# LR1

# USER MANUAL

# Canon

# Canon

# COLOR BUBBLE JET™PRINTER

LR1

User's Manual

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#### Disclaimer

Canon Computer Systems, Inc. has reviewed this manual thoroughly in order that it will be an easy to use guide to your Canon LR1 Color Bubble Jet Printer. All statements, technical information, and recommendations in this manual and in any guides or related documents are believed reliable, but the accuracy and completeness thereof are not guaranteed or warranted, and they are not intended to be, nor should they be understood to be, representations or warranties concerning the products described.

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As an Energy Star® Partner, Canon U.S.A., Inc. has determined that this product meets the Energy Star® guidelines for energy efficiency.

# **Using Your Documentation**

The following documentation is supplied with the Canon LR1 Color Bubble Jet™ Printer to help you efficiently use your new printer.

#### **Quick Start Guide**

Follow the instructions in *Quick Start Guide* to set up the printer and prepare it for use.

## **Quick Guide to Printing**

This guide (on the back of *Quick Start Guide*) provides explanations about every-day operations, such as remedies for low print quality, replacing ink tanks, what to do if the lights come on, and loading paper.

#### User's Manual (this guide)

Read this manual to find out specific details about printer operation. Before using the printer, please be sure to read "Important Notes on Safety" (see page 1-2).

#### **Quick Reference**

This is a convenient guide that attaches to the bottom of the printer for easy reference. Attach the *Quick Reference* panel to the bottom of the printer as shown here, and refer to it when necessary.



## Conventions

This *User's Manual* uses the following conventions to alert you to information that will help you operate the printer correctly and safely.



Notes provide advice or suggestions regarding the use of the printer.



Cautions alert you to operations that could cause damage to your hardware or software, or cause injury to yourself.

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Congratulations on your purchase of the Canon LR1 Color Bubble Jet Printer. We appreciate your choosing this printer to meet your printing needs.

The Canon LR1 printer offers excellent print quality and fast print speed using both color and black inks. We are certain you will be satisfied with this advanced Bubble Jet technology.



#### This chapter describes:

- Important notes on safety
- Supplies and accessories you can purchase for the printer
- Printer components
- Turning the power on and off
- Canon's customer support services

# Important Notes on Safety

# Choosing a Place for Your Printer

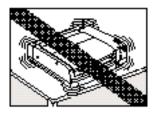
 Do not place the printer near volatile liquids, such as alcohol or paint thinner.
 Volatile liquids coming in contact with the electrical

Volatile liquids coming in contact with the electrical components inside the printer may result in fire or electrical shock.



Do not place the printer on an unstable or vibrating surface.

If the printer falls or tips over, it may be damaged or cause injury.

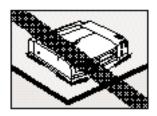


Avoid placing the printer in humid or dusty areas, direct sunlight, and areas of high temperature or excessive heat.

Doing so can result in fire or electrical shock.



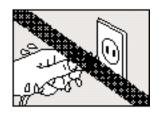
Do not place the printer on thick rugs or carpets. Carpet fibers or dust entering the printer can result in fire or electrical shock.



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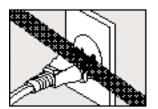
## Supplying Power to the Printer

■ To avoid electrical shock, make sure your hands are dry before plugging in the power cord.



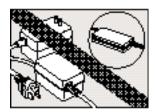
Make sure you insert the plug all the way into the power outlet.

Loose connections can result in fire or electrical shock.



Attempting to use a power cord or AC adapter other than those provided can result in fire or electrical shock.

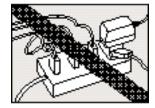
Do not use the printer's power cord and AC adapter with any other machine.



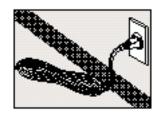
Avoid damaging, modifying, pulling, or excessively bending the AC adapter and power cord. Do not place heavy objects on top of the power cord. Damaged cords may short-circuit, resulting in fire or electrical shock.



Overloading the electrical outlet can result in fire or electrical shock.



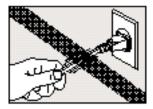
■ Do not use the power cord if it is tied or knotted. Doing so may result in fire or electrical shock.



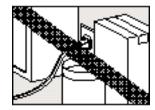
■ If you notice smoke or any strange odor coming from your printer, immediately turn off the power and unplug the power cord from the power outlet. Continuing to use the printer under these conditions may cause fire or electrical shock. Contact the Canon **Customer Care Center.** 



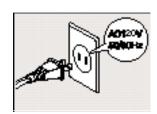
■ When removing the power cord, make sure you pull on the plug, and not on the cord. Pulling on the cord can damage it, possibly resulting in fire or electrical shock.



■ Do not place any object next to the power outlet that would prevent you from pulling out the power cord. In emergencies, fire or electrical shock could result if you are unable to pull out the plug quickly.



■ The printer is designed for use with AC 120 V. Using it with any other voltage can result in fire or electrical shock. Please use with a power source that meets these conditions:



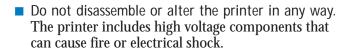
Voltage: AC 120 V Frequency: 60 Hz

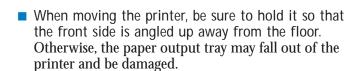
1-4 Introduction Chapter 1

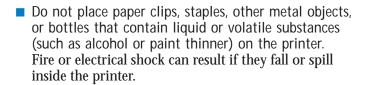
## Handling the Printer

Do not use items such as flammable sprays near the printer.

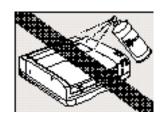
If gas from the spray contacts electrical components inside the printer, fire or electrical shock may result.

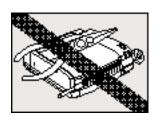


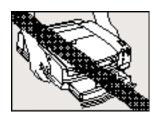


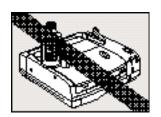


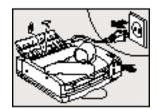
If foreign objects (such as metal objects or liquids) fall or spill inside the printer, turn off the printer, unplug the power cord from the electrical outlet, and contact the Canon Customer Care Center. Continuing to use the printer under these conditions can result in fire or electrical shock.





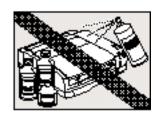




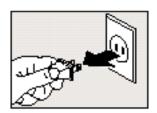


#### Maintaining the Printer

When cleaning, use a damp cloth. Do not use volatile liquids such as alcohol, benzene, or paint thinner. Such substances can cause fire or electrical shock if they contact electrical components inside the printer.

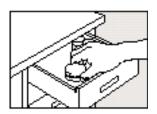


Before cleaning the printer, turn off the power and unplug the power cord from the electrical outlet. If you leave the printer plugged in and accidentally turn the power on, the parts inside the printer will start to move and you could be injured.



## Handling the BJ Cartridge

For safety reasons, always store BJ cartridges and ink tanks out of reach of children. In case of accidental ink ingestion, consult a physician immediately.



Do not drop or shake BJ cartridges. If spilled, the ink will stain objects and clothing.



 After printing, do not touch the metallic portion of the BJ cartridge.
 This part of the cartridge becomes hot during printing and can cause burns.



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# Supplies and Accessories

Canon has an extensive dealer network equipped to offer you supplies as you need them. To find a dealer near you, call the Canon referral service at **1-800-848-4123**.

If supplies are not available from your local dealer, you can order directly from Canon by calling **1-800-671-1090**.



Canon has more engineers dedicated to creating quality ink for providing the best results for output on Bubble Jet printers than any other organization. Canon does not prohibit the use of third-party inks and the use of third-party inks does not invalidate the product's limited warranty. However, Canon cannot guarantee the quality or performance of your printer when you are using inks from other suppliers.

Canon's limited warranty does not cover damage caused to Canon's Bubble Jet products that is attributable to the use of third party parts or supplies, including inks. The limited warranty remains in effect for its life once that particular damage has been properly repaired.

