

PIXMA iP1500

SERVICE MANUAL

Canon

1. PRODUCT LIST

1-1. Main Units

| Product name | Product code | Sales territory | Remarks |
|------------------------------------|--------------|-----------------|---------|
| Canon Bubble Jet Printer iP1500 | 9319A001AA | US | |
| | 9319A002AA | CA | |
| | 9319A003AA | LAM LVT | |
| | 9319A004AA | LAM HVT | |
| | 9319A005AA | EMB | |
| | 9319A005AB | EMB | |
| | 9319A008AA | ASA HVT | |
| | 9319A009AA | AU | |
| | 9319A010AA | KR | |
| | 9319A011AA | GB | |
| | 9319A012AA | JP | |
| | 9319A013AA | TW | |
| | 9319A014AA | HK | |
| | 9319A015AA | CN | |
| | 9319A017AA | 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, and i255 |
| | 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 |
| Resolution | 4,800 x 1,200 dpi (max.) |
| Printing speed | Measured by throughput patterns Fine_BK and Fine_CL. |
| HQ | BK 13.2 ppm (BK throughput pattern) |
| | CL 6.8 ppm (CL throughput pattern) |
| HS | BK 18 ppm (BK throughput pattern) |
| | CL 13 ppm (CL throughput pattern) |
| 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) |
| Interface | USB (2.0) Full Speed only |
| Supported print head | Service part: QY6-0054-000 |
| No. of pages that can be printed | |
| CL | CL approx. 170 pages, BK approx. 520 pages (SCID No.5 pattern, default print mode) |
| BK | BK approx. 300 pages (1500 character pattern, default print mode) |
| ASF stacking capacity | Max. 10 mm (Approx. 100 pages of 75 g/m ²) |
| Paper weight | 64 to 105 g/m ² |
| Plain paper | 10 mm or less |
| High Resolution Paper | 10 mm (Approx. 80 sheets) or less |
| Glossy Photo Paper | A4, LTR: 10 sheets or less 4x6: 20 sheets or less |
| Photo Paper Pro, Photo Paper Plus Glossy, Matte Photo Paper, Photo Paper Plus Semi-gloss | A4, LTR, 5x7: 10 sheets or less 4x6: 20 sheets or less |
| Photo Paper Plus Double Sided | 1 sheet |
| Transparency | 30 sheets or less |
| Envelope | 10 sheets or less |
| T-shirt Transfer | 1 sheet |
| Photo Stickers | 1 sheet |
| 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 (Glossy Photo Paper / Fine mode) | Approx. 43 dB (Sound pressure level ISO9296) |
| HQ | Approx. 46 dB |
| HS | Approx. 55 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. 8 W |
| Stand-by status | Approx. 1 W |
| External dimensions | |
| With the paper support extended (no paper output tray) | Approx. 416 (W) x 250 (D) x 305 (H) mm |
| With the paper support retracted (no paper output tray) | Approx. 416 (W) x 207 (D) x 165 (H) mm |
| Weight | Approx. 2.5 kg (excluding the print head and ink tanks) |
| Related standards | |
| Electromagnetic radiance, Electrical safety | VCCI, FCC, IC, CE Mark, Taiwan EMC, C-Tick, CCC (EMC), Korea MIC, Gost-R, DENAN, UL, C-UL, CB Report, GS, FT, SASO, SPRING, Korea EK, IRAM |

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: Although the print head can be physically installed in the i350, i355, i250, i255, S300, and S330 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)

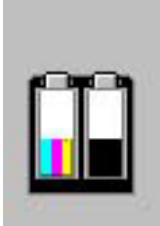
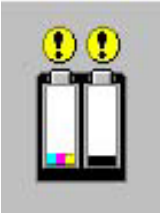

| LED blinking | Error | Corrective action |
|--------------|--|--|
| 2 times | Paper out | Set paper, and press the Resume/Cancel button to feed the paper. |
| 3 times | Paper jam | Remove the jammed paper, and press the Resume/Cancel button. |
| 4 times | Ink tank not installed | Re-install the ink tanks, and close the access 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.) | Install the print head, and close the access cover. Or, confirm the print head is "QY6-0054-000" and perform re-installation. 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. |

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

| LED blinking | Error | Corrective Action |
|--------------|---|---------------------------------------|
| 2 times | Carriage error | Replace the printer as it has failed. |
| 3 times | LF error | Replace the printer as it has failed. |
| 7 times | Waste ink absorber full or platen waste ink absorber full | Replace the printer as it has failed. |
| 8 times | Print head temperature rise error | Replace the printer as it has failed. |
| 9 times | EEPROM error | Replace the printer as it has failed. |
| 10 times | No print head detected excepting print head replacement (during printing) | Replace the printer as it has failed. |

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. SERVICE MODE

To conduct the following functions, a host computer (Windows 98 / ME / 2000 / XP), printer driver and service tool (QY9-0066) for the iP1500 are needed.

