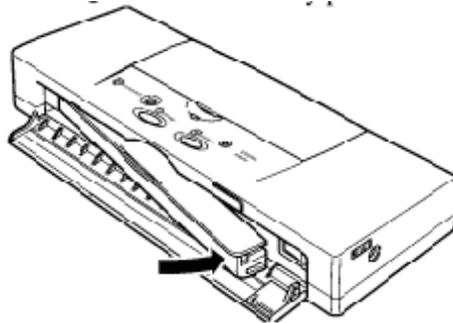




3. Align the marks (▷◁) on the battery pack and the printer, and insert the battery pack at a slight angle to align the connector slots on the battery pack with the prongs inside the printer.



4. Push in on the right side of the battery pack to lock it in place



5. Close the front cover.





FOLLOW THESE GUIDELINES WHEN STORING AND HANDLING THE BATTERY PACK:

- A battery pack is not charged when purchased. You must charge the battery pack for about 4 to 6 hours for it to reach full charge.
- For best results, use the battery pack at room temperature. At low temperatures the capacity of the battery pack is diminished and it will print fewer sheets between recharging sessions.
- Never attempt to recharge the battery pack with any device other than the Universal AC Adapter AD-360U supplied with this printer.
- To avoid personal injury from an explosion, never expose the battery pack to an open flame and never attempt to incinerate an old battery pack.
- Used battery packs should be disposed of according to environmental regulations in your country. For details, contact your Canon Authorised Dealer or Canon representative.
- To avoid damaging the contacts on the corner of the battery pack, avoid touching them with any metal object like a tool, jewellery, the surface of a metal table, etc. Damaged contacts could cause leaking and serious burns.
- To avoid personal injury from corrosive liquids, never attempt to disassemble the battery pack.
- If any liquid from a leaking or broken battery pack gets into your eyes, flush your eyes immediately with clean water and contact a physician.
- Never attempt to connect the battery pack directly to mains (house) current or to a cigarette lighter socket in an automobile.
- Never attempt to use this battery pack for any purpose other than as a power source for this printer.
- Never store a battery pack in a location above room temperature.
- Remove the battery pack immediately and contact your Canon Authorised Dealer or Canon Representative if the battery pack shows any signs of warping, releasing a strange odour, leaking fluid, or overheating. However, do not be concerned if the battery pack feels slightly warm during recharging; this is perfectly normal.
- If you intend to store the printer for a prolonged period (3 months or more), remove the battery pack. Store the printer and battery pack in a dust-free location away from direct sunlight.
- Always handle the battery pack with care to avoid dropping it and damaging its casing and contacts.





Connecting the printer to your computer

This printer is equipped with two interfaces. In addition to a parallel interface, the printer also has a built-in IrDA interface for wireless connection to a host computer equipped with an IrDA interface.

Connecting the parallel interface

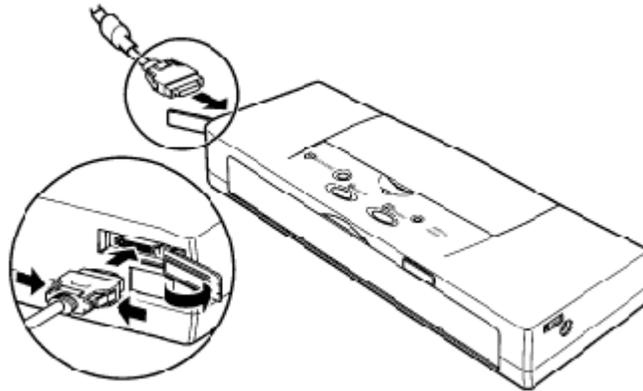
A parallel interface port is provided for connection to IBM compatible PC computers.

Follow the procedure below to connect the printer to the host computer with the BIFC-50 printer cable.



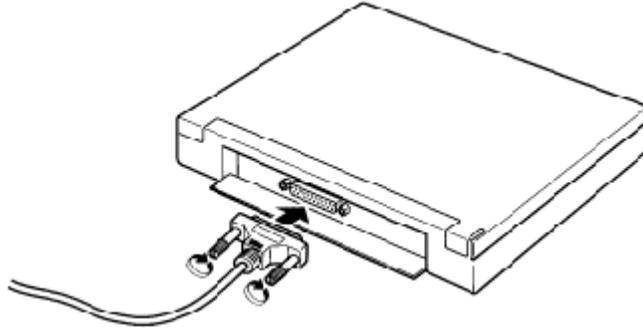
To connect this printer to a computer via the parallel interface ports, you must use the Canon Printer Cable BIFC-50 provided with this printer.

1. Make sure the printer and computer are switched off.
2. Connect the small end of the BIFC-50 printer cable to the parallel interface connector on the left side of the printer. Carefully match the shape of the small D-connectors () on the end of the cable with the connector on the printer then push gently to connect the cable to the printer.





3. Connect the large end of the BIFC-50 printer cable to the back of the computer. Turn the screws on both sides of the connector to fasten it securely.



Setting up the IrDA wireless interface

This printer is equipped with an IrDA 1.0 compatible infra-red wireless communication interface port (115.2 kbps). The IrDA interface is very popular among notebook or laptop computer users because no cable connection between the printer and computer is required.

In order to use the IrDA wireless interface, your computer must be equipped with an IrDA interface and have an Microsoft IR Comm Driver (infra-red driver) Ver. 2.0 for Windows 95 installed. If you need assistance or more information about these items, contact your local supplier. IrDA can be used only with Windows 95.



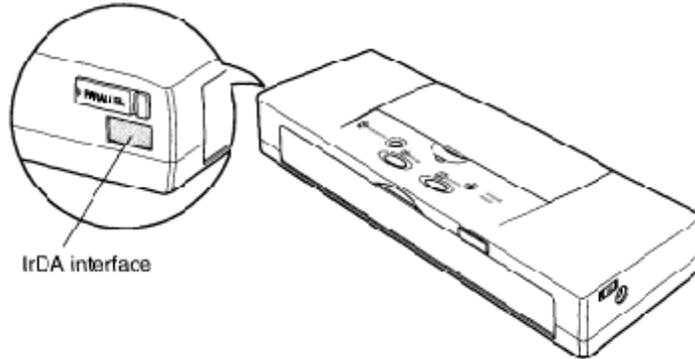
Even if your computer has an IrDA interface port, you still may not be able to use the Microsoft IR Comm Driver Ver. 2.0. To determine whether your computer IrDA interface supports Microsoft IR Comm Driver Ver. 2.0, contact the Help Desk of your computer manufacturer.





Follow this procedure to set up the printer for data transfer via the IrDA interface

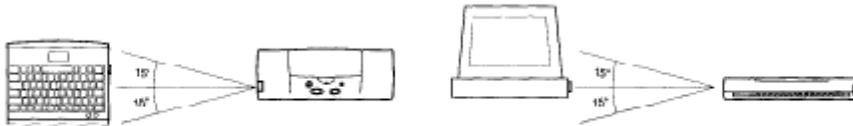
1. The printer IrDA interface is on the left side of the printer, below the parallel interface connector.



2. Locate the IrDA interface on the computer. Arrange the printer so the IrDA interface ports are facing one another.



The IrDA interface ports must face one another and be approximately level, within a range of 15 degrees left or right, 15 degrees up or down and not more than 1 metre (3 ft.) apart.



The following conditions may reduce the reception range of the IrDA interface.

- If another IrDA device is attached.
- If another infra-red device, like a set of wireless headphones or a remote controller, for example, is broadcasting in the same area.
- If the IrDA port is exposed to sunlight, fluorescent light, or any other strong light source like a large torch.
- If the IrDA port is not clean. Clean it with a soft, dry cloth if the port is smudged or dirty.





3. Make sure the computer is set up for IrDA operation.

To use IrDA successfully, make sure the following conditions are satisfied:

- You must use Windows 95.
- Make sure the infra-red driver Microsoft IR Comm Driver Ver. 2.0 has been installed.
- Make sure a COM port has been selected for IrDA with the Printer Wizard.
- Make sure the BJC-50 is selected as the default printer with the BJC-50 printer driver.
- Only the Microsoft IR Comm Driver Ver. 2.0 can be used as the IrDA driver for the BJC-50. Other IrDA drivers cannot be used.
- The IrDA interface cannot detect the printer status and reset the printer. If communication between the printer and computer is interrupted and the print job is stopped, the printer is initialised automatically. (The buffer memory of the printer is cleared and the paper is ejected.)





Attaching the AC adapter

Read the following precautions before attaching the AC adapter.



Use only the Universal AC Adapter AD-360U supplied with the printer.

- Always use the AC adapter indoors, never outdoors.
 - In case of trouble (smoke, odd smells, etc.), unplug the AC adapter immediately.
 - Do not place anything in front of your power outlet that may obstruct your access to the power supply or put pressure on the AC adapter or its cord.
 - When unplugging the AC adapter, always remove it by pulling the connector, never by pulling the cord.
 - Do not unplug the AC adapter until you have switched off the printer. After you switch off the printer if the **CHARGE/ERROR** lamp flashes green, this means the battery pack power is low. Leave the AC adapter connected to the printer and plugged into a power outlet so the battery pack can be recharged. While the battery pack is charging, the **CHARGE/ERROR** lamp lights and remains on until the battery pack is fully charged. (The time required for recharging is four to six hours.) When the **CHARGE/ERROR** lamp goes off, the battery pack is fully charged.
-



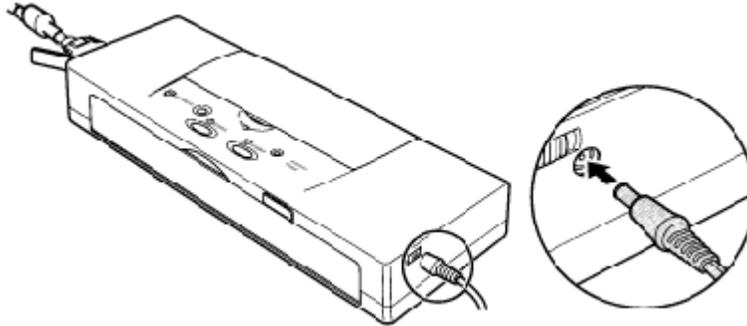
USE ONLY THE AC ADAPTER SUPPLIED WITH THE PRINTER. DO NOT USE AC ADAPTERS FOR OTHER CANON BJ PRINTERS OR ADAPTERS INTENDED FOR USE WITH OTHER ELECTRONIC DEVICES.





To connect the AC adapter

1. Plug the connector end of the AC adapter into the power connector on the right side of the printer.

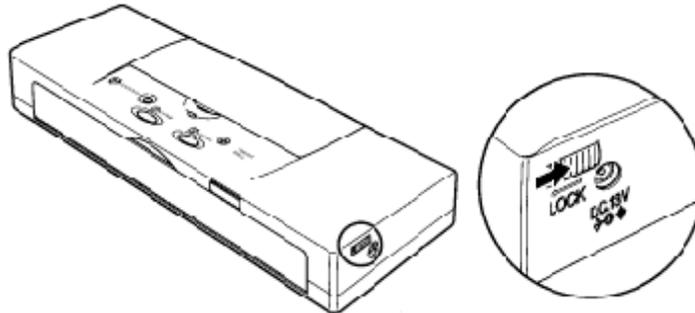


2. Insert the AC adapter plug into a wall outlet.

- If the printer is not switched on and the battery requires recharging, the **CHARGE/ERROR** lamp will light green and remain on to indicate that the battery pack is recharging.
- To recharge the battery pack, switch off the printer and connect the AC adapter if it is not already connected. When the battery pack is fully charged, the **CHARGE/ERROR** lamp will go off. (p62)

Switching the printer on and off

1. Before you switch the printer on, check the power lock switch on the right side of the printer. If the power lock switch is in the left position, slide it to the right.



When the power lock switch is in the left position, it locks the power switch off so it cannot be switched on accidentally during transport.





2. To switch the printer on, press the **POWER** button.
3. To switch the printer off, press the **POWER** button

The printer has an Auto Power Off feature which will shut the printer down automatically to save power if the printer remains idle for over 30 minutes. To disable this feature, open the printer driver, click the Control tab and select Disable for Auto Power Off.

Installing the BJ Cartridge

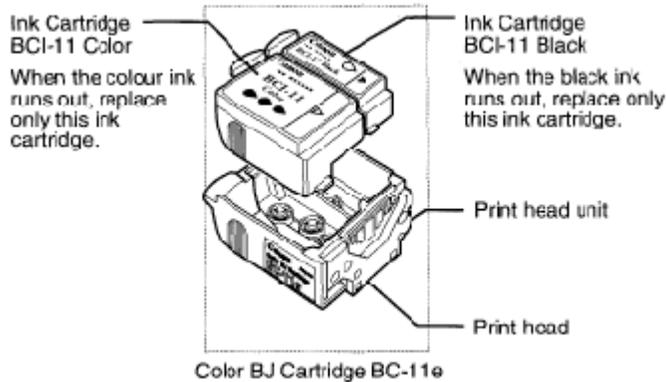
This printer is shipped with a color and black BJ Cartridge one of which must be installed before you can use the printer. Each BJ Cartridge contains removable ink cartridges and a print head unit which releases the ink.

The Color BJ Cartridge BC-11e is mainly for color printing and the Black BJ Cartridge BC-10 is for monochrome printing. Select the cartridge based on your print job (color or monochrome).

Choosing which BJ Cartridge to use

Color BJ Cartridge BC-11e

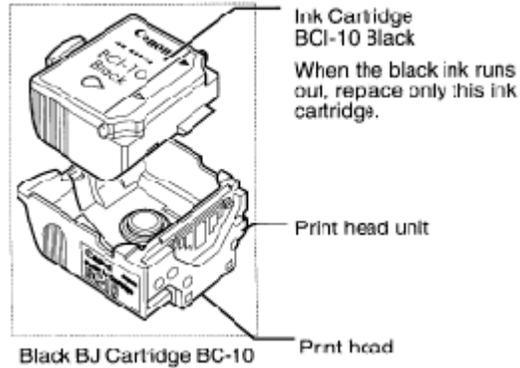
Use this cartridge for printing in color. Use the BC-11e whenever you want to produce brilliant color output. Do not waste the black ink cartridge of this color BJ Cartridge by printing drafts of black-and-white text documents. Use the color BJ Cartridge only for printing color.





Black BJ Cartridge BC-10

Use this cartridge for printing in black and white for draft output. When the BC-10 is installed your output will print faster. The BC-10 is also more cost effective for monochrome printing because it can print more pages per cartridge than the BC-11e



BJ Cartridge guidelines

Canon manufactures several types of BJ Cartridges, but you must use only the BJ Cartridges designed for this printer. To ensure the best performance with the BJC-50, use only Canon Color BJ Cartridge BC-11e or Canon Black BJ Cartridge BC-10. Canon cannot guarantee your print quality if you use any other type of BJ Cartridge.

To avoid drying out the ink, clogging the print head, or ink leakage, follow these simple precautions:

- Do not unpack a BJ Cartridge until you are ready to use it.
- Keep the BJ Cartridge out of the reach of children. If spilled, the ink is difficult to clean.
- Install the BJ Cartridge in the printer immediately after removing the protective cap and protective tape.
- Never shake a BJ Cartridge.
- Never attempt to disassemble a BJ Cartridge.
- Never place a BJ Cartridge on a table with the print head facing down.
- The BJ Cartridge must be installed in the printer or be stored in the BJ Cartridge Storage Container SB-10. If the print head is left uncapped, the print head may dry out.





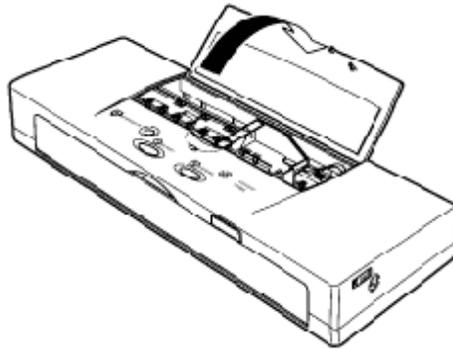
BJ Cartridge installation

1. Make sure the AC adapter is connected and the battery pack is installed.
 2. Press the **POWER** button.
-

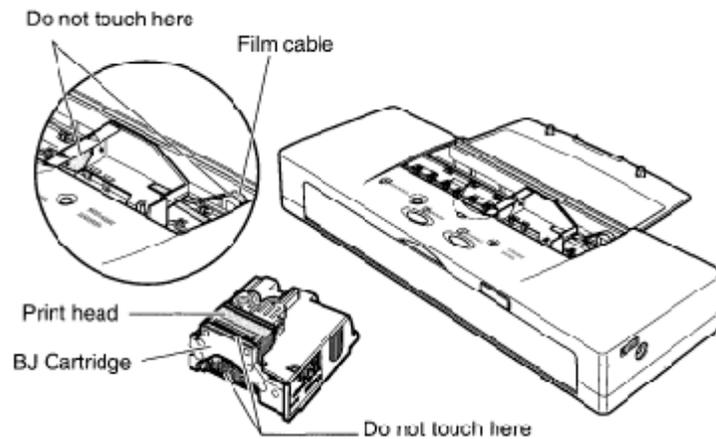


When you switch the printer on, the cartridge holder moves to the centre if a BJ Cartridge is not yet installed.

3. Raise the top cover.

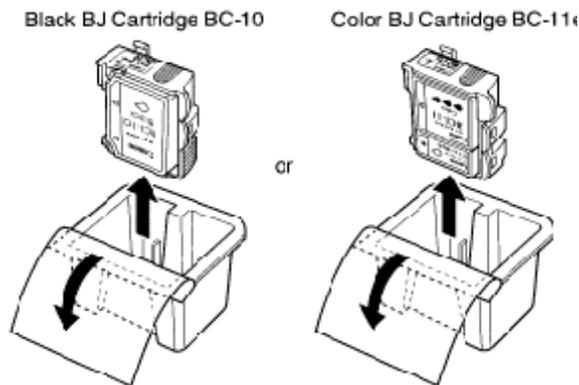


Never move the cartridge holder to the centre by pulling the film cable. Never touch the interior of the empty cartridge holder, the terminal of the print head unit, the print head itself, or the film cable when installing the BJ Cartridge (shaded portions).

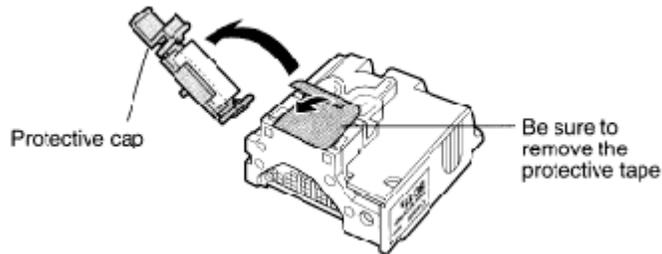




4. Remove the BJ Cartridge from its protective packaging.



5. Remove the orange protective cap from the print head and then remove the orange protective tape.



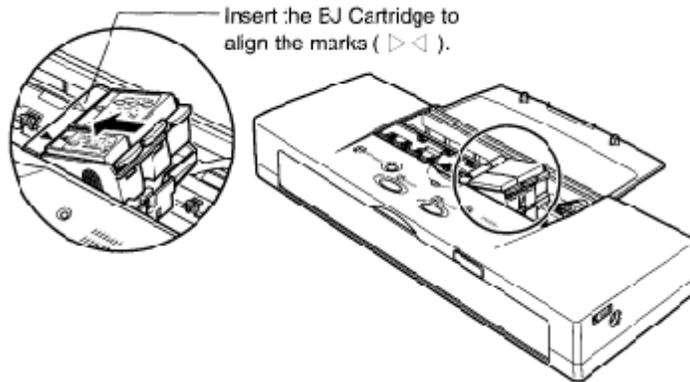
To avoid staining your clothing or articles in your work area, do not drop or shake the BJ Cartridge. The ink in the BJ Cartridge can stain fabric permanently.

6. Point the print head down, and insert the BJ Cartridge as shown below. Align the marks on the BJ Cartridge with the cartridge holder (yellow-yellow, black-black).

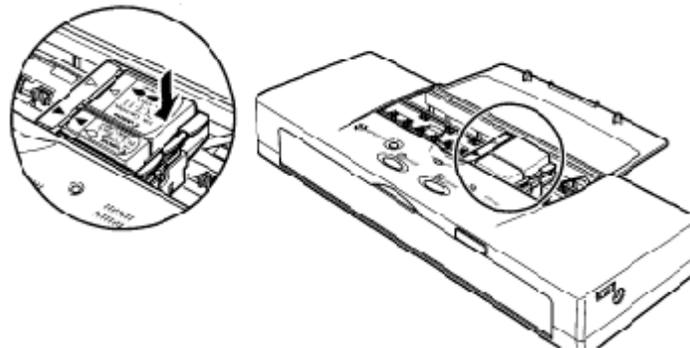




The illustration shows the installation of the Color BJ Cartridge BC-11e.

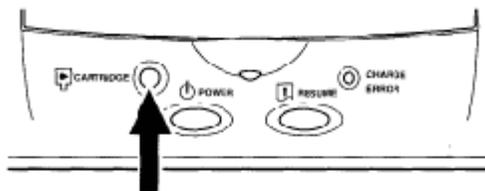


7. Press down gently on the high side of the BJ Cartridge until it snaps in place.



8. Close the top cover.

9. Wait about three seconds and press the **CARTRIDGE** button once.



9. After the BJ Cartridge is installed, the printer requires at least two seconds to detect the presence of the BJ Cartridge then the cartridge holder will move to the home position.



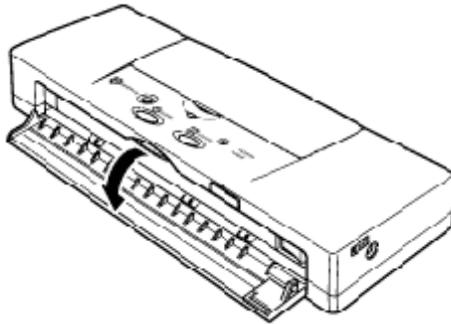


Always press the CARTRIDGE button to move the cartridge holder to the home position. If you fail to press CARTRIDGE button and the cartridge holder stays in the centre, after five minutes the buzzer beeps three times and the cartridge holder automatically returns to the home position to prevent the print head from drying out.

