This training course explains the differences between the PE-MF2 series and the older PE-MF1 series.

What Models are there in the Series?

- **PE-MF2b (M018)**
  - 20 ppm (color and b/w)
  - No optional memory
  - DDST (GDI)
  - Duplex built-in
  - Fax built-in
  - Optional 500-sheet paper tray
- **PE-MF2c (M019)**
  - 20 ppm (color and b/w)
  - Optional 256MB memory available
  - PCL/PS
  - Duplex built-in
  - Fax built-in
  - Optional 500-sheet paper tray

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No additional notes

Appearance

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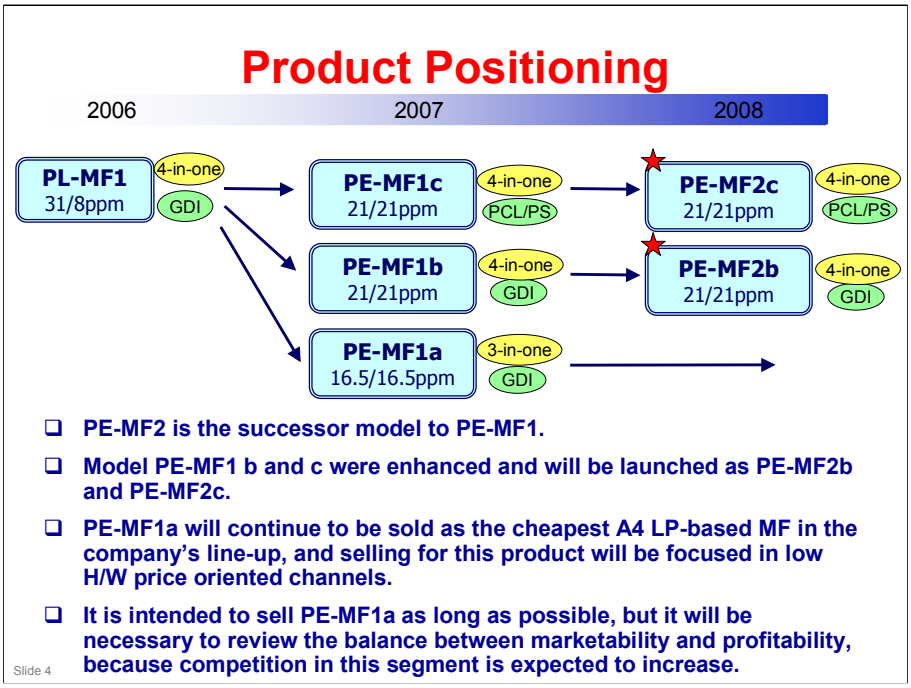
- These machines have a built-in ADF.



- 3-in-one: Copier, Printer, Scanner
- 4-in-one: Copier, Printer, Scanner, Fax

Operation Panel

- **There is a User Tools button to make initial setup easier.**

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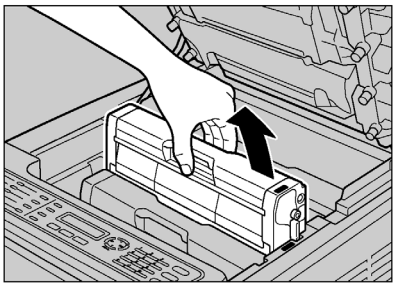
- Service mode is the same as the PE-MF1. It is not necessary to use a PC, like it was for the PE-P1.

Uses an AIO Cartridge



- **The OPC, charge roller, and development unit are all in an AIO cartridge.**
  - AIO: All-in-one
- **The cartridge can be removed with one hand.**
- **The AIO cartridge for the PE-MF2 is different from the AIO cartridge for the PE-MF1.**
  - It is the same as the AIO cartridge that is used with the MD-P1.

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No additional notes

Two Types of AIO (Print) Cartridge

- **Starter**
  - 1 k prints per cartridge
- **Short Yield**
  - 2.5 k prints per cartridge
- **Long (High Yield)**
  - 6.5 k prints per cartridge (BK)
  - 6.0 k prints per cartridge (CMY)
    - » Method was changed: From 5% chart & 50% color to ISO19798
    - » Yield based on ISO 19798 (ISO chart, continuous prints)
- **Waste Toner Tank**
  - Approximately 25 k prints per tank

