MP160
SERVICE REFERENCE MANUAL

(Differences from the base model, PIXMA MP150, only)

1. PRODUCT LIST

1-1. Main Units

Product name	Product code	Destination	Remarks
Canon Multifunction Inkjet Printer PIXMA MP160	1447B002AA	US	
	1447B003AA	CA	
	1447B004AA	LAM-LV	
	1447B005AA	LAM-HV	
	1447B006AA	EUM	
	1447B007AA	EMB	
	1447B008AA	GB	
	1447B011AA	AU	
	1447B012AA	ASA	
	1447B013AA	HK	
	1447B014AA	CN	
	1447B015AA	TW	
	1447B016AA	KR	
	1447B017AA	BR	

2. PRODUCT SPECIFICATIONS

2-1. Machine Specifications

Printing speed	Approx. 52 sec. (PP-101, 4 x 6, borderless printing, default print quality settings) For reference:
Interface	Direct print port (PictBridge)
Paper weight 　Transparency	Not supported.
Acoustic noise level 　Printing from a computer	Approx. 44.5 dB (highest print quality settings)
Copying	Approx. 48.0 dB (highest print quality settings)
Weight	Approx. 6.3 kg (including the ink cartridges)
Scanner 　Optical resolution	600 x 1,200 dpi (max.)
Scanning resolution	600 x 1,200 dpi (max.)
Copy 　Number of continuous copying	Monochrome / color:　1 to 9 sheets, 20 sheets
Throughput *1	Approx. 53 seconds
Camera Direct printing 　Supported digital cameras	Digital cameras and digital video cameras supporting PictBridge
Throughput *2	Approx. ~~52~~ 66 seconds, ~~with the following conditions and settings:~~ ~~- A photo from a 6 mega-pixel digital camera~~ ~~- PP-101 4" x 6"~~ ~~- Exif Print, Standard~~ ~~- Process from pressing the printing start button to ejecting paper~~

For the "For reference" sub-table in Printing speed:

	Custom setting 5	Standard
Black (J/E)	22 ppm	13.7 ppm
Color (J/E)	17 ppm	9.0 ppm

Note:　Not Blue Angel compliant.

*1:　Document copy speed is based on copying the manuscript "ISO/IEC FCD24712: Newsletter" (digital data printed by offset) using default settings on plain paper.
Copy speed may vary depending on document complexity, copy mode, page coverage, type of paper used, etc. and does not take into account warming up time.

*2:　When printing a 6 megapixel image taken by certain Canon digital camera from PictBridge on default settings using Photo Paper Plus Glossy without border.
Actual print speed may vary depending on image data, print mode, type of paper used and device that the printer is connected to.

2-2　Product Life

Same as the MP150.

<Ink cartridge yield>

Units:　pages

	Standard		High capacity	
	BK	CL	BK	CL
	PG-40	CL-40	PG-50	CL-51
Black document (ISO/IEC 19752)[*1]	348	(3,350)	510	(5,590)
Color document (ISO/IEC FCD24712)[*1]	355	308	547	560
Photo (4" x 6")[*2]	(2,165)	120	(3,275)	198

Note:　( ):　Estimated supplemental yield

*1:　Black/Color document: Declared yield value in accordance with ISO/IEC FCD24711. Values are obtained by continuous printing.

*2:　Photo (4" x 6"): When printing Canon standard patterns on 4" x 6" Photo Paper Plus Glossy continuously with the default settings of Photo Paper Plus Glossy using Windows XP printer driver in borderless printing mode and Windows XP Photo Printing Wizard.
Declared yield value is determined based on Canon standard method referring to ISO/IEC FCD24712.

3. ERROR DISPLAY

"E" and numeric value(s) are alternately displayed on the LED.

