RICOH

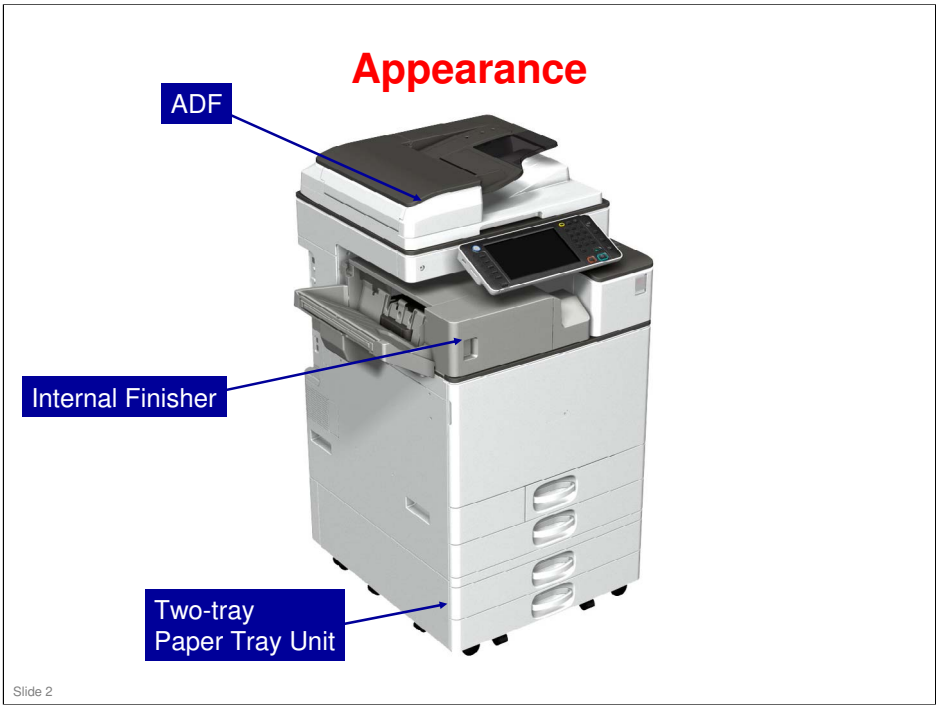
D176/D177
Service Training

Met-C1yz

Version 1.0

This course explains the new additions to the Met-C1 series of middle-to-high range color MFPs. These new models are successors to the Di-C1.5-series.

The course explains differences from the Met-C1ab, and compares the specifications with those of the Di-C1.5.



- Customers can install a simple ADF. It is the same as the K-C4.

This section provides an overview of the machine, and the options that can be installed.

What Models are there in the Series?

Comparing Basic Specifications

- **Met-C1y (D176)**
  - 20 cpm (b/w, color)
- **Met-C1z (D177)**
  - 25 cpm (b/w, color)

Slide 4

No additional notes

What Models are there in the Series?
Regional Variations in Standard Models

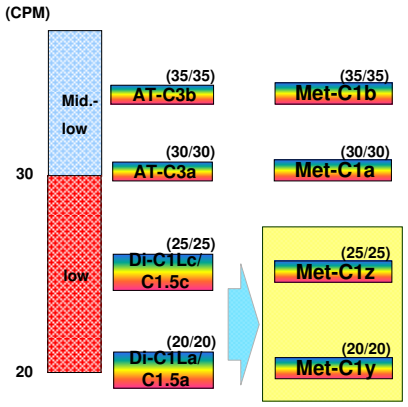
	RAC	RE	RA	RCN
C1y	1 model ARDF is standard; Smart Operation Panel is option	2 models 1) ARDF, normal operation panel (The Smart operation panel is not available as an option) 2) ARDF, Smart operation panel	1 model ARDF is option; Smart Operation Panel is option	1 model ARDF is option; Smart Operation Panel is option
C1z	1 model ARDF is standard; Smart Operation Panel is option	2 models 1) ARDF, normal operation panel (The Smart operation panel is not available as an option) 2) ARDF, Smart operation panel	1 model ARDF is option; Smart Operation Panel is option	1 model ARDF is option; Smart Operation Panel is option

Slide 5

No additional notes

Product Positioning

- Met-C1a/b: Successors to the Di-C1.5 and Di-C1L series



Slide 6

No additional notes

Comparing Specifications
Met-C1y/z - 1

	Di-C1.5		Met-C1	
	a	c	y	z
Size (WxDxH, mm)	587 x 676 x 724 , w/o ADF		587 x 677 x 760, w/o ADF	
Weight (kg)	100		81	
Print/Copy Speed (B/W, ppm)	20	25	20	25
Print/Copy Speed (FC, ppm)	20	25	20	25
1st Copy Time (B/W, seconds)	6.5		5.5	
1st Copy Time (FC, seconds)	9.5		7.7	
Warm-up Time (seconds)	30		19	
Recovery from Sleep Mode (Full System, seconds)	10		5.6	
Print resolution, dpi	1200 x 1200		1200 x 1200, 2-bit	
Scan Resolution, dpi	600 dpi		600 dpi	
Copy Resolution, dpi	600 dpi		600 dpi	
Max Output Size (Trays)	297 x 420 mm, 11” x 17”		320 x 457 mm, 12.6” x 18”	
Max Output Size (Bypass)	305 x 600 mm, 12” x 18”		320 x 600 mm, 12.6” x 18”	

Slide 7

No additional notes

Comparing Specifications
Met-C1y/z - 2

	Di-C1.5		Met-C1	
	a	c	y	z
Paper Weight (Trays, gsm)	60 - 256		60 - 300	
Paper Weight (Bypass, gsm)	60 - 256		52 - 300	
Paper Weight (Duplex, gsm)	60 - 105		52 - 169	
Paper Feed Capacity (Standard)	300 x 2 + 100 = 700		550 x 2 + 100 = 1200	
Paper Feed Capacity (Maximum)	500 x 2 + 300 x 2 + 100 = 1700		550 x 4 + 100 = 2300	
Hard Disk (GB)	160		250	
Memory (GB)	1.5		1.5 (Max 2.0)	
Scanning Speed (B/W, FC)	47 lpm (200 dpi)		55 lpm (200 dpi, 300 dpi)	
TEC Value (kWh)	US: 1.00 EU: 1.00	US: 1.30 EU: 1.20	0.71	0.86
Max Power Consumption (kW)	US: 1.6 EU: 1.68		US: 1.584 EU: 1.7	

Slide 8

- Memory: To upgrade the memory to 2 GB, the 1.5 GB memory is removed and a 2 GB option is installed.

Differences from Other Models in the Series

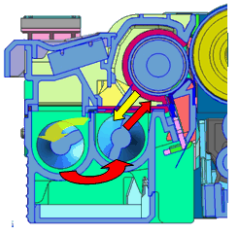
	Met-C1y/z	Met-C1a/b	Met-C1c/d/e
Laser diode unit	LD 1 beam	LD 1 beam	LD 4 beams
Air flow	7 fans	8 fans	11 fans
Double feed detection	No	No	Only Met-C1e
Bypass: Side fence contact sensor mechanism	No	No	Only Met-C1e
Paper tray	- Locked tray (At/Ap-C3) - No pick up solenoid - No Paper Feed sensor (Main frame only)	Tray pull-in mechanism	Tray pull-in mechanism
IPU	No SPDF option, so the issues with the IPU do not apply	IPU is not compatible with SPDF	IPU is compatible with SPDF, but an additional board (IPU sub board) is mounted on SPDF models, and must be installed when an optional SPDF is installed.
HVP-CB (high voltage supply board)	Correction SP value must be input when this board is replaced	No SP value	No SP value

Slide 9

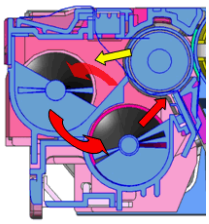
No additional notes

Differences from Other Models in the Series

	Met-C1y/z	Met-C1a/b	Met-C1c/d/e
PCU	-DC charge roller (Contact type) - No lubricant bar - 3-layer drum - Discharge lamp is in the mainframe - Correction SP value must be input when PCU is replaced	-AC charge roller (No contact type) - Lubricant bar - 4-layer drum - No discharge lamp	- AC charge roller (No contact type) - Lubricant bar - 4-layer drum - No discharge lamp
Development unit	Two mixing augers, two-way circulation (see diagram below)	Two mixing augers, one way circulation (see diagram below)	



Met-C1yz



Met-C1abcde

Slide 10

No additional notes

Yield of Consumables

- **Toner cartridges**
  - Black: 15k
  - CMY high yield: 9.5k
  - CMY standard: 5.5k (except for China)
  - CMY low yield (for China only): 3k
- **Waste toner bottle: 100k**
  - This is replaced by the customer.
  - With SP 5-073-001, this can be changed to replacement by technician.
  - Never try to empty toner out of the waste toner bottle to use the same bottle again; always replace the bottle with a new one. This is because the coil inside the bottle may break.