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No additional notes

Standard Equipment

- **This equipment is built-in for both models.**
  - 35-sheet automatic document feeder
  - 250-sheet paper feed unit
  - 1-sheet bypass feed
  - Duplex (for printing and copying)
    - » PE-MF1: Duplex is for printing only
  - Ethernet: 10Base-T/100base-TX
  - USB 2.0
  - Fax
- **Memory**
  - RAM: 128 MB (Main board: PE-MF2b & PE-MF2c)
    - » PE-MF2c also has 128MB on its PDL board (built-in), with an empty slot which can be upgraded with an optional 256MB board, for a maximum of 384MB on the PDL board (in addition to the main board's 128MB)
      - – Note: As the memory for the main board and the memory for the PDL board serve different functions, the 128MB of the Main Board and the maximum of 384MB on the PDL board should ***not*** be thought of as additive for a total of 512MB.
  - No hard disk (built-in or optional) for either model

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- Memory
  - PE-MF2b (GDI model): The memory on the main board is used for printing.
  - PE-MF2c (PDL/PS model): The memory on the PDL board is used for printing. Raster data in the memory on the PDL board is sent to the memory on the main board. However, the memory on the main board is not used for printing processing; it is only a temporary holding area. So the 128 MB on the main board cannot be included in the total printer memory spec.

Optional Equipment

- Memory Unit Type F 256MB, G891 (PE-MF2c only)
- TK1010 Paper Feed Unit, G849 (PE-MF2b and PE-MF2c)
- Both of these are also used in the PE-MF1.

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No additional notes

Improvements to Basic Features

- **Faster warm-up time**
  - Improved from 51 s to 48 s
- **Higher yield for the AIO Cartridge**
  - Improved from 2k to 6.5k (black) and 6k (CMY)
- **Improved copying functions**
  - "Duplex Copy", for example.
  - In the PE-MF1, duplex printing is available but not duplex copying.
- **PC-Fax is added**
- **Improvement of "Dual Access Capability"**
  - This means that there are more cases in which the machine can do two jobs at the same time (for example, scanning and printing a fax at the same time).
- **Additional security features, such as "Locked Print" and "User Restriction".**
- **Improved operation panel**
  - A User Tools key was added.

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No additional notes

Main Specifications - 1/2

- **Warm-up time: 48 seconds**
- **First copy speed: 30 seconds**
- **First print speed: Less than 14 seconds**
- **Paper Input Capacity:**
  - 250 sheets (standard tray)
  - 1 sheet (bypass tray)
  - 500 sheets (optional paper tray unit)
- **Paper Output Capacity: 150 sheets**
- **Paper Weight**
  - Standard and bypass trays: 60 - 160g/m^2, 16lb - 40lb Bond
  - Optional paper tray unit: 60 - 105g/m^2, 16lb - 28lb Bond

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- Why is 1st copy time so much slower than the 1st print time?
  - Scanner initialization and movement to the start position takes more time.
- Duplex printing speed is about 60% of the normal printing speed)
  - Duplex printing cannot be done for thick paper (more than 105 g/m^2, 28 lb Bond).
- Printing on OHP transparencies is not possible.
- Other specs:
  - Printer Language

    PE-MF2b: DDST (GDI)

    PE-MF2c: PCL 5c/6, PostScript Level 3 emulation
  - Paper sizes, paper types, paper weights: See the Operating Instructions (Hardware Guide - 4. Paper and Other Media)

Main Specifications - 2/2

- **Memory (RAM)**
  - 128 MB (Main board: PE-MF2b & PE-MF2c)
  - PE-MF2c also has 128MB on its PDL board (built-in), with an empty slot which can be upgraded with an optional 256MB board, for a maximum of 384MB on the PDL board (in addition to the main board's 128MB)
    - » Note: As the memory for the main board and the memory for the PDL board serve different functions, the 128MB of the Main Board and the maximum of 384MB on the PDL board should ***not*** be thought of as additive for a total of 512MB.

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- Memory
  - PE-MF2b (GDI model): The memory on the main board is used for printing.
  - PE-MF2c (PDL/PS model): The memory on the PDL board is used for printing. Raster data in the memory on the PDL board is sent to the memory on the main board. However, the memory on the main board is not used for printing processing; it is only a temporary holding area. So the 128 MB on the main board cannot be included in the total printer memory spec.
- Print Resolution settings: There are three settings (600 x 600 1-bit, 600 x 600 2-bit [also called 1200 x 600], 600 x 600 4-bit [also called 2400 x 600 dpi])
  - Without 256 MB of extra memory, 2400 x 600 dpi duplex LG size cannot be printed (PCL/PS). For PostScript printing, 2400 x 600 dpi Duplex also cannot be printed for A4/LT or A5.
- Other specs
  - Maximum paper size for scanning

    Exposure glass: A4, Letter (8.5×11")

    ADF: Legal (8.5×14")
  - Maximum paper size for printing: Legal (8.5×14")
  - ADF capacity: 35 sheets
  - Scan area (scanner mode)

