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BJC-3000

SERVICE MANUAL

REVISION 0

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QY8-1365-000

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BJC-3000

SERVICE MANUAL

Canon

Application

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CANON INC.

BJ Products Quality Support Dept.

16-1, Shimonoge 3-chome, Takatsu-ku, Kawasaki-shi, Kanagawa 213, Japan

This manual has been produced on an Apple Power Macintosh G3 personal computer and Apple LaserWriter 600/16 laser beam printer; artworks of printing films were printed on Valityper® 4300J. All page layouts, logos, and parts-list data were saved with Canon Optical Disc Subsystem mo-5001S™ and Optical Disc Cartridge mo-502M™, and Interface Kit mo-IF2™ for Macintosh. All graphics were produced with MACROMEDIA FREEHAND™ 7.0J. All documents and all page layouts were created with QuarkXpress™ 3.3 Japanese version.

I. ABOUT THIS MANUAL

This manual is divided into five sections, and contains information required for serving the unit.

Part 1: Product Specifications
This section contains outlines and product specifications of the unit.

Part 2: Maintenance
This section explains how to maintain the unit. Descriptions and adjustment of assembly/disassembly and verification methods after assembly/disassembly are included.

Part 3: Operation
This section explains how to operate the unit properly. Operation procedures for service modes are explained.

Part 4: Troubleshooting
This section explains how to find out possible causes of troubles and units/parts to be replaced. It is divided into two parts: troubleshooting by error indications and by symptoms.

Part 5: Appendix
This section includes block diagrams of the unit and information to technically understand the hardware (applied for new techniques only). This section also includes pin arrangements.

Sufficient information regarding assembly/disassembly is not given in this manual. Refer to the illustrations in the separate *Parts Catalog*.

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1. PRODUCT OUTLINE

1.1 Product Outline

"High-performance, Low-end Home Printer"

This printer is a powerful printer with high-speed, high-resolution, Photo-Realistic printing, is USB compliant, and can use an optional scanner cartridge.

High cost-performance is also achieved by separating the BJ cartridges and ink tanks, realizing separate ink tanks for all colors.