| Function | Procedure | Remarks |
|--|--|--|
| Print head manual cleaning | Select "Cleaning" from the printer driver's Maintenance. | Cleaning time: Approx. 40 sec. |
| <For reference> Print head deep cleaning | Select "Deep Cleaning" from the printer driver's Maintenance. | Cleaning time: Approx. 70 sec. |
| Paper feed roller cleaning | 1. Remove the paper from the ASF. 2. Select "Roller Cleaning" from the printer driver's Maintenance. 3. Following the instruction from the Status Monitor, load 3 sheets of plain paper in the ASF, and feed them. | Cleaning time: Approx. 2 min. |
| Test printing | | |
| 1) Nozzle check pattern printing <For reference> Print head alignment | Select "Nozzle Check" from the printer driver's Maintenance. 1. Select "Print Head Alignment" from the printer driver's Maintenance. 2. Select the optimal value using the printed head position adjustment pattern. | Nozzle check pattern printing Significant misalignment can be adjusted. |
| 2) Shipment pattern printing - ROM version - Number of pages fed - Waste ink amount | Refer to Shipment inspection pattern* ¹ below. | Refer to Shipment inspection pattern sample* ² below. Host computer and service tool are required. |
| EEPROM reset (Reset of waste ink counter etc.) | Refer to EEPROM reset / Destination setting* ³ below. | Host computer and service tool are required. |
| Destination setting | Refer to EEPROM reset / Destination setting* ³ below. | Host computer and service tool are required. |
| EEPROM information check | Refer to Shipment inspection pattern* ¹ below. | Host computer and service tool are required. |

*¹ Shipment inspection pattern printing

- a. Install the print head (QY6-0054-000), and press the Power button to turn on the printer. (The LED lights in green.)
- b. Load A4-sized paper.
- c. Connect the printer to the computer. Using the iP1500 service tool (QY9-0066), select "USB PORT." (See APPENDIX 2, iP1500 SERVICE TOOL.)
- d. Select "TEST PATTERN 1." The printer starts printing the shipment inspection pattern.

*² Shipment inspection pattern sample

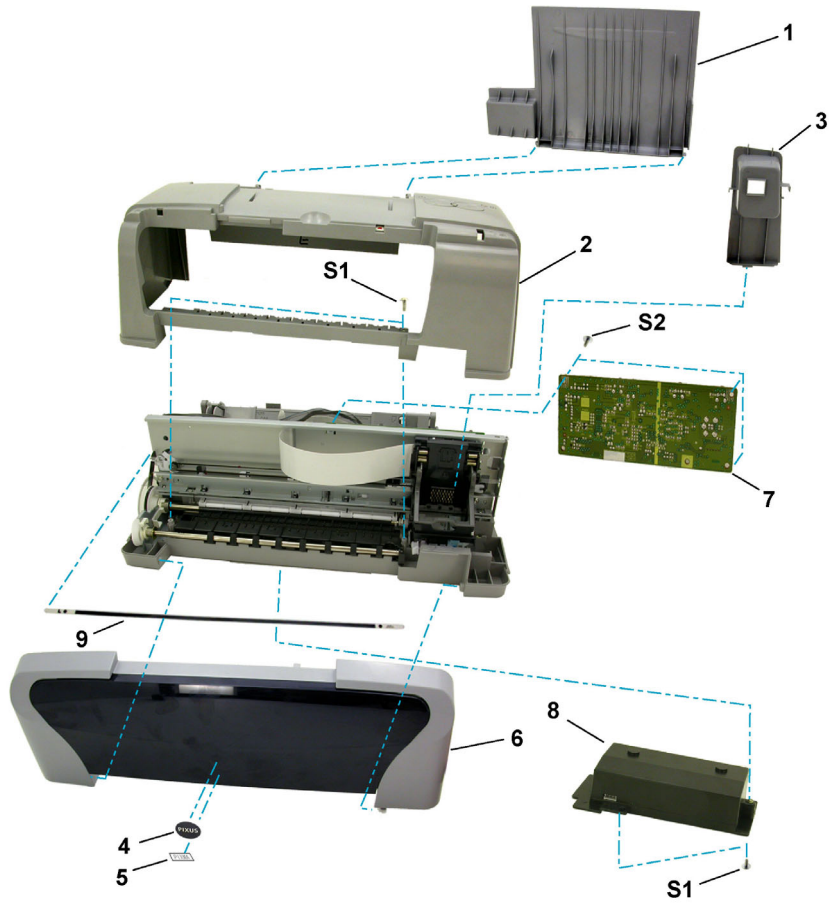
EEPROM contents can be confirmed from the shipment inspection pattern printout (top of the shipment inspection pattern). See APPENDIX 1, SHIPMENT INSPECTION PATTERN 1, for print sample.