Slide 11

Yields are based on these conditions:

- A4 (LT) long-edge feed
- 5% image coverage ratio
- Color ratio: 30%
- 3 prints/job (Met-C1a/b), 4 prints/job (Met-C1c/d/e)

Targets

- **Average Print Volume**
  - Met-C1y: 3 k/month
  - Met-C1z: 4 k/month
- **Color ratio: 20%**

Slide 12

No additional notes

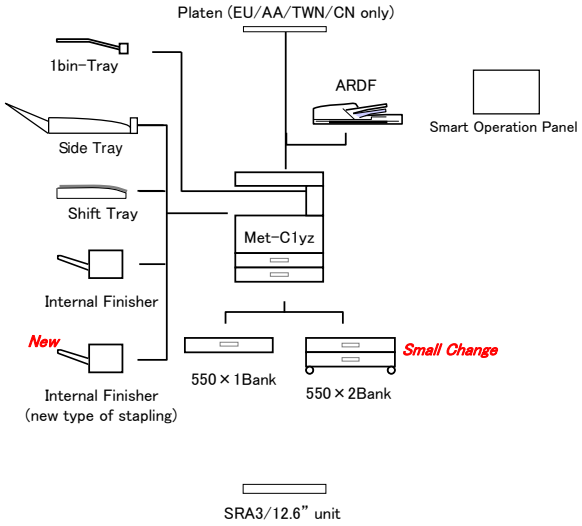
Reliability Information

- **PM Interval: 60k**
- **MPBF Target (Mainframe)**
  - Met-C1y: 77k
  - Met-C1z: 89k
- **Call Ratio Target (Mainframe)**
  - Met-C1y: 0.089
  - Met-C1z: 0.112
- **Machine Life**
  - Mainframe: 600k or 5 years whichever comes first
  - Scanner (book mode): 400k scans or 5 years whichever comes first

Slide 13

No additional notes

Optional Hardware Peripherals



Slide 14

- There is no optional SPDF.
- There are no large capacity trays.
- There are two types of optional internal finishers, but no external finishers.
- There is no EFI controller.

Options: Original Feed

		Also used with these models:	Similar to:	Note
D779: ARDF DF3090		Met-C1ab	K-C4	
D700: Platen Cover PN2000		K-C4, Met-C1ab		
D593: ADF Handle Type C		Or-C1, Met-C1ab		

Slide 15

No additional notes

Options: Paper Feed

		Also used with these models:	Similar to:	Note
D787: Paper Feed Unit PB3210	New		Ap/At-C3, Met-C1ab	2 trays
D694: Paper Feed Unit PB3150		Met-C1ab	Ap/At-C3	1 tray; only one of these can be installed
D178: Caster Table Type M3		Met-C1ab		Requires PB3150

- **The D787 paper feed unit is similar to the Met-C1abcde, but has the following differences.**
  - No pick-up solenoid
  - There is no pull-in mechanism, but there is a tray lock mechanism

Slide 16

No additional notes

Options: Finishing

		Also used with these models:	Similar to:	Note
D609: Internal Finisher SR3130		Met-C1ab	Or-C1	500-sheet
D716: Punch Unit PU3040		OR-C1, Met-C1ab		
D691: Internal Shift Tray SH3070		Met-C1ab	Ap/At-C3	
D692: 1 Bin Tray BN3110		Met-C1ab	Ap/At-C3	
D725: Side Tray Type M3		Met-C1ab	Ap/At-C3	
D766: Internal Finisher SR3180	New			New type of stapling mechanism, without metal staples 250-sheet No punch unit

Slide 17

No additional notes

Options: Controller

		Also used with these models:	Similar to:	Note
D165: Postscript3 Unit Type M3		Met-C1ab	Similar to those used with other models	
D165: Camera Direct Print Card Type M3		Met-C1ab		
D165: Browser Unit Type M9	New			Requires Memory Unit Type M3 2GB
D165: SD card for NetWare printing Type M3		Met-C1ab		
D165: IPDS Unit Type M3		Met-C1ab		

Slide 18

No additional notes

Options: Controller

		Also used with these models:	Similar to:	Note
D164: IEEE 802.11a/g/n Interface Unit Type M2		Met-C1ab	Similar to those used with other models	
D164: Memory Unit Type M3 2GB		Met-C1ab		Remove existing 1.5 GB memory and install this 2GB memory
D166: OCR Unit Type M2		Ch-C1, Met-C1ab		
D739: Smart Card Reader Built-in Unit Type M2		Ch-C1, Met-C1ab		Install in left USB port only
B679: IEEE 1284 Interface Board Type A		Used with many other models		
D566: Bluetooth Interface Unit Type D		Used with many other models		
D377: File Format Converter Type E		Used with many other models		
D640: Copy Data Security Unit Type G		Used with many other models		
D641: SD Card for Fonts Type D		Used with many other models		
B869: Unicode Font Package for SAP®		Used with many other models		
D377: Data Overwrite Security Unit Type H		Used with many other models		For CC certification

Slide 19

No additional notes

Options: Fax

		Also used with these models:	Similar to:	Note
D163: Fax Option Type M3		Met-C1ab	Similar to those used with other models	
D163: G3 Interface Unit Type M3		Met-C1ab		
D165: Fax Connection Type M3		Met-C1ab		
G578: Memory Unit Type B 32MB		In use with many models		
D739: Handset HS3020		Met-C1ab		
H903: Marker Type 30		In use with many models		

Slide 20

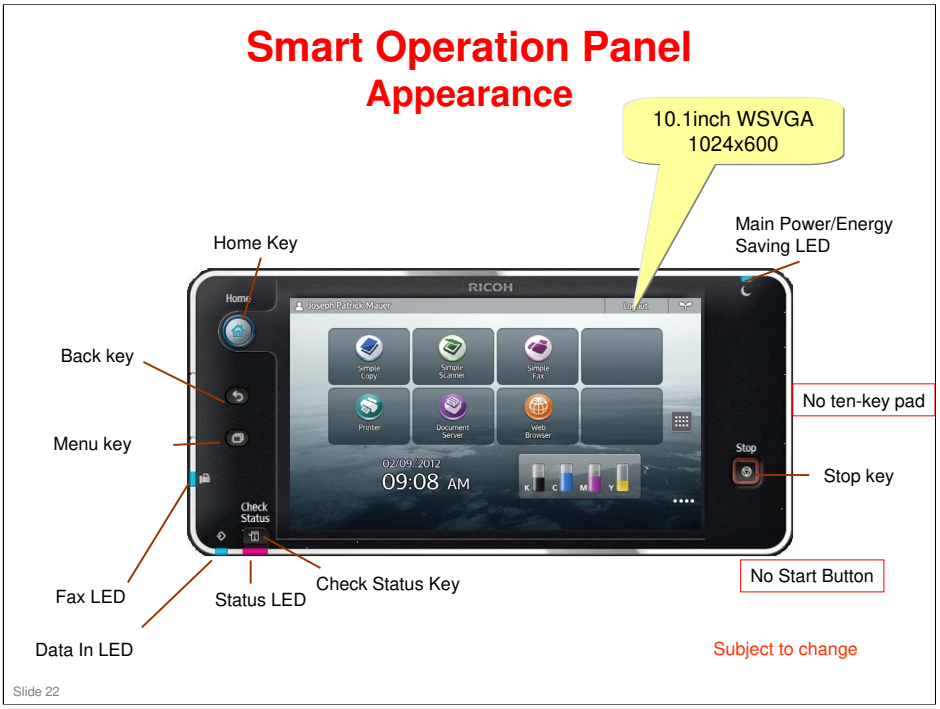
No additional notes

Options: Other

		Also used with these models:	Similar to:	Note
D739: Imageable Area Extension Unit Type M3		Met-C1ab		This is a longer paper transfer roller; it allows the machine to print on SRA3/12.6 inch paper
B870: Optional Counter Interface Unit Type A			Similar to those used with other models	
D739: Key Counter Bracket Type M3				
D593: Card Reader Bracket Type 3352				
D148: Smart Operation Panel Type M3		Met-C1ab		A new type of operation panel.
D739: External Keyboard Bracket Type M3		Met-C1ab		For the Smart Operation Panel Type M3

Slide 21

No additional notes



No additional notes

SD Cards

- Options on SD cards must be moved to the card in slot 1.
- Original SD cards must be stored inside the power supply cover [A] as shown below, as proof of purchase.

Slide 23

No additional notes

This section explains the main points about installation. For full details, see the Field Service Manual.

Installation is almost the same as for the Met-C1ab, except that some steps have been deleted, and the PCDU seals are different.

Installing the Copier

- **Basically, this is very simple.**
  - Remove packing materials.
  - Remove the seals from the PCDUs.
  - Install the toner bottles.
    - » When the machine is switched on for the first time, toner is sent to the hopper automatically. It takes about 5 minutes.
- **Developer is pre-installed in the machine before shipping.**
  - Also, developer is also pre-installed in the service parts for the PCDU and development unit.
  - This means that there are no procedures for removing old developer and installing new developer.
- **If you install an optional paper tray unit at the same time, put the machine on the paper tray unit first. Then install the machine and other options**

Slide 25

Note that the following steps from Met-C1ab installation are deleted for the new models:

- Connect the PCDU harnesses.
- Rotate two levers on the ITB clockwise until they point down.

Lifting the Machine

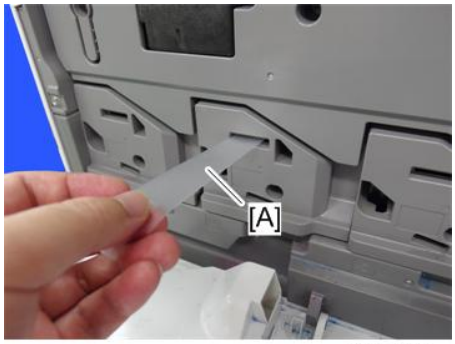
d1462211

- Always lift the machine with the handles at the bottom.
- Do not lift by holding the right cover, scanner unit, operation panel, or other components that might be sticking out, because this will damage the machine.
- When shipped from the factory, these handles are obscured by packing materials. So, remove the packing materials before you attempt to lift the machine.