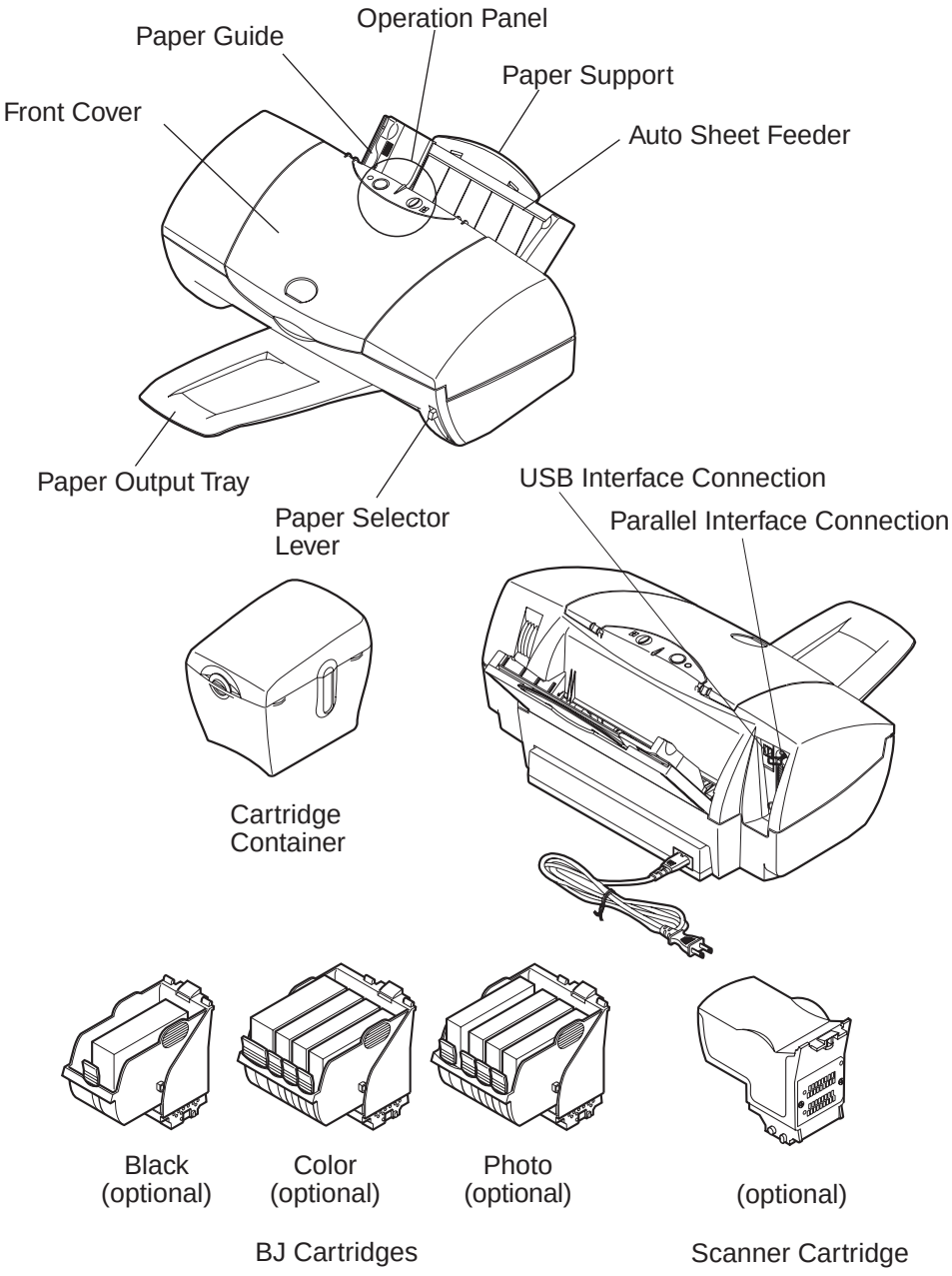

Figure 1-1 Printer Appearance

1.2 Features

1) Three types of BJ cartridges are available.
   · Pigment ink is adopted for the black cartridge and color cartridge, realizing modulated, high-density text printing.
   · High-quality printing, up to 1440 × 720 dpi, is achieved by drop modulation technology adopted for the Black, Color, and Photo BJ cartridges.
   · Separate BJ cartridges and ink tanks for all colors makes lower running costs possible.

Black BJ Cartridge (optional):	160 nozzles Separate ink tank (Pigment Black)
Color BJ Cartridge:	192 nozzles, Bk, C, M, Y (48 nozzles×4) in a vertical line Separate ink tanks for all colors (Pigment Black, Cyan, Magenta, and Yellow)
Photo-Color BJ Cartridge: (optional)	192 nozzles, PBk, PC, PM, Y (48 nozzles×4) in a vertical line Separate ink tanks for all colors (Dye Photo-Black, Photo-Cyan, Photo-Magenta, and Yellow)

2) Ink-out detection function with both optical and dot-count methods; transparent ink tanks enable visible confirmation.
3) USB and IEEE 1284 compatible 8-bit parallel interfaces.
4) Two buttons (*POWER, RESUME*), cover sensor, two-color LEDs (green/orange), with no beeper.
5) Optional scanner cartridge with maximum readout resolution of 720×720 dpi also available.

