

This course explains the new series of high-end black-and-white copiers BR-C1. These new models are successors to the Katana series.



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

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### Model Names

- BR-C1a Basic: Pro 8100EX
- > BR-C1a SP: Pro 8100S
- BR-C1b SP: Pro 8110S
- > BR-C1c SP: Pro 8120S



 $\hfill\square$  This shows minimal optional peripherals attached.





 $\hfill\square$  There will be more details on the peripherals later.













## **Options: Paper Feed**

		Also used with these models:	Similar to:	Note
D517: Multi Bypass Tray BY5010		Taurus-C1		
D732: LCIT RT5080	New		Taurus-C1	
D733: LCIT RT5070	New		Katana-C2	
D738: Cover Interposer Tray CI5030	New		Taurus-C1	

		Also used with these models:	Similar to:	Note
D735: Finisher SR5050	New		Taurus-C1, Katana-C2	
D734: Booklet Finisher SR5060	New		Taurus-C1, Katana-C2	
D449: Punch Unit PU5020		Taurus-C1, Katana-C2		For D734/D73
D736: Perfect Binder GB5010	New		Aegis/Aries	
D736: Cover Interposer Tray for Perfect Binder Type S1	New		Katana-C2	
D736: Transit Pass Unit for Perfect Binder Type S1	New			
D737: Ring Binder RB5020	New		Aegis/Aries	
D419: Ring Opener Type A		Taurus-C1, Katana-C2	Katana-C2	
D520: Trimmer Unit TR5040		Taurus-C1		
D740: Multi-Folding Unit FD5020	New		Taurus-C1, Katana-C2	
D741: Decurl Unit DU5030	New		Taurus-C1	

- □ The multi-folding unit does not support custom paper sizes.
- □ Output Jogger Unit Type M2: It jogs the sheets delivered to the finisher shift tray.

		Also used with these models:	Similar to:	Note
D726: Postscript3 Unit Type S1	New		Similar to those used with other models	
D726: SD card for NetWare printing Type S1	New			
D726: Browser Unit Type S1	New			
D726: IPDS Unit Type S1	New			



		Also used with these models:	Similar to:	Note
D726: Printer/Scanner Unit Type S1	New			For BR-C1a Basic only
D164: IEEE 802.11a/g/n Interface Unit Type M3		CH-C1, Met-C1		
D166: OCR Unit Type M2	New	CH-C1, Met-C1		
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		
D377: Data Overwrite Security Unit Type H		Used with many other models		For CC certification
D641: SD Card for Fonts Type D		Used with many other models		
B869: Unicode Font Package for SAP®		Used with many other models		

		Also used with these models:	Similar to:	Note
D726: Printer Controller EB-32	New			
	<u> </u>			





□ Same as Ch-C1 and Met-C1. There is no Smart Operation Panel option with Android OS.























□ The max volume and machine life targets are the same as Katana-C2. However, the duty (maximum possible output per month) is much higher for the BR-C1 series (almost double that of the Katana-C2).









- 1. VCSEL Array
- 2. Photosensor (feedback detection)
- 3. Aperture
- 4. Mirror
- 5. Aperture
- 6. Lens (TCL)
- 7. Collimating Lens
- 8. 1/4 Wavelength Board

"VCSEL" means Vertical Cavity Surface Emitting Laser. It operates at 1200 x 4800 dpi.







□ Sub scan magnification is done in the IPU board.









□ Magnified x 1000





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### No additional notes

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### **ITB Separation D** Rotating a lever up and down raises and lowers T the ITB against and away from the drum. □ There is no motor or $\bigcirc$ 5 separation mechanism to separate the belt and drum when the machine is idle. 0 0 0 d1790714 Slide 36


No additional notes















- □ The leading edge shift mechanism is the same as the Taurus.
- □ The trailing edge shift mechanism is a new mechanism.

























### **BR-C1** Training







□ Check Settings button: Displays the settings for the selected paper type













E	Improve New O Back-up and Re	ments to th peration Flow & store the Custo	ie Pa & Use om Pa	aper Library r Interface: aper via SD Card - 2
	► 05 : Machine: Maintenance		-	
	0502 Execute Photoconductor Refreshing	0503	_	
4	0504 Developer Fill	0505 Developer Fill: Result		
	0506   Developer Exhaust 0509   Developer Setup: Result	0507 Developer Exhaust: Result	4.	Select [0520: Backup / Restore Custom Paper
		0510 Execute Cleaning Initial Setting		
	0511  Execute Process Initial Setting	0512   ITB Manual Lubrication		Detel
	0513   Tishten Fusing Cleaning Unit at Replacement	0515 Reset Replaceable Parts Counter	-	Dalaj.
	0516	0517 Temperature / Humidity inside the Machine	-	
		·		
5	<ul> <li>b 0520 : Back Up / Restore Custom Paper Data</li> <li>001 Back Up Saved Paper Library</li> <li>002 Back Up Custom Paper Settings</li> </ul>		5.	Select either [Back Up Saved Paper Library] or [Back Up Custom Paper Settings] or [Bestore
				Custom Paper Sottingol
	003 Restore Custo	m Paper Settings		Custom Paper Settings
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See the 'Capturing the Debug Logs' section in the service manual for details of the procedures.






An announcement on the recommended vendors, capacity, speed, and format of the SD card will follow.



### RICOH



### RICOH











- □ From 12A models such as Ch-C1, we provide the new optional feature "Searchable PDF"
- □ This feature is provided as a SD card option.
- □ The OCR button is displayed after you install it from the SD card.
- □ It is not necessary to install any application on the customer's PC. Just install the OCR kit on the machine.
- □ After scanning the originals, the machine starts the OCR processing on the scanned data in the HDD.
- And then, when the OCR processing has finished, the machine sends the scanned data which includes OCR data.
- While OCR processing, you can use other functions, such as printing or scanning.

