RICOH   Technical Bulletin

Model: General RTB	Date: 4-Feb-03	No.: RGene013b

RTB Reissue

The items in **bold italics** have been corrected or updated.

Subject: Service remarks at installation	Prepared by: T. Itoh
From: Technical Service Sec. Service Planning Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other (Specification change)		

Please note the following change in counter specification. Although a production line modification will not be applied to some products, the action described in *4. Important Notes for Installation* below <u>must be taken for **all products** at installation</u>.

Overview:

Electronic counters will now be set to <u>**0**</u> when released from the factory, instead of being set to a negative value.

Background:

Previously, counters were set to a negative value when shipped from the factory, and later set to "0" at installation, following installation test copies/prints. However this may cause confusion among some customers as to why the counter value at the commencement of the contract is "0", even though some installation test copies have already been made.

Details:

1. Specification Change

	Specification
Current	• The initial value of the electrical counter is <u>**negative**</u> when products are shipped from the factory. **Note:** After making test samples at installation, the negative counter value can be set to "0" with SP mode.
New	• The initial value of the electrical counter is <u>**"0"**</u> when products are shipped from the factory. **Note:** After making test samples at installation, the (positive) counter value cannot be set back to "0" with SP mode.

Model: General RTB	Date: 4-Feb-03	No.: RGene013b

2. Firmware Modification

Due to the counter modification, SP5-849 has also been changed as follows for products that have this SP mode (listed below).

	SP mode name:	Specification:	
Current	Counter Clear Day	•	When the electrical counter is changed **from a negative value to 0**, the machine recognizes this as the counter clear day and stores this date in the NVRAM.
New	Installation Date	•	When the electrical counter **reaches a value of 20**, the machine recognizes this as the installation date and stores this date in the NVRAM.

NOTE: The following products have SP5-849. The new firmware for these products has not yet been released. However the release notes for each will clearly mention the new firmware version.

New products: Bellini-C2, Adonis C3
Current products: Martini C1, Model-U C1

3. Schedule for the Counter Modification

The following is the current schedule for when the counter modification will be applied. Please note that there are some models to which the change will not be applied (marked as "---"), due to production schedules, production lot quantities and sales figures.

NOTE: The actual cut-in months that have been confirmed appear in the "Cut-in production month" column below. This RTB will be reissued when these dates have been confirmed for the remaining products.

(1) New products

Product Name	Product Code	Target cut-in production month	Cut-in production month
Bellini C2	B070	2003.03	***April '03 production***
Adonis C3	B079/82	2003.03	First mass production lot
Model J-P2	G080	2003.03	***March '03 production***
Model J-P2 CF	G367	2003.03	***March '03 production***
Model AR- P1	G081/92	2003.03	***March '03 production***
Model K-C1a	B120	2003.03	***March '03 production***

Reissued: 19-Mar-03

Model: General RTB	Date: 4-Feb-03	No.: RGene013b

(2) Current products

Product Name	Product Code	Target cut-in production month	Cut-in production month
Digital B&W Copiers			
Bellini C1	A294	---	**---**
Martini C1	B064/65	2003.03	***April '03 production (see Note)***
Model M-C2b	B098	2003.03	***March '03 production***
Adonis C2	B003/04/06/07	---	**---**
Russian C2	B022/27/31	2003.03	February ***'03*** production
Model K-C1	B039/40/43	2003.03	***March '03 production***
Stella C1	B044/45/46/49	2003.03	***March '03 production***
Digital WF Copiers			
Dolphin	B010	2003.03	***March '03 production***
Analog Copiers			
All products	-	---	**---**
J2SS-C3	***B047/48***	***(See Note)***	***March '03 production***
Whale	***A174***		***March '03 production***
Color Copiers			
Model I2	B018	---	**---**
Model L2	B017	---	**---**
Model C2	B023	2003.02	February ***'03*** production
Model U-C1	B051/52	2003.03	***April '03 production***
Color Printers			
Model J-P1	G060	---	**---**
Model J-P1 CF	G570	---	**---**
Model U-P1	G071	2003.03	***March '03 production***
Pomelo P3	G063	2003.03	***March '03 production***

NOTE: The counter change will be applied as a running change to production units only. For machines already shipped out or in the field, please be sure to take the action described below in Section 4.

