iP2000
SIMPLIFIED SERVICE MANUAL

QY8-13A1-000

Rev. 00 EUR

August 6, 2004

Canon Inc.

1. PRODUCT LIST

1-1. Main Units

Product name	Product code	Sales territory	Remarks
Canon Bubble Jet Printer iP2000	9318A001AA	US	
	9318A002AA	CA	
	9318A003AA	LAM LVT	
	9318A004AA	LAM HVT	
	9318A005AA	EMB	
	9318A005AB	EMB	
	9318A008AA	ASA HVT	
	9318A009AA	AU	
	9318A010AA	KR	
	9318A011AA	GB	
	9318A012AA	JP	
	9318A013AA	TW	
	9318A014AA	HK	
	9318A015AA	CN	
	9318A017AA	EUM	

1-2. Options
None

1-3. Consumables

Product name	Product code	Sales territory	Remarks
Canon Ink Tank BCI-24 Black	6881A001AA	JPN	In common with the S200, S200x, S300, S330, i320, i350, i355, i250, i255, iP1000, and iP1500.
	6881A002AA	EUR	
	6881A003AA	USA/CAN	
	6881A004AA	ASIA/AUST	
Canon Ink Tank BCI-24 Color	6882A001AA	JPN	
	6882A002AA	EUR	
	6882A003AA	USA/CAN	
	6882A004AA	ASIA/AUST	
Canon Ink Tank BCI-24 Black Twin Pack	6881A008AA	JPN	
	6881A009AA	EUR	
	6881A010AA	USA/CAN	
	6881A011AA	ASIA/AUST	
Canon Ink Tank BCI-24 Color Twin Pack	6882A008AA	JPN	
	6882A009AA	EUR	
	6882A010AA	USA/CAN	
	6882A011AA	ASIA/AUST	

2. PRODUCT SPECIFICATIONS

2-1. Printer Main Unit Specifications

Paper feeding method	ASF and front sheet feeder
Resolution	4,800 x 1,200 dpi (max.)
Printing speed (ASF)	<table><tr><td></td><td>Draft</td><td>Standard</td></tr><tr><td>BK (FINE_BK)</td><td>20 ppm</td><td>14.4 ppm</td></tr><tr><td>CL (FINE_CL)</td><td>14 ppm</td><td>7.3 ppm</td></tr></table>
Printing direction	Bi-directional / Uni-directional (automatically switched according to print data and print mode)
Draft mode print duty	50% duty
Print width	203.2 mm (8 inches), 216.0 mm (8.5 inches) in borderless printing
Interface	USB (2.0) Full Speed only
Supported print head	Service part: QY6-0054-000

Number of pages that can be printed	
CL	Approx. 170 pages (SCID No.5 pattern, default print mode)
BK	Approx. 520 pages (SCID No.5 pattern, default print mode)
	Approx. 300 pages (1,500-character pattern, default print mode)

Stacking capacity (ASF, front sheet feeder)	Max. 13 mm (Approx. 150 pages of 64 g/m^2)	
	ASF	Front sheet feeder
Plain paper	13 mm or less (64 to 105 g/m^2)	13 mm or less (64 to 105 g/m^2)
High Resolution Paper (HR-101)	13 mm (approx. 80 sheets) or less	13 mm (approx. 80 sheets) or less
Glossy Photo Paper (GP-401)	A4, LTR: 10 sheets or less 4x6, Credit Card: 20 sheets or less	A4, LTR: 10 sheets or less
Photo Paper Pro (PR-101)	A4, LTR, 5x7: 10 sheets or less 4x6: 20 sheets or less	A4, LTR: 10 sheets or less
Photo Paper Plus Glossy (PP-101)	A4, LTR, 5x7: 10 sheets or less 4x6: 20 sheets or less	A4, LTR: 10 sheets or less
Matte Photo Paper (MP-101)	A4, LTR: 10 sheets or less	A4, LTR: 10 sheets or less
Photo Paper Plus Double Sided (PP-101D) Manual duplex printing is supported.	A4, 5x7: 1 sheet	A4, LTR: 10 sheets or less (Printing on the front side of paper in duplex printing can be performed from the front sheet feeder.)
Photo Paper Plus Semi-gloss (SG-101)	A4, LTR, 5x7: 10 sheets or less 4x6: 20 sheets or less	A4, LTR: 10 sheets or less
Transparency (CF-102)	1 sheet	1 sheet
T-shirt Transfer (TR-301)	1 sheet	1 sheet
Envelope	COM#10, DL: 10 sheets or less	Not feedable.
Photo Stickers (PS-101)	1 sheet	Not feedable.

Borderless printing	Up to A4, LTR

Detection function	
Cover open	Available
Presence of print head	Available
Presence of ink tank	Not available
Presence of paper	Available
Paper width	Not available
Waste ink absorber full	Available
Remaining ink amount	Available (Detected by dot counting. Reset by user operation. Enabled at default.)

Print head alignment	Available (11 types)

Acoustic noise level	
Fine (Photo Paper Pro / Fine mode)	Approx. 43 dB (Sound pressure level ISO9296)
HQ	Approx. 44 dB
HS	Approx. 53 dB

Environmental requirements	
During operation	Temperature: 5C to 35C (41F to 95F) Humidity: 10% to 90%RH (no condensation)
Non-operation	Temperature: 0C to 40C (32F to 104F) Humidity: 5% to 95%RH (no condensation)

Power supply	
Input voltage / Frequency	AC 100 to 127 V, 50/60Hz (LV) AC 220 to 240 V, 50/60Hz (HV)
Power consumption: During printing	Approx. 11 W
Stand-by status	Approx. 2 W

External dimensions	
With the paper support and front sheet feeder extended	Approx. 418 (W) x 510 (D) x 315 (H) mm
With the paper support and front sheet feeder retracted	Approx. 418 (W) x 260 (D) x 169 (H) mm
Weight	Approx. 4.4 kg (excluding the print head and ink tanks)
Related standards	
Electromagnetic radiance	VCCI, FCC, IC, CE Mark, Taiwan EMC, C-Tick, CCC (EMC), Korea MIC, Gost-R
Electrical safety	*DENAN*, UL, C-UL, CB Report, CE Mark, GS, Gost-R, FT, SASO, CCC, SPRING, Korea EK, IRAM
Environmental regulations	RoHS (EU), WEEE (EU), Korea Package Recycle Law, Green Point (Germany), Energy Star, Eco Mark, Law on Promoting Green Purchasing

Note: Not Blue Angel compliant.