3-2. Service Call Errors

LED display	Error (Error code)	Parts which are likely to be faulty
E, 2, 2	Carriage error [5100]	- Carriage unit (main unit) - Timing slit strip film - Logic board ass'y - Carriage motor (main unit)
E, 2, 3	Paper feed error [6000]	- Timing sensor ass'y - Timing slit disk film (main unit) - Feed roller ass'y (main unit) - Platen (main unit) - Logic board ass'y - Paper feed motor (main unit)
E, 2, 4	Purge cam sensor error [5C00]	- Carriage unit (main unit) - Timing slit strip film - Logic board ass'y - Carriage motor (main unit)
E, 2, 5	ASF cam sensor error [5700]	- Drive ass'y (main unit) - PE sensor ass'y - Pressure roller ass'y (main unit)
E, 2, 6	Internal temperature rise error [5400]	- Logic board ass'y

E, 2, 7	Main ink absorber full [5B00] or platen ink absorber full [5B10]	Main ink absorber:
		  - Bottom case unit (main unit)
		  - Ink absorber kit
		Platen ink absorber:
		  - Ink absorber
		  - Ink absorber kit

E, 2, 8	Ink cartridge temperature rise error [5200]	- Print head - Logic board ass'y
E, 2, 9	EEPROM error [6800]	- Logic board ass'y
E, 3, 2	AP position error [6A00]	- Drive ass'y (main unit) - PE sensor ass'y - Logic board ass'y
E, 3, 5	USB Host VBUS overcurrent [9000]	- Logic board ass'y
E, 3, 7	Abnormal motor driver error [6D00]	- Logic board ass'y
E, 4, 0	Other hardware error [6500]	- Logic board ass'y
E, 4, 2	Scanner error [5010]	- Scanner unit - Logic board ass'y

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. 70% of ink remaining)	
Ink low warning 2 (approx. 40% of ink remaining)	
Ink low warning 3 (low remaining ink)	
Ink low warning 4 (no ink remaining)	
Remaining ink level unknown	

4. REPAIR

4-1. Notes on Service Part Replacement (and Disassembling / Reassembling) in Asia

Service part	Notes on replacement	Adjustment/settings	Operation check
Logic board ass'y (QM3-1691)	- Before removal of the logic board ass'y, remove the power cord, and allow for approx. 1 minute (for discharge of capacitor's accumulated charges), to prevent damages to the logic board ass'y. - Before replacement, check the ink absorber counter value. If the value is 7% or more, also replace the ink absorber when replacing the logic board ass'y. If the ink absorber is not replaced, then set the ink absorber counter value to the replaced new logic board ass'y.	After replacement: 1. Initialize the EEPROM. 2. Reset the ink absorber counter. If the ink absorber is not replaced, set the ink absorber counter value to the replaced new logic board ass'y, while referring to 4.2, "Service Mode" below. 3. Set the destination in the EEPROM. 4. Perform the print head alignment in the user mode.	- EEPROM print - Service test print - Printing via USB connection - Camera Direct print
Operation panel unit (QM3-1358)		After replacement: 1. Check the buttons and the LCD. See 4.2, "Service Mode."	

4-2. SERVICE MODE

Number of times the Stop/Reset button is pressed	LED	Function	Remarks
12 times	Green	Button and LCD test	
13 times	Orange	Sets the ink absorber counter value (ink amount in the ink absorber)	See below for how to set the ink counter value.
14 or more times		Returns to the menu selection	

<How to set the ink absorber counter value>

1) In the ink absorber counter setting mode, press the Stop/Reset button the specified number of time(s) according to the ink absorber whose counter value should be transferred to the EEPROM.

Times	LED	
0 times	Green	Main ink absorber
1 time	Orange	Platen ink absorber
2 times	Green	Both the main and platen ink absorbers
3 times or more		Returns to the ink absorber counter setting mode

2) Press the ON/OFF button to proceed to the next step.

3) The ink absorber counter value can be set in 10% increments by pressing the Stop/Reset button. Press the Stop/Reset button the appropriate number of time(s) to select the value which is closest to the actual ink amount in the ink absorber.

