

Model OP-P1/MF1

Machine Code:

**M133, M134, M135, M141, M142, M143,
M144, M145, M146, M147, M148, M149,
M150, M151, M162, M163, M164, M165,
M166, M167, M168, M169, M191**

Field Service Manual

June, 2013

Safety, Symbols, Trademarks, and Important Safety Notices

Conventions

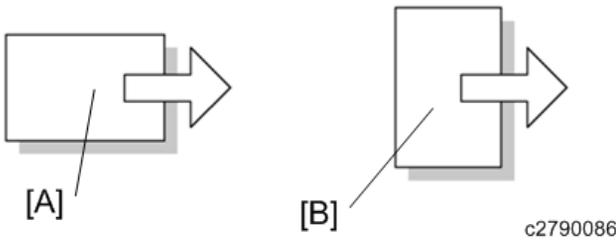
Commonly Used Icons for Replacements and Adjustments

Symbol	What it means
	Binding screw (shoulder hexagonal head)
	Binding screw (round flathead)
	Black screw (heavy, fusing unit, TCRU)
	Bushing
	C-ring
	Connector
	E-ring
	FFC (Flat Film Connector)
	FFC (Flat Film Connector)
	Gear
	Harness clamp
	Harness clamp (metal: fusing unit)
	Hook (or tab release)
	Knob screw (black)
	Knob screw (silver)
	Pivot screw
	Screw (common screw)
	Shoulder screw

Symbol	What it means
	Spring
	Standoff
	Stud screw
	Tapping screw (wide threads for plastic)
	Timing belt

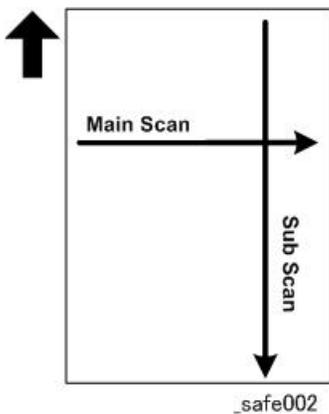
Paper Feed: SEF/LEF

The notations "SEF" and "LEF" describe the direction of paper feed. The arrows indicate the direction of paper feed.



[A] Short Edge Feed (SEF)

[B] Long Edge Feed (LEF)



In this manual "Main Scan" means "Horizontal" and "Sub Scan" means "Vertical", both relative to the direction of paper feed.

Smart Organizing Monitor

In this service manual "Smart Organizing Monitor" is often abbreviated as "SOM".

Important

- The detailed procedure for entering the service mode of the Smart Organizing Monitor is provided in the training materials for these machines. The procedure for entering the service mode is not described in the service manuals.
- Service technicians must know how to enter the service mode before servicing these machines. Please refer to the training materials.

Machine Names

Name	Abbrev.	Model No.
SP 200	P	M133
SP 200	P	M162
SP 200N	P	M144
SP 200N	P	M163
SP 201N	P	M145
SP 200Nw	P	M164
SP 201Nw	P	M146
SP 200S	TiO	M134
SP 200S	TiO	M165
SP 201S	TiO	M142
SP 202S	TiO	M191
SP 203S	TiO	M147
SP 202SN	TiO	M166
SP 204SN	TiO	M148
SP 201SF	FiO	M135
SP 200SF	FiO	M141
SP 202SF	FiO	M143

Name	Abbrev.	Model No.
SP 203SF	FiO	M167
SP 204SF	FiO	M149
SP 203SFN	FiO	M168
SP 204SFN	FiO	M150
SP 203SFNw	FiO	M169
SP 204SFNw	FiO	M151

The abbreviated notations in the second column above (not used in these service manuals) are used in the operating instructions to distinguish the machine models:

- P: Printer only
- TiO: Three-in-1 (printer, copier, scanner)
- FiO: Four-in-1 (printer, copier, scanner, fax)

★ Important

- Throughout this manual the machines are referenced by the model numbers only: M133, M162, M144, M163, M145, M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M146, M164, M151, M169, and M191.

AIO (All In One) Cartridge

The AIO (print cartridge) in the center of the machine is permanently sealed around these main elements of the printing mechanisms: 1) OPC drum, 2) charge unit, 3) development unit, 4) drum cleaning unit, and 5) toner supply unit.

- This print cartridge is called the "AIO" (All-In-One) throughout this service manual.
- When toner runs out, the AIO can be refilled by the service technician or the AIO can be replaced by the operator. Refilling requires removal of two caps: the square cap to dump the toner and the round cap for refilling. These two parts are the only service parts for the AIO. There are no other service parts for the AIO.
- The AIO can be easily removed and replaced by the user. For more details, please refer to the operating instructions.

Key Presses

Symbol	What It Means
[Key]	The names of machine operation panel keys and PC keyboard keys are enclosed in square brackets.
Select	This means to press one of the arrow keys to move the menu selector up/down (▼▲) or left/right (◀▶) to the menu selection you want and then press [OK] on the machine operation panel.
>	A right angle bracket means to select a menu item (enclosed in quotation marks) by pressing the right or left arrow key and then pressing [OK]. For example, [User Tools] > Select "System Settings" > "Tray Paper Settings" means, Press the [User Tools], press the right arrow to highlight "System Settings" and press [OK], and then press [OK] to select "Tray Paper Settings".

RoHS Compliance

These machines are fully compliant with Chinese RoHS and contain no restricted materials such as lead, mercury, cadmium, hexavalent chrome, polybrominated biphenyl, or polybrominated diphenyl ether.

Warnings, Cautions, Notes

In this manual, the following important symbols and notations are used.

WARNING

- A Warning indicates a potentially hazardous situation. Failure to obey a Warning could result in death or serious injury.

CAUTION

- A Caution indicates a potentially hazardous situation. Failure to obey a Caution could result in minor or moderate injury or damage to the machine or other property.

Important

- Obey these guidelines to avoid problems such as misfeeds, damage to originals, loss of valuable data and to prevent damage to the machine.

Note

- This information provides tips and advice about how to best service the machine.

General Safety Instructions

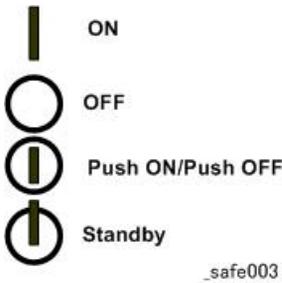
For your safety, please read this manual carefully before you use this product. Keep this manual handy for future reference.

Safety Information

Always obey the following safety precautions when using this product.

Safety During Operation

In this manual, the following important symbols and notations are used.



Switches and Symbols

Where symbols are used on or near switches on machines for Europe and other areas, the meaning of each symbol conforms with IEC60417.

Responsibilities of the Customer Engineer

Customer Engineer

Maintenance shall be done only by trained customer engineers who have completed service training for the machine and all optional devices designed for use with the machine.

Reference Material for Maintenance

- Maintenance shall be done using the special tools and procedures prescribed for maintenance of the machine described in the reference materials (service manuals, technical bulletins, operating instructions, and safety guidelines for customer engineers).
- Use only consumable supplies and replacement parts designed for use with the machine.

Before Installation, Maintenance

Shipping and Moving the Machine

CAUTION

- Work carefully when lifting or moving the machine. If the machine is heavy, two or more customer engineers may be required to prevent injuries (muscle strains, spinal injuries, etc.) or damage to the machine if it is dropped or tipped over.
- Personnel moving or working around the machine should always wear proper clothing and footwear. Never wear loose fitting clothing or accessories (neckties, loose sweaters, bracelets, etc.) or casual footwear (slippers, sandals, etc.) when lifting or moving the machine.
- Always unplug the power cord from the power source before you move the machine. Before you move the product, arrange the power cord so it will not fall under the machine.

Power

WARNING

- Always disconnect the power plug before doing any maintenance procedure. After switching off the machine, power is still supplied to the main machine and other devices. To prevent electrical shock, switch the machine off, wait for a few seconds, then unplug the machine from the power source.
- Before you do any checks or adjustments after turning the machine off, work carefully to avoid injury. After removing covers or opening the machine to do checks or adjustments, never touch electrical components or moving parts (gears, timing belts, etc.).
- After turning the machine on with any cover removed, keep your hands away from electrical components and moving parts. Never touch the cover of the fusing unit, gears, timing belts, etc.

Installation, Disassembly, and Adjustments

CAUTION

- After installation, maintenance, or adjustment, always check the operation of the machine to make sure that it is operating normally. This ensures that all shipping materials, protective materials, wires and tags, metal brackets, etc., removed for installation, have been removed and that no tools remain inside the machine. This also ensures that all release interlock switches have been restored to normal operation.
- Never use your fingers to check moving parts causing spurious noise. Never use your fingers to lubricate moving parts while the machine is operating.

Special Tools

CAUTION

- Use only standard tools approved for machine maintenance.
- For special adjustments, use only the special tools and lubricants described in the service manual. Using tools incorrectly, or using tools that could damage parts, could damage the machine or cause injuries.

During Maintenance

General

CAUTION

- Before you begin a maintenance procedure: 1) Switch the machine off, 2) Disconnect the power plug from the power source, 3) Allow the machine to cool for at least 10 minutes.
- Avoid touching the components inside the machine that are labeled as hot surfaces.

Safety Devices

WARNING

- Never remove any safety device unless it requires replacement. Always replace safety devices immediately.
- Never do any procedure that defeats the function of any safety device. Modification or removal of a safety device (fuse, switch, etc.) could lead to a fire and personal injury. Always test the operation of the machine to ensure that it is operating normally and safely after removal and replacement of any safety device.
- For replacements use only the correct fuses or circuit breakers rated for use with the machine. Using replacement devices not designed for use with the machine could lead to a fire and personal injuries.

Organic Cleaners

CAUTION

- During preventive maintenance, never use any organic cleaners (alcohol, etc.) other than those described in the service manual.
- Make sure the room is well ventilated before using any organic cleaner. Use organic solvents in small amounts to avoid breathing the fumes and becoming nauseous.

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- Switch the machine off, unplug it, and allow it to cool before doing preventive maintenance. To avoid fire or explosion, never use an organic cleaner near any part that generates heat.
 - Wash your hands thoroughly after cleaning parts with an organic cleaner to prevent contamination of food, drinks, etc. which could cause illness.
 - Clean the floor completely after accidental spillage to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use dry rags to soak up spills.

Power Plug and Power Cord

WARNING

- Before servicing the machine (especially when responding to a service call), always make sure that the power plug has been inserted completely into the power source. A partially inserted plug could lead to heat generation (due to a power surge caused by high resistance) and cause a fire or other problems.
- Always check the power plug and make sure that it is free of dust and lint. Clean it if necessary. A dirty plug can generate heat which could cause a fire.
- Inspect the length of the power cord for cuts or other damage. Replace the power cord if necessary. A frayed or otherwise damaged power cord can cause a short circuit which could lead to a fire or personal injury from electrical shock.
- Check the length of the power cord between the machine and power supply. Make sure the power cord is not coiled or wrapped around any object such as a table leg. Coiling the power cord can cause excessive heat to build up and could cause a fire.
- Make sure that the area around the power source is free of obstacles so the power cord can be removed quickly in case of an emergency.
- Make sure that the power cord is grounded (earthed) at the power source with the ground wire on the plug.
- Connect the power cord directly into the power source. Never use an extension cord.
- When you disconnect the power plug from the power source, always pull on the plug, not the cable.

After Installation, Servicing

Disposal of Used Items

WARNING

- Never incinerate used toner, toner cartridges, or AIO units.

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- Toner thrown into a fire can ignite or explode and cause serious injury. At the work site always carefully wrap used toner and toner cartridges with plastic bags to avoid spillage before disposal or removal.

CAUTION

- Always dispose of used items (developer, toner, toner cartridges, OPC drums, AIO units, etc.) in accordance with the local laws and regulations regarding the disposal of such items.
- To protect the environment, never dispose of this product or any kind of waste from consumables at a household waste collection point. Dispose of these items at one of our dealers or at an authorized collection site.
- Return used drums to the service center for handling in accordance with company policy regarding the recycling or disposal of such items.

Points to Confirm with Operators

At the end of installation or a service call, instruct the user about use of the machine. Emphasize the following points.

- Show operators how to remove jammed paper and troubleshoot other minor problems by following the procedures described in the operating instructions.
- Point out the parts inside the machine that they should never touch or attempt to remove.
- Confirm that operators know how to store and dispose of consumables.
- Make sure that all operators have access to an operating instruction manual for the machine.
- Confirm that operators have read and understand all the safety instructions described in the operating instructions.
- Demonstrate how to turn off the power and disconnect the power plug (by pulling the plug, not the cord) if any of the following events occur: 1) something has spilled into the product, 2) service or repair of the product is necessary, 3) the product cover has been damaged.
- Caution operators about removing paper fasteners around the machine. They should never allow paper clips, staples, or any other small metallic objects to fall into the machine.

Special Safety Instructions for Toner

Accidental Physical Exposure

CAUTION

- Work carefully when removing paper jams or replacing toner bottles or cartridges to avoid spilling toner on clothing or the hands.

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- If toner is inhaled, immediately gargle with large amounts of cold water and move to a well ventilated location. If there are signs of irritation or other problems, seek medical attention.
 - If toner gets on the skin, wash immediately with soap and cold running water.
 - If toner gets into the eyes, flush the eyes with cold running water or eye wash. If there are signs of irritation or other problems, seek medical attention.
 - If toner is swallowed, drink a large amount of cold water to dilute the ingested toner. If there are signs of any problem, seek medical attention.
 - If toner spills on clothing, wash the affected area immediately with soap and cold water. Never use hot water! Hot water can cause toner to set and permanently stain fabric.

Handling and Storing Toner

WARNING

- Toner, used toner, and developer are extremely flammable.
- Never store toner, developer, toner cartridges, or toner bottles (including empty toner bottles or cartridges), or AIO units in a location where they will be exposed to high temperature or an open flame.
- Do not use a vacuum cleaner to remove spilled toner (including used toner). Vacuumed toner may cause a fire or explosion due to sparks or electrical contact inside the cleaner. However, it is possible to use a cleaner designed to be dust explosion-proof. If toner is spilled over the floor, sweep up spilled toner slowly and clean up any remaining toner with a wet cloth.

CAUTION

- Always store toner and developer supplies such as toner and developer packages, cartridges, bottles (including used toner and empty bottles and cartridges) and AIO units out of the reach of children.
- Always store fresh toner supplies or empty bottles or cartridges in a cool, dry location that is not exposed to direct sunlight.

Toner Disposal

WARNING

- Never attempt to incinerate toner, used toner, or empty toner containers (bottles or cartridges). Burning toner can explode and scatter, causing serious burns.
- Always wrap used toner and empty toner bottles and cartridges in plastic bags to avoid spillage. Follow the local laws and regulations regarding the disposal of such items.
- Dispose of used toner and toner cartridges at one of our dealers or at an authorized collection site. Always dispose of used toner cartridges and toner bottles in accordance with the local laws and regulations regarding the disposal of such items.

Safety Instructions for the Machine

Prevention of Physical Injury

1. Before disassembling or assembling parts of the machine and peripherals, make sure that the machine and peripheral power cords are unplugged.
2. The plug should be near the machine and easily accessible.
3. Note that some components of the machine and the paper tray unit are supplied with electrical voltage even if the main power switch is turned off.
4. If any adjustment or operation check has to be made with exterior covers off or open while the main switch is turned on, keep hands away from electrified or mechanically driven components.
5. If the [Start] key is pressed before the machine completes the warm-up period (the [Start] key starts blinking red and green), keep hands away from the mechanical and the electrical components, because the machine starts making copies as soon as the warm-up period is completed.
6. The inside and the metal parts of the fusing unit become extremely hot while the machine is operating. Be careful to avoid touching those components with your bare hands.
7. To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.

Health Safety Conditions

1. If the machine has ozone filters, never operate the machine without the ozone filters installed. Always replace the ozone filters with the specified types at the proper intervals.
2. To avoid possible accumulation of ozone in the work area, locate the machine in a large well ventilated room that has an air turnover rate of more than 30m³/hr/person.
3. Toner and developer are non-toxic, but if you get either of them in your eyes by accident, it may cause temporary eye discomfort. Try to remove with eye drops or flush with water as first aid. If unsuccessful, get medical attention.

Observance of Electrical Safety Standards

1. The machine and its peripherals must be installed and maintained by a customer service representative who has completed the training course on those models.
2. The NVRAM on the system control board has a lithium battery which can explode if replaced incorrectly. Replace the NVRAM only with an identical one. The manufacturer recommends replacing the entire NVRAM. Do not recharge or burn this battery. Used NVRAM must be handled in accordance with local regulations.

Safety and Ecological Notes for Disposal

1. Never incinerate toner bottles or used toner. Toner dust may ignite suddenly when exposed to an open flame.
2. Dispose of used toner, developer, and organic photoconductors in accordance with local regulations. (These are non-toxic supplies.)
3. Dispose of replaced parts in accordance with local regulations.
4. When keeping used lithium batteries in order to dispose of them later, do not put more than 100 batteries per sealed box. Storing larger numbers or not sealing them apart may lead to chemical reactions and heat build-up.

CAUTION

- The danger of explosion exists if a battery of this type is incorrectly replaced.
- Replace only with the same or an equivalent type recommended by the manufacturer. Discard used batteries in accordance with the manufacturer's instructions.

Laser Safety



1. The Center for Devices and Radiological Health (CDRH) prohibits the repair of laser-based optical units in the field.
2. The optical housing unit can only be repaired in a factory or at a location with the requisite equipment.
3. The laser subsystem is replaceable in the field by a qualified Customer Engineer.
4. The laser chassis is not repairable in the field.
5. Customer engineers are therefore directed to return all chassis and laser subsystems to the factory or service depot when replacement of the optical subsystem is required.

WARNING

- Use of controls, or adjustment, or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.
- Turn off the main switch before attempting any of the procedures in the Laser Unit section. Laser beams can seriously damage your eyes.

Trademarks

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1. Product Information

Specifications

See "Appendices" for the following information:

- Before You Read These Specifications
- General Specifications
- Printer Specifications
- Copier Specifications (M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M151, M169, M191)
- Scanner Specifications (M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M151, M169, M191)
- Fax Specifications (M135, M141, M143, M167, M149, M168, M150, M151, M169)
- Reports
- Software Specifications

New Product Information

Series Machines Compared

General Differences

★ Important

- Throughout this manual the machines are referenced by the model numbers only: M133, M162, M144, M163, M145, M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M140, M164, M151, M169, and M191.



M133
M162
M144
M163
M145
M146
M164

M134
M165
M147
M142



M135
M143
M151
M169

M141

M167
M149
M168
M150
M166
M148
M191

m1910002

The 18-type machines can be identified by their external appearances.