2. SPECIFICATIONS

2.1 Printer Specifications

2.1.1 Printer specifications

Type	Desktop serial printer			
Paper feeding method	Auto sheet feed only (no manual sheet feed available)			
Resolution	Maximum resolution 1440×720dpi			
Printing throughput (reference)		HS Mode	Standard Mode	HQ Mode
	BC-30 Black Cartridge			
	Black Text (PC Magazine)	8.1ppm	6.2ppm	2.5ppm
	New Monochorome Pattern (E)	9ppm*	6.8ppm*	2.5ppm
	BC-33 Color Cartridge			
	New Color Pattern (E)	4ppm*	2.8ppm	1.0ppm
	BC-34 Photo Cartridge			
	Full Address Printing	---	---	0.25ppm*
	*: Catalog specifications			
Printing direction	HS Mode (180dpi×180dpi) bi-directional HQ Mode (360dpi×360dpi, 720dpi×720dpi) bi-directional Fine Mode (360dpi×360dpi, 720dpi×720dpi, 1440dpi×720dpi) unidirectional/bi-directional			
Max. print width	203 mm			
Line feed speed	5.6 "/S			
Interface	USB, IEEE 1284 compatible 8-bit parallel (compatible/nibble/ECP)			
ASF stacking capacity	Plain paper: Max 10mm (approx. 100 pages of 64 g/m² paper) BJ printer paper: Max. 10mm (approx. 80 pages of high-resolution paper)			
Detection functions	Front cover open: Available Presence of BJ cartridge: Available BJ cartridge distinction: Available Ink out: Available Print position: None Paper out: Available Waste ink amount: Available Paper width: None			
Operation noise	Approx. 45dB(A) in conformance to the sound pressure level ISO 9296			
Environmental conditions	During operation	Temperature	5°C to 35°C (41°F to 95°F)	
		Humidity	10% to 90% RH (no condensation)	
	Non-operation	Temperature	0°C to 35°C (32°F to 95°F)	
		Humidity	5% to 95% RH (no condensation)	
Power supply	Input voltage/Frequency	Power consumption	Stand-by status	
	AC 100 to 120V 50/60Hz	Approx. 35W	Approx. 3W	
	AC 200 to 240V 50/60Hz	Approx. 35W	Approx. 3W	
External dimensions	Approx. 418mm W × 306mm D × 169mm H (with paper support retracted, and without the paper output tray)			
Weight	Approx. 3.7kg			
Standard conformance	Radio-wave interference: FCC, IC, CE Mark, Taiwan EMC, C-Tick, VCCI Electrical safety: UL, C-UL, CB Report, GS, CE Mark, FIMKO, Electric Commerce, AS, CCIB, SISIR, Korean Electric Commerce Environmental: Energy Star, Blue Angel			

2.1.2 Printer service life

The print quality can be assured during the product life given below, if the specified maintenance is conducted.

1) 20,000 printed sheets (1,500 character pattern printed in black) OR,
2) 6,000 printed sheets (7.5% duty color) OR,
3) 5 years of use, whichever comes first.

2.2 Paper Specifications

2.2.1 Paper size/basis weight

(1) Paper Size

A4, B5, A5, A5 Horizontal, Letter, Legal, Envelopes (Com #10/DL-size)

(2) Basis Weight

64 to 105g/m^2 with automatic feed

2.2.2 Paper type/setting

Media		Size	ASF Stacking Capacity	Selector Lever Position
Plain paper	---	A4/B5/ LTR/LGL/A5 (landscape/ portrait)	10mm or less (approx. 100 pages of 64g/m^2 paper)	Up
Color bubble jet paper	LC-301*	A4/LTR	10mm or less	Up
High-resolution paper	HR-101*	A4/LTR	10mm or less	Up
Glossy photo paper	GP-301*	A4/LTR	10 pages	Up
Glossy film	HG-201*	A4/LTR	1 page	Up
OHP film	CF-102*	A4/LTR	30 pages or less	Up
Back print film	BF-102*	A4/LTR	10 pages or less	Up
Banner paper	BP-101*	A4/LTR	1 page	Down
T-shirt transfers	TR-201*	A4/LTR	1 page	Down
Glossy postcard	FM-101*	120mm×216mm	1 page	Up
Envelopes	COM #10 DL-size	241mm×105mm 220mm×110mm	10 pages or less 10 pages or less	Down Down

* : Special papers for BJ Printers

Incorrect paper selector lever positioning may result in paper mis-feeding or misprinting.