2-2. Product Life

Specified print volume or the years of use, whichever comes first.

- 3 years of use

- Print volume: 4,000 pages

        - Black: 2,000 pages (A4, standard mode, 1,500-character pattern)

        - Color: 1,200 pages (A4, 7.5% duty per color pattern)

                120 pages (A4, photo, borderless printing)

                 80 pages (4 x 6, photo, borderless printing)

                600 pages (Postcard, photo, borderless printing)

Note: The above print volume breakdown is estimated using average user consumption patterns.

2-3. Print Head Specifications

Type	4-color integrated type (ink tank separate type)
Print head	BK: 320 nozzles in 2 vertical lines C/M/Y: 128 nozzles in 2 vertical lines per color Ink droplet: BK 30 pl, CL 5 pl / 2 pl
Ink color	BK (pigment-based ink) CL: Y, M, C (high brilliance)
Ink tank	BCI-24 Black, BCI-24 Color
Weight	Approx. 58g (excluding ink tanks)
Supply method	Service part (excluding ink tanks) Part number: QY6-0054-000
Print head life	4,000 pages (Same as the printer main unit)

Note: - The print head is in common with the iP1500.

        - Although the print head can be physically installed in the i350, i355, i250, i255, S300, S330, and iP1000 series printers, it is incompatible with and cannot be used in those models.

3. ERROR DISPLAY

Errors are displayed by the LEDs, and ink low warnings are displayed by the Status Monitor.
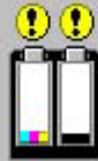
3-1. Operator Call Error (LED Blinking in Orange)

LED blinking	Error	Corrective action
2 times	Paper out	Set paper, and press the Resume/Cancel button to feed the paper.
3 times	Paper jam	Remove the jammed paper, and press the Resume/Cancel button.
4 times	Ink tank not installed	Re-install the ink tanks, and close the front cover.
5 times	Print head not installed or failure has occurred in the print head. (Non-supported print head (see page 4) is installed or print head EEPROM data is abnormal.)	After confirming that the print head is for the iP2000 (QY6-0054), re-install the print head, and close the front cover. If not recovered, with the print head installed, power the printer off and on.
8 times	Waste ink absorber full or platen waste ink absorber full warning (approx. 95% of the maximum capacity)	Pressing the Resume/Cancel button will exit the error, and enable printing.
9 times	Non-supported digital camera or digital video camera is connected.	After removing the cable between the printer and the camera, press the Resume/Cancel button, and re-connect the cable. If the error is not resolved, the connected camera may not be supported for Camera Direct Printing. Check that a supported camera is connected.

3-2. Service Call Error (LED Blinking in Orange and Green Alternately)

LED blinking	Error	Corrective Action
2 times	Carriage error	Turn the printer off and on again. If the error is not resolved, replace the printer.
3 times	LF error	Turn the printer off and on again. If the error is not resolved, replace the printer.
4 times	Purge unit error	Turn the printer off and on again. If the error is not resolved, replace the printer.
5 times	ASF cam sensor error	Turn the printer off and on again. If the error is not resolved, replace the printer.
6 times	Internal temperature error	Turn the printer off and on again. If the error is not resolved, replace the printer.
7 times	Waste ink absorber full or platen waste ink absorber full	Replace the printer. (In waste ink absorber replacement, perform the EEPROM information print to identify if the main and/or platen waste ink absorber should be replaced. After replacement, reset the applicable waste ink counter(s).)
8 times	Print head temperature rise error	Turn the printer off and on again. If the error is not resolved, replace the printer.
9 times	EEPROM error	Turn the printer off and on again. If the error is not resolved, replace the printer.
13 times	PF position error	Turn the printer off and on again. If the error is not resolved, replace the printer.
14 times	PF cam sensor error	Turn the printer off and on again. If the error is not resolved, replace the printer.
17 times	Motor driver error	Turn the printer off and on again. If the error is not resolved, replace the printer.

3-3. Ink Low Warning (Ink low warnings are displayed by the Status Monitor only when the remaining ink level detection is enabled, and no Status Monitor display when disabled.)

Note: The Status Monitor display in the table below is for Windows.

Warning	Display by Status Monitor
Ink low warning 1 (approx. half level)	
Ink low warning 2 (low remaining ink)	
Ink low warning 3 (ink level unknown)	

4. ADJUSTMENT / SETTINGS

4-1. User Mode

Function	Procedures	Remarks
Print head manual cleaning	- Cleaning both black and color: See "Standalone printer operation" below. - Cleaning black or color separately, or both black and color: Perform from the printer driver's Maintenance tab.	
Print head deep cleaning	- Cleaning black or color separately, or both black and color: Perform from the printer driver's Maintenance tab.	
Paper feed roller cleaning	1) Using the Paper Feed switch, select the sheet feeder unit to perform paper feed roller cleaning. 2) Remove all paper from the selected sheet feeder unit. 3) Perform paper feed roller cleaning, following the "Standalone printer operation" procedures below.	If the paper feed roller cleaning is not effective, manually clean the rollers with a cloth slightly dampened with water.
Bottom plate cleaning (cleaning of ink mist on the platen ribs)	1) Fold a sheet of plain paper (A4 or letter) in half crosswise, then unfold and set it in the ASF with the folded ridge facing down. 2) Perform bottom plate cleaning, following the "Standalone printer operation" procedures below. 3) When the folded ridge of the ejected paper is NOT soiled, cleaning is completed. If it is soiled, repeat the steps 1) and 2).	If soiling on the paper persists after the bottom plate cleaning is performed 3 times, manually clean the platen ribs with a cotton swab.
Nozzle check pattern printing	See "Standalone printer operation" below.	Also available from the printer driver's Maintenance tab.
Print head alignment	1) Perform from the printer driver's Maintenance tab. 2) According to the printout, set the optimum values.	

<Standalone printer operation>
1) Turn on the printer.
2) Press and hold the Resume/Cancel button until the LED blinks the specified number of times listed in the table below, and release it. The operation starts.