Performing a test print

To check the printer installation, print a Demonstration. This and other test prints are described in detail in Chapter 4. (p45)

1. Open the front cover of the printer.



2. Select one sheet of plain A4 or Letter size paper.



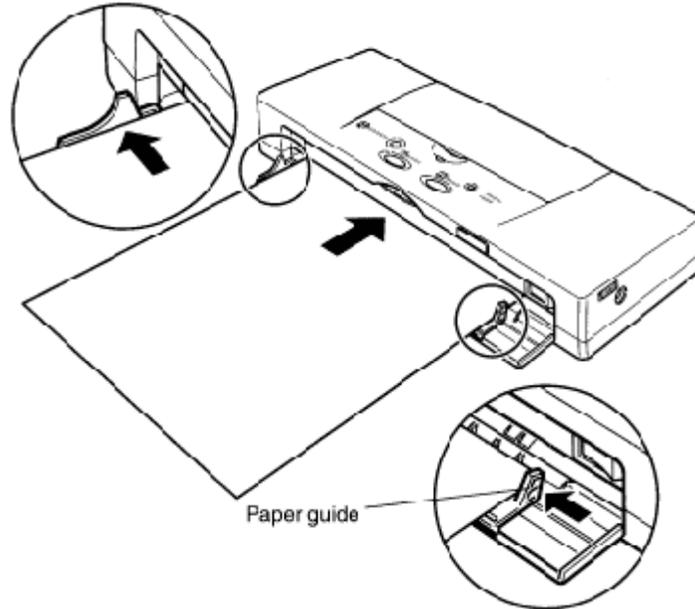
To avoid fouling the platen with wet ink, never attempt to perform a test print on paper smaller than A4 or Letter size. You can print on either side of plain paper.

3. Press and hold down the **POWER** button until you hear one beep and release it.





4. Slide the paper guide all the way to the right, and align the long side of the sheet with the left side of the feed slot. Slide the paper guide left to the right edge of the sheet until it is snug (not too tight).



5. Insert the sheet straight into the printer until it stops. Hold the sheet until the printer roller grabs the sheet and feeds it partially into the printer then release the sheet.



If the sheet is not set straight, or if the sheet is less than 100 mm wide, the sheet will not feed and will be ejected automatically from the feed slot. The printer will beep once and the error lamp will light orange to indicate a feed error. Remove the sheet from the printer and insert it again. If there is data waiting to be printed (the POWER lamp will be flashing), press the RESUME button to finish printing.





BJC-50
Color Bubble Jet Printer





***Exceptional portability:** Compact and super lightweight design; built-in lithium ion battery; standard universal adapter and printer cable for added convenience on the move across the world.



***Built-in IrDA:** Canon's infrared interface gives hassle-free wireless printing.



***High quality printing:** Canon's Drop Modulation Technology™ offers professional quality output with smaller dots for smoother color gradations, a wider color range, and less visible dots.



***Professional performance:** Quick, crisp black printing and brilliant, quick color printing.



***Scanner cartridge (option):** By simply swapping cartridges the BJC-50 becomes a 300 dpi color sheetfed scanner.



***Superb paper handling:** The optional auto sheet feeder feeds plain, photo, and coated papers, as well as envelopes, transparencies, and other Canon media.



***Excellent software compatibility:** Fully compatible with Microsoft® Windows® 95, Windows® 3.1, and DOS.

***Image Optimizer:** Sophisticated driver technology optimizes low-resolution images from scanners, digital cameras, and the Internet to produce smooth output without jagged edges.

***Guaranteed worldwide:** Canon's International Warranty System provides worldwide repair service.

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The above sample was printed with the Black BJ Cartridge BC-10.





Installing and using printer drivers

In order to use the BJC-50, you must install the correct printer driver on your computer. This section explains the printer drivers and gives you some hints on DOS driver selection.

Installing a printer driver for Windows 95/3.1

Printer drivers for both Windows 95 and Windows 3.1 are provided with the printer. For installation instructions, see the *Quick Start Guide* or the *Windows Print Guide*.

Installing a printer driver for DOS applications

To use the printer with a software application running under DOS, you must select and install a compatible driver using the software application's setup or installation procedure. After you select a compatible driver, you should be able to use all the features of the printer.



With some software applications, you may have to send control codes directly from the computer to the printer. In this case, see Appendix C for a complete list of printer command codes.

Selecting a DOS printer driver from your software application

Most DOS software applications include an installation or setup procedure that you must perform in order to install a printer driver. During this procedure you are asked to select the appropriate driver from a list of drivers provided with the software application. Even if you do not see a driver for the BJC-50, and this will be the case for older programs, you can still use the BJC-50 printer if you select a compatible driver. To allow you to do this, the BJC-50 can operate in two modes.

- BJ mode: Emulates an IBM Proprinter X24E series printer.
 - LQ mode: Emulates an Epson LQ-2550 series printer.
-



Some of these drivers may not allow you to take advantage of all the BJC-50 printer features.





Here is a list of compatible printer drivers, listed in order of preference.

Priority	Printer Name	Printer Control Mode	Remark
1	BJC-50	BJ or LQ	
2	BJC-80	BJ or LQ	
3	BJC-70	BJ or LQ	
4	Canon Color BJ Printer	BJ or LQ	
5	Epson LQ-2550	LQ	
6	Epson LQ printer	LQ	
7	IBM Proprinter X24E	BJ	Black & white only
8	IBM printer	BJ	Black & white only

Note that there are restrictions on the availability of font typefaces, print styles, and character sets, depending on whether you are using the BJ or LQ mode.

Feature		BJ	LQ
Font Typeface	15 cpi, 20 cpi	No	Yes
Print Style	Italic	No	Yes
	Slash zero	Yes	No
Character Set	Italic Set	No	Yes
	Graphics Set	No	Yes
	International Set	No	Yes





Chapter 3

Paper Handling

This chapter describes how to load plain paper and special media in the printer. To get the best performance from your printer, use the media most appropriate for the task and make sure that you follow these instructions to load it correctly.

Selecting paper types

One of the most important things you can do to ensure the best possible performance from your printer is to select the correct print media. Your printer produces letter-quality print on most plain paper, including cotton bond and photocopier paper, and does not require special ink jet paper. However, the print quality varies with different paper types, especially with color printing. Plain paper should be fully tested before large quantities are purchased. Your printer accepts either plain paper or the special media as described below.

Plain paper

Paper fed to the printer must be free of curls, folds, and damaged edges. The printer can accept A4, A5, B5, Letter and Legal size sheets in portrait orientation. Paper thickness should be in the range 64 to 105 gsm. Paper must be fed to the printer one sheet at a time unless you have installed the optional sheet feeder. Canon produces Bubble Jet Paper LC-301, a plain paper designed specially for Canon Bubble Jet printers.



This printer meets the standards for using recycled paper. The BJC-50 produces excellent printouts on recycled paper.





Special media

Several special media have been designed for use with the BJC-50 and other Canon Bubble Jet printers. When you handle special media other than plain paper (e.g. Coated Paper), follow these guidelines:

- Store the media in its original package until you are ready to use it. Exposing media to direct sunlight or air may lower the print quality.
- Avoid high temperature and high humidity. Store media in a comfortable environment that is not subject to wide changes in temperature or humidity.
- Before using the media, always read the precautions and additional instructions printed on the package or in the instructions provided with the packet. Special media like Fabric Sheet FS-101 and T-Shirt Transfer TR-201 (TR-101 in the U.S.) require special handling after printing. Detailed instructions are provided with purchase of these media.
- When using High Resolution Paper HR- 101, do not use the cleaning sheet supplied with the packet. The cleaning sheet will not feed smoothly through the BJC-50.

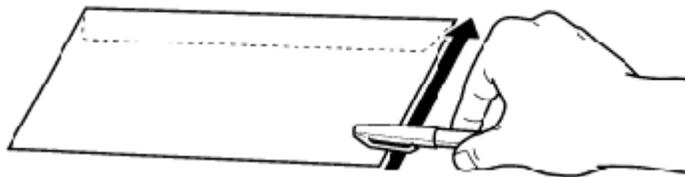
Envelopes

You can print addresses on envelopes of two common standard sizes:

- European DL size (220 x 110 mm).
- U.S. Commercial 10 (241 x 105 mm (9.5 x 4.1 inches)).

An envelope can be loaded horizontally or vertically for printing. Envelopes, like other media, must be loaded one at a time.

If an envelope will not advance, use the top of a biro or pen to sharpen the crease of the right edge of the envelope.





The following envelopes cannot be used:

- Envelopes with windows, holes, perforations, cutouts, and double flaps.
- Envelopes made with special coated paper or deeply embossed paper.
- Envelopes using peel-off sealing strips.
- Envelopes in which letters have already been enclosed.
- Warped envelopes or envelopes that have been folded.

Loading paper and other media

Paper and other media must be loaded one sheet at a time.



Before you attempt to load single sheets of paper or other media into the feed slot on the front of the printer, make sure the battery pack is installed. If the battery pack is not installed, you may experience problems feeding paper or other media into the front feed slot. Install the battery pack and leave it installed, even if you intend to use the printer only with the AC adapter.

Follow this procedure to load paper or other media one sheet at a time.

1. Open the printer driver for Windows 95 or Windows 3.1 so you can check the settings and make adjustments for the print job.
-

Make sure the printer driver has been installed for Windows 95, Windows 3.1, or your DOS software application.

To open the printer driver for Windows 95

- In your software application, pull down the File menu and select Print.
- Check the Name entry box. If BJC-50 is not displayed as the selected printer, click the down-arrow and select BJC-50 from the pull down list.
- With Canon BJC-50 displayed in the Name line, click the Properties button.
- The Paper and Graphics control sheets contain the settings for setting up a print job. For details, refer to the *Windows Print Guide*.





- On the Paper tab, check the Paper Feed setting and make sure that it is set for Manual Feed. If this setting is set for Auto Feeder, click Manual Feed.

To open the printer driver for Windows 3.1

- In your software application, pull down the Print Setup menu to open the Print Setup dialog.
- If the BJC-50 has not be set as the Default Printer, click the Specific Printer button, click the down-arrow in the entry box below the Specific Printer heading, and select BJC-50 from the pull-down list.
- Click the Options button.
- The Paper and Graphics tabs contain the settings for setting up a print job. For details, refer to the *Windows Print Guide*.
- On the Paper control sheet, check the Paper Feed setting and make sure that it is set for Manual Feed. If this setting is set for Auto Feeder, click Manual Feed.

To check the settings for a DOS application

- Open the DOS software application and start the print setup procedure so you can set or adjust the settings for the print job. For details, refer to your DOS software application instructions.

2. Make sure the printer driver and software application are set up for the media you are going to print on. On the Paper control sheet of the Windows 95/3.1 printer driver, make sure the following items are set correctly:

- For Media Type, the type of media should be selected (Plain Paper, Coated Paper, Transparency, etc.).
- For Paper Size, the appropriate Size should be selected for the sheet you are loading (A4, Letter, etc.)
- For Orientation, make sure Portrait is selected.
- For Paper Feed, select Manual.
- For Graphics, you may want to click the Graphics tab to select a setting appropriate for the content of the image on the Graphics control sheet.
- For details, refer to the *Windows Print Guide* and the instructions you received with your print media packet.





- Select one sheet of the media you want to load and hold the print side up at the edge of the feed slot.



You must determine the correct print side of the sheet, based on the type of media you are using. Refer to the table below.

Loading Table for Manual Feed			
Name	Media Type	Print Side	Purpose
Plain paper	Plain Paper	Either side up	General purpose printing.
Bubble Jet Paper LC-301	Plain Paper	Either side up	All purpose paper for printing business letters, tables, graphs, charts, color
presentations, etc. Glossy Photo Paper GP-201	Glossy Paper	Glossy side up	Produces superior results in printing photographic images.
High Resolution Paper HR-101	Coated Paper	Whiter side up	Produces vivid graphics and near-photo quality with photographic images.
Transparencies CF-102	Transparency	Either side up	Produces color images for display with an overhead projector.
High Gloss Film HG-101	High Gloss Film	Glossy side up	Specially designed to reproduce photographic images in lustrous colors.
Back Print Film BF-102	Back Print Film	Matte side up	Special mylar-based translucent sheets for printing color images to be projected with a backlighting device.
Fabric Sheet FS-101	Fabric Sheet	Cloth side up	Printable white, cotton fabric to produce your own embroidery designs, pillows, appliques, and so on.

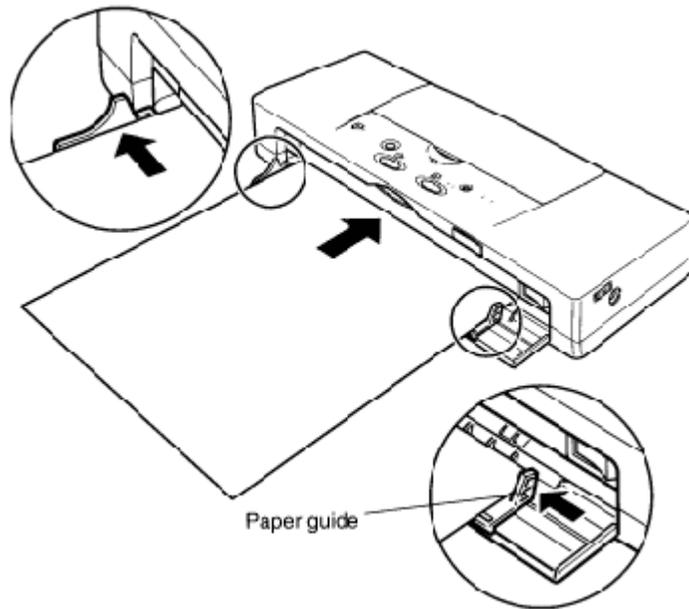




Name	Media Type	Print Side	Purpose
T-shirt Transfer TR-201 (TR-101 in the U.S.)	T-shirt Transfer	Side with green lines face down.	Print on the sheet then transfer the color image to a cotton or polyester-cotton blend T-shirt with a hot iron.

Media Type: This is the name of the Media Type you will see after you pull down the list for Media Type on the Paper control sheet of the Windows 95/3.1 printer driver.

- Slide the paper guide all the way to the right, and align the long side of the sheet with the left side of the feed slot. Slide the paper guide left to the right edge of the sheet until it is snug (not too tight).





5. Insert the sheet straight into the printer until it stops. Hold the sheet until the printer roller grabs the sheet and feeds it partially into the printer then release the sheet.
-



If the sheet is not set straight, or if the sheet is less than 90 mm wide, the sheet will not feed and will be ejected automatically from the feed slot. The printer will beep once and the error lamp will light orange to indicate a feed error. Remove the sheet from the printer and insert it again. If the error has left print data (the POWER lamp will be flashing), press the RESUME button to finish printing.

6. Start the print job with your software application.





Chapter 4

Performing Test Prints

In this chapter we will show you how to perform all the test prints with the operation panel. These test prints can also be executed from the Windows printer driver.

Starting the test prints

Follow this general procedure to perform any test print.



To avoid fouling the platen with wet ink, never attempt to perform a test print on paper smaller than A4 or Letter size. You can print on either side of plain paper

1. Check the table below and select the test you want to print.

Test Print	Number of Beeps	See page
Demonstration	1	47
Printer Settings	2	48
Ripple Pattern	3	48
Nozzle Check Pattern	4	49
Hex Dump Mode	5*	50
Font Sample	6	49

* The Hex Dump Mode is not a test print. This setting switches the printer to hexadecimal dump mode.

2. Switch off the printer by pressing the **POWER** button and wait for the print head unit to return to the home position.
3. Press and hold down the **POWER** button. Wait for the number of beeps required for the test print you want then release the **POWER** button. After you release the **POWER** button, the test print you selected starts to print.
4. Load the printer with A4 or Letter paper. (p43) Samples and descriptions of each test print are provided on the following pages.





In addition to starting the test prints, you can also use the **POWER** button to change the printer default settings.

1. Press the **POWER** button to switch the printer off.
2. Press and hold down the **POWER** button and count the number of beeps. Release the **POWER** button when you hear the number of beeps for the defaults you want to set.

Default	Number of Beeps
LQ mode (USA)	7
BJ mode (USA)	8
LQ mode (Europe/Asia)	9
BJ mode (Europe)	10
BJ mode (UK/Asia)	11
No change	12

The following table lists the defaults for each setting.

	USA-LO	USA-BJ	Europe/Asia	Europe-BJ	UK/Asia-BJ
Print Control Mode	LQ	BJ	LQ	BJ	BJ
Paper Selection	LTR	LTR	A4	A4	A4
Print Mode	HQ	HQ	HQ	HQ	HQ
Reduction	1/1	1/1	1/1	1/1	1/1
Auto Power Off	ON	ON	ON	ON	ON
Font	Roman	Courier	Roman	Courier	Courier
Code Page	437	437	437	850	437
Page Length	23 inch	11 inch	23 inch	12 inch	12 inch
Character Set	Italic	Set 1	Italic	Set 1	Set 1
Text Scale	OFF	OFF	OFF	OFF	OFF
Auto Line Feed	CR	CR	CR	CR	CR
Auto Carriage Ret.	—	LF	—	LF	LF
Auto Graphics Mode	—	OFF	—	OFF	OFF
Intl. Chara. Set	USA	—	USA	—	—

HQ: High Quality.





Sample test prints

Demonstration

Provides an attractive demonstration of the printer's capabilities and describes some of the printer's important features.

BJC-50
Color Bubble Jet Printer

Canon

-  **•Exceptional portability:** Compact and super lightweight design; built-in lithium ion battery; standard universal adapter and printer cable for added convenience on the move across the world.
-  **•Built-in IrDA:** Canon's infrared interface gives hassle-free wireless printing.
-  **•High quality printing:** Canon's Drop Modulation Technology™ offers professional quality output with smaller dots for smoother color gradations, a wider color range, and less visible dots.
-  **•Professional performance:** Quick, crisp black printing and brilliant, quick color printing.
-  **•Scanner cartridge (option):** By simply swapping cartridges the BJC-50 becomes a 360 dpi color sheetfed scanner.
-  **•Superb paper handling:** The optional auto sheet feeder feeds plain, photo, and coated papers, as well as envelopes, transparencies, and other Canon media.
-  **•Excellent software compatibility:** Fully compatible with Microsoft® Windows® 95, Windows® 3.1, and DOS.
- Image Optimizer:** Sophisticated driver technology optimizes low-resolution images from scanners, digital cameras, and the internet to produce smooth output without jagged edges.
- Guaranteed worldwide:** Canon's International Warranty System provides worldwide repair service.

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Chapter 5

Color Printing and Black-and-White Printing

Switching between colour printing and black-and-white printing

Before switching between colour printing and black-and-white printing, you must adjust the settings with your software application and prepare your printer by installing an appropriate BJ Cartridge.

Printing with Windows

Changing printer driver settings

You can change the settings of the Canon BJC-50 Printer Driver from the Printer Setup dialogue box.

Setting up a software application

Some software applications allow you to select colour printing or black-and-white printing for each document. With such an application, you may need to change the selection of colour or black-and-white printing.

Printing with DOS applications

Selecting a printer driver

To print in color, you must select an appropriate printer driver for color printing from a printer selection menu that most DOS software applications provide.

Setting up a software application

Some software applications allow you to select colour printing or blackand-white printing for each document. If the printer only prints in blackand-white even if you have selected a correct printer name for colour printing, check the software application's printer setup menu.





Preparing your printer

Depending on your printing needs, you may need to change the BJ Cartridge. To print in colour, install a Color BJ Cartridge BC-11e. To print a number of pages in black-and-white, install a Black BJ Cartridge BC-10.



For black-and-white print jobs, we recommend that you use the Black BJ Cartridge BC-10, not the Color BJ Cartridge BC-11e. The BC-10's 128 nozzles deliver printing at higher speed.

Changing the BJ Cartridges

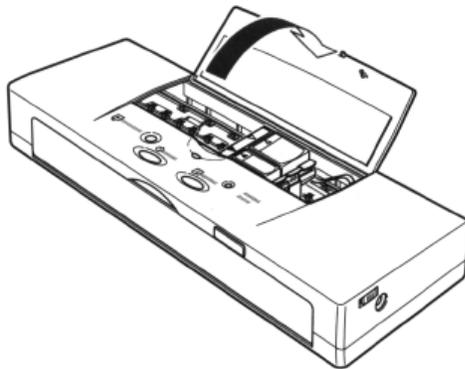
Follow the procedure below to change the BJ Cartridges. For example, before you print a long report full of black-and-white text, replace the Color BJ Cartridge BC-11e with a Black BJ Cartridge BC-10.

1. Check the printer **POWER** lamp and make sure that it is on. If the printer is off, press the **POWER** button to switch it on.
2. Press the **CARTRIDGE** button on the operation panel. The cartridge holder moves to the centre and the **POWER** lamp flashes.



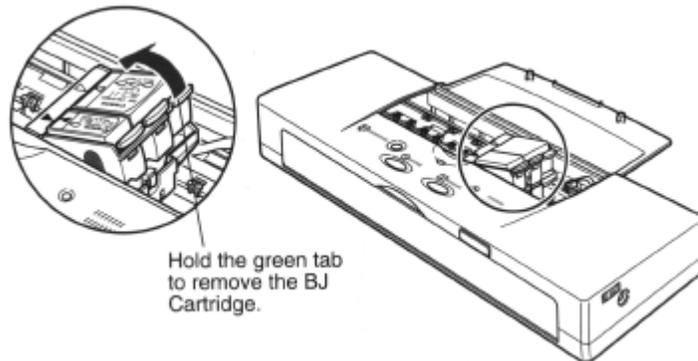
If the print head is overheated, it may not move to the centre immediately. Wait a few minutes for the print head to cool down. Never attempt to move the cartridge manually by pushing it or pulling on the film cable.

3. Open the top cover

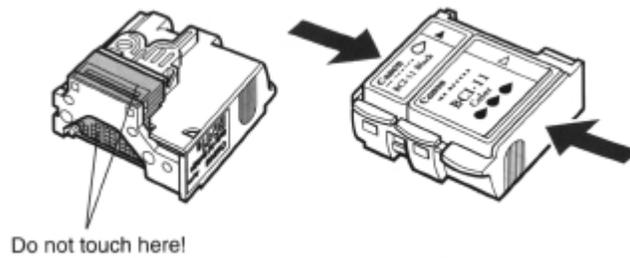




4. With the tip of your finger, lift up the tab on the corner of the BJ Cartridge then raise the cartridge and green print head unit out of the cartridge holder.