2.2.3 Printable area

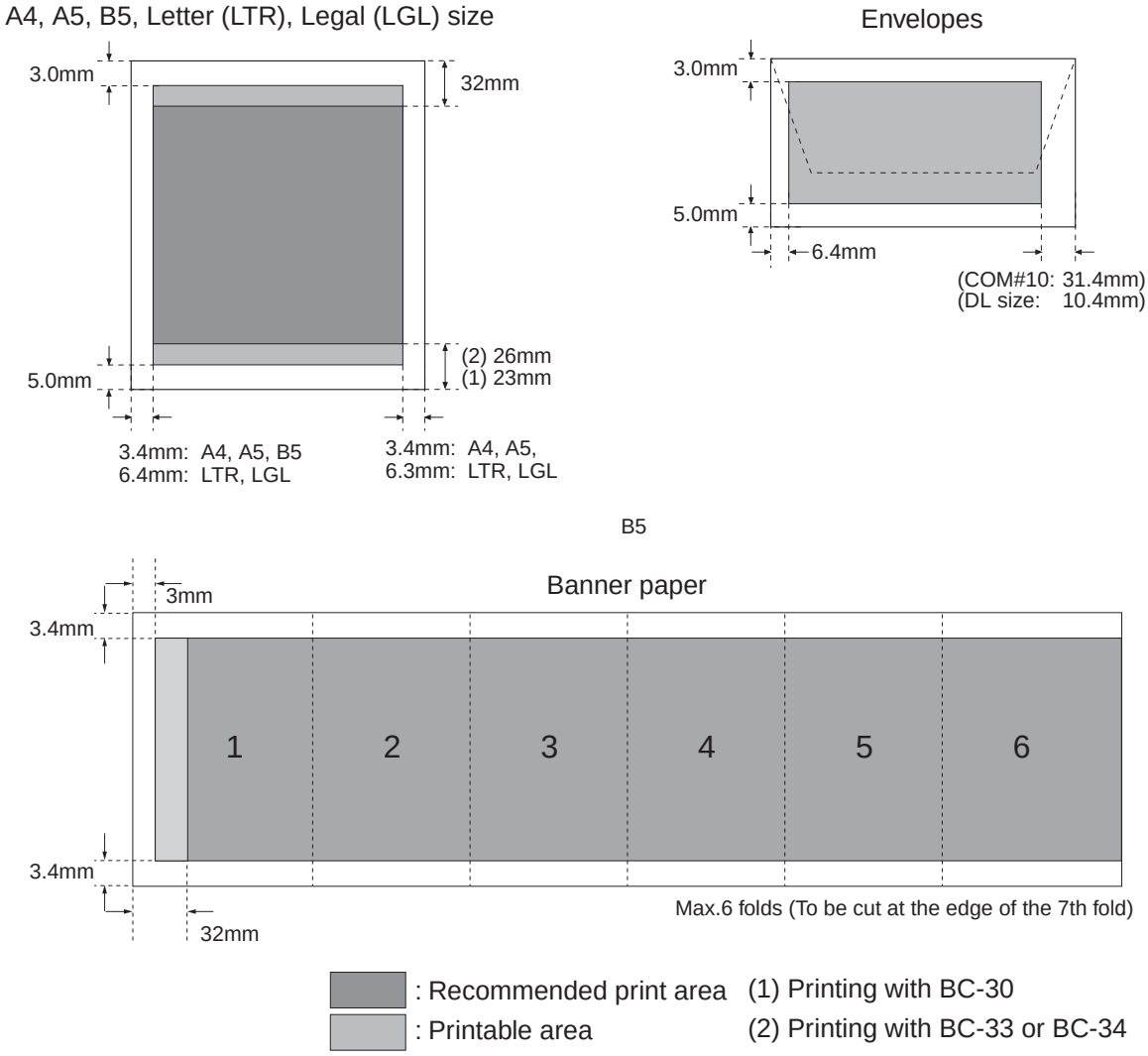

Figure 1-2 Printable Area

2.3 BJ Cartridge Specifications

	Black BJ Cartridge BC-30	**Color BJ Cartridge BC-33**	**Photo BJ Cartridge BC-34Photo**
Structure	Separate type ink tank	Separate type ink tank	Separate type ink tank
Head	160 nozzles (in a vertical line)	192 nozzles (in a vertical line)	192 nozzles (in a vertical line)
	Bk (160 nozzles×1)	Bk, C, M, Y (48 nozzles×4)	Bk, C, M, Y (48 nozzles×4)
Ink colors	Pigment Bk	Pigment Bk, C, M, Y	Dye PBk, PC, PM, Y
Ink tanks	BCI-3BK	BCI-3BK, BCI-3C, BCI-3M, BCI-3Y	BCI-3BK Photo BCI-3PC Photo BCI-3PM Photo, BCI-3Y
Weight	60g (without ink tank)	72g (without ink tanks)	75g (without ink tanks)
Service life	Approx. 5,000 pages	Approx. 3,000 pages	←
Printable pages (pages/cartridge)	Approx. 500 pages (standard 1,500 characters print in black)	Approx. 300 pages* (7.5% duty per color)	←

* as determined with the printable area of A4 paper.