LED blinking	Operation	Remarks
1 time	Print head manual cleaning	
2 times	Nozzle check pattern printing	
3 times	Paper feed roller cleaning	
4 times	Unspecified	
5 times	Bottom plate cleaning	
6 times	Unspecified	

4-2. Service Mode

Function	Procedures	Remarks
EEPROM information print - Destination - ROM version - Waste ink amount - Total number of sheets fed	See "Service mode operation procedures" below.	Set a sheet of A4-, letter-, or larger-sized paper. For print sample, see APPENDIX 2, iP2000 EEPROM INFORMATION PRINT SAMPLE.
EEPROM initialization	See "Service mode operation procedures" below.	The following items are NOT initialized: - Destination settings - Waste ink counters
Waste ink counter reset	See "Service mode operation procedures" below.	The following 3 methods are available: - Resetting the main waste ink counter (0%) - Re-setting the main waste ink counter value to 50% - Resetting the platen waste ink counter (0%)
Destination settings	See "Service mode operation procedures" below.	
Print head deep cleaning	See "Service mode operation procedures" below.	

<Service mode operation procedures>
1) With the front cover closed, and the printer power turned off, while pressing the Resume/Cancel button, press and hold the Power button. (DO NOT release the buttons. The LED lights in green to indicate that a function is selectable.)
2) While holding the Power button, release the Resume/Cancel button. (DO NOT release the Power button.)
3) While holding the Power button, press the Resume/Cancel button 2 times, and then release both the Power and Resume/Cancel buttons. (Each time the Resume/Cancel button is pressed, the LED lights alternately in orange and green, starting with orange.) During initial operations, the LED blinks in green.
4) When the LED light sin green, press the Resume/Cancel button the specified number of time(s) according to the function listed in the table below. (Each time the Resume/Cancel button is pressed, the LED lights alternately in orange and green, starting with orange.)

Time(s)	LED	Function	Remarks
0 times	Green	Power off	When the print head is not installed, the carriage returns and locks in the home position.
1 time	Orange	Service test print	
2 times	Green	EEPROM information print	
3 times	Orange	EEPROM initialization	
4 times	Green	Waste ink counter resetting	Proceed to the step 5), and follow the Waste ink counter reset procedures.
5 times	Orange	Destination settings	Proceed to the step 5), and following the Destination settings procedures.
6 times	Green	Print head deep cleaning	
7 to 9 times	Orange	Not used in servicing	
10 times	Green	Return to the menu selection	

5) After the function (menu) is selected, press the Power button. The LED lights in green, and the selected function is performed. (When the operation completes, the printer returns to the menu selection mode automatically.)

<Waste ink counter reset procedures>
In the waste ink counter resetting mode, press the Resume/Cancel button the specified number of time(s) according to the ink counter reset value listed in the table below, and press the Power button.

Time(s)	LED	Waste ink counter value
0 times	Green	Reset the main waste ink counter (0%).
1 time	Orange	Reset the platen waste ink counter (0%)
2 times	Green	Re-set the main waste ink counter value to 50%.

<Destination settings procedures>
In the destination settings mode, press the Resume/Cancel button the specified number of time(s) according to the destination listed in the table below, and press the Power button.

Time(s)	LED	Destination
0 times	Green	No change
1 time	Orange	Japan
2 times	Green	Other than Japan (A4)
3 times	Orange	Other than Japan (LTR)

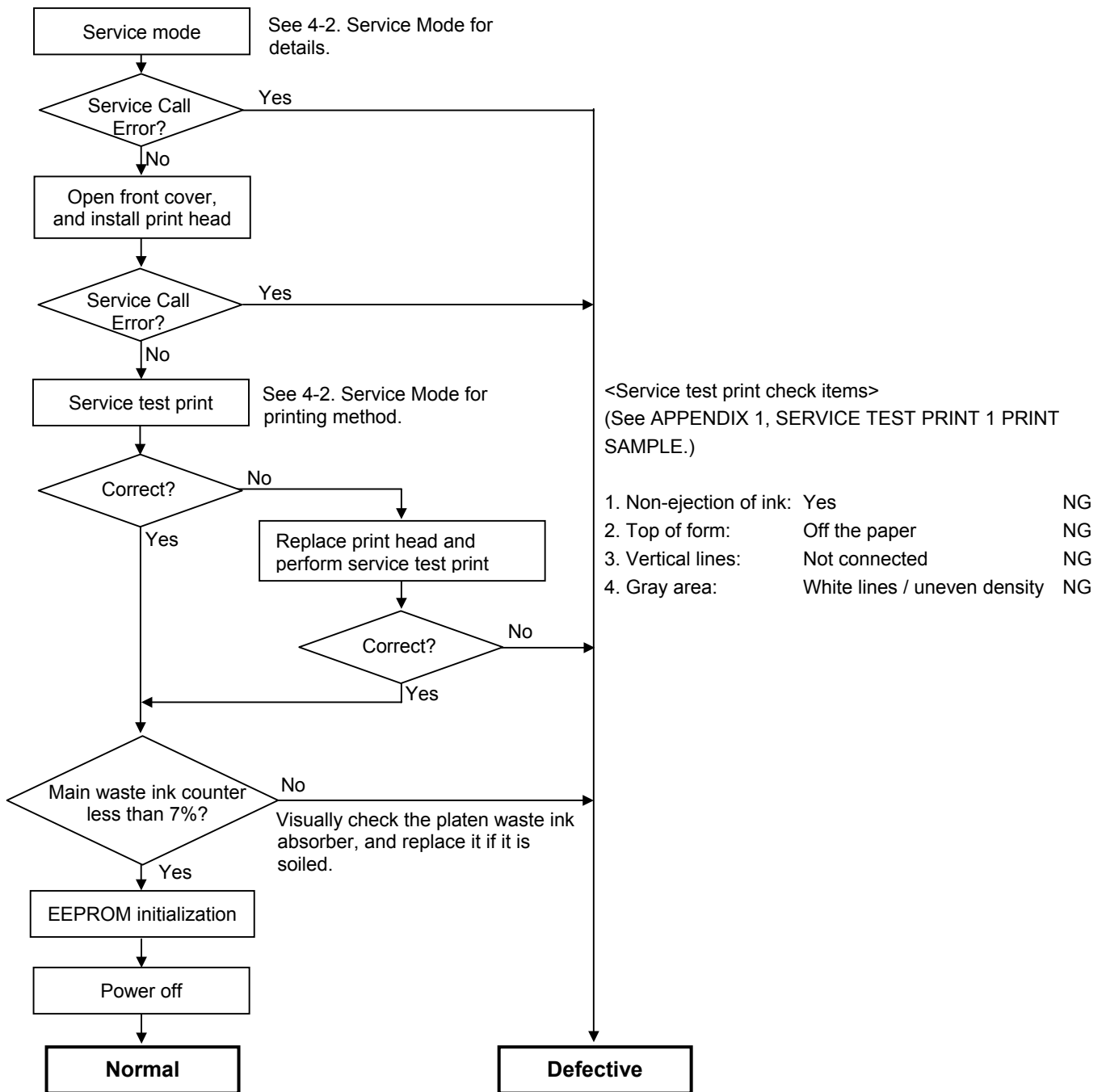## 5. PARTS LIST

Key	Part Number	Rank	Q'ty	Description	Remark	Common parts
	QY6-0054-000	K	1	PRINT HEAD		★