	Model	ADF/ Platen	n/usb/ wifi	Display	AIO:R/NR	Scan to USB	Handset
4in 1	M135	ADF	usb	2-LINE	R	-	Y
	M141	Platen	usb	2-LINE	R	-	Y
	M143	ADF	n	2-LINE	R	-	Y
	M167	ADF	usb	2-LINE	R	-	
	M149	ADF	usb	2-LINE	NR	-	-
	M168	ADF	n	2-LINE	R	Y	-
	M150	ADF	n	2-LINE	NR	Y	-
	M169	ADF	wifi	2-LINE	R	Y	-
	M151	ADF	wifi	2-LINE	NR	Y	-
3in 1	M134	Platen	usb	2-digit	R	-	-
	M165	Platen	usb	2-digit	R	-	-
	M147	Platen	usb	2-digit	NR	-	-
	M142	Platen	n	2-digit	R	-	-
	M166	ADF	n	2-LINE	R	Y	-
	M148	ADF	n	2-LINE	NR	Y	-
	M191	ADF	usb	2-LINE	R	-	-
Printer	M133	-	usb	2 LEDs	R	-	-
	M162	-	usb	2 LEDs	R	-	-
	M144	-	n	2 LEDs	R	-	-
	M163	-	n	2 LEDs	R	-	-
	M145	-	n	2 LEDs	NR	-	-
	M164	-	wifi	2 LEDs	R	-	-
	M146	-	wifi	2 LEDs	NR	-	-

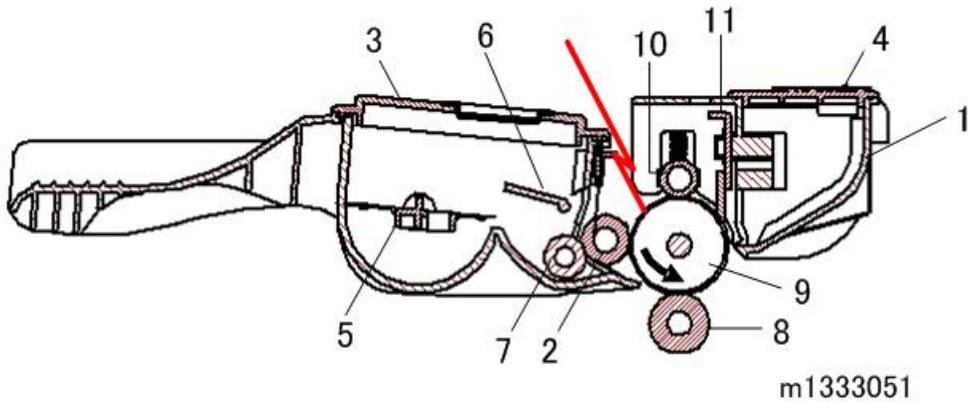
Y: Support - : Not support

ADF/Platen: ADF=ADF model, Platen= Platen cover model(Non-ADF)

n/usb: n=network model, usb=usb model, wifi=wi-fi model

AIO:R/NR: R=Refill model, NR=Not Refill model

Common AIO



m1333051

No.	Part	No.	Part
1	Waste Toner Tank	7	Toner Supply Roller
2	Development Roller	8	Image Transfer Roller
3	Toner Hopper	9	Drum
4	ID Chip	10	Charge Roller
5	Agitator	11	Cleaning Blade
6	Agitator Feeler		

- Throughout the service manual this unit is called the "AIO" (All-In-One).
- The AIO is common to all machines of this series.
- There are no serviceable parts inside the AIO. (Disassembly of an AIO is never required.)
- When the AIO runs out of toner, the toner waste tank can be emptied and the toner supply tank can be refilled with fresh developer/toner.
- An AIO can be refilled up to three times (this is the approximate service life of the drum). The refillings greatly extend the service life of the AIO.
- The AIO can be easily removed and replaced by the user.

- The AIO has an ID chip which helps the machine to detect when an AIO is set and when a new AIO has been installed.

Feature Summary

1

General Features

Unlike other machines in their class, these machines are not inkjet or GelJet printers—they are laser printers. The three machines of this series have these common features:

- Thin printers have a small footprint and require little space.
- They are extremely light and easy to carry:
 - 4in1 models: 11.1 kg (24.5 lb.) or less
 - 3in1 models: 9.9 kg (21.8 lb.) or less
 - Printer models: 7.2 kg (15.9 lb.) or less
- Their AIO units are identical and allow up to three refills with non-toxic developer/toner.

Here is a quick feature comparison.

Standard Features	M133 M162 M144 M163 M145 M146 M164	M134 M165 M147 M142	M135 M143 M167 M149 M168 M150 M151 M169	M141	M166 M148 M191
ADF Unit	No	No	Yes	No	Yes
Fax Unit	No	No	Yes	Yes	No
Operation Panel	2 keys & 2 LEDs	2-digit	2-line	2-line	2-line
Output Tray (50 sheets)	Yes	Yes	Yes	Yes	Yes
Paper Tray (150 sheets)	Yes	Yes	Yes	Yes	Yes
Platen	No	Yes	No	Yes	No

The following features are not supported by these machines:

- Bulk paper feed unit (only one small tray is available)
- USB2 Print
- NRS support (no UZ, Basil, or Cumin options available)
- Memory expansion
- HDD expansion
- G3 expansion (no G3 option available)
- PictBridge

Duplex Printing

These machines have no mechanism for automatic duplexing.

- However, the operator can run a print job and print on the first side of the pages, remove the printed sheets from the output tray, turn the stack over so the blank side is facing up, load the stack in the paper feed tray, and then run another job to print on the second sides of the pages.
- Both portrait and landscape printing are possible. Duplex printing must be set up with the print application. For more details, refer to the operating instructions.

Important Points to Remember

These are very important points to keep in mind while using the service manual:

- **Functionality.** M135, M166, M148, M143, M167, M149, M168, M150, M151, M169, and M191 have both the ADF and flatbed unit.
- **Smart Organizing Monitor.** This utility (installed with the printer driver at installation) is used to configure the system and handle errors of all machines of this series.
- **Message and error displays.** M135, M141, M166, M148, M143, M167, M149, M168, M150, M151, M169, and M191 have a 2-line display that can show errors (SC codes) and messages. The M134, M165, M147, M142, M146, and M164 display are limited to two digits, and the M133, M162, M144, M163, and M145 have no display. The Service Mode of Smart Organizing Monitor can be used to view error messages for all machines.
- **User Tool.** The M135, M141, M143, M167, M149, M168, M150, M151, M169, and M191 have a [User Tool] button which opens the User Tool menu settings used to configure the machine. The Service Mode of the Smart Organizing Monitor is used to configure all machines.
- **Scanning.** The M135, M141, M165, M147, M142, M166, M148, M143, M167, M149, M168, M150, M151, and M169 both support applications that use the TWAIN and WIA drivers for scanning. The originals can be scanned and saved directly onto a computer disk.

About AIO units

AIO units vary depending on the model being used.

M145, M147, M148, M146

Printers, 3-in-1 models

- With the M145, M147, and M146, which can detect the amount of remaining toner but have no display on the control panel, the amount of remaining toner appears in Smart Organizing Monitor. With the M148, which has a two-line display, the amount of remaining toner appears on the control panel as well as in Smart Organizing Monitor.
- If the toner is at near end or toner end, the machine issues the alert. Replace the AIO unit to refill the toner, since the toner alone cannot be refilled.
- "Toner End Option" is not included in User Tools.

M149, M150, M151

4-in-1 models

- Capable of detecting the amount of remaining toner. The amount of remaining toner appears on the control panel and also in Smart Organizing Monitor.
- If the toner is at near end or toner end, it is reported. Replace the AIO unit to refill the toner, since the toner alone cannot be refilled.
- "Toner End Option" is included in User Tools. If set to "Continue Printing", the amount of remaining toner is not determined. In this case, even if the toner is at near end or toner end, the machine does not issue the alert.

M133, M134, M162, M144, M163, M165, M142, M166, M146, M191

Printers, 3-in-1 models capable of being refilled

- Equipped with AIO units with caps for refilling the toner
- Cannot determine the amount of remaining toner
- Cannot issue an alert when the toner is at near end or toner end
- Refill the toner either by replacing the AIO unit or by refilling the AIO unit with toner.
- "Toner End Option" is not included in User Tools.

M135, M141, M143, M167, M168, M169

4-in-1 models capable of being refilled

- Equipped with AIO units with caps for refilling the toner
- When using a starter or other genuine AIO unit, the amount of remaining toner can be determined, and if the toner is at near end or toner end, the machine issues the alert. However, if a refilled AIO unit is installed, it is not possible to determine the amount of remaining toner, toner-near-end or toner-end.
- "Toner End Option" is included in User Tools. If set to "Continue Printing", the amount of remaining toner is not determined even if a starter or other genuine AIO unit is being used. In this case, even if the toner is at near end or toner end, the machine does not report an alert.

Criteria for Determining the Amount of Remaining Toner and Reporting a Toner-end Alert

Model	Criteria for determining the amount of remaining toner and reporting a toner-end/toner-near-end alert
M145, M147, M148, M146	Capable of determination and notification. Operates as if "Toner End Option" is set to "Stop Printing" at all times.
M149, M150, M151	Capable of determination and notification if "Toner End Option" is set to "Stop Printing". As the default, "Toner End Option" is set to "Stop Printing".
M133, M134, M162, M144, M163, M165, M142, M166, M164, M191	Not capable of determination and notification. Operates as if "Toner End Option" is set to "Continue Printing" at all times.
M135, M141, M143, M167, M168, M169	Capable of determination and notification if a starter or other genuine AIO unit is installed and "Toner End Option" is set to "Stop Printing". As the default, "Toner End Option" is set to "Stop Printing".

AIO Unit Specifications

Starter AIO

M133, M162, M144, M163, M134, M165, M142, M166, M135, M141, M143, M167, M168, M164, M169, M191: 1.0K

M145, M147, M148, M149, M150, M146, M151: 0.70K

Replacement AIO Unit

China: only 2.6K

Regions Other than China: 1.5K and 2.6K

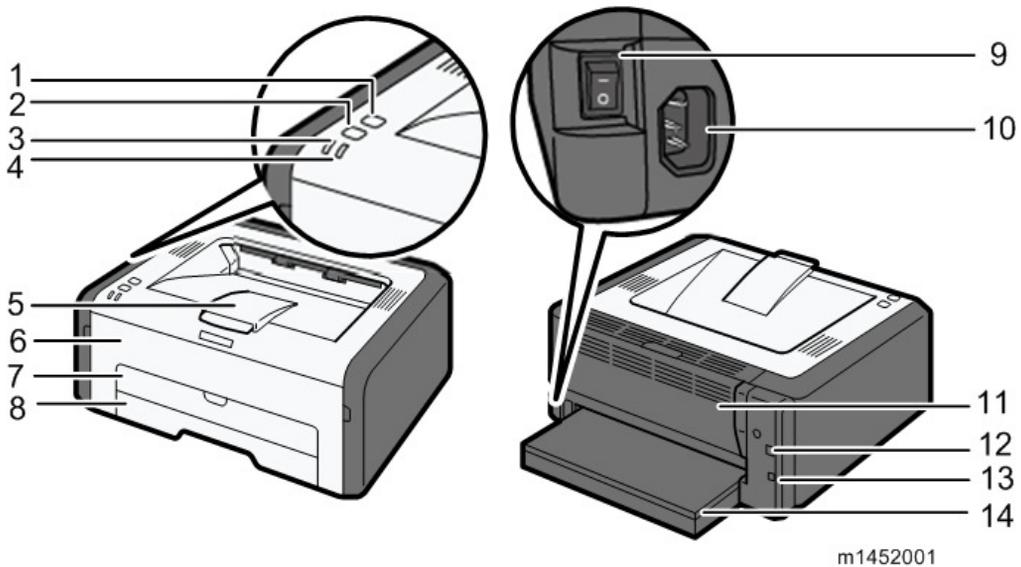
Function	M135, M141, M143, M167, M168, M169		M149 M150 M151	M133, M134, M162, M144, M163, M165, M142, M166, M164, M191		M145 M147 M148 M146
	Refilled AIO Unit	Genuine AIO Unit	Genuine AIO Unit	Refilled AIO Unit	Genuine AIO Unit	Genuine AIO Unit
ID chip (Installed)	Y	Y	Y	Y	Y	Y
Detecting installation (Checking by the ID chip whether the AIO unit is installed)	Y	Y	Y	Y	Y	Y
Detecting new products (Checking whether the installed AIO unit is unused)	-	Y	Y	-	-	Y
Photoconductor life (Determining the photoconductor life and notifying the user when it is nearing its end)	-	Y	Y	-	-	Y
Photoconductor life (Determining the photoconductor life and notifying the user when it has ended)	-	Y	Y	-	-	Y
Reporting toner near end	-	Y	Y	-	-	Y
Reporting toner end	-	Y	Y	-	-	Y
Waster toner bottle notification (Notifying the user when the waster toner bottle is full)	-	Y	Y	-	-	Y
50 pages print after reporting toner end	-	Y	Y	-	-	Y
Toner End Option (User Tools)	Y	Y	Y	-	-	-

Y: Supported

-: Not Supported

General Configuration

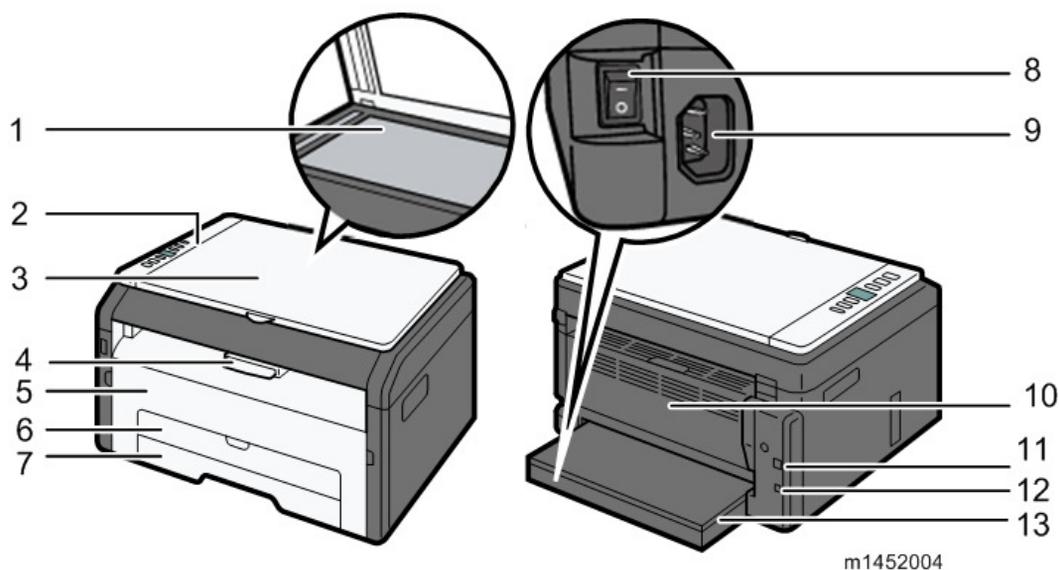
M133, M162, M144, M163, M145, M146, M164 Configuration



1. **[Job Reset] key**
Press this key to cancel an ongoing print job.
2. **[Start] key**
Press this key to resume printing if printing stops due to paper running out or a paper setting error.
3. **Power Indicator**
This indicator lights up green when the machine is turned on. It flashes when a print job is received and while printing is in progress.
4. **Alert Indicator**
This indicator lights up red when the machine runs out of paper or consumables, when the paper settings do not match the setting specified by the driver, or other errors occur.
5. **Output Tray**
Printed paper is output here.
6. **Front Cover**
Lift up this cover to replace consumables or clear a paper jam.
7. **Bypass Tray**
This tray can hold up to one sheet of plain paper.

8. **Tray 1**
This tray can hold up to 150 sheets of plain paper.
9. **Power Switch**
Use this switch to turn the power on or off.
10. **Power Connector**
Connect the power cord to the machine here. Insert the other end of the cable into a nearby wall outlet.
11. **Rear Door**
Open this cover to deliver sheets face up or remove jammed paper.
12. **USB Port**
Use this port to connect the machine to a computer using a USB cable.
13. **Ethernet Port (M144, M163, and M145, M146, M164 only)**
Use this port to connect the machine to network using an Ethernet cable.
14. **Tray Cover**
Attach this cover when you extend the tray.

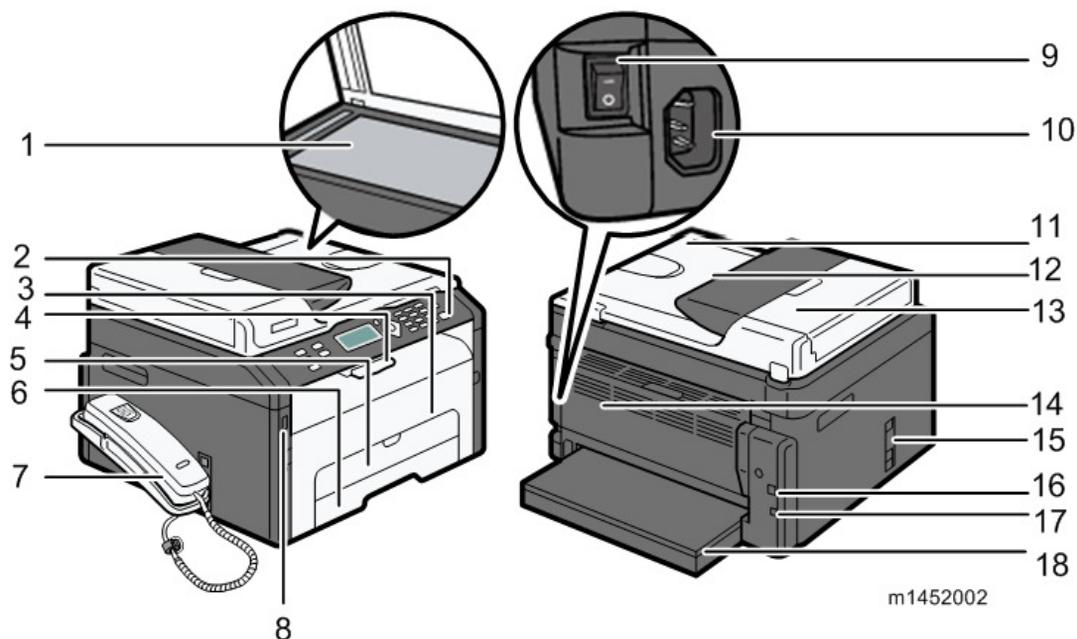
M134, M165, M147, M142 Configuration



1. **Exposure Glass**
Place originals here sheet by sheet.
2. **Control Panel**
Contains a screen and keys for machine control.

3. **Exposure Glass Cover**
Open this cover to place originals on the exposure glass.
4. **Output Tray**
Printed paper is output here.
5. **Front Cover**
Lift up this cover to replace consumables or clear a paper jam.
6. **Bypass Tray**
This tray can hold up to one sheet of plain paper.
7. **Tray 1**
This tray can hold up to 150 sheets of plain paper.
8. **Power Switch**
Use this switch to turn the power on or off.
9. **Power Connector**
Connect the power cord to the machine here. Insert the other end of the cable into a nearby wall outlet.
10. **Rear Door**
Open this cover to deliver sheets face up or remove jammed paper.
11. **USB Port**
Use this port to connect the machine to a computer using a USB cable.
12. **Ethernet Port (M142 only)**
Use this port to connect the machine to network using an Ethernet cable.
13. **Tray Cover**
Attach this cover when you extend the tray.