2.4 Scanner Cartridge Specifications

Name	IS-32
Type	Cartridge replacement type color scanner
Resolution (dpi)	90×90, 180×180, 200×180, 300×360, 360×360, 720×720
Image sensor	Single-line, 256 pixel CCD
Light source	RGB (R; Red, G; Green, B; Blue)
Scanning method/direction	Sequential RGB light source switching method
Document feeding method	Place the document into the scanning holder and feed it through ASF
Interface	ECP/Nibble
External dimensions	Approx. 41 mm W × 90 mm D × 77 mm H
Weight	Approx. 100 g
Others	Raise the paper selector lever on the printer upward when scanning Scannable paper size: A4/LTR size or smaller (when used with the BJC-3000) Scannable paper thickness: 0.25 mm or less

2.4.1 Scannable area

For scanning, be sure to use the scanning holder to avoid paper jams. Place the image to scan in the scanning holder with the upper left corner fitted to the placement point.

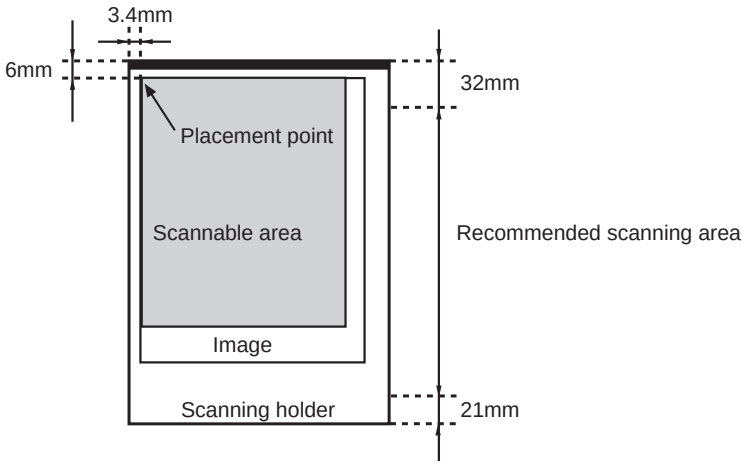

Figure 1-3 Scannable Area

Paper	Size (width × height: mm)	Scannable area (width × height: mm)
Postcard	100.0 × 148.0	93.2 × 138.0
A5	148.0 × 210.0	141.2 × 200.0
B5	182.0 × 257.0	175.2 × 247.0
A4**	210.0 × 297.0	203.2 × 287.0
Letter***	215.9 × 279.4 (8.5 × 11.0 inches)	208.2 × 269.4

* : Depending on the display resolution and scanning resolution, the area actually scanned can slightly differ.

** : The scanning holder packed with Scanner Cartridge IS-32 supports up to B5-sized paper.
To scan paper larger than B5, the option scanning holder (SH-101) should be used.

2.5 Interface Specifications

2.5.1 Parallel interface

1) Interface type

IEEE 1284 compatible parallel interface

2) Data transfer

8-bit parallel interface (supports nibble/ECP modes)

3) Signal voltage levels

Input:

"Low" level: 0.0V to +0.8V
"High" level: +2.4V to +5.0V
Output:
"Low" level: 0.0V to +0.8V
"High" level: +2.4V to +5.25V

4) Input/output

Each signal pulled up with +5V

5) Interface cable

Twisted-pair double shielded cable, shorter than 2.0m
IEEE 1284 compatible required
Material: AWG No. 28 or higher (AWG: American Wire Gauge)

6) Interface connector

Printer-side Amphenol 57-40360 (or equivalent)
Cable-side Amphenol 57-30360 (or equivalent)

7) Input/output signal and pin arrangements

Refer to *Part 5: 2. CONNECTORS AND PIN LAYOUT (Page 5-15)* for details.

2.5.2 Serial interface

1) Interface type

USB Interface (Universal Serial Bus; USB Specification Release Number 1.10)

2) Data transfer

Control transfer method
Bulk transfer method

3) Signal voltage level

Input:
Input difference sensitivity: +0.2V (Max)
Common-mode difference: +0.8V to +2.5V
Output:
Static output high: +2.8V to 3.6V
Static output low: less than +0.3V

4) Input/output

Each signal pulled up with 3.3V

5) Interface cable

Twisted-pair shielded cable
USB standard compatible required
Material AWG No.28, Data pair (AWG: American Wire Gauge)
AWG No.20 to No.28, Power distribution pair

6) Interface connector

Printer-side USB standard, Series B receptacle
Cable-side USB standard, Series B plug

7) Input/output signal and pin arrangements

Refer to *Part 5: 2. CONNECTORS AND PIN LAYOUT (Page 5-15)* for details.

2.6 Printer/Scanner Driver Types

The following table shows the relationship between available drivers and the interfaces for this printer.