NOTE: ***For Martini-C1 mainframes assembled in Japan, the counter change will be applied from the first unit of April '03 production. For mainframes assembled at REI, the change will be applied midway through April production. These cut-in serial numbers will be announced as soon as they have been confirmed.***

NOTE: ***The change will also be applied to analog models J2SS-C3 and Whale, as production will continue for a while. However, as these models use only mechanical counters, the initial value when shipped from the factory will be 1 or 2 (not 0), following the 1 or 2 factory test copies.***

Model: General RTB	Date: 4-Feb-03	No.: RGene013b

4. Important Notes for Machine Installation – All Products

Please be sure to perform the following at machine installation:

1. If the product is from before the counter modification, i.e. the counter is at a negative value, be sure to <u>set the counter value to 0 **first**</u>, <u>then make the installation test samples</u>.

Digital products	Set the electrical counter to 0 with SP mode.
Analog products	Set the mechanical counter to 0 with a reset key (tool).

2. If the product is modified, i.e. the counter is already at 0 (or above 0 following pre-installation at a service depot), simply make the installation test samples.

3. After completing the installation, make sure to **record the counter value**. This is very important, as this value will be used for billing with Meter Click contracts. Also, inform the customer of the value along with the reason why the counter does not start from "0".

Model: Model AR-P1	Date: 30-May-03	No.: RG081001

Subject: Engine firmware release note for AR-P1			Prepared by: K. Moriizumi	
From: 1st Tech. Support Sec. Service Support Dept.				
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required	
	☐ Mechanical	☐ Electrical	☐ Service manual revision	
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information	
	☒ Other ( )			

Firmware release information for the Model AR-P1 engine controller board.

Engine Controller

Version	Program No.	C. SUM	Effective Date
1.02	G0815980	82D5	1st mass production

Engine Controller

Version	Title	Symptom Corrected
1.02		1st mass production

RICOH

Technical Bulletin

Model: Model AR-P1	Date: 30-May-03	No.: RG081002

Subject: Controller firmware release note for AR-P1	Prepared by: K. Moriizumi
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

Firmware release information for the Model AR-P1 controller board.

Printer Controller

Version	Program No.	C. SUM	Effective Date
1.02	G0815940E	6ABB	1st mass production

PS/PCL

Version	Program No.	C. SUM	Effective Date
1.02	G0815941E	D0CA	1st mass production

Network PHY

Version	Program No.	C. SUM	Effective Date
0.62	G0815920B	E730	1st mass production

Printer Controller

Version	Title	Symptom Corrected
1.02		1st mass production

PS/PCL

Version	Title	Symptom Corrected
1.02		1st mass production

Network PHY

Version	Title	Symptom Corrected
0.62		1st mass production

Model: Model AR-P1	Date: 30-May-03	No.: RG081001a

RTB Correction
The items in bold italics have been corrected or added.

Subject: Engine firmware release note for AR-P1	Prepared by: K. Moriizumi
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

This RTB has been issued to announce the firmware release information for the Model AR-P1 engine controller board.

Engine Controller

Version	Program No.	C. SUM	Effective Date
10201700	G0815980	82D5	1st mass production
10201800	*G0815980A*	*AD49*	*June production*

Engine Controller

Version	Title	Symptom Corrected
10201700		1st mass production
10201800	*SC471*	*SC471 conditions changed as follows to minimize unnecessary occurrences:* *Previous: Triggered when the belt tension cam does not move.* *New: Triggered when the belt tension cam does not move even after attempting to return to the home position.*
	Color registration error	*Error conditions changed as follows to minimize unnecessary occurrences:* *Previous: Triggered when any one of the color registration patterns cannot be detected.* *New: Triggered when none of the color registration patterns can be detected.*
	Fusing temperature	*Fusing temperature warm-up changed for when recovering from Energy Saver Mode 1 so that the curve does not depend on the initial fusing belt temperature detected.*
	Paper tray full	*Sometimes the machine prints out an incoming job ahead of the current job, if the incoming data is received just after removing the stack from the exit tray to clear the tray full condition.*

Reissued: 27-Oct-03

Model: Model AR-P1	Date: 30-May-03	No.: RG081002a

RTB Reissue

The items in bold italics have been added.

Subject: Controller firmware release note for AR-P1	Prepared by: K. Moriizumi
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

This RTB is issued to announce the firmware release information for the Model AR-P1 controller board.