Always hold a BJ Cartridge by its sides and never touch the wet print head or metal contacts.

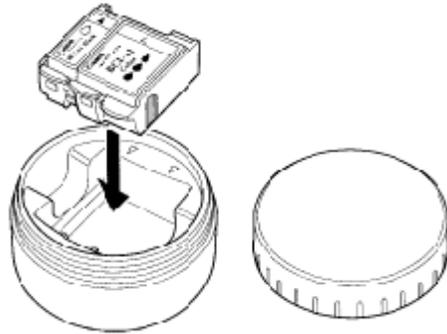




5. After removing the partially used BJ Cartridge, store it in the BJ Cartridge Storage Container SB-10 supplied with the printer. Turn the cover to tightly seal the container.



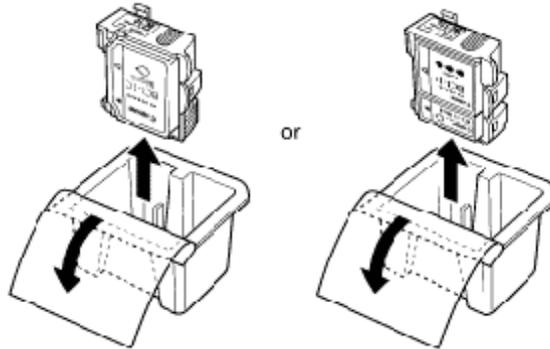
Every time you store a partially used BJ Cartridge in the BJ Cartridge Storage Container SB-10, always screw the lid on tightly to prevent the BJ Cartridge from drying out.



6. If you are installing a new BJ Cartridge, remove the BJ Cartridge from its protective packaging.

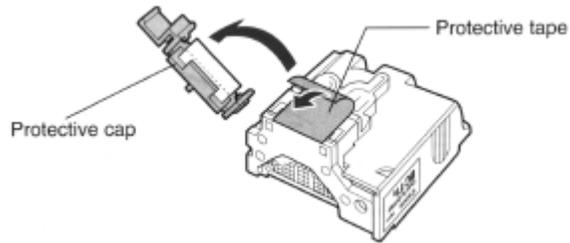
Black BJ Cartridge BC-10

Color BJ Cartridge BC-11c



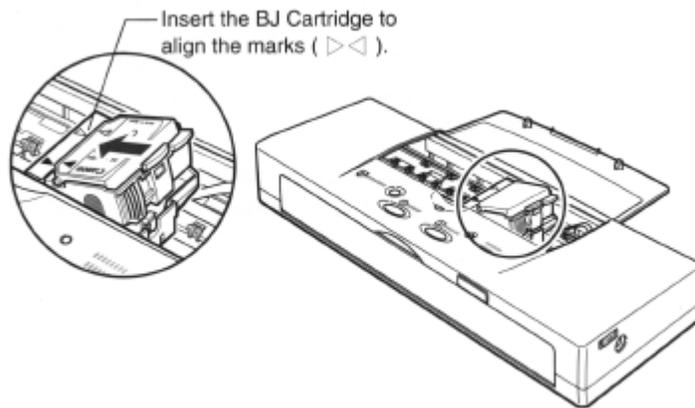


7. If you are installing a new BJ Cartridge, remove the orange protective cap and orange protective tape from the BJ Cartridge.



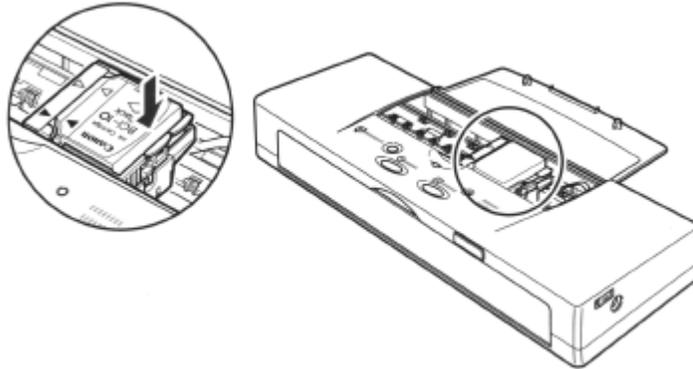
To avoid staining your clothing or articles in your work area, do not drop or shake the BJ Cartridge. The ink in the BJ Cartridge can stain fabric permanently.

8. Insert the BJ Cartridge as shown below. Align the marks on the BJ Cartridge and the cartridge holder (yellow-yellow, black-black).





9. Press down on the high side of the BJ Cartridge until it snaps into the cartridge holder.



10. Close the top cover.
11. Wait about three seconds and press the **CARTRIDGE** button once.

After the BJ Cartridge is installed, the printer requires at least two seconds to detect the presence of the BJ Cartridge. The cartridge holder moves to the home position, and the printer automatically executes print head cleaning. Once print head cleaning is completed, the printer is ready to print.

If print quality problems such as white streaks, missing dots, or irregular dots are found in the initial printout, clean the print head. (p80)





Printing with a color BJ Cartridge

The benefits of color printing

Color printing enables you to create documents that are easier to understand, particularly if you are using colored graphs for a presentation.



Selecting the print media

The correct choice of media is particularly important for color printing.

The Canon BJC-50 is capable of printing not only on plain paper, but also on envelopes, transparencies, and other media. Please use the following guidelines when selecting a print media for your documents.

- Plain copier paper provides good results, and paper with cotton fibre is also suitable for color printing.
- For important presentations or documents that include intensive graphics and color, use High Resolution Paper HR-101, High Gloss





Film HG- 101, Glossy Photo Paper GP-201, or similar products. The printer will produce even more vivid colors with these media. When printing on High Gloss Film or Glossy Paper, print on the glossy side only.

- For overhead presentations, use Transparencies CF- 102. Do not use copier transparencies as they cannot absorb the ink.
- If back-lighting is available for your presentation, you can use Back Print Film BF-102. This print medium is a mylar translucent sheet on which colors appear very vivid when shown with a back-lighting device.
- To print color designs and patterns on cloth, use Canon Fabric Sheet FS- 101. Use your favorite software to produce an original design then print the design on the fabric sheet. Create materials for pillows, gift bags, stuffed animals, hand puppets, appliques and so on.
- You can also produce original designs on T-Shirt Transfer TR-20 1 (TR-101 in the U.S.) and transfer them with a hot iron to cotton or cotton-polyester blend T-shirts.
- For envelopes, use European DL size (220 x 110 mm) or U.S. Commercial 10 (241 x 105 mm (9.5 x 4.1 inches)).
- When you use special print media, make sure that you always print on the correct side. For details, refer to the table for loading special media. (p42)

Understanding your software application's capabilities

The Canon BJC-50 can print a large number of different colors. Your software application determines which colors you can use. The software application may support all 16.7 million colors or may be limited, as follows:

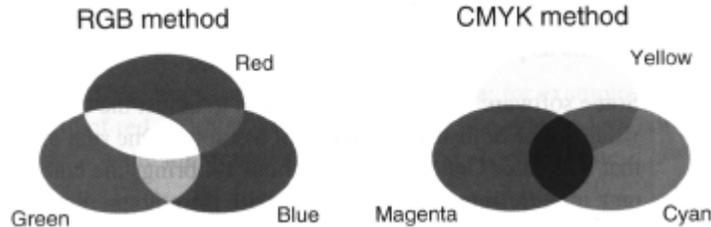
- A limited number of colors, such as the basic eight: red, green, blue, cyan, yellow, magenta, black, and white.
- A limited number of colors plus shades of those colors. Shades are created by adding white or using different color patterns.
- A limited number of colors plus custom colors. For example, mixing red and blue for purple.





Matching Colors displayed on your monitor with printouts

Colors are displayed on a video monitor by mixing the colours red, green, and blue (the three primary colors of visible light) in the amounts required to produce any given color. This sort of display technology is called RGB. In the RGB method, the more intense the colors you mix, the brighter the color becomes.



Printing technologies, on the other hand, employ the three primary colors cyan, magenta, and yellow, plus black (or K) to produce color effects. This method is called CMYK. In the CMYK method, the more of a given color you add to a mixture of colors, the darker the resultant color becomes.

As these paragraphs illustrate, the methods used to produce color in displays and printers are completely different. Other factors that can affect the perception of color are the quality of paper, type of print media, and differences in the source of light in use when viewing the colors. For these reasons, it is impossible to avoid some differences in the perceived color of a document or image viewed on a monitor, and the same image in printed form. In order to achieve a printed result which looks like the image displayed on the screen of a monitor, you must first make the appropriate settings to both the software application and the printer.





Adjustments made to the monitor

If you have high quality monitor capable of finely controlling the amount of light allocated to each component of the RGB mix of colors, it is possible to adjust the colors appearing on the screen in such a way as to approximate the printed result. However, normal monitors allow only rough control of brightness and contrast, control which is applied indiscriminately to the entire screen and is not very effective for anything more than rough adjustment of the appearance of whole screen images. We recommend selection of a highly reliable monitor which suffers from as little deviation in the reproduction of colors as possible.

Some software applications allow you to adjust the Gamma value, a value which adjusts the contrast of a color. One rule of thumb holds that a monitor Gamma value of about 1.4 brings the colors displayed on a monitor into close agreement with the colors displayed on the printed page.

Adjustment of color from within software applications

When the software application allows adjustment of color, the appearance of colors on the monitor screen can be adjusted after comparison with printed results.

Normally, colors are adjusted according to the procedure outlined below. For further information about how to adjust colors, see the documentation accompanying your software application.

- First, print out a color sample using the CMYK method, and adjust the colors appearing on the monitor screen as you compare them to the printed result. This process is called color calibration. By performing this calibration, it is possible to bring the colors displayed on the monitor screen and on the printed page into closer match.
- If your software application uses a color palette to set color levels, it is possible to finely tune the appearance of a particular color by adjusting the color palette.
- If your software application permits you to adjust the colors over the entire screen through use of a color balance, you can make adjustments like washing out red colors or strengthening yellows over the entire screen at a single stroke.





Color and cost

Printing in color costs more than printing in black ink only. To reduce the cost of color printing, follow these guidelines:

- When printing monochrome images, install the Black BJ Cartridge BC-10.
- When printing spreadsheet-type graphs, choose coloured hatch patterns instead of solid colors. Hatch patterns typically use less ink and look just as good as solid colors.
- Use lighter colors that use more white space; for example, pink instead of red. Although white is a color, the printer does not produce white ink; it uses the color of the paper as white.
- Avoid using full-color backgrounds. For color presentations that do contain a full-color background, print the background for the final output only, not for drafts.

Some software applications allow you to print several pages of data on one page in condensed size. If available, use this mode for printing multiple pages quickly at a lower cost.





Chapter 6

Maintaining the Printer

This chapter covers the care and maintenance of your Canon BJC-50 printer including instructions for transporting, storing, and cleaning the printer, replacing BJ Cartridges, and cleaning the print head.

Your printer requires little maintenance but to keep it in top operating condition, you should perform the following routine maintenance.

Recharging and replacing the battery pack

This section shows you how to recharge and replace your battery pack.



Install and use only a Canon Li-Ion Battery LB-50 in this printer. You must install the battery pack and leave it installed in the printer even if you intend to use the printer only with the AC adapter. If the battery pack is not installed, the printer CHARGE/ERROR lamp will light orange and the printer will beep six times.

Recharging the battery pack

When the power in the battery pack runs low, the **CHARGE/ERROR** lamp flashes orange and the printer beeps four times. When the power in the battery pack is depleted, the **CHARGE/ERROR** lamp lights orange and the printer beeps twice (one long and one short beep).

Follow this procedure to recharge the battery pack.



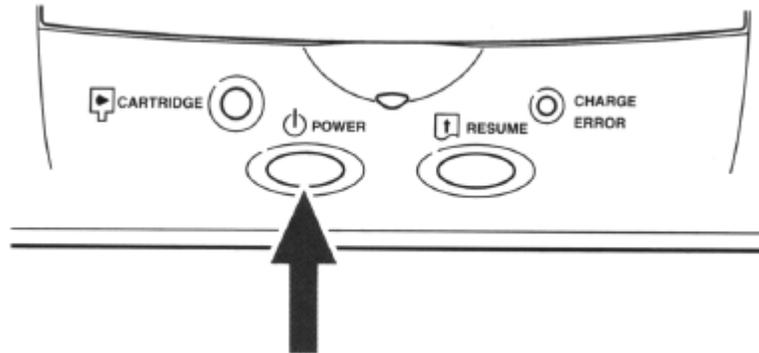
NEVER ATTEMPT TO RECHARGE THE BATTERY PACK WITH ANYTHING OTHER THAN THE UNIVERSAL AC ADAPTER AD-360U SUPPLIED.

For best results, charge the battery pack at room temperature 10°C to 30°C (50°F to 86°F). The battery pack will recharge very slowly at low temperature and will not charge fully at high temperature.

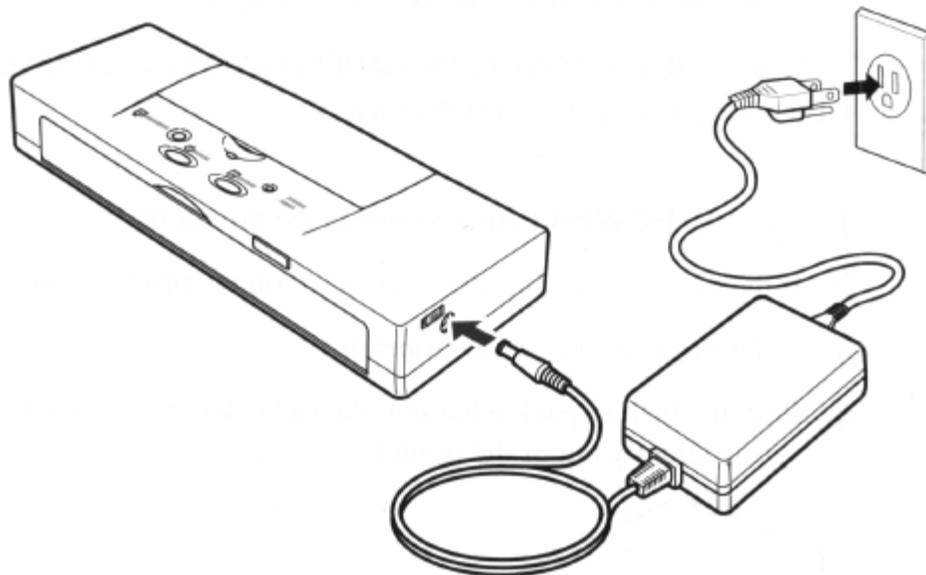




1. Press the **POWER** button to switch the printer off.



2. Attach the AC adapter cord to the right side of the printer and plug the other end of the AC adapter to a power source.



The **CHARGE/ERROR** lamp will remain illuminated green until the battery pack is completely recharged.

3. When the **CHARGE/ERROR** lamp goes off, you can disconnect the AC adapter.



Note

- The battery pack requires six hours (maximum) to recharge.
- The battery pack may become warm during a long print job and may not start recharging until it has cooled (max. 30 minutes).





Replacing the battery pack

Follow this procedure to replace the battery pack.

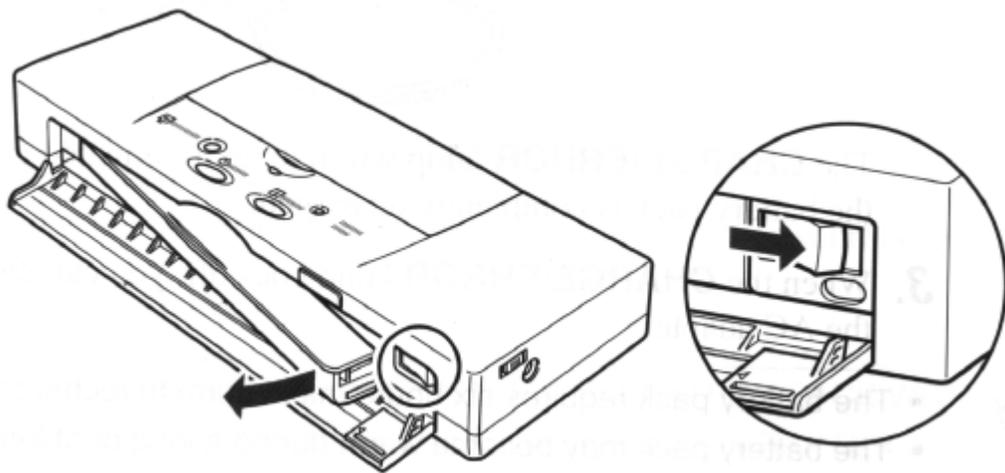
You can replace the battery pack at any time. You may want to purchase and carry extra battery packs for emergencies. However, please remember that new battery packs must be fully charged before you can use them. Before you travel, make sure new battery packs are fully charged.

You must also replace a battery pack after it is exhausted. The **CHARGE/ERROR** lamp will flash and the printer will beep six times when the battery pack becomes exhausted. After the battery pack is exhausted, it cannot be recharged and used again.



HANDLE THE BATTERY PACK CAREFULLY BY FOLLOWING THE GUIDELINES DESCRIBED ON PAGE 21.

1. Press the **POWER** button to switch the printer off.
2. If the optional sheet feeder is installed on the printer, remove it.
3. If the front cover is closed, open it.
4. Push the battery pack release to the right. The battery pack will spring slightly out of the printer.

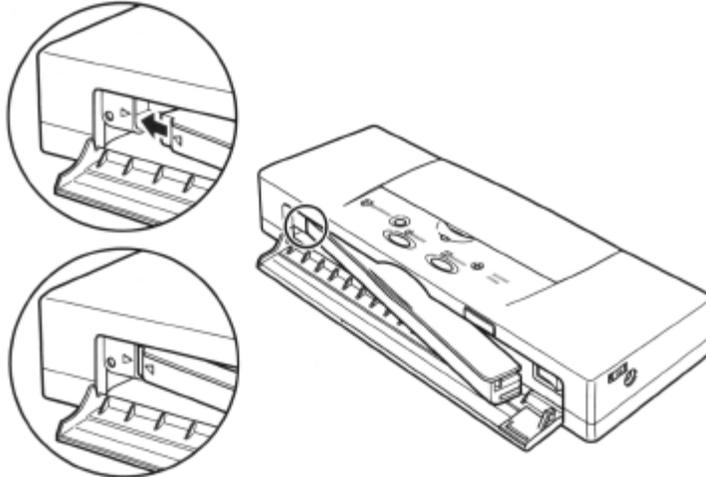


5. Remove the battery pack from the printer.





6. Remove the new battery pack from its packaging.
7. Insert the battery pack into the slot at a slight angle to match its connector slots to the prongs inside the left corner of the battery pack slot.



8. Push in the right side of the battery pack to lock it in place.
9. Close the front cover.
10. If you have just installed a new battery pack, you must allow it to charge before you can use it. Just leave the AC adapter connected to the printer and the power outlet. The battery pack will charge while the printer is switched off or on. About six hours (maximum) is required for the battery pack to fully charge.



Note

If you have replace an exhausted battery pack, dispose of the battery pack according to the regulations in your country. For details, contact your Canon Authorised Dealer or Canon Representative.





Replacing ink cartridges

In this section we show you how to handle and replace the ink cartridges.

Handling ink cartridges

BJ Cartridges and ink cartridges should be used within six months of purchase to ensure optimum printing. To avoid leaking or drying, follow these simple precautions:

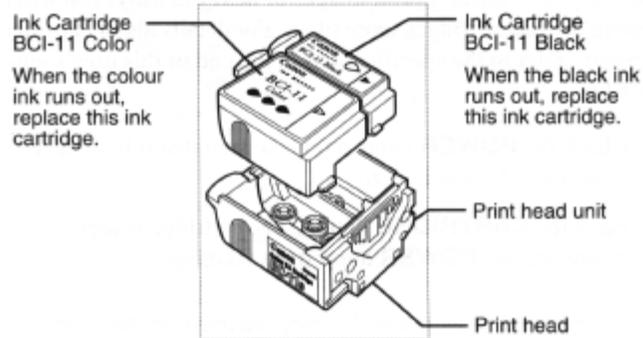
- Never attempt to disassemble an ink cartridge.
- Never shake an ink cartridge.
- Never unpack an ink cartridge until you are ready to install it.
- Do not remove ink cartridges from the BJ Cartridge unnecessarily.
- To prevent drying out the print head, never use the print head unit with an ink cartridge missing.
- Always install an ink cartridge as soon as you remove the protective cap and tape.
- Keep unused ink cartridges out of the reach of children, and discard used ink cartridges immediately. If spilled, the ink is difficult to clean.





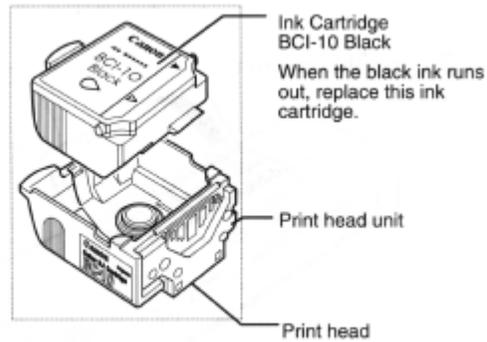
Examining the ink cartridges

The Color BJ Cartridge BC-11e employs the Ink Cartridge BCI-11 Color and the Ink Cartridge BCI-11 Black.



Color BJ Cartridge BC-11e

The Black BJ Cartridge BC-10 employs only one ink cartridge.