### **RICOH**



### Embedded OCR (Searchable PDF) How it Works



#### **User Operations**

- Users' basic operation does not differ from other scanner settings.This function supports the following file types: PDF, High
- Compression PDF, and PDF/A.

#### Send Searchable PDF to email

- When there are email size limitations and the scanned file size exceeds it, the file will be automatically divided so that its size will become within the limit.
- The file will be divided by pages.
- Please note that users cannot cancel the job once Searchable PDF job has started, unlike other file formats.

#### **Benefits for the Customer**

- Users can search specific words by using electronic search functions. Also this function lets you use Copy
- & Paste functions like other Office documents. Therefore, users can reduce time to look for documents. • This function requires only the OCR option. Users don't have to provide additional servers or software for
- using this function. Users don't have to provide additional servers or software
- Some models requires OCR option plus HDD option.

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#### No additional notes

RICOH













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### Finisher

- □ Improved productivity in stapling mode, because the capacity of the pre-stack tray is increased.
- □ Air-assisted paper delivery has been added for the shift tray, to improve stacking for large-size coated paper.
- The staple unit has a new mechanism to move the bottom fence up and down slightly, to allow the stapling position to be adjusted (this is a TCRU adjustment).
- □ The folding unit has an improved folding plate, and it pushes the paper further through the folding roller nip.
- □ This new finisher is able to support up to 20 sheets (80g/m2) for saddle stitching.
- □ The punch unit allows punching at 135ppm. Also, the punch has a registration mechanism (similar to previous finishers).
- □ For details on the new mechanisms, see the section of the course about the finisher.



The following slides just show the important points about installation. For full details, see the procedures in the service manual.

Follow the steps carefully. Observe all notes and cautions in the procedures.

### **Outline of the Procedure**

- Remove Tapes, Shipping Materials
- □ Install Operation Panel (Standard Installation, or Easy Access Installation)
- Status Light
- Power Cord, Cable Clamp
- □ Fusing Roller Knob Holder, ITB Lever, Cleaning Cloth
- Name Plate, Decals
- □ Clean the Exposure Glass
- Level the Main Machine
- Breaker Switch Test
- Install Toner Bottles
- Paper Library Data Installation
- Loading the Paper Trays
- Tray Paper Settings
- SMC Report
- Test Print
- Check Image Area
- Paper Bank Tray Heaters

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### **Factory Values Sheet**





#### **Fusing Roller Knob Holder** Open the left front door [A]. □ Locate the hole and faint vertical line where the [B] holder will be installed. [A] □ Peel the cover off the tape on the back of the holder d1790986 [B]. Align the holder with the vertical line [A] stamped into the sheet metal of the [A] cover. [B] Press the holder [B] onto the inside cover. d1790987 Slide 92







- □ After prolonged use, if you see the breaker switch covered with soot, this could indicate that the switch has malfunctioned or been damaged.
- □ To prevent damage to the breaker switch, installation of a voltage stabilizer (constant voltage transformer) is recommended for work sites where there is significant fluctuation in the AC power source.















### **Forced Shutdown**

- In case normal shutdown does not complete for some reason, the machine has a forced shutdown function.
- To make a forced shutdown, press and hold the power switch on the operation panel for 6 seconds.
- In general, do not use the forced shutdown.
  Forced shutdown may damage the hard disk and memory, and can cause damage to the machine.
   Use a forced shutdown only if it is unavoidable.

### No additional notes

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### Paper Tray Heaters - 1

- □ There are two tray heaters in the paper bank, an upper heater for Tray 1 and a lower heater for Trays 2 and 3.
- □ The tray heaters are not pre-installed. They are options that must be installed by the technician.
- There are no switches for these tray heaters. Their mode of operation depends on how they are connected to the AC drive board (see the next slide).
- Do not connect the tray heaters unless they are needed.
  The heaters are recommended for use only where the humidity is high.
- Please explain to the customer that while the heaters can effectively reduce collection of moisture in the paper trays, the machine will consume slightly more power.

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### **ITB Heater**

□ There is a heater below the image transfer roller.

- The heater is installed in the factory but not connected. Connect it if image problems caused by low temperature are occurring.
  - See the slide titled 'Replacement AC Drive Board Connectors' for where to connect this heater.
- □ After the heater is connected, the operation is as follows.
  - When the power switch is ON, the heater is off.
  - When the power switch is OFF, the heater is on to keep the ITB unit warm.

### No additional notes

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The following slides just show the important points about installation. For full details, see the procedures in the service manual.

Follow the steps carefully. Observe all notes and cautions in the procedures.

Note that installation of guide plates, mylars, sponges, and docking brackets depends on which peripherals are connected immediately upstream or downstream. Pay attention to the instructions in the manual.





No additional notes





Decur	ler - 4
[A]	Make some test copies to check for curl.
dratocr	<ul> <li>If the output is curled, correct with SP 1906-001- 007. The settings are as follows:</li> </ul>
Back Curi	<ul> <li>1: Slight Face Curl</li> <li>2: Excessive Face Curl</li> <li>3: None. This is the default setting.</li> <li>4: Slight Back Curl</li> <li>5: Excessive Back Curl</li> </ul>
Face Curl	For example, if the output appears like [A] in the diagram, use setting 4 or 5.
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- □ Tray 1, 1st Tray: Main Machine, SP1906 001
- □ Tray 2, 2nd Tray: Main Machine, SP1906 002
- □ Tray 3, Top Tray: LCIT, SP1906 003
- □ Tray 4, Middle Tray: LCIT, SP1906 004
- □ Tray 5, Bottom Tray: LCIT, SP1906 005
- □ Tray 6, Multi Bypass Tray: On top of LCIT, SP1906 006





□ Installation is different from previous models.