Printer Controller

Version	Program No.	C. SUM	Effective Date
1.02	G0815940E	6ABB	1st mass production
1.05	*G0815940F*	*3022*	*From Oct. '03 production*

PS/PCL

Version	Program No.	C. SUM	Effective Date
1.02	G0815941E	D0CA	1st mass production
1.05	*G0815941F*	*9CF9*	*From Oct. '03 production*

Network PHY

Version	Program No.	C. SUM	Effective Date
0.62	G0815920B	E730	1st mass production
3.01	*G0815920C*	*6C7E*	*From Oct. '03 production*

Model: Model AR-P1	Date: 30-May-03	No.: RG081002a

Printer Controller

Version	Title	Symptom Corrected
1.02		1st mass production
1.05	*Listed option on the configuration sheet*	*The installed options are not listed on the configuration sheet when the Plug and Play name is changed to Lanier, NRG or Gestetner.*
	SP modes	*The following SP modes were added, but they are for the Japanese model only. Do not use them for overseas models.* *SP2-311: STR bias setting* *SP5-997: Engine type selection* *The following SP mode was deleted. The print counter starts from "0", so the print counter cannot be reset.* *SP7-825: Counter Reset*
	"Others" size counter	*The "Others" size counter on SMC report is not increased.*
	Misfeed Recovery	*Continuously "Printing" displays if the misfeed recovery function is off and paper is emptied.*
	Double sided printing	*Abnormal double sided printing process (interleave).*
	Bluetooth	*Bluetooth ver3 is now supported.*

PS/PCL

Version	Title	Symptom Corrected
1.02		1st mass production
1.05	*PCL*	*Merged PCL job does not print (TechMail #TS030100)*
	PS	*When a PDF file consisting of many graphics is printed with Windows XP and Acrobat 5.0, the job may be reset.*

Model: Model AR-P1	Date: 30-May-03	No.: RG081002a

Network PHY

Version	Title	Symptom Corrected
0.62		1st mass production
3.01	*Bug fixed*	*When the printer seeks the local Netware file server, the printer does not directly access the target local Netware file server. (TechMail #: RE020229)*
		If the SAP setting is unchecked in the NetWare server, the printer cannot log on to the Netware server.
		When browsing devices with SmartNetMonitor for Client using NetBEUI protocol, SC819 might occur.

RICOH

Technical Bulletin

Model: Model AR-P1	Date: 5-Mar-04	No.: RG081003

Subject: SP5-833: Job log ON/OFF	Prepared by: K. Moriizumi
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☒ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Please apply the following revision to your Model AR-P1 (G081/G092) Service Manuals.

Model AR-P1 Service Manual, pg. 5-16:

SP5-833: Job Log ON/OFF

Not used. Do not change the settings.

Note: The Job Log cannot be stored in the HDD, even if this SP is changed to "Job log ON".

The *Job History* on the Web Status Monitor is different from the *Job Log*, in that the *Job History is* stored in volatile RAM memory, and the 16 most recent job entries can be viewed by anyone with access to the Web Status Monitor. However, the entire history is then cleared when the machine main power is turned off.

Reissued: 29-Jun-05

Model: Model AR-P1	Date: 28-Apr-04	No.: RG081004a

RTB Correction
The items in bold italics have been corrected or added.

Subject: Engine firmware release note for AR-P1eL	Prepared by: K. Moriizumi
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

This RTB has been issued to announce the firmware release information for the Model AR-P1eL engine controller board.

P1e

Version	Program No.	C. SUM	Effective Date
10401100	G1205930	1901	1st mass production
10401200	*G1205930A*		*November 2004 production*

Version	Title	Symptom Corrected
10401100	P1e	1st mass production
10401200	*Jam from by-pass tray*	*The control for the bypass tray motor was changed to minimize bypass tray jams.*
	Color registration error	*A color registration error is displayed when the machine recovers from Energy Saver mode.*

P1L

Version	Program No.	C. SUM	Effective Date
10451100	G1205940	01F4	1st mass production
10451200	*G1205940A*		*1st mass production*

Version	Title	Symptom Corrected
10451100	P1L	1st mass production
10451200	*Jam from by-pass tray*	*The control for the bypass tray motor was changed to minimize bypass tray jams.*
	Color registration error	*A color registration error is displayed when the machine recovers from Energy Saver mode.*

Model: Model AR-P1	Date: 28-Apr-04	No.: RG081005a

RTB Correction
The items in bold italics have been corrected or added.