★note: In common with the iP1500

6. TROUBLESHOOTING FLOWCHART

6-1. Printer Main Unit Troubleshooting Flowchart (how to confirm printer operation at refurbishment)

```
┌─────────────────┐
│  Service mode   │      See 4-2. Service Mode for
└─────────────────┘      details.
         │
         ▼
   ╱────────────╲   Yes
  ╱ Service Call ╲──────────────────────────────┐
  ╲    Error?    ╱                               │
   ╲────────────╱                                │
         │ No                                    │
         ▼                                       │
┌─────────────────┐                              │
│ Open front cover,│                             │
│ and install print head│                        │
└─────────────────┘                              │
         │                                       │
         ▼                                       │
   ╱────────────╲   Yes                          │
  ╱ Service Call ╲──────────────────────────────┤
  ╲    Error?    ╱                               │
   ╲────────────╱                                │
         │ No                                    │
         ▼                                       │
┌─────────────────┐   See 4-2. Service Mode for  │
│ Service test print│   printing method.         │
└─────────────────┘                              │
         │                                       │
         ▼                                       │
   ╱────────────╲   No                           │
  ╱   Correct?   ╲──────────┐                    │
  ╲              ╱          │                    │
   ╲────────────╱           ▼                    │
         │ Yes    ┌──────────────────┐           │
         │        │ Replace print head and│      │
         │        │ perform service test print│  │
         │        └──────────────────┘           │
         │                 │                      │
         │                 ▼                      │
         │           ╱────────────╲   No          │
         │          ╱   Correct?   ╲──────────────┤
         │          ╲              ╱              │
         │           ╲────────────╱               │
         │                 │ Yes                  │
         │◄────────────────┘                      │
         ▼                                        │
   ╱──────────────────╲   No                      │
  ╱ Main waste ink counter╲─────────────────────┤
  ╲   less than 7%?     ╱                         │
   ╲──────────────────╱                           │
         │ Yes                                    │
         ▼                                        │
┌─────────────────┐                               │
│ EEPROM initialization│                          │
└─────────────────┘                               │
         │                                        │
         ▼                                        │
┌─────────────────┐                               │
│   Power off     │                               │
└─────────────────┘                               │
         │                                        │
         ▼                                        ▼
┌─────────────────┐               ┌─────────────────┐
│     Normal      │               │    Defective    │
└─────────────────┘               └─────────────────┘
```

<Service test print check items>
(See APPENDIX 1, SERVICE TEST PRINT 1 PRINT SAMPLE.)

1. Non-ejection of ink: Yes   NG
2. Top of form: Off the paper   NG
3. Vertical lines: Not connected   NG
4. Gray area: White lines / uneven density   NG

(Under "Main waste ink counter less than 7%?" No branch:) Visually check the platen waste ink absorber, and replace it if it is soiled.
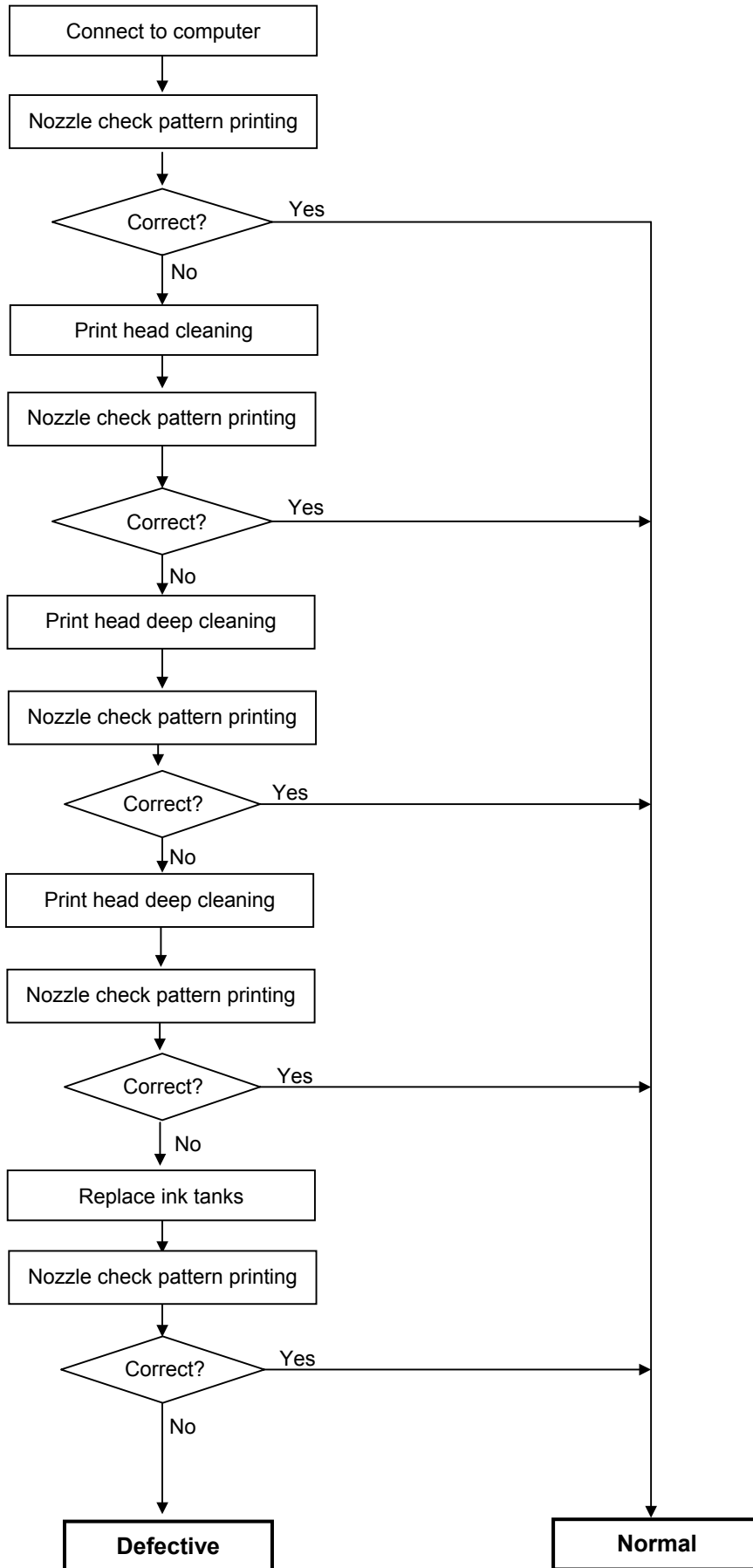
<Note for normal printer refurbishment>

At end of refurbishment, set the printer to the default shipment conditions (with the paper lifting plate in the raised position, and the carriage locked in the print head replacement position), following the steps below.