# LCIT - 1 Install the tray heaters before you dock the LCIT with the main frame.



# LCIT - 3

Image: Additional and the second se	<ul> <li>Docking with the main machine:</li> <li>Push the unit toward the right side of the main unit until they are about 15 cm (6 in.) apart.</li> <li>Open the front door of the unit.</li> <li>Remove screw [A] (x1).</li> <li>Pull the spring-loaded lock lever [B] forward and release it to make sure that it is free and moves easily.</li> </ul>
Image: Second	<ul> <li>Slowly, push the unit [A] onto the right side of the main machine. You should hear two clicks as the lock lever connects with the two upper joint pins.</li> <li>Behind the door, re-attach screw [B] to fasten the lock lever.</li> </ul>
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#### **Moving a Finisher** Turn the system off and unplug the main machine from the power source. Disconnect the finisher I/F cord from the upstream unit (or main machine). Make sure that the front door of the finisher is closed. Loosen the screws of the caster D cover (x2). 0 Push the caster up until it stops and is not touching the floor. Tighten the caster cover screws. This prevents the caster from ٠ snagging on a carpet or door jam when the finisher is pushed along the floor. After the finisher has been d7340172 moved to its new location, lower the caster again and tighten the screws. Slide 121





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No additional notes



Folder	- 3
<ul> <li>There are six types of folding.</li> <li>FM1: Z-Fold</li> <li>FM2: Half-fold</li> <li>FM3: Letter Fold-out</li> <li>FM4: Letter Fold-in</li> <li>FM5: Double-parallel Fold</li> <li>FM6: Gate Fold</li> </ul>	FM1 FM2 FM3 FM3 FM6

- □ This is the same as previous models.
- □ The names of these fold types are the same as the names shown in the operation manual and on the display.
- □ The numbers FM1 to FM6 appear in the SP mode. The names (z-fold, etc) appear on the operation panel.
- □ Stapled sheets cannot be folded.

























#### **BR-C1** Training







This section takes a quick look at the PM table, and new features related to PM.

Cleaning, lubrication, and replacement procedures are in the Replacement and Adjustment section of the service manual. Important points will be mentioned during the course.

Also see Cleaning Points in the maintenance section of the manual for detailed procedures on how to clean sensors and rollers in the paper path with only a small amount of disassembly.

#### **BR-C1** Training



#### No additional notes

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RI	CO	Н

New features on the PM co the following:	unter display allow you to see
Estimated usage rate / R     yield)	emaining days (with relation to PM
Commissioning Status R	eport
SP Mode (PM Parts)	Prev Menu Exit
Select Item	
1 All PM Parts List	Counter Clear for Parts Exceeding Target Yield
2 Parts List for PM Yield Indicator	3 Clear All PM Settings
Parts Exceeding Target Yield	(4) Counter List Printout
5 Estimated Usage Rate/Estimated Remain Days	6 Commissioning Status Report Print
Last SP Login 1 May 2008 3:29 System Status	Job List 3:29
	112520.10

□ This screen appears when you press the PM Counter button just after entering SP mode.




- Motor rotation time: This is the accumulated time that the motor that drives the PM part has been rotating.
- □ The machine applies the running distance calculation to display the usage rate and remaining days of parts.
- With this system, PM can be scheduled with more accuracy according to machine usage conditions unique to every user.
- Please refer to the usage rate and remaining days when scheduling PM.

#### Note: Running Distance Data

- Since the PM parts yield is determined by given conditions (e.g., A4LEF, 26P/J, FC70%, etc), if a machine is used in an unexpected manner, parts could reach their life before the prescribed yield (EM), or on the contrary, could exceed the prescribed yield.
- However, if a machine refers to the running distance of the parts (which is a calculation based on the total number of revolutions made by the parts), PM can be carried out at more precise timing because the running distance reflects the actual status of the machine.

SP Mode	(PM Parts)			Prev Menu	Exit
Estimate	d UsageRate/RemainDays	Select parts			
No Desc	ription	Exceed Usage Rate	Remain Days		
001 #PCI	DU:K	000	255	Clear	
003 #Dev	elopment Unit:K	000	255	Clear	01/05
008 #Clea	aning Unit:K	000	255	Clear	A Dravel
012 #Cha	irge Roller Unit:K	000	255	Clear	A Prev
021 #Pho	to Conductor:K	000	255	Clear	▼ Next
024 #PCI	DU:C	000	200	Clear	
026 #Dev	elopment Unit:C	000	255		
[A]	[B]	[C]	[D]	[E]	
🗆 [A]: Nu	mber buttons. Press	sing a number	button o	pens a sul	omenu.
□ [B]: De	scriptions. The # ma	ark denotes a	"unit" (no	t individu	al items)
[C]: Dis	plays the estimated	usage rate (0	~100%)		
[D]: Dis	plays the estimated	remaining da	iys (255~0	) days)	
[E]: Cle starts t • Th	ear button: Resets the automatic adjust e Clear button that ap	<b>ne number of r ments, PM co</b> opears when yo	remaining unter clea ou do SP 7	days, rep ar 7622 to res	<b>lacemer</b> et PM co

- □ This screen appears when you press (1) All PM Parts List in the PM Counter display.
- □ The Clear button operates the same way as CH-C1.







