

Minor fix on Slide #25 – November 2009



### **Operation Panel**















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General Specifications	- 1/3
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Print Process

Laser electrostatic transfer

- □ Warm-up time
  - Less than 30 seconds (23 C / 71.6 F)

#### **D** Paper Output Capacity

Standard 125 sheets

#### □ Paper Input Capacity

- Tray-1 250 sheets (100 postcards)
- Tray-2 (optional) 250 sheets
- Bypass tray 50 sheets (20 postcards, 8 envelopes)

#### □ ADF Capacity

• 35 sheets



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### General Specifications (Fax) - 1/2

Network

- PSTN/PBX
- Compatibility
  - T30 (ITU-T Super G3)
- □ Modem Speed
  - Automatic fallback: 33,600 bps

#### □ Transmission Speed

- Approx. 3 seconds
- Coding System
  - MH/MR/MMR
- Contrast Control
  - 3 levels



### **Options**

#### □ Paper Feed Unit TK1080

- Paper capacity
  » 250 sheets
- Dimensions (W x D x H)
  » 420 x 397 x 89 mm (16.6 x 18.7 x 3.5 inches)
- Weight
  - » Less than 2.4 kg (5.3 lbs.)





As a safety precaution, the power cord should be close to the machine and positioned so that power can be quickly cut by unplugging the machine.



### Removing Shipping Tape & Foam



PowerPoint Usage Note: Graphics on this page independently imported, and then grouped. By ungrouping, the six images can be independently adjusted. AIO – All In One



PowerPoint Usage Note: In contrast to previous slide, graphics on this page one single bitmap image. They cannot be ungrouped and independently adjusted. AIO – All In One



















#### FCU – Fax Control Unit

Note that the FCU Board is behind both the Controller Board and a metal plate behind the Controller Board.



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### Left Side (Clutches)









For more details, see "General Precautions on Disassembly" in the Service Manual.



### **Removing the ADF Feed Unit - 2/2**



Slide 33 D The ADF Feed Unit is removed as shown in this and previous slide.









### Bypass & Front Cover Removal - 3/3






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### **Right Cover Removal**





### **Rear Cover Removal**



### **Releasing ADF Hinges - 1/2**



**After releasing right hinge, left hinge can be easily removed.** 

### **Releasing ADF Hinges - 2/2**









# SP-Paper Transfer Roller • First, remove AlO. • Then, remove Transfer Roller in direction of arrows. • Transfer Roller • Ext



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### Fusing Unit - 2/3



### Fusing Unit - 3/3



















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### LD Safety Mechanisms

	ı r		
Power Supply	+24V	Engine Controller	
Onic	Rear Cover SW	Doard	
	Front Cover SW		
			LD Drive Board
Regulator	+5VLD		
	]		+5VLD LD PD
			¥ 4
			LD Driver
			Ĩ,
Laser Safety Switch			
There are safety switches on front and rear covers which stop laser while cover is open.			
□ If user opens one of these covers, the +5VLD power to laser diodes is stopped.			
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### **Toner Overflow Prevention - 1/2**

#### Main Motor Rotation Count

- Time to replace AIO cartridge can also be determined by length of time main motor has been rotating.
- When toner end is detected, 'Replace Print Cartridge' is displayed alternately with 'Ready'.

#### **D** Toner Overflow Prevention

- With main motor rotation count feature, machine can be set to stop printing after print total exceeds a certain set value.
- If print count exceeds this value, then 'Replace Print Cartridge' remains in display. Then a new AIO cartridge must be installed.
- This feature is a safety measure to prevent the used toner tank from becoming full (there is no toner overflow detection mechanism).

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### **Toner Overflow Prevention - 2/2**

#### □ Why do we need this feature?

 Normally, AIO is replaced by user at about 2K / 5K. But some users will refill old AIO with toner, and reuse. If this occurs, used toner tank will not be emptied. So there must be a way to stop users from repeatedly filling old AIO with fresh toner.

#### □ How does machine know if AIO is a new one?

• AIO has serial number information on a chip. The machine checks this number when AIO is placed in machine.

#### Why is this feature disabled?

• Ricoh does not support the practice of refilling old AIOs with fresh toner, so this feature is disabled by default. But if field service stations know that this practice occurs in their region, or they know a customer who is doing this, then they can enable this feature.