1. Install the print head, and while pressing and holding the Power button, connect the AC plug. After the LED lights in green, with the Power button still pressed, press the Resume/Cancel button 2 times, and release both the Power and Resume/Cancel buttons. (Each time the Resume/Cancel button is pressed, the LED lights alternately in orange and green, starting with orange.)

2. Press the Resume/Cancel button 4 times, and then press the Paper Feed switch 2 times. The shipment inspection pattern is printed, and the EEPROM is initialized.

3. After removing the print head, press the Paper Feed switch 2 times to turn off the printer. (The paper lifting plate is raised, and the carriage moves to the print head replacement position.) DO NOT print after this point.

6-2. Print Head Troubleshooting Flowchart (print head operation confirmation)

```
                  ┌────────────────────────────┐
                  │     Connect to computer     │
                  └────────────────────────────┘
                                │
                  ┌────────────────────────────┐
                  │ Nozzle check pattern printing│
                  └────────────────────────────┘
                                │
                           ◇ Correct? ◇──── Yes ──────────────────────┐
                                │                                       │
                               No                                      │
                  ┌────────────────────────────┐                       │
                  │     Print head cleaning      │                      │
                  └────────────────────────────┘                       │
                                │                                       │
                  ┌────────────────────────────┐                       │
                  │ Nozzle check pattern printing│                      │
                  └────────────────────────────┘                       │
                                │                                       │
                           ◇ Correct? ◇──── Yes ──────────────────────┤
                                │                                       │
                               No                                      │
                  ┌────────────────────────────┐                       │
                  │   Print head deep cleaning   │                      │
                  └────────────────────────────┘                       │
                                │                                       │
                  ┌────────────────────────────┐                       │
                  │ Nozzle check pattern printing│                      │
                  └────────────────────────────┘                       │
                                │                                       │
                           ◇ Correct? ◇──── Yes ──────────────────────┤
                                │                                       │
                               No                                      │
                  ┌────────────────────────────┐                       │
                  │   Print head deep cleaning   │                      │
                  └────────────────────────────┘                       │
                                │                                       │
                  ┌────────────────────────────┐                       │
                  │ Nozzle check pattern printing│                      │
                  └────────────────────────────┘                       │
                                │                                       │
                           ◇ Correct? ◇──── Yes ──────────────────────┤
                                │                                       │
                               No                                      │
                  ┌────────────────────────────┐                       │
                  │      Replace ink tanks       │                      │
                  └────────────────────────────┘                       │
                                │                                       │
                  ┌────────────────────────────┐                       │
                  │ Nozzle check pattern printing│                      │
                  └────────────────────────────┘                       │
                                │                                       │
                           ◇ Correct? ◇──── Yes ──────────────────────┤
                                │                                       │
                               No                                      │
                                │                                       │
                  ┌─────────────────────┐          ┌─────────────────────┐
                  │      Defective       │          │       Normal        │
                  └─────────────────────┘          └─────────────────────┘
```

7. SPECIAL NOTES ON SERVICING IN ASIA

7-1. Resetting the Main and Platen Waste Ink Counters

The iP2000 has separate waste ink counters for the main waste ink absorber and the platen waste ink absorber, respectively. At waste ink absorber replacement, in the service mode, reset the applicable waste ink counter according to the replaced waste ink absorber. (When both the main and platen waste ink absorbers are replaced, reset both the main and platen waste ink counters.)

For the main waste ink absorber, a new design has been adopted so that a half portion of the main waste ink absorber can be replaced just by removing the printer housing.

When compared with replacement of the entire main waste ink absorber, replacement of the half portion is extremely simple and easy, as it does not require removal of other components such as the chassis and ASF.

The printable number of pages after replacement of the half portion of the main waste ink absorber is 2,000 pages.

According to the above, 2 methods are available for replacement of the main waste ink absorber, and the main waste ink counter should be reset according to the replacement method.

- Replacement of the half of the main waste ink absorber:

    Easy, and the printable number of pages after the replacement is approx. 2,000.

- Replacement of the entire main waste ink absorber:

    Difficult, and the printable number of pages after the replacement is approx. 4,000.

After replacement, the main or platen waste ink counter should be reset according to the replaced absorber portion.

<Waste ink counter value to be re-set to after waste ink absorber replacement>

Replaced waste ink absorber	Waste ink counter value
Entire main waste ink absorber	Reset the main waste ink counter (0%).
Half of the main waste ink absorber*	Re-set the main waste ink counter value to 50%.
Entire platen waste ink absorber	Reset the platen waste ink counter (0%).

* How to replace half of the main waste ink absorber:

1. Remove the upper cover unit.
2. Replace the 4 ink absorbers (2 types, equivalent to half of the main waste ink absorber), shown in the figure below.
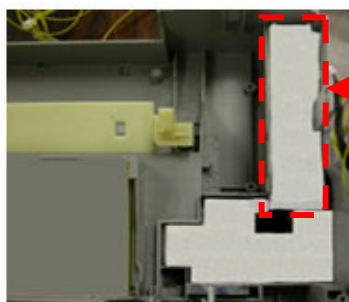
Replaceable half portion (4 ink absorbers)

After the half portion is replaced, re-set the waste ink counter to 50%.

<Waste ink absorber replacement procedures>

1. Error check

    Perform EEPROM information printing, and check the following values:

    - D: Main waste ink counter

    - PD: Platen waste ink counter

2. Replace the applicable waste ink absorber(s).
3. Reset the waste ink counter.

    For waste ink counter resetting procedures, see 4. ADJUSTMENT / SETTINGS, 4-2. Service Mode.