Slide 26

No additional notes

Removing the PCDU Seals



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- **Each PCDU [A] has a seal [B] that must be removed during installation.**
- **Do this before you turn the main switch on, or the development units can be severely damaged.**

Slide 27

- This is different from the Met-C1abcde, and more similar to the Ap/At-C3 series.

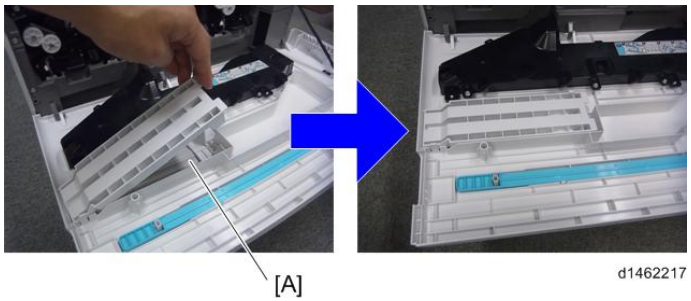
Installing the Toner Bottles

- The shape of the bottles is different from previous models
- You must remove a cap from the bottle before installing it in the machine

Slide 28

No additional notes

Factory Setting Sheet

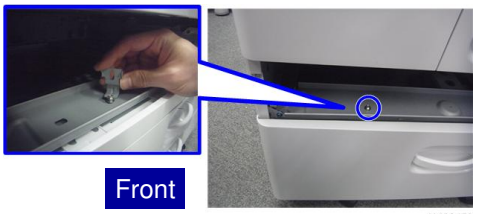


- The factory setting sheet is stored on the reverse side of the front cover, in the location [A] where you store the scanner support plate.

Slide 29

No additional notes

Options
Paper Tray Units



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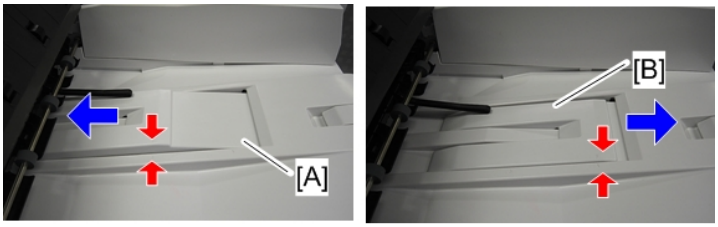
- **These units are installed below the copier.**
- **Always join the copier to the tray unit with one screw. Use one of the connecting brackets as a screwdriver. Do this immediately after you put the copier on top of the tray unit.**
  - At the front of the machine, pull out the copier's 2nd tray and attach the bracket.
  - At the rear of the machine, at two locations.
- **Then lock the casters of the paper feed unit.**
- **Finally, check the registration with SP mode as explained in the installation procedure.**
- **Paper size is set as shown below when the machine is shipped from the factory.**
  - NA: LT LEF
  - EU, AA, CHN: A4 LEF
- **The paper size can be changed to A4 or LT. First, adjust the side fences, then change SP5-181-007**
  - 0: A4, 1: LT

Slide 30

- There is no space to use a normal screwdriver, so we must use one of the connecting brackets to attach the screw.

Options
ARDF DF3090



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- When feeding thin paper, adjust the sliding tray to the point shown above [A].
- When feeding normal paper, adjust the sliding tray to the point shown above [B].
- If not, you may get the following problems:
  - Original jam
  - Originals cannot be stacked neatly

Slide 31

No additional notes

Options

One-bin Tray, Side Tray, SR3180 Internal Finisher

- If the side tray or internal finisher will be used, install the one-bin tray first.

Slide 32

No additional notes

Options
SR3130 Internal Finisher

- **If the punch unit for this finisher will be installed, installed the punch unit before you install this finisher.**
- **If you will install the one-bin tray also, install that option part of the way through the procedure for installing the internal finisher.**
  - See the installation procedure for the internal finisher in the service manual for details.
- **Attach stabilizers to the base of the machine as explained in the installation procedure, to prevent the machine from falling over.**
  - These stabilizers are shipped with the internal finisher as accessories.

Slide 33

No additional notes

Options

Imageable Area Extension Unit - 1

- **This is a transfer roller that allows full bleed printing on 315mm width paper.**
  - The standard transfer roller allows image widths of up to 305 mm.
- **Do not touch the surface of this roller during installation. The material is very soft and breaks easily.**
- **Before you change the roller, you need to set SP2-400-001 to 1.**
  - Real time process control is disabled if the extension unit is installed. This is because real time process control uses areas at the extreme edges of the ITB, which are outside the image area if the normal PTR is used, but not if the extension unit is installed.
- **Then turn the power off.**
- **Install the new roller.**

Slide 34

No additional notes

Options

Imageable Area Extension Unit - 2

- **When you forget to change the SP, the following problems occur.**
  - If the SP setting is the normal setting (SRA3 paper not supported), but the optional longer paper transfer roller is installed
    - » Images at the edges of SRA3 paper will not be transferred.
    - » MUSIC/program control pattern adheres to the ends of the paper transfer roller (outside the A3 area), and this can transfer to the underside of printouts.
    - » Real-time process control cannot be performed correctly, and because of this, an abnormal image and SC285-00 (MUSIC error) may occur.
  - If the SP setting is for SRA3, but the paper transfer roller is the normal one (SRA3 paper not supported)
    - » Images at the edges of SRA3 paper will not be transferred.
      - – Real-time process control is not performed, and the time between process controls will be shorter (productivity will decrease)
    - » The waiting time for fusing temperature rise is longer than intended.

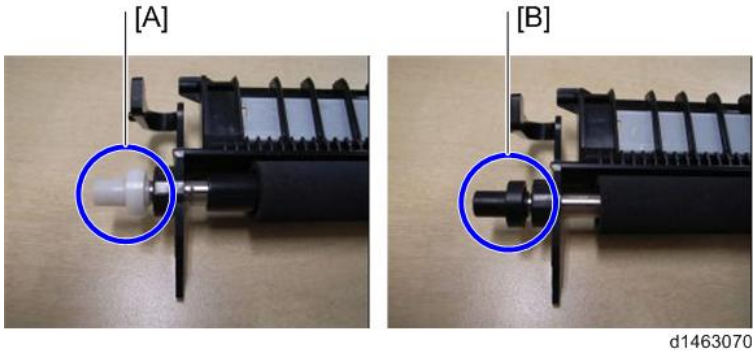
Slide 35

No additional notes

Options

Imageable Area Extension Unit - 3

- **When you replace the roller at PM, make sure to install the correct type of transfer roller.**
  - [A]: Standard transfer roller
  - [B]: Imageable Area Extension Unit



Slide 36

No additional notes

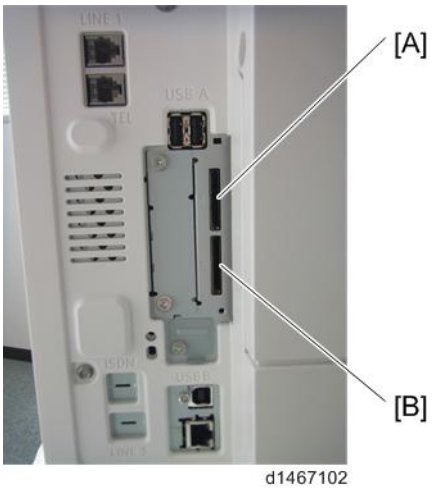
Options
Smart Operation Panel

- **Before installation, do the following SP adjustments.**
  - Set SP5-748-201 bit 0 to 1 (default: 0).
  - Set SP5-748-101 to 1 (default: 0).
- **After installation, do the following SP adjustments.**
  - Set SP5-752-001 bit 0 to 1
  - Set Scanner SP1-041-001 bit 0 to 1
  - If the fax option is installed, set Fax SP3-301-001 bit 0 to 1
  - Switch power OFF/ON.
- **After switching the power on, if the default setting icon is displayed and the default screen is displayed, the operation panel is connected normally.**

Slide 37

No additional notes

Options
SD Card Slots



- [A]: SD card slot 1 (option slot)
- [B]: SD card slot 2 (service slot)

Slide 38

- The OCR card does not need to be kept in the slot after installation. So the legal aspects about merging the OCR software are not a problem, because there is no need to merge the OCR software.

Options
SD Card Options

- **In former models (such as Ap/At-C3), there are some SD card options that can't be merged.**
- **In Met-C1, there are no restrictions.**
  - For example, the part of the Postscript software that requires licensing is now built into the controller, so the portion on the SD card can be moved to another SD card.
- **You can insert SD card options in any slot on controller board.**
  - We recommend that you insert SD card options in slot 1, because slot 2 is also used as the service slot.

Slide 39

No additional notes

Embedded OCR (Searchable PDF) Installation - 1

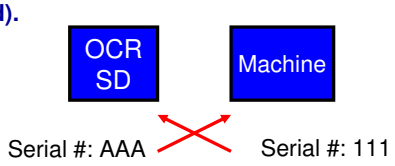
- Insert the OCR SD card in slot 1 or 2
- Turn the main switch on.
- Execute SP 5-878-004 (Option setup: OCR dictionary)
- Turn the switch off and on.
- Execute SP 5-878-004 again (Option setup: OCR dictionary)
- Turn the switch off.
- Remove the SD card from the SD slot.
- Save the SD card in the storage space under the switch cover.

Slide 40

No additional notes

Embedded OCR (Searchable PDF) Installation - 2

- The machine's serial number is saved on the OCR SD card during the first execution of SP5-878-004. At the same time, the OCR option's serial number is saved in the machine's NVRAM (on the controller board).