*³ EEPROM reset / Destination setting

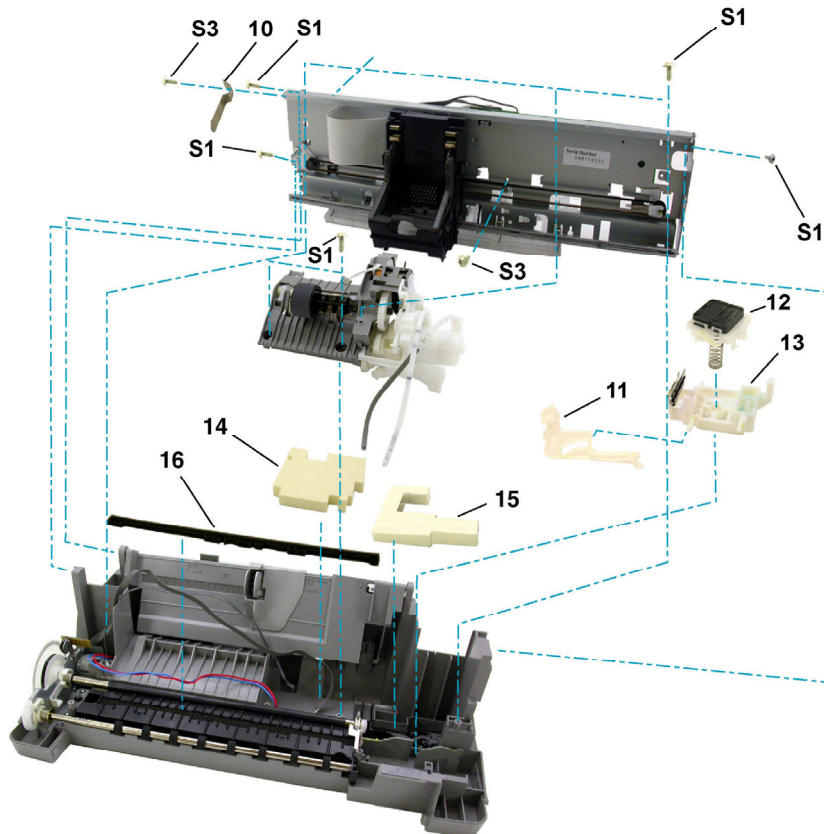
- a. Install the print head (QY6-0054-000), and press the Power button to turn on the printer. (The LED lights in green.)
 - b. Connect the printer to the computer. Using the iP1500 service tool (QY9-0066), select "USB PORT". (See APPENDIX 2, iP1500 SERVICE TOOL.)
 - c. <Destination setting>
Destination can be set by clicking each model name in "SET DESTINATION."
Confirm the model name by clicking "GET DEVICE ID" after setting change. (If incorrect, it can be changed before turning the unit OFF/ON.)
- <EEPROM reset>
When "EEPROM CLEAR" is checked, the EEPROM is reset after the shipment inspection pattern printing.

5. EXTERNAL VIEW / PARTS LIST

5-1. External Parts, Power Supply Unit, Logic Board Ass'y



5-2. Print Unit



Parts List

| Key | Part Number | Rank | Q'ty | Description | Remark | Common parts |
|-----|--------------|------|------|--------------------------------|---------------------------------------|--------------|
| | QY6-0054-000 | K | 1 | PRINT HEAD | | B |
| 1 | QC1-4988-000 | J | 1 | PAPER SUPPORT | | |
| 2 | QM2-1428-000 | J | 1 | UPPER COVER UNIT, WITH BUTTON | | |
| 3 | QC1-4991-000 | J | 1 | COVER, I/F | | |
| 4 | QC1-5005-000 | J | 1 | EMBLEM (E) | | B |
| | QC1-5009-000 | J | 1 | EMBLEM (J) | | B |
| 5 | QC1-5019-000 | J | 1 | LABEL, PIXMA (E) | | |
| 6 | QM2-1441-000 | I | 1 | FRONT COVER | | |
| 7 | QM2-1477-000 | I | 1 | LOGIC BOARD ASS'Y | | |
| 8 | QK1-0756-000 | I | 1 | AC ADAPTER: 100/120V 50/60HZ | LV | |
| | QK1-0757-000 | N | 1 | AC ADAPTER: 220/240V 50/60HZ | HV (EUR/ASIA/AU/KR/HK/GB/EUM) | |
| 9 | QC1-5104-000 | I | 1 | FILM, TIMING SLIT STRIP | | |
| 10 | QC1-4998-000 | I | 1 | SPRING, TIMING SLIT STRIP FILM | | |
| 11 | QC1-1690-000 | I | 1 | LOCK LEVER.BLADE | | C |
| 12 | QM2-1445-000 | I | 1 | CAP UNIT | | C |
| 13 | QM2-1443-000 | I | 1 | BLADE UNIT | | C |
| 14 | QC1-4975-000 | I | 1 | ABSORBER 1, INK | MAIN WASTE INK ABSORBER 1 | |
| 15 | QC1-4976-000 | I | 1 | ABSORBER 2, INK | MAIN WASTE INK ABSORBER 2 | |
| 16 | QM2-1847-000 | I | 1 | ABSORBER, PLATEN | PLATEN WASTE INK ABSORBER | |
| S1 | XA9-1493-000 | G | | SCREW, TP M3X8 | FOR AC ADAPTER FOR UPPER CASE UNIT | C |
| S2 | XB6-7300-605 | G | | SCREW, TP M3X6 MM | FOR LOGIC BOARD ASS'Y FOR LF MOTOR | C |
| S3 | XB1-2300-405 | G | | SCREW, M3X4 | FOR TIMING SLIT STRIP FILM SPRING | C |

Power cables:

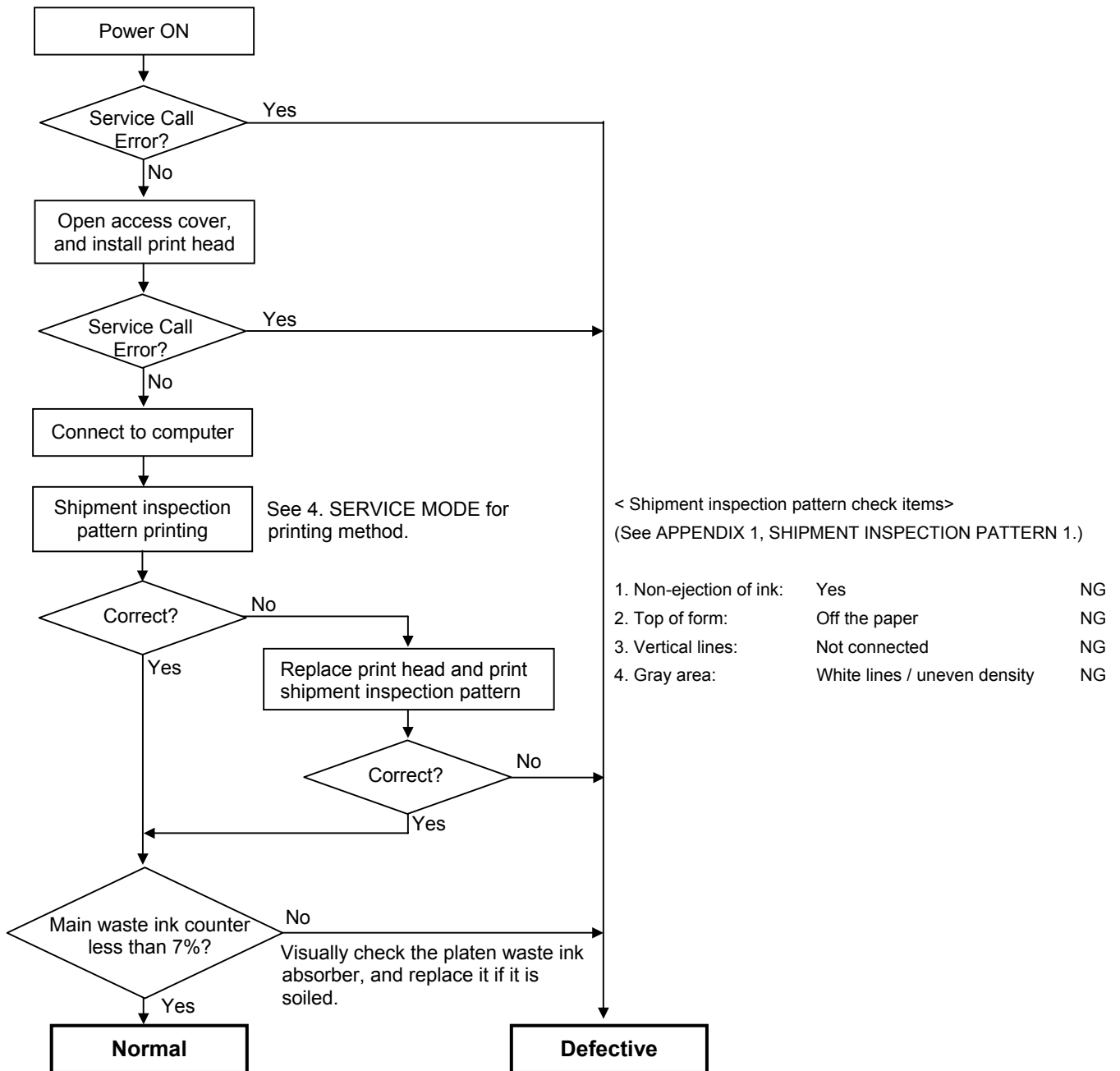
| | | | | | | |
|--|--------------|---|---|-------------|--------------------|---|
| | QH2-2720-000 | S | 1 | CORD, POWER | 120V (LAM-LV) | A |
| | QH2-2724-000 | S | 1 | CORD, POWER | 100V-120V (JP) | B |
| | QH2-2725-000 | S | 1 | CORD, POWER | 100V-120V | A |
| | QH2-2726-000 | S | 1 | CORD, POWER | 220V-240V | A |
| | QH2-2727-000 | S | 1 | CORD, POWER | 220V-240V (AU) | A |
| | WT3-5156-000 | S | 1 | CORD, POWER | 220V-240V (GB, HK) | A |
| | WT3-5160-000 | S | 1 | CORD, POWER | 220V-240V (KR) | A |
| | WT3-5182-000 | S | 1 | CORD, POWER | 220V-240V (CHN) | A |