M135, M141, M166, M148, M143, M167, M149, M168, M150, M151, M169, M191 Configuration



★ Important

- In the M141, Auto Document Feeder (ADF) has not been installed.

1. **Exposure Glass**
Place originals here sheet by sheet.
2. **Control Panel**
Contains a screen and keys for machine control.
3. **Front Cover**
Lift up this cover to replace consumables or clear a paper jam.
4. **Output Tray**
Printed paper is output here.
5. **Bypass Tray**
This tray can hold up to one sheet of plain paper.
6. **Tray 1**
This tray can hold up to 150 sheets of plain paper.
7. **Handset (M135, M141, and M143 only)**
Enables you to use the machine as a telephone.
8. **USB Flash Disk Port (M150, M168, M148, M166, M151, and M169 only)**
Insert a USB flash disk to store scanned files using the Scan to USB function.

9. **Power Connector**

Connect the power cord to the machine here. Insert the other end of the cable into a nearby wall outlet.

10. **Power Switch**

Use this switch to turn the power on or off.

11. **Auto Document Feeder (Exposure Glass Cover)**

The ADF is integrated with the exposure glass cover. Open this cover to place documents on the exposure glass.

12. **Input Tray for the ADF**

Place stacks of originals here. They will feed in automatically. This tray can hold up to 15 sheets of plain paper.

13. **ADF Cover**

Open this cover to remove originals jammed in the ADF.

14. **Rear Door**

Open this cover to deliver sheets face up or remove jammed paper.

15. **Line and TEL Connector (M135, M141, M143, M167, M149, M168, M150, M151, and M169 only)**

- **For M135, M141, M143**

Upper port: Port for handset connection.

Middle port: Port for external telephone connection.

Lower port: G3 (analog) line Interface port for telephone line connection.

- **For M167, M149, M168, M150, M151, M169**

Upper port: Port for external telephone connection.

Lower port: G3 (analog) line Interface port for telephone line connection.

16. **USB Port**

Use this port to connect the machine to a computer using a USB cable.

17. **Ethernet Port (M150, M168, M143, M148, M166, M151, and M169 only)**

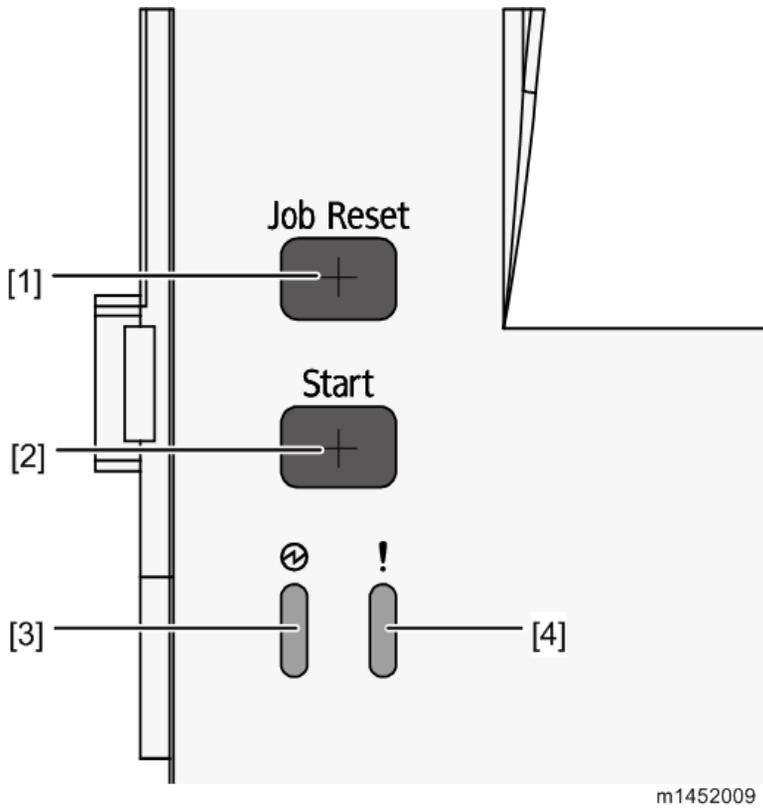
Use this port to connect the machine to network using an Ethernet cable.

18. **Tray Cover**

Attach this cover when you extend the tray.

Operation Panels

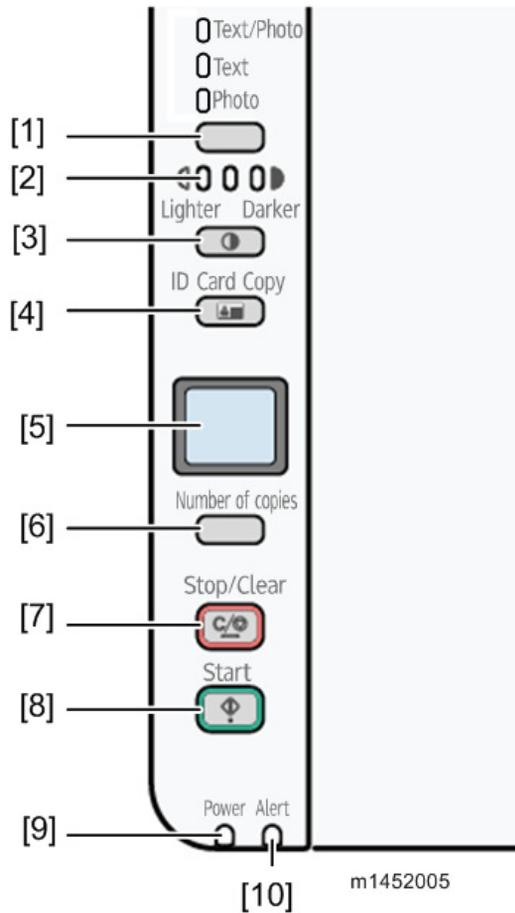
The operation panel for each machine of this series is different.

M133, M134, M162, M163, M145, M146, M164 Operation Panel

No.	Name
1	[Job Reset] Key
2	[Start] Key
3	Power Indicator
4	Alert Indicator

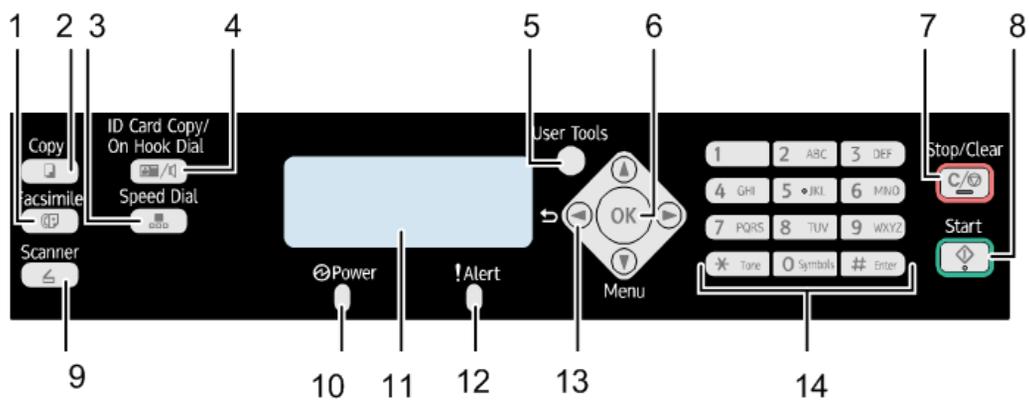
M134, M142, M165, M147 Operation Panel

1



No.	Name	No.	Name
1	Document type key	6	[Number of copies] Key
2	Density Indicator	7	[Stop/Clear] Key
3	[Density] Key	8	[Start] Key
4	[ID Card Copy] Key	9	Power Indicator
5	Display (LCD)	10	Alert Indicator

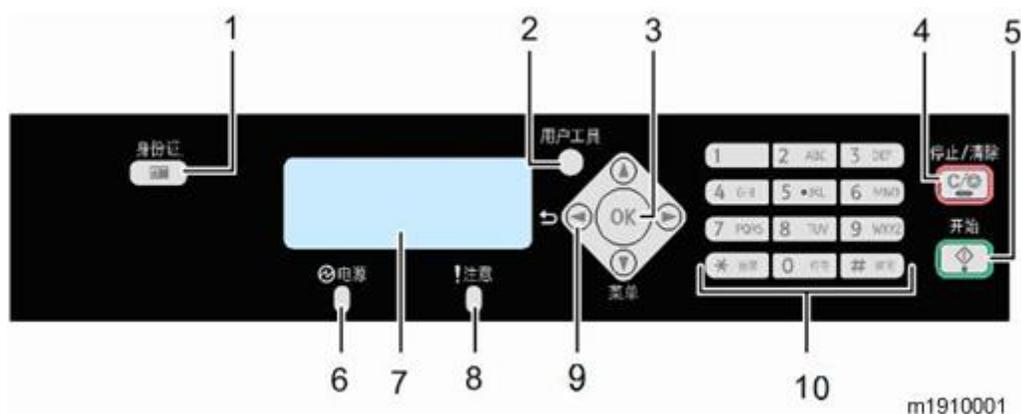
M135, M141, M143, M166, M148, M167, M149, M168, M150, M151, M169 Operation Panel



m1452006

No.	Name	No.	Name
1	[Facsimile] Key	8	[Start] Key
2	[Copy] Key	9	[Scanner] Key *M168, M169, M150, M151 only.
3	[Speed Dial] Key	10	Power Indicator
4	[ID Card Copy/On Hook Dial] Key	11	Display Screen (LCD)
5	[User Tools] Key	12	Alert Indicator
6	[OK] Key	13	Scroll Keys
7	[Stop/Clear] Key	14	Number Keys

M191 Operation Panel



No.	Name	No.	Name
1	[ID Card Copy] Key	6	Power Indicator
2	[User Tools] Key	7	Display Screen (LCD)
3	[OK] Key	8	Alert Indicator
4	[Stop/Clear] Key	9	Scroll Keys
5	[Start] Key	10	Number Keys

Alert LEDs

Power LED

The Power LED remains OFF while the machine is turned off. The Power LED lights and remains ON:

- After the machine is turned on and enters the Ready mode
- While the machine is in energy save mode

The Power LED FLASHES at 1 sec. intervals when

- The PC is communicating with the machine
- After picking up the handset to talk (M135, M141, and M143)
- During copying
- During printing
- During scanning
- During firmware update

Alert LED

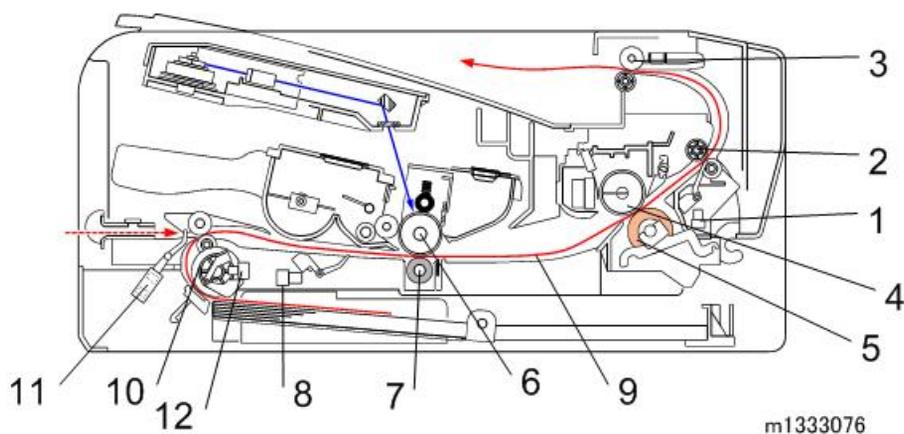
The alert LED remains OFF while the printer is functioning normally or goes OFF after a problem with the machine has been resolved.

The alert LED lights and remains ON:

- When the machine malfunctions
- Service Call errors (SC codes will appear on the 2-line and 2-digit display models.)
- At toner end
 - Models that can detect toner end are as follows;
 - M145, M147, M148, M146
 - M149, M150, M151 (When Toner End Option is set for "Stop Printing".)
 - M135, M141, M143, M167, M168, M169 (Using genuine AIO and Toner End Option is set to "Stop Printing".)
- If the top cover or maintenance cover is open
- When a paper or original jam occurs
- When the paper tray runs out of paper

Overview

Paper Path



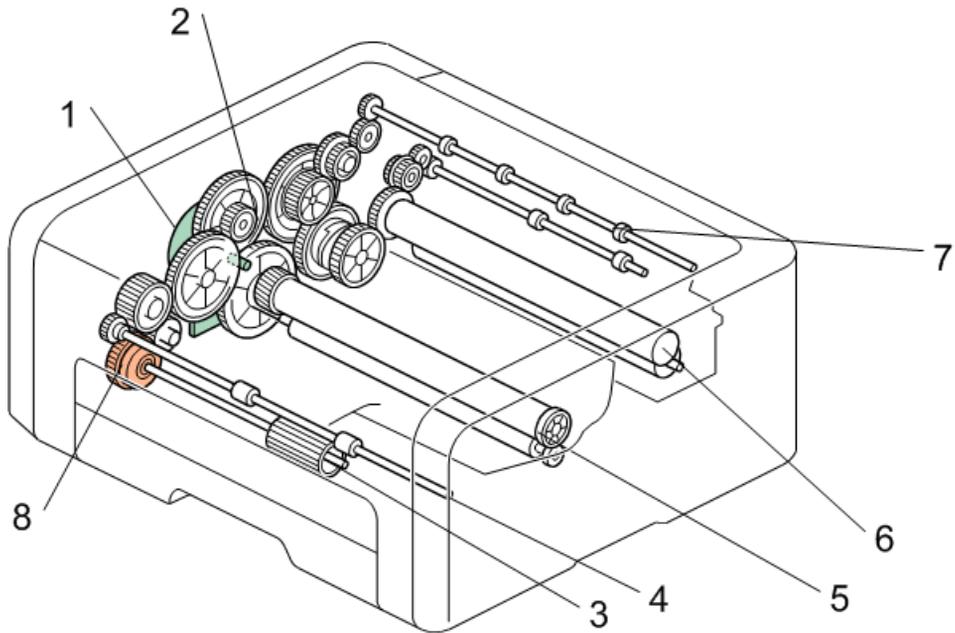
No.	Part	No.	Part
1	Paper Exit Sensor	7	Image Transfer Roller
2	Fusing Exit Roller	8	Registration Sensor
3	Exit Roller	9	Paper

No.	Part	No.	Part
4	Hot Roller	10	Feed Roller
5	Pressure Roller	11	By-pass Set Sensor
6	Drum	12	Paper End Sensor

When paper passes through the machine:

- Paper (up to 150 sheets) is loaded in the paper tray. To feed the paper from the tray by the feed roller (10) is driven by the main motor.
- The paper feeds between the nip of the rotating feed roller (10).
- The registration sensor (8) detects the leading edge of the paper. This triggers the laser unit above which writes the image onto the drum. The registration sensor will trigger an error if the leading and trailing edge of the paper does not pass within the prescribed time. (The timing is different, depending on the lengths of different paper sizes.)
- The paper passes through the nip of the drum (6) and transfer roller (7). The transfer roller pulls the toner image from the drum onto the paper.
- The toner image is fused onto the paper when it passes through the nip of the hot roller (4) and pressure roller (5).
- The paper exit sensor (1) detects the leading edge and trailing edge of the paper. The sensor will trigger a jam alert if the leading and trailing edge do not pass within the time prescribed for the length of the paper (determined by the selected paper size).
- Finally, the paper passes through the nip of the exit roller (3) and is stacked face-down on the output tray.
- When there is no paper in the tray, a feeler falls into a cutout in the bottom of the plate, triggering the paper end sensor.
- The By-pass Set Sensor (11) detects when paper is set in the bypass tray.

Drive Layout



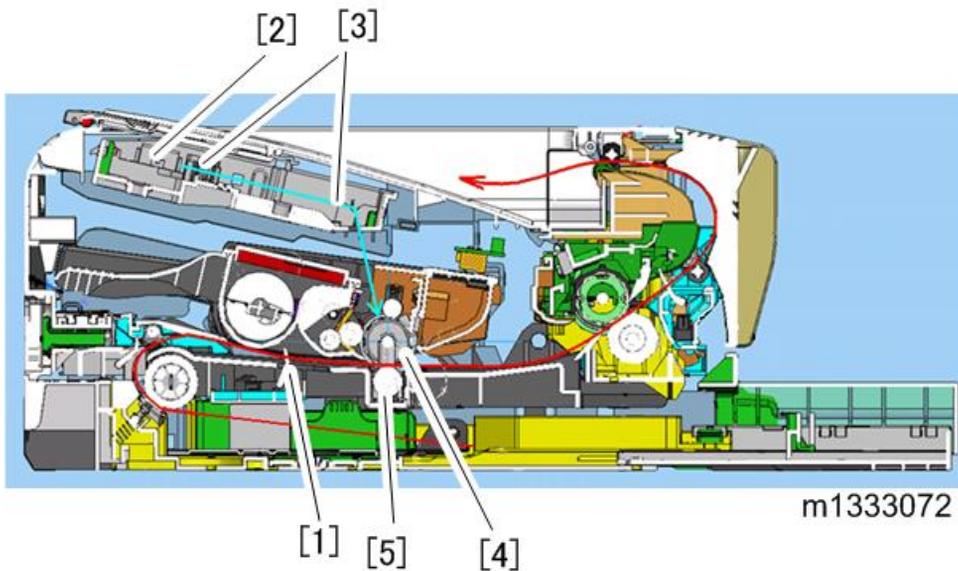
m1333075

No.	Part	No.	Part
1	Main Motor	5	Drum (inside AIO)
2	Gear Train	6	Hot Roller
3	Feed Roller	7	Paper Exit Roller
4	Paper Transport Roller	8	Paper Feed Clutch

The main motor (1) with gear train (2) drives Feed Roller (3), Paper Transport Roller (4), the drum (5) in the AIO, Hot Roller (6) and Paper Exit Roller (7).

The Paper Feed Clutch (8) turns ON/OFF to control the Feed Roller.

Image Writing



No.	Part
1	Registration Sensor
2	Polygon Mirror
3	Lenses, Mirrors
4	Drum
5	Image Transfer Roller

The registration sensor (1) detects the leading edge of the paper fed from the feed roller and triggers the laser unit to fire the laser. The polygon mirror (2) shoots the laser through lenses and mirrors (3) and onto the surface of the drum (4). Toner from the AIO forms the image on the drum. The toner image is pulled from the surface on the drum onto the paper by the transfer roller (5).