8. PRODUCT TECHNICAL INFORMATION

8-1. FAQ (Problems specific to the iP2000 and corrective actions)

No.	*	Function	Phenomenon	Possible Call / Claim	Corrective action	Cause
1	A	Installation	Carriage error (LED blinks alternately in orange and green 2 times).	- LED blinks alternately in orange and green, 2 times (carriage error).	Remove the packing material fixing the carriage.	The user may not have removed the packing material at unpacking and installation. Although a caution sheet is packaged together with the printer, the user may not have noticed it. Note: Even if the packing material remains, no parts are damaged.
2	A		Ink tank installation error (LED blinks in orange 4 times.)	- LED blinks in orange 4 times (ink tank installation error). (As this occurs at printer installation, the user cannot recognize the error.)	Open the access cover, and install the ink tanks properly.	Since the user did not seat the ink tanks completely at unpacking, installation, or ink tank replacement, the ink tank contacts the main case.
3	B	Paper feeding	No paper feeding (due to incorrect Paper Feed switch setting)	- Paper out error - Paper cannot be fed - Cannot print	1. Perform roller cleaning from the printer driver. 2. Change the paper feed method by the Paper Feed switch. 3. Clean the paper feed roller with moistened cloth.	The paper feed roller slips on the paper at paper feeding, or the Paper Feed switch setting is not correct. Note: Camera Direct Printing is available only when paper feeds from the ASF.
4	B		Multi-feeding	- Multiple pages of paper are fed simultaneously. -Blank paper is ejected.	1. Fan the paper and set them. 2. In case of PR-101, set the paper sheet by sheet.	In the high temperature and high humidity environment, the frictional force between the front and back sides of paper becomes high, and sheets stick to each other, contributing to multi-feeding.
5	B		Envelope not feeding	- Paper out error - Paper cannot be fed - Cannot print	1. Perform roller cleaning from the printer driver. 2. Clean the paper feed roller with moistened cloth. 3. Reduce the number of envelopes loaded in the ASF. 4. Flatten the envelope (with a pen).	The paper feed roller slips on the paper at paper feeding. Note: Depending on the paper lots. This phenomenon may occur in DL envelope.
6	B		Credit Card size paper jam at feeding	- Paper jam error - Paper cannot be fed - Cannot print	Set a sheet of Credit Card size paper in the ASF with the longer edge in vertical orientation, and press the Resume/Cancel button.	When Credit Card size paper is set with the shorter edge in vertical orientation, the paper does not reach the LF roller, and the paper is not fed.
7	C		Paper jam	- Paper jam error - Paper cannot be fed - Cannot print	When using the ASF, remove the jammed paper from the paper pick-up side. When using the front sheet feeder, open the rear cover, and remove the jammed paper.	As the LF roller slips on the paper, the paper is not fed, causing the jam error at paper ejecting.

No.	*	Function	Phenomenon	Possible Call / Claim	Corrective action	Cause
8	B	Image quality	Smearing on printed side.	- Smear on the printed side of paper - Cannot print properly - Paper edge crease	1. Correct the paper curl. 2. Change the paper thickness lever setting. 3. Recommend the user to conduct printing in the print quality assurance area.	The edge of paper rises due when paper is curled, causing the print head to rub against the printed surface of paper, resulting in smearing.
9	B		Smearing on the backside, or address side of postcards	<Photo Paper Plus Double Sided> - Smears on the already printed side when printing the other side <When printing the address side of postcards> - Smears on the address side <When printing the message side of postcards> - Smears on the backside	1. Perform bottom plate cleaning from the printer driver. 2. Clean the ribs on the platen with cotton swabs/buds.	When borderless printing is conducted continuously, ink mist attaches to the ribs on the platen, and is transferred to the backside of the following paper.
10	C		Horizontal lines or uneven print density at the trailing edge of paper	- Cannot print to the bottom edge of paper - Lines or uneven print density appear in the trailing edge of paper - Cannot print properly	1. Recommend printing in the print quality assurance area. 2. Change the print quality from standard to high mode. 3. Try other paper (PP-101)	When the paper end comes off the pinch roller, printing is performed without the paper being held, preventing the ink drops from being ejected in the correct positions, resulting in unevenness. Note: The problem is less noticeable than that of the i320.
11	C		Horizontal lines or uneven print density due to LF roller feeding at small pitch	- Lines or uneven print density (on skin tones and background) - Cannot print properly	Change the print quality from standard to high mode.	As the print media slightly slips while being fed by the LF roller, printed areas overlap, causing the problem.

*Occurrence level:
   A: The phenomenon is likely to occur frequently. (Caution required).
   B: The phenomenon may occur under certain conditions, but likeliness is assumed very low in practical usage.
   C: The phenomenon is unlikely to be recognized by the user, and no practical issues are assumed.

8-2. Major Functions

(1) Borderless printing (up to A4 and LTR sizes)

<Possible problems with this function>
- Smearing on the address side of postcards in continuous borderless printing on the message side.
  -> Perform bottom plate cleaning, and clean the ribs on the platen.
- Smearing on the backside of paper in continuous borderless printing.
  -> Perform bottom plate cleaning, and clean the ribs on the platen.
- Ink mist on the platen.
  -> Perform bottom plate cleaning, and clean the ribs on the platen.

(2) 2 types of paper path feeding (paper feeding from the ASF and front sheet feeder)

The printer has 2 paper feeding methods, from the ASF and from the front sheet feeder.
Paper feeding from the front sheet feeder does not support,
- paper size smaller than A5,
- Camera Direct Printing, and
- printing on the back side of paper in duplex printing.

<Possible problems with this function>
- "No paper" error due to incorrect Paper Feed switch setting (such as when the Resume/Cancel button is pressed after Paper Feed switch setting).
  Printer driver default setting: Paper Source is set to Paper Feed Switch.
  Printer's Paper Feed switch default setting: ASF
  Paper feed setting priority: Printer driver setting over printer's Paper Feed switch setting
- Paper feed problem due to incorrect paper size setting (the front sheet feeder supports only A5- or larger-sized paper).

(3) Remaining ink level detection function

The printer has a function to detect the remaining ink level. (Default setting: ON)

Detection method: Dot counting (Counted for each BK/CL ink tank)
>   CL tank: The remaining ink level is detected by total counted dot values of 3 colors of ink.

Display method: Displayed on the Status Monitor (at 3 levels listed below for each BK/CL ink tank)
>   Level 1: Half level of remaining ink level (Approx. 40% of ink remaining)
>   Level 2: Indication of "!" mark (Approx. 10% of ink remaining)
>   Level 3: Indication of "?" mark (Remaining ink level is unknown, ink may be used up anytime)
>   Note: Remaining ink detection function displays the status only, and does not cause errors.