	Printer Driver		Scanner Driver	
	Parallel I/F	USB I/F	Parallel I/F	USB I/F
Windows 95/98	fully supported	conditionally supported*	fully supported***	conditionally supported*
Windows NT 4.0	fully supported	not supported	fully supported***	not supported
Windows 2000	fully supported	not supported	not supported	not supported
Macintosh	---	fully supported**	---	fully supported**

* : Support for USB is provided, and the operation is guaranteed, with Windows 98-preinstalled computers.

** : Supported by iMac and Power Macintosh G3. Mac OS 8.1-installed iMac is necessary to be upgraded by iMac Update 1.0 for full support of USB.

*** : Common driver for Windows 95/98/NT 4.0

1) Windows Drivers

Win95/98 BJ Raster Printer Driver (IEEE 1284 compatible 8-bit parallel & USB supported)
WinNT4.0 BJ Raster Printer Driver
Win2000 BJ Raster Printer Driver
Win95/98/NT4.0 Scanner Driver IS Scan (Win2000 not supported)

2) Macintosh Drivers

Mac BJ Printer Driver (USB)
Mac Scanner Driver IS Scan (USB)

3. PRINTER PACKING

After unpacking the printer, make sure the items below are included:

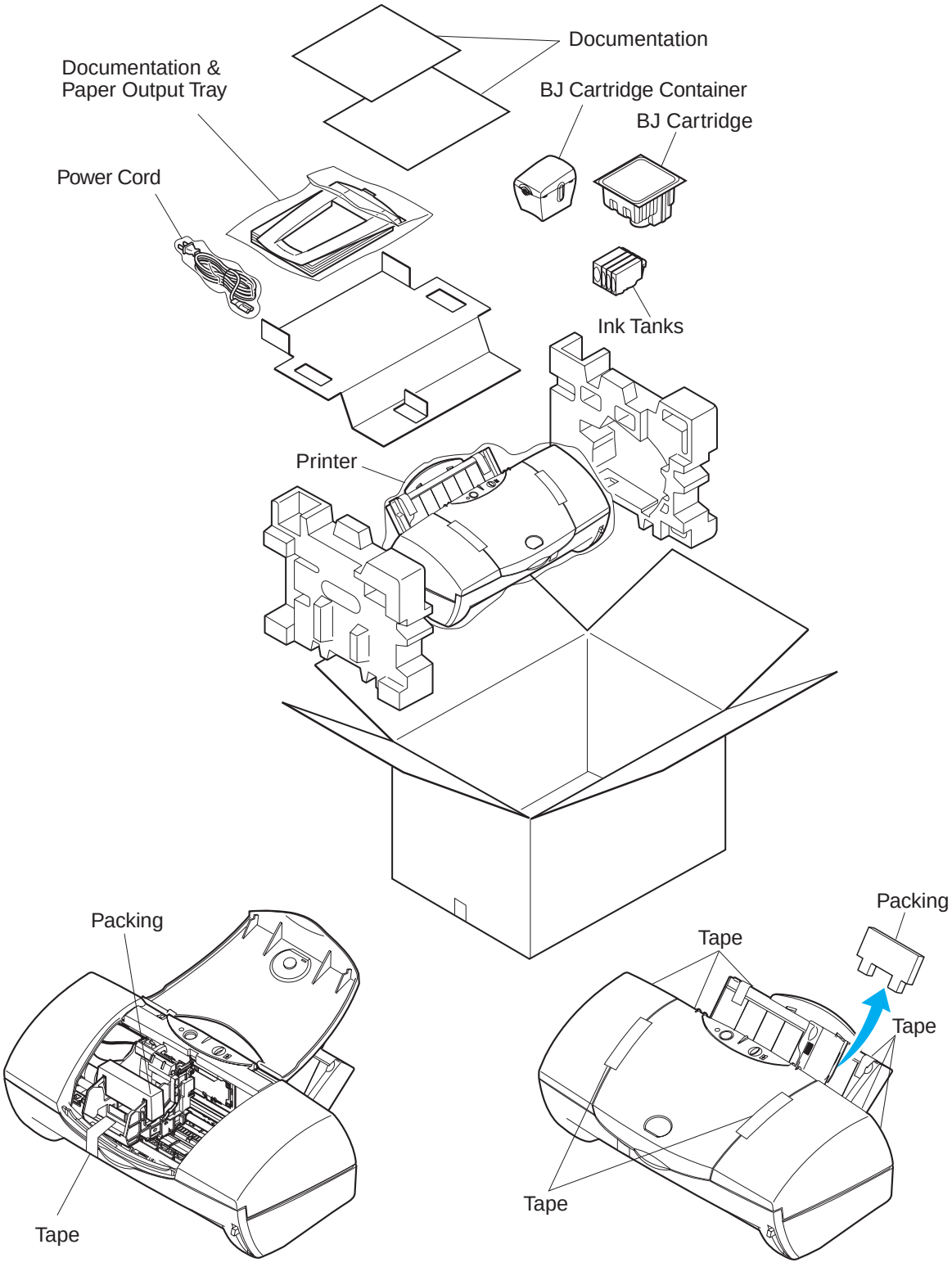

Figure 1-4 Packing

4. INSTALLATION

Refer to the User's Manual for detailed installation procedures.

4.1 Installation Location