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- **OPC Organic Photo-Conductor (drum)**
- **PSU Power Supply Unit**




























Note: In some machines, the by-pass feed roller has a flat section to enable paper to pass by by-pass roller freely. This machine utilizes a curved metal plate on the by-pass feed roller to perform this function.











# Image Fusing & Paper Exit Overview













## **Overheat Protection**

- □ If hot roller temperature becomes greater than 225C, CPU cuts off power to fusing lamp.
- □ If thermistor overheat protection fails, there is a thermostat in series with the common ground line of fusing lamp.
- □ If temperature of thermostat becomes greater than 210C, the thermostat opens, removing power from fusing lamp.
- □ At this time, machine stops operation.

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# Paper feed components in the optional paper tray.









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## **Status Information**

	in SP 3/10SE Web image man	itar			
Homo		1101			
Machina Sattinga	Home		W	/eb Language   English	Refresh
One Touch Butten					
Core Fouch Batton	Status Counter Machin	ne Information			
Scan Destination					
Fax Speed Dial	Model Name :Aholo SP 341USF				
Restrict User Functions	Location :				
Network Settings	Contact :				
Reports Print	Host Name :3410SF-E20982				
Admin Settings	Device Status :EnergySaverMode2				
	Toner				
		0 50	100		
	Black Toner			Remaining Level 5	
	Fuser Unit	<b>L</b>		Status OK	
	Transfer Roller Unit	<b></b>		Status OK	
	Paper Feed Roller Unit			Status OK	
	Paner Trav				
	Tray 1	Status OK	A4 🗔	Plain Paper	
	Bynase Tray	Out of Paner	A4 🗌	Plain Paper	
	Dibase uni			i iani rapei	
Slide 106	en servicing ma	chine, always r	note stat	us informatio	n.



## Other Types of Reports:

You can also check other reports than two reports (configuration page and maintenance page) with "Report Print" in the "Menu".

- Activity Report

Prints a fax transmission and reception report for the last 100 jobs.

- Memory List

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Prints a list of unsent fax jobs remaining in the machine's memory.

- Quick Dial List

Prints a list of scan and fax Quick Dial entries.

- Speed Dial List

Prints a list of Speed Dial entries.

- No Sort

Prints the list with the entries sorted by Speed Dial registration number.

- Sort By Name

Prints the list with the entries sorted by name.

- Scan Directory List

Prints a list of scan destinations.

- Scan Transmission Log

Prints a scan transmission report.



## Note to Service Personnel

- □ Yield Parts are rated to last for 120 K, which is expected to be longer than this machine's rated lifespan of five years.
- □ For customers who are very heavy users, it may be necessary to change Yield Parts during the life of the machine.
  - When installing Yield Parts, the machine must be reset.
  - Reset procedure is not a user function and must be performed by a trained serviceperson.
  - See FSM (Field Service Manual) for reset procedures.
- □ After performing any maintenance procedure, always print out a Configuration Report, and check Yield Parts.

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### **Firmware Updating**

- □ A computer is necessary for updating the firmware of this machine.
- □ Using correct procedures (see service manual for details) to update controller firmware.
- □ User can update Firmware by downloading Firmware from the download page of Ricoh websites.

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## **Paper Jams**

Various types of paper jams and their causes are detailed in the service manual. Some causes include:

- Use of a non-recommended paper type
- End fence set incorrectly
- Paper lift mechanism not functioning correctly
- Defective paper feed motor
- □ Go over the causes and suggested actions.
- □ When clearing jams near the fusing unit, use caution to avoid possible burns.

#### M016/M017 / MF1a/MF1b SP-3400SF/SP-3410SF



### **Test Pattern Printing**

Test Pattern Printing - When checking an image or other problems, it might be necessary to print a test pattern. Follow the test pattern print procedure below to print a test pattern.

#### Test Pattern Print Procedure

#### • 1. Enter "Maintenance Mode".

- 1. Enter Maintenance Mode .
  2. Select "Test Pattern", and then press "OK" key.
  3. The following three test pattern pages are printed.

  Checker flag
  Trimming Pattern
  Grid Pattern

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#### M016/M017 / MF1a/MF1b SP-3400SF/SP-3410SF

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## M016/M017 Service Training

**Environmental Conservation** 

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### **Promote Use of Energy Saving Features**

#### **Energy Saver Mode**

• Proper use of energy saver modes saves energy and is environmentally friendly.