For optimum printing results, Canon recommends that you use only Canon BJ cartridges and ink tanks.

#### Paper

You can use the following paper with the LR1:

- Plain paper
- Canon's Bubble Jet Paper
- Canon's High Resolution Paper

#### BJ Cartridges

		Number of items
Туре	Product name	in package
Color	BC-11e Color BJ Cartridge	1
Black	BC-10 Black BJ Cartridge	1
Photo	BC-12e Photo BJ Cartridge	1

When purchasing additional BJ cartridges, make sure to purchase an SB-11 Ink Cartridge Storage Box.

#### Ink Tanks

#### BC-11e Color BJ Cartridge

Туре	Product name	Number of items in package
Black ink	BCI-11 Black Ink Tank BCI-18 Black Ink Tank (High capacity)	3 2
Color ink	BCI-11 Color Ink Tank BCI-18 Color Ink Tank (High capacity)	3 1

#### BC-10 Black BJ Cartridge

		Number of items
Туре	Product name	in package
Black ink	BCI-10 Black Ink Tank	3
	BCI-17 Black Ink Tank (High capacity)	1

#### BC-12e Photo BJ Cartridge

Туре	Product name	Number of items in package
Black ink	BCI-12 Photo Black Ink Tank	3
Color ink	BCI-12 Photo Color Ink Tank	3

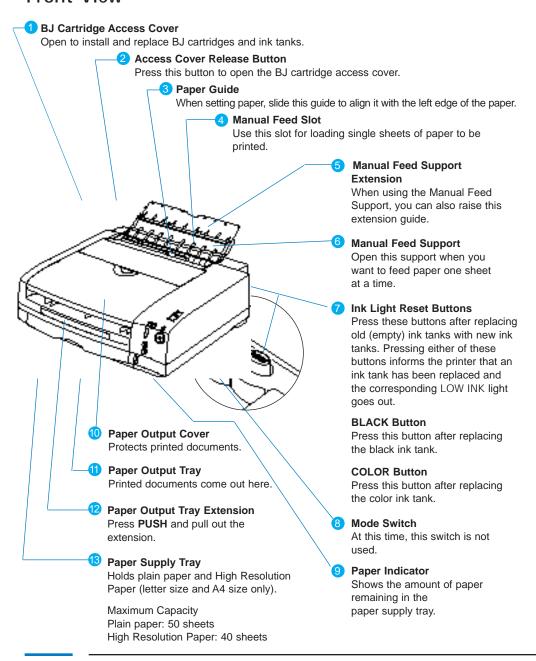
#### ■ Ink Cartridge Storage Box

		Number of items
Туре	Product name	in package
Container	SB-11 Ink Cartridge Storage Box	1

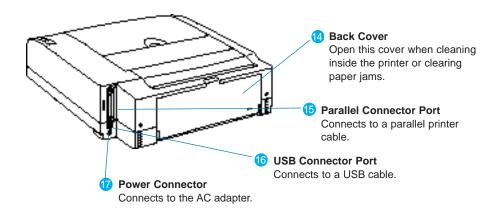
1-8 Introduction Chapter 1

# Names and Functions of the Printer's Parts

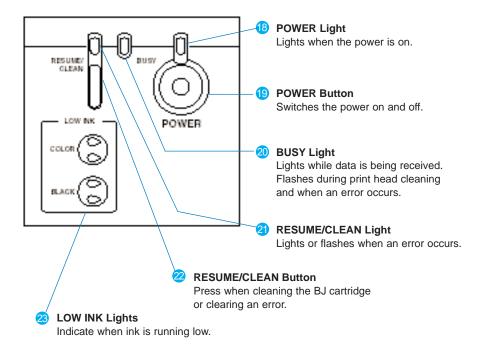
#### Front View



#### **Back View**



#### **Control Panel**



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# Introduction

# Turning the Power On and Off

## Turning On the Power



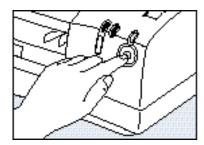
Confirm that the connected Internet device is turned off.

If the Internet device is turned on first, it may not detect the printer. Make sure you turn the printer on first.



Make sure the printer is plugged in and press the **POWER** button on the printer.

The POWER light comes on.





Turn on the connected Internet device.



If the power does not come on: Refer to Chapter 5, *Troubleshooting*.

Auto power on/off function:

If you do not use the printer within 30 minutes of turning it on, it automatically switches off. If this happens, the power automatically switches back on again when you select Print from the connected Internet device, even if you do not press the **POWER** button.

# ntroduction

## Turning the Power Off



Press the printer's **POWER** button.

Once the BUSY light stops flashing, the printer is powered off.

After turning off the printer, wait at least three seconds before turning it back on again.



Do not unplug the power cord from the power outlet while the BUSY light is flashing. If you turn off the power while the BUSY light is flashing, the BJ cartridge ink nozzles are not capped and will dry, causing an ink blockage.

If you do not intend to use the printer for an extended period of time, unplug the power cord from the power outlet after turning off the printer.

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# Getting Help From Canon

Canon Computer Systems, Inc. offers a full range of customer technical support\* options including:

- 24-hour, 7-day-a-week, toll-free automated support for troubleshooting issues on most current products (1-800-423-2366)
- Speak to a technician free of service charge (currently Monday—Friday 8:00 a.m. to 10:00 p.m. and Saturday 12:00 p.m. to 6:00 p.m. EST, excluding holidays) for products still under warranty\*\* (1-757-413-2848)
- Speak to a technician (currently \$24.99) during holidays and days/hours not listed above regarding urgent product questions or for products no longer under warranty (1-800-423-2366)

Or for a charge of \$2.50 per minute, to a maximum of \$25.00 per call (1-900-246-1200)

- To find out about all Canon products and accessories, to download the latest drivers, and to explore all your technical support options including e-mail support, visit the Canon Computer Systems, Inc. Web site (www.ccsi.canon.com)
- 24-hour, toll-free Fax Retrieval System (1-800-526-4345)
- To download the latest printer driver using your modem, 24-hour Bulletin Board Service (1-757-420-2000)
- Within Canada, 24 hours a day, 7 days a week\* (1-800-263-1121)

<sup>\*</sup>Support program specifics subject to change without notice.

<sup>\*\*</sup>Refer to individual product information for warranty details.

## Servicing the Printer

The Canon LR1 Color Bubble Jet Printer is designed with the latest technology to provide trouble-free operation. The Warranty Card that comes with the printer describes Canon's limited warranty for your Bubble Jet printer. Be sure to read the warranty information to find out about the different service options available to you.



**Save your sales receipt for proof of purchase.** In the event that your printer needs service, you will need your proof of purchase to obtain warranty service.

If you feel your LR1 Color Bubble Jet Printer needs servicing, contact Canon on the World Wide Web (www.ccsi.canon.com) to locate the Canon Authorized Service Facility (ASF) nearest you. If you do not have access to the Web, you can call the Canon Customer Care Center.

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# Using BJ Cartridges

You can use the following BJ cartridges with the LR1:



BC-11e Color BJ Cartridge
Use for color printing
(provided)



BC-10 Black BJ Cartridge Ideal for high volume black and white printing (optional)



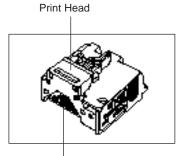
BC-12e Photo BJ Cartridge Ideal for printing high quality color photos (optional)



The BJ cartridge contains the print head (where the ink comes out) and the ink tanks. When the ink runs out, replace only the ink tank.

Follow these guidelines when using a BJ cartridge.

- Keep the BJ cartridge in its sealed container until you are ready to use it.
- Do not attempt to disassemble the BJ cartridge.
- Do not touch the print head or circuit board surface.
- Do not drop, bump, or subject the BJ cartridge to any type of hard impact.
- Do not place BJ cartridges in direct sunlight or in hot and humid areas.