Allow enough space for the printer to be used with ease.
Refer to the diagram below for the printer's external dimensions for installation.

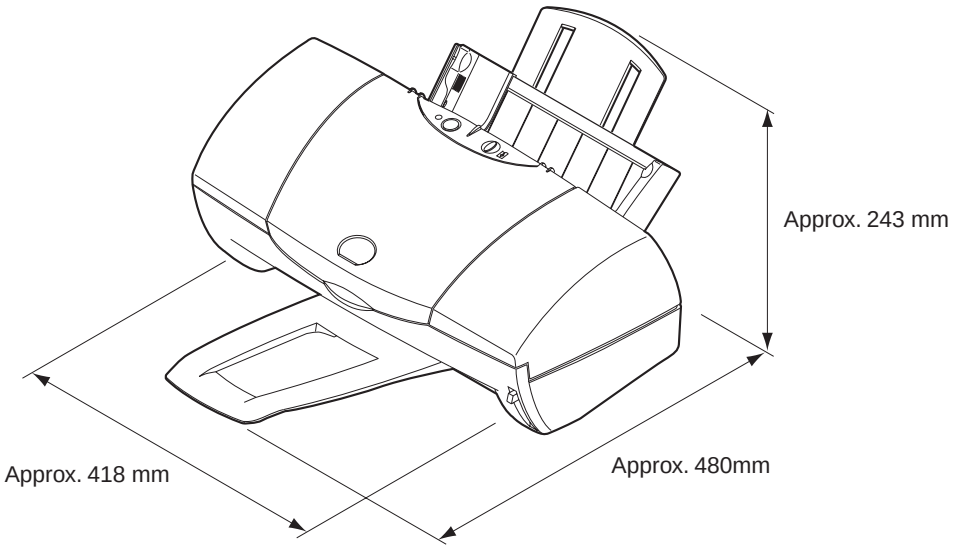

Figure 1-5 Installation Space

4.2 Setup Procedures

In order to prevent the potential difference between the computer and the printer, interface cables should be connected prior to connecting the AC power plug to the AC outlet.

4.2.1 Connecting the interface cable

1) Make sure that both the printer and the computer are turned off.
2) Connect the interface cable to the interface connector on the printer, and lock in place with the connector clips.
3) Connect the other end of the interface cable to a computer and secure in place.

4.2.2 Connecting the power

1) Connect the AC power plug to the AC outlet.
2) Press the *POWER* button on the printer to turn it on. Initialization will be carried out while the indicator blinks in green. After initialization is completed, the indicator lights in green. When a cartridge is not installed in the printer, the indicator blinks six times in orange and once in green, repeatedly. Also, the carriage will move to the cartridge replacement position.

5. NAME OF THE PARTS AND THEIR FUNCTIONS

The different parts of the printer and their functions are shown below.