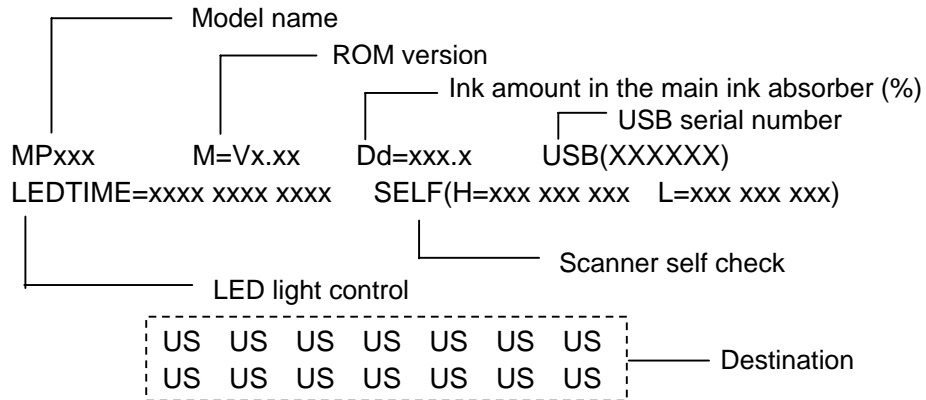| Times	Ink absorber counter value to be set(%)
0 times	0%
1 time	10%
2 times	20%
3 times	30%
4 times	40%
5 times	50%
6 times	60%
7 times	70%

8 times	80%
9 times	90%
10 times or more	Not valid. Press the ON/OFF button to return to the ink absorber counter setting mode.

4) Press the ON/OFF button to set the selected value to the EEPROM.

APPENDIX 1: SHIPMENT INSPECTION PATTERN 1

<EEPROM information contents>

On the service test print (sample below), confirm the EEPROM information as shown below. (The information is given in the upper portion of the printout.)
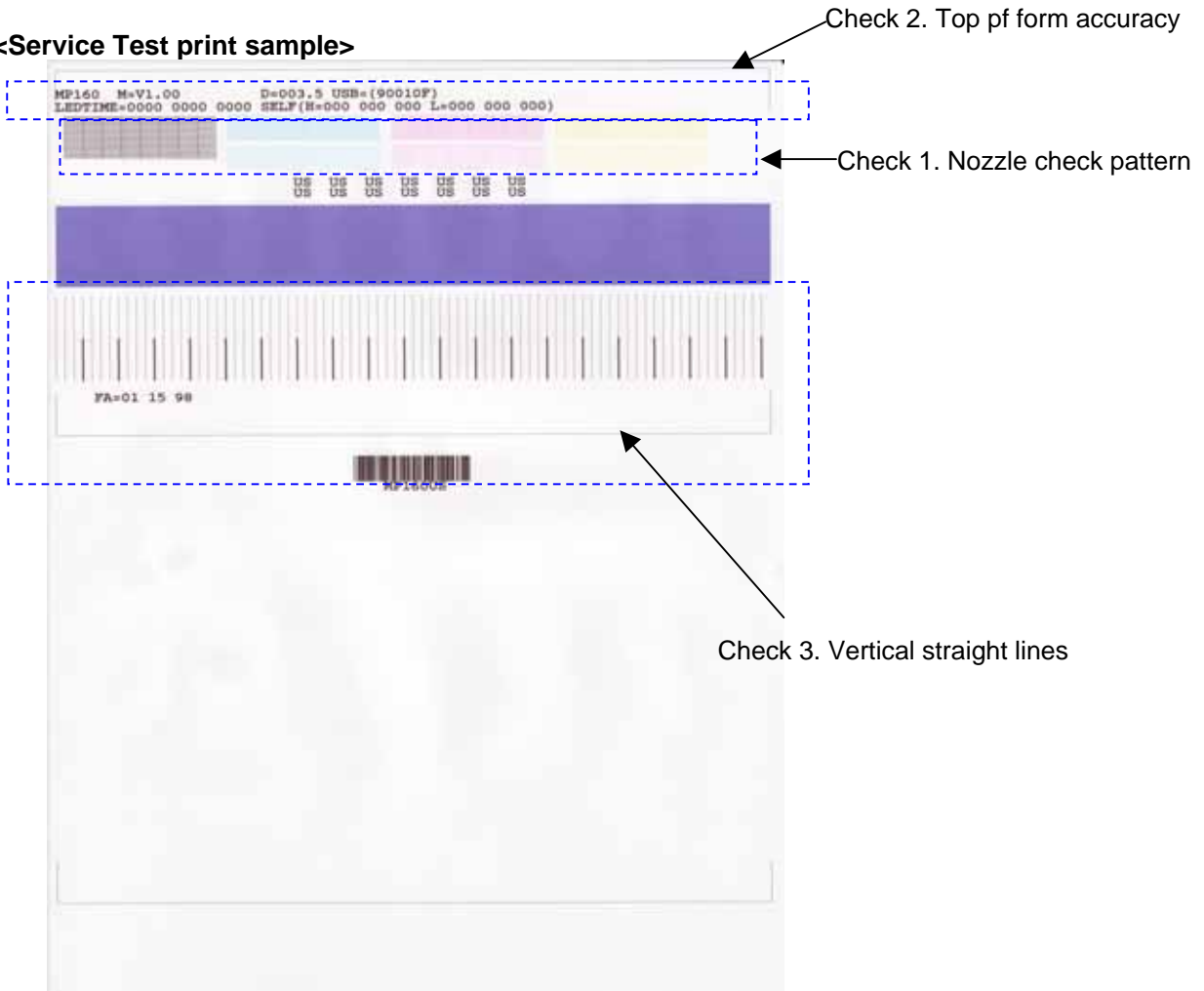
Model name