A: In common with the iP2000 and iP1000

B: In common with the iP2000

C: In common with the iP1000

6. TROUBLESHOOTING FLOWCHART



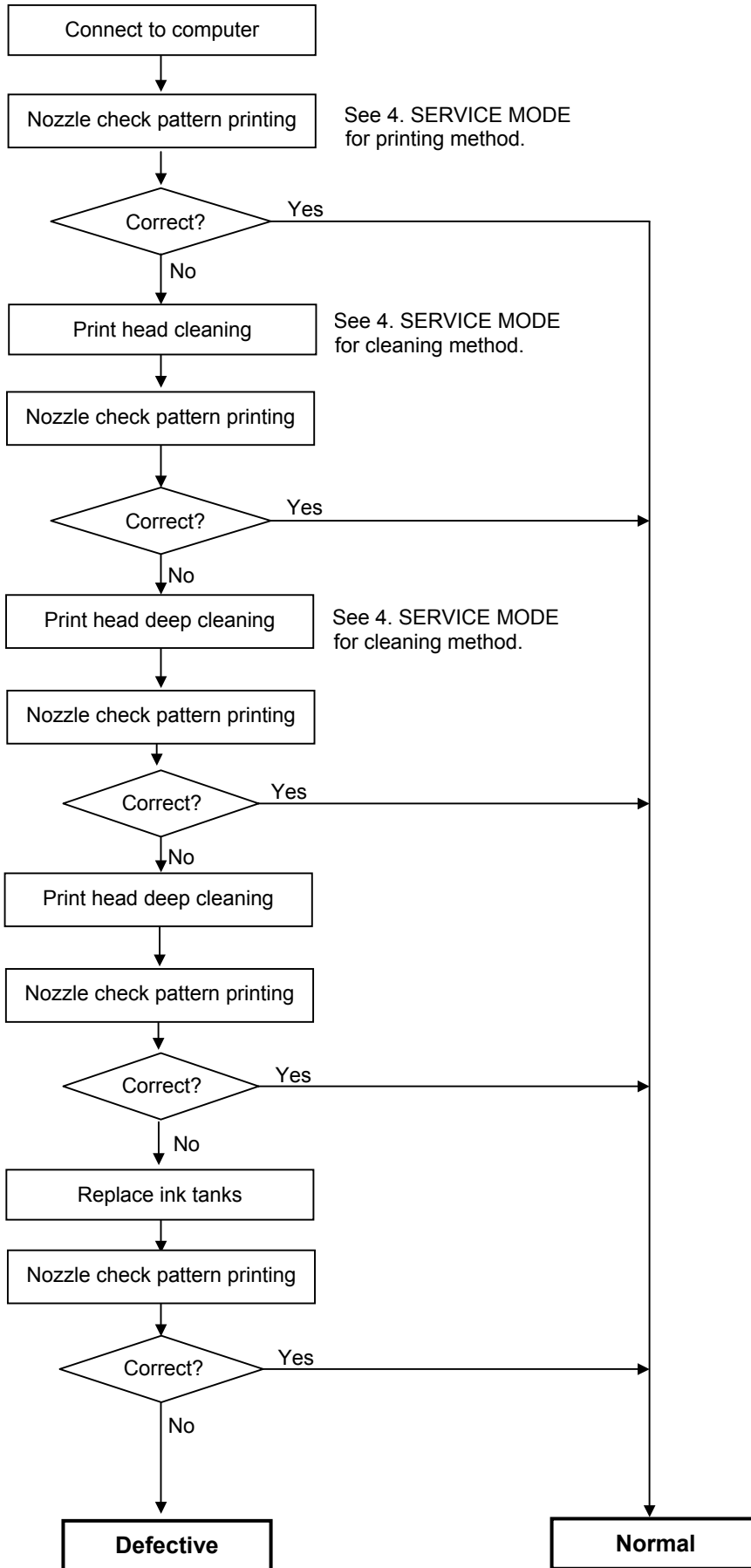
6-1. Printer Main Unit Troubleshooting Flowchart (how to confirm printer operation at refurbishment)

<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 home 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. Print the shipment inspection pattern, and reset the EEPROM, following the procedures in 4. SERVICE MODE.
3. Press the Power button to turn off the printer. (The paper lifting plate is raised, and the carriage moves to the print head replacement position.) Remove the print head. (DO NOT print after this point.)

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



7. SPECIAL NOTES ON SERVICING

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

The counters for the main waste ink absorber and the platen waste ink absorber can be reset separately. At waste ink absorber replacement, using the iP1500 service tool, reset the applicable waste ink counter(s). (When both the main and platen waste ink absorbers are replaced, reset both the main and platen waste ink counters.)

<Waste ink absorber replacement procedures>

1. Error check

At a waste ink full error (95% or full), identify which waste ink absorber is full, the main or the platen, using the iP1500 service tool's EEPROM INFORMATION, Dd or Ds values, as the error itself does not indicate which waste ink absorber is full. (See APPENDIX 2, iP1500 SERVICE TOOL, for details). Then, replace the applicable waste ink absorber.

- Dd: Main waste ink absorber amount (128,400 mg at 95% full, 135,200 mg at full)

- Ds: Platen waste ink absorber amount (7,220 mg at 95% full, 7,600 mg at full)

2. Resetting the replaced waste ink absorber counter

- At main waste ink absorber replacement:

In the iP1500 service tool CLEAR WASTE INK COUNTER section, click MAIN to reset the main waste ink counter value.