Black BJ Cartridge BC-10





Replacing an ink cartridge

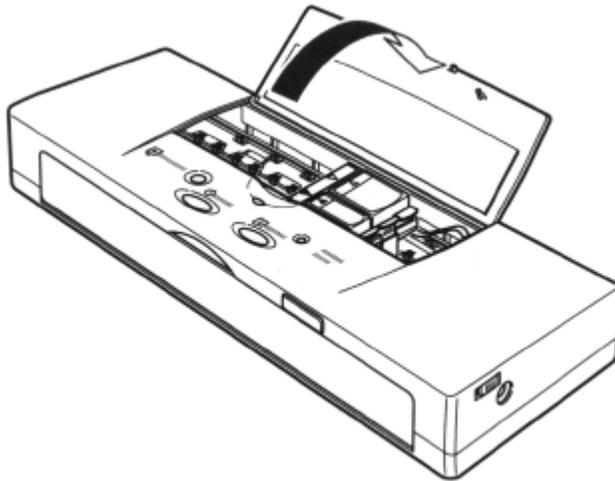
Replace an ink cartridge when it runs out of ink. The frequency of changing the ink cartridges will vary according to how the printer is used. If you frequently print images of heavy density, you will need to change the ink cartridges more often. For details about cartridge capacity, refer to the specifications at the end of this user's guide. (p129)

1. Check the **POWER** lamp and make sure that it is switched on. If the printer is off, switch it on.
2. Press the **CARTRIDGE** button. The cartridge holder moves to the centre and the **POWER** lamp starts flashing.



If the print head is overheated, it may not move to the centre immediately. Wait a few minutes for the print head to cool down. Never attempt to move the cartridge manually by pushing it or pulling on the film cable.

3. Open the top cover.



4. Release the hook on the ink cartridge and raise it up as shown in the illustration below.



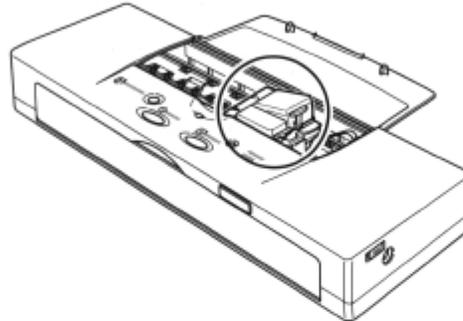
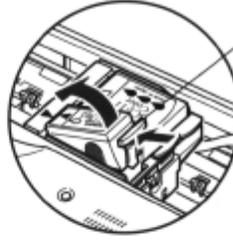


Ink Cartridges BCI-11 Color and Black

Press this white hook to remove the colour ink cartridge.



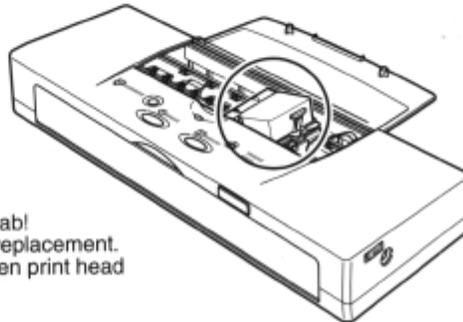
Press this grey hook to remove the black ink cartridge.



Do not press the green tab! This is for BJ Cartridge replacement. Be sure to leave the green print head unit in the printer.

Ink Cartridge BCI-10 Black

Press this grey hook to remove the ink cartridge.



Do not press the green tab! This is for BJ Cartridge replacement. Be sure to leave the green print head unit in the printer.



Caution

DO NOT TOUCH THE INTERIOR OF THE CARTRIDGE HOLDER, THE BASE OF THE PRINTHEAD UNIT, THE PRINTHEAD, THE FILM CABLE, OR THE INK CARTRIDGE FILTERS WHEN CHANGING THE INK CARTRIDGE.



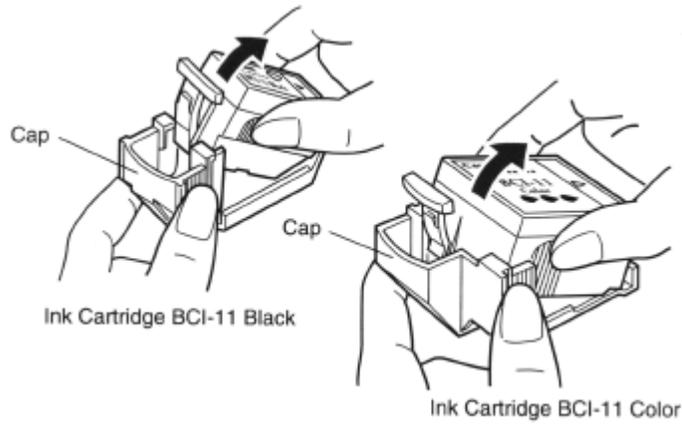
Note

When replacing an ink cartridge, remove only the empty ink cartridge and leave the print head unit in the cartridge holder to avoid soiling your hands.

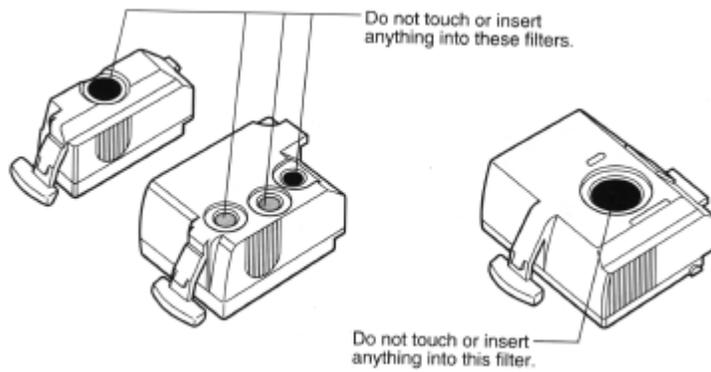




5. Remove the orange protective cap from the new ink cartridge.

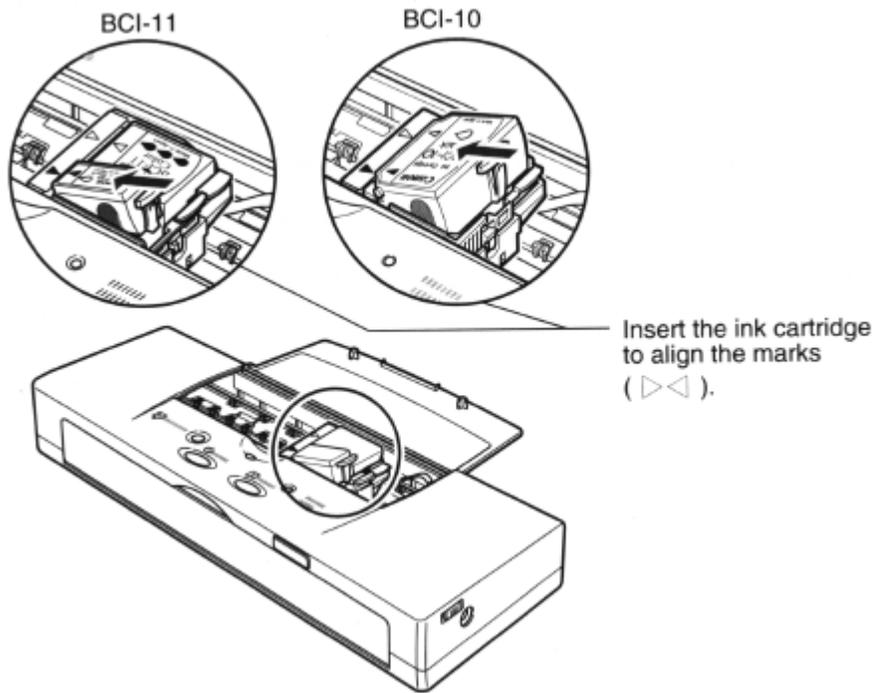


Do not touch or insert anything into the filter on the ink cartridge.



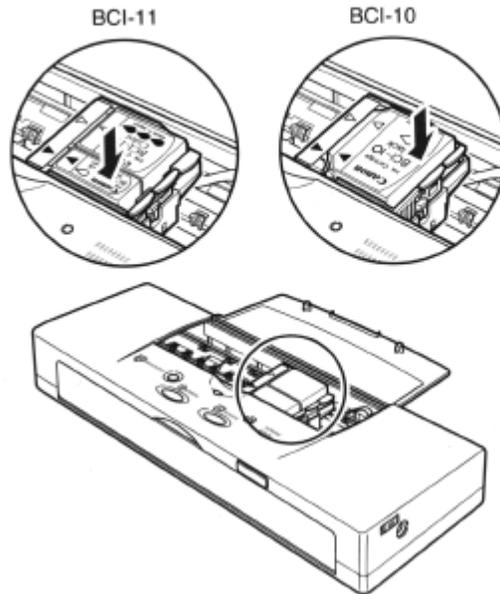


6. Position the new ink cartridge so that its filter is on the bottom, and insert it as shown in the illustration below.



7. Press down gently on the high side of the ink cartridge until the ink cartridge clicks into the print head unit.

7. Press down gently on the high side of the ink cartridge until the ink cartridge clicks into the print head unit.





8. Close the top cover.
9. Press the **CARTRIDGE** button. The cartridge holder moves to the home position and the printer starts cleaning the print head.

Replacing BJ Cartridges

Follow this procedure to replace or exchange a BJ Cartridge.

Before you replace a worn BJ Cartridge...

When a print head becomes worn out, the printing is no longer crisp and clear, gaps may appear in characters, and lines may appear broken or not complete. However, these and similar problems can also be caused by a clogged print head.



Before you decide to replace the BJ Cartridge, always clean the print head to confirm that the problem is not a clogged print head.

1. Print a Nozzle Check Pattern. (p45)
2. If the quality of the pattern is poor, clean the print head four or five
3. Print another Nozzle Check Pattern. If the pattern is still poor, flush the print head twice. (p80)
4. If print head flushing fails to correct the problem, follow the procedure below to replace the BJ Cartridge.

Replacing a BJ Cartridge

Follow this procedure to replace the BJ Cartridge.



The Black BJ Cartridge BC-10 and Color BJ Cartridge BC-11e were designed specially for this printer. Never attempt to use any other type of cartridge with this printer.

1. Check the printer **POWER** lamp and make sure that it is switched on. If the printer is off, press the **POWER** button to switch it on.
2. Press the **CARTRIDGE** button. The cartridge holder moves to the centre and the **POWER** lamp flashes.





If the print head is overheated, it may not move to the centre immediately. Wait a few minutes for the print head to cool down. Never attempt to move the cartridge manually by pushing it or pulling on the film cable.

3. Remove the BJ Cartridge and install a new BJ Cartridge. Follow the same procedure used to replace a Color BJ Cartridge BC-11e with a Black BJ Cartridge BC-10. (p72)

Dispose of the old BJ Cartridge immediately.



You may want to place it in a plastic bag to prevent spillage from the print head.

4. Press the **CARTRIDGE** button.

The cartridge holder moves to the home position and the printer starts cleaning the print head. After print head cleaning is completed, the printer is ready for operation.

Installing the Color Image Scanner Cartridge IS-12

The printer can be converted to a color image scanner by installing the optional Color Image Scanner Cartridge IS-12. This section describes how to install and remove the Scanner Cartridge. For details about operating the printer as a scanner, see the *Color Image Scanner Cartridge IS-12 User's Manual*.

Removing the BJ Cartridge

Follow this procedure to remove the BJ Cartridge.

1. Check the printer **POWER** lamp and make sure that it is on. If the lamp is off, press the **POWER** button to switch the printer on.
 2. Press the **CARTRIDGE** button. The cartridge holder moves to the centre.
-

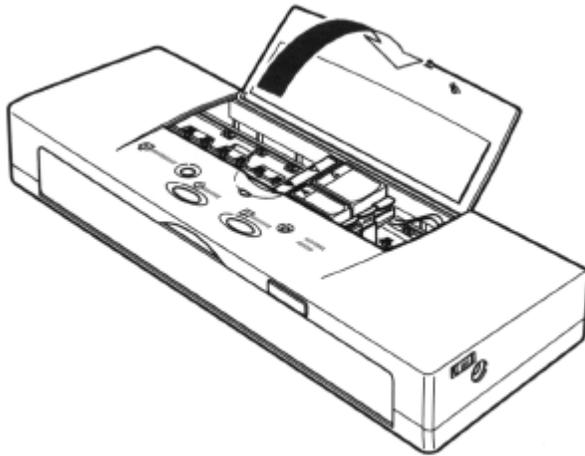


You must install and use the IS Scan 1.20 scanner driver or higher. Earlier versions of this scanner driver do not work correctly with the BJC-50.

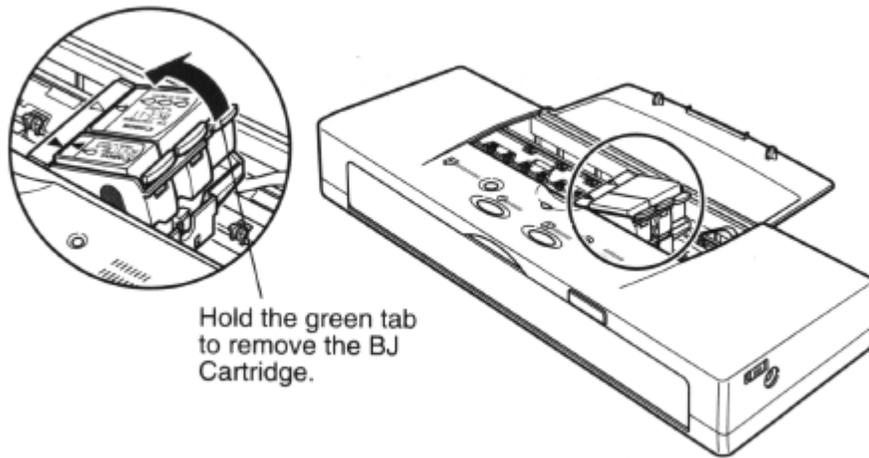




3. Open the top cover.



4. With the tip of your finger, lift up the green tab on the corner of the BJ Cartridge then raise the cartridge and green print head unit out of the cartridge holder.

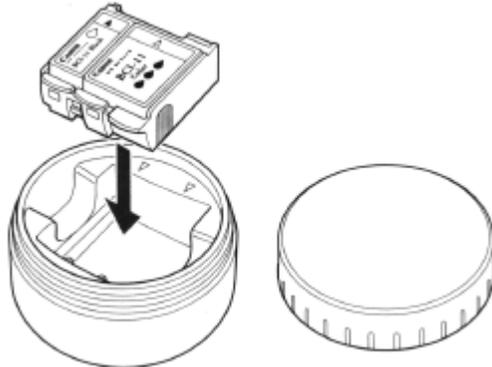


Make sure that you remove the whole BJ Cartridge, not just the ink cartridges.





5. Place the BJ Cartridge with its ink cartridges in a BJ Cartridge Storage Container SB-10.



6. To prevent the print head from drying out, close the lid on the container tightly. If the print head dries out, it will no longer be able to print.

Installing the Scanner Cartridge

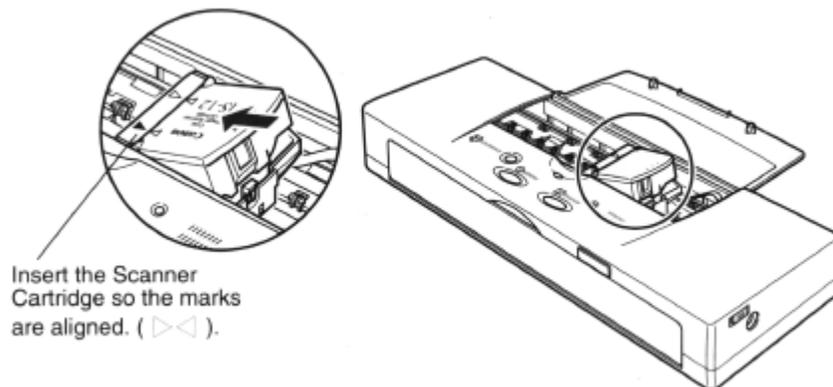
Follow this procedure to install the Color Image Scanner Cartridge IS-12.

1. Remove the Scanner Cartridge from its protective soft case.



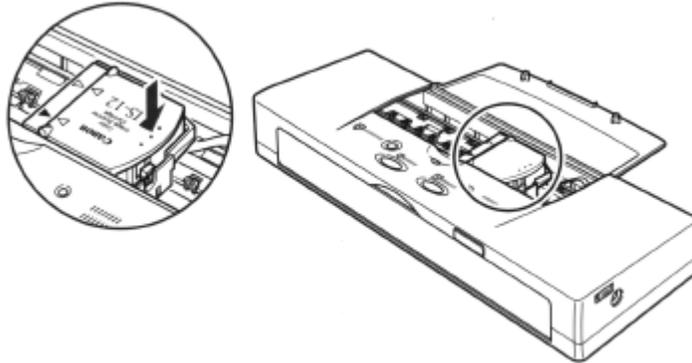
Save the case! You will need it to store the Scanner Cartridge when it is not installed on the printer.

2. With its label facing up, place the Scanner Cartridge in the cartridge holder.





3. Press down gently on the high side of the Scanner Cartridge until it snaps in place.



4. Wait about three seconds and press the **CARTRIDGE** button once.

After the Scanner Cartridge is installed, the printer requires at least two seconds to detect the presence of the Scanner Cartridge, then the Scanner Cartridge moves to the home position.

5. Close the top cover.

Removing the Scanner Cartridge

Remove the Scanner Cartridge as soon as you are finished scanning and replace it with a BJ Cartridge.



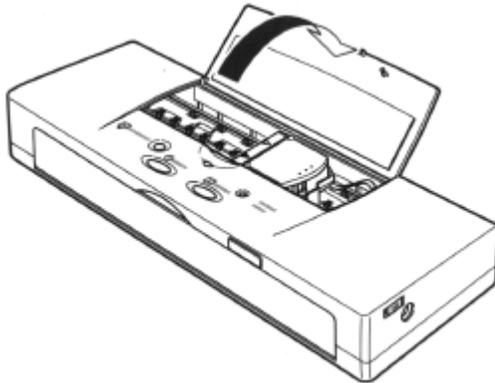
To avoid problems with printer and Scanner Cartridge operation, never leave the Scanner Cartridge in the printer longer than necessary. Always remove the Scanner Cartridge and store it when it is no longer in use.

1. Check the printer **POWER** lamp and make sure that it is on. If the lamp is off, press the **POWER** button to switch the printer on.
2. Press the **CARTRIDGE** button. The cartridge holder moves to the center.

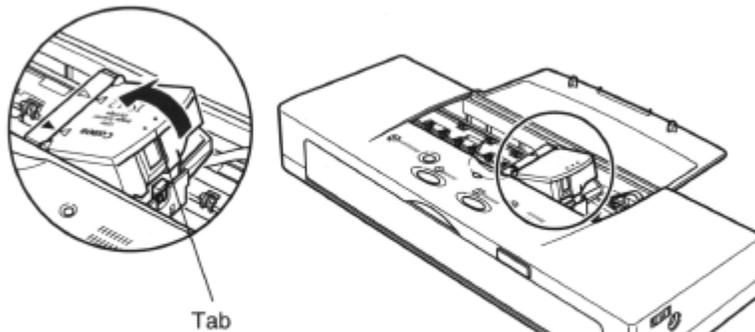




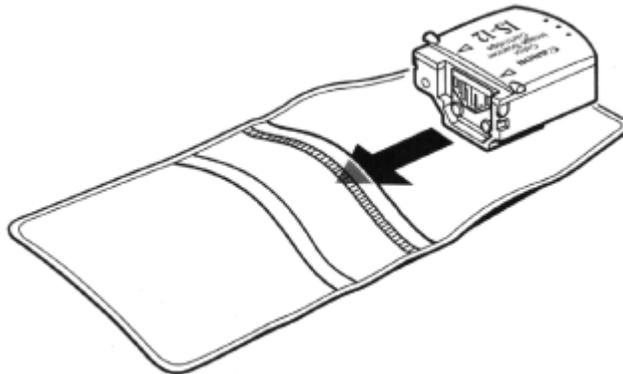
3. Open the top cover.



4. With the tip of your finger, lift up the tab on the Scanner Cartridge then raise it out of the cartridge holder.



5. Store the Scanner Cartridge in its protective soft case.



6. Remove the BJ Cartridge from the BJ Cartridge Storage Container SB-10.





7. Insert the BJ Cartridge into the cartridge holder diagonally so the points of the small triangle marks align (yellow-yellow, black-black).
8. Press down gently on the BJ Cartridge until it clicks into place.
9. Press the **CARTRIDGE** button once. The printer starts cleaning the print head. After print head cleaning is completed, the cartridge holder moves to the home position.
10. Close the top cover.
11. Make sure you install the IS Scan 1.20 scanner driver supplied on disk with the printer. For details, refer to the supplemental sheet for scanner driver installation.



You must install and use the IS Scan 1.20 scanner driver or higher. Earlier versions of this scanner driver do not work correctly with the BJC-50.

Cleaning the printer

Before you start cleaning

You should clean the printer regularly to avoid printing problems. Follow these simple guidelines when you clean the printer:

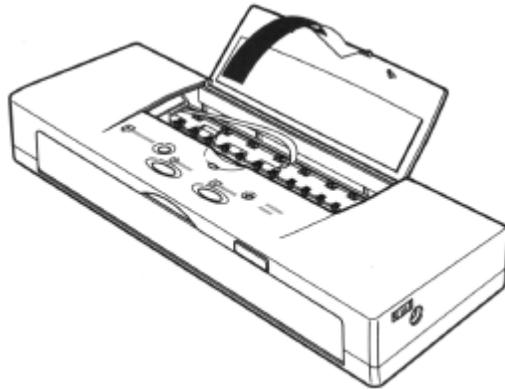
- Before you clean the printer, press the POWER button to switch the power off, unplug the AC adapter from the power source, and remove the battery pack from the printer. (p64)
- Use only a soft cloth to clean the printer. Do not use paper towels or tissues.
- Do not clean the grease from the cartridge rail.
- To avoid damaging the surface of the printer, do not clean the printer body with volatile liquids such as thinners, benzene, or any chemical or spray cleaners.
- When cleaning the printer, avoid the area near the print head on the BJ Cartridge. Do not touch the print head, film cable and other delicate parts.
- Never submerge the printer in water.