- □ T: Counter This is the total counter for all applications
- □ O: Counter This is the counter for network and SDK applications











- 1. Status Light
- 2. Operation Panel
- 3. ADF
- 4. Scanner
- 5. ITB Cleaning Unit
- 6. Fusing Unit
- 7. PTB (Paper Transport Belt)
- 8. Invert/Exit Unit
- 9. Purge Path
- 10. Toner Supply Unit
- 11. Laser Unit
- 12. PCDU
- 13.ITB Unit
- 14. Registration Unit (Main Path)
- 15. PTR Unit (Paper Transfer Roller)
- 16. Vertical Transfer Unit (VTU)
- 17. Tray 1
- 18. Tray 2
- 19. Tray 3
- 20. Universal Trays (x2)
- 21. Tandem Tray
- 22. Used Toner Bottle



- 1. ADF
- 2. Paper Bank
- 3. Vertical Transport Unit
- 4. Registration Unit
- 5. ITB Unit (Image Transfer)
- 6. PTR Unit (Paper Transfer)
- 7. Paper Transport Belt
- 8. Straight-through Path Exit
- 9. Invert Exit
- 10. Duplex Return Path
- 11. LCIT (Option)
- 12. Multi Bypass Tray (Option)



- 1. Inverter Entrance Motor
- 2. Duplex Transport Motor 1
- 3. Exit Junction Gate Motor
- 4. Exit Invert Motor
- 5. PTR Lift Motor
- 6. LCT Relay Separation Motor
- 7. Main Relay Separation Motor
- 8. Duplex Transport Motor 2
- 9. Trailing Edge Shift Motor
- **10. Web Cleaning Motor**
- **11. Cleaning Pad Motor**
- 12. PTB Motor
- 13. Scanner Motor
- 14. Polygon Motor
- 15. Tandem Transport Motor



- 1. Toner Bottle Motors (x2)
- 2. Toner Bottle Cap Motors (x2)
- 3. Toner Feed Motor
- 4. Toner Agitator Motor
- 5. Drum Cleaning Motor
- 6. Fusing Motor
- 7. Used Toner Collection Motor
- 8. Used Toner Bottle Motor
- 9. Drum Motor
- 10.ITB/PTR Motor
- 11. Development Motor
- 12. Invert Duplex Motor
- 13. Invert Exit Motor
- 14. Tray 1 (F1) Feed Motor
- 15.Tray 1 (F1) Transport Motor 16.Tray 2 (F2) Feed Motor
- 17. Tray 2 (F2) Transport Motor
- 18. Tray 3 (F3) Feed Motor
- 19. Tray 3 (F3) Transport Motor
- 20. Bank Exit Motor
- 21. Vertical Transport Motor
- 22. Tray 1 (F1) Lift Motor
- 23. Tray 2 (F2) Lift Motor
- 24. Tray 3 (F3) Lift Motor
- 25. Belt Centering Motor
- 26. Transport Belt Motor
- 27. Registration Entrance Motor
- 28. Registration Timing Motor
- 29. Transfer Timing Motor
- 30. Exit Motor
- 31. Registration Gate Motor
- 32. Registration Shift Motor
- 33. Pressure Roller Lift Motor
- 34. ADF Exit Motor 35. ADF Scan Motor
- 36. ADF Bottom Plate Lift Motor
- 37. ADF Feed Motor
- 38. ADF Pickup Roller Motor
- 39. ADF Transport Motor
- 40. ADF Relay Motor



#### **BR-C1** Training











- □ The controller box can be removed if necessary to move the machine through a tight space.
  - Service Manual > Replacement and Adjustment > Common Procedures > Controller Box Removal









#### **Summary of Board Functions - 2**

- □ SIO (Scanner Interface Board). Controls motors and circuits of the scanner unit.
- □ SBU (Sensor Board Unit). Contains the CCD that processes analog image data and converts it to digital data.
- □ CGB (Charge, Grid, Bias) Power Pack. Generates high voltage DC supply for image creation.
- □ Transfer Power Pack. Generates high voltage DC supply to the image transfer unit
- □ Separation Power Pack. Generates high voltage DC output for the paper transfer unit.
- □ DRB (Drive Board). Controls the motors and circuits of the registration unit.
- LDB (Laser Drive Board). Controls the LD unit, including VCSEL.
- **OPU** (Operation Panel Unit). Controls the operation panel.

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#### **Summary of Board Functions - 4**

HDD. Scanned image data is compressed and held here temporarily. Also, provides storage space required for user data, font downloads, form downloads, electronic sorting, money charges, job history data, print job spooling, address book, sort output, job logs, etc.

- Capacity: 500 GB (250 GB x2)
- Local storage
  - » Printing: approx. 15,000
- Temporary storage
  - » Copying: electronic sorting: approx. 5,000 pages
  - » Scanning: approx. 2,200 pages
  - » Printing: electronic sorting: approx. 20,000 pages
  - » Copying: electronic sorting: approx. 5,000 pages

#### No additional notes

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#### **Summary of Board Functions - 5**

- □ EDRB (Exit Drive Board). Controls the motors in the exit unit on the left side of the drawer.
- □ CNB (Connector Board). Sorts and routes signals on harnesses between the BCU and IOB.
- URRB (Ultra-sonic Receive Board). This is the small PCB on the double-feed sensor above the original path in the ADF. Receives the ultrasound signals.
- URTB (Ultrasonic Transfer Board). This is the small PCB on the double-feed sensor below the original path in the ADF. Emits the ultra-sound signals.

#### No additional notes

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□ The machine has three NVRAMs. There are two on the controller board, and one on the BCU.



The machine has three NVRAMs. There are two on the controller board, and one on the BCU.



#### Replacement

Controller Board (2)

When replacing the controller board, first, check which SDK applications have been installed (such as the OCR Unit). After replacing the controller board, re-install the SDK applications by following the installation instructions for each application.

After reinstalling the SDK applications, print the SMC (SP-5-990-024/025 (SMC: SDK/Application Info)).