Circuit Board Surface

- When placing the BJ cartridge on hard surfaces, such as a desk, place the cartridge with the print head facing up.
- Dispose of used BJ cartridges according to the rules and regulations in your area.
- Do not use BJ cartridges that have been used in other printers. If you do so, the LOW INK light function will not work properly.

# If Printing Is Unclear or Colors Are Missing

If your printing is unclear or colors are missing, one of the following may be the reason:

- The BJ cartridge print head nozzles are clogged.
- An ink tank is empty.

If printing becomes unclear or colors are missing, print the Nozzle Check Pattern to determine whether each nozzle in the print head is operating correctly. If the print head is clogged, perform the print head cleaning procedure. If the print head is operating properly, replace the ink tank.

#### Printing the Nozzle Check Pattern



Make sure paper is loaded in the paper supply tray.

Important! Paper must be loaded in the paper supply tray! You cannot print a Nozzle Check Pattern when using manual paper feed. The paper in the manual feed slot will be ejected.



If the printer is on, turn it off.

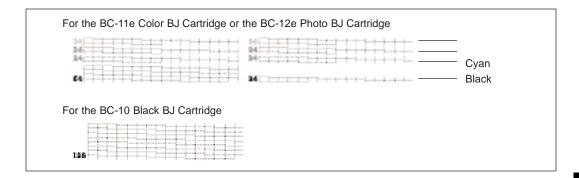


Press and hold the **POWER** button until you hear four beeps, then release the button.

The printer loads paper and prints the Nozzle Check Pattern. (If the printer has not been used in awhile, the printer cleans the print head before loading paper.)

2-2 Using BJ Cartridges Chapter 2

A normal Nozzle Check Pattern looks like this:



If the print head nozzles are clogged, some horizontal lines will have a broken appearance. If this happens, clean the print head.

If the ink tank is empty, some colors will not print. If some colors do not print even after you have done the print head cleaning, replace the ink tank.

If the problem persists, try replacing the BJ cartridge.

Avoid the following operations which can cause print heads to clog:

- Storing BJ cartridges that have been removed from the printer in an unsealed Ink Cartridge Storage Box. (To purchase an Ink Cartridge Storage Box, call 1-800-671-1090.)
- Touching the print head with your fingers.
- Placing the print head directly on any surface, such as a desk.
- Pulling out the power cord while the BJ cartridge access cover is open. This allows air to get into the print head and causes drying.

# Cleaning the Print Head

The LR1 is equipped with two print head cleaning functions: normal print head cleaning and a more powerful deep print head cleaning.

Only execute deep print head cleaning when the print quality does not improve after executing normal print head cleaning.



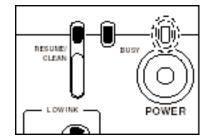
Perform print head cleaning only when necessary; unnecessary and repetitious print head cleaning wastes ink. Deep print head cleaning consumes a particularly large amount of ink.

#### Normal Print Head Cleaning



Make sure the printer is turned on.

The green POWER light is on.





Press and hold the **RESUME/CLEAN** button until you hear two beeps, then release the button.

Cleaning begins. The BUSY light flashes during cleaning. When cleaning is finished, the BUSY light goes out.



Print a Nozzle Check Pattern (see page 2-2).

If broken lines appear, repeat the above operation two or three times. If broken lines still appear in the Nozzle Check Pattern, execute deep print head cleaning.

2-4 Using BJ Cartridges Chapter 2

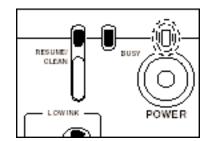
2-5

# Deep Print Head Cleaning



Make sure the printer is turned on.

The green POWER light is on.





Press and hold the **RESUME/CLEAN** button until you hear two beeps, wait for one more beep, then release the button.

It takes approximately 3 seconds for the third beep to sound after the first two beeps. Be careful not to release the button until you hear the third beep.



Print a Nozzle Check Pattern (see page 2-2).

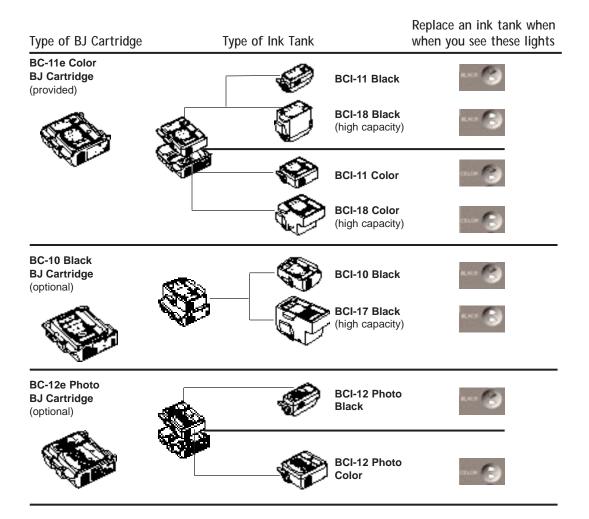
Chapter 2 Using BJ Cartridges

# Replacing Ink Tanks

If the LOW INK lights come on, replace the corresponding ink tank.

# Ink Type and Ink Replacement

The LOW INK lights on the front of the printer prompt you to replace an ink tank when the ink runs low. Confirm the type of ink tank currently installed, and then replace the ink tank.



2-6 Using BJ Cartridges Chapter 2



You can install any combination of BCI-11 and high-capacity BCI-18 ink tanks in a BC-11e Color BJ Cartridge. However, you cannot install both a BCI-11 Black and a BCI-18 Black Ink Tank in the cartridge.



For safety reasons, always store ink tanks out of reach of children. If ink is accidentally ingested, consult a physician immediately. (The ink contains isopropyl alcohol 67-63-0.)

Do not drop or shake BJ cartridges or ink tanks. If spilled, the ink will stain objects and clothing.

#### **Important Notes:**

- Perform ink tank replacement operations promptly, and do not leave ink tanks lying around after removing them from the LR1.
- Always replace empty ink tanks with new ones. If you install an ink tank that has already been used, the print head may become clogged, and the LOW INK light function will not work properly.
- To ensure freshness of ink tanks, use them within one year of purchase. Also, it's a good idea to change an ink tank if it has not been used within six months of the time it was put in the printer.
- Do not open the sealed container that the ink tank comes in until you are ready to use the ink tank.
- Do not refill the ink tanks.
- The ink is water-soluble. Keep water and other liquids out of contact with prints, as the ink may run.

Chapter 2 Using BJ Cartridges

# Replacing an Ink Tank

Make sure the LR1 is turned on.

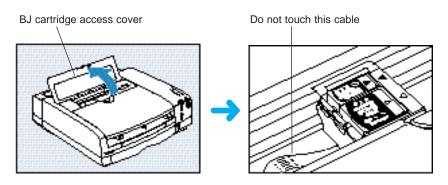


Do not turn off or unplug the printer while replacing an ink tank. Doing so may cause damage to the BJ cartridge.



Press the access cover release button and open the BJ cartridge access cover.

The BJ cartridge automatically moves to the center.



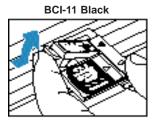


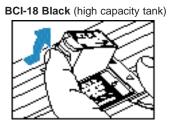
Remove the ink tank.

- Do not remove the green print head unit when replacing ink tanks.
- When disposing of used ink tanks, follow local regulations for disposal.

For the BC-11e Color BJ Cartridge

■ **Black ink tank** — Raise the gray tab by lifting it with your finger.





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# Replacing an Ink Tank

Make sure the LR1 is turned on.