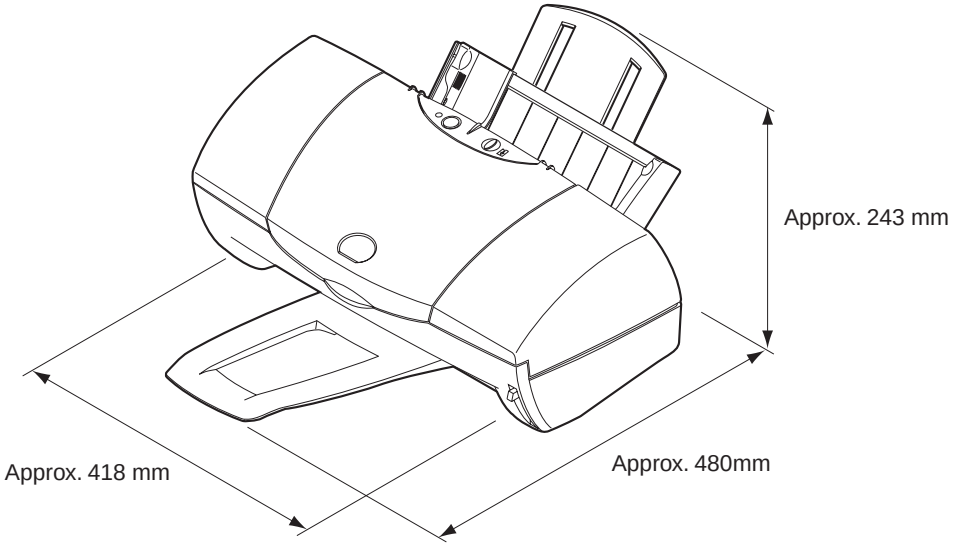

Figure 1-6 Name of the Parts and Their Functions

6. PRODUCT CODE LIST

The product codes for the printer, consumables, and options are shown in *TABLE 1-1*.

TABLE 1-1 PRODUCT CODE LIST

Item		Name	Product code
Printer	-	BJC-3000 *	Q30-3180
			Q30-3182
BJ cartridge	Black	BC-30	F45-1471
	Color	BC-33	F45-1491
	Photo	BC-34 Photo	F45-1511
Ink tank	Black	BCI-3BK	F47-2171
	Cyan	BCI-3C	F47-2181
	Magenta	BCI-3M	F47-2191
	Yellow	BCI-3Y	F47-2201
	Photo Black	BCI-3PBK Photo	F47-2231
	Photo Cyan	BCI-3PC Photo	F47-2211
	Photo Magenta	BCI-3PM Photo	F47-2221
Cartridge container	-	SB-30	Q70-4040
Scanner cartridge	-	IS-32	Q70-4070
Scanning holder for A4, LTR	Scanning Holder	SH-101	Q70-3640
	White Calibration sheet		

*: Packed with BJC-3000 are the BC-33/ BCI-3BK/ BCI-3C/ BCI-3M/ BCI-3Y/ SB-30.

Part 2

MAINTENANCE

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1. REGULAR REPLACEMENT AND MAINTENANCE

1.1 Parts for Regular Replacement

Level	Part
User	None
ServicePersonnel	None

Level	Consumable
User	Black BJ Cartridge: BC-30 Color BJ Cartridge: BC-33 Photo BJ Cartridge: BC-34Photo Black BJ Cartridge ink tank (Black: BCI-3BK) Color BJ Cartridge ink tank (Black: BCI-3BK, Cyan: BCI-3C, Magenta: BCI-3M, Yellow: BCI-3Y) Photo BJ Cartridge ink tank (Black: BCI-3BK Photo, Cyan: BCI-3C Photo, Magenta: BCI-3M Photo, Yellow: BCI-3Y)
Service Personnel	None

1.2 Periodic Maintenance

Level	Periodic Maintenance
User	None
Service Personnel	None

Product: 1998 Canon BJC-5000 Printer Service Repair Workshop Manual
Full Download: https://www.arepairmanual.com/downloads/1998-canon-bjc-5000-printer-service-repair-workshop-manual/

2. DISASSEMBLY/REASSEMBLY

2.1 List of Tools

Tools required for disassembly/reassembly are shown below:

Ordinary Tools	Use
Phillips screwdriver	For installing and removing screws
Blade screwdriver	For removing plastic parts
Long-nose pliers	For installing and removing coil springs
Tweezers	For installing and removing flexible cables
Flat brush	For applying grease
Multi-meter	For troubleshooting

Special Tools (Parts Number)	Use
Gap gauge 2.3mm (QY9-0054-000)	For adjusting the head gap (see Page 2-10 *Figure 2-12*). Qty: 1
Tension spring (QY9-0043-000)	For adjusting the carriage belt tension (see Page 2-14 *Figure 2-15*)
Grease MOLYKOTE PG-641 (CK-0562-000)	For application to the specified place (see Page 2-11 Figure *2-13*)

Sample of manual. Download All 119 pages at:
https://www.arepairmanual.com/downloads/1998-canon-bjc-5000-printer-service-repair-workshop-manual/