Subject: Controller firmware release note for AR-P1eL		Prepared by: K. Moriizumi	
From: 1st Tech. Support Sec. Service Support Dept.			
Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

This RTB has been issued to announce the firmware release information for the Model AR-P1*eL* controller board.

Printer Controller

Version	Program No.	C. SUM	Effective Date
1.00	G0815960A	C776	1st mass production

PS/PCL

Version	Program No.	C. SUM	Effective Date
1.00	G0815961A	87EE	1st mass production

Network PHY

Version	Program No.	C. SUM	Effective Date
3.03.1	G0815970	7ABE	1st mass production

Printer Controller

Version	Title	Symptom Corrected
1.00		1st mass production

PS/PCL

Version	Title	Symptom Corrected
1.00		1st mass production

Network PHY

Version	Title	Symptom Corrected
3.03.1		1st mass production

Model: Model AR-P1		Date: 7-May-04	No.: RG081006

Subject: Model AR-P1e/L technical change points	Prepared by: K. Moriizumi
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☐ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☒ Other ( )		

This RTB has been issued to announce the technical information for the Model AR-P1e/L.

Product Configuration:

■ Model AR-P1e: Enhanced version

■ Model AR-P1L: Low-cost version

	AR-P1e	AR-P1L	AR-P1
Print speed (Continuous A4 SEF): Mono/Color	21ppm/17ppm	16ppm/16ppm	20ppm/16ppm
CPU	400MHz	350Mhz	400Mhz
Standard RAM	128Mb	64Mb	64Mb
RAM slots	2 slots (1 slot for optional memory)	1 slot	2 slots (1 slot for optional memory)

Consumables:

Interchangeability of consumables between Models AR-P1 and AR-P1e/L:

	Model AR-P1	Model AR-P1e/L
Old Waste Toner Bottle	**Usable** (Expected yield: 24KD)	*Not useable*
New Waste Toner Bottle	**Usable** (Expected yield: 36KD)	**Usable** (Expected yield: 44KD)
Old Fusing Unit	**Usable**	*Not useable*
New Fusing Unit	*Not useable*	**Usable**

Technical Changes, Units

■ Toner transfer method

Model AR-P1: Fixed-voltage transfer

Model AR-P1e/L: Fixed-current transfer

The high voltage unit and transfer roller have been changed.

[Purpose]

Improve image quality with thick and small paper types.

[Description]

-On the AR-P1, the operator needs to set the paper type in UP Mode (Normal, Other1 or Other2) to obtain the optimal transfer current.

-On the AR-P1e/L, the three paper type settings above are combined into one. The machine automatically adjusts to the optimal transfer current/voltage.

■ PCU

The material of the quenching sheet has been changed.

[Purpose]

To minimize the appearance of vertical lines.

[Description]

Scratches or indentations develop on the quenching sheet due to arcing between the sheet and development roller, after which toner fills in these areas. This in turn scratches and shows up on the outputs as vertical lines. The new material prevents arcing between the sheet and development roller, minimizing the appearance of vertical lines.

Applied from: February 2004 production.

■ Toner bottle

The shape of the agitator has been changed.

[Purpose]

To minimize the amount of "dead" toner in the toner bottle.

[Description]

The agitator has been changed to minimize remaining toner in the hopper at the time that Toner End is detected.

Applied from: April 2004 production.

Model: Model AR-P1	Date: 7-May-04	No.: RG081006

■ **Machine internal temperature**

Openings have been added to the machine frame.

[Purpose]

To provide for a lower machine internal temperature.

[Description]

This reduction in machine internal temperature will help further minimize symptoms caused by higher temperature levels (e.g. darkened yellow areas, brush marks, partial blank lines).

■ **Main drive unit**

The unit's mechanism has been simplified.

[Purpose]

To further improve image quality.

[Description]

The planetary gears have been removed from the main driver unit. The unit's mechanism has been simplified in order to reduce the internally generated vibrations, which can contribute to poor image quality.

■ **Optimal image density**

The image density has been optimized (slightly lowered compared to the AR-P1).

[Purpose]

To improve overall image quality and toner yield.