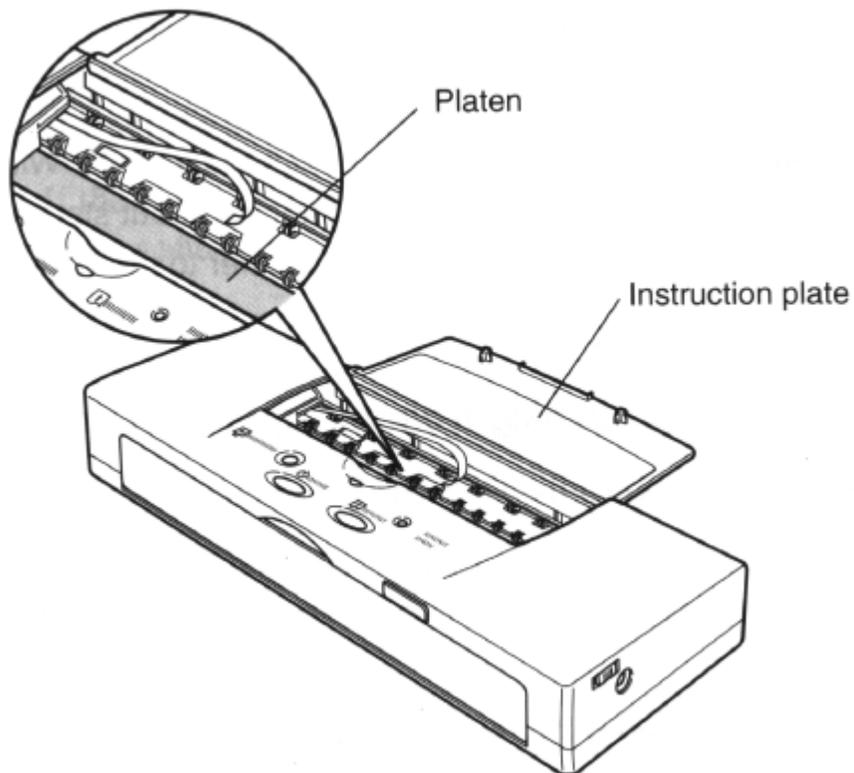
Cleaning inside and outside the printer

1. Open the top cover.



2. Clean the platen.

The platen, which holds the paper in position during ink transfer, may be soiled after a paper jam or other paper feed problems. When the platen is soiled with ink, the back or edge of the printed sheet may be smudged. Use a soft, dry cloth to wipe the platen clean.

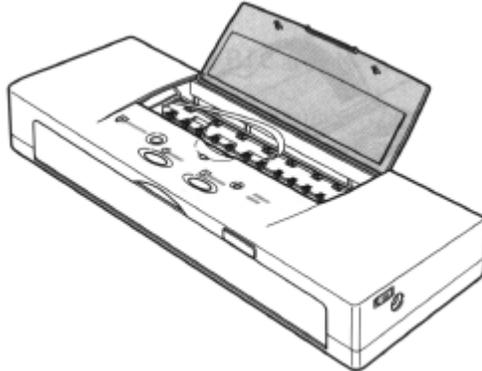


WHILE YOU ARE CLEANING THE INSIDE OF THE PRINTER, DO NOT BEND THE INSTRUCTION PLATE.





3. Clean the underside of the top cover. Ink residues may collect in this area.



Cleaning the print head

You should start print head cleaning when your print quality is poor. There are two methods of print head cleaning:

- **Cleaning:** Requires about 30 seconds and can improve print quality.
- **Flushing:** Requires about 60 seconds and corrects severe nozzle clogging. Because Flushing consumes a lot of ink, execute flushing only when the print quality does not improve after repeated cleaning.



You can start cleaning or flushing the print head with the Windows printer driver or the operation panel. For details about starting cleaning or flushing with the Windows printer driver, refer to the Windows Print Guide.

To start cleaning/flushing from the operation panel:

1. Press and hold down the **RESUME** button.

To start print head cleaning, hold down the **RESUME** button until you hear two beeps then release it. Cleaning requires about 30 seconds.

To start print head flushing, hold down the **RESUME** button until you hear three beeps then release it. Flushing requires about 60 seconds.

2. To check the performance of the print head, print a Nozzle Check Pattern. (p45)

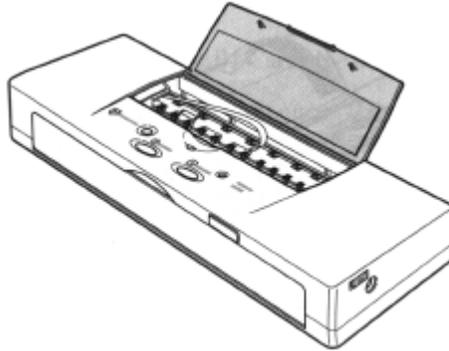




Preparing the printer for travel or storage

Follow the procedure below before you transport or store the printer.

1. Press the **POWER** button to switch off the power. This secures the cartridge holder in the home position.
2. On the right side of the printer, slide the power lock switch to the left position. This locks the printer off so it cannot be switched on accidentally during transportation.



The next time you use the printer, make sure that you slide the power lock switch to the right position before you press the **POWER** button to switch the printer on.

3. If the optional sheet feeder is attached, remove it.
4. If the BIFC-50 printer cable is connected, disconnect it from the printer and computer.
5. If the AC adapter is connected, disconnect it from the printer and the power outlet.
6. Make sure that the top cover is closed.



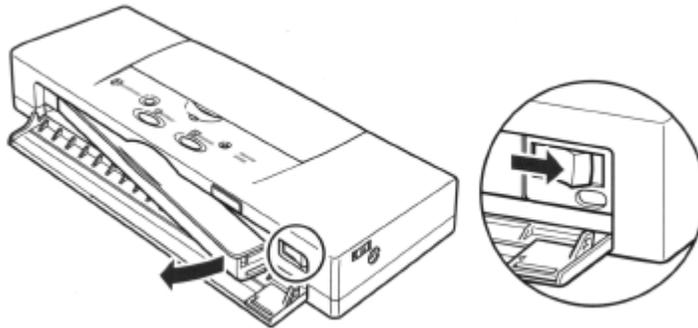


7. If you are going to store the printer for a prolonged period (three months or more), remove the battery pack.



You do not have to remove the battery pack to transport the printer. Remove the battery pack only if you are going to store the printer for a prolonged period (three months or more).

- Open the front cover.
- Push the battery pack release to the right. The battery pack will spring slightly out of the printer.



- Remove the battery pack and close the front cover.
8. Replace the printer and accessories in the original packing materials for storage, or place them in a suitable carrying case for transport.
- It is not necessary to remove the BI Cartridge and ink cartridges from the printer for transport.
 - When travelling on an aeroplane, always pack the printer with your hand luggage items to minimise shocks and vibrations to the printer.
 - Avoid leaving the printer in a closed automobile where it may be exposed to extremes of temperature or humidity.



The printer can safely be sent through airport security X-ray machines.





Chapter 7

Troubleshooting

If you experience problems during printing, first check your software application settings and make sure you have selected the correct printer driver, page size, and so on.

Print a demonstration or one of the test patterns. (p45)

If the test prints successfully, the problem is not inside the printer, so first check the printer cable connection at the printer and your computer. A loose connection can generate random errors and messages that can waste valuable time and effort in trying to identify the problem.

Switch the printer off and switch it on again. Try the print again. If the problem persists, read the check list below and try to solve the problem.

Check List

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Problem **See Page**

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Errors indicated by the CHARGE/ERROR lamp

CHARGE/ERROR lamp lights and stays on and buzzer beeps once.

The printer could not feed the paper or special media correctly from the feed slot on the front of the printer or from the optional sheet feeder. Hold the printer steady with one hand then pull the sheet from the printer slowly. Load the sheet straight into the printer, and press the **RESUME** button to clear the error condition.

CHARGE/ERROR lamp lights and stays on and buzzer beeps twice.

The printer could not eject the paper correctly because the paper is over 58 cm long (23 in.). Remove the paper. Break the print job into shorter pages. The printer cannot feed and eject paper longer than 58 cm (23 in.).

CHARGE/ERROR lamp lights and stays on and buzzer beeps three times.

No BJ Cartridge is installed on the printer. Install a BJ Cartridge. (p28)

CHARGE/ERROR lamp lights and stays on and buzzer beeps six times.

The battery pack is not installed correctly in the printer. Press the **POWER** button to switch the printer off and install the battery pack. (p19) Press the **POWER** button to switch the printer on again. If the problem persists, replace the battery pack. (p62) To avoid problems with the battery pack, always use the printer within the correct temperature range of 0°C to 35°C (32°F to 95°F).





CHARGE/ERROR lamp flashes and buzzer beeps once.

The printer could not feed the paper or special media correctly. Hold the printer steady with one hand and then pull the sheet from the printer slowly. Reload the sheet straight into the printer with the left edge of the sheet perfectly aligned with the left side of the feed slot.

CHARGE/ERROR lamp flashes and buzzer beeps three times.

The cartridge has automatically moved to the home position. Press the **CARTRIDGE** button again to move the cartridge holder to the centre.

CHARGE/ERROR lamp flashes and buzzer beeps four times.

The battery pack charge is low and the printer will switch off automatically in about five minutes. To finish a short print job in progress, press the **RESUME** button to continue printing. If possible, use the AC adapter to power the printer and complete the print job. Recharge the battery pack. (p62)

CHARGE/ERROR lamp flashes and buzzer beeps five times.

The internal ink waste tank is almost full. To finish a print job in progress, press the **RESUME** button and continue printing. Contact your Canon Authorised Dealer or supplier as soon as possible.

CHARGE/ERROR lamp flashes and buzzer beeps six times.

The battery pack has been exhausted and cannot be recharged. Discard the used battery pack and replace it with a new one. (p64). Dispose of the battery pack according to the regulations in your country. For details, contact your Canon Authorised Dealer or Canon Representative.

CHARGE/ERROR lamp lights orange and the printer beeps twice, one long and one short beep.

The power in the battery pack is depleted. In order to continue using the printer, you must connect the AC adapter. Recharge or replace the battery pack. (p62)

CHARGE/ERROR lamp and POWER lamp flash together and the buzzer beeps once, twice, four times, six to seven times, or 11 to 12 times.

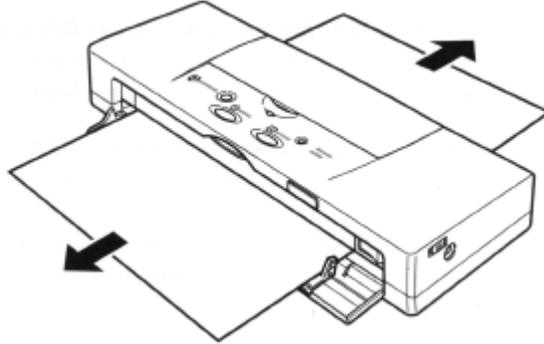
An internal system error has occurred. Switch the printer off and disconnect the AC adapter. Connect the AC adapter again, switch on the printer, and perform some test prints. Usually this solves the problem, but if the problem persists, stop using the printer and contact your Canon Authorised Dealer or supplier.





Clearing paper jams

1. Gently pull the paper out of the printer with one hand while holding the printer in place with the other. You can pull the paper out from the front or the rear of the printer.



2. If the paper tears off inside the printer, switch off the printer and open the top cover. Remove the remaining paper, taking care not to touch the film cable.
3. Press the **POWER** button to switch the printer on again. The printer is now ready to print.
4. Open the top cover and check the platen. If the platen is soiled and the reverse side of your output is stained with ink after a paper jam occurs, clean the platen inside the printer. (p79)
 - If paper jams occur repeatedly, you may be loading the paper incorrectly, or using the wrong kind of paper.
 - Make sure that you are loading and feeding the paper or special media correctly. (p42)





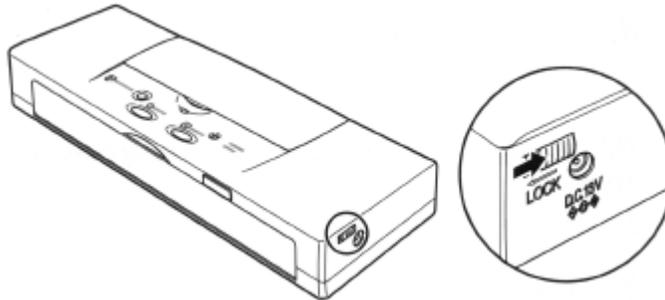
Operational problems

This section describes solutions to various problems you may have with the operation of your printer. Each section contains several solutions. Try them in the order listed.

Printer does not switch on

When you switch on the printer, the **POWER** lamp flashes until automatic print head cleaning is completed. The **POWER** lamp lights and stays on when the printer is ready for normal operation. If the **POWER** lamp is not on, the printer is not receiving power.

1. If the power lock switch is in the left position, slide it to the right.



When the power lock switch is in the left position, it locks the power switch off so it cannot be switched on accidentally during transportation.

2. If the AC adapter is not attached, check the **CHARGE/ERROR** lamp. If the **CHARGE/ERROR** lamp lights orange, this means the battery pack requires charging. Switch off the printer and connect the AC adapter. The **CHARGE/ERROR** lamp will remain illuminated green until the battery pack is completely recharged.
-



If you want to use the printer immediately, just connect the AC adapter and use the printer. When you switch off the printer, leave the AC adapter connected so the battery pack will be continue recharging.

3. If the AC adapter is connected and the **POWER** lamp is not on, check the AC adapter connector on the right side of the printer and make sure it is completely inserted into the printer.
4. Make sure the AC adapter is plugged securely into a power outlet. If the AC adapter is connected to a power strip, make sure that the power strip is switched on and connected to a power outlet.





POWER lamp comes on, but printer does not print

1. Check the printer cable connection. You must use the Canon Printer Cable BIFC-50 supplied with this printer. Make sure the connections are secure on the printer and on the computer.
2. If you are using an IrDA connection, make sure the IrDA interface ports on the printer and computer are facing one another and not more than one metre apart. (p23) Check the Windows 95 Printers setup and make sure that the BJC-50 is selected as the default printer. Check the Details sheet of the BJC-50 printer driver and make sure an available COM port is selected for the IrDA interface.
3. Make sure the computer is set up correctly for your printer.
4. Make sure that your software application is set up correctly for your printer.

BJ Cartridge moves, but printed text/graphics does not appear

1. Make sure that the BJ Cartridge and its ink cartridges are properly installed.
2. If print does not appear after print cartridge installation, make sure that you have removed the protective cap and the protective tape from the BJ Cartridge. (p31)
3. The nozzles on the print cartridge may be clogged. Clean the print head. (p80)
4. If printed text/graphics does not appear after performing the print head cleaning once or twice, the ink cartridge is empty. Replace it with a new one. (p66)

Ink runs out sooner than expected

Make sure you do not press the **CARTRIDGE** button and move the BJ Cartridge to the centre unnecessarily. The printer executes print head cleaning automatically every time you move the BJ Cartridge in this way. This consumes ink.





Paper does not eject after printing

Most software applications instruct the printer to eject the last sheet after printing. However, occasionally you may need to eject a sheet manually.

1. If there is data waiting to print, the **POWER** lamp flashes.
2. To print the last sheet, press the **RESUME** button.

Print quality problems

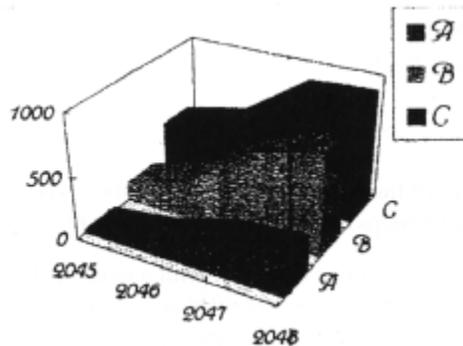
Some print quality problems result from using the wrong media or prin mode. There may also be a problem with the print head or ink cartridge. If the quality of your printout does not match your expectations, check the list of problems and solutions below.

White streaks, dots missing, or irregular dots

If white streaks (see example below) or irregular dots appear on the printout, or if there seem to be dots missing, the print head may be clogged with ink, paper particles, or dust.

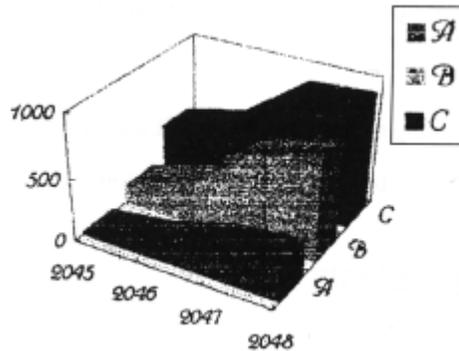
Clean the print head to restore print quality. [\(p80\)](#)

Print sample with white streaks (clogged print head)





Normal print sample



To clean the print head

1. If print quality deteriorates as described above, first clean the print head. Press and hold down the RESUME button until you hear two beeps then release it. Cleaning requires about 30 seconds.
2. After cleaning is completed, print the Nozzle Check Pattern to see if the print quality has been restored. (p45) If horizontal lines are missing on the Nozzle Check Pattern, the print head may be still clogged.
3. Clean the print head unit once again.
 - If a printed page or the Nozzle Check Pattern is almost blank after one or two cleanings, the ink cartridge has run out so replace it with a new one. (p66)
 - If print quality is not restored after replacing the ink cartridge, start flushing.

To start flushing

1. Press and hold down the RESUME button for about six seconds until you hear three beeps. Flushing requires about 60 seconds.
2. After executing flushing once or twice, print a page or the Nozzle Check Pattern. (p45) If you see irregular dots or lines on the printed page, this means the print head has worn out.
3. Replace the BJ Cartridge with a new one. (p72)

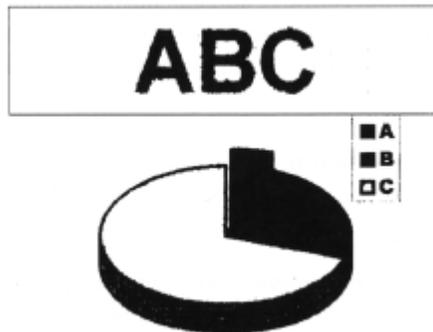




Printout is not clear

1. Make sure that you are using a recommended media. (P42)
2. Some copier paper has a right side and a wrong side. If the print quality is poor, try turning the paper over and printing on the other side.
3. If the printout is faint, you may be printing in **HS** mode, which uses only half the ink of the **HQ** mode. Open the printer driver and change the setting.
4. The print head nozzles may be clogged. To clean the print head, press and hold down the **RESUME** button until the printer beeps once.

Characters are blurred or smudged



1. Make sure that you are using a recommended media. (P42)
2. Some copier paper has a preferred side. If the print quality is poor, try turning the paper over and printing on the other side.
3. Check the print mode. If the printout is stained with ink, try using the Fine mode. Open the printer driver and change the setting.

Smudges on back or edge of printed page

If the printer platen has been soiled by a paper jam or by printing beyond the paper edges, the reverse side of the printed page may have smudge marks. Clean the platen. (p79)

Output appears jagged

Check your software application to see what printing resolution you have selected. Printing at 180 dpi will give the output a jagged look. Changing the resolution to 360 dpi should correct this problem.





Color printing problems

This section contains solutions for problems you may encounter when printing in color.

Printer prints only in black-and-white

If you are printing from a software application that supports color printing but your output is only in black ink, follow these steps.

1. Make sure that you selected the BJC-50 printer driver or a compatible driver for another color printer.
2. When you print from a DOS software application, make sure that you use the BJC-50 printer driver, or you use a compatible driver for another color printer and the printer is set to **LQ** mode.
3. Make sure the color ink cartridge still contains ink to print the Nozzle Check Pattern. (p45) If any part of the color pattern is blank, the color ink cartridge has run out of ink. Replace the empty ink cartridge. (p66)

Colors are broken or uneven

If colors are broken, uneven, or vary from line to line, follow these steps.

1. The print mode may be inappropriate for your graphics resolution. If you are printing high-density graphics, set the printer driver to **Fine** mode.
2. If you are generating a thin line in a non-primary color (not cyan, magenta, or yellow), the software may tell the printer to dither the line by printing alternate colored dots and blank white areas. To correct this, choose cyan, magenta, or yellow.
3. Make sure the color ink cartridge still contains ink to print the Nozzle Check Pattern. (p45) If any part of the color pattern is blank, the color ink cartridge has run out of ink. Replace the empty ink cartridge. (p66)





Colors print incorrectly

If the colors in your printout do not match the colors on your screen, verify that you have selected the BJC-50 printer driver or a compatible driver.

Some colors are impossible to match exactly. The printer will match as closely as possible.

Printing is slow

If your printer seems extremely slow when printing in color, follow these steps to improve the printing speed.

1. Make sure that you are using only one software application at a time.
2. Limit the number of colors on each page.
3. Use primary colors (cyan, magenta, yellow, and black) as much as possible.
4. Print at a lower resolution.
5. Increase the amount of memory in your computer.
6. Upgrade to a computer with a higher processing speed.
7. If you are using a screen saver, turn it off.
8. If you are using IrDA communications, print speed can be improved by using the parallel interface (with the printer cable).





Other printing problems

This section contains solutions for printer and printer driver problems.

Strange characters

If strange characters appear in your output, there may be a communication problem between the printer and your computer. If your printout does not match your expectations, follow the procedure below:

1. Shut down the print job. Switch off the printer and switch off the computer.
2. Switch the printer on and switch the computer on.
3. If the print job does not execute normally, check the printer cable.
 - To connect the printer to an IBM compatible PC, a Canon Printer Cable BIFC-50 is required.
 - Do not use the printer near office equipment or machinery that can generate large magnetic fields.
 - If the computer and printer are not directly connected (if they are connected through a switching device, or network, for example), connect the computer and printer directly.
4. If you are using Windows 95 or Windows 3.1, confirm that you are using the correct printer driver.
 - Make sure you have installed the BJC-50 printer driver.
 - Make sure you have selected the BJC-50 printer driver for the print job.
 - Check the printer setup and make sure LPT1 has been selected for the printer port. If ECP is selected as the printer port, remove it from the list of printer ports or reassign it to FILE. For details, refer to the *Windows Print Guide* or your Windows 95 or Windows 3.1 instructions.
5. Start the print job again.





Printing job halts before completion

1. Open the printer driver.

2. Check the port setting.

If you are using Windows 95, go on to the next step.

-or-

If you are using Windows 3.1, go to step 4.