Accuracy: The margin of error of detection accuracy is +/-10% in normal printing.
The margin of error is likely to be large in the following specific print patterns:
>   When printing continuously using any one of the CMY colors of ink
>   -> As the remaining ink level is calculated by total counted dot values of 3 colors of ink, if any of the C/M/Y inks is heavily consumed, the margin of error for remaining ink increases.
>   When performing continuous BK solid printing
>   -> With continuous printing, ink flow from the tank to the ink chamber can be interrupted, after which ink remains unused in the tank.

Reset procedure: Perform the following operations from the printer driver's Maintenance tab:
1. In Low Ink Warning Setting, enable Display low ink warning.
2. In Ink Counter Reset, reset the applicable ink counter(s).
>   Note: Be sure to reset the ink counter from the printer driver's Maintenance tab after replacing ink tanks.

<Possible problems with this function>
- Due to user error, the actual remaining ink level does not match the indicated remaining ink level, resulting in "ink out", etc.
    User error: Forgetting to reset the ink counter / ink counter reset other than when replacing ink tanks.
- Due to the specific print pattern, the actual remaining ink level does not match the indicated remaining ink level, resulting in "ink out".
    Specific print pattern: Continuous printing using any one of the CMY colors of ink / continuous BK solid printing, etc.

(4)   Print head deep cleaning
The printer has a print head deep cleaning (refreshing) function.
    Print head deep cleaning (refreshing):
        This is a deep cleaning function in order to resolve print failure due to ink clogging the print head. (The black ink is pigment-based, and clogs easier than other dye-based ink.)
        Perform from the printer driver's Maintenance tab.

<Possible problems with this function>
- Excessive ink consumption when conducting print head deep cleaning repeatedly. (The amount of ink used is approx. 10 to 15 times the normal manual cleaning amount.)

<Reference> Cleaning types, amount of ink used, and time required
    BK and CL ink drawing is simultaneously performed.

Cleaning type	Amount of ink used	Time required
Manual cleaning Dot count cleaning	BK: Approx. 0.12 g CL: Approx. 0.14 g	Approx. 40 sec.
Cleaning on arrival at user Print head replacement Timer cleaning (24 hours to 3 months) Cleaning when the print head is not capped at printer power on	BK: Approx. 0.42 g CL: Approx. 0.52 g	Approx. 60 sec.
Ink tank replacement	BK: Approx. 0.57 g CL: Approx. 0.62 g	Approx. 60 sec.
Print head deep cleaning Timer cleaning (3 months or more)	BK: Approx. 1.50 g CL: Approx. 2.35 g	Approx. 70 sec.

(5)   Print head alignment
The printer has a print head alignment function (print head position adjustment function). As it is not necessary to perform print head alignment at setup or installation of the printer, the function is only briefly introduced at installation.
    Print head alignment: This is a function to correct displacements between the nozzle lines of the print head, and incorrect print position at bi-directional printing.
        The adjustment is conducted using the printed head position adjustment pattern.
        A: Print head alignment between black even and odd nozzles
        B: Print head alignment between cyan even and odd large nozzles
        C: Print head alignment between magenta even and odd large nozzles
        D: Print head alignment between cyan even and odd small nozzles
        E: Print head alignment between magenta even and odd small nozzles
        F: Print head alignment in bi-directional black printing
        G: Print head alignment of large nozzles in color bi-directional printing
        H: Print head alignment between black and photo black nozzles

I: Print head alignment of small nozzles in color bi-directional printing
J: Print head alignment between cyan large and small nozzles
K: Print head alignment between magenta large and small nozzles
Perform from the printer driver's Maintenance tab.
(At initial set-up by the user, notice to perform the print head alignment is displayed in the Status Monitor.)
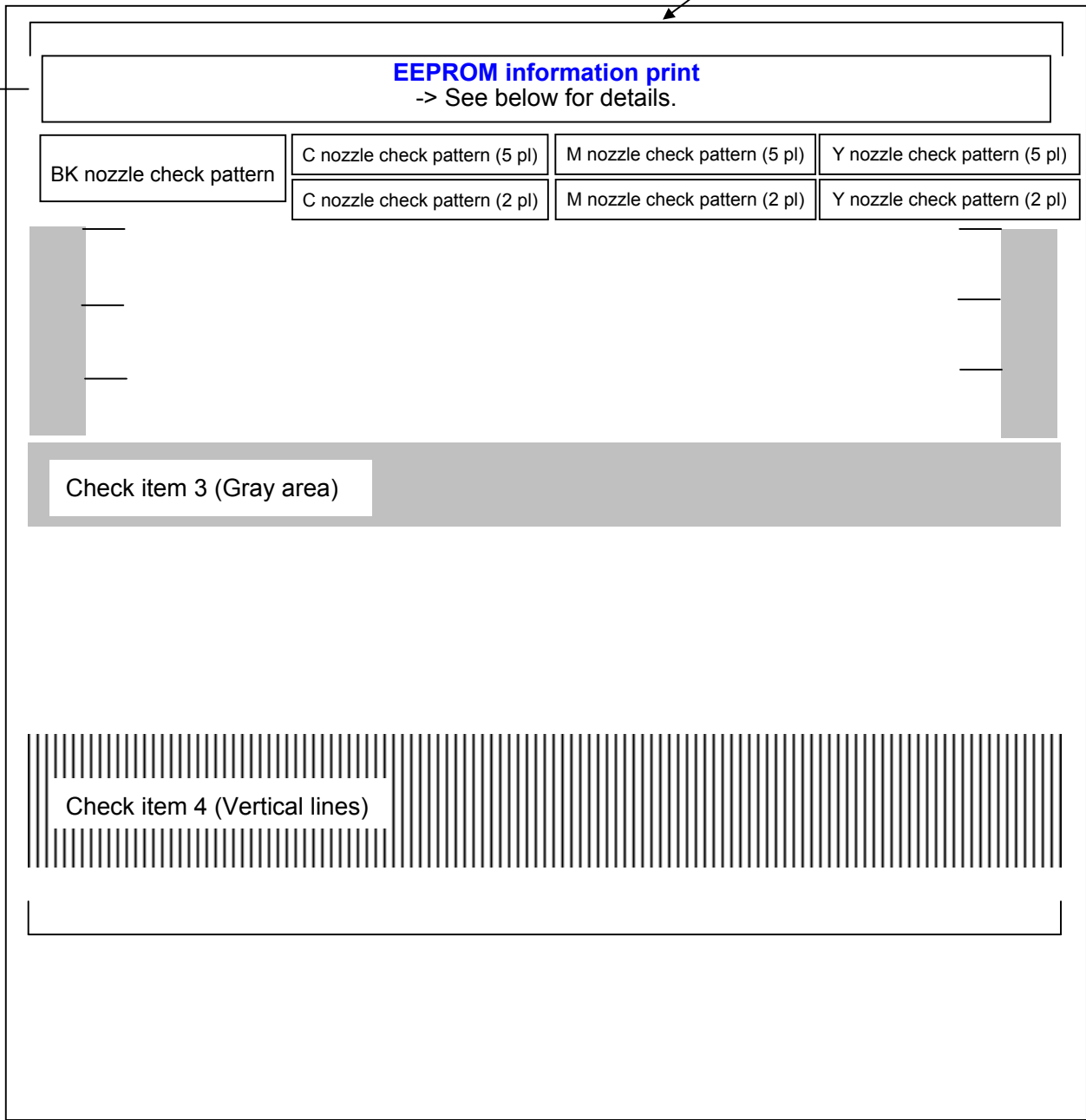
<Possible problems with this function>
- The line is not straight.
    -> Perform print head alignment from the printer driver.
- Printout is granulated.
    -> Perform print head alignment from the printer driver.