No additional notes

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#### Replacement HDD Unit - 2

After Installation of a New HDD Unit

- 1. Do SP5-832-001 to format the hard disk.
  - 2. Do SP5-853-001 to copy the preset stamp data from the firmware to the hard disk
  - 3. Do SP5-846-052 to copy back the address book to the hard disk from the SD card to which you have already copied the address book data if possible.
  - 4. Turn the main power switch off/on.
- Make sure the cables are correctly connected on the controller board: Red cable: Upper socket, Black cable: Lower socket.
  - If the connections are reversed, the machine will issue an error at startup. If it occurs, reconnect the HDD correctly and start again. The HDD will not be damaged by such an incorrect startup.

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#### Replacement HDD Unit - 3

If the customer has any concerns about the security of any information on the HDD, the HDD must remain with the customer for disposal or safe keeping.

- The HDD may contain proprietary or classified (Confidential, Secret) information.
- Specifically, the HDD contains document server documents and data stored in temporary files created automatically during copy job sorting and jam recovery. Such data is stored on the HDD in a special format so it cannot normally be read but can be recovered with illegal methods.

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□ You can use SP6020-001 to make the scanning entrance roller stop for the second skew adjustment for any size of paper (not just small paper).



- 1. Original Length Sensor (A4 LEF, LT LEF)
- 2. Original Length Sensor (B5)
- 3. Original Length Sensor (A4)
- 4. Original Length Sensor (LG)
- 5. Width Sensor 5
- 6. Width Sensors 4
- 7. Width Sensor 3
- 8. Width Sensor 2
- 9. Width Sensor 1









- □ After the grip roller starts to rotate:
  - The grip motor increases its rotation speed slightly in order to reduce the gap between the original and the downstream original being scanned.
  - If this speed increase were maintained, the leading edge of the original would collide with the trailing edge of the downstream original.
  - To compensate for the difference in speed, when the leading edge is detected at the skew correction sensor, the speed of the feed belt is reduced, and the line speed slows as the leading edge of the original reaches the pre-scanning roller.































### **Shading Correction**

- A white standard label is affixed to the rear scale which the machine uses to calibrate the white balance with light reflected from the LED exposure lamp as soon as the machine is turned on. Shading is done on the flatbed scanner one original at a time, regardless of whether the image is FC or B&W.
- When scanning with the ADF, shading correction is done before the first original is scanned, and then executed again at prescribed intervals (more than one minute), regardless of whether the originals are FC or B&W.



- A. 1st Carriage
- **B. Scanner HP Sensor**
- C. 2nd Carriage
- **D. Scanner Wires**
- E. Scanner Motor
- F. IDB
- G. SIO





No additional notes



For width direction, if the value detected by the CCD at any of the three detection locations (S1, S2, or S3) is 18 or more, the machine detects that an original has been placed. SP 4-310-1 to 9 show the CCD readings at S1 to S3. The values shown are the latest detection results.



□ This function is the same as V-C3.











□ There is no caution for the main exposure glass, because the side scale is attached to the service part, so it is not possible to make a mistake.







- [A] Photosensor (feedback detection)
- [B] Collimating Lens
- [C] Mirror

- [D] Aperture
- [E] Lens (TCL)
- [F] Quarter Wave Plate
- [G] VCSEL Array

"VCSEL" means Vertical Cavity Surface Emitting Laser. It operates at 4800 x 4800 dpi.

#### The VCSEL method has the following merits:

- Low current threshold / Low energy consumption
- □ High resolution for vertical writing (4800dpi)
- Polygon motor speed reduction (temperature reduction) / noise reduction, because 40 beams are writing






### Cautions

#### Laser Unit

- □ Laser beams can seriously damage the eyes and cause permanent blindness.
- Make sure that the machine is switched off and unplugged from the power source before performing any procedure in this section.
- Turn off the power switch on the left front corner of the machine. A message will prompt you to wait before you switch on the main switch.
- □ After the message goes off, switch off the main power switch.
- Unplug the machine and wait at least 10 min. before performing any procedure.

#### No additional notes

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□ This tool is the same as the scanner adjustment pin.

#### **BR-C1** Training

















 $\hfill\square$  Items 6, 7, and 8 must always be replaced at the same time.







#### **Related SP Codes**

- □ SP2-220-001 Charger Cleaner Operation Start
  - > Executing this SP code cleans the charge wire automatically.
- □ SP2-221-001 Charge Operation Mode
  - Allows selection of the timing for automatic cleaning of the charge corona wires.
  - O: No cleaning, charge corona wires can be cleaned by execution of SP2-220 only.
  - 1: Cleaning done when process control is executed after the prescribed number of prints (p). Wire cleaning precedes process control execution. Executes based on the number of pages prescribed by SP2-221-002.
  - 2: Cleaning executes automatically after count exceeds prescribed number of pages, at the end of job in progress. Executes based on the number of pages prescribed by SP2-221-002. Default: 6,000 prints
- SP2-221-002 Charger Cleaner Operation Interval
  - > This SP specifies the number of pages for the charge wire cleaning interval.
- SP2-221-003 Charge Cleaner Count Display
  - Displays the total number of cleanings, both automatic and those done with SP2200-001.
- □ SP2-221-004 Charge Cleaner Count Clear
  - This SP clears the charge cleaner count display (SP2-221-003). Clears the count for the number of cleanings performed after the charge cleaner unit is removed and then re-installed in the machine.









□ The target yield for the lubricant bar is 640k.











# <section-header><section-header><image><list-item><list-item><list-item>

- 1. Ozone Air Intake Fan
- 2. Ozone Air Exhaust Fan
- 3. Fusing Transport Exhaust Fan
- 4. Fusing Exhaust Fan: Upper
- 5. Fusing Exhaust Fan: Lower
- 6. Fusing Exhaust Filters
- 7. Ozone Filters











□ The procedure for tightening the drum knob is the same in the Aries.