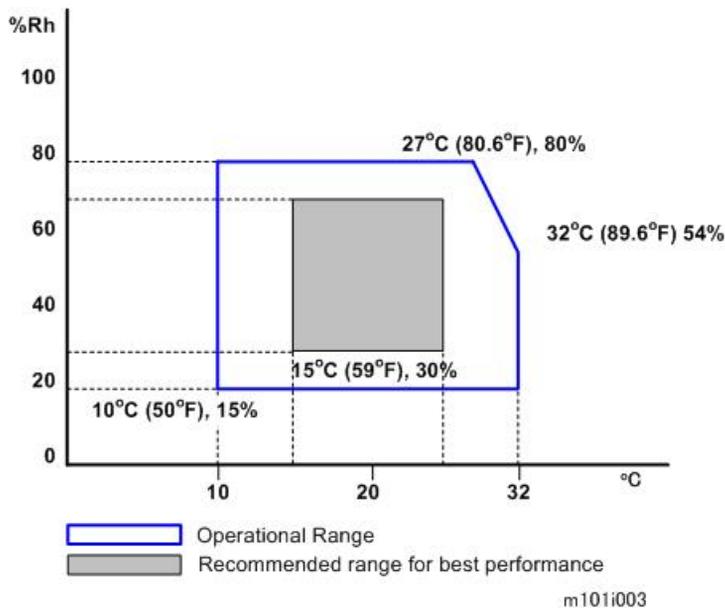
2. Installation

Installation Requirements

Installation Procedure

For instructions on unpacking the machine, installing the print cartridge (AIO), connection and software installation, please refer to the operating instructions Quick Installation Guide.

Environment



Temperature	15°C to 25°C (59°F to 77°F)
Humidity	30% to 70% RH

1. The machine can be used slightly out of the recommended ranges for temperature and humidity ("Operational Range"), but for best performance use the temperature within the recommended ranges.
2. Ambient Illumination: Less than 2,000 lux (do not expose the AIO to strong light, especially direct sunlight)
3. Ventilation: 3 times/hr/person

4. Do not put the machine in areas with sudden temperature changes. This includes:
 - Areas directly exposed to cool air from air conditioning
 - Areas directly exposed to heat from a heating system.
5. Do not put the machine in areas exposed to corrosive gas.
6. Do not install the machine at locations over 2,000 m (6,562 ft.) above sea level.
7. Put the machine on a strong, level base. (Tilting towards any side must be no more than 3 mm.)
8. Do not put the machine in areas with strong vibrations.

Power Requirement

Power Source:

- 220 to 240V 50/60 Hz 5A or less (Asia/EU)
- 120V 60 Hz 8A or less (North America)

Check the machine installation and confirm the following important points:

- Power plug fits tightly in the outlet.
- Power plug is clean and free of dust.
- The machine power plug is not connected to a shared source.
- The machine should be properly grounded.
- The power cord should be free and not wrapped around the leg of a chair or table, or bundled.

Machine Level

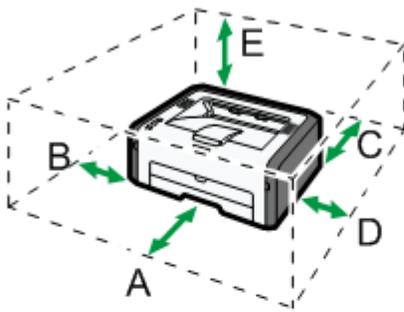
Make sure that the machine is located on a flat surface.

Front to back	Within 5 mm (0.2") of level
Right to left	Within 5 mm (0.2") of level

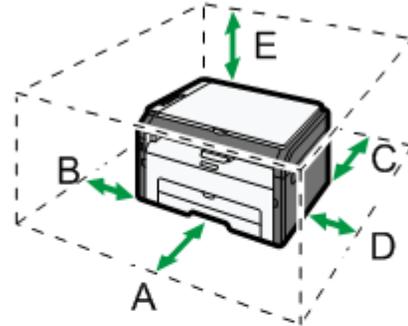
Space Requirements

The machine should be used in a location that meets these minimum space requirements.

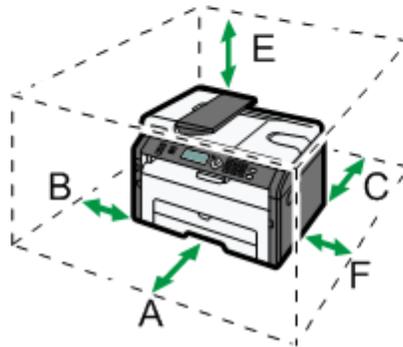
M133, M162, M144,
M163, M145, M146,
M164



M134, M165, M147,
M142



M135, M141, M143, M167, M149, M168,
M150, M166, M148, M151, M169, M191



m1461001

Space Requirements	
A	45 cm (17.8 in.)
B	10 cm (4.0 in.)
C	20 cm (7.9 in.)
D	10 cm (4.0 in.)
E	40 cm (15.8 in.)
F	20 cm (7.9 in.)

There should be enough space at the front so the output tray can be opened and closed.

Moving the Machine

The machine is light, but be careful when you move it:

- Always lift the printer by the inset handles on the left and right sides.
- Leave the AIO in the machine while moving it.
- Hold the machine horizontal while carrying it to prevent possible toner scatter inside the machine.
- Before transporting the printer to a remote location, re-pack it in its original box and packing material.

Smart Organizing Monitor

Smart Organizing Monitor is the utility that allows the operator to view and change the machine settings for:

- Paper size and type
- System Settings:
- Printer settings
- Copy settings (for M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M151, M169, M191)
- Fax settings (for M135, M141, M143, M167, M149, M168, M150, M151, M169)
- Network settings (for M144, M163, M145, M142, M166, M148, M143, M168, M150, M151, M167, M146, M164)
- Scanner settings (for M166, M148, M143, M168, M150, M151, M169)
- Printing reports and test pages

The Smart Organizing Monitor is provided with the machine on a CD-ROM and must be installed together with the printer driver.

Important Features

Here are some important features you should remember:

- The refillable AIO units can be refilled by a service technician up to three times, depending on usage. This extends the life of OPC drum.
- Remaining toner amount is monitored using dot count for FiO, refillable printer, and TiO only.
- Before loading paper, the paper size and paper type must be selected on the initial screen (System Settings) of the smart Organizing Monitor. The same paper size and paper type must also be selected with the printer driver at the start of a job. A mismatch error will occur if the paper size/type settings in the Smart Organizing Monitor and the printer driver are not the same.

- The starter AIO (capacity: 1,000 prints for M133, M162, M144, M163, M134, M165, M142, M166, M135, M141, M143, M167, M168, M191, M169 / 700 prints for M145, M147, M148, M149, M150, M146, M151, M164) provided with the machine should be installed in the machine at installation. After the starter AIO runs out of toner, it can be replaced with a new AIO (capacity: 2,600/1,500 prints). This is especially important for the machines with fax option; if the Toner End Option is switched off, customers may not be able to read incoming fax messages.

3. Preventive Maintenance

Cleaning the Machine

There are no PM parts for this machine. This section describes how the machine should be cleaned.

Before Cleaning

CAUTION

- Always switch the machine off and unplug it before cleaning.
- At least once a year, disconnect the power cable and clean the plug. Accumulated dust causes a fire hazard.

Important

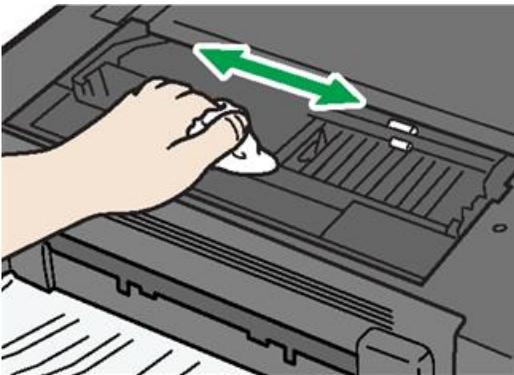
- **Never use an organic solvent like benzene, thinner, acetone, etc. to clean the machine. These materials can damage the plastic covers and other parts of the printer.**

Make sure that the operators know how to clean the machine.

- The machine should be cleaned periodically with a dry cloth.
- If dry wiping is not sufficient, used a soft damp cloth with a neutral detergent and then dry wipe.
- Inspect the plug and clean away any dust or grime before reconnecting. Accumulated dust can cause a fire hazard.

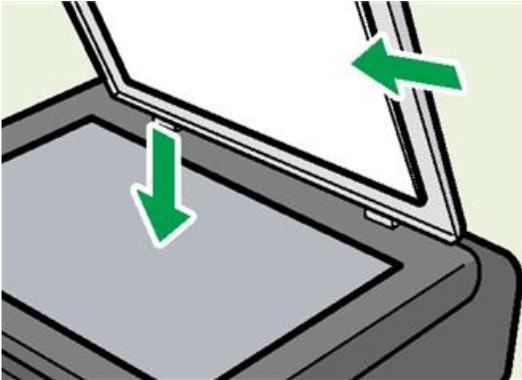
Routine Cleaning

1. Remove the AIO and clean the inside surfaces of the printer with a dry cloth.



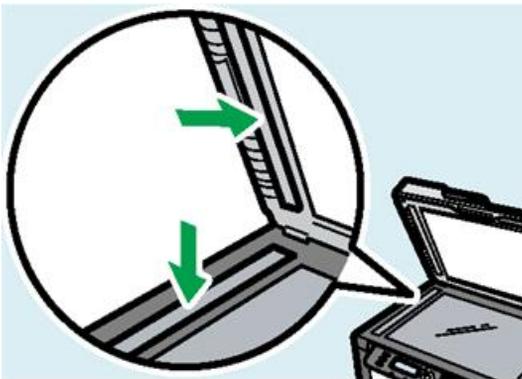
m101p001

2. Clean the exposure glass and white plate above the exposure glass of MF models with a soft damp cloth, and then wipe it with a dry cloth.



m101p002

3. Clean the scanning glass of the ADF MF models (M166, M148, M135, M143, M167, M149, M168, M150, M151, M169, and M191) with a soft damp cloth, and then wipe it with a dry cloth.



m101p003

Note

- For more details about cleaning, please refer to the machine operating instructions.

4. Replacement and Adjustments

Before You Begin

Precautions

CAUTION

- To prevent electrical shock, always switch the machine off and unplug it from its power source.
- Allow the machine to cool for at least 10 minutes. This allows the fusing unit to cool and also allows time for the polygon mirror inside the laser unit to stop rotating.

Special Tools

There are no special tools required for disassembling the machine. However, you should have these items:

- Standard length hex screwdriver
- Stubby hex screwdriver
- Thin radio pliers

Printing the Test Page and Reports

The table below is a quick reference to help you find how to print a report. Detailed descriptions of these reports are provided in another section of this manual. (▶ page 160 "Utilities")

Keep these points in mind when you use this table:

- The User Tools menu ("User Tools" key) is available for the M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M164, and M191.
- The Fax Maintenance menus are available for the M135, M141, M143, M167, M149, M168, M150, M151, and M169 because only these have the fax feature.
- The Smart Organizing Monitor is available for all machines for printing the Configuration Page and Test Page.

No.	Report	Procedure
1	Configuration Page	[User Tools] > "Report Print Set" > "Configuration Page" Start SOM > User Tools > select "Configuration Page" from the List/Test list > click [Print]

No.	Report	Procedure
2	Error Log History List	<p>* Service Mode > "Fax Maintenance" > "Report" > "Error Log History List"</p> <p>After selection, the list is output after finishing the SP mode with the "STOP" button.</p>
3	Fax Journal	[User Tools] > "Fax Features" > "Report Print Set" > "Fax Journal"
		[User Tools] > "Report Print Set" > "Fax Journal"
		Start SOM > User Tools > select "Fax Journal" from the List/Test list > click [Print]
4	Fax Speed Dial List	[User Tools] > "Report Print Set" > "Fax Speed Dial List"
		Start SOM > User Tools > select "Fax Speed Dial List" from the List/Test list > click [Print]
5	Fax Tx Standby File List	Start SOM > User Tools > select "Fax Tx Standby File List" from the List/Test list > click [Print]
6	Service Data List	<p>* Service Mode > [Start] > "Fax Maintenance" > "Report" > "Service Data List"</p> <p>After selection, the list is output after finishing the SP mode with the "STOP" button.</p>
7	T.30 Protocol List	<p>* Service Mode > "Fax Maintenance" > "Report" > "T.30 Protocol List"</p> <p>After selection, the list is output after finishing the SP mode with the "STOP" button.</p>
8	TX Standby File List	[User Tools] > "Report Print Set" > "TX Standby File List"
9	TX Status Report	[User Tools] > "Fax Features" > "Report Print Set" > "TX Status Report"
		[User Tools] > "Report Print Set" > "TX Status Report"
10	Test Page	[User Tools] > "Report Print Set" > "Test Page"
		Start SOM > User Tools > select "Test Page" from the List/Test list > click [Print]

No.	Report	Procedure
11	PC FAX Error Report	[User Tools] > "Fax Features" > "Report Print Set" > " PC FAX Error Report "
12	Power Failure Report	The report is output automatically in the following cases <ul style="list-style-type: none"> • Power OFF during immediate transmission. • Power OFF during reception. • Unable to re-transmit after power OFF during memory transmission.
13	Network Setting List	[User Tools]>"Print List/ Report" > "Network Setting List"
14	Scanner Journal	[User Tools]>"Print List/ Report" > "Scanner Journal"
15	Scanner Dest. List	[User Tools]>"Print List/ Report" > "Scanner Dest. List"

★ Important

- The detailed procedure for entering the service mode is provided in the training materials for these machines.

Basic Procedures

Before You Begin

This section describes the procedures that the service technician should know before servicing the machine. Most of the parts of the machines in this series are identical and interchangeable. However, please note that the main boards of these machines are not the same.

- **M133, M162, M144, M163, M145, M146, M164.** Main board has no connectors for the flatbed scanner or ADF.
- **M134, M141, M165, M147, M142.** Main board has flat connectors for the flatbed scanner only (not ADF).
- **M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191.** Main board has flat connectors for both the flatbed scanner and ADF.

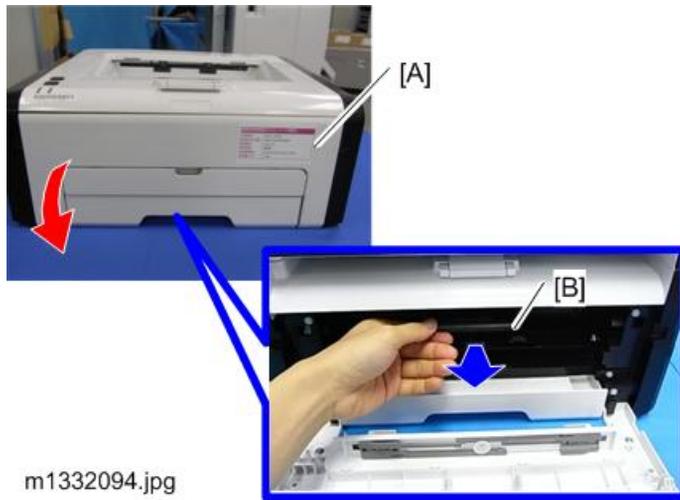
★ Important

- Before you service the machine, make sure that you know how to open the Service Mode screen of the Smart Organizing Monitor. This procedure is not described in this service manual.
- For more details about how to open the Service Mode screen of the Smart Organizing Monitor, refer to the service training material.

M133, M162, M144, M163, M145, M146, M164 Covers

AIO

1. Open the front cover [A].
2. Grip the AIO [B] by its handle and pull it out of the machine.



3. Place the AIO on a flat clean surface as shown below so the drum is not exposed to light.

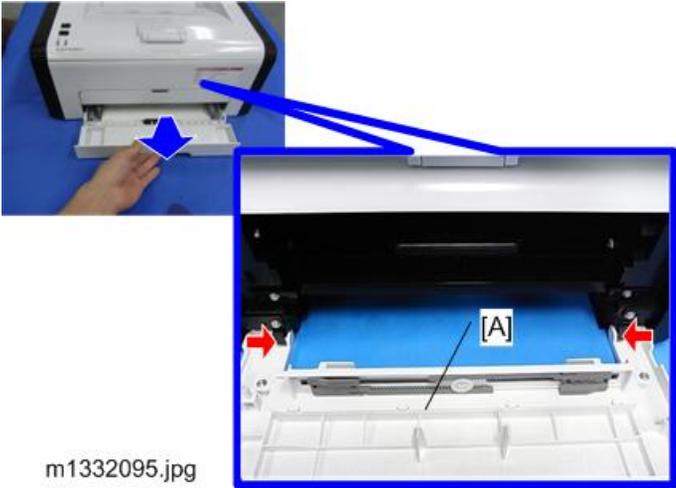


Note

- An AIO can be refilled up to three times (this is the approximate service life of the drum).

Front Cover

1. Pull the paper feed tray out of the machine.
2. Press in and release either peg on the front cover [A].



m1332095.jpg

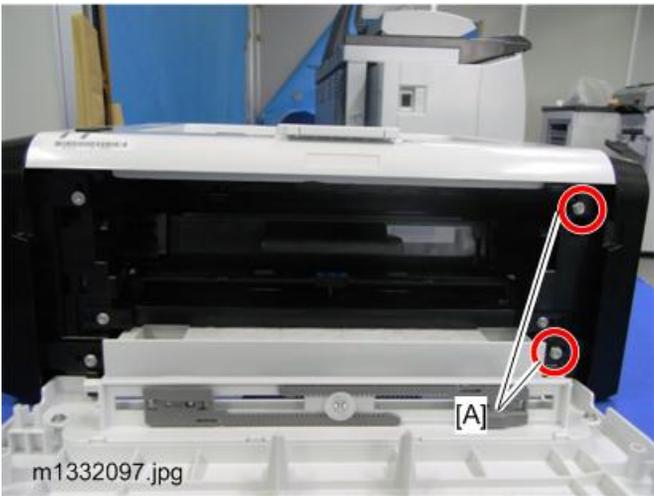
4

Right Cover

Preparation

Remove:

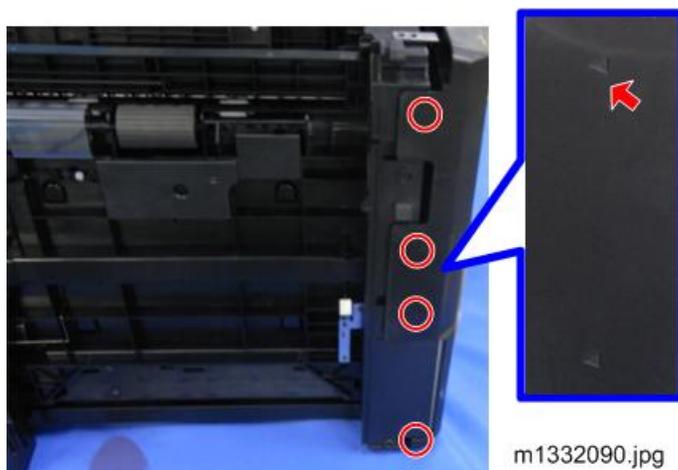
- Front cover
- Feed tray
- 1. Screws [A]



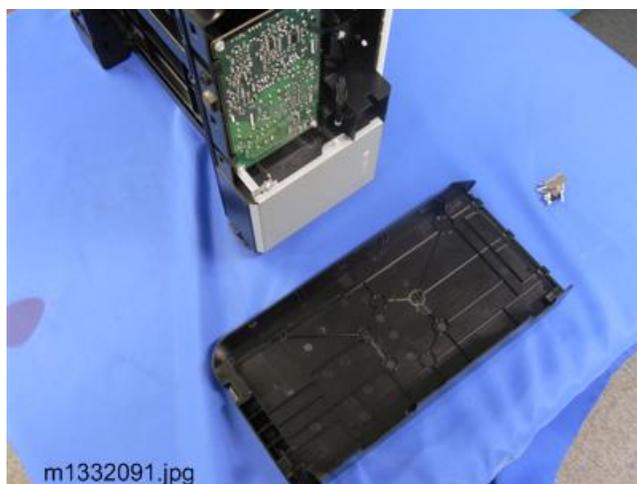
m1332097.jpg

2. Stand the machine as shown.
3. Locate the triangle marks that show you where the tab releases are located.
 - There are nine tabs on the right cover.
 - There are four tabs on the bottom.