    Exposure glass: 216 x 297 mm (8.5 x 11.7 inches)

    ADF: 216 x 356 mm (8.5 x 14.1 inches)

Fax Specifications

- Resolution: 8 x 3.85, 8 x 7.7 dots/mm
- Modem rate (max): 33.6 kbps
- Transmission time: 3 seconds
- Data compression method: MH, MR, MMR
- Memory capacity: More than 100 sheets (8 x 3.85)
- Speed dial: 50 (total for Fax and Scan to E-mail)
- Group Dial: No
- Quick dial: 20
- Number of redials: 1

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No additional notes

Comparison with PE-MF1 - 1/2

			PE-MF1b	PE-MF1c	PE-MF2b	PE-MF2c
Common	Paper input	std	250 sheets + 1 sheet Bypass		250 sheets + 1 sheet Bypass	
		Op	500 sheets x 1		500 sheets x 1	
	Paper output capacity		150 sheets		150 sheets	
	Paper Weight	Standard Tray	60 - 160g/m2		60 - 160g/m2	
		Op. Paper Tray	60 - 105g/m2		60 - 105g/m2	
	Warm-up time		51 sec.		48 sec.	
	Dimensions (WxDxH)		420x493x476mm		420x493x476mm	
	I/F		USB2.0, 100Base-TX		USB2.0, 100Base-TX	
Scanner	Paper input capacity		Platen 1sheet, ADF 35 sheets (max.)		Platen 1sheet, ADF 35 sheets (max.)	
	Resolution (dpi, bit/pixcel)		1200 x 1200 dpi		1200 x 1200 dpi	
	I/F		TWAIN, WIA		TWAIN, WIA	
	Feature	Scan to e-mail	Yes		Yes	
		Scan to Folder	Yes		Yes	
		Scan to FTP	Yes		Yes	

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- The red areas show improvements.

Comparison with PE-MF1 - 2/2

			PE-MF1b	PE-MF1c	PE-MF2b	PE-MF2c
Printer	Printing Speed(A4/LT)		Mono:20ppm/21ppm F/C: 20ppm/21ppm		Mono:20ppm/21ppm F/C: 20ppm/21ppm	
	First	Mono	Less than 14 sec		Less than 14 sec	
		F/C	Less than 14 sec		Less than 14 sec	
	Resolution (dpi, bit/pixcel)		600x600 dpi, 1200 x 600 dpi, 2400 x 600dpi		600x600 dpi, 1200 x 600 dpi, 2400 x 600dpi	
	Duplex		Yes (Standard)		Yes (Standard)	
	Printer Laungage		DDST (GDI)	PCL, PS3	DDST (GDI)	PCL, PS3
Copy	Continuous Copy Speed		Mono:20ppm F/C: 20ppm		Mono:20ppm F/C: 20ppm	
	First	Mono	30sec		30sec	
	Copy Speed	F/C	30sec		30sec	
	Resolution (dpi, bit/pixcel)		600 x 600 dpi		600 x 600 dpi	
	Duplex		No		Yes	
	ID Copy		No		Yes	
Fax	Compatibility		Super G3		Super G3	
	PC Fax		No		Yes	
	Internet Fax		No		No	
Security			No		YES (Locked Print / User Restriction)	
Supply	Black/Color Yield		2K/2K		2.5K/2.5K, 6.5K/6.0K	

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New Functions

- ID Copy
  - Use for printing 2-sided originals, such as an ID card, on one sheet. One side of the original is printed on the upper half of the paper and the other side is printed on the lower half.
- User Restriction
  - When user restriction is turned on, users must input their User ID and Password.

Supplies

- **Starter**
  - 1 k prints per cartridge
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    - » Yield based on ISO 19798 (ISO chart, continuous prints)
- **Waste Toner Tank**
  - Approximately 25 k prints per tank

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- AIO yield for the PE-MF1 was 2K.
- Used toner bottle yield was measured when printing at 3P/J and a color ratio of 50% color, 50% b/w

Targets

- **Average Monthly Print Volume**
  - 0.75K prints (PE-MF2b)
  - 0.9K prints (PE-MF2c)
  - Color ratio: 60%
- **Maximum Monthly Print Volume: 1.5K prints**
- **Estimated Unit Life: 5 years or 90K prints**