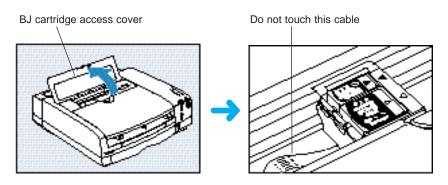


Do not turn off or unplug the printer while replacing an ink tank. Doing so may cause damage to the BJ cartridge.



Press the access cover release button and open the BJ cartridge access cover.

The BJ cartridge automatically moves to the center.



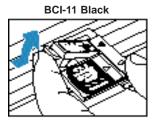


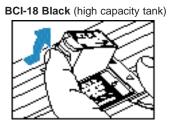
Remove the ink tank.

- Do not remove the green print head unit when replacing ink tanks.
- When disposing of used ink tanks, follow local regulations for disposal.

For the BC-11e Color BJ Cartridge

■ **Black ink tank** — Raise the gray tab by lifting it with your finger.

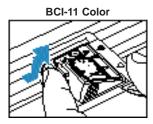


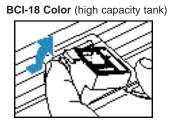


2-8 Using BJ Cartridges Chapter 2

Using BJ Cartridges

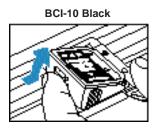
■ **Color ink tank** — Raise the white tab by lifting it with your finger.

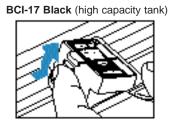




For the BC-10 Black BJ Cartridge

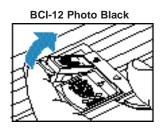
■ Raise the gray tab by lifting it with your finger.



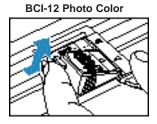


For the BC-12e Photo BJ Cartridge

■ Raise the gray tab by lifting it with your finger.



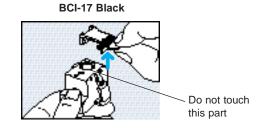
■ Raise the white tab by lifting it with your finger.



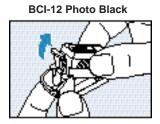
Chapter 2 Using BJ Cartridges

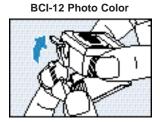
#### For the BC-10 Black BJ Cartridge

BCI-10 Black



For the BC-12e Photo BJ Cartridge



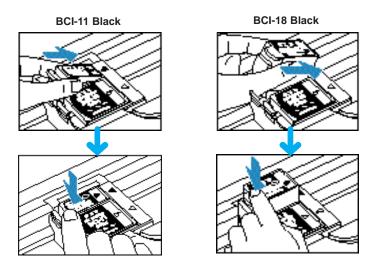


Install the new ink tank.

Align the arrows ( $\blacktriangleright$  and  $\blacktriangleleft$ ) and set the new ink tank so that it rests at an angle, then gently press down until the ink tank locks into place.

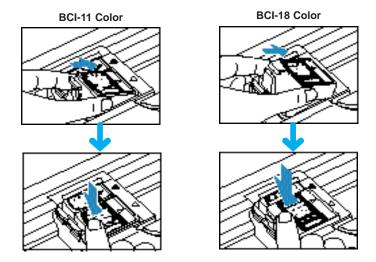
For the BC-11e Color BJ Cartridge

#### Black ink tank

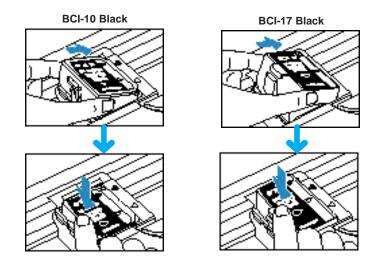


Chapter 2 Using BJ Cartridges

#### ■ Color ink tank

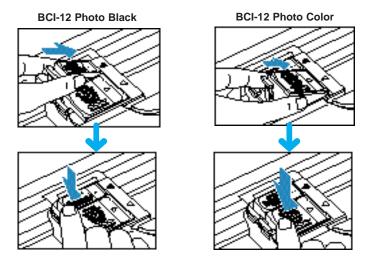


For the BC-10 Black BJ Cartridge



2-12 Using BJ Cartridges Chapter 2

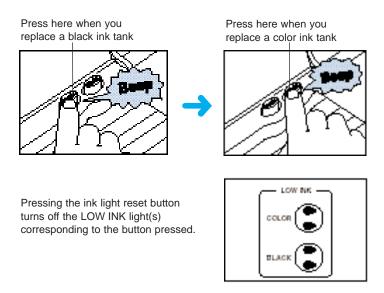
#### For the BC-12e Photo BJ Cartridge



E

Press the ink light reset button.

If you do not press the ink light reset button, the LOW INK light function will not work correctly.



If you replace both ink tanks, press both the  ${\tt BLACK}$  and  ${\tt COLOR}$  buttons, one at a time, until you hear two beeps.

Chapter 2 Using BJ Cartridges 2-13



Close the BJ cartridge access cover.

Print head cleaning starts and the BUSY light flashes. When the printer beeps and the BUSY light goes out, you are ready to print.

# Replacing the BJ Cartridge

You can use the following BJ cartridges with the LR1:

- BC-11e Color BJ Cartridge for normal color printing (provided)
- BC-10 Black BJ Cartridge for printing large volumes of black and white (optional)
- BC-12e Photo BJ Cartridge for printing photos in high quality color (optional)



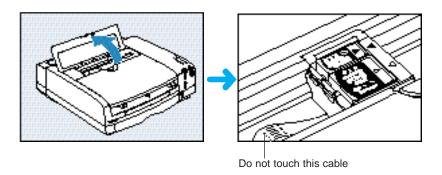
When switching BJ cartridges, store the unused cartridge in the SB-11 Ink Cartridge Storage Box. If you do not store an opened cartridge in the Ink Cartridge Storage Box, the ink will dry, rendering the cartridge unusable.

To purchase an Ink Cartridge Storage Box, call 1-800-671-1090.



Make sure the printer's power is on. Press the access cover release button and open the BJ cartridge access cover.

The BJ cartridge automatically moves to the center.

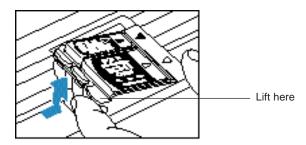


2-14 Using BJ Cartridges Chapter 2



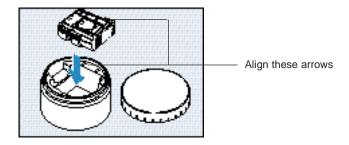
Remove the BJ cartridge.

Release and raise the green tab with your finger.





Place the BJ cartridge you just removed in the lnk Cartridge Storage Box.



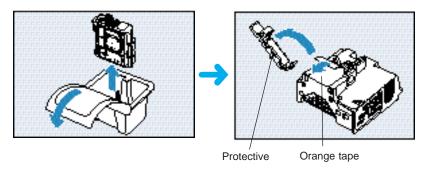
Securely twist the lid. Make sure the box is tightly closed.

Chapter 2 Using BJ Cartridges 2-15



Prepare the replacement BJ cartridge.

If using a new BJ cartridge, open the packaging and remove the protective orange cap and orange tape.

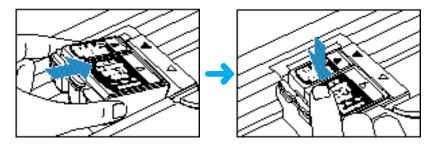


- Do not replace the protective orange cap once it has been removed. You may damage the print head.
- Make sure you remove the protective orange tape. If you do not do so, the ink will not be able to flow out.
- Do not drop or shake BJ cartridges. If spilled, the ink will stain objects and clothing.
- Do not touch the print head or circuit areas.
- Do not use BJ cartridges that have been used in other printers. If you do so, the LOW INK light function will not work properly.



Install the BJ cartridge.

Set the new BJ cartridge so it rests diagonally. Align the arrows on the BJ cartridge with the arrows on the cartridge holder. Gently press down until you hear the BJ cartridge lock into place.