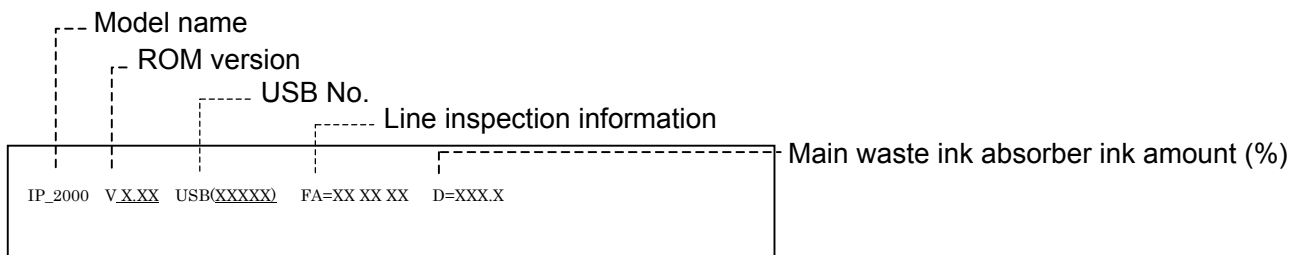## APPENDIX 1:   SERVICE TEST PRINT 1 PRINT SAMPLE

Check item 1 (Non-ejection of ink):   Total area of the sample below

Check item 2 (Top of form)

EEPROM information print
-> See below for details.

| BK nozzle check pattern | C nozzle check pattern (5 pl) | M nozzle check pattern (5 pl) | Y nozzle check pattern (5 pl) |
| | C nozzle check pattern (2 pl) | M nozzle check pattern (2 pl) | Y nozzle check pattern (2 pl) |

Check item 3 (Gray area)

Check item 4 (Vertical lines)

Paper size: A4

<EEPROM information print>

Model name
ROM version
USB No.
Line inspection information
Main waste ink absorber ink amount (%)

IP_2000   V X.XX   USB(XXXXX)   FA=XX XX XX   D=XXX.X

APPENDIX 2: iP2000 EEPROM INFORMATION PRINT SAMPLE

Print sample:

```
iPXXXX V1.03 IF(USB=1) D=004.5 PD=000.0 ST=2001/09/27-18:30
ER(ER0=1000 ER1=5100 ER2=0000 ER3=0000) LPT=2001/09/09-09:09
PC(M=002 R=00 T=0001 D=009 C=000)
CLT(BK=2001/09/27-18:30 CL=2001/09/27-18:30)
CH=00002 DC(BK1=040 CL=000)
IC(BK1=00001 C=00001 M=00001 Y=00001)
P_ON(S=00009 h=00005) REG=1
UR(A(BKoe)=+01 B(Coe)=-01 C(Moe)=+01 D(SCoe)=-01 E(SMoe)=+01 F(BKbi)=+01
G(CLbi)=+01 H(BK-PCBK)=+01 I(SCLbi)=+01 J(C-SC)=+01 K(M-SM)=+01)


WP=00024 CDIN(LG=000 PB=000) MSD(015)
PAGE(All=00083 PP=00035 HR+MP=00003 PR+SP+SG=00000 GP=00000 PC=00000 EVN=00000)
UCPAGE(All=00083 PP=00035 HR+MP=00003 PR+SP+SG=00000 GP=00000)
CDPAGE(All=000) EDGE=00083 L=00000 2L=00000
Head TempBK=18.5 Head TempC=17.5 Env Temp=30.0 FF(3F 3F 3F)


HDEEPROM
V0001
SN=0000-0EA5
LN(00000 00000 00001 00003 00013 00017 00015)
ID=03
IL=(BK=000 C=+01 M=000 Y=+01 C2=+01 M2=+01 Y2=+01)
```

Printed items:

1. Model name   2. ROM version   3. Connected I/F (USB1)   4. Waste ink amount/Platen waste ink amount   5. Installation date

6. Operator call/service call error record   7. Last printing time

8. Purging count (manual/deep cleaning/timer/dot count/ink tank or print head replacement)

9. Cleaning time (BK/CL)

10. Print head replacement count   11. Number of times the dot count values are reset (pigment BK1/CL)

12. Total ink consumption (pigment BK/C/M/Y)

13. Power-on count (soft/hard)   14. Print head alignment by user

15. User print head alignment values (Bkoe/Coe/Moe/SCoe/SMoe/BKbi/CLbi/BK-PCBK/SCLbi/C-SC/M-SM)

16. Wiping count   17. Camera Direct Print-supported device connection count (PictBridge/legacy)   18. Longest period where printing stops

19. ASF feed pages (total, plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, postcard, envelope)

20. U-turn cassette feed pages (total, plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper)

21. Camera Direct print pages (total)   22. Borderless print pages (total)   23. L-size & 4x6 print pages   24. 2L-size & 5x7 print pages   25. Print head temperature (BK/CL)   26. Inside temperature   27. Line inspection information

HDEEPROM

28. Version

29. Serial number

30. Lot number

31. Print head ID

32. Ink ejection level (BK/C/M/Y/C2/M2/Y2)