- At platen waste ink absorber replacement:

In the iP1500 service tool CLEAR WASTE INK COUNTER section, click PLATEN to reset the platen waste ink counter value.

7-2. Servicing in Asia

- Elimination of Major Component Connectors on the Logic Board Ass'y -

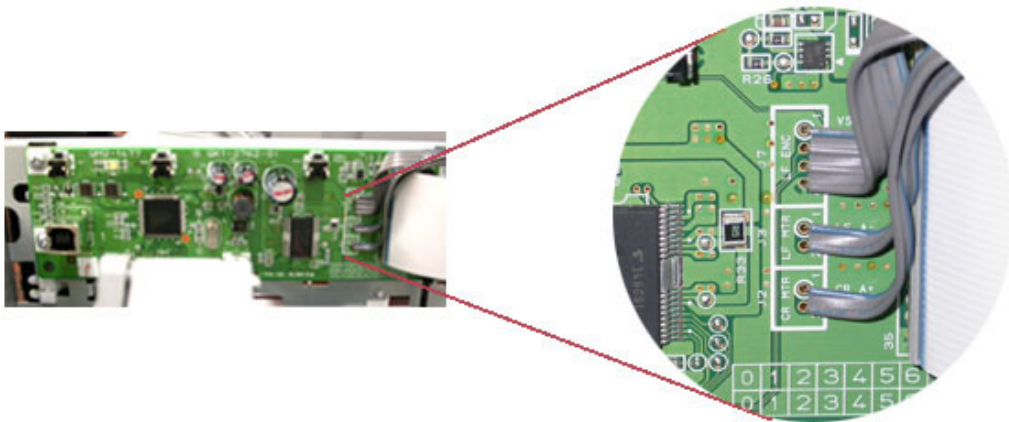
In the iP1500, the LF and CR motors and the LF encoder are soldered to the logic board ass'y, and the connectors which were used in prior models are eliminated.

In addition, the CR flexible cable is soldered to the print head to eliminate the connector. (However, in peak periods of production, instead of soldering, the connector may be used for the CR flexible cable on the print head side.)

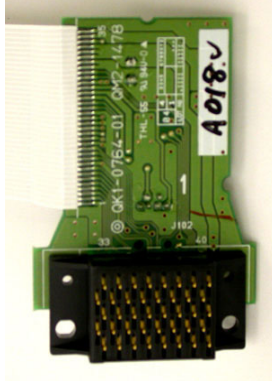
<Special notes on servicing>

In replacing the logic board ass'y, remove the solder from the backside of the logic board's LF motor, CR motor, and LF encoder cable connections, and re-solder them to the replaced logic board ass'y. Regarding the CR flexible cable, as servicing is to be conducted by replacement of the print unit, no solder removal or re-soldering of the cable itself is required.

Logic Board Ass'y



CR Flexible Cable (Print Head Side)



8. PRODUCT TECHNICAL INFORMATION

8-1. FAQ (Problems specific to the iP1500 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 when a number of sheets are loaded. (PP-101) | - Paper out error - Paper cannot be fed - Cannot print | 1. Perform roller cleaning from the printer driver. 2. Clean the paper feed roller with pre-moistened wipe or moistened cloth. | The paper feed roller slips on the paper at paper feeding. |
| 4 | B | | Multi-feeding | - Multiple pages of paper are fed simultaneously. - Blank paper is ejected. | 1. Fan the paper and set them in the ASF. 2. In case of PR-101, set the paper sheet by sheet in the ASF. | 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 pre-moistened wipe or 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 | | Envelope jam at feeding | - Paper jam error - Paper cannot be fed - Cannot print | 1. Perform roller cleaning from the printer driver. 2. Reduce the number of envelopes loaded in the ASF. | When the paper is fed by the slightly-slippery paper feed roller, the flap is caught in the return position of the claw. |
| 7 | C | | Paper jam | - Paper jam error - Paper cannot be fed - Cannot print | 1. Remove the jammed paper from the paper pick-up side. | As the LF roller slips on the paper, the paper is not fed, causing the jam error at paper ejecting. |

(8-1. FAQ (Problems specific to the iP1000 and corrective actions) cont'd)

| 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. Recommend the user to conduct printing in the print quality assurance area. (In the iP1500, the head-to-paper distance cannot be changed.) | 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) No paper selection lever

The printer does not need adjustment via a paper selection lever. (Adjustment of the head-to-paper distance when printing envelopes is not necessary.)

<Possible problems with this function>

- The head rubs against the paper when the amount of paper curl is large.
 - > Flatten curled paper (to less than 3 mm).
 - > In print modes other than borderless printing, conduct printing in the print quality assurance area of the top and bottom edges. (Top margin 28 mm, bottom margin 26.5 mm)

(3) Quiet mode

The printer has a quiet mode function.

Compared with the normal mode,

- Acoustic noise level: Slightly lower. (HQ, normal: Approx. 43.4 dB, Quiet: Approx. 42.8 dB)
- Audible overtone level: Sound quality changes, and sound becomes quieter.
- Print speed: Slows. (BK printing in HQ/HS mode using an acoustic noise measurement pattern: Approx. 1.3 times)

<Possible problems with this function>

- The operation sound does not become quieter.
 - >The audible sound becomes only slightly quieter.
- Printing is slow.
 - > Disable the Quiet mode.