- Dictionary text information in the SD card is copied to the HDD during the second execution of SP5-878-004.
- Even after the dictionary data is copied to the HDD, the information is still stored in the SD card.

Note: The OCR option has a license, like the PS option. Each SD card is available for only one machine. Therefore, once an OCR SD card is used on a certain machine, the machine writes the serial number on the SD card to prevent it from being used on other machines.

Slide 41

No additional notes

Embedded OCR (Searchable PDF) Troubleshooting

1. **HDD broken**
   - Replace the HDD and copy the dictionary text information to the new HDD by using the original SD card again.
2. **NVRAM broken/replaced**
   - If upload/download of NVRAM is not possible, order the OCR SD card as a service part and do the installation procedure again.
3. **Please make sure to keep the original SD card in the storage location inside machine.**

Slide 42

No additional notes

No additional notes

Important Notes

- With previous models, when the DC power was turned off, the supply of power from the AC control board to machine internal systems was stopped.
- With this model, even after the main switch/DC power has been turned off, a voltage of 5V still flows through the machine to detect when the switch is pushed to turn the power on.
- Therefore, before performing any kind of machine maintenance, you must physically remove the power cord from the outlet and wait several minutes (approx. equivalent to the time it takes to remove the rear cover).

Slide 44

No additional notes

PM Parts

- **PCDU**
  - PCU-K: 60k
  - Development Unit – K: 120k
- **Other**
  - Waste Toner Bottle: 100k (this is replaced by the customer, but can be changed to technician PM replacement by SP adjustment)

Slide 45

- The yield figures in the above table are based on the following conditions:
  - A4 (LT) long-edge feed
  - 5% image coverage ratio
  - Color ratio: 20%
  - 2 Prints / Job
- The PCU is the same part for all colors (KYMC), and the target yield figure of the rotation distance is the same. However, the target yield figure in pages is different between black PCU and color PCUs because the rotation distance per print is different between black and white print and full color print.

Yield Parts

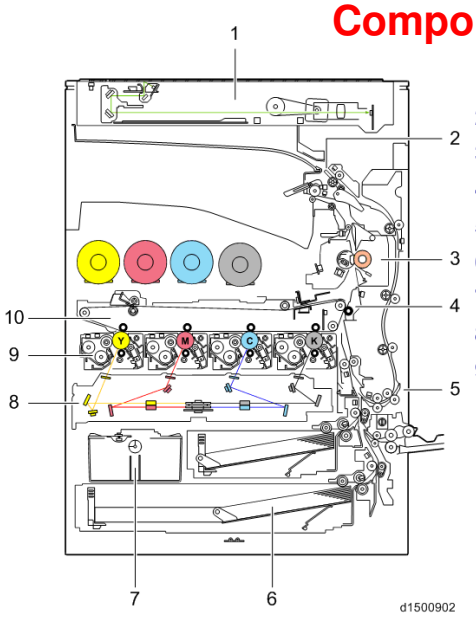
- **PCDU**
  - PCU-CMY: 48k
  - Development Unit – CMY: 120k
- **Transfer**
  - ITB Unit: 240k
  - ITB Cleaning Unit: 240K
  - PTR Unit: 240k
- **Fusing**
  - Pressure Roller: 240k
  - Heating Sleeve Unit: 240k
  - Ball Bearing: 240k
- **Other**
  - Exhaust Filters: 300k
  - ARDF Feed Belt, Pick-up Roller, Reverse Roller: 120k originals
- **When the fusing sleeve unit is used past 240k, the heating sleeve may break, causing a service call. Therefore, the machine displays a warning on the operation panel at 244k pages and stops at 248k pages. Please make sure to replace the heating sleeve unit before the unit's PM counter reaches 240k pages.**

Slide 46

- The above listed parts are treated as “Yield Parts”, which means that they are not expected to require replacement during the entire lifecycle of the machine, assuming the machine is used at the target ACV, coverage ratio, and color ratio. This is why these parts are listed separately from PM parts

No additional notes

Components



1. Scanner Unit
2. Paper Exit Unit
3. Fusing Unit
4. Paper Transfer Unit
5. Duplex Unit
6. Paper Feed Unit
7. Waste Toner Unit
8. Laser Exposure Unit
9. PCDU
10. Image Transfer Unit

- Note that the print engine is upside down (the laser units are below the PCDUs, and the ITB unit is above the PCDUs).

Slide 48

No additional notes

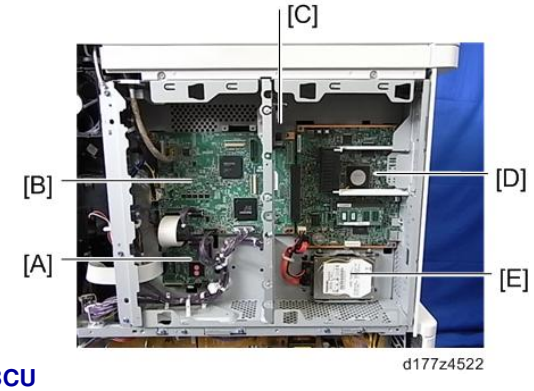
Cooling

- **The layout of the cooling fans is the same as In the Met-C1ab.**

Slide 49

- Cooling is increased over the Ap/At series, because the Met series uses all motors and a few clutches, and the Met is more compact.

Locations of PCBs
Inside the Controller Box



- [A] BCU
- [B] IPU
- [C] Controller Box Cooling Fan
- [D] Controller Board
- [E] HDD

Slide 50

- Different from the abcde versions
- The other board location photos are the same as the abcde version TTP.

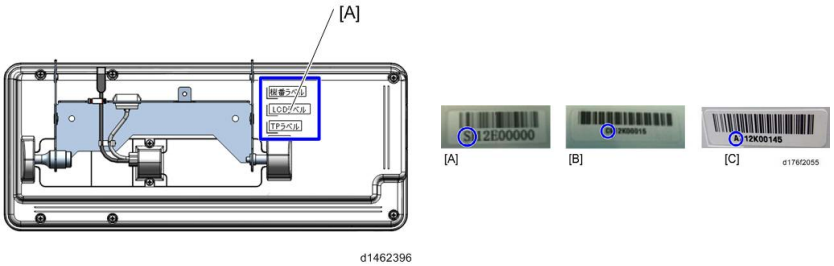
LCD Panels - 1

- LCD panels from three different vendors are used.
- Depending on which type is used in the machine, the bracket for attaching these has a different shape. Also, the exterior cover on the machine has a different shape.
- So, if you replace the LCD panel, make sure that you install the correct type.

Slide 51

No additional notes

LCD Panels - 2



d1462396

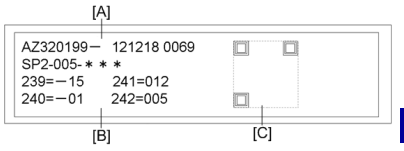
- How to determine the correct type to install?
- There are three labels on the rear of the operation panel. The center label [A] shows the LCD model number.
- The first letter is either an S or a C or an A, to indicate the different vendors.
- Panels from vendor S and vendor A are interchangeable.
- If your machine has a label starting with S, you can replace the LCD with another one that has a label starting with S or A.
- If your machine has a label starting with A, you can replace the LCD with another one that has a label starting with S or A.
- If your machine has a label starting with C, you can only replace the LCD with another one that has a label starting with C.

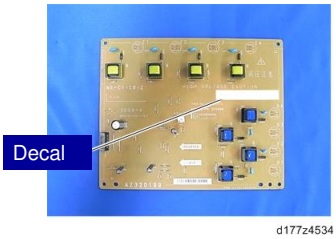
Slide 52

Replacement and Adjustment > Controller Unit > LCD

- See the above section of the service manual for more details on replacing the two types of LCD panel.

Replacing the HVP-CB Board



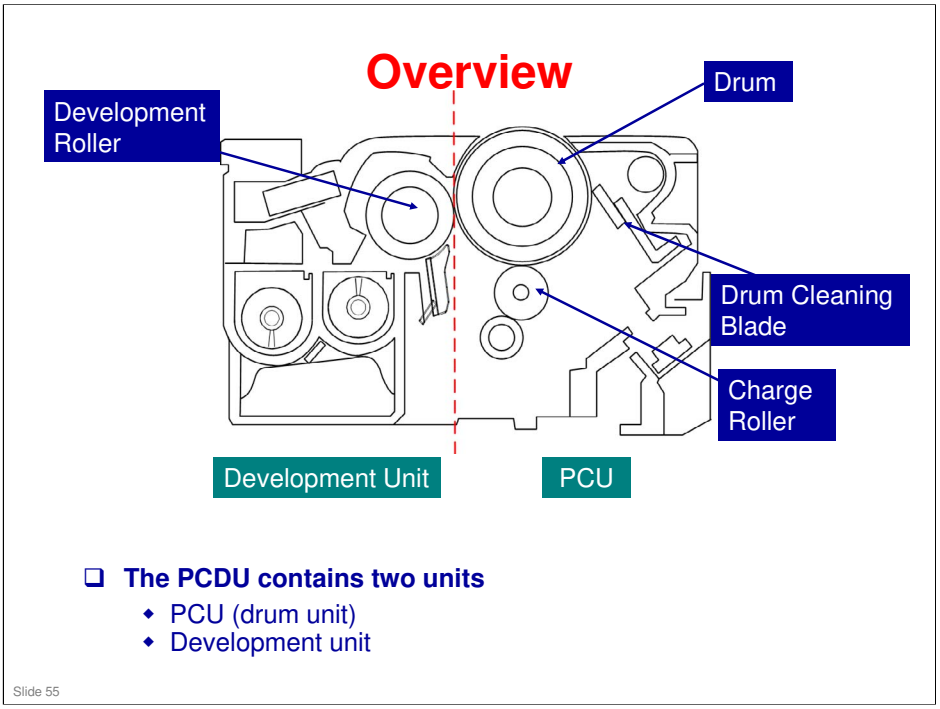


- **Before replacing the HVP-CB, input the correction values from the decal on the new board into the correct SPs as shown below, then turn the power OFF. After replacing the board, turn the power ON.**
  - K: SP2-005-239
  - C: SP2-005-240
  - M: SP2-005-241
  - Y: SP2-005-242