ROM version

Ink amount in the main ink absorber (%)

USB serial number

MPxxx   M=Vx.xx   Dd=xxx.x   USB(XXXXXX)

LEDTIME=xxxx xxxx xxxx   SELF(H=xxx xxx xxx   L=xxx xxx xxx)

Scanner self check

LED light control

US US US US US US US
US US US US US US US

Destination

<Print check items>

On the service test print (sample below), confirm the following items:
- Check 1, nozzle check pattern: Ink shall be ejected from all nozzles.
- Check 2, top of form accuracy: The line shall not extend off the paper.
- Check 3, vertical straight lines: The line shall not be broken.

<Service Test print sample>

Check 2. Top pf form accuracy

MP160 M=V1.00   D=003.5 USB=(90010F)
LEDTIME=0000 0000 0000 SELF(H=000 000 000 L=000 000 000)

Check 1. Nozzle check pattern

US US US US US US US
US US US US US US US

FA=01 15 98

MP160US

Check 3. Vertical straight lines

APPENDIX 2: EEPROM INFORMATION PRINT
<How to read EEPROM information print>

Print sample:

```
MP160   US   V1.00   ST=2006/05/30-16:41   LPT=2006/07/04-10:25
ER(ER0=1000 ER1=5100)   P_ON(S=00001)   MSD(000)
IF(USB1=1)   PC(M=000 R=000 T=011 D=000 C=000)
D=008.0   Ps 000.0
TPAGE(TTL=00022   COPY=00005)
CLT(2006/06/02-11:34)
CT(BK_ST=002 BK_HC=002 CL_ST=000 CL_HC=000)
IS(BK=0 M=0 C=0 Y=0)
IC(BK=02150 M=02435 C=02001 Y=02081)
A_REG=0   M_REG=1
CDIN(PB=000 OPB=000)   BTIN=0
PAGE(All=00145 PP=00112 HR+MP=00000 PR+SP+SG=00033 GP=00000 PC=00000 EV=00000)
CDPAGE(All=00000)
EDGE=00000   L=00031   BTPAGE=00000
```
<Direct>
```
LG=00 Unknown      CDI=000   CDP=000
CDD-PR (L=00020   2L=00000   PC=00000   A4=00000)
CDD-SP (L=00020   2L=00000   PC=00000   A4=00000)
CDD-MP (L=00020   2L=00000   PC=00000   A4=00000)
DCD-PP (L=00020   2L=00000   PC=00000   A4=00000)
DCD-FPP (L=00020   2L=00000   PC=00000   A4=00000)
DCD-MPP (L=00020   2L=00000   PC=00000   A4=00000)
PrnB=00000   SC=00000   Seal=00000
```
<Scanner>
```
SC=00000   SCAN_ER(ER0=0000 ER1=0000)
SC-dpi(75=00000   150=00000   300=00000   600=00000   1200=00000   2400=00000)
SG(GY=00000   CL=00000)
```
<Copy>
```
MCASF(PP=00000   SP+PR+GP=00000   OTH=00000)
CCASF(PP=00000   HR+MP=00000   PR+SP+SG=00000   GP=00000   PC=00000)
```

- EEPROM Information <Hex.> -

Printed items:
1: Model name (Destination)
2: ROM version
3: Installation date
4: Last printing time
5: Operator call / service call error record
6: Power-on count (S = soft-power-on)