#### **Replacement and Adjustment** Reinstalling the Drum and Cleaning Unit - 1



 Install the drum first. Note that it must be aligned correctly and locked before you can install the drum cleaning unit.

- Hold the drum handle vertical, set the drum, and then rotate the handle to the left. This aligns the drum in its cradle.
- Rotate the knob clockwise until it stops, to lock the drum.

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# <section-header><section-header><image><image><image>














































□ Not all the old developer is removed. About 145 g remains (same as Aries).



### **BR-C1** Training



#### No additional notes

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### **Replacement and Adjustment** Cleaning the Development Unit - 1



### **BR-C1** Training

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No additional notes









### What is Process Control?

### Background

In the electrostatic copying process, many conditions such as changes in temperature, length of time the machine has remained idle, print mode selection (amount of toner on a page), etc., affect image quality.

### Aim

The machine must frequently sample the machine's development ability (condition or status) at prescribed intervals, and then make adjustments based on these samplings in order to maintain optimum conditions for production of the best possible images.

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### What is Process Control?

Process control can be divided into two separate phases:

### 1. Potential control.

Performs adjustments for development that affect basic image quality such as gradation levels, line width.

### 2. Toner supply control.

Standardizes the image density by controlling toner supply.

These two methods have been already adopted the color products. But, this is the first time for b/w products.

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□ Katana-series models do not make a gradation pattern for potential control.















□ PID control is similar to the Aries.











### Layout - Rollers



- 1. Duplex Transport Rollers
- 2. Main Relay Rollers
- 3. Bank Exit Rollers
- 4. Vertical Transport Rollers
- 5. 3rd Transport Roller
- 6. 3rd Feed Roller
- 7. 3rd Pickup Roller
- 8. 3rd Separation Roller



- 1. Left Tray Paper End Sensor
- 2. Rear Fence Return Sensor
- 3. Lower Limit Sensor
- 4. Paper Height Sensors 1 to 5
- 5. 1st Paper End Sensor
- 6. 1st Feed Sensor
- 7. Bank Exit Sensor
- 8. Vertical Transport Sensor
- 9. 2nd Transport Sensor
- 10.2nd Feed Sensor
- 11.3rd Transport Sensor
- 12.3rd Feed Sensor
- 13.3rd Paper Size Sensor
- 14.3rd Paper End Sensor
- 15.2nd Paper Size Sensor
- 16.2nd Paper End Sensor



- 1. Bank Exit Motor
- 2. Main Relay Separation Motor
- 3. Vertical Transport Motor
- 4. 1st Paper Feed Motor
- 5. 1st Grip Motor
- 6. 2nd Feed Motor
- 7. 2nd Grip Motor
- 8. 3rd Feed Motor
- 9. 3rd Grip Motor



- 1. Pickup Solenoid
- 2. Transport Rollers
- 3. Feed Roller
- 4. Feed Sensor
- 5. Separation Roller
- 6. Pickup Roller
- 7. Pressure Slide Arm



- 1. Pickup Solenoid
- 2. Transport Rollers
- 3. Feed Roller
- 4. Feed Sensor
- 5. Separation Roller
- 6. Pickup Roller
- 7. Pressure Slide Arm

















No additional notes





























□ This is a new feature (not in Katana-C2).





• For more details, please refer to "Paper Tray Heaters" in "Installation".

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No additional notes









Replacement and Adjustment > Vertical Transport Unit > Opening the VTU

### **BR-C1** Training











1. Main Relay Sensor: Monitors movement of paper to check for paper jams.

2. Registration Entrance Sensor: Monitors movement of paper to check for paper jams.

3. LCT Relay Sensor: Monitors movement of paper to check for paper jams.

4. Double-feed Sensor (Emitter): Mounted below the double-feed sensor (receptor), the paper passes through the gap between these two sensors for the double-feed check.

5. Double-feed Sensor (Receptor): Mounted above the double-feed sensor (emitter), the paper passes through the gap between these two sensors for the double-feed check.

6. Registration Timing Sensor: Determines the timing of the rotation of the registration gate roller to stop paper in the paper path, also checks for paper jams.

7. CIS: Checks paper position in the path to determine the amount of correction needed for side-to-side registration.

8. Transfer Timing Sensor: Monitors paper movement for jam detection and controls the timing of paper release to the PTR unit.







A: Emitter

**B: Receiver** 









- □ The registration timing roller [D] feeds the leading edge against gate of the gate roller (which has stopped) to straighten the leading edge.
- □ After skew correction, the paper feed rollers briefly release the paper, and the shift rollers grip the paper and adjust the position of the paper for main scan registration.





No additional notes







□ The registration gate roller is part of the LE shift unit, so the nip does not open during main scan registration.



□ Home position is where the LE and TE units stay when the shift units are idle.























- The image is first transferred from the drum to the image transfer belt and then carried to the PTR unit. At the PTR unit [2], the image is taken from the belt and transferred to paper.
- □ The paper is separated from the ITB and then transported over the PTB unit [4] to the fusing unit.
- D PTB: Paper transport belt

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#### **BR-C1** Training


















 $\hfill\square$  The cleaning unit set switch is included in the ITB unit, not in the cleaning unit.



□ This motor also drives the cleaning unit in the paper transfer roller unit.



□ This motor also drives the cleaning unit in the paper transfer roller unit.



### **ITB Unit Location**





















### **BR-C1** Training











### **BR-C1** Training







- □ If Process Control Fails, it is the same as explained earlier in the PCDU section
  - If process control did not end successfully, the machine will issue an SC code.
  - Correct the problem by following the steps recommended for releasing the SC code.
  - After correcting the problem, service control will not execute automatically, so you will need to execute process control manually with SP3011-002.