(4) 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:
 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 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.

(5) 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.

<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 Timer cleaning (24 hours to 2 weeks) | BK: Approx. 0.12 g CL: Approx. 0.14 g | Approx. 40 sec. |
| Print head replacement Ink tank replacement Cleaning when the print head is not capped at printer power on | BK: Approx. 0.42 g CL: Approx. 0.52 g | Approx. 45 sec. |
| Cleaning on arrival at user Timer cleaning (2 weeks to 3 months) | BK: Approx. 0.42 g CL: Approx. 0.52 g | Approx. 60 sec. |
| Print head deep cleaning Timer cleaning (3 months or more) | BK: Approx. 1.5 g CL: Approx. 2.2 g | Approx. 70 sec. |

(6) 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 color large and small nozzles

K: Print head alignment between magenta large and small nozzles

Perform from the printer driver's Maintenance.

(At initial set-up by the user, notice to perform the print head alignment is displayed in the Status Monitor.)

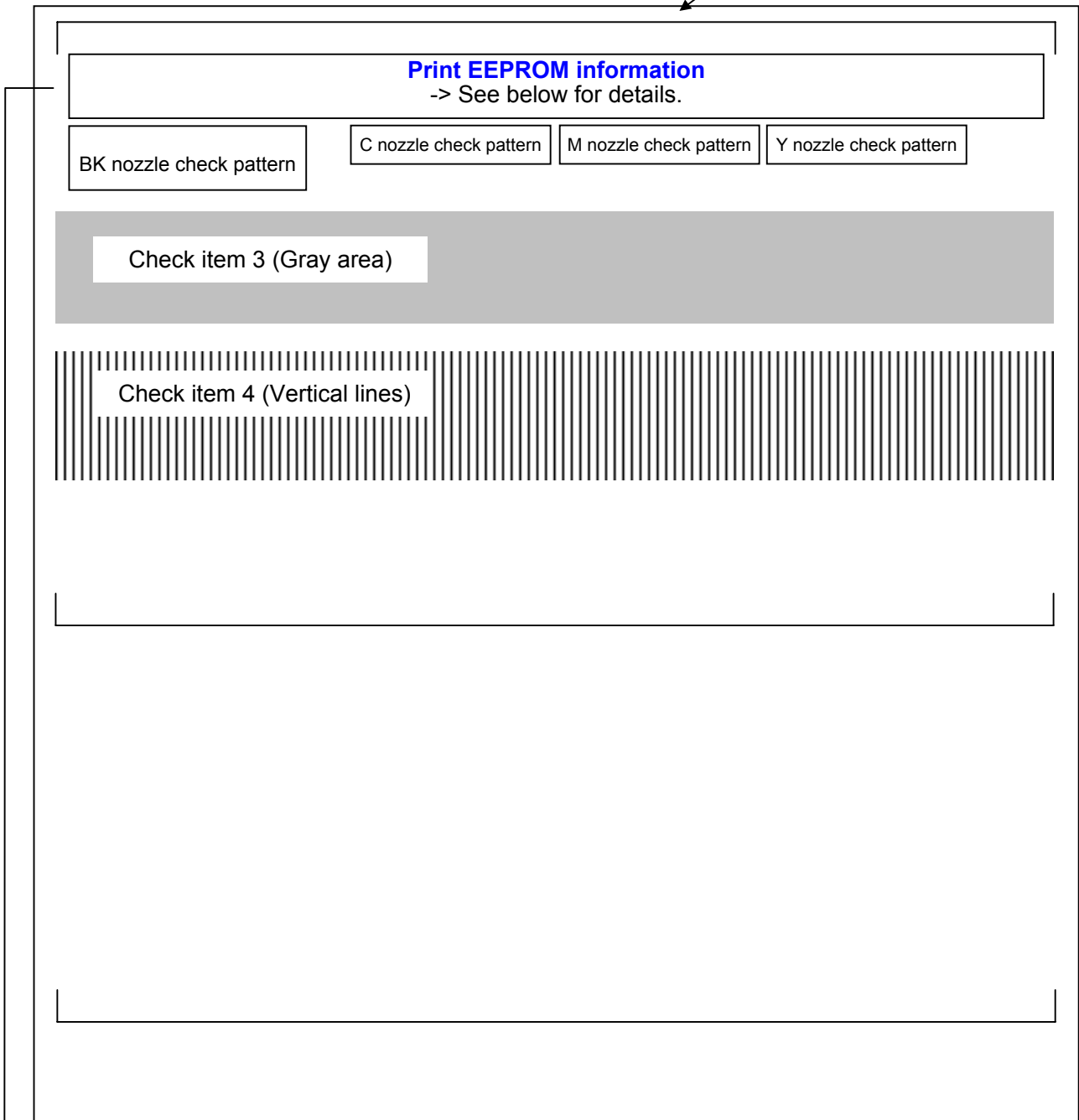
<Possible problems with this function>

- The line is not straight.
 - > Perform print head alignment from the printer driver.
- Printout is granulated.
 - > Disable the Quiet mode.