Slide 53

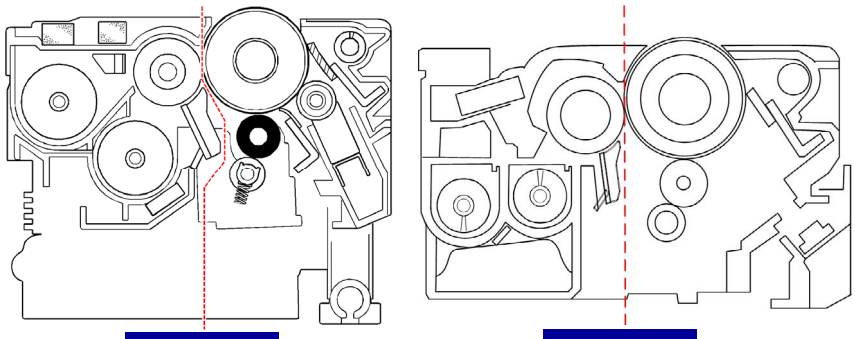
- The SPs are for charge voltage correction
- On the decal (diagram on the right):
  - [A]: Serial number
  - [B]: SP values
  - [C]: QR code

This section describes the processes around the drum.



No additional notes

Comparison with Met-C1ab

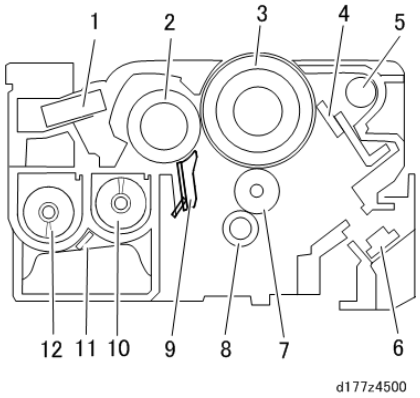


- **In the Met-C1yz:**
  - The PCDU does not have a lubricant bar.
  - The charge roller contacts the OPC drum.
  - The development unit has a different layout, similar to the AT/AP-C3.

Slide 56

No additional notes

Layout

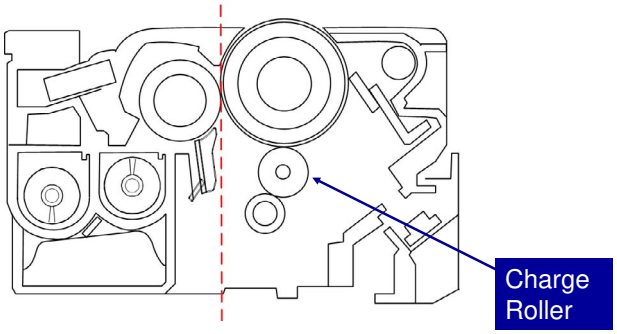


1. Inner pressure adjustment filter
2. Development roller
3. OPC drum
4. Cleaning blade
5. Toner collection coil
6. Quenching lamp (part of the mainframe)
7. Charge roller (contact)
8. Cleaning roller (charge roller)
9. Doctor blade
10. Developer supply coil: right
11. TD sensor
12. Developer supply coil: left

Slide 57

No additional notes

Charge

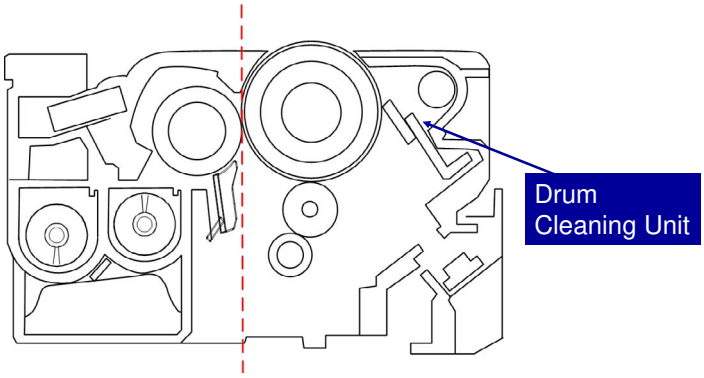


- A charge roller is used for each drum.
- The charge roller contacts the drum and rotates with the drum.
- When the charge roller is dirty, an uneven charge is generated, so a cleaning roller always contacts the charge roller.

Slide 58

No additional notes

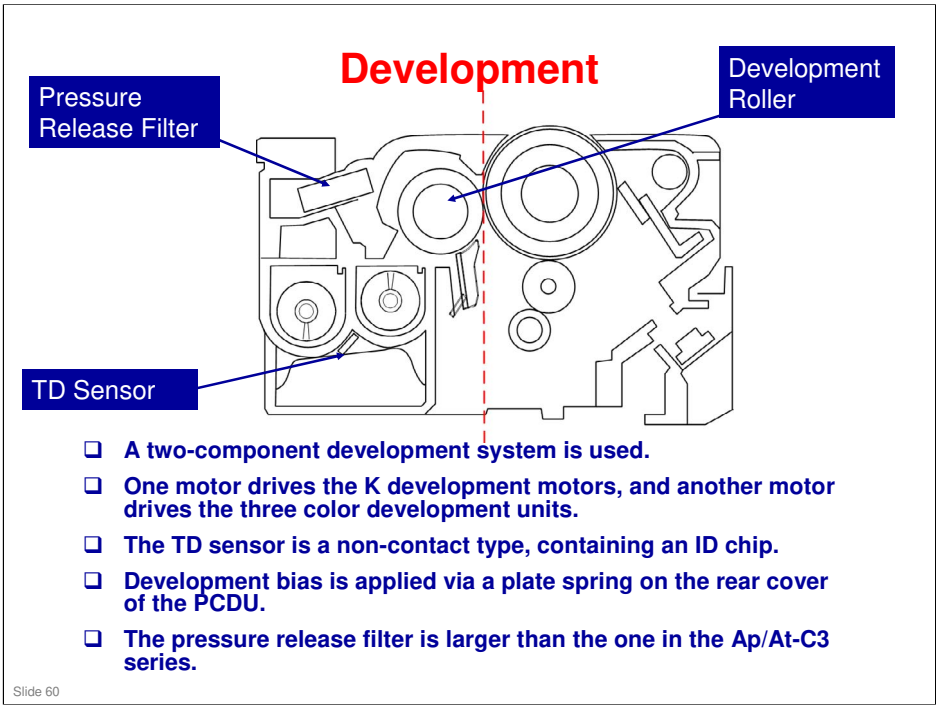
Cleaning



- **A cleaning blade removes residual toner from the drum.**
  - Counter blade type.
- **There is no drum lubricant.**

Slide 59

No additional notes



In the ID chip, the following data is stored.

- Model series ID
- New PCDU information
- Color information
- Developer replacement information
- PCU replacement information
- Sensor serial no., date of manufacture
- Date of unit installation
- Unit total counter at installation (no. of sheets, travel distance)
- Date of unit operation
- Unit total counter during operation (no. of sheets, travel distance)
- Unit parts information
- Total counter
- Total color counter

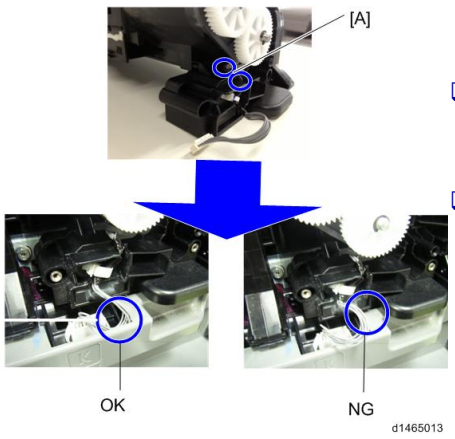
Replacing a PCDU - 1

- When you install a new development unit or PCDU, the counter is not reset automatically.
- Before replacing a PCDU, set SP3-701 to "1" for the PCU that you will replace, and again for the development unit that you will replace.
  - SP3-701-002 PCU Bk
  - SP3-701-003 Dev Bk
  - SP3-701-025 PCU C
  - SP3-701-026 Dev C
  - SP3-701-048 PCU M
  - SP3-701-049 Dev M
  - SP3-701-071 PCU Y
  - SP3-701-072 Dev Y
- Then switch the power OFF.
- Then replace the PCDU and switch the power ON.
- If you forget this procedure, the counter of the PCU will be overwritten with the development unit value.

Slide 61

No additional notes

Replacing a PCDU - 2



- Be careful not to trap the harness with the PCDU front cover.
- Place the excess portion of the harness on the inside of the inner cover.
- Also, hook the harness in two places [A].