### **BR-C1** Training

















### **Replacement and Adjustment Re-installing the ITB Cleaning Unit - 1** 1. Make sure the machine power is off. 2. Open both front doors. 3. Open the lubricant blade and cleaning blade by rotating the two levers up. 4. Remove the PTR. 5. Remove the drum cleaning unit. 6. Remove the front edge cover. 7. Turn the machine power d1793203 on. Enter SP mode. 8. Do SP2310-1 (Force Lubricant - Belt Cleaning).

No additional notes

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### **BR-C1** Training



### No additional notes

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### See the following table for a summary.

Part	When Replaced Individually	When ITB Unit Replaced as a Unit
Cleaning blade *1	SP2310-001	SP2310-001
Lubricant brush roller *3		
Lubricant bar *3		
Lubricant blade *2 *3		
*1: Setting power (zinc stearate) applied before shipping.		
*2: Yellow toner applied before shipping		
*3: Always replaced together as a set.		





 $\hfill\square$  This PTR unit has a cleaning unit.



No additional notes





□ This motor also drives the cleaning unit in the image transfer belt unit.





□ This motor also drives the cleaning unit in the image transfer belt unit.


















### Replacement and Adjustment Notes about Lubrication

- □ The cleaning blade, lubricant roller, and lubricant bar are always replaced together.
- Setting powder (zinc stearate) is applied to the cleaning blade at the factory.
- □ When this set of parts is replaced, setting powder must be applied at the PTR roller nip on both ends of the roller while the PTR is rotated.
- □ When the paper transfer roller (PTR) is replaced, the entire surface of the roller must be dusted with setting powder while the PTR is rotated.

No additional notes

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- □ If process control fails, you will see "Fail" appear on the operation panel, and then the machine will issue an SC code.
- Do the procedure recommended to resolve the problem that triggered the SC code.
- □ You must then execute SP3011-002 to execute process control manually because it will not execute again automatically.



Used toner is not recycled.







No additional notes





#### **Bottle Full Sensor** Normally, the used toner bottle sensor switches on/off repeatedly during the rotation of [B] the coils. When the used toner bottle [A] becomes full, the load on the transport coils means that the torque limiter on the drive gear CCC MANAGERE cannot turn. So, the sensor stops switching on/off. If this condition ARRANNA STATE continues for longer than 3 seconds, the bottle is full. • The machine stops. If there is a job in progress, it will stop immediately and an alert will appear on the operation panel. d1791117 The capacity of the used toner bottle is about 1200 K sheets. Slide 412



### **Replacement and Adjustment**

### □ If a blockage occurs in either the upper or lower used toner path, the machine will issue SC448.

- In this case, the mechanism must be disassembled to determine if the upper duct or lower pipe is jammed with clumped toner.
- The jammed duct or pipe must be replaced.

### □ Rotate the used toner transport motor.

- If the motor does not turn easily, this means there is a blockage in the upper used toner path, lower used toner path, or both.
- The motor drives the belts for both paths, so you will not be able to determine which path is blocked until the drive belts are disconnected.

Slide 414





4: Paper Transport Belt Unit







#### Layout - 1: Upper unit 1. Entrance Guide (Lower) 2. Entrance Guide (Upper) Fusing Temperature Sensor 3. 10 4. Fusing Belt 6 5. Fusing Temperature Sensor 11 5 4 6. Heating Roller Thermostats (x2) 12 з 7. Fusing Temperature Sensor 13 8. Fusing Heat Thermistor (Rear) 14 2 9. Heating Roller 10. Heating Roller Lamps (1090/1000 W) 1 11. Heating Roller Lamps (1150/900 W) 12. Fusing Belt Paper Sensor 13. Fusing Exit Guide Plate 14. Stripper plate 15. Hot roller d1791101 Slide 420





### Layout - 3 : Other





### **Fusing Lamp Voltages**

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Location	Element Site	Connector Color	Voltage
Upper	Center A	Green	1090 W
	Center B	White	1000 W
Lower	End-to-End	Blue	1150 W
	Ends Only	Yellow	900 W

### Fusing Lamp Operation by Paper Size

Size (L: Main Scan Direction)	Operating Fusing Lamps
148 mm or less	Center A
148 mm - 225 mm	Center A, Center B
225 mm - 304.8 mm	Center A, Center B, End-to-End
More than 304.8 "	Center A, Center B, End-to-End, Ends Only

### Fusing Lamp Operation (Other Cases)

Machine Status	Operating Fusing Lamps	
Machine boot	Center A, Center B, End-to-end, Ends only, Fusing lamp	
Hot roller idling after reload temp.	inside pressure roller.	
Before printing		
Before paper feed		
Ready	Ends only, Fusing lamp inside pressure roller	
Low power mode		
After paper feed	Same as "Fusing Lamp Operation by Paper Size" table above/	





- □ The NC sensors in the fusing unit and the thermopile attached to the main machine on the right side of the fusing unit both use infra-red
- □ The thermopile, extremely sensitive to temperature change, is separate from the fusing unit. The NC sensors, slightly less sensitive to temperature than the thermopile, are located inside the fusing unit.



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- □ The width of the nip of between the hot roller and pressure roller is 15.9 mm and is not adjusted in the field.
- The width of the nip is adjusted manually at the factory with a screwdriver by raising and lowering the pressure roller. (This method is the same as the Taurus.)




[C]	Jam Detection	
Sensors	Detecting function	
[A] Fusing exit sensor	Jam detection during a job, and remaining paper between the fusing unit and the exit unit	
[B] Accordion jam sensor	Remaining accordion jam paper just after the fusing nip. No jam detection during a job.	
[C] Fusing belt paper sensor	Remaining paper wrapped on the fusing belt; detected by the difference in reflection between the paper and the fusing belt. No jam detection during a job.	