APPENDIX 1: SHIPMENT INSPECTION PATTERN 1

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

Check item 2 (Top of form)



Paper size: A4

<EEPROM information print>

```

IP1500 P=V_X.XX D=XXXXX.X Page=XXXX PL=XXXX,HR=XXXX,GP=XXXX,CA=XXXX,BL=XXXX
SettingTime=XXXX/XX/XX XX:XX YY YY YY YY USB=(YYYYYY)
    
```

--- Model name

--- ROM version

--- Main ink absorber waste ink amount (%)

----- Installation time

--- Number of sheets fed

Page: Total

PL: Plain paper

PR: PR-101, PP-101, MP-101

CA: Postcard, inkjet postcard, glossy photo card

BL: Borderless printing (counted separately from the count by paper type)

APPENDIX 2: iP1500 SERVICE TOOL

<How to use the iP1500 Service Tool (QY9-0066)>

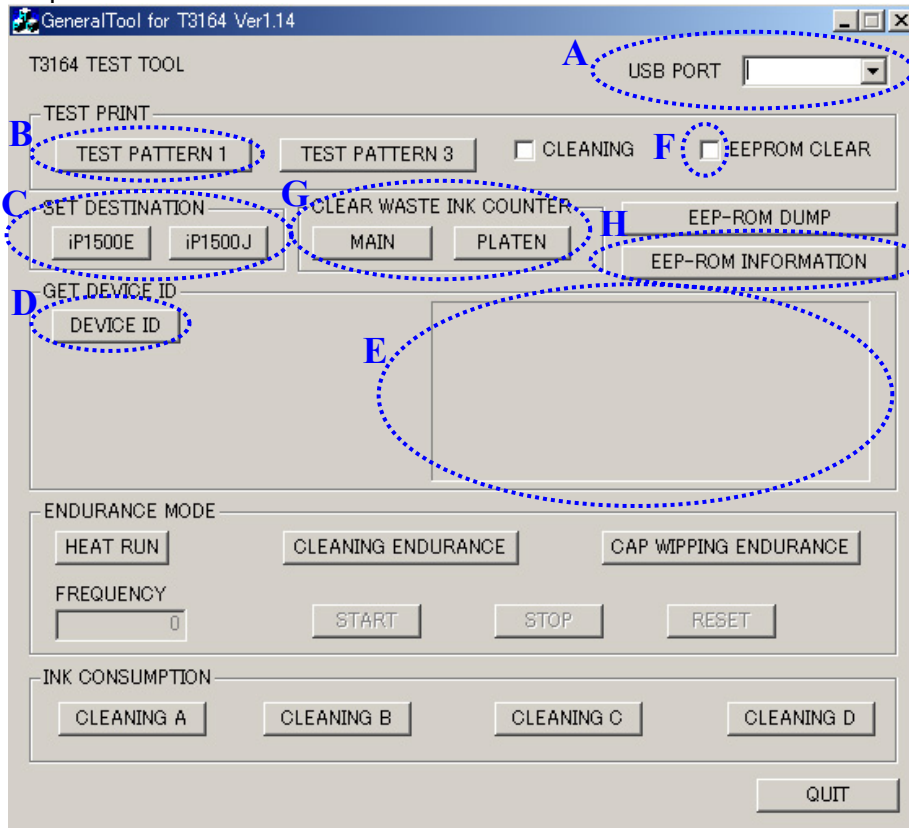
Usage: Shipment inspection pattern printing/Destination setting in EEPROM/EEPROM reset

Supported OS: Windows 98 / ME / 2000 / XP (J/E version) : QY9-0066

Distribution method: Provided by SSIS (Download "iP1500 Service Tool" from software download in SSIS.)

<Usage procedures>

1. Unzip **iP1500tool_V100.EXE**. (Double-click to unzip the file.)
2. Open the **iP1500tool_V100** folder created after unzipping.
3. Open **GeneralTool.exe**.



4. Select the connected USB port number from USB PORT (A).

<How to print the shipment inspection pattern>

1. Select TEST PATTERN 1 (B), and the shipment inspection pattern 1 will be printed. (Refer to APPENDIX 1, SHIPMENT INSPECTION PATTERN 1.)

<How to set the destination>

1. In SET DESTINATION (C), select the applicable model name.
 - “iP1500J” for Japan model
 - “iP1500E” for non-Japan models
2. Click DEVICE ID (D), and confirm the model name indicated in the (E) area (iP_1500 for iP1500J, iP1500 for iP1500E). Or, confirm the model name on the shipment inspection pattern printout.

<How to reset EEPROM>

After marking the EEPROM CLEAR check box, perform the shipment inspection pattern printing. The EEPROM will be reset.

<How to reset the waste ink counter>

In CLEAR WASTE INK COUNTER (G), select MAIN or PLATEN. The selected waste ink counter will be reset.

MAIN resets the main waste ink counter.

PLATEN resets the platen waste ink counter.

If both the main and platen waste ink absorbers are replaced, reset both the main and platen waste ink counters.

<How to confirm EEPROM information details>

Click EEP-ROM INFORMATION (H). The EEP-ROM INFORMATION dialog box will open to display EEPROM information details.