Slide 62

No additional notes

Replacing a PCU - 1

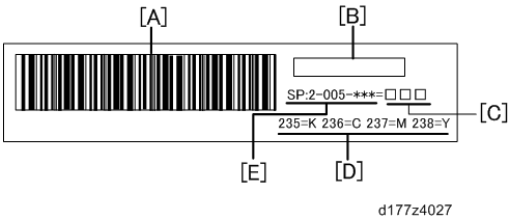
- **Before replacing the PCU, set SP3-701 (Manual New Unit Set) to "1" for the PCU that you will replace.**
  - SP3-701-002 PCU Bk
  - SP3-701-025 PCU C
  - SP3-701-048 PCU M
  - SP3-701-071 PCU Y
- **Then input the correction value into the correct SP as shown on the next slide, then turn the power OFF.**
  - This is not necessary when replacing a complete PCDU; the correction will be done automatically.
- **Then replace the PCU and switch the power ON.**

Slide 63

No additional notes

Replacing a PCU - 2

- **This shows how to determine which SP to use, and which value to input.**



A: Bar code
B: PCU Lot No.
C: Correction value
D: Last three digits of SP number
  K: SP2-005-235
  C: SP2-005-236
  M: SP2-005-237
  Y: SP2-005-238
E: SP No.

Slide 64

No additional notes

Replacing a PCU - 3

- **If you forget to do the procedure on the previous two slides before replacing the PCU, do the following.**

  Case 1: When you set SP3-701 to "1"
  1. Input the PCU correction value.
  2. Execute process control manually with SP3-011-001 in order to adjust the machine settings with the PCU correction value.

  Case 2: When you **did not** set SP3-701 to "1"
  1. Set SP3-701 to "1".
  2. Input the PCU correction value.
  3. Turn the power OFF. Note that process control will start automatically.

Slide 65

No additional notes

Replacing a Development Unit - 1

- **Before replacing the development unit, set SP3-701 to "1" for the development unit that you will replace. Then turn the power OFF.**
  - SP3-701-003 Dev Bk
  - SP3-701-026 Dev C
  - SP3-701-049 Dev M
  - SP3-701-072 Dev Y
- **Then replace the development unit and switch the power ON.**
- **If you do this in the wrong order, the counters will be incorrect.**

Slide 66

No additional notes

Replacing a Development Unit - 2

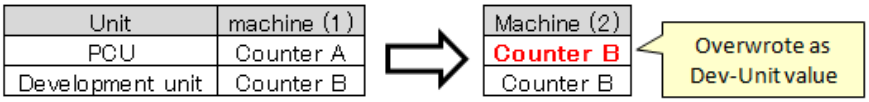
- Take care not to damage the part of the rear end block shown by the blue circle.
- Otherwise, electrical contact may become poor, and this may cause poor image quality.

Slide 67

No additional notes

Notes for Replacing a PCDU or PCU

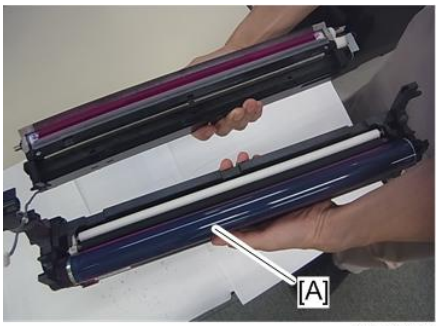
- **DO NOT exchange a PCDU or PCU unit between field machines. (The counters will be overwritten.)**



Slide 68

No additional notes

Replacing a PCU or Development Unit - 1



d7662069

- When separating the PCU and development unit, the drum may come off and this could cause a toner spillage. Hold the PCU [A] with the drum side up to prevent toner spillage.

Slide 69

No additional notes

Replacing a PCU or Development Unit - 2

- **On the new PCDU:**
  - Remove the heat seal [A] after installing the new PCDU.
  - Remove the cap [B] pasted on the toner port.

Slide 70

No additional notes

Replacing a PCU or Development Unit - 3

d766z0008

- **Before installing, rotate the drum in the blue arrow direction, to ensure that toner lines do not occur.**

Slide 71

- For the Met-C1abcde, there is a caution about preventing the cleaning blade from turning over. In the Met-C1xyz, the cleaning blade is changed to a harder material, so this caution is not needed.

No additional notes

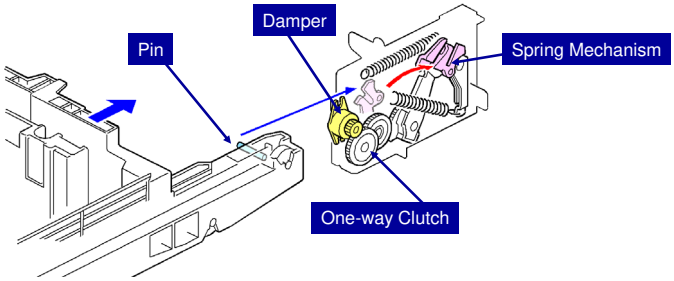
Differences from Met-C1ab

- **In the Met-C1yz:**
  - The tray pull-in mechanism is only used in the optional PB3150 paper tray unit (see the next slide). It is not used in the mainframe's paper trays.
    - » The main frame has a tray lock mechanism instead.
  - There is no paper feed sensor
  - There is no pick-up solenoid
  - There is no paper overflow sensor in the exit tray.
  - A roller was removed from the duplex feed path (duplex transport roller 2 was removed).
  - Maximum paper weight for duplex mode was changed from 256 gsm to 169 gsm.

Slide 73

No additional notes

Tray Pull-in Mechanism (PB3150 only)



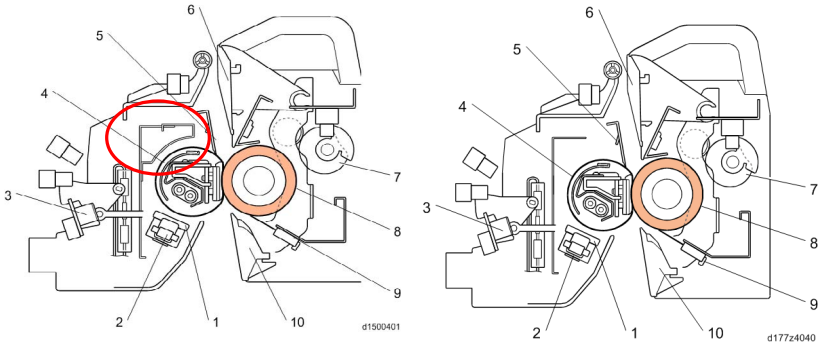
- The tray is pulled in by a one-way clutch and spring mechanism in the pull-in unit. The pull-in unit catches a pin on the tray to pull the tray in.
- When the user pulls the tray out, a damper controls the release of the tray.

Slide 74

No additional notes

No additional notes

Differences from Met-C1abcde



Met-C1abcde　　Met-C1yz

- **A reflective plate has been deleted from the yz models.**

Slide 76

- The red circle shows the part that was deleted.

This section describes a new internal finisher. The stapling method is new.

Basic Specifications

- **No. of sheets:**
  - A4, 8 1/2 ×11 or smaller: 250
  - B4, 8 1/2 ×14 or larger: 125
- **Paper thickness: 52 g/m2 – 300 g/m2**
- **Up/down tray shift: No**
- **Left/right tray shift: Yes**
- **Stapling: Yes**
- **Punching: No**
- **Power consumption: Less than 30W**

Slide 78

No additional notes

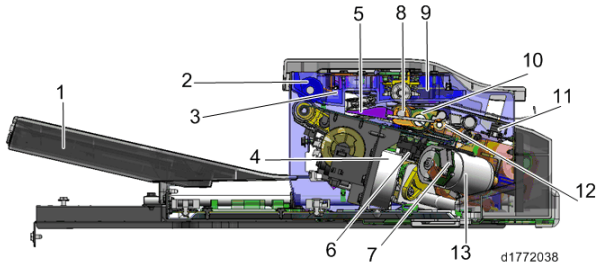
Stapler Specifications

- Type of stapling: Without metal staples, application of pressure
- No. of sheets which can be stitched together: 2 to 5 sheets
- Sizes which can be stitched: A3 SEF - B5 SEF, DLT SEF - LT SEF
- Thickness: 54 g/m2 – 80 g/m2
- Stitching position: 1 position (Top corner, Slanted)

Slide 79

No additional notes

Components - 1

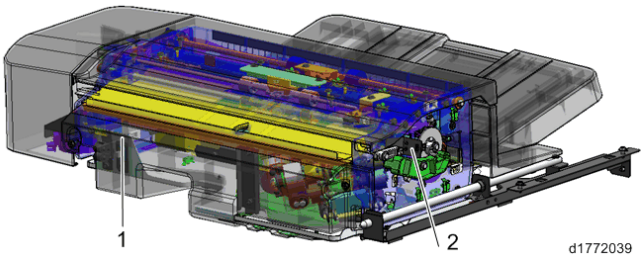


1. Paper output tray
2. Paper output roller/paper output belt
3. Paper output sensor
4. Paper output pressure motor
5. Junction gate
6. Stapler home position sensor
7. Stapler
8. Shift roller
9. Side-to-side registration sensor
10. Reverse roller
11. Entrance sensor
12. Rear edge presser
13. Stapler drive motor