2-16 Using BJ Cartridges Chapter 2

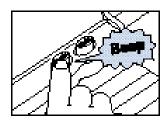


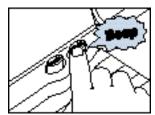
Press the ink light reset buttons only after installing a new BJ cartridge.

Press each button, one at a time.



Do not press these buttons when installing a BJ cartridge that has been used before. The printer will not be able to detect when the ink runs out.







Close the BJ cartridge access cover.

When the printer beeps and the BUSY light goes out, you are ready to print.

Chapter 2 Using BJ Cartridges

2-18 Using BJ Cartridges Chapter 2

This chapter describes the type of paper you can use with the Canon LR1, and how you load the paper. You can stack paper in the paper supply tray to load it automatically or you can manually feed one sheet at a time. You can use either plain paper or high resolution paper.

Plain Paper

You can use ordinary paper made for use with photocopiers. You can also use Canon Bubble Jet Paper.

Letter  $(8.5 \times 11 \text{ in})$ Paper size:

A4 (210  $\times$  297 mm) A5  $(148 \times 210 \text{ mm})$ B5  $(182 \times 257 \text{ mm})$ 

Paper thickness: Less than 0.2 mm

Paper weight: 17 to 35 lb (64 to 90 g/m $^2$ ) (when using the paper

supply tray)

17 to 38 lb (64 to 105 g/m<sup>2</sup>) (when using manual feed)



Do not use continuous forms (paper with perforations).

High Resolution Paper High Resolution Paper (letter size only) is superior to plain paper when printing color. This paper is suitable for printing photos or business documents which incorporate graphics with High Resolution Paper, you print on the whiter side of

the sheet.

# Important Notes on Paper

Do not use any of the following types of paper. Not only will they reduce print quality, but paper jams may also result.

- **■** Folded paper
- Curled paper
- Creased paper
- Wet paper
- Extremely thin paper (less than 17 lb or 64 g/m²)
- Extremely thick paper (more than 38 lb or 105 g/m²)
- Perforated paper (either continuous form or loose leaf)

3-2 Paper Handling Chapter 3

# Paper Handling

## **Loading Paper**

The LR1 provides two methods of feeding paper: from the paper supply tray and from the manual feed slot. Load letter size paper in the paper supply tray. You can also load one sheet at a time in the manual feed slot.

- Set paper in the paper supply tray with the print side facing down.
- Set paper in the manual feed slot with the print side facing up.

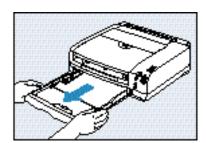
## Loading the Paper Supply Tray



Pull the paper supply tray all the way out.

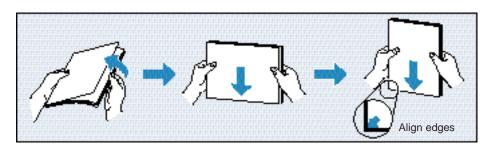
After pulling the tray out a short distance, grasp it on both sides with your hands and slowly pull it out the rest of the way.

Do not remove the paper supply tray by pulling on the front edge with one hand. You could lose your grip on the tray and drop it.



Fan the paper to be loaded and align the four corners.



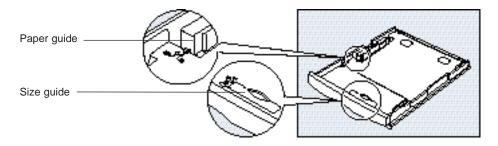


Chapter 3 Paper Handling 3-3



Set the paper guide and size guide.

You will normally set up the paper supply tray for letter size paper. Settings are also available for A4 size paper.

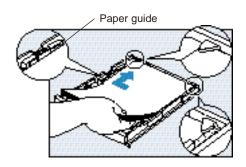




Load the paper and make sure the corners are under the clips.

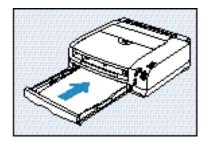
Set the paper in the tray with the print side down.

Adjust the paper guide so that it is flush with the paper. If there is any gap, paper will feed diagonally and a paper jam may occur.





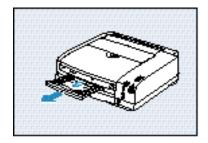
Push the tray all the way into the printer.



3-4 Paper Handling Chapter 3



Press **PUSH** on the front of the printer, and pull out the paper output tray extension.



Printed documents are stacked in the paper output tray. If possible, remove each sheet as it is printed to avoid getting ink on the back of the next sheet.

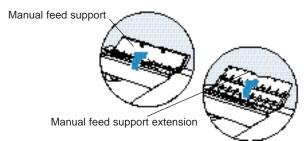


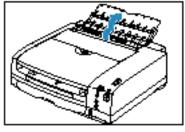
If you do let printed sheets pile up in the paper output tray, do not allow more than 20 sheets to accumulate in the tray at any one time.

## Loading Single Sheets in the Manual Feed Slot



Lift the manual feed support and fold out the manual feed support extension.



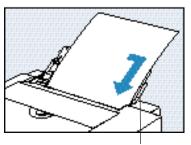




Insert the paper.

Holding the paper with the printing side facing up, align it with the right edge of the manual feed support, then insert the paper.

Insert the paper all the way into the printer. The printer will automatically feed the sheet.



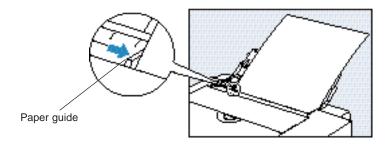
Align the right edge

Chapter 3 Paper Handling

3-5

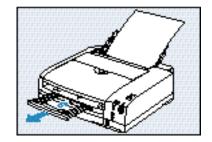


Align the paper guide with the left edge of the paper.





Press **PUSH** on the front of the printer, and pull out the paper output tray extension.



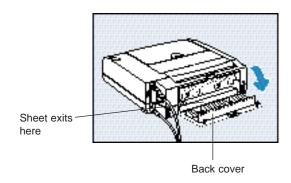
# Using High Resolution Paper

After printing High Resolution Paper, fine powder from the paper accumulates inside the printer and paper may not feed properly. Be sure to use the cleaning sheet that comes with the High Resolution Paper to periodically clean the printer. Normally, you'll want to use the cleaning sheet after you finish a packet of High Resolution Paper.



Open the back cover.

The cleaning sheet is delivered from here. Make sure there is enough space at the back of the printer.



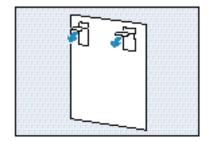
3-6 Paper Handling Chapter 3



Pull out the paper supply tray.

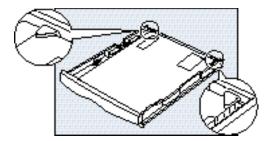


Remove the peel-off tabs from the cut-outs on the cleaning sheet.



4

Place the side with the exposed sticky cut-outs facing up, and insert the paper so the cut-outs enter the printer first.



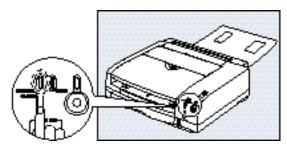
15

Push the paper supply tray back into the printer.



Push the RESUME/CLEAN button.

You will hear a beep and cleaning starts, The cleaning sheet exits from the back cover.



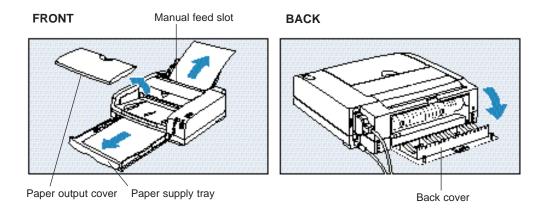


Close the back cover and press the  $\ensuremath{\mathsf{RESUME/CLEAN}}$  button again.