3. At the startup screen of Windows 95, click the Start button. Click Settings then click Printers.

- Use the right mouse button to click on the BJC-50 icon then click properties.
- Click the Details tab to open the Details control sheet. Check the port assignment in the first box.
- Make sure that the printer port is set for LPT1 (not ECP).
- If you need to change the port assignment, click the down-arrow of the first box to pull down the list of available printer ports and select LPT1.
- If there is a WPS driver installed, make sure that this WPS driver is not installed for the same port as the BJC-50. If the WPS driver is installed for the same port as the BJC-50 printer driver, disable the WPS driver temporarily by assigning it the FILE port, or delete the WPS driver.

4. In the Program Manager of Windows 3.1, click Main then click Control Panel.

- In the Control Panel click Printers. Check the port assignment of the BJC-50 in the list of Installed Printers. Make sure the assigned port is LPT1 not ECP.
- If you need to change the port assignment, highlight BJC-50 in the list of Installed Printers and click the Connect button. Select a new port assignment from the list of Ports.

For details, refer to *Windows Print Guide* or your Windows 95 or Windows 3.1 instructions





Characters on the screen do not match printed characters

Special symbols and graphics codes may be mapped to different ASCII codes by different computers and printers. Compare the character set in your computer manual with the printer character set shown in Appendix B.

Printing beyond edge of page

If the printer is printing only part of each line, try the following measures.

1. Make sure the paper is aligned correctly with the left side of the feed slot.
2. Check the software application's setting for the right margin.

The printer may print on the platen when this problem occurs. Clean the printer platen before starting your print job. (p79)

IrDA printing stops and paper is ejected

If printing via the IrDA interface suddenly stops, try the following measures.

1. Make sure communication via IrDA is not blocked. (p23)
2. Make sure the IrDA port is clean. Use only a soft, clean cloth to clean IrDA port.

Printer prints incorrect number of lines on a page

If too few or too many lines are printed on the page, follow the procedure below.

1. Check the software application's page length and top/bottom margin settings.
2. Make sure the paper is loaded correctly.





Computer indicates a device time-out

1. Make sure that the printer is on-line.
2. Make sure that the printer's printer cable is securely connected to both the printer and the computer.

Printouts are incomplete (only 50% to 75% of the page) or printed with large white bands

On windows 95, make sure Compatible or Bi-directional is selected for the parallel printer port (LPT 1).

Where to Find More Help

In the event that you cannot solve a problem with the BJC-50 printer, review the Troubleshooting section which appears earlier in this chapter. If you still cannot resolve the problem, contact the appropriate Canon office listed below:

Australia

Canon Australia Pty Ltd. 1 Thomas Holt Drive
North Ryde, Sydney,
N.S.W. 2113, Australia
TEL: 02-9805-2864
Web page: <http://www.canon.com.au>

New Zealand

Canon New Zealand Ltd.
Fred Thomas Drive, Takapuna
P.O. Box 33-336
Auckland, New Zealand
TEL: 0900-522666
Web page: <http://www.canon.com.au>

United Kingdom

Canon (UK) Ltd.
Canon House, Manor Road, Wallington,
Surrey, SM6 OAJ, United Kingdom
For technical support
please contact Canon Helpdesk:
P.O. box 431, Wallington, Surrey, SM6 OXU
TEL: (0990) 143723
FAX: (0181) 288-7303
BBS: (0181) 288-7304
For sales enquiries, please call on (0121) 666-6262

France

Canon France SA.
Centre dAffaires Paris-Nord, 93154
Le Blanc-Mesnil Cedex
Standard: (1) 49 39 2 5 25
Hotline: (1)49 39 2890 Fax: (1) 49 39 25 50

Germany

Canon Deutschland GmbH
Europark Fichtenhain A10, 47807 Krefeld,
Postfach 528, 47705 Krefeld
Tel-No.: 02151/345-0
Fax-No.: 021 51/345-102
CANON-Hotline-Service
Customer Support: 02151/349-555
Info-Desk: 02151/349-566
Mailbox: 02151/349-577

China

Canon Hongkong Co., Ltd. Beijing Office
Room 1710, Bright China Chang An Building
No.7 Jianguomen Nei Avenue,
Dongcheng District, 100005
Beijing, China
Canon Printer Hotline: (01 0)651 0-2761, 6510-2762, 651 0-2763
FAX: (010) 651 0-2580

Hong Kong and Taiwan

Canon Hongkong Co., Ltd.
10/F., Lippo Sun Plaza 28 Canton Road
Tsimshatsui, Kowloon
Hong Kong
TEL: 852-2739-0802
FAX: 852-2739-6428
Web page: <http://www.canon.com.sg>

India (and other southeast Asian countries)

Canon Singapore Pte. Ltd.
79 Anson Road, #09-01
Singapore 079906
TEL: 65-5324400
FAX: 65-221 7577
Web page: <http://www.canon.com.sg>





Indonesia

Datascrip Systems for Business P.T.
Jl. Angkasa 18
Jakarta 10610
Indonesia
TEL: 62-21 -4247121
FAX: 62-21-4250353
Web page: <http://www.canon.com.sg>

United States

Canon Computer Systems, Inc.
2995 Redhill Ave.
Costa Mesa, CA 92626 U.S.A.
TEL: 1-800-423-2366
Web page: <http://www.ccsi.canon.com>

Korea

Lotte Canon Co., Ltd.
Headquarters:
Taehwa Bldg. #996-15
Daech-3 Dong Kangnam-Ku, Seoul
Korea
TEL: 02-3450-0700
FAX: 02-558-4365
Customer Information Center:
TEL: 02-562-9133
FAX: 02-3450-0788 Clover Service:
TEL: 080-987-8585

Canada

Canon Canada Inc.
6390 Dixie Road, Mississauga, Ontario, L5T 1 P7
Help Desk at 1-800-263-1121

Malaysia

Canon Marketing (Malaysia) Sdn. Bhd.
1 3A, Jalan 219, 46100 Petaling Jaya
Selangor Darul Ehsan
Malaysia
TEL: 603-7577210
FAX: 603-7570948
Web page: <http://www.canon.com.sg>

Philippines

Canon Marketing Philippines Inc.
Marvin Plaza Building
2153 Don Chino Roces Ave
Makati City
TEL: 632-812-6047, 632-812-6285
FAX: 632-812-0067

Singapore

Canon Marketing Services Pte. Ltd.
2 Alexandra Road, #04-01A
Delta House
Singapore 159919
TEL: 65-273-5311
FAX: 65-273-3317

Web page: <http://www.canon.com.sg/cms>

Thailand

Canon Marketing (Thailand) Co. Ltd.
2nd Floor Indosuez House
152 Wireless Road
Bangkok 10330 Thailand
TEL: 66-2-6514000
FAX: 66-2-6514095
Web page: <http://www.canon.com.sg>



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Appendix A

Paper Specifications

Paper size

Letter	8.5 x 11 in.
Legal	8.5 x 14in.
A4	210 x 297 mm
A5	148 x 210 mm
B5	182 x 256 mm
US Commercial 10 envelope	9.5 x 4.1 in.
European DL size envelope	220 x 110 mm

Paper type

Media Name	Media Type*
Plain paper	Plain Paper
Bubble Jet Paper LC-301	Plain Paper
Glossy Photo Paper GP-201	Glossy Paper
High Resolution Paper HR- 101	Coated Paper
Transparency CF- 102	Transparency
High Gloss Film HG-101	High Gloss Film
Back Print Film BF-102	Back Print Film
Fabric Sheet FS-101	Fabric Sheet
T-Shirt Transfer TR-201 **	T-Shirt Transfer

* This is the name of the Media Type you will see after you pull down the list for Media Type on the Paper control sheet of the Windows 95/3.1 printer driver.

** TR101 in the U.S.

Paperweight

64 to 105 gsm (17 to 28 lb.)



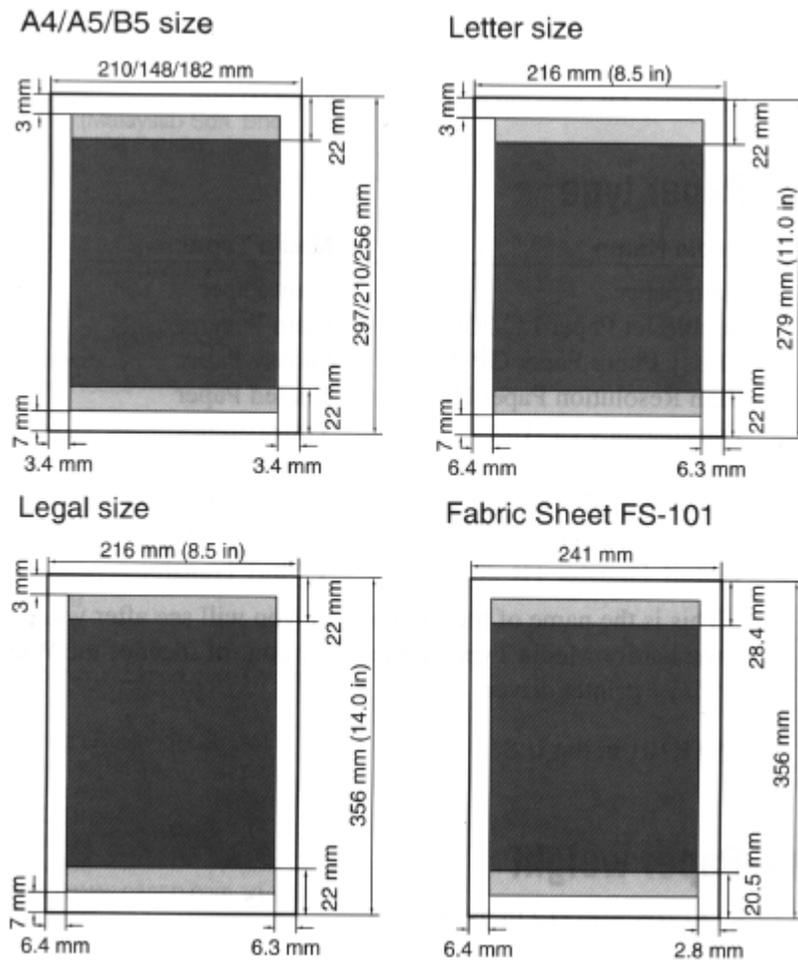


Printing area

Paper and special media

The shaded portion in the following figure shows the recommended printing area for paper and special media. The printer's mechanical printing area is inside the 3 mm top/bottom margins. However, we recommend setting the margins greater than 22 mm because the print quality degrades below this.

Before you print on Fabric Sheet FS-101, set the paper size for Legal. The printing area may vary according to settings in the printer driver. The margins and printable areas for Fabric Sheet are shown below.





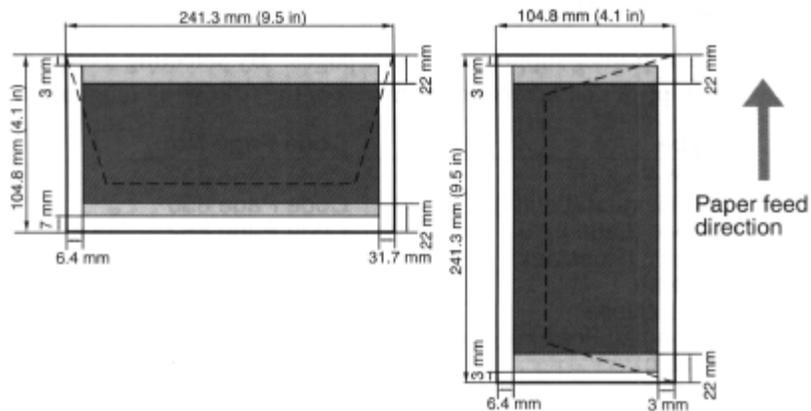
Envelopes

The shaded portion in the figures below shows the recommended printing areas for a US Commercial No. 10 envelope (9.5 x 4.1 in) and European DL size envelope (220 x 110 mm). The printer's maximum mechanical printing area is inside the top and bottom margins. However, we recommend setting the margins wider than 22 mm because print quality degrades below this.

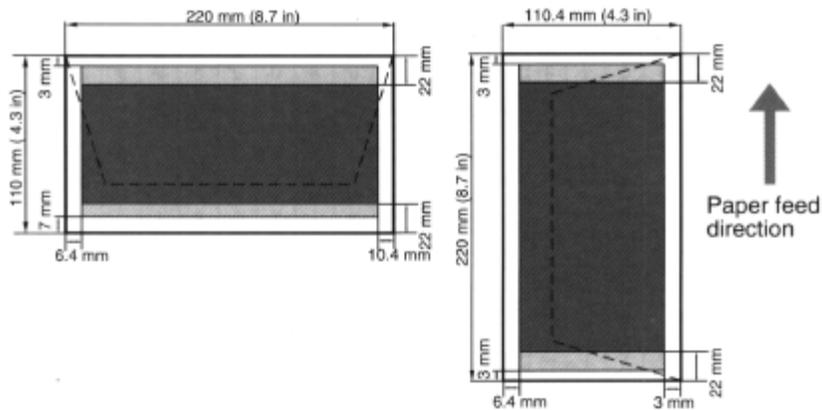


The size of the printing area may vary according to settings done with the printer driver.

U.S. Commercial 10 size



European DL size





Appendix B

Code Pages and Character Sets

This section presents information on the character code pages and character sets supported by your printer. The character sets accessed by your printer at any time are determined by the printer control mode being used: BJ mode or LQ mode.

Code pages

Your printer supports ten code pages. By selecting a code page, you can print characters and symbols in the following languages.

Type	Code Page No.
USA English	Code Page 437
Multilingual (Latin I)	Code Page 850*
Slavic (Latin II)	Code Page 852
Cyrillic (Russian)	Code Page 855
Turkish	Code Page 857
Portuguese	Code Page 860
Canadian French	Code Page 863
Arabic	Code Page 864
Nordic	Code Page 865
Greek	Code Page 869

* Multilingual means that you can print most European languages when you select this code page.





The code page tables are shown on the following pages.

SA English — Code Page 437

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	Hex No.	
0	ø	▶	SP	0	@	P	·	p	Ç	É	á	■	L	⌌	α	≡	0000	
1	☺	◀	!	1	A	Q	a	q	û	æ	í	■	⌌	⌌	β	±	0001	
2	●	↑	"	2	B	R	b	r	é	Æ	ó	■	⌌	⌌	Γ	≥	0010	
3	♥	!!	#	3	C	S	c	s	â	ô	ú	|	⌌	⌌	π	≤	0011	
4	♦	⌌	\$	4	D	T	d	t	ä	ö	ñ	⌌	⌌	⌌	Σ	∫	0100	
5	♣	\$	%	5	E	U	e	u	à	ò	Ñ	⌌	⌌	⌌	⌌	⌌	0101	
6	♠	-	&	6	F	V	f	v	â	ô	á	⌌	⌌	⌌	⌌	⌌	0110	
7	·	↑	'	7	G	W	g	w	ç	ù	ó	⌌	⌌	⌌	⌌	τ	0111	
8	■	↑	(	8	H	X	h	x	ê	ÿ	¿	⌌	⌌	⌌	⌌	Φ	1000
9	○	↓	)	9	I	Y	i	y	ë	Ö	⌌	⌌	⌌	⌌	⌌	•	1001
A	■	→	*	:	J	Z	j	z	è	Ü	⌌	⌌	⌌	⌌	⌌	Ω	1010	
B	♂	←	+	:	K	[	k	{	ï	€	½	⌌	⌌	⌌	⌌	δ	1011
C	♀	⌌	.	<	L	\	l	|	î	£	¼	⌌	⌌	⌌	⌌	∞	1100	
D	♪	↔	-	=	M	]	m	}	ì	¥	⅓	⌌	⌌	⌌	⌌	∅	1101
E	♪	▲	.	>	N	^	n	~	Ä	Þ	<<	⌌	⌌	⌌	⌌	€	1110	
F	○	▼	/	?	O	_	o	ó	À	f	>>	⌌	⌌	⌌	⌌	⌌	SP	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.	

Multilingual(Latin I) — Code Page 850*

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	Hex No.
0	ø	▶	SP	0	@	P	·	p	Ç	É	á	■	L	ø	Ó	-	0000
1	☺	◀	!	1	A	Q	a	q	û	æ	í	■	⌌	Ð	β	±	0001
2	●	↑	"	2	B	R	b	r	é	Æ	ó	■	⌌	Ê	Ô	=	0010
3	♥	!!	#	3	C	S	c	s	â	ô	ú	|	⌌	Ë	Ö	¼	0011
4	♦	⌌	\$	4	D	T	d	t	ä	ö	ñ	⌌	⌌	È	õ	¶	0100
5	♣	\$	%	5	E	U	e	u	à	ò	Ñ	⌌	⌌	Ï	Õ	§	0101
6	♠	-	&	6	F	V	f	v	â	ô	á	⌌	⌌	ä	í	μ	0110
7	·	↑	'	7	G	W	g	w	ç	ù	ó	⌌	⌌	Å	Ï	·	0111
8	■	↑	(	8	H	X	h	x	ê	ÿ	¿	⌌	⌌	Ï	Þ	°	1000
9	○	↓	)	9	I	Y	i	y	ë	Ö	⌌	⌌	⌌	Û	Ú	-	1001
A	■	→	*	:	J	Z	j	z	è	Ü	⌌	⌌	⌌	Û	·	1010	
B	♂	←	+	:	K	[	k	{	ï	€	½	⌌	⌌	Û	1	1011	
C	♀	⌌	.	<	L	\	l	|	î	£	¼	⌌	⌌	Û	3	1100	
D	♪	↔	-	=	M	]	m	}	ì	¥	⅓	⌌	⌌	Û	2	1101	

-	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253	
E	♯ 14	▲ 30	. 46	> 62	N 78	^ 94	n 110	~ 126	Ä 142	× 158	« 174	¥ 190	⚡ 206	Ï 222	— 238	■ 254	1110
F	⊙ 15	▼ 31	/ 47	? 63	O 79	_ 95	o 111	□ 127	À 143	f 159	» 175	⌋ 191	☐ 207	■ 223	' 239	SP 255	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.



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Slavic (Latin II) — Code Page 852

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	0000
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241	0001
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242	0010
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243	0011
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244	0100
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245	0101
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246	0110
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247	0111
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	1000
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249	1001
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250	1010
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251	1011
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252	1100
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253	1101
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254	1110
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.

Cyrillic (Russian) — Code Page 855

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	0000
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241	0001
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242	0010
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243	0011
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244	0100
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245	0101
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246	0110
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247	0111
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	1000
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249	1001
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250	1010
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251	1011
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252	1100
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253	1101
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254	1110
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	1111

	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254	...
F	⊙ 15	▼ 31	/ 47	? 63	○ 79	◡ 95	o 111	□ 127	J 143	↳ 159	>> 175	┘ 191	□ 207	■ 223	№ 239	SP 255	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.



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Turkish — Code Page 857

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	ø	▶	SP	0	@	P	`	p	Ç	É	á	■	L	Q	Ó	-	0000
1	☺	◀	!	1	A	Q	a	q	ü	À	í	■	┘	á	ß	±	0001
2	●	↑	"	2	B	R	b	r	é	Æ	ó	■	T	Ê	Ö	²	0010
3	♥	!!	#	3	C	S	c	s	â	ô	ú	|	┘	È	Ò	³	0011
4	♦	¶	\$	4	D	T	d	t	ä	ö	ñ	┘	—	È	ô	¶	0100
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	Á	+		Ô	§	0101
6	♠	—	&	6	F	V	f	v	á	û	Ğ	Â	ã	í	µ	÷	0110
7	•	‡	'	7	G	W	g	w	ç	ù	ğ	À	Ä	İ		·	0111
8	■	↑	(	8	H	X	h	x	ê	ì	ı	©	┘	ı	×	°	1000
9	○	↓	)	9	I	Y	i	y	ë	ö	®	¶	¶	┘	Û	-	1001
A	▣	→	*	J	Z	j	z	è	Û	ı	ı	¶	¶	┘	Ü	·	1010
B	♂	←	+	:	K	[	k	{	ı	ø	ı	¶	¶	■	Û	¹	1011
C	♀	L	<	<	L	\	l	|	ı	£	ı	¶	¶	■	ı	³	1100
D	♪	↔	-	=	M	]	m	}	ı	Ø	ı	¶	¶	■	ÿ	²	1101
E	♫	▲	.	>	N	^	n	~	Ä	Ş	<<	¥	¶	ı	—	■	1110
F	○	▼	/	?	O	_	o	o	Á	ş	>>	₺	□	■	SP	SP	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.

Portuguese — Code Page 860

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	ø	▶	SP	0	@	P	`	p	Ç	É	á	■	L	┘	α	≡	0000
1	☺	◀	!	1	A	Q	a	q	ü	À	í	■	┘	┘	β	±	0001
2	●	↑	"	2	B	R	b	r	é	Ê	ó	■	T	┘	Γ	≥	0010
3	♥	!!	#	3	C	S	c	s	â	ô	ú	|	┘	┘	π	≤	0011
4	♦	¶	\$	4	D	T	d	t	ä	ö	ñ	┘	—	┘	Σ	∫	0100
5	♣	§	%	5	E	U	e	u	à	ò	Ñ	¶	+	┘	σ	J	0101
6	♠	—	&	6	F	V	f	v	Á	Ú	ã	¶	¶	┘	µ	÷	0110
7	•	‡	'	7	G	W	g	w	ç	ù	ğ	¶	¶	┘	τ	≈	0111
8	■	↑	(	8	H	X	h	x	ê	ì	ı	¶	┘	┘	Φ	°	1000
9	○	↓	)	9	I	Y	i	y	ë	ö	®	¶	¶	┘	Θ	·	1001
A	▣	→	*	J	Z	j	z	è	Û	ı	ı	¶	¶	┘	Ω	·	1010
B	♂	←	+	:	K	[	k	{	ı	ø	ı	¶	¶	■	δ	√	1011
C	♀	L	<	<	L	\	l	|	ı	£	ı	¶	¶	■	∞	∞	1100
D	♪	↔	-	=	M	]	m	}	ı	Ø	ı	¶	¶	■	∅	²	1101
E	♫	▲	.	>	N	^	n	~	Ä	Pt	<<	₺	¶	ı	€	■	1110

F	U	▼	/	?	U	_	0	□	A	U	??	┘	—	—	┘	SP	1111
	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.



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E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254	1110
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.



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Nordic — Code Page 865

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	0000
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241	0001
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242	0010
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243	0011
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244	0100
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245	0101
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246	0110
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247	0111
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	1000
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249	1001
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250	1010
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251	1011
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252	1100
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253	1101
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254	1110
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.