[Description]

The overall image density on this model has been slightly lowered, as the solid area ID on Model AR-P1 was slightly dark, which improves both image quality and toner yield.

RICOH

Technical **B**ulletin

PAGE: 1/2

Reissued: 15-Jun-04

Model: Model AR-P1	Date: 28-Apr-04	No.: RG081005b

RTB Correction
The items in bold italics have been corrected or added.

Subject: Controller firmware release note for AR-P1eL		Prepared by: K. Moriizumi	
From: 1st Tech. Support Sec. Service Support Dept.			
Classification:	☐ Troubleshooting ☐ Mechanical ☐ Paper path ☒ Other ( )	☐ Part information ☐ Electrical ☐ Transmit/receive	☐ Action required ☐ Service manual revision ☐ Retrofit information

This RTB has been issued to announce the firmware release information for the Model
AR-P1eL controller board.

Printer Controller

Version	Program No.	C. SUM	Effective Date
1.00	G0815960A	*9173*	1st mass production
1.01	*G0815960B*	*2097*	July production

PS/PCL

Version	Program No.	C. SUM	Effective Date
1.00	G0815961A	*EEC9*	1st mass production
1.01	*G0815961B*	*F0DB*	July production

Network PHY

Version	Program No.	C. SUM	Effective Date
3.03.1	G0815970	7ABE	1st mass production

Note: The firmware of Network PHY is not changed at this release.

RICOH

Technical Bulletin

PAGE: 1/4

Model: Model AR-P1	Date: 29-Jun-05	No.: RG081007

Subject: Vertical thin line problem	Prepared by: K. Moriizumi
From: 1st Tech. Support Sec. Service Support Dept.	

Classification:	☒ Troubleshooting	☐ Part information	☐ Action required
	☐ Mechanical	☐ Electrical	☐ Service manual revision
	☐ Paper path	☐ Transmit/receive	☐ Retrofit information
	☐ Other ( )		

Symptom

There are three main types of vertical thin lines and white lines problems.

Case 1

After printing about 8,000 pages, the vertical thin lines appear.

- At first, the vertical thin lines appear in the image area, and do not appear in the background area. Especially, the lines are visible easily in halftone image areas.
- Then, vertical thin lines appear in the background area, too. But the line width will not increase.
- This problem occurs with black and magenta only.
- Mostly, there are lines on the left side of the paper.
- In some cases, white lines will occur.

Black thin lines:

White lines:

Case 2

After printing about from 500 to 2,000 pages, vertical white lines appear.

- At first, the image becomes low in density.
- Then, the white lines will appear. Mostly, the lines are in the center of the paper.

Case 3

The timing of the problem occurrence is random.

- A vertical line appears suddenly. Mostly, there is only one vertical line.

Model: Model AR-P1	Date: 29-Jun-05	No.: RG081007

Cause

Case 1

Scratches or indentations develop on the quenching sheet due to foreign particles stuck to the sheet, after which toner fills in these areas. This in turn scratches the development roller surface and shows up on the outputs as vertical lines.

Case 2

The toner is not supplied. The protection sheets for the toner supply holes must be removed at installation, as shown in the following drawing. If the protection sheet is not removed and the toner bottle is installed, the toner cannot be supplied. The low toner condition will damage the PCU surface.
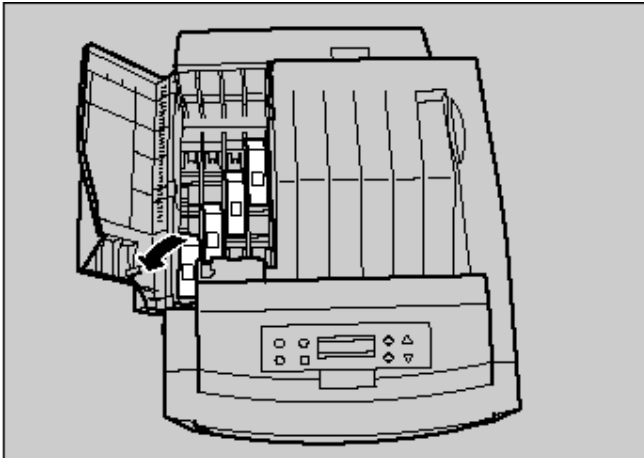
Case 3

There is a small object inside the PCU, and it will damage the PCU surface.

Troubleshooting

Case 1

Replace the PCU.