The RESUME/CLEAN light goes out and cleaning is finished.

Chapter 3 Paper Handling

# **Clearing Paper Jams**



If a paper jams occurs, check the following and gently pull the jammed paper out in the direction indicated by the arrows.

If the RESUME/CLEAN light comes on:

- Paper is not loaded, or paper has not ejected completely. All lights come on.
- Load paper and press the **RESUME/CLEAN** button, or remove the jammed paper from the printer.

If the paper tears off and gets jammed inside the printer:

■ Turn off the power, open the BJ cartridge access cover, and remove the torn paper.

3-8 Paper Handling Chapter 3

This section describes printer maintenance and cautions for transporting the printer.

## **Printer Maintenance**

When maintaining the printer, always follow these precautions:

- When caring for your printer, turn the power off, and unplug the power cord from the electrical outlet. If you do not unplug the printer and you accidentally turn the power on, the parts inside the printer will start to move and you could be injured.
- Do not use flammable solvents, such as paint thinner, benzene, or alcohol. They can result in fire or electrical shock.
- Do not unplug the power cord from the power outlet while the POWER light is on or flashing. This may damage the printer.
- Do not use paper towels or tissue to clean the inside of the printer. Paper particles remaining inside the printer will stick to the print head and cause a blockage in the nozzle. Use a soft cloth.
- Be careful that no liquids, such as water, enter the printer unit. This may damage the printer.
- When cleaning inside the printer, be careful not to bend or pull the film cable. This may damage the printer.

Maintaining the Printer

# Cleaning the Printer



Turn off the printer and unplug the power cord from the electrical outlet.

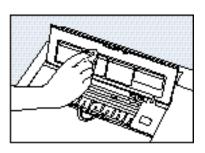


Wipe any dirt from the outside of the printer (such as around the paper output tray) with a soft cloth that has been moistened with water, then firmly wrung out.



Open the BJ cartridge access cover and wipe the back of the flap with a soft damp cloth.

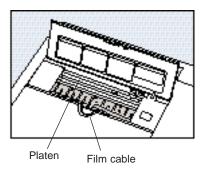
Wipe away any ink and paper sediment. Be careful not to bend the plate attached to the BJ cartridge access cover (the cover with ink replacement instructions).





If the platen becomes soiled from paper jams, wipe it clean with a dry cloth.

Be careful not to bend or pull the film cable.



When transporting the printer, pack it in its original box and affix all protective materials.



Do not remove the power cord from the electrical outlet while the POWER light is on or flashing. Damage to the printer may result.



Turn off the power to the Internet device and the printer.

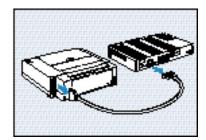
Confirm that the POWER light is out.



Unplug the printer's power cord from the electrical outlet and remove the power cord.



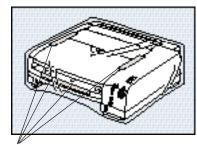
Disconnect the printer cable.





Pull out the paper supply tray and affix tape to the printer.

Place the paper supply tray in its bag.



Place tape here



Pack the printer and paper supply tray in their protective materials and set them in the box.



When using a shipping company to transport your printer, make sure you do the following:

- Secure the lid of the box with tape.
- Write "Precision Machinery Handle With Care" in a prominent location on the outside of the box.

When transporting the printer by automobile, be careful not to vibrate or bump the printer. On sunny days, be careful not to leave the printer in a closed vehicle for long periods of time; this may expose the printer to extremely high temperatures.

# Troubleshooting 5

This chapter describes remedies for various printer problems.

## **Power**

## Power does not go on

Check	Solution
Is the power cord properly plugged into the printer and the electrical outlet?	Make sure the power cord is securely plugged into the electrical outlet. Then make sure the power cord is securely inserted into the AC adapter and that the AC adapter is plugged into the printer's power connector port.
Is the electrical outlet operating?	Plug another electrical appliance into the electrical outlet to confirm that it is operating correctly.

# Lights

## The light above the **POWER** button comes on

0	On	ij.	Flashing   Off	
	Ligh	nt	Number of Beeps	Printer Condition and Status/Solution
•	•	(0)	_	Normal (power is on).
•	•		_	Normal (power is off).

Chapter 5 Troubleshooting 5-1



Light	Number of Beeps	Printer Condition and Status/Solution
• ∰ <b>(</b>	_	Normal (setup or cleaning is in process). Wait until the flashing light goes out.
		The BJ cartridge access cover is open. Close the BJ cartridge access cover. When replacing BJ cartridges and ink tanks, close the access cover after you have finished replacement, then wait until the flashing light goes out.
	_	Normal (receiving print data). Wait for printing to begin.
<b>(1)</b>	1	Paper is not loaded correctly.  Check the feed areas and reload the paper (see page 3-3).
	2	Paper is jammed. Remove the jammed paper (see page 3-8).
	3	The BJ cartridge is not inserted correctly. Remove the BJ cartridge and reinsert it (see page 2-14).
	4	The BJ cartridge is overheated.  Stop printing and wait until the BJ cartridge cools. When the cartridge cools, the light stops flashing.
i i i i i i i i i i i i i i i i i i i	_	A serious error has occurred.  Turn off the power, wait approximately 15 seconds, and then turn it back on. If the lights continue flashing, contact the Canon Customer Care Center (see page 1-13).

5-2 Troubleshooting Chapter 5

## The LOW INK light comes on



Check



Solution

Is it time to replace the ink tanks?

Confirm the type of ink installed in your printer and check the ink tank (see page 2-6).

# Paper Trouble When Printing

## The paper is jammed

Follow the steps in *Clearing Paper Jams* (see page 3-8) and remove the paper.

## The paper does not feed properly

## Paper does not feed / Paper feeds diagonally



#### Check



## Solution

Is the paper too thick?

You cannot use paper that exceeds  $38 \text{ lb } (105 \text{ g/m}^2)$  (see page 3-1).

Is there too much paper loaded in the printer?

You can load up to 50 sheets (20 lb or 75 g/m²) when feeding from the paper supply tray (40 sheets with High Resolution Paper), but only one sheet at a time when feeding manually.

Is the paper bent or curled?

Do not use paper that is bent or creased. Smooth out all curls before using curled paper (see page 3-6).

When feeding manually, is the paper guide set properly?

Align the paper guide with the left edge of the paper (see page 3-5).

When feeding from the paper supply tray, is the paper loaded correctly into the

Place the edge of the paper so it fits under the clips (see page 3-4).

tray?

Chapter 5 Troubleshooting 5-3



## Check



## Solution

When feeding from the paper supply tray, is the tray inserted properly?

After printing on High Resolution Paper, are the rollers soiled?

Push the paper supply tray firmly into the printer as far as it will go (see page 3-4).

Use the cleaning sheet that came with the High Resolution Paper to clean the rollers (see page 3-6).

## Paper double feeds



#### Check



## Solution

Was the paper fanned before loading?

Is too much paper loaded?

Is the paper bent or curled?

Fan the paper thoroughly before loading it into the paper supply tray (see page 3-3).

You can load up to 50 sheets (20 lb or 75 g/m $^2$ ) when feeding from the paper supply tray (40 sheets for High Resolution Paper), but only one sheet at a time when feeding manually.

Do not use paper that is bent or has creases. Smooth out all curls before using curled paper.

5-4 Troubleshooting Chapter 5

# Paper Trouble After Printing

## The back side of the paper is soiled



#### Check



## Solution

Is the paper output tray soiled?

Clean the printer (see page 4-2).

Is a second page printing before the first one is dry? If you print documents that require some time to dry, such as photos, the printer may eject the next page before the first page is dry. If this happens, remove each page as it prints to avoid stacking.

## The printed side of the paper is soiled



## Check



## Solution

Is the paper too thick?

You cannot use paper that exceeds 38 lb (105 g/m<sup>2</sup>) (see page 3-1).