Greek — Code Page 869

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	0000
1	1	17	33	49	65	81	97	113	129	145	161	177	193	209	225	241	0001
2	2	18	34	50	66	82	98	114	130	146	162	178	194	210	226	242	0010
3	3	19	35	51	67	83	99	115	131	147	163	179	195	211	227	243	0011
4	4	20	36	52	68	84	100	116	132	148	164	180	196	212	228	244	0100
5	5	21	37	53	69	85	101	117	133	149	165	181	197	213	229	245	0101
6	6	22	38	54	70	86	102	118	134	150	166	182	198	214	230	246	0110
7	7	23	39	55	71	87	103	119	135	151	167	183	199	215	231	247	0111
8	8	24	40	56	72	88	104	120	136	152	168	184	200	216	232	248	1000
9	9	25	41	57	73	89	105	121	137	153	169	185	201	217	233	249	1001
A	10	26	42	58	74	90	106	122	138	154	170	186	202	218	234	250	1010
B	11	27	43	59	75	91	107	123	139	155	171	187	203	219	235	251	1011
C	12	28	44	60	76	92	108	124	140	156	172	188	204	220	236	252	1100
D	13	29	45	61	77	93	109	125	141	157	173	189	205	221	237	253	1101
E	14	30	46	62	78	94	110	126	142	158	174	190	206	222	238	254	1110
F	15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	1111

15	31	47	63	79	95	111	127	143	159	175	191	207	223	239	255	Binary No.
0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	



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Character sets

BJ mode

Each of the ten code pages, 437, 850, 852, 855, 857, 860, 863, 864, 865 and 869 can be changed to three character sets: Set 1, Set 2 and All Characters Chart. The code page tables shown on the previous pages are All Characters Charts.

Each of the 10 code pages corresponds to an All Characters Chart. For the All Characters Chart, there are no control codes except for the space code at ASCII 32. All other ASCII characters are printable. The All Characters Chart is selected by using the ESC A or the ESC \ code.

Character Set 1 has control codes in two places:

- Between ASCII 0 and ASCII 31 (Hex 00h and Hex 1Fh)
- Between ASCII 128 and ASCII 159 (Hex 80h and Hex 9Fh)

Character Set 2 has control codes in only one place, between ASCII 0 and ASCII 31 (Hex 00h and Hex 1Fh).



A control code is an unprintable character that the printer uses for printer operations such as line spacing or carriage returns.





The tables on the following pages show the differences between Character Set 1 and Set 2 from the All Characters Chart. The example below is from Code Page 437 U.S.A. English.

Hex No.	All Character Chart	Character Set 1	Character Set 2
00	∅	NUL	NUL
01	☺		
02	☹		
03	♥		♥
04	♦		♦
05	♣		♣
06	♠		♠
07	•	BEL	BEL
08	▣	BS	BS
09	◦	HT	HT
0A	◻	LF	LF
0B	♂	VT	VT
0C	♀	FF	FF
0D	♪	CR	CR
0E	♫	SO	SO
0F	⊙	SI	SI

Hex No.	All Character Chart	Character Set 1	Character Set 2
10	▶		
11	◀	DC1	DC1
12	↑	DC2	DC2
13	!!		
14	¶	DC4	DC4
15	§		§
16	—		
17	±		
18	↑	CAN	CAN
19	↓		
1A	→		
1B	←	ESC	ESC
1C	└	FS	FS
1D	↔		
1E	▲		
1F	▼		





Hex No.	All Character Chart	Character Set 1	Character Set 2
80	Ç		Ç
81	ü		ü
82	é		é
83	â		â
84	ä		ä
85	à		à
86	å		å
87	ç	BEL	ç
88	ê	BS	ê
89	ë	HT	ë
8A	è	LF	è
8B	ï	VT	ï
8C	î	FF	î
8D	ì	CR	ì
8E	Ä	SO	Ä
8F	Å	SI	Å

Hex No.	All Character Chart	Character Set 1	Character Set 2
90	É		É
91	æ	DC1	æ
92	Æ	DC2	Æ
93	ô		ô
94	ö	DC4	ö
95	ò		ò
96	û		û
97	ù		ù
98	ÿ	CAN	ÿ
99	Ö		Ö
9A	Ü		Ü
9B	€	ESC	€
9C	£	FS	£
9D	¥		¥
9E	Pts		Pts
9F	f		f





LQ mode

In LQ mode, your printer can select one of eight International Character Sets, one of ten code pages, and one of two character tables: the EPSON Italics and the EPSON Graphics character tables.

International character sets

By selecting an International Character Set, you can print characters and symbols of eight different countries or languages: USA, UK, Germany, France, Denmark, Sweden, Italy, and Spain.

When you want to print other languages, select the appropriate code page. The printer supports many code pages: USA 437, Multilingual* (Latin I) 850, Slavic (Latin II) 852, Cyrillic (Russian) 855, Turkish 857, Portuguese 860, Canadian French 863, Arabic 864, Nordic 865, and Greek 869. (p102)



When you select a code page to print characters and symbols of your language, be sure to select the Graphics character table. Otherwise, the characters and symbols between ASCII 128 and ASCII 255 are changed to italic characters.

* Multilingual means that you can print most European languages when you select this code page. However, in LQ mode, if you want to print the languages supported by the printer in the International Character Sets, select the appropriate International Character Set and select USA 437 code page.





The table below shows the International Character Sets.

Country	Hex Dec	23	24	40	5B	5C	5D	5E	60	7B	7C	7D	7E	A3	A4	C0	DB	DC	DD	DE	E0	FB	FC	FD	FE
		35	36	64	91	92	93	94	96	123	124	125	126	163	164	192	219	220	221	222	224	251	252	253	254
0 U.S.A	# \$ @ [ \ \] ^ ' { | } ~	#	\$	@	[	\	\]	^	'	{	|	}	~	#	\$	@	[	\	\]	^	'	{	|	}	~
1 France	# \$ à ° ç § ^ ' é ù è "	#	\$	à	°	ç	§	^	'	é	ù	è	"	#	\$	à	°	ç	§	^	'	é	ù	è	"
2 Germany	# \$ § Ä Ö Ü ^ ' ä ö ü ß	#	\$	§	Ä	Ö	Ü	^	'	ä	ö	ü	ß	#	\$	§	Ä	Ö	Ü	^	'	ä	ö	ü	ß
3 U.K	E \$ @ [ \ \] ^ ' { | } ~	E	\$	@	[	\	\]	^	'	{	|	}	~	E	\$	@	[	\	\]	^	'	{	|	}	~
4 Denmark I	# \$ @ Æ Ø Å ^ ' æ ø å ~	#	\$	@	Æ	Ø	Å	^	'	æ	ø	å	~	#	\$	@	Æ	Ø	Å	^	'	æ	ø	å	~
5 Sweden	# □ É Ä Ö Å Ü é ä ö å ü	#	□	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü	#	□	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü
6 Italy	# \$ @ ° \ é ^ ù à ò è ì	#	\$	@	°	\	é	^	ù	à	ò	è	ì	#	\$	@	°	\	é	^	ù	à	ò	è	ì
7 Spain I	Pt \$ @ ¡ Ñ ¿ ^ ' ñ } ~	Pt	\$	@	¡	Ñ	¿	^	'	ñ	}	~	Pt	\$	@	¡	Ñ	¿	^	'	ñ	}	~		
8 Japan	# \$ @ [ ¥ ] ^ ' { | } ~	#	\$	@	[	¥	]	^	'	{	|	}	~	#	\$	@	[	¥	]	^	'	{	|	}	~
9 Norway	# □ É Æ Ø Å Ü é æ ø å ü	#	□	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü	#	□	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10 Denmark II	# \$ É Æ Ø Å Ü é æ ø å ü	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü	#	\$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11 Spain II	# \$ á ¡ Ñ ¿ é ' í ñ ó ú	#	\$	á	¡	Ñ	¿	é	'	í	ñ	ó	ú	#	\$	á	¡	Ñ	¿	é	'	í	ñ	ó	ú
12 Latin America	# \$ á ¡ Ñ ¿ é ü í ñ ó ú	#	\$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú	#	\$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
13 Korea	# \$ @ [ ₩ ] ^ ' { | } ~	#	\$	@	[	₩	]	^	'	{	|	}	~	#	\$	@	[	₩	]	^	'	{	|	}	~
64 Legal	# \$ § ° ' " ¶ © ® † ™	#	\$	§	°	'	"	¶	©	®	†	™	#	\$	§	°	'	"	¶	©	®	†	™		

The international character sets 8 to 13, and 64 can be selected only by using the escape code ESC R.

EPSON character tables

Two character tables—the Italics character table and the Graphics character table—are available in LQ mode. The Italics character table has control codes in two places: between ASCII 0 and ASCII 31 and also between ASCII 128 and ASCII 159. In addition, in the Italics character table, characters between ASCII 160 and ASCII 255 are italic characters of characters between ASCII 0 and ASCII 127, whatever code page you select.

The Graphics character table has control codes only in one place:

between ASCII 0 and ASCII 31. All other characters are printable. The characters between ASCII 32 and ASCII 126 are always as shown in the table on the next page. The characters between ASCII 128 and ASCII 255 vary depending on your selected code page. The Graphics character table shown on the next page is for when the code page is set to 437 USA.

The control codes between ASCII 0 and ASCII 31 can be changed to printable characters by using the ESC (^ control code).



When you select a code page to print characters and symbols of your language, select the Graphics character table. Otherwise, the characters and symbols between ASCII 128 and ASCII 255 are changed to Italics characters.





The tables below show the Italics character table and the Graphics character table.

Italics Character Table

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	NUL	SP	0	@	P	·	p	NUL		SP	0	@	P	·	p		0000
1	DC1	!	1	A	Q	a	q	DC1	!	1	A	Q	a	q			0001
2	DC2	"	2	B	R	b	r	DC2	"	2	B	R	b	r			0010
3	DC3	#	3	C	S	c	s	DC3	#	3	C	S	c	s			0011
4	DC4	\$	4	D	T	d	t	DC4	\$	4	D	T	d	t			0100
5		%	5	E	U	e	u		%	5	E	U	e	u			0101
6		&	6	F	V	f	v		&	6	F	V	f	v			0110
7	BEL	'	7	G	W	g	w	BEL	'	7	G	W	g	w			0111
8	BS	CAN	(	8	H	X	h	x	BS	CAN	(	8	H	X	h	x	1000
9	HT	EM	)	9	I	Y	i	y	HT	EM	)	9	I	Y	i	y	1001
A	LF	*	:	J	Z	j	z	LF	*	:	J	Z	j	z			1010
B	VT	ESC	+	:	K	[	k	{	VT	ESC	+	:	K	[	k	{	1011
C	FF	,	<	L	\	l	|	/	FF	,	<	L	\	l	|	/	1100
D	CR	-	=	M	]	m	}	CR	-	=	M	]	m	}			1101
E	SO	.	>	N	^	n	~	SO	.	>	N	^	n	~			1110
F	SI	/	?	O	_	o	DEL	SI	/	?	O	_	o				1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.

Graphics Character Table

Hex No.	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	
0	NUL	SP	0	@	P	·	p	Ç	É	á	■	ℒ	⌚	α	≡		0000
1	DC1	!	1	A	Q	a	q	û	æ	í	■	⌚	≡	β	±		0001
2	DC2	"	2	B	R	b	r	é	Æ	ó	■	⌚	≡	Γ	≥		0010
3	DC3	#	3	C	S	c	s	â	ô	ú	|	⌚	≡	π	≤		0011
4	DC4	\$	4	D	T	d	t	ä	ô	ñ	⌚	≡	Σ	Γ			0100
5		%	5	E	U	e	u	à	ò	Ñ	≡	⌚	≡	σ	∫		0101
6		&	6	F	V	f	v	â	û	á	≡	⌚	≡	μ	÷		0110
7	BEL	'	7	G	W	g	w	ç	ù	ó	≡	⌚	≡	τ	∞		0111
8	BS	CAN	(	8	H	X	h	ê	ÿ	¿	≡	⌚	≡	Φ	°		1000
9	HT	EM	)	9	I	Y	i	y	ë	Ö	≡	⌚	≡	Θ	•		1001
A	LF	*	:	J	Z	j	z	è	Û	≡	⌚	≡	Ω	.			1010
B	VT	ESC	+	:	K	[	k	{	ï	ç	≡	⌚	≡	δ	√		1011
C	FF	,	<	L	\	l	|	/	£	¼	≡	⌚	≡	∞	∞		1100

D	CR 13	29	- 45	= 61	M 77	J 93	m 109	I 125	I 141	¶ 157	¡ 173	~ 189	= 205	■ 221	∅ 237	≈ 253	1101
E	SO 14	30	. 46	> 62	N 78	^ 94	n 110	- 126	À 142	Pt 158	<< 174	≡ 190	≡ 206	■ 222	€ 238	■ 254	1110
F	SI 15	31	/ 47	? 63	O 79	_ 95	o 111	DEL 127	Á 143	f 159	>> 175	⌋ 191	≡ 207	■ 223	∩ 239	255	1111
	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	Binary No.



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Appendix C

Printer Command Summaries

Printer control codes are listed under each of the two printer control modes: BJ mode and LQ mode. Printer control codes tell the printer how to print a job.

You can send commands in several ways:

- You can use your software application to automatically embed certain commands (such as bold, underline, or indent) within a document. Your software application usually displays a symbol (such as B for bold) or changes the appearance of the displayed text to indicate the embedded commands. When the document prints, the embedded commands control the way the printer produces the printed page. See your software application manual for instructions on sending commands.
- You can send specific commands directly to the printer, using either a BASIC statement or a printer command option in your software application.

Entering a setup string in Lotus 1-2-3

The procedure for entering printer control commands in Lotus 1-2-3 is typical of the procedures used in spreadsheet software applications. If you are using another spreadsheet, review your application manual to determine if your software application supports printer option setups. Although the procedure to enter the codes may differ slightly, you will still have to enter the same number codes.

For a list of these codes, refer to the tables later in this appendix.





BJ mode example

This part shows that the decimal form the command to specify condensed text is 15 and the character form of the same command is SI. To access condensed (17 cpi) text in Lotus 1-2-3 when you are in BJ mode, follow this procedure.

Each number in the decimal form of the command must be three characters long, so you need to use a leading zero if the code is a two-digit number. A simple command might look like this:

`\077`

1. In Lotus 1-2-3, type `\PPOS` to open the printer option setup menu.
2. To use the decimal form, type `\O1 5` to specify condensed text.

LQ mode example

Suppose you are working in LQ mode and want to print text at 12 cpi. In Appendix B you see that the decimal code for the command for 12 cpi is 27 77. Follow this procedure to specify 12 cpi printing in Lotus 1-2-3.

1. In Lotus 1-2-3, type `\PPOS` to access the printer option setup menu.
2. To enter the code in decimal format, type `\027\077`. Be sure to insert the leading zeros before the numbers so they are both three digits.

BJ mode command summary

All of the control codes shown in the following tables can be used in the BJ mode.



Because of hardware differences, the reverse feed code — ESC] and the printer deselect code — DC3 — are not supported by your printer. Also, the styles of block graphics characters at 12 cpi are different from normal Proprinter X24E printing.





Basic control codes

Function	ASCII	Dec.	Hex.
End command	NUL	0	00
Sound beeper	BEL	7	07
Backspace	BS	8	08
Horizontal tab control	HT	9	09
Move to next tab.			
Perform line feed	LF	10	0A
Vertical tab control	VT	11	0B
Move to next tab.			
Perform form feed	FF	12	0C
Carriage return	CR	13	0D
Set double-wide mode by line	SO	14	0E
Set condensed mode (17 cpi)	SI	15	0F
Cancel by DC2.			
Select printer	DC1	17	11
Set 10 cpi mode	DC2	18	12
Cancel double-wide mode	DC4	20	14
Cancel data	CAN	24	18
Insert space	SP	32	20
Delete character	DEL	127	7F

ESCAPE sequence codes

Function	ASCII	Dec.	Hex.
Set/cancel underscore mode n = 0:End underscore n = 1:Start underscore	ESC _ n	27 45 n	1B 2D n
Set 1/8 inch line spacing	ESC 0	27 48	1B 30
Set 7/72 inch line spacing	ESC 1	27 49	1B 31
Enable line spacing by ESC A	ESC 2	27 50	1B 32
Set graphics line spacing in n/216 inch increment when FUNCTION 12 is OFF; in n/180 inch increment when FUNCTION 12 is ON (AGM mode); n = 1 to 255	ESC 3 n	27 51 n	1B 33 n
Set top of form	ESC 4	27 52	1B 34
Set/cancel automatic line feed n = 0:End automatic line feed n = 1:Start automatic line feed	ESC 5 n	27 53 n	1B 35 n
Select Character Set 2	ESC 6	27 54	1B 36
Select Character Set 1	ESC 7	27 55	1B 37
Set 12 cpi mode	ESC :	27 58	1B 3A
24 dot font image download id = 35 or 36	ESC = n1 n2 id r1 r2 data	27 61 n1 n2 id r1 r2 data	1B 3D n1 n2 id r1 r2 data
48 dot font image download id = 37	ESC = n1 n2 id r1 r2 data	27 61 n1 n2 id r1 r2 data	1B 3D n1 n2 id r1 r2 data
Set text line spacing *1 in n/72 inch increment when FUNCTION 12 is OFF; in n/60 inch increment when FUNCTION 12 is ON (AGM mode); n = 1 to 255	ESC A n	27 65 n	1B 41 n

*1 • After text line spacing is set, use the ESC 2 code to enable text line spacing.





Function	ASCII	Dec.	Hex.
Set vertical tabs n1 ... n64 = line numbers for tab stops n = 1 to 255 lines	ESC B n1...n64 NUL	0 27 66 n1...n64 0	1B 42 n1...n64 00
Set page length in lines *2 n = line numbers on a page n = 1 to 255	ESC C n	27 67 n	1B 43 n
Set page length in inches *2 n = inches for a page n = 1 to 255	ESC C NUL n	27 67 0 n	1B 43 00 n
Set horizontal tabs n1 ... n28 = columns for tab stops	ESC D n1...n28 NUL	27 68 n1...n28 0	1B 44 n1...n28 00
Set emphasised mode	ESC E	27 69	1B 45
Cancel emphasised mode Cancel printing in twice the normal dot density. Set by ESC E.	ESC F	27 70	1B 46
Set double-strike mode	ESC G	27 71	1B 47
Cancel double-strike mode	ESC H	27 72	1B 48
Select font pitch and print mode	ESC I n *3	27 73 n	1B 49 n
Perform graphics line spacing Line spacing amount becomes n/216 when FUNCTION 12 is OFF; Line spacing amount becomes n/180 when FUNCTION 12 is ON; n = 0 to 255	ESC J n	27 74 n	1B 4A n
Set normal density image graphics mode	ESC K n1 n2 data	27 75 n1 n2 data	1B 4B n1 n2 data
Set double density image graphics mode	ESC L n1 n2 data	27 76 n1 n2 data	1B 4C n1 n2 data
Set perforation skip n = 1 to 255 lines	ESC N n	27 78 n	1B 4E n
Cancel perforation skip	ESC O	27 79	1B 4F

*2 Since the maximum page length for the printer is 20 inches, when the specified value is more than 20 inches, the page length is set to 20 inches.

- *3 n = 0: Draft 10 cpi (default: created from Gothic 10 cpi)
n = 2: Letter Quality 10 cpi (Courier 10 cpi)
n = 3: Letter Quality Proportional (Courier Proportional)
n = 4: Download Draft 10 cpi
n = 6: Download Letter Quality 10 cpi
n = 7: Download Letter Quality Proportional
n = 8: Draft 12 cpi (created from Gothic 10 cpi)
n = 10: Letter Quality 12 cpi (created from Prestige 10 cpi)
n = 12: Download Draft 12 cpi (created from download Draft 10 cpi)
n = 14: Download Letter Quality 12 cpi
n = 16: Draft 17 cpi (created from Gothic 10 cpi)
n = 18: Download Letter Quality 17 cpi (created from Courier 10 cpi)
n = 20: Download Draft 17 cpi (created from download Draft 10 cpi)
n = 22: Download Letter Quality 17 cpi (created from download Letter Quality 10 cpi)
n=Else: Command ignored
- Internal fonts are used if the characters are not downloaded.
 - When 48-dots font is downloaded and 2, 3, 10, or 18 is set to n, font created from the current font.
 - When Draft font is selected using the printer control panel, the Courier font is used.





Function	ASCII	Dec.	Hex.
Set/cancel proportional spacing mode n = 0: End proportional spacing n = 1: Start proportional spacing	ESC P n	27 80 n	1B 50 n
Deselect printer n = 35, 36 or 37	ESC Q n	27 81 n	1B 51 n
Set all tabs to default setting	ESC R	27 82	1B 52
Set super/subscript mode Cancel by ESC T. n = 0: Select superscript mode n = 1: Select subscript mode	ESC S n	27 83	1B 53
Cancel super/subscript mode Set by ESC S.	ESC T	27 84	1B 54
Select print direction n = 0: Select bidirectional printing n = 1: Select unidirectional printing (default)	ESC U n	27 85 n	1B 55 n
Set/cancel double-wide mode n = 0: Cancel double-wide mode n = 1: Start double-wide mode	ESC W n	27 87 n	1B 57n
Set horizontal margins n: Define the left margin m: Define the right margin	ESC X n m	27 88 n m	1B 58 n m
Set double density image graphics mode	ESC Y n1 n2 data	27 89 n1 n2 data	1B 59 n1 n2 data
Set quadruple density image graphics mode	ESC Z n1 n2 data	27 90 n1 n2 data	1B 5A n1 n2 data
Set presentation highlight *4	ESC [@ n1 n2 m1 m2 m3 m4	27 91 64 n1 n2 m1 m2 m3 m4	1B 5B 40 n1 n2 m1 m2 m3 m4
Set initial condition n1: High-order byte specifies a code page n2: Low-order byte specifies a code page	ESC [K n1 n2 n3 id p1 p2	27 91 75 n1 n2 n3 id p1 p2	1B 5B 4B n1 n2 n3 id p1 p2
Set code page	ESC [T 4 0 0 0 n1 n2	27 91 84 4 0 0 0 n1 n2	1B 5B 54 04 00 00 00 n1 n2
Change graphics line spacing	ESC [\ 4 0 0 0 n1 n2	27 91 92 4 0 0 0 n1 n2	1B 5B 5C 04 00 00 00 n1 n2
Select high resolution graphics mode	ESC [g n1 n2 m data	27 91 103 n1 n2 m data	1B 5B 67 n1 n2 m data

*4 Set or cancel the presentation highlight (double-high) mode.