7: Longest period of non-printing
8: I/F connection (USB1)
9: Purging count (manual cleaning, deep cleaning, timer cleaning, cleaning by dot count, cleaning at ink cartridge replacement)
10: Ink amount in the ink absorber (main, platen)
11: Number of all pages fed (total, number of copying sheets)
12: Last cleaning time

13: Ink cartridge replacement count (Black standard, black high capacity, color standard, color high capacity)
14: Ink status (BK/M/C/Y)
15: Total ink consumption amount (BK/M/C/Y)
16: Half-automatic print head alignment on the machine
17: Manual print head alignment via the MP driver
18: Camera Direct print-supported device connection record (Canon PictBridge, other PictBridge)
19: Bluetooth-supported device connection record (BTIN=BLUETOOTH INSERT)
20: Number of pages fed from ASF (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)
21: Camera Direct print pages in total
22: Borderless print pages
23: L & 4x6 print pages
24: Print pages via Bluetooth connection (BTPAGE=BLUETOOTH PRINT PAGE)
<Direct>
25: Language setting
26: Number of times a memory card is inserted (CDI=Card Install)
27: Total Card Direct print pages (CDP=Card Print)
28: Memory Card Direct print pages: Photo Paper Pro (4x6, 5x7, postcard, A4/LTR)
29: Memory Card Direct print pages: Photo Paper Plus Glossy (4x6, 5x7, postcard, A4/LTR)
30: Memory Card Direct print pages: Matte Photo Paper (4x6, 5x7, postcard, A4/LTR)
31: Camera Direct print pages: Photo Paper (4x6, 5x7, postcard, A4/LTR)
32: Camera Direct print pages: Fast Photo Paper (4x6, 5x7, postcard, A4/LTR)
33: Camera Direct print pages: Matte Paper (4x6, 5x7, postcard, A4/LTR)
34: Print Beam pages fed (PrnB=Print Beam)
35: Business Card / Credit Card size paper pages fed
36: Sticker pages fed
<Scanner>
37: Total number of scanning
38: Scanning error status history
39: Number of scanning by the scanning resolution (75/150/300/600/1200/2400 dpi)
40: Number of scanning by the scanning tone (grayscale/color)
<Copy>
41: Number of monochrome copy pages fed from ASF (plain paper, Photo Paper Plus Glossy , Photo Paper Pro, Glossy Photo Paper, other paper)
42: Number of color copy pages fed from ASF (plain paper, High Resolution Paper & Matte Photo Paper, Photo Paper Pro & Photo Paper Plus Glossy & Photo Paper Plus Semi-gloss, Glossy Photo Paper, postcard)

- Printer EEPROM information dump in hex -