Slide 80

No additional notes

Components - 2

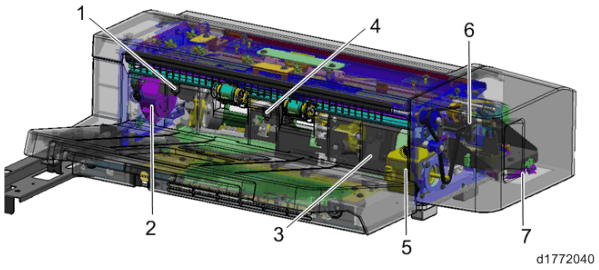


1. Open/close door switch
2. Junction solenoid motor HP sensor

Slide 81

No additional notes

Components - 3

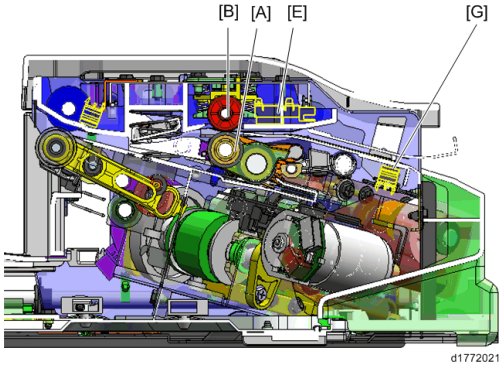


1. Paper output full sensor 2 (stapling)
2. Junction Solenoid Motor
3. Paper output pressure HP sensor
4. Paper output full sensor 1
5. Transport motor
6. Shift HP sensor
7. Shift motor

Slide 82

No additional notes

Paper Feed Mechanism

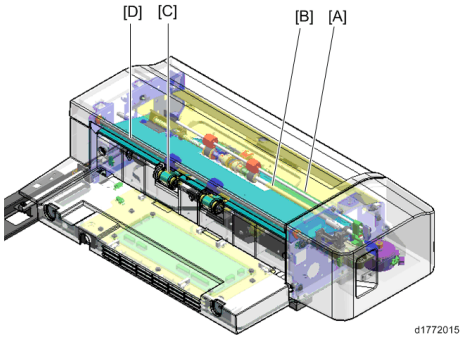


- **The leading edge of the paper is detected by the entrance sensor [G].**
- **If shift mode is used, the shift rollers [A] and [B] move the paper until the side-to-side registration sensor [E] can detect the rear edge of the paper.**

Slide 83

- Rear edge of the paper: As viewed by the machine operator standing at the operation panel.

Straight-through Feed

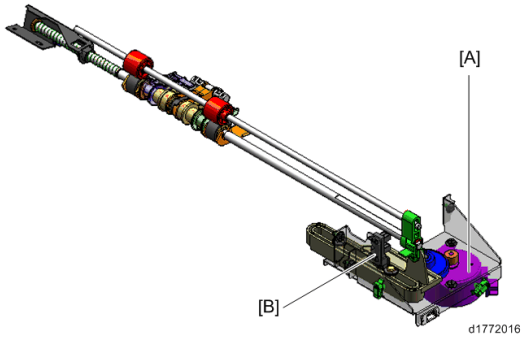


- **Paper from the mainframe goes to the paper output rollers [C] and [D], and on to the shift rollers [A] and [B].**
- **The transport motor drives the rollers in the paper feed path.**
- **When shift mode is used, the shift motor moves the shift rollers from side to side.**
  - The paper is caught between the shift rollers, but the paper output rollers separate so that the paper can be moved from side to side.

Slide 84

No additional notes

Shift Mechanism

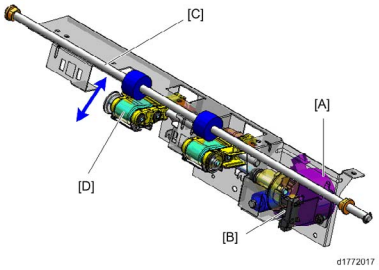


- **The shift mechanism starts when the distance between the trailing edge of paper and the paper output roller on the main frame is 10mm (timing is based on motor pulses and leading edge detection by the entrance sensor).**
- **The shift motor [A] rotates to shift the paper to the front or back.**
  - The shift amount is 20mm for the front side, 10mm for the back side.
- **The home position is at the back of the movement range, and is detected by the shift roller home position sensor [B].**

Slide 85

No additional notes

Paper Output Rollers/Belt
Pressure Release Mechanism

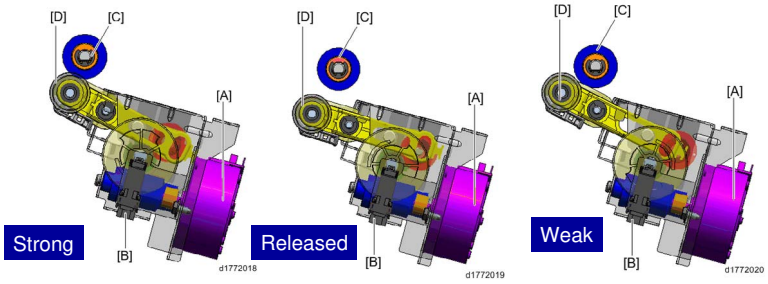


- **Paper output pressure motor [A] rotates, and moves the paper output roller (driven) [D] to change the pressure between the output rollers [C] and [D].**
- **There are three pressure positions:**
  - Strong pressure (home position)
  - Weak pressure
  - Pressure released
- **Paper output pressure HP sensor [B] detects the home position.**

Slide 86

No additional notes

Paper Output Rollers/Belt
Three Pressure Positions



- **Strong: For paper feed, stapling, and paper exit (including feeding out the stapled paper stack)**
- **Pressure released: During shift operation**
- **Weak: For feeding and stacking paper when stapling is used.**
  - When the mechanism moves to the 'weak' position, the upper output roller [C] contacts the output belt, and not the lower output roller [D]
  - When stacking, weak pressure is applied, to prevent damage due to rubbing the sheets too strongly.

Slide 87

[A]: Motor

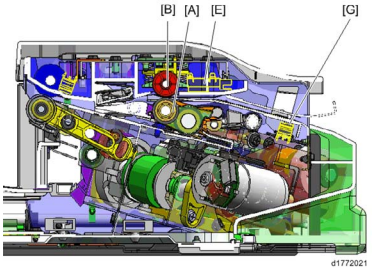
[B]: HP sensor

[C]: Idle roller

[D]: Driven roller

- The weak pressure position intends to avoid dirt/offset which is generated by rubbing the stacked paper and the next sheet of paper, when transporting the next sheet.

Stapling
Stacking in the Stapler Tray - 1

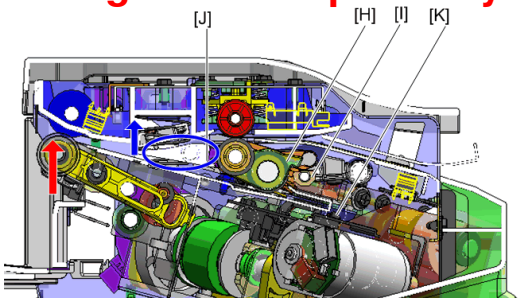


- **There is no jogger mechanism.**
- **The shift mechanism described previously is used to align the left and right edges of the sheet before feed to the stacking tray.**
  - The shift rollers [A] and [B] move the paper until the side-to-side registration sensor [E] can detect the rear edge of the paper.
- **The paper output roller and paper output belt move to the pressure release position during the shift operation.**

Slide 88

No additional notes

Stapling
Stacking in the Stapler Tray - 2

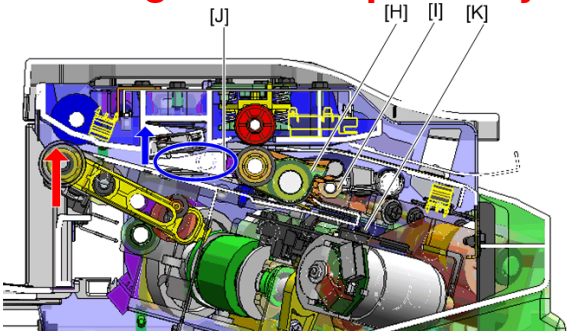


- After the first sheet is fed and shift operation is completed, the paper output rollers move to the strong pressure position.
- After the trailing edge passes the paper output roller, that roller reverses to send the paper to the stacking area.
- At this time, the junction gate [J] moves up (shown as the blue arrow and circle) to send the paper to the stacking area.
- Paper is fed to the stacking area by the reverse roller [H].
- When paper is fed to the reverse roller, the paper output rollers move to the pressure release position (shown as the red arrow), so that the shift operation can be performed for the next sheet.

Slide 89

No additional notes

Stapling
Stacking in the Stapler Tray - 3

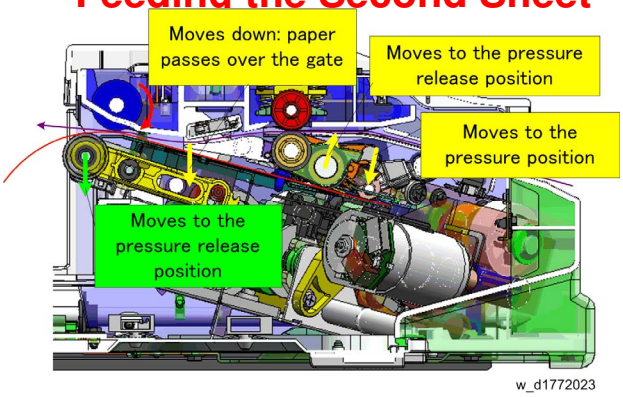


- The paper hits the fence [K], to align the edge of the stack in the paper feed direction.
- After paper is stacked, the trailing edge presser [I] moves to the pressing position (the reverse roller moves to the pressure release position) and holds the stacked paper.