- There are two tabs on the front, one tab on the top, and two hooks on the back.
4. Release the bottom tabs, then the front tabs.
 5. Open the cover front to back with attention to the rest of the tabs and hooks.



6. Right Cover



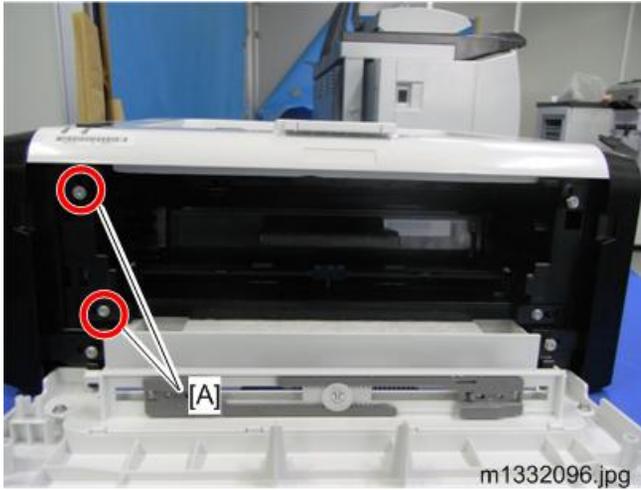
Left Cover

Preparation

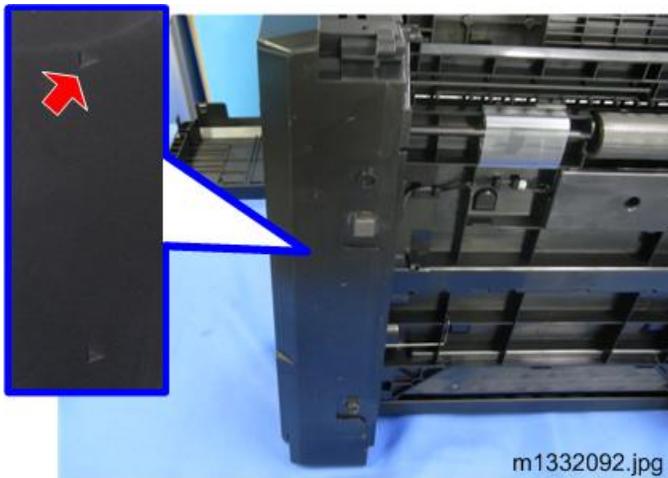
Remove:

- Front cover
- Feed tray

1. Screws [A]



2. Stand the machine as shown.
3. Locate the triangle marks that show you where the tab releases are located.
 - There are twelve tabs on the left cover.
 - There are four tabs on the bottom.
 - There are two tabs on the front, three tabs on the top, and three tabs on the back.
4. Release the bottom tabs, then the front tabs.
5. Open the cover front to back with attention to the rest of the tabs.



6. Left Cover



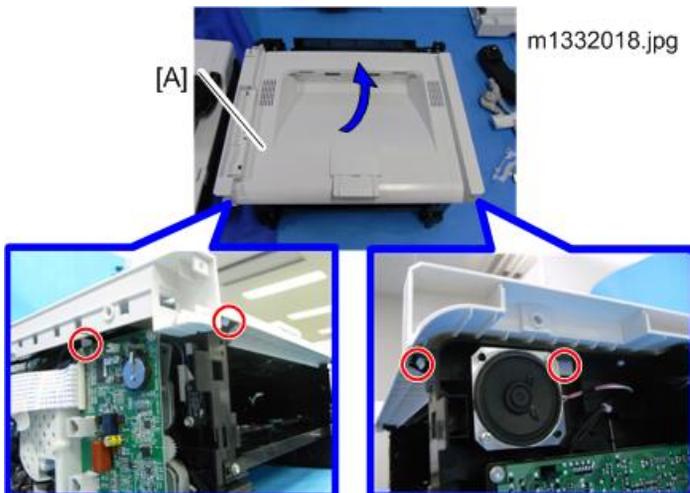
Top Cover

Preparation

Remove:

- Front Cover
- Right Cover
- Left Cover

Top Cover ( x 4)



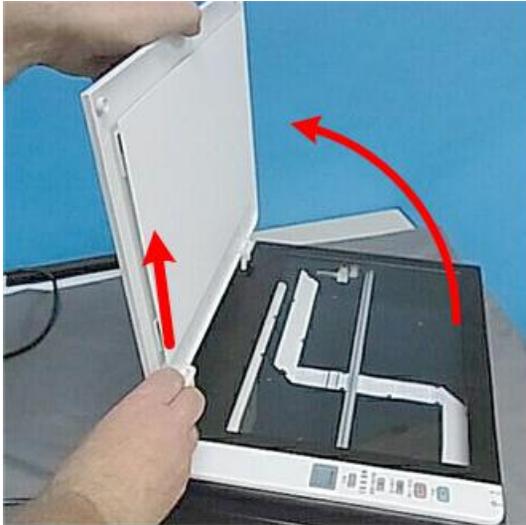
Rear Cover

The rear cover does not require removal unless the PSU requires replacement. ( page 134 "PSU")

M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit

Platen Cover

Raise the platen cover and then lift it straight up to remove it.



m102r031

AIO

1. Open the front cover [A].
2. Grip the AIO [B] by its handle and pull it out of the machine.



m1332086.jpg

- Place the AIO on a flat clean surface as shown below so the drum is not exposed to light.

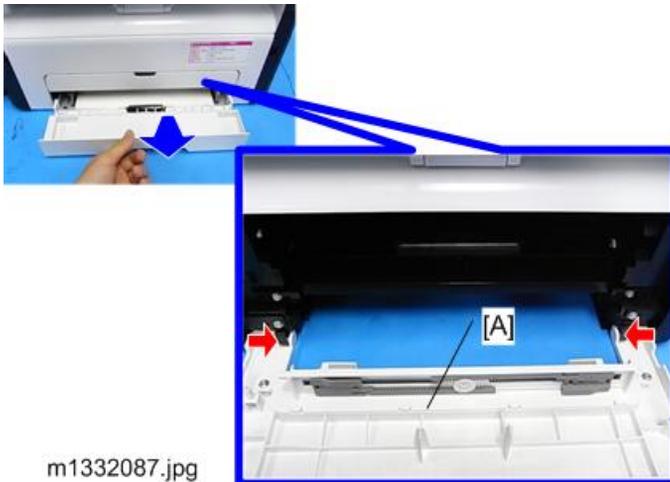


↓ Note

- An AIO can be refilled up to three times (this is the approximate service life of the drum).

Front Cover

- Pull the paper feed tray out of the machine.
- Press in and release either peg on the front cover [A].



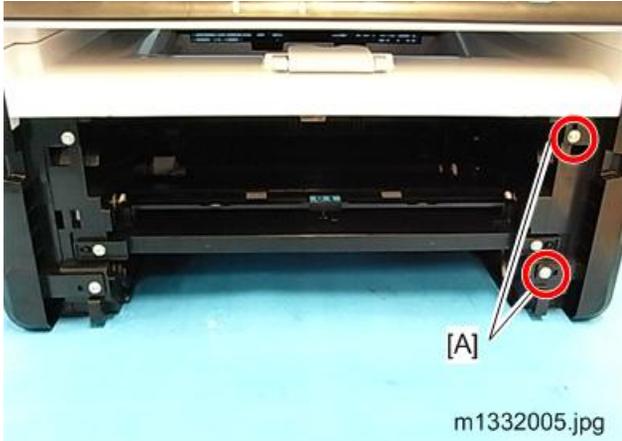
Right Cover

Preparation

Remove:

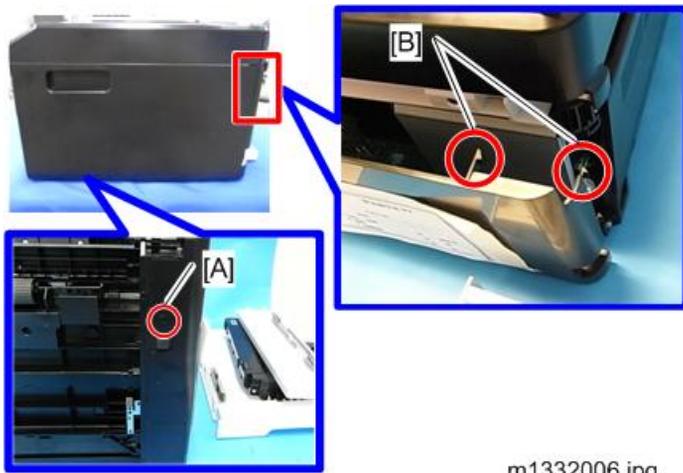
- AIO
- Front cover

1. Screws and hooks [A].



2. Release the hook on the bottom [A].

3. Open the cover front to back while paying attention to the hooks [B] at the back.



4. Right Cover



4

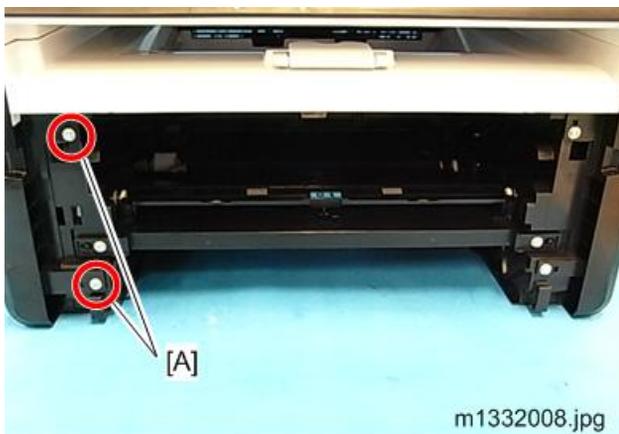
Left Cover

Preparation

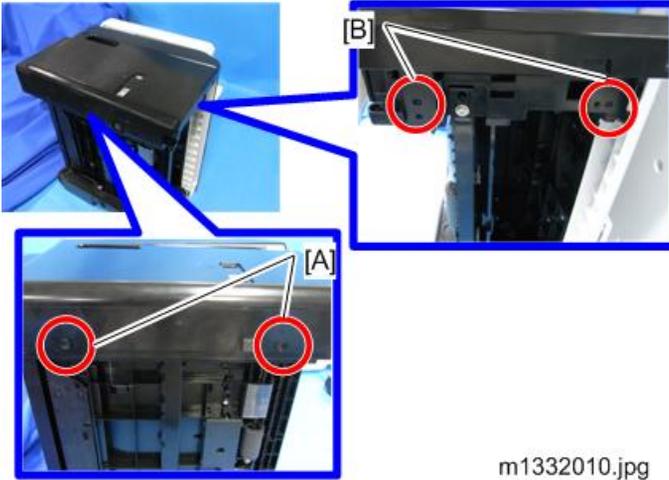
Remove:

- Handset
- AIO
- Front Cover

1. Screws [A]

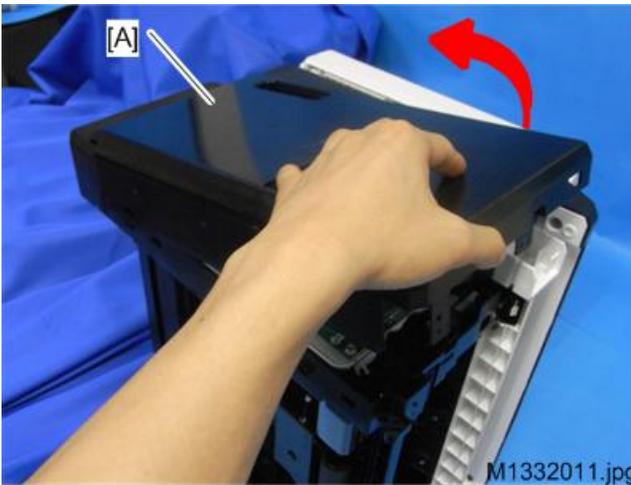


2. Stand the machine as shown below.
3. Release the hooks on the bottom [A].
4. Release the hooks on the front [B].



4

5. Take the left cover [A] off from the front to the back. (▼ x 1)



Rear Cover

The rear cover does not require removal unless the PSU requires replacement. (▶ page 134 "PSU")

Left Hinge

The left hinge does not require removal unless it must be replaced.

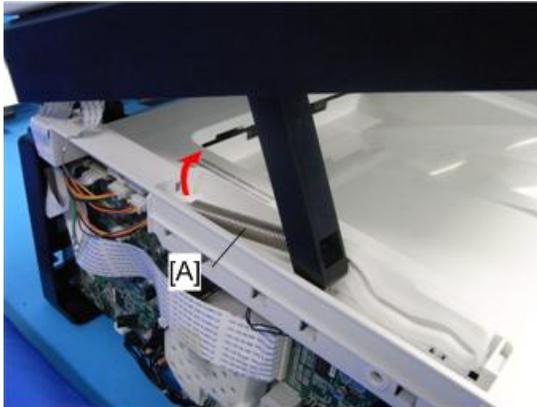
Preparation

Remove:

- Left Cover.
- Feed Tray.

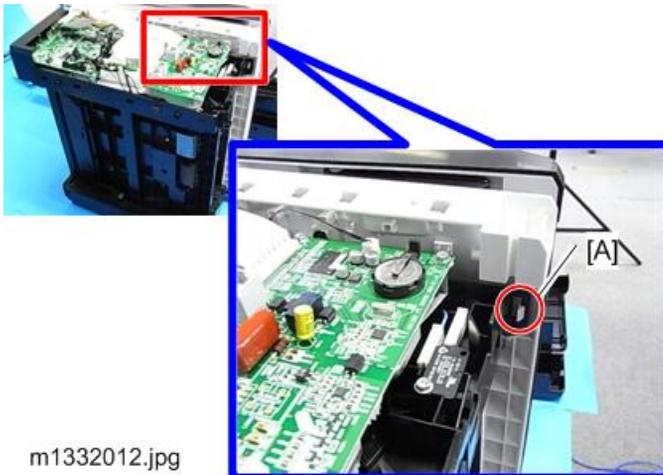
- AIO.

1. Release the spring [A].



m1332017.jpg

2. Stand the machine as shown below.
3. Release the hook [A].

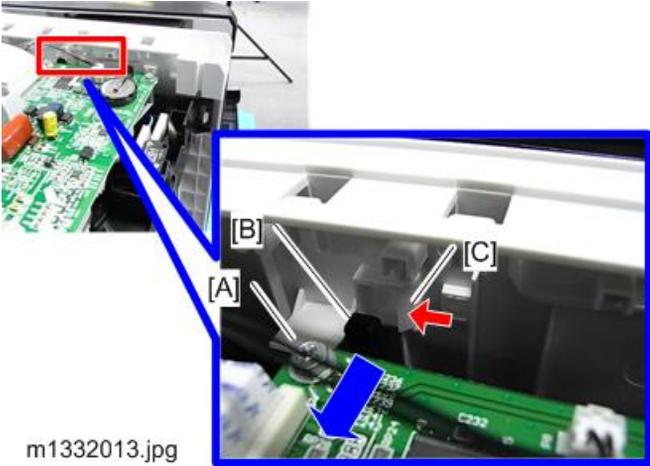


m1332012.jpg

4. Release the hook [A] to separate the boss [B] from the flatbed unit slightly.
5. Release the hook [C] to detach the guide which connects to the hinge.

Note

- Without step No. 4, the hook [C] cannot release due to the boss [B].



4

6. Detach the hinge [A] from the guide [B].



7. Bend and release the joint part with a screwdriver to detach the hinge.

**Note**

- Bend the hinge carefully not to break it.

8. Left Hinge

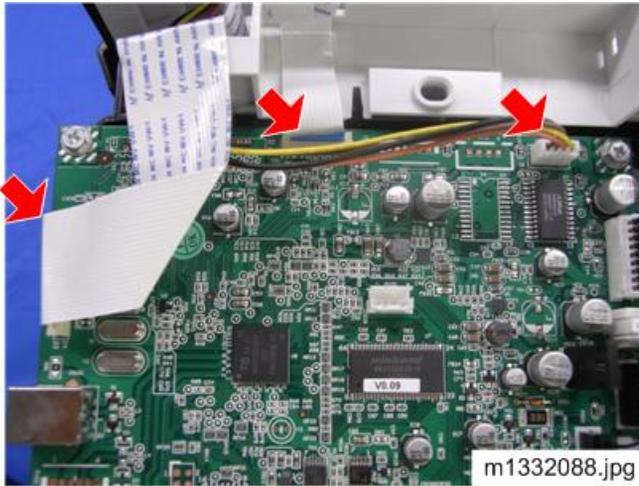
m1332110.jpg

Flatbed Scanner Unit**Preparation**

Remove:

- Platen Cover
- AIO
- Front Cover
- Right Cover
- Left Cover
- Detach the Left Hinge from the Guide

1. Disconnect the FFCs and the connector on the main board. ( x 2,  x 1).

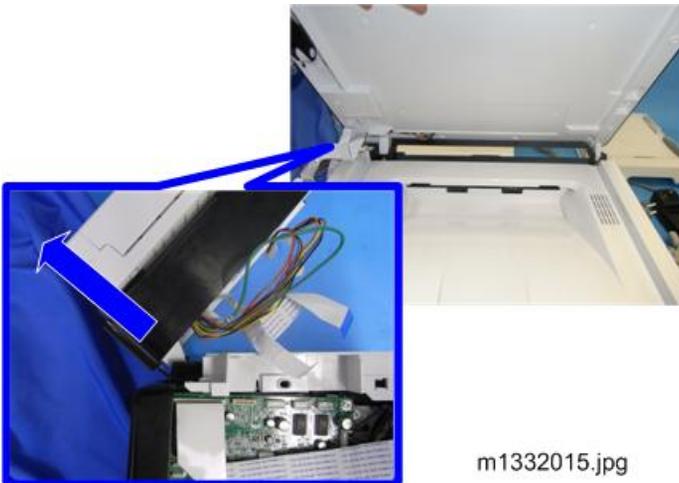


4

Note

- To disconnect the FFC on the left corner, remove the screw at the back to move the cover out. (The cover is also hooked at the bottom, so release it.)