Is the paper bent or curled?

Do not use paper that is bent or creased. Smooth out all curls before printing.

Is the printing on the wrong side of the paper?

Paper has a right side and a wrong side for printing. Confirm which side of the paper to print on and reset the paper in the printer.

## Paper curls after printing



## Check



## Solution

Is the paper suitable for printing?

When printing colorful illustrations, such as photos, thin paper will curl or warp because of the large amount of ink used.

If this happens, use paper that is designed for printing illustrations and photos, such as High Resolution Paper.

Chapter 5 Troubleshooting 5-5

Troubleshooting

# Trouble When Printing

## If the printer does not print or stops during printing

## The printer does not print at all



#### Check



## Solution

Is the power on?

Check whether the POWER light is on. If not, press the **POWER** button.

Is the printer properly connected to the Internet device?

Securely connect the power cord and the printer cable.

Does the document involve a large quantity of data, such as photos and illustrations? When printing documents that involve a large quantity of data, it may take several moments before printing starts. If the BUSY light is green, print data is being sent to the printer. Wait for printing to start.

## The printer starts, but does not print anything



#### Check



## Solution

Is ink flowing properly from the BJ cartridge?

The BJ cartridge print head may be blocked or the ink tanks may be empty. Print a Nozzle Check Pattern to check the condition of the print head (see page 2-2).

If the Nozzle Check Pattern prints correctly, the printer and the Internet device may not be connected correctly. Reconfirm the connections.

If the Nozzle Check Pattern does not print correctly, the print head may be blocked or the ink tanks may be empty. Perform the print head cleaning procedure (see page 2-4).

If you still cannot print, replace the ink tanks (see page 2-6).

When installing a new BJ cartridge, was the protective orange tape removed?

Remove the BJ cartridge and confirm that the protective tape has been removed from the print head (see page 2-16).

5-6 Troubleshooting Chapter 5

## The last part of the document does not print



Check



Solution

Is the printer properly connected to the Internet device?

Firmly connect the power cord and the printer cable.

## Printing starts, but stops before it is finished



Check



Solution

Does the document involve a large amount of data, such as photos and illustrations? When printing documents that involve a large amount of data, it may take several moments before printing starts. If the BUSY light is green, print data is being sent to the printer. Wait for printing to start.

Has the printer been printing for an extended period of time?

If you print for extended periods of time, the BJ cartridge overheats and the RESUME/CLEAN light flashes. If this happens, stop printing and wait until the BJ cartridge has cooled. When the BJ cartridge is cool, the light stops flashing.

## The printer is printing garbage



Check



Solution

Was the previous printing job cancelled while it was still printing?

Data from the previously printed job may be left in the printer's memory. Turn off the power to the printer and the Internet device, then turn the power on again.

Is the printer properly connected to the Internet device?

Firmly connect the power cord and the printer cable.

Is the data printout correct?

If unreadable characters are printed only when printing certain data, there may be a problem with the data or the application software. Re-create the data and print again. If the problem persists, call the Canon Customer Care Center (see page 1-13).

Chapter 5 Troubleshooting 5-7

Troubleshooting

## Printing is unclear



#### Check



## Solution

Is ink flowing properly from the BJ cartridge?

The BJ cartridge may be out of certain ink colors, or the print head may be blocked. Print a Nozzle Check Pattern to check the condition of the print head (see page 2-2).

If the Nozzle Check Pattern does not print correctly, the print head may be blocked. Perform the print head cleaning procedure (see page 2-4).

If you still cannot print, replace the ink tanks (see page 2-6).

Was the protective cap or tape reattached after it was removed?

If you reattached the protective cap and tape after they have been removed, dirt and air can enter the ink tank, and ink may stop flowing. If the protective cap and tape have been reattached, remove them immediately and clean the print head (see page 2-4).

Are you printing on the wrong side of the paper?

Paper has a right side and a wrong side for printing. Confirm which side of the paper to print on and reset the paper in the printer.

## Printing has a "scratched" appearance



## Check



## Solution

Is the paper too thick?

You cannot use paper that exceeds 38 lb  $(105 \text{ g/m}^2)$  (see page 3-1).

Is the paper bent or curled?

Do not use paper that is bent or creased. Smooth out all curls before printing.

Are you printing on the wrong side of the paper?

Paper has a right side and a wrong side for printing. Confirm which side of the paper to print on and reset it in the printer.

5-8 Troubleshooting Chapter 5

## White lines appear



Check



## Solution

Is ink flowing properly from the BJ cartridge?

The BJ cartridge's print head may be blocked. Print a Nozzle Check Pattern to check the condition of the print head (see page 2-2).

If the Nozzle Check Pattern does not print correctly, perform the print head cleaning procedure (see page 2-4).

If you still cannot print, replace the ink tanks and, if necessary, the BJ cartridge (see page 2-6).

## The ink bleeds



Check



## Solution

Is the paper suitable for printing?

Is the print head dirty?

Does the document require a large amount of ink; for example, are you printing photos and illustrations? Change the type of paper you are using and try printing again. Paper such as High Resolution Paper is more resistant to bleeding than plain paper.

Try cleaning the print head (see page 2-4).

When printing colorful documents, such as illustrations and photos, ink may bleed because of the quantity used. If this happens, use paper that is designed for printing illustrations and photos, such as High Resolution Paper.

Troubleshooting

Chapter 5 Troubleshooting 5-9

## Colors are wrong

## Color documents are printed in black ink only



Check



Solution

Is the BC-10 Black BJ Cartridge installed?

When printing in color, install the BC-11e Color BJ Cartridge or the BC-12e Photo BJ Cartridge (see page 2-14).

## Printed colors differ markedly from those on screen



#### Check



## Solution

Is ink flowing properly from the BJ cartridge?

The BJ cartridge may be out of certain ink colors, or the print head may be blocked. Print a Nozzle Check Pattern to check the condition of the print head (see page 2-2).

If the Nozzle Check Pattern does not print correctly, the print head may be blocked. Perform the print head cleaning procedure (see page 2-4).

If you still cannot print, replace the ink tanks. (see page 2-6).

## Color quality does not meet expectations



#### Check



## Solution

Is the paper suitable for printing?

When printing illustrations and photos, use High Resolution Paper. To achieve a non-grainy, life-like appearance for illustrations and photos of natural images that have many color gradations, use the optional BC-12e Photo BJ Cartridge.

Are you using a refillable ink tank?

Refilling of ink tanks is not recommended. For ideal printing, use Canon ink products.

5-10 Troubleshooting Chapter 5

## Lines do not print straight



## Check



## Solution

Is the BJ cartridge correctly installed? Remove the BJ cartridge and reinstall it (see page 2-14).

## The cartridge does not move into the replacement position



## Check



## Solution

Is the power on?

Confirm that the printer's POWER light is green. If the power is not on, refer to "Power does not go on" (see page 5-1).

Is the BJ cartridge access cover open? If you leave the BJ cartridge access cover open, the cartridge holder moves to the right (home position) to prevent the print head from drying out. Close the cover, then open it again; the cartridge holder will move into the replacement position.

Is the RESUME/CLEAN light flashing?

Open the BJ cartridge access cover and check for a paper jam. Remove any jammed paper.

Has the printer been printing for an extended period of time?

If you print for extended periods of time, the BJ cartridge overheats and the RESUME/CLEAN light flashes. If this happens, stop printing and wait until the BJ cartridge has cooled. When the BJ cartridge is

cool, the light stops flashing.