Slide 90

No additional notes

Stapling
Feeding the Second Sheet

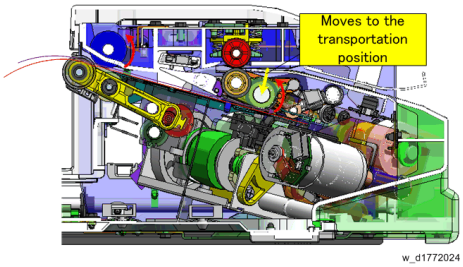


- After the first sheet is stacked, the second sheet is fed and shifted in the same way as the first sheet.
- The trailing edge presser continues to hold the first sheet.

Slide 91

No additional notes

Stapling
Stacking the Second Sheet

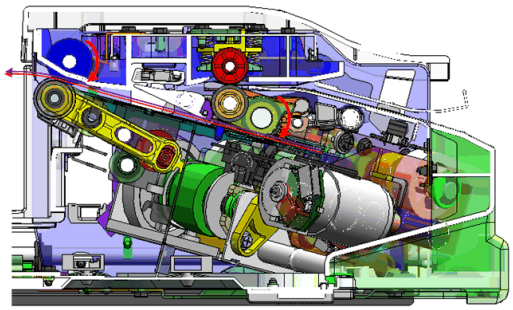


- **After shift operation is completed, the paper output rollers move to the weak pressure position and feed the paper to the stacking area. The reverse roller then receives the paper.**
  - This procedure also applies to the third and later sheets.
- **The trailing edge presser holds the stacked paper and the shift roller feeds the second and later sheets into the stacking area where they are held by the trailing edge presser.**

Slide 92

No additional notes

Stapling
Stapling and Feed-out

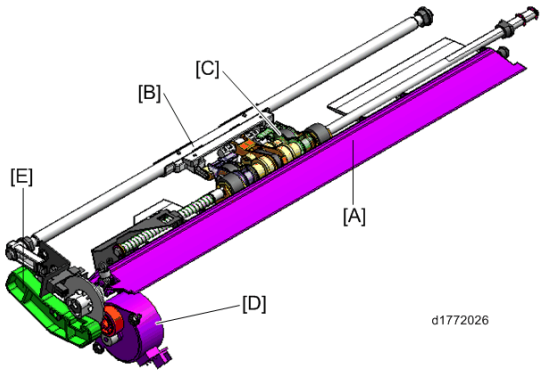


- **After all sheets are stacked, the paper stack is stapled and fed out by the paper output rollers.**
  - The stapled stack is also called the ‘paper bundle’.

Slide 93

No additional notes

Junction Gate and Trailing Edge Presser Mechanism



- Junction solenoid motor [D] rotates clockwise to drive the junction gate [A], the trailing edge presser [B] and the reverse roller [C].
- Junction solenoid motor HP sensor [E] detects the home position of the mechanism.

Slide 94

No additional notes

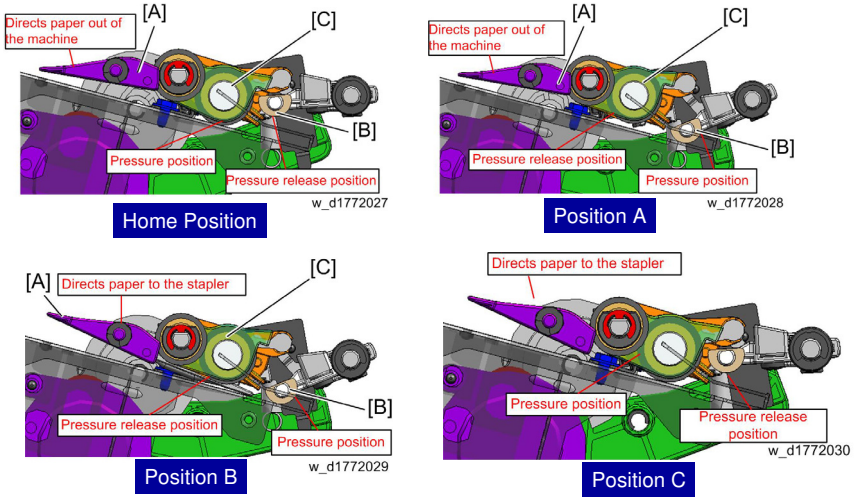
Junction Gate and Trailing Edge Presser Timing

- **Junction gate**
  - Switches over to feed paper down to the stapler when the trailing edge of the paper is 10mm ahead of the front edge of the junction gate.
  - Switches back to the standard position when the trailing edge of the paper reaches the fence and the trailing edge presser has moved to the pressure position.
- **Trailing edge presser**
  - Moves to the pressure release position when the trailing edge of paper reaches the reverse roller.
  - Moves to the pressure position when the trailing edge of the paper reaches the fence.

Slide 95

No additional notes

Junction Gate and Trailing Edge Presser Procedure

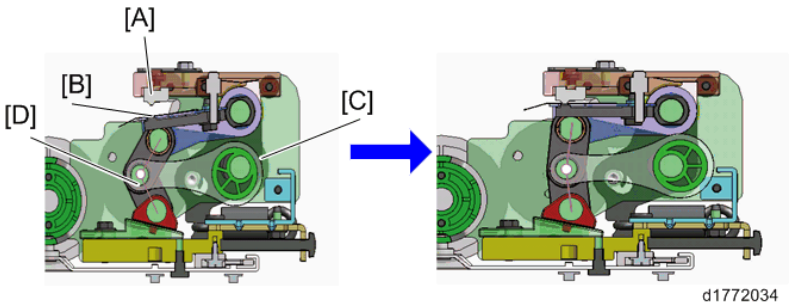


- **The junction gate, reverse roller up/down movement, and trailing edge presser cycle through the four states shown in these 4 diagrams**

Slide 96

- Home position: Paper feed (first sheet)
- Position A: Paper feed (second and later sheets)
- Position B: Stacking
- Position C: Feedout of stapled stack

Stapler Mechanism

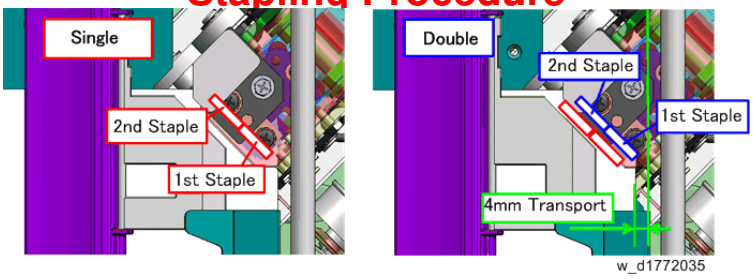


- Stapling is done by crimping the paper between two teeth. There are no staples.
- The stapler applies pressure (220kg) to the paper between the upper tooth [A] and the lower tooth [B].
- The machine applies pressure through the pressure cam [C] by stretching the pressure link [D].
- Moving and stapling is done by the stapler drive motor.
- The home position is detected by stapler home position sensor.
- After stapling, the trailing edge pressure releases the stack and the output rollers feed the stack out of the machine.

Slide 97

No additional notes

Stapler
Stapling Procedure

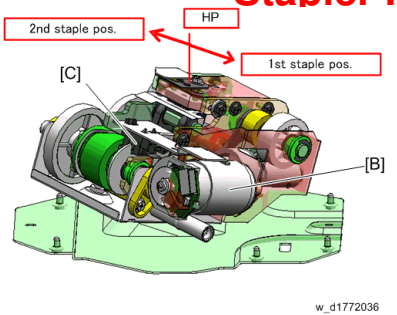


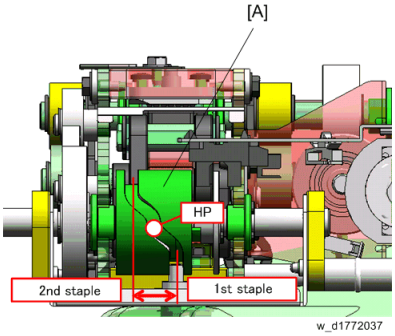
- **The machine can do single stapling or double stapling. Some paper types require double stapling because of the arrangement of fibres in the paper make it necessary for stronger bonding between sheets.**
  - Single stapling: Moves to the first staple position > Staples the paper > Moves to the second staple position > Staples the paper > Moves back to the home position
  - Double stapling: First, the same operation as for single stapling > Transport motor feeds the paper 4 mm > The single stapling operation is repeated

Slide 98

No additional notes

Stapler
Stapler Movement



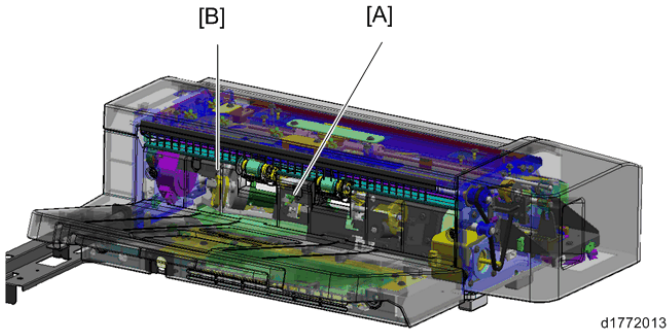


- The staple motor [B] moves the stapler through a cam [A].
- There is also a home position sensor [C].

Slide 99

No additional notes

Output Tray Full Detection



- **There are two sensors: one for stapling [B], and one for without stapling [A].**
- **Paper feed stops when tray full is detected, and the user must remove the stack from the tray. Then output restarts automatically.**

Slide 100

- Paper output full sensor 1 is located at the center across the main-scan, and detects the amount of all the output paper.
- On the other hand, when stapling, the height of paper around the stapled area is higher than other areas. Paper output full sensor 2 (for stapling) is installed in the stapling area, and is dedicated to detect the amount of stapled output paper.

The End