ASCII	ESC [@ n1 n2 m1 m2 m3 m4
DEC	27 91 64 n1 n2 m1 m2 m3 m4
HEX	1B 5B 40 n1 n2 m1 m2 m3 m4

The parameters are set as follows:

n1 = 4 n2 = 0 m1 = 0 m2 = 0

m3 determines the character height and line feed amount:

m3	Line Feed	Character Height
0	No change	No change
1	No change	Single high
2	No change	Double high
16	Normal line feed	No change
17	Normal line feed	Single high
18	Normal line feed	Double high
32	Double line feed	No change
33	Double line feed	Single high
34	Double line feed	Double high

m4 determines character width:

m4 = 0:	No change	m4 = 1: Single wide
m4 = 2:	Double wide	





Function	ASCII	Dec.	Hex.
Print continuously from All Characters Chart	ESC \ n1 n2 data	27 92 n1 n2 data	1B 5C n1 n2 data
Print single character from All Characters Chart	ESC ^	27 94	1B 5E
Set/cancel overscore mode	ESC _ n	27 95 n	1B 5F n
n = 0: Cancel overscore mode			
n = 1: Set overscore mode			
Relative move inline forward	ESC d n1 n2	27 100 n1 n2	1B 64 n1 n2
Set printer off-line	ESC j	27 106	1B 6A

Alternate Graphics Mode (AGM) codes

When AGM is set to ON, the following commands are available. When the AGM is not selected, the commands ESC 3, ESC A, and ESC J are used to set different line spacing.

Function	ASCII	Dec.	Hex.
Set graphics line spacing	ESC 3 n	27 51 n	1B 33 n
in n/180 increments; n=1 to 255			
Set text line spacing	ESC A n	27 65 n	1B 41 n
in n/60 inch per line; n=1 to 255:			
Perform graphics line spacing	ESC J n	27 74 n	1B 4A n
Line spacing amount is n/180;			
n = 0 to 255			
Select graphics mode	ESC * m n1 n2 data	27 42 m n1 n2 data	1B 2A m n1 n2 data

Miscellaneous control codes

Function	ASCII	Dec.	Hex.
Select Font Global	ESC [I n1 n2 f1 f2	27 91 73 n1 n2 f1 f2	1B 5B 49 n1 n2 f1 f2
	s1 s2 s3	s1 s2 s3	s1 s2 s3
Set 360 dpi graphics	FS C B m1 m2 n1	28 67 66 m1 m2 n1	1C 43 42 m1 m2 n1
	n2 data	n2 data	n2 data
Set/Perform graphics line spacing	FS C J m n	28 67 74 m n	1C 43 4A m n
m = 0: set n/180 line spacing			
m = 4: set n/360 line spacing			





ESCape sequence code for colour printing

When the Color BJ Cartridge BC-11e is installed in the printer, the following colour command is available.

Function	ASCII	Dec.	Hex.
Select colour printing n1 = 1, n2 = 0 m = 0; m = 1; m = 2; m = 3; m = 4; m = 5; m = 6;	ESC [M n1 n2 m	27 91 77 n1 n2 m	1B 5B 4D n1 n2 m
	Black (default)		
	Blue		
	Red		
	Magenta		
	Green		
	Cyan		
	Yellow		

LQ mode command summary

All of the control codes shown in the following tables can be used when the printer is in LQ mode.



Because of hardware differences, the justification code (ESC a) is not supported on your printer. The styles of block graphics characters at 12 cpi are also different from normal LQ-2550 printing.

Basic control codes

Function	ASCII	Dec.	Hex.
End command	NUL	0	00
Sound beeper	BEL	7	07
Backspace one character	BS	8	08
Horizontal tab control	HT	9	09
Move to next tab.			
Perform line feed	LF	10	0A
Vertical tab control	VT	11	0B
Move to next tab.			
Perform form feed	FF	12	0C
Perform carriage return	CR	13	0D
Set double-wide mode by line	SO	14	0E
Set condensed mode (17 cpi)	SI	15	0F
Cancel by DC2.			
Select printer	DC1	17	11
Cancel condensed mode	DC2	18	12
Set by SI. Cancel also by setting 2nd bit to 0 in the ESC ! n code.			
Deselect printer	DC3	19	13
Cancel double-wide mode	DC4	20	14
Cancel line	CAN	24	18
Insert space	SP	32	20
Delete character	DEL	127	7F





ESCape sequence codes

Function	ASCII	Dec.	Hex.
Set double-wide mode by line	ESC SO	27 14	1B 0E
Set condensed mode	ESC SI	27 15	1B 0F
Control automatic sheet feeder n = R: Eject paper	ESC EM n	27 25 n	1B 19 n
Function	ASCII	Dec.	Hex.
Set inter-character space n = 0 to 127	ESC SP n	27 32 n	1B 20 n
Select various print modes *1	ESC ! n	27 33 n	1B 21 n
Cancel MSB control	ESC #	27 35	1B 23
Set absolute print position	ESC \$ n1 n2	27 36 n1 n2	1B 24 n1 n2
Select download character set	ESC % n	27 37 n	1B 25 n
Define download characters	ESC & NUL n1 n2 r1 r2 r3 data	27 38 0 n1 n2 r1 r2 r3 data	1B 26 00 n1 n2 r1 r2 r3 data
Select score mode *2	ESC (- n1 n2 m d1 d2	27 40 45 3 0 1 d1 d2	1B 28 2D 03 00 01 d1 d2
Assign character table *3	ESC (t n1 n2 d1 d2 d3	27 40 45 3 0 d1 d2 d3	1B 28 2D 03 00 d1 d2 d3
Print data as characters	ESC (^ n1 n2 data	27 40 n1 n2 data	1B 28 5E n1 n2 data

*1 Use the bit pattern (bit 0 to bit 7) of n, where n can range from 0 to 255, to set or cancel a combination of character pitch and highlighting.

Bit	0	1	2	3	4	5	6	7
1	12 cpi	PS	Condensed	Emphasized	Double	Double wide	Italic	Underscore
0	10 cpi	Cancel	Cancel	Cancel	Cancel	Cancel	Cancel	Cancel

*2 d1 determines the score position:

- d1 = 1: underscore
 - d1 = 2: strikethrough
 - d1 = 3: overscore
- d2 determines the score type:
- d2 = 0: cancel the score set by d1
 - d2 = 1: single continuous line
 - d2 = 2: double continuous line
 - d2 = 5: single broken line]
 - d2 = 6: double broken line

*3 d1 defines the character table area

- d1 = 0, 48: Table 0
 - d1 = 1, 49: Table 1
 - d1 = 2, 50: Table 2
 - d1 = 3, 51: Table 3
- d2 defines the character table
- d2 = 0: Italics table
 - d2 = 1: Code Page 437
 - d2 = 3: Code Page 850
 - d2 = 6: Code Page 855
 - d2 = 7: Code Page 860
 - d2 = 8: Code Page 863
 - d2 = 9: Code Page 865
 - d2 = 10: Code Page 852
 - d2 = 11: Code Page 857
 - d2 = 13: Code Page 864
 - d2 = 15: Code Page 869
 - d3 = 0





Function	ASCII	Dec.	Hex.
Select image graphics mode *4	ESC * m n1 n2 data	27 42 m n1 n2 data	1B 2A m n1 n2 data
Set n/360 inch line spacing n = 0 to 255	ESC + n	27 43 n	1B 2B n
Set/cancel underline mode n = 0: Cancel auto-underscore n = 1: Set auto-underscore	ESC _ n	27 45 n	1B 2D n
Select vertical tab channel n = 0 to 7: Select tab cancel	ESC / c	27 47 c	1B 2F c
Set 1/8 inch line spacing	ESC 0	27 48	1B 30
Set 1/6 inch line spacing	ESC 2	27 50	1B 32
Set n/180 inch line spacing n = 0 to 255	ESC 3 n	27 51 n	1B 33 n
Set italic mode Cancel by ESC 5.	ESC 4	27 52	1B 34
Cancel italic mode	ESC 5	27 53	1B 35
Expand printable range	ESC 6	27 54	1B 36
Cancel printable range expansion	ESC 7	27 55	1B 37
Copy ROM font to RAM n: Defines font typeface	ESC : NUL n NUL	27 58 0 n 0	1B 3A 00 n 00
Set unidirectional print by line	ESC @	27 60	1B 3C
Set MSB to 0	ESC =	27 61	1B 3D
Set MSB to 1	ESC :	27 62	1B 3E
Reassign image graphics mode	ESC ? n m	27 63 n m	1B 3F n m
Reset printer Initialize all printer settings to the values when the printer goes on.	ESC @	27 64	1B 40
Set n/60 inch line spacing n = 0 to 85	ESC A n	27 65 n	1B 41 n
Set vertical tabs	ESC B n1...n16 NUL	27 66 n1...n16 6 0	1B 42 n1...n16 00
Set page length in lines n = 1 to 127	ESC C n	27 67 n	1B 43 n
Set page length in inches n = 1 to 20	ESC C NUL n	27 67 0 n	1B 43 00 n

*4	m	Dot Density (DPI)		Bit Image Mode
		Vertical	Horizontal	
0	60	60		8-bit normal-density bit image
1	60	120		8-bit double-density bit image
2	60	120		8-bit double-velocity double-density bit image
3	60	240		8-bit quadruple-density bit image
4	60	80		8-bit CRT graphics I
6	60	90		8-bit CRT graphics II
32	180	60		24-bit normal-density bit image
33	180	120		24-bit double-density bit image
38	180	90		24-bit CRT graphics II
39	180	180		24-bit triple-density bit image
40	180	360		24-bit sextuple-density bit image
71	180	1440		48-bit triple-density bit image
72	360	2880		48-bit sextuple-density bit image
73	360	2880		48-bit sextuple-density bit image





Function	ASCII	Dec.	Hex.
Set horizontal tabs	ESC D n1...n32 NUL	27 68n1...n32 0	1B 44n1...n32 00
Set emphasized mode	ESC E	27 69	1B 45
Cancel by ESC F.			
Cancel emphasized mode	ESC F	27 70	1B 46
Set double-strike mode	ESC G	27 71	1B 47
Cancel double-strike mode	ESC H	27 72	1B 48
Perform n/180 inch line feed	ESC J n	27 74 n	1B 4A n
n = 0 to 255			
Set single-density graphics mode	ESC K n1 n2 data	27 75 n1 n2 data	1B 4B n1 n2 data
Set double-density graphics mode	ESC L n1 n2 data	27 76 n1 n2 data	1B 4C n1 n2 data
Set 12 cpi mode	ESC M	27 77	1B 4D
Cancel by ESC P.			
Set perforation skip	ESC N		
n = 1 to 127			
Cancel perforation skip	ESC O		
Set 10 cpi mode	ESC P	27 80	1B 50
Cancel 12 cpi or 15 cpi mode.			
Set right margin	ESC Q n	27 81 n	1B 51 n
Select international character set *5	ESC R n	27 82 n	1B 52 n
Set super/subscript mode	ESC S n	27 83 n	1B 53 0n
n = 0: Set superscript mode			
n = 1: Set subscript mode			
Cancel by ESC T.			
Cancel super/subscript mode	ESC T	27 84	1B 54
Select print direction	ESC U n	27 85 n	1B 55 n
n = 0: Set bidirectional printing			
n = 1: Set unidirectional printing			
Set/cancel double-wide mode	ESC W n	27 87 n	1B 57 n
n = 0: Cancel double-wide mode			
n = 1: Set double-wide mode			
Set double-density graphics mode	ESC Y n1 n2 data	27 89 n1 n2 data	1B 59 n1 n2 data
Set quadruple-density graphics mode	ESC Z n1 n2 data	27 90 n1 n2 data	1B 5A n1 n2 data
Set relative print position	ESC \ n1 n2	27 92 n1 n2	1B 5C n1 n2
Set vertical tabs in channels	ESC b c n1...n16 NUL	27 98 c n1...n16 0	1B 62 c n1...n16 00
c = 0 to 7: Select chansl			
Set 15 cpi mode	ESC g	27 103	1B 67
Cancel by ESC P.			

- *5
- n = 0 USA
 - n = 1 France
 - n = 2 Germany
 - n = 3 UK
 - n = 4 Denmark I
 - n = 5 Sweden
 - n = 6 Italy
 - n = 7 Spain I
 - n = 8 Japan
 - n = 9 Norway
 - n = 10 Denmark II
 - n = 11 Spain II
 - n = 12 Latin America
 - n = 13 Korea
 - n = 64 Legal

The initial value is determined by FUNCTION 11, 12, and 13.





Function	ASCII	Dec.	Hex.
Select typeface *6	ESC k n	27 107 n	1B 6B n
Set left margin	ESC l n	27 108 n	1B 6C n
Set/cancel proportional space mode n=0: Cancel proportional spacing n=1: Set proportional spacing	ESC p n	27 112 n	1B 70 n
Select character style n = 0: Normal n = 1: Outline n = 2: Shadowing n = 3: Outline with shadowing n = Else: Command ignored	ESC q n	27 113 n	1B 71 n
Select character table n = 0: Table 0 (Italics table) n = 1: Table 1 (Code Page Selected by FUNCTION) n = 2: Table 2 (Download table) n = 3: Table 3 (Code Page Selected by FUNCTION)	ESC t n	27 116 n	1B 74 n
Set/cancel double-high mode n = 0: Cancel double-high mode n = 1: Set double-high mode	ESC w n	27 119 n	1B 77 n
Select high-speed/high-quality mode n = 0: Set Draft mode n = 1: Set high-quality (HQ) mode	ESC x n	27 120 n	1B 78 n

*6 n = 0 Roman (10,12,15,17,20, Proportional)
n = 1 Gothic (10,12,15,17,20, Proportional)
n = 2 Courier (10,12,15,17,20, Proportional)
n = 3 Prestige (10,12,15,17,20, Proportional)
n = Other Roman
The initial value of n is set via the control panel.

ESCape sequence code for colour printing

When the Color BJ Cartridge BC-11e is installed in the printer, the following colour command is available.

Function	ASCII	Dec.	Hex.
Select colour printing n = 0: Black n = 1: Magenta n = 2: Cyan n = 3: Blue n = 4: Yellow n = 5: Red n = 6: Green n = else: Command ignored	ESC r n	27 114 n	1B 72 n





Appendix D

Options and Supplies

Whenever you need any of these replaceable items, contact a local Canon Authorised Dealer or your Canon representative.

Consumables

Black BJ Cartridge BC-10

Contains both a print head unit and replaceable black ink cartridge.

Ink Cartridge BCI-10 Black

Used in the Black BI Cartridge BC-10.

Color BJ Cartridge BC-11e

Incorporates a Bubble Jet print head and two replaceable ink cartridges: the Ink Cartridge BCI-11 Color and the Ink Cartridge BCI-11 Black.

Ink Cartridge BCI-11 Black

Used in the Color BJ Cartridge BC-11e.

Ink Cartridge BCI-11 Color

Three-colour ink cartridge used in the Color BJ Cartridge BC-11e.

Canon Li-Ion Battery LB-50

Rechargeable battery pack.





Paper and special media

Name	Media Type	Sizes
Bubble Jet Paper LC-301	Plain Paper	A4, LTR
Glossy Photo Paper GP-201	Glossy Paper	A4, LTR
High Resolution Paper HR-101	Coated Paper	A4, LTR
Transparency CF- 102	Transparency	A4, LTR
High Gloss Film HG-101	High Gloss Film	A4, LTR
Back Print Film BF-102	Back Print Film	A4, LTR
Fabric Sheet FS-101	Fabric Sheet	241 x 356 mm
T-Shirt Transfer TR-201	T-Shirt Transfer	216 x 279 mm

Available options

Canon Auto Sheet Feeder ASF-50

Allows you to stack and feed more than one sheet for printing.

Color Image Scanner Cartridge IS-12

This Scanner Cartridge turns your printer into a color scanner.

BJ Cartridge Storage Container SB-10

Used for storing partially used Color BJ Cartridge BC-11e or Black BJ Cartridge BC-10.





Appendix E

Specifications

Printer Specifications

Printing Method	Bubble jet ink on-demand
Paper Handling	Automatic feed
Print Speed	BC-10 Black print speed*: HQ mode 346 cps HS mode 434 cps BC-11e Color print speed: Fine mode 0.26 ppm HQ mode 1.8 ppm HS mode 2.1 ppm
Printing Direction	Uni-directional (or bi-directional, depends on data format)
Print Width	Maximum 8 inches
Line Feed Speed	Approximately 70 ms/line at 1/6 inch line in HQ, HS mode
Resident Printer	BJ mode: IBM Proprinter X24E emulation
Control Modes	LQ mode: EPSON LQ-2550 emulation (for color printing) EPSON LQ-5 10 emulation (for black printing) Canon Extended Mode

*Print speed depends on content of the document.





Line Feed Pitch (inch)

BJ mode: 1/6, 1/8, n160, n/72, n/180, n/2 16, and n1360

LQ mode: 1/6, 1/8, n/180, and n/360 (n: programmable)

Printing Characters

Typeface: Roman, Gothic, Courier, Prestige, and Draft

Pitch: BJ mode — 10, 12, 17 cpi, and PS

LQ mode — 10, 12, 15, 17, 20 cpi, and PS

Cell composition:

36 (h) x 48 (v) dot matrix in HQ mode

18 out of 36 (h) x 48 (v) dot matrix in HS mode

Character set:

BJ mode IBM character set 1, 2, and All characters chart

LQ mode — Italic character table and Graphics character

Code page:

437, 850, 860, 863, 865, 857, 855, 852, 864, and 869

Maximum Number of Characters per Line

BJ mode:

Mode	Pitch	Characters per line
10 cpi	10.0 cpi	80.0 cpl
10 cpi double-wide	5.0 cpi	40.0 cpl
10 cpi condensed	17.0 cpi	136.0 cpl
10 cpi condensed double-wide	8.5 cpi	68.0 cpl
12cpi	12.0 cpi	96.0 cpl
12 cpi double-wide	6.0 cpi	48.0 cpl
Proportional spacing	PS	Varies

LQ mode:

Mode	Pitch	Characters per line
10 cpi	10.0 cpi	80.0 cpl
10 cpi double-wide	5.0 cpi	40.0 cpl
10 cpi condensed	17.0 cpi	136.0 cpl
10 cpi condensed double-wide	8.5 cpi	68.0 cpl
12cpi	12.0 cpi	96.0 cpl
12 cpi double-wide	6.0 cpi	48.0 cpl
12 cpi condensed	20.0 cpi	160.0 cpl
12 cpi condensed double-wide	10.0 cpi	80.0 cpl
15cpi	15.0 cpi	120.0 cpl
15 cpi double-wide	7.5 cpi	60.0 cpl
Proportional spacing	PS	Varies





- Graphic Image Print** Data format: Vertical 8, 24, and/or 48-dot format
Resolution: Horizontal 60 dpi
Horizontal 120 dpi
Horizontal 180 dpi
Horizontal 240 dpi
Horizontal 360 dpi
Horizontal 720 dpi
- Buffer** BJ mode: Input buffer: 34 kB (or 2 kB)
Download buffer: 0 kB (or 32 kB)
LQ mode: Input buffer: 25 kB (or 2kB)
Download buffer: 0 kB (or 23 kB)
The values in parentheses show the buffer sizes when automatic emulation switching is turned on.
- Interface** IEEE 1284 compatible parallel interface
IrDA 1.0 interface
- Color BJ Cartridge BC-11e** Print head: 64 nozzles for Black, 24 nozzles each for Cyan, Magenta, and Yellow
Ink Color: Black, Cyan, Magenta, and Yellow
Number of pages printed (Black Ink Cartridge BCI-11):
Approx. 45 pages/cartridge in HQ mode (at 5% coverage)
Number of pages printed (Color Ink Cartridge BCI- 11):
Approx. 40 pages/cartridge in HQ mode (at 7.5% coverage for each color)
- Black BJ Cartridge BC-10** Print head: 128 bubble jet nozzles
Ink Color: Black
Number of pages printed:
Approx. 170 pages/cartridge in HQ mode (at 5% coverage)





Acoustic Noise Level 45 dB or less in HQ mode (Approx. 43 dB in Fine mode) (Per ISO 9296)

Operating Environment Temperature: 5 °C to 35 °C (41 °F to 95 °F)
Humidity: 10% to 90% RH (no condensation)

Storage Environment Temperature: 0 °C to 35 °C (32 °F to 95 °F)
Humidity: 5% to 95% RH (no condensation)

Power Source Universal AC Adapter AD-360U connected to AC power source

Power Consumption Printing: 23W
Standby: 3 W
Off: 2W

Battery Pack Type: Lithium-ion battery
Voltage level: 12V DC
Size: 213.3 x 28.5 x 20.6 mm
Weight: Approx. 160 g

Dimensions (W x D x H): 302mm (11.9 in.) x 112.5mm (4.4 in.) x 49mm (2 in.)

Weight Approx. 900g (2.0 lb.) including battery





Appendix F

Interface Specifications

Parallel interface

To connect this printer with a computer via the parallel interface connector provided on the printer, you must use the Canon Printer Cable BIFC-50 provided with printer (or its equivalent).

Interface type:	Parallel Centronics with 1mm-pitched connector.
Interface cable	
Type:	Twisted-pair shielded cable
Material:	AWG#28
Length:	1.5m(5ft)
Interface connectors	
Printer side:	Japan Molex 52629-2611 (or equivalent)
Cable side:	Fujitsu Takamisawa Component FCN-28øP26 G/E (or equivalent)

IrDA interface

Because of its simplicity and versatility, the IrDA interface, controlled by the Infra-red Data Association, is rapidly gaining popularity among users of personal computers.

Interface type:	IrDA 1.0 Compatible
Data rates:	Maximum 115.2 kbps
Effective angle:	±15°
Effective distance:	Maximum 1.0 m (3.2 ft.)