Troubleshooting Chapter 5

5-12 Troubleshooting Chapter 5

# Specifications A

Printing Method Bubble Jet Ink on demand

Printing Resolution Maximum 720 (horizontal) × 360 (vertical) dpi

Printing Speed (measured by Canon's standard pattern)

Black printing Fast: 3.8 ppm Standard: 3.5 ppm

Color printing Fast: 1.8 ppm Standard: 1.5 ppm

Photo printing High resolution: 0.1 ppm

**Printing Direction** 

Uni-directional (or bi-directional, depending on data format)

Printing Width 8 in./203.2 mm

Receiving Buffer 64 KB

Interface

IEEE1284 standard parallel interface (Parallel printer cable is provided) USB1.00 standard USB interface (USB cable is optionally available)

Operating Signal Approximately 45 dB(A)

Operating Environment Temperature: 41° F to 95° F (5 to 35° C)

Humidity: 10 to 90% RH (without condensation)

Storage Environment Temperature: 32° F to 95° F (5 to 35° C)

Humidity: 5 to 90% RH (without condensation)

Power Source AC 120 V, 60 Hz

Power Consumption Approximately 3 W (standby)

Approximately 30 W (printing)

Dimensions 14.4" (W)  $\times 4.3"$  (D)  $\times 4.3"$  (H)

365 mm (W)  $\times$  364 mm (D)  $\times$  110 mm (H)

Weight Approximately 8.8 lb (4.0 kg)

Paper Feeding Method

Paper supply tray Letter and A4 size only

Plain paper, High Resolution Paper

Manual feed slot Plain paper, High Resolution Paper

Paper Supply Tray Capacity

Plain paper Maximum 50 sheets (20 lb or 75 g/m²)

High Resolution Paper Maximum 40 sheets

Maximum capacity Less than 0.2 in/5 mm (approximately)

Paper Size

Paper supply tray
Manual feed slot
Letter, A4
Letter, A4, B5, A5

Minimum 3.86" (W)  $\times$  3.86" (H) Maximum 9.5" (W)  $\times$  14.0" (H)

Paper Weight

Paper supply tray

Manual feed slot

17 lb to 35 lb (64 g/m² to 90 g/m²)

17 lb to 38 lb (64 g/m² to 105 g/m²)

Extremely thin or thick paper that exceeds these limits

cannot be used

BJ Cartridges

BC-11e Color BJ Cartridge (provided)

Print head 64 nozzles for black

24 nozzles each for cyan, magenta, and yellow

Ink colors Black, cyan, magenta, and yellow

Capacity Black Approximately 25 pages (for the BCI-11 Black)

Approximately 40 pages (for the BCI-18 Black)
Color Approximately 30 pages (for the BCI-11 Color)
Approximately 50 pages (for the BCI-18 Color)

At 7.5 % coverage for each color; calculated for the number of pages possible printing with an ink tank, based on the possible printing

area for an A4 page.

• BC-10 Black BJ Cartridge (optional)

Print head 128 nozzles
Ink color Black

Capacity Approximately 170 pages (for the BCI-10)

Approximately 270 pages (for the BCI-17) For 1,500 character standard documents

BC-12e Photo Color BJ Cartridge (optional)

Print head 64 nozzles for black

24 nozzles each for cyan, magenta, and yellow

Ink colors Black, cyan, magenta, and yellow

Capacity Approximately 20 pages

At 7.5 % coverage for each color; calculated for the number of pages possible printing with an ink tank, based on the possible printing

possible printing with an ink tank, based on the

area for an A4 page.

A-2 Specifications Appendix A

To use this printer with a computer:

#### • Printer Driver

You must download the printer driver from the CCSI website (http://www.ccsi.canon.com). For details on using the driver, see the driver and accompanying downloaded manual.

#### Computer

Computers that operate under Microsoft<sup>®</sup> Windows<sup>®</sup> 98, or Microsoft Windows 95 When connecting with a USB cable, USB port operation is limited to computers on which Microsoft Windows 98 was preinstalled by the computer manufacturer.

## Operating System

Microsoft Windows 98 or Microsoft Windows 95

Printable Area

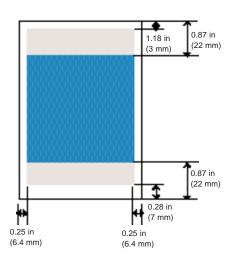
To maintain printing quality, please leave sufficient spacing on all four sides of the printing page. Please note that the dimensions of this area vary according to paper size. The measurements for Letter, A4, A5 and B5 are shown below.

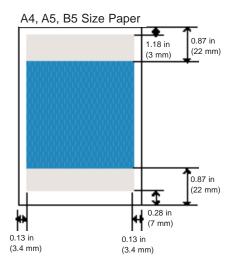
Recommended Printing Area ( area):

It is recommended that you print within this area.

Possible Printable Area ( area):

You can print within this area. However, print and paper feed accuracy may be reduced.





A-4 Specifications Appendix A

## Automatic feed

Refers to one way in which paper can be fed into the printer when the paper supply tray is used.

## BJ cartridge

The printing mechanism that contains the print head unit and ink tanks.

## **Bubble Jet printing**

An ink jet type of printing that heats the ink to a boiling point in a nozzle to form a bubble. When the bubble expands, there is no room left in the nozzle for the ink and the ink is projected onto paper.

## **CMYK**

Acronym for cyan, magenta, yellow, and black; the four colors used in the standard color model of the printing industry. Refers to a method of specifying color using CMYK color values. (K is used for black because B is used to represent blue in RGB.)

## dB(A)

Stands for decibel level (a decibel being a unit of measurement for the intensity of the sound coming from the printer), adjusted for background noise.

## dpi

Dots per inch. A unit of measurement for indicating a printer's resolution. Your printer can produce a resolution up to 720 dpi (horizontal) by 360 dpi (vertical).

## Ink Cartridge Storage Box

A box for storing a BJ cartridge. A BJ cartridge removed from the printer must be stored inside this container to prevent the print head of the cartridge from drying and clogging.

## Interface

The connection between two devices that makes it possible for them to communicate with each other. This printer features both a parallel and a USB interface.

## Manual feed

A method of feeding paper to the printer one sheet at a time.

#### Noise level

See dB(A).

Glossary G-1

#### Parallel interface

An interface that transmits multiple bits simultaneously (usually in one-byte segments). Your printer has a built-in, Centronics-type parallel interface with bi-directional capability. *See also* Interface.

#### Platen

Printer component that holds the paper in position during ink transfer.

#### Print head

The printing mechanism that contains print nozzles and ejects the ink for printing.

## Print head capping

An automatic protection function that prevents the print head unit and BJ cartridges from drying out or becoming clogged with dust.

#### Printable area

The area of a sheet of paper on which a printer can reproduce text or graphics (the printing area is smaller than the paper). On this printer, the printing area varies depending on the type of paper being used.

#### Printer driver

Software that sends printing instructions to a printer. The printer driver keeps track of the attributes of a printer and the codes the program must send to access those attributes.

#### **RAM**

Random Access Memory. Printer memory that is used for temporary storage of information you want to print and downloaded fonts.

## Resolution

The density of dots for any given output device. Expressed in terms of dots per inch (dpi). Low resolution causes font characters and graphics to have a jagged appearance. Higher resolution means smoother curves and angles as well as a better match to traditional typeface designs. Resolution values are represented by horizontal data and vertical data, for example,  $360 \times 360$  dpi. This printer can produce output with resolutions up to  $720 \times 360$  dpi precision.

#### **RGB**

An acronym for Red, Green, and Blue; the three primary colors used in the additive process to form a wide spectrum of colors.

G-2 Glossary

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# **FCC Regulations**

Color Bubble Jet Printer, Model K10191

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Do not make any changes or modifications to the equipment unless otherwise specified in the manual. If such changes or modifications should be made, you could be required to stop operation of the equipment.

Use of shielded cable is required to comply with Class B limits in Subpart B of Part 15 of FCC Rules.

## Canadian Radio Interference Regulations

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Industry and Science Canada.

Cet appareil numérique respecte les limites de bruits radio électriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques," NMB-003 édictée par l'Industrie et Sciences Canada.

FCC Regulations FCC-1