2. Raise the cover as shown below and pull it out of the hinges.



3. Flatbed Scanner Unit.



m1332089

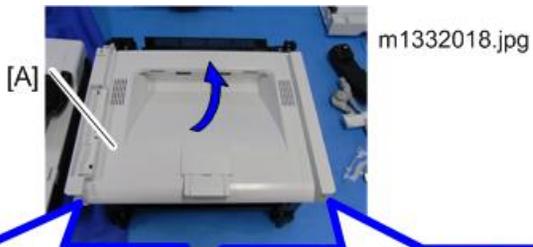
Inner Cover

Preparation

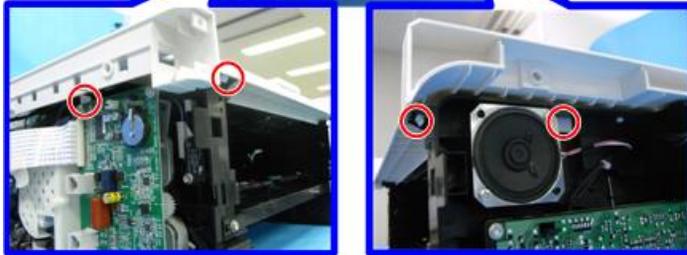
Remove:

- Front Cover
- Right Cover
- Left Cover
- Detach ADF / Flatbed Unit from the machine

Inner Cover [A] ( x 4)



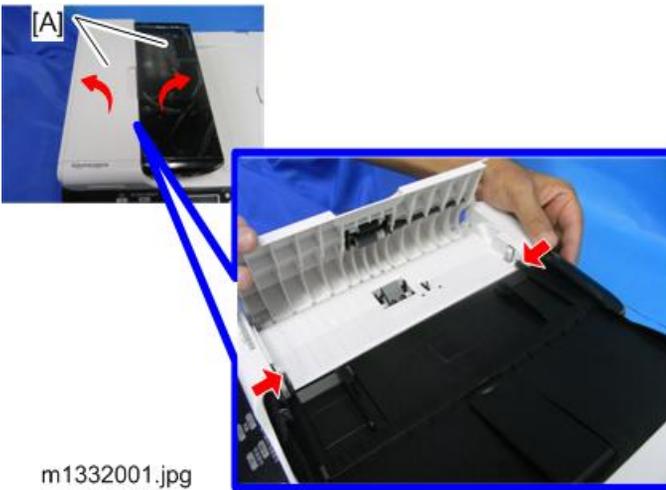
m1332018.jpg



**M135, M143, M167, M149, M168, M150, M166, M148, M191, M151,
M169 Covers, Flatbed Unit, ADF**

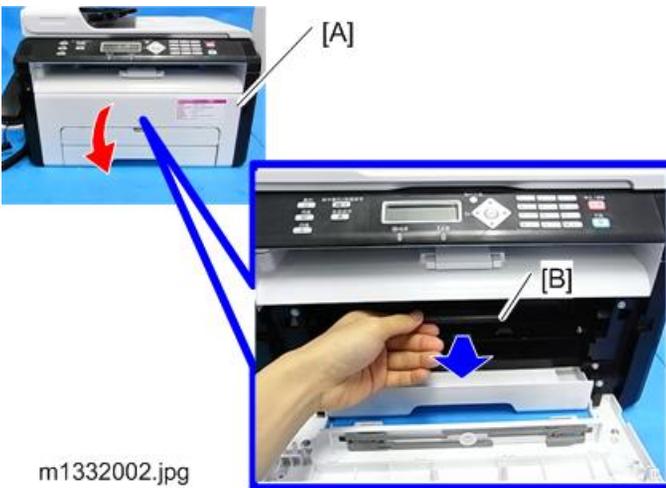
Original Feed Tray

1. Open the covers [A] and keep on.
2. Press in and release either peg on each end of the tray.



AIO

1. Open the front cover [A].
2. Grip the AIO [B] by its handle and pull it out of the machine.



3. Place the AIO on a flat clean surface as shown below so the drum is not exposed to light.



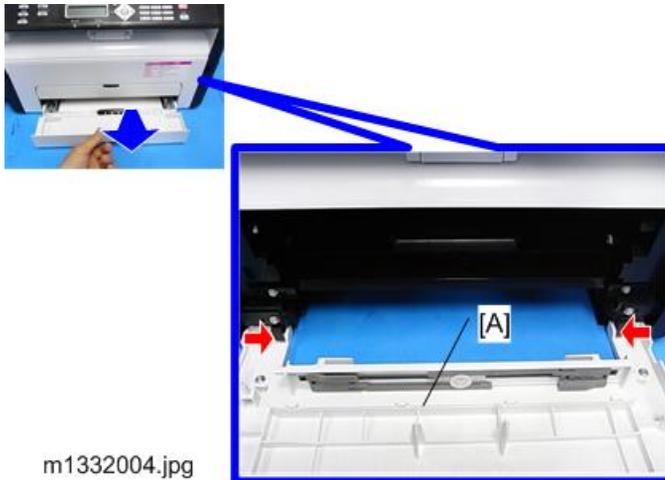
4

Note

- An AIO can be refilled up to three times (this is the approximate service life of the drum).

Front Cover

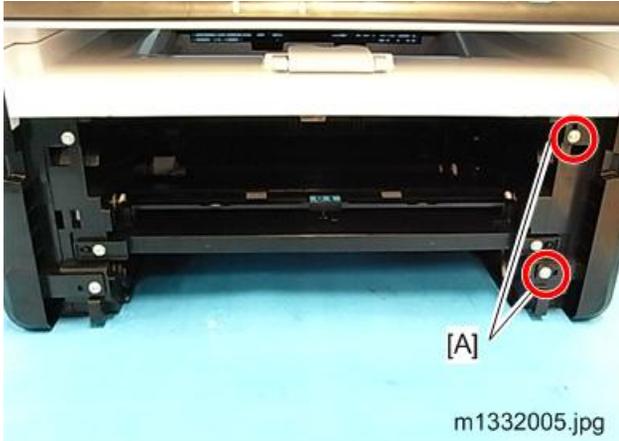
1. Pull the paper feed tray out of the machine.
2. Press in and release either peg on the front cover [A].

**Right Cover****Preparation**

Remove:

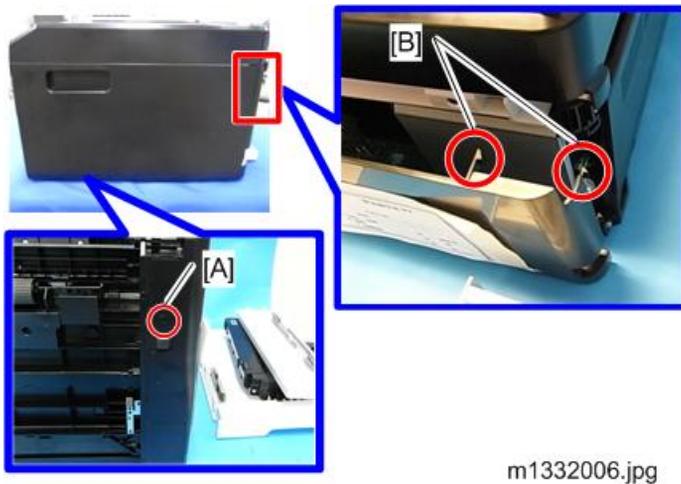
- AIO
- Front Cover

1. Screws and hooks [A].



2. Release the hook on the bottom [A].

3. Open the right cover front to back while paying attention to the hooks [B] at the back.



4. Right Cover



4

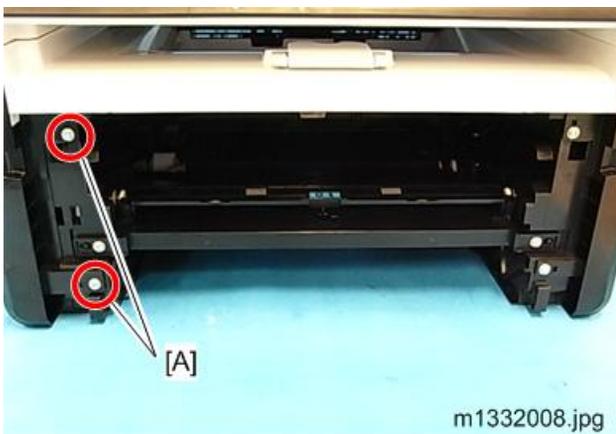
Left Cover

Preparation

Remove:

- Handset
- AIO
- Front Cover

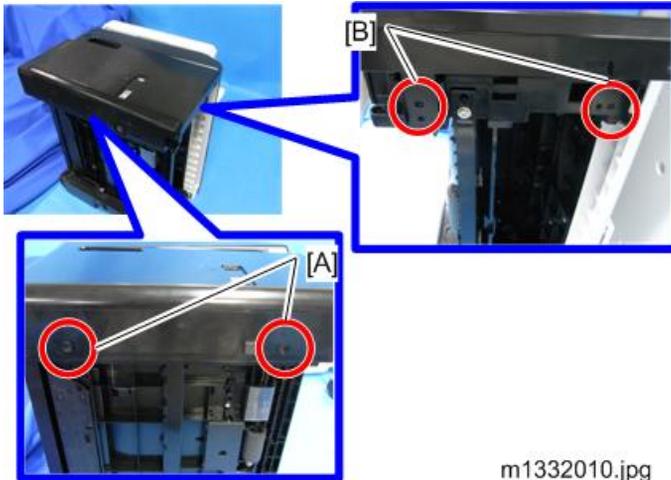
1. Screws [A]



2. The screws [A] that hold the handset.



- 3. Stand the machine as shown below.
- 4. Release the hooks on the bottom [A]
- 5. Release the hooks on the front [B].



- 6. Put the left cover [A] off from the front to the back as shown below. (▼ x 1)



Left Hinge

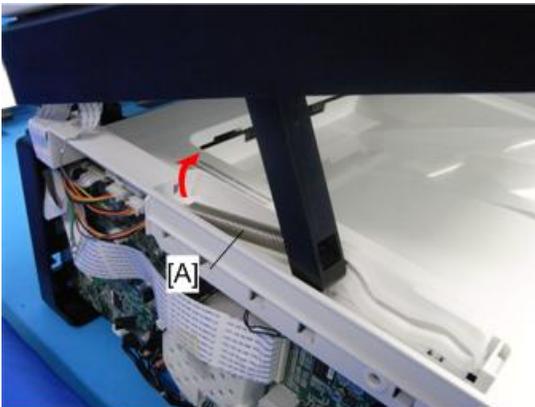
The left hinge does not require removal unless it must be replaced.

Preparation

Remove:

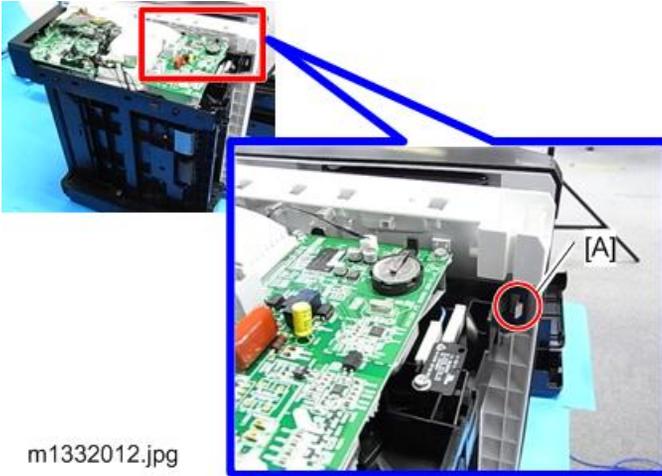
- Left Cover.
- Feed Tray.
- AIO.

1. Release the spring [A].



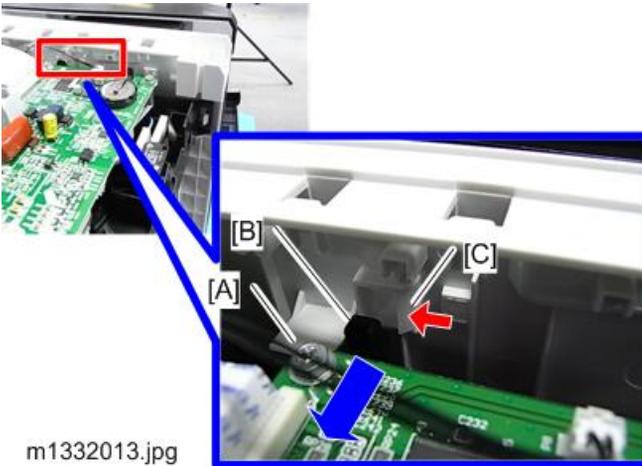
m1332017.jpg

2. Stand the machine as shown below.
3. Release the hook [A].



m1332012.jpg

4. Release the hook [A] to separate the boss [B] from the flatbed unit slightly.
5. Release the hook [C] to detach the guide which connects to the hinge.

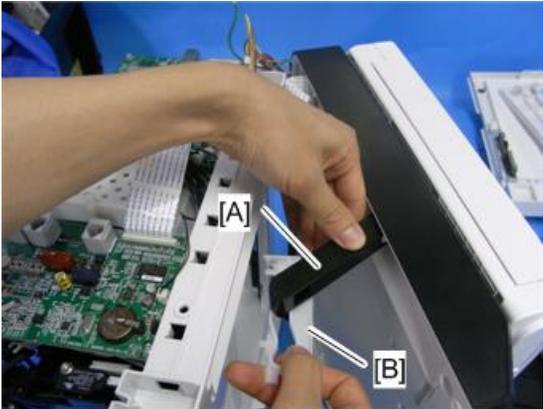


m1332013.jpg

Note

- Without step No. 4, the hook [C] cannot release due to the boss [B].

6. Detach the hinge [A] from the guide [B].



m1332026.jpg

7. Bend and release the joint part with a screwdriver to detach the hinge.

4



m1332109.jpg

Note

- Bend the hinge carefully not to break it.

8. Left Hinge



m1332110.jpg

Rear Cover

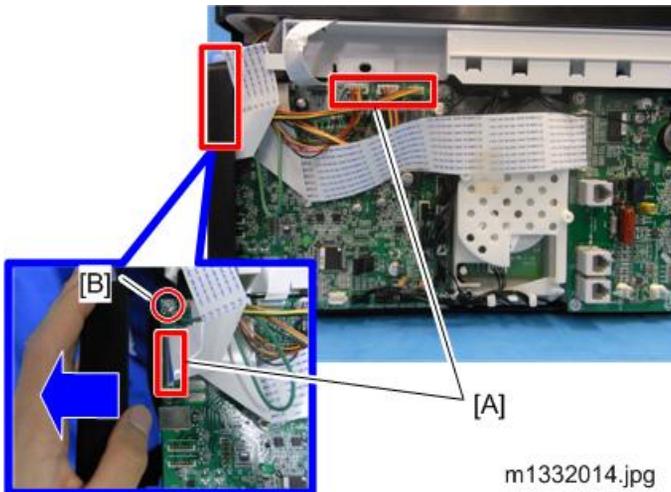
The rear cover does not require removal unless the PSU requires replacement (📄 page 134 "PSU")

ADF/Flatbed Unit

Preparation

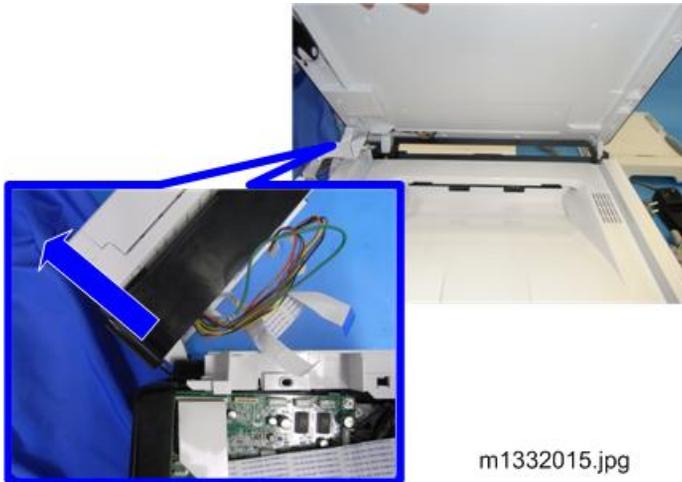
Remove:

- AIO
 - Front Cover
 - Right Cover
 - Left Cover
 - Detach the Left Hinge from the Guide
1. Disconnect FFCs and connectors [A]. (📄 x 2, 📄 x 3)
 2. Disconnect the ground wire [B]. (🔧 x 1)



Note

- To disconnect the FFCs and the ground wire on the corner, remove the screw at the back to move the cover out. (The cover is also hooked at the bottom, so release it.)
3. Raise the cover as shown below and pull it out of the hinges.



4. Pull the ADF out of the flatbed unit.
5. Pull the harnesses through the rear corner of the flatbed unit.



Note

- A latch will get stuck when you try to pull the ADF out. So tilt the ADF backward to let it out while pulling.