#### Duplex Settings

• Use of Duplex settings reduces amount of paper used, which results in less energy consumption for paper production.



#### **Energy Saver Modes**

Customers should use energy saver modes properly, to save energy and protect the environment.

The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 240 min., the grey area will disappear, and no energy is saved before 240 min. expires.

**Timer Settings** 

The user can set these timers with User Tools (Menu > Admin Settings > Power Saver > Energy Saver Mode1 or Mode2)

- Energy Saver Mode1 (30 sec.): This can be only turned on or off.

- Energy Saver Mode2 (1 to 240 min.): This can be turned on or off and timer setting is adjustable (default: 1min.).

Return to Stand-by Mode

**Energy Saver Mode1** 

- Recovery time: 10 sec.

Energy Saver Mode2

- Recovery time: 23 sec.

Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.

- If it is necessary to change the settings, please try to make sure that the Energy Saver Mode2 Timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.

- If the timers are all set to the maximum value, the machine will not begin saving energy until 240 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.

### **Energy Saver Modes - 2/3**

#### □ There are four operating modes for this machine:

- Operating mode
- Ready mode
- Power Save-1 mode
- Power Save-2 mode

#### □ Timer Settings - User can set these timers via:

- User Tools (Menu > Admin Settings > Power Saver >

  - Energy Saver Mode1 or Mode2)
    » Energy Saver Mode1 (30 sec.): Setting is for [On] or [Off].
    » Energy Saver Mode2 (1 to 240 min.): Settings are for [On] or [Off] and timer is adjustable (default: 1 min.)

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### **Energy Saver Modes - 3/3**

#### □ How is energy saved?

- Low Energy Mode-1 10-second start-up mode
  - » Less than 70 W
  - » Machine starts up within 10 seconds
  - » Backlight is off

#### Low Energy Mode-2

- » Less than 10 W
- » Machine starts up within 20 seconds
- » Backlight is off
- » Fusing lamps: Off

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# **Paper Saving** Measuring the Paper Consumed - 1 1. Duplex: Reduce paper volume by half!



2. Combine mode: Reduce paper volume by half!



3. Duplex + Combine: Using both features together can further reduce paper volume by 3/4!



### Paper Saving Measuring the Paper Consumed - 2

- To check paper consumption, look at total counter and duplex counter.
- □ Total counter counts all pages printed.
  - For one duplex page, the total counter goes up by 2.
  - For a duplex job of a three-page original, the total counter goes up by 3.
- □ The duplex counter counts pages that have images on both sides.
  - For one duplex page, the duplex counter goes up by 1.
  - For a duplex job of a three-page original, the duplex counter will only increase by 2, even though two sheets are used.
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- □ The following table shows paper savings and how the counters increase for some simple examples of single-sided and duplex jobs.

Originals	Simplex	Duplex	Paper	Total counter	Duplex counter
	Sheet	Sheets	Saved	SP8501-001	SP8411-001
	used	used			
1	1	1	0	1	0
2	2	1	1	2	1
3	3	2	1	3	1
4	4	2	2	4	2
5	5	3	2	5	2
10	10	5	5	10	5
20	20	10	10	20	10



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### Paper Saving Measuring the Paper Consumed - 3

□ If combine mode is used, the total and duplex counters work in the same way as explained previously.

2 in 1					
	Simploy	Combino	Dopor	Total countar	Simploy
Onginais	Shoot	Shoote	Paper		Combino
			Saveu	51 0501-001	counter
	useu	useu			SP8421-004
1	1	1	0	1	1
2	2	1	1	1	1
3	3	2	1	2	2
4	4	2	2	2	2
5	5	3	2	3	2
10	10	5	5	5	5
20	20	10	10	10	10
Duplex +	2 in 1				
Originals	Simplex	Combine	Paper	Total counter	Dupplex
- 3	Sheet	Sheets	Saved	SP8501-001	Combine
	used	used			counter
					SP8421-005
1	1	1	0	1	1
2	2	1	1	1	1
3	3	1	2	2	2
4	4	1	3	2	2
5	5	2	3	3	3
6	6	2	4	3	3
7	7	2	5	4	4
8	8	2	6	4	4
-	l a	3	6	5	5
9	5		-	-	
9 10	10	3	7	5	5

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## End of Course