Case 2

Replace the PCU and add toner.

Case 3

Replace the PCU.

Countermeasures

Case 1

The diagram on the right shows the inside of the PCU.

There is a potential difference of about 63V between the development roller and the quenching sheet because of a zener diode (Tz).

The toner will be gathered on the surface of the quenching sheet because of the potential difference. Then, the toner will be fixed on the quenching sheet.

This toner scratches the development roller surface.
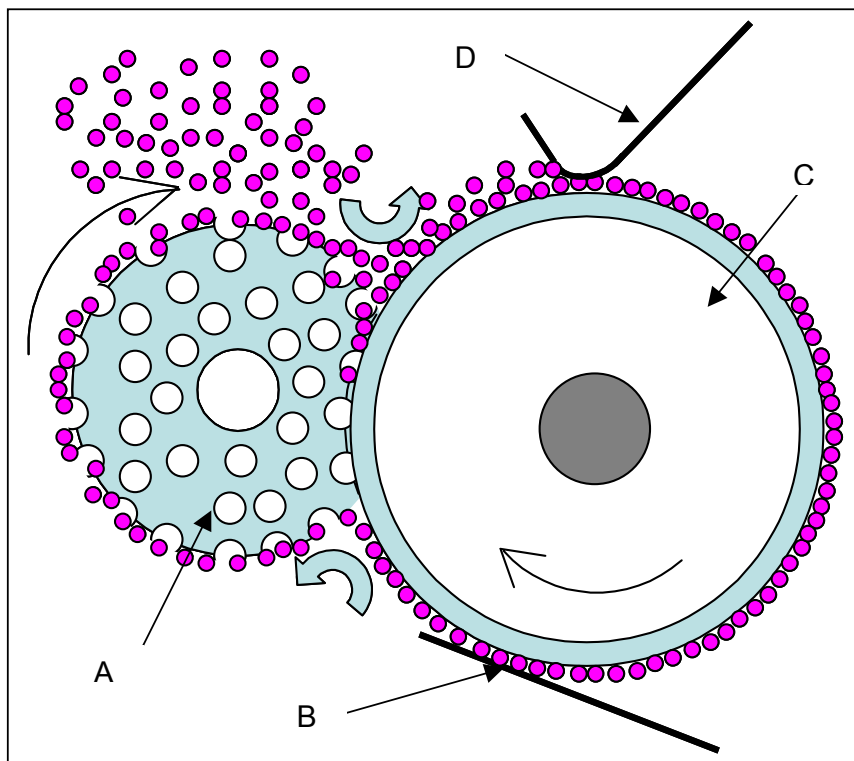
A: Toner supply roller, B: Quenching sheet
C: Development roller, D: Doctor blade

The resistor that connects the quenching sheet to the ground will be removed. The electric level of the quenching sheet will be same as the development roller in order to prevent toner from gathering on the sheet.
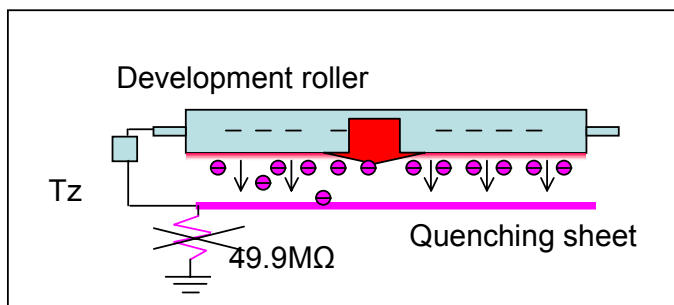
This modification was available from the September 2004 production.

Model: Model AR-P1	Date: 29-Jun-05	No.: RG081007

Cut-in Serial Numbers

Machine: G081-17: All

G120-17: Q20409XXXXX

G121-17: Q18409XXXXX

G122-17: Q19409XXXXX

G081-22, 27: All

G092-22, 27: All

G120-22, 27: Q20409XXXXX

G121-22, 27: Q18409XXXXX

G123-22, 27: Q21409XXXXX

PCUs: Bk: 4IAMH05086

       Color: 4IAMH04413

4: Year

I: Month (A: Jan, B: Feb, ... I: Sep.....)

A: Beginning of month, B: Middle of month, C: End of month

M: Factory code

H: Suffix

5 digits: lot number for first mass production