6. ADF / Flatbed unit.



m103r022

4

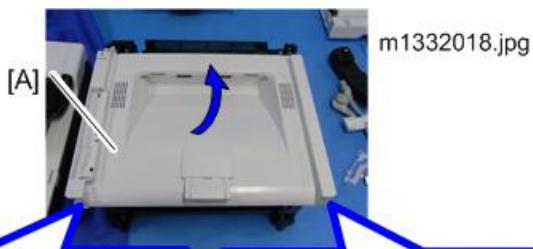
Inner Cover

Preparation

Remove:

- Front Cover
- Right Cover
- Left Cover
- Detach the ADF / Flatbed Unit from the machine

Inner Cover [A] ( x 4)



Removing the Fusing Unit

Preparation

**M133, M162, M144,
M163, M145, M146,
M164**

(🖨️ page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")

- AIO
- Front cover
- Right cover
- Top cover

**M134, M141, M165,
M147, M142**

(🖨️ page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")

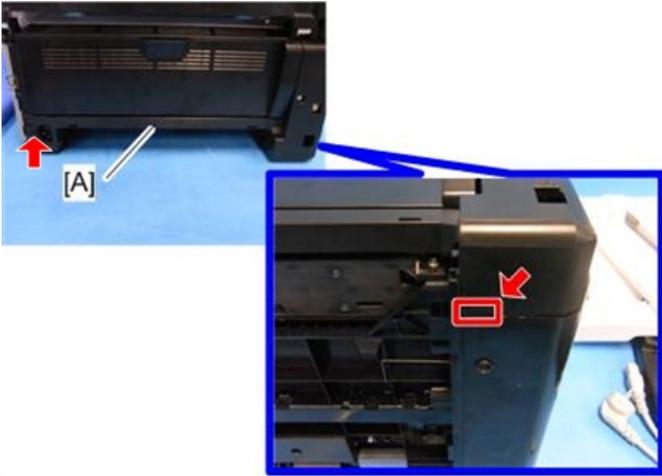
- AIO
- Front cover
- Right cover
- Inner cover

**M135, M143, M167,
M149, M168, M150,
M166, M148, M169,
M151, M191**

(🖨️ page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

- AIO
- Front cover
- Right cover
- Inner cover

1. Rear cover [A]. (🔧 x2, 🔩 x2)



m1455507

Note

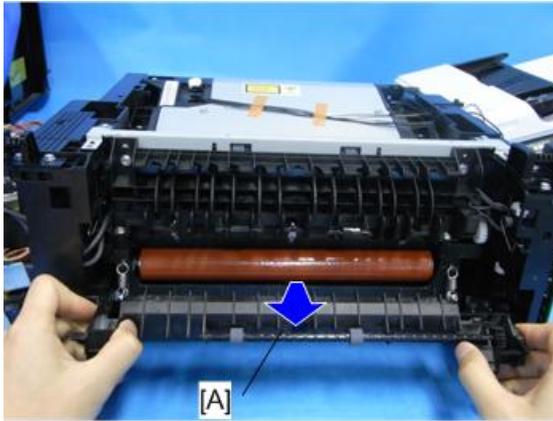
- The red arrows in the picture above indicate where the hooks are.

2. Rear door [A] (peg x 2)



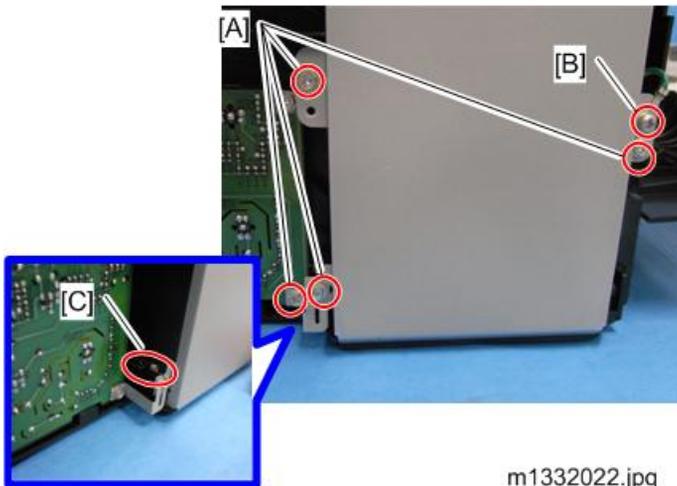
m1332020.jpg

3. Exit roller unit [A]



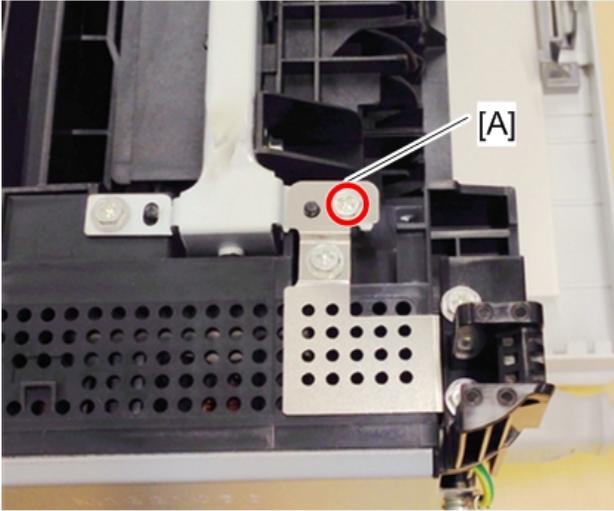
m1332021.jpg

4. Screws [A] on the right side.
5. Ground wire [B]. ( x 1)
6. Release the spring [C].



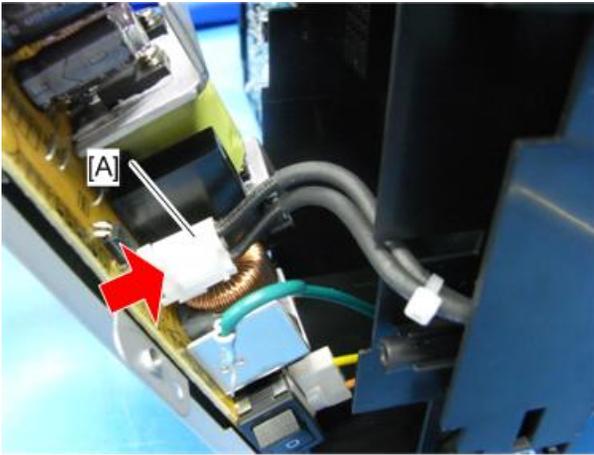
m1332022.jpg

7. Screw [A] on the top side.



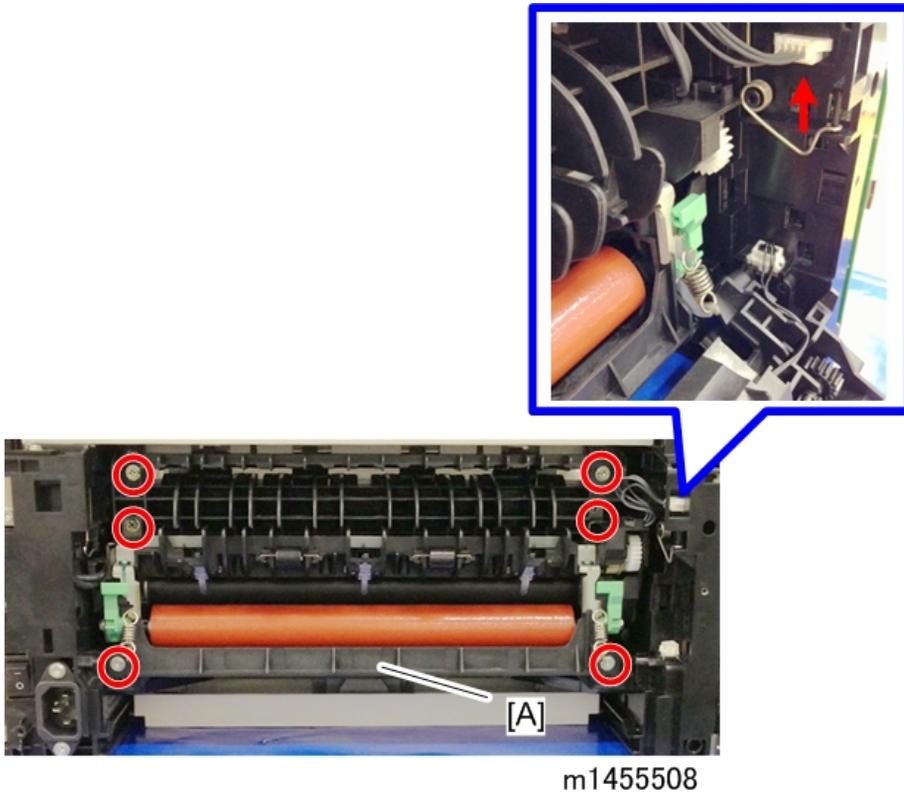
m1455505

8. Disconnect the fusing unit harness [A].



m1332024.jpg

9. Fusing Unit [A] ( x 6,  x 1).



Utilities and Maintenance

This is a quick summary of the utilities that are available for machine servicing.

No.	Function	Start From	M133 M162 M144 M163 M145 M146 M164	M134 M165 M147 M142 M166 M148 M191	M135 M141 M143 M167 M149 M168 M150 M151 M169
1	Fax Maintenance	Operation Panel	No	No	Yes
2	Fax Test	Operation Panel	No	No	Yes

No.	Function	Start From	M133 M162 M144 M163 M145 M146 M164	M134 M165 M147 M142 M166 M148 M191	M135 M141 M143 M167 M149 M168 M150 M151 M169
3	Engine Maintenance	SOM Service Mode Screen	Yes	Yes	Yes
4	Counter Information		Yes	Yes	Yes
5	Error History		Yes	Yes	Yes

1. To start Fax Maintenance

1. Make sure the machine is in the Ready mode.
2. Enter the service mode. Ask your supervisor if you don't know how to enter this mode.

2. To start Fax Test

1. Switch the machine on.
2. With the machine in Ready mode, press [Copy/Fax].

3. Engine Maintenance, Counter Information, Error History

Items 3, 4, and 5 in the table above are on the Service Mode screen of the Smart Organizing Monitor.

1. Open Smart Organizing Monitor.
2. Enter the service mode to display the Service Mode screen.

There are other important features in the Smart Organizing Monitor that are used during servicing:

- Printing a Test Page
- Firmware update
- Releasing the machine after a fatal fusing error
- Resetting the machine after correcting a fatal fusing error

More details about these utilities are available in another section of this service manual. (▶ page 160 "Utilities")

★ Important

- The M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, and M191 have a User Tools key that opens the User Tools menus.

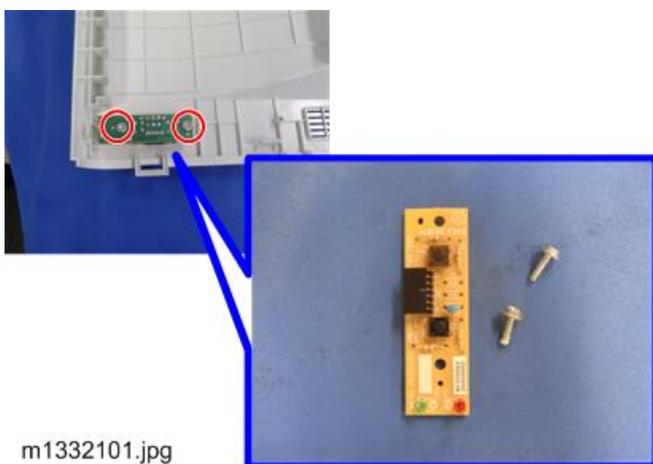
- Many items in these menus duplicate the tasks that can be performed with the Smart Organizing Monitor.
- Please remember that these User Tools menus are available with the M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, and M191 only. (The M133, M162, M144, M163, M145, M134, M165, M147, M142, M146, and M164 do not have a User Tools key on their operation panels.)

Operation Panels

M133, M162, M144, M163, M145, M146, M164 Operation Panel

Preparation

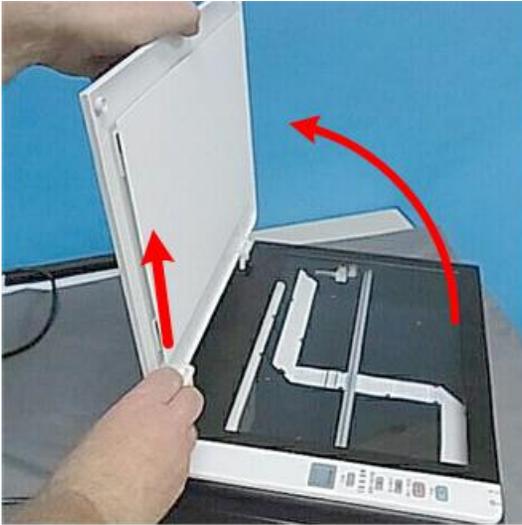
- Top cover (see page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")
1. Lay the top cover upside down.
 2. Operation panel PCB (see icon x 2).



M134, M165, M147, M142 Operation Panel / Panel Cover

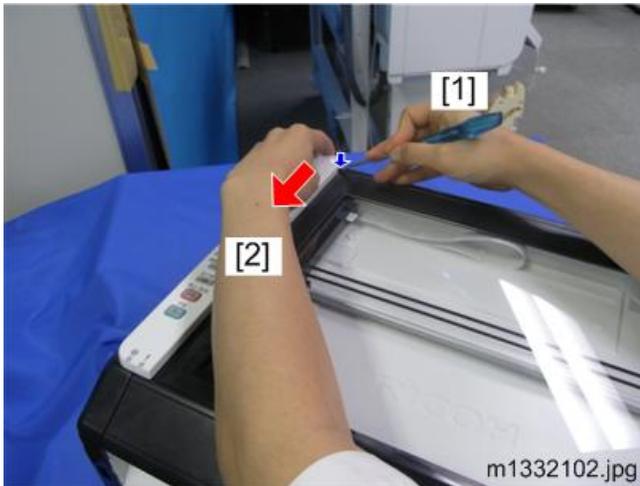
Operation Panel

1. Raise the platen and then lift it straight up to remove it.

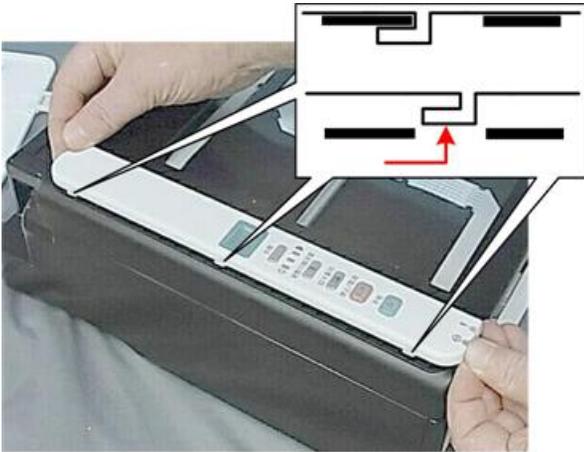


m102r031

2. Insert a screwdriver into the hole and press it downward to take the latch off as shown [1] while pushing firmly toward the front of the machine [2] until you hear it click and release.

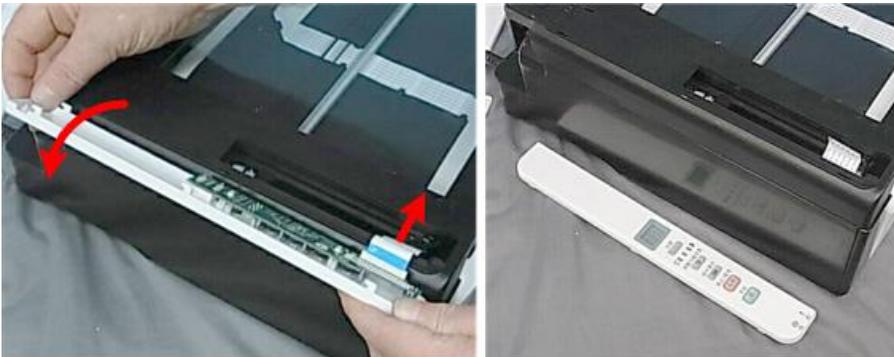


3. Lift the operation panel straight up to disconnect the hooks at three points.



m102r033

4. Turn the operation panel over, and then disconnect the flat cable ( x 1).



m102r034

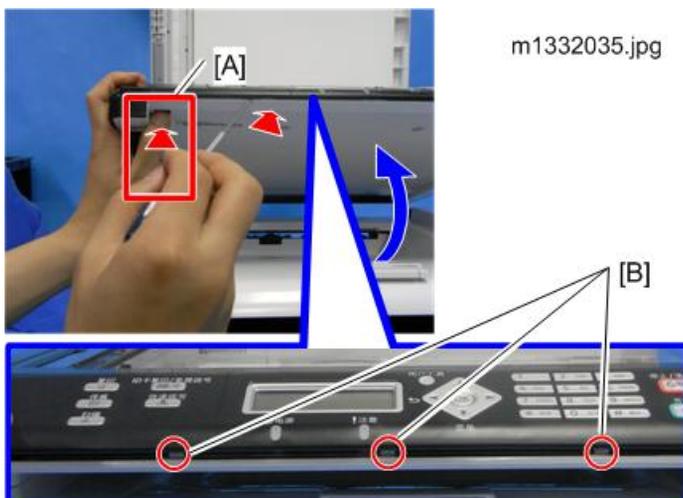
Panel Cover

Panel Cover [A] can be detached in the same manner as the M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191 Operation Panel ( page 93 "M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191 Operation Panel") without disconnection.

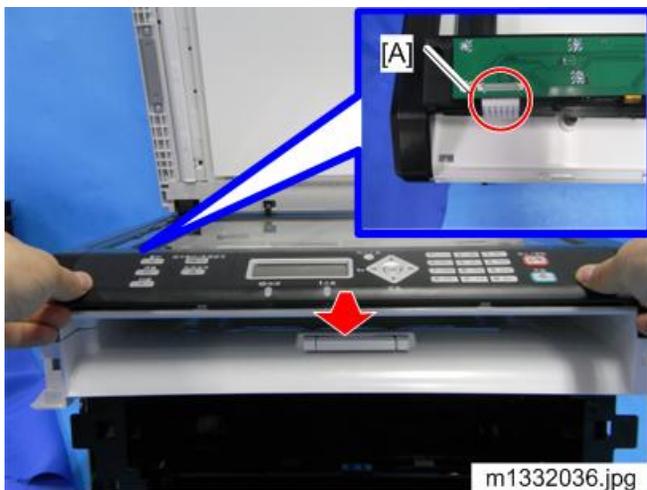


M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191 Operation Panel

1. Raise the ADF/flatbed unit.
2. Insert a flat-blade screwdriver while pushing either side of the latches [A] to release the hooks [B]. (▼ x 3)



3. Pull the operation panel.
4. Disconnect the FFC [A]. (■ x 1)



4

5. Operation Panel



Laser Unit

Removing the Laser Unit

★ Important

- There are no serviceable parts inside the laser unit. Never attempt to disassemble the laser unit and then reinstall it in the machine.

Preparation

M133, M162, M144, M163, M145, M146, M164

( page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")

- AIO
- Left Cover
- Top Cover

M134, M141, M165, M147, M142

( page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")

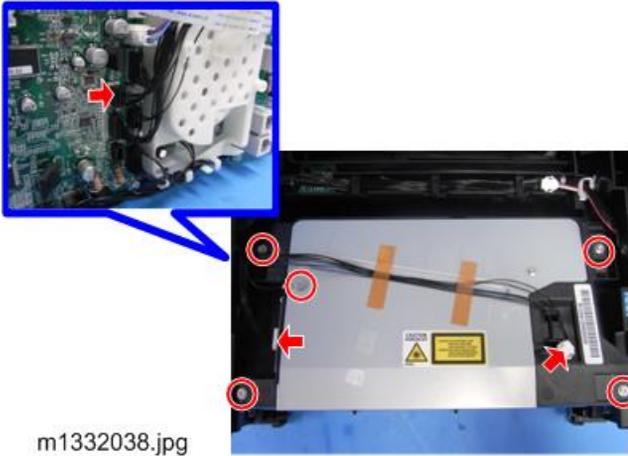
- AIO
- Left Cover
- Flatbed Unit
- Inner Cover

M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191

( page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

- AIO
- Left Cover
- ADF/Flatbed Unit
- Inner Cover

1. Detach the screws [circles] and the connectors [arrows]. ( x 5,  x 3)



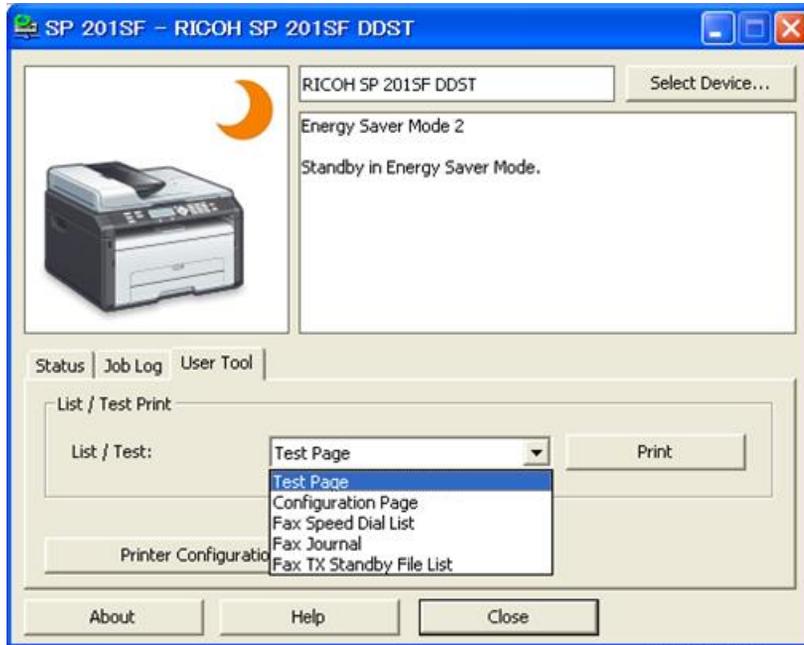
2. Laser Unit



After Replacing the Laser Unit

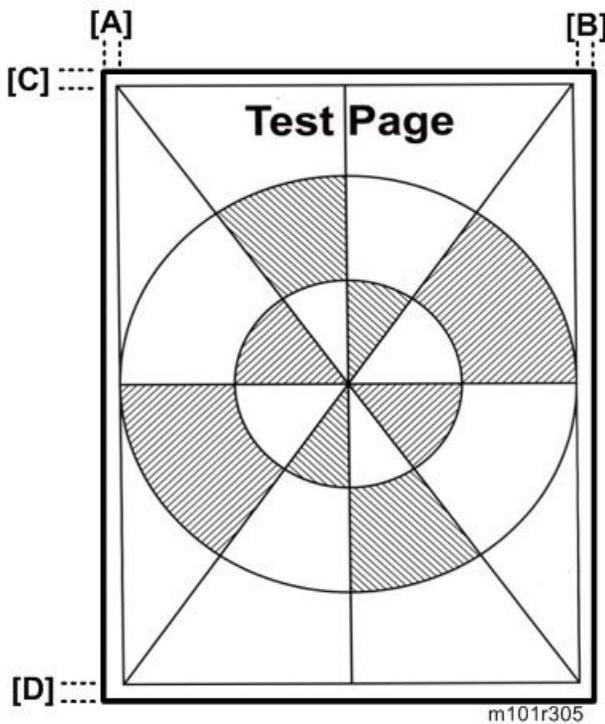
After replacing the laser unit, print the Test Page and check the position of the image area on the page.

1. Start Smart Organizing Monitor.
2. Click the User Tool tab (1), open the List/Test pull-down list (2), and then click [Print]. The Test Page prints.



m1333023.png

3. Check the margins of the image area to see the width of the margins are satisfactory.



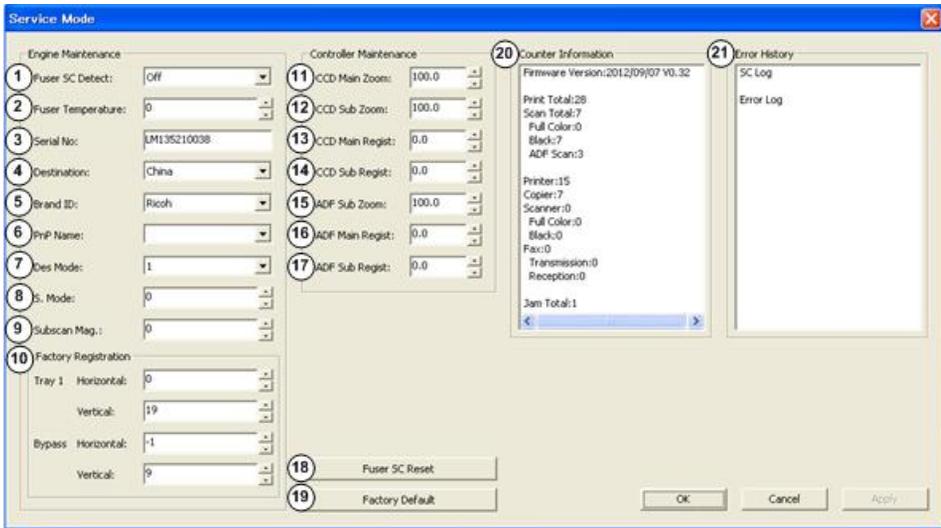
m101r305

	Margin	Width (mm)
[A]	Left	4.2
[B]	Right	4.2
[C]	Leading	4.2
[D]	Trailing	4.2

4. Enter the service mode and display the Service Mode screen.
5. Adjust the Factory Registration settings (10) to adjust the margins.

- **Horizontal.** Shifts the image left or right to adjust the left/margins.
- **Vertical.** Shifts the image up or down to adjust the top/bottom margins.

4



m1333026.png

Paper Pass

This section describes how to remove these items:

- Friction Pad
- Paper Feed Roller
- Image Transfer Roller
- Exit Roller

Preparation

These items must be removed before doing any procedure in this section. Do this now before going to any other part of this section.

4

M133, M162, M144, M163, M145, M146, M164

- AIO (page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")
- Front Cover
- Top Cover
- Left Cover
- Main Board
- Laser Unit (page 95 "Removing the Laser Unit")

M134, M165, M147, M142, M141

- AIO (page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")
- Front Cover
- Left Cover
- Platen Cover
- Flatbed Unit
- Inner Cover
- Main Board
- Fax Board (For M141)
- Laser Unit (page 95 "Removing the Laser Unit")

M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191

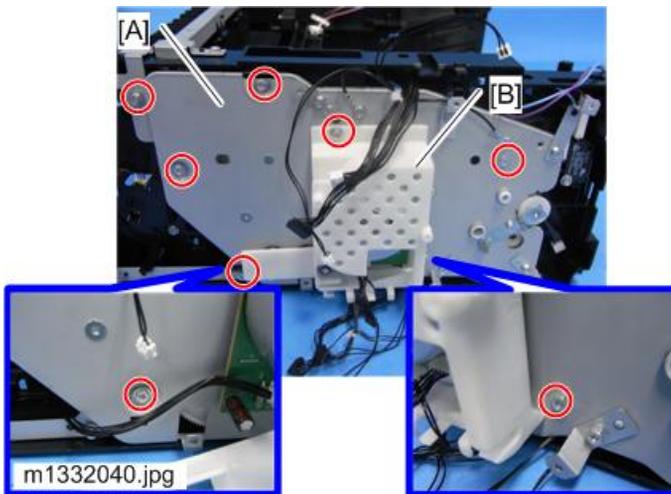
- AIO (page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")
- Front Cover
- Top Cover
- Left Cover
- Flatbed Unit, ADF
- Inner Cover
- Main Board
- Fax Board (For M135, M143, M167, M149, M168, M150, M151, M169)
- Laser unit (page 95 "Removing the Laser Unit")

Paper Feed Roller

Note

- To detach the paper feed roller, the paper feed clutch that is attached to the end of the paper feed roller shaft must be removed first.

1. Gear cover [A] (8).



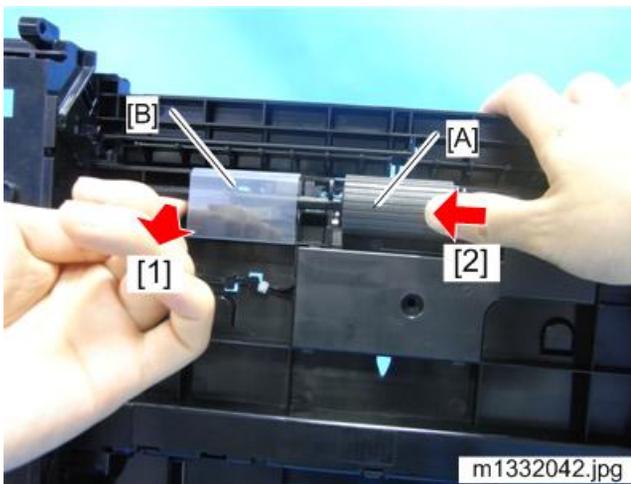
↓ **Note**

- One of the screws is hidden at the back of the main motor cover [B].

2. Detach the gear [A] to take the paper feed clutch [B] off.



3. Release the right end of the shaft [A].



↓ **Note**

- To release the shaft, pull the shaft [1] to bend it while pushing to the left [2] to let the latch in the area of the film [B] out from the notch which is carved in the shaft.

4. Slide the paper feed roller out.

4

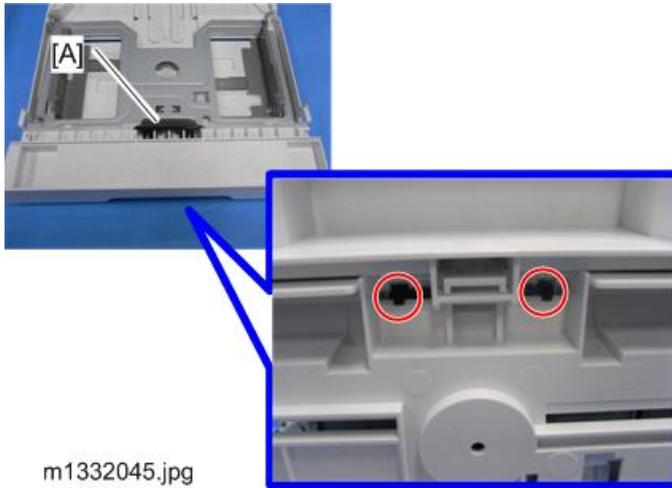


5. Paper Feed Roller.



Friction Pad

1. Pull the feed tray out.
2. Detach the friction pad [A] from the feed tray. (▼ x 2).



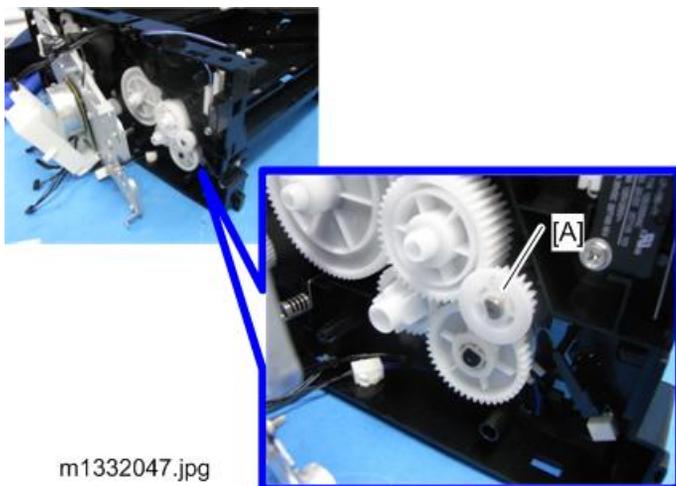
3. Friction Pad



Paper Transport Roller

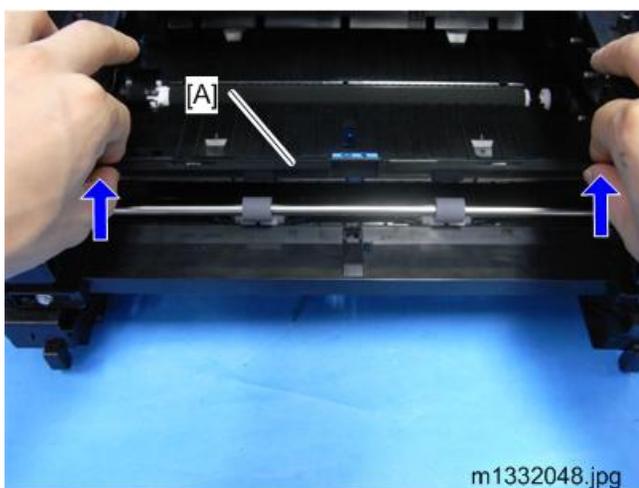
Preparation

- Gear Cover (see page 100 "Paper Feed Roller")
1. Gear [A] on the paper transport roller shaft.

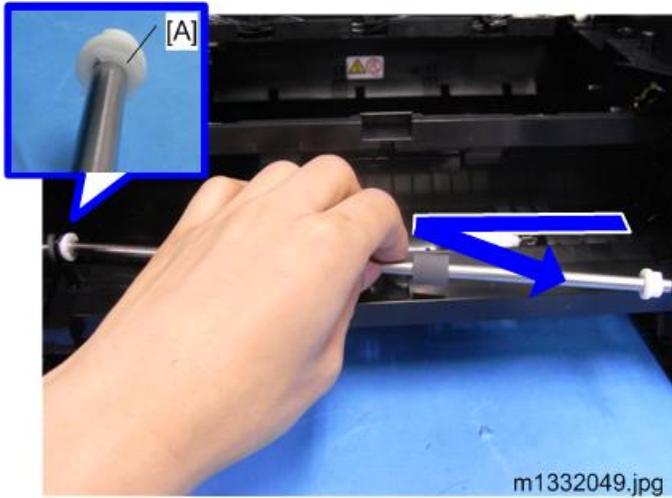


4

2. Open the roller cover [A].



3. E-ring [A] on the left side end of the shaft.
4. Slide the shaft to the left and release the right end. Then pull it out.



5. Paper Transport Roller



4

Image Transfer Roller

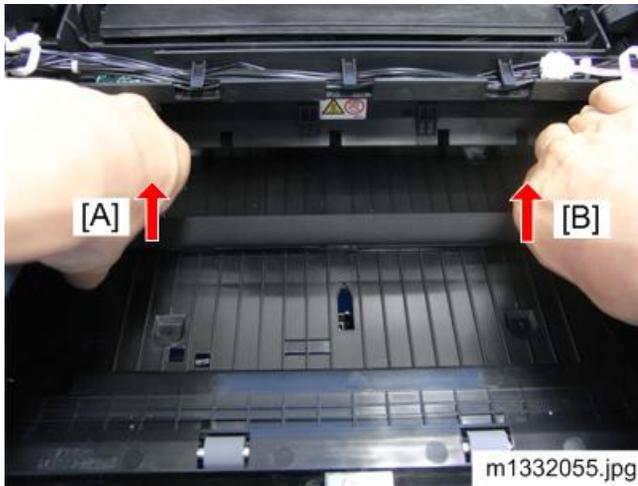
Preparation

- Laser Unit (see page 95 "Removing the Laser Unit")
1. Before you remove the Image transfer roller:
 - The collar on the right end of the roller [A] is black.
 - The collar on the left end of the roller [B] is white.
 - The Image transfer roller must be installed the same way, with the black collar on the right and the white collar on the left.

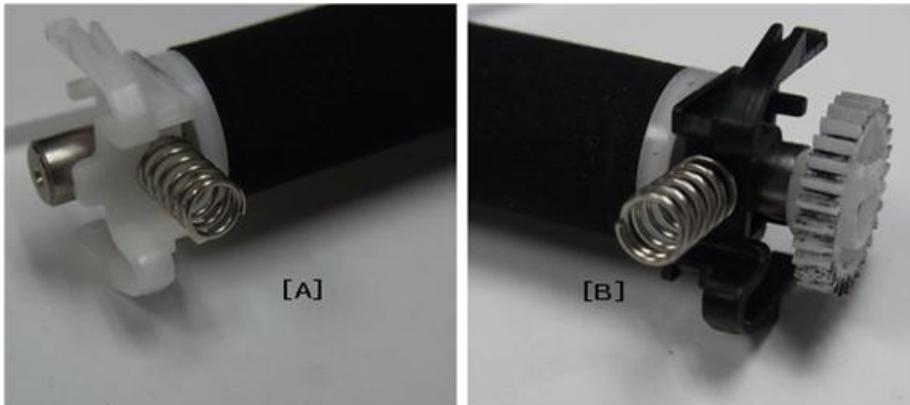


4

2. The collars are set in grooves. Pull up on both ends of the Image transfer roller [A] and [B] to free the collars.



3. Remove the spring from the left end [A] and right end [B] to prevent the springs from getting lost.



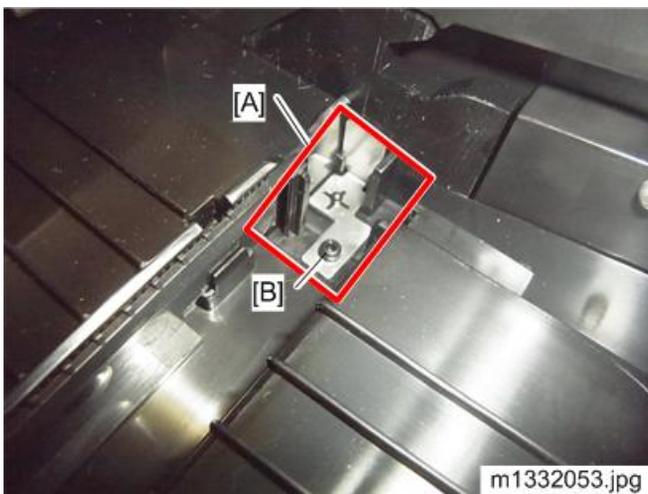
m1332052

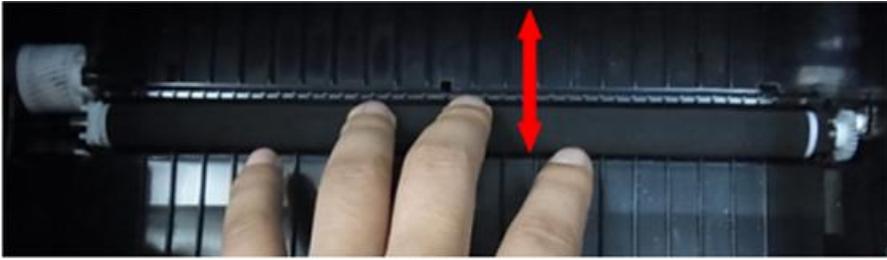
★ Important

- If you are replacing the Image transfer roller, keep these springs. New springs may not be provided with the new Image transfer roller.

Re-installation

1. Clean the charge plates [A] on the side where the right end of the roller will be re-installed. The spring will be re-attached over the peg [B].
2. After re-installing the Image transfer roller, press and release the Image transfer roller several times to confirm that the roller bounces up and down evenly.





m