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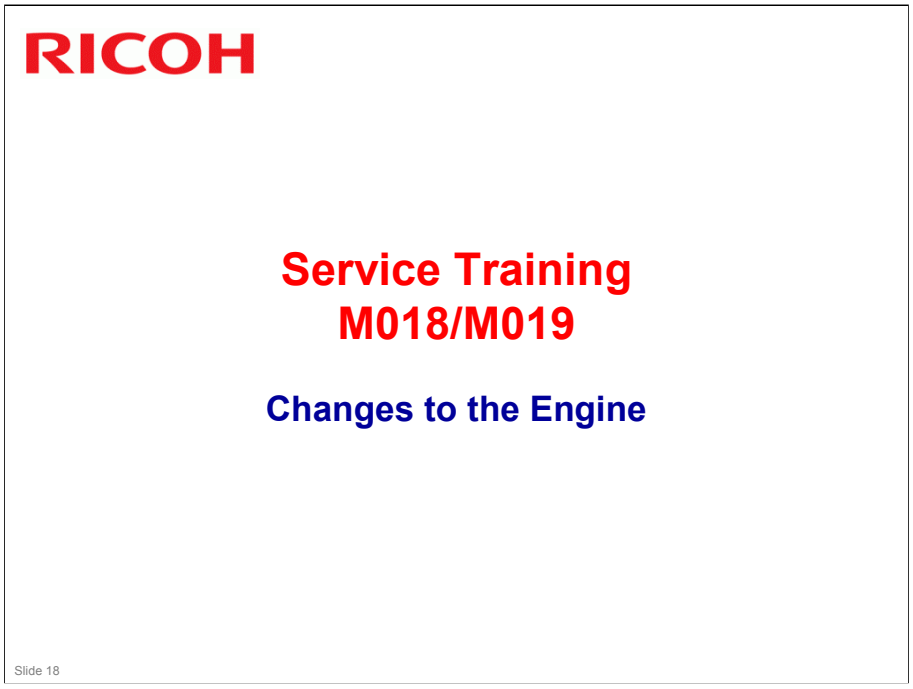
No additional notes



No additional notes

Replacement Procedures

- **ITB Unit, Laser Optics Housing Unit**
  - The changes were also applied to the PE-MF1, as stated in earlier technical bulletins.

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No additional notes

Firmware Update Procedures

- **Controller Firmware Update**
  - The procedure has changed.
  - If the update procedure failed, note the following points:
    - » The machine must be connected to a computer by USB.
    - » When using a computer running on a Windows operating system, you must have an account that has Manage Printers permission. Log on as an Administrator or Power Users group member to acquire this permission.
  - For details of the new procedures, and how to recover the machine if the update failed, see the service manual.
    - » System Maintenance Reference, Firmware Updating

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No additional notes

Image Problem Troubleshooting

- **This section has been changed, and there is a new procedure for printing a test page to check the cause of the problem.**
  - Service Manual: Troubleshooting, Image Problems

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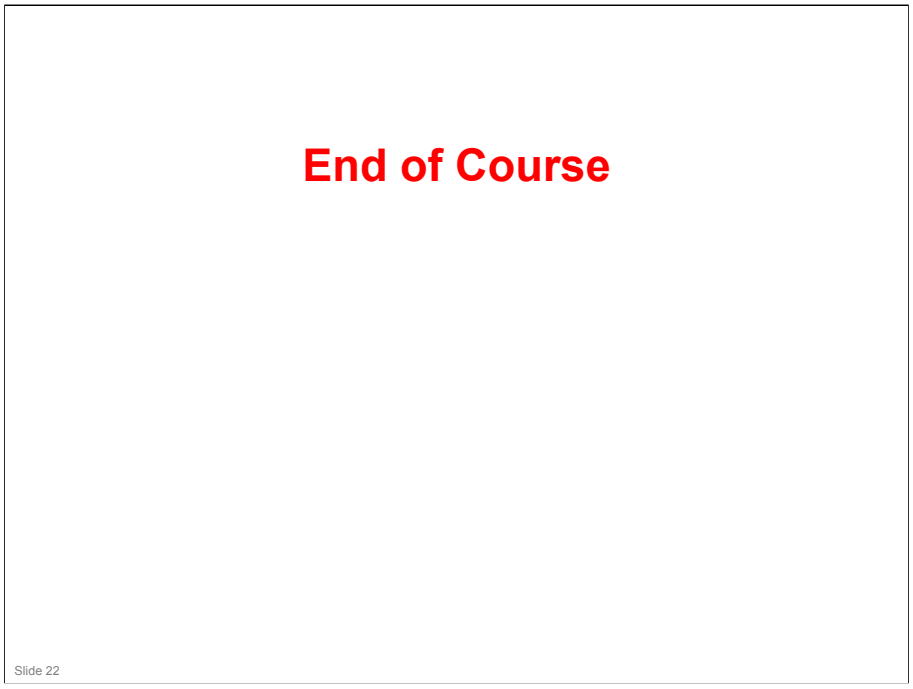
No additional notes



No additional notes