No additional notes





No additional notes































### **BR-C1** Training

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### **BR-C1** Training

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No additional notes





### Replacement and Adjustment Re-installing the Fusing Unit Cleaning Unit







□ The bends in the paper feed path are not sharp, so heavier paper (up to 300 g/m2) can be fed.



- 1. Exit Motor
- 2. Invert Entrance Motor
- 3. Exit/Invert Motor
- 4. Duplex/Invert Motor
- 5. Duplex Transport Motors 1
- 6. Duplex Transport Motors 2
- 7. Exit Junction Gate Motor
- 8. Exit/Invert Separation Motor
- 9. Invert Junction Gate Solenoid



- 1. Exit JG Sensor
- 2. Exit Sensor
- 3. Exit/Invert Sensor
- 4. Purge Relay Sensor
- 5. Purged Paper Sensor
- 6. Duplex Invert Sensor
- 7. Duplex Transport Sensor 1
- 8. Duplex Transport Sensor 2
- 9. Duplex Transport Sensor 3
- 10. Duplex Transport Sensor 4
- 11. Duplex Transport Sensor 5
- 12. Duplex Transport Sensor 6
- **13. Duplex Exit Sensor**



- 1. Duplex/Invert Motor
- 2. Duplex Transport Motor 1
- 3. Duplex Transport Motor 2
- 4. Bank Exit Motor (in Vertical Transport Unit)



- □ The paper (1) passes under the cooling pipe (2).
- □ The pipe has a system of capillary tubes filled with water running along the inside of the pipe.
- □ The paper leaving the fusing unit heats the parts of the cooling pipe that it touches. This heats the water inside the tubes.
- □ The principle of heat transference moves the heated water to toward the cooler rear end of the cooling pipe where a heat sink with fins (4) is attached.
- □ The fins of the baffle conduct heat away from the water in the pipe. Air moving around the fins dissipates the heat into the air.




□ JG: Junction gate



























□ For the 'strong' setting, the curler unit moves further away from the central position than for the 'weak' setting.

User Setting	Decurl Path	Decurl Roller Nip
Face curl correction (weak)	Lower path	1.5 mm
Face curl correction (strong)	Lower path	1.8 mm
Normal (not selected)	Upper path	0.3 mm
Back curl correction (weak)	Upper path	1.5 mm
Back curl correction (strong)	Upper path	1.8 mm

### **User Adjustment**

- Moving the decurl roller up or down changes the amount pressure applied to the paper to correct paper curl.
- **\Box** The maximum range of movement is ±13.15 mm from the home position.
- □ The amount of pressure applied to correct paper curl can be adjusted with the "Adjustment Settings for Skilled Operators".
- 1. Press the [User Tools] button on the operation panel.
- 2. Touch "Adjustment Settings for Skilled Operators" and log in.
- 3. Touch "0116 Adjust Paper Curl".
  - The next screen presents options for adjusting the amount of curl applied (Weak or Strong) for all the trays (Tray 1 to 6).
  - To adjust the amount of pressure applied for "Weak" or "Strong", use SP1906-1 to 6.

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### **Up/Down Movement - 1 The up and down movement** of the decurl unit is controlled by two sensors. **Before a print job, the decurl** unit HP sensor [1] detects the home position of the decurl unit. [A] □ To correct back curl, the unit is raised [A] the distance specified by the user. □ If the decurl unit limit sensor a [2] detects the bottom actuator, this triggers the over limit error (SC593). [2] Slide 486





- Most parts in the decurl unit have been precisely adjusted at the factory. Do not remove the parts for which replacement procedures are not mentioned in this manual. Otherwise, adjustment for the decurl unit requires special tools.
- Only the following parts can be replaced without special adjustment.
  - DDRB (Decurl Drive Board)
  - Decurl Unit Motor
  - Decurl Feed Motor
  - Decurl Unit HP and Limit Sensor

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### **BR-C1** Training

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### Replacement and Adjustment Working on the Decurler Unit

























- □ At [1], the junction gate transport rollers feed the 1st sheet which brushes past the pre-stack junction gate and into the nip of the 1st pre-stack rollers.
- □ When the trailing edge of sheet passes the junction gate at [2], the pre-stack motor reverses and the 1st pre-stack roller and 3rd pre-stack roller feed the sheet into the standby path. Next, just before the leading edge of the sheet passes the 1st pre-stack roller, the pre-stack motor stops with the sheet in the nip of the 1st pre-stack roller and pauses (standby), and then waits for the next sheet to feed.
- Next, at [3] just before the leading edge of the sheet passes the 1st pre-stack roller, the pre-stack motor starts to rotate forward to drive the 1st pre-stack roller and 3rd pre-stack roller.
- The leading edge of sheet that was at standby and the leading edge of the sheet that was just fed are aligned [4], and then the sheets are fed together to the stapling tray.
- Thereafter, it is possible to stack several sheets through repetition of this operation (pre-stacking). One or the other mode is employed, depending on the paper size, stapling mode, and the number of sheets to be pre-stacked.

### Pre-stacking Method Depends on Paper Size

For some paper lengths, the new method can adversely affect paper feed and productivity. So, the older method is used for some paper lengths.

Size	Method	Number of Sheets	
	-	Booklet Stapling	Corner Stapling
B5, 16-kai LEF	Old Method	6	3
A4, LT LEF	New Method	6	3
B5, 16-kai SEF	New Method	4	2
LT, A4 SEF	Old Method	4	2
LG, B4 SEF	Old Method	4	3
8-kai, A3, DLT SEF	New Method	4	3





□ The exit guide opens only for stacks of more than 15 sheets, regardless of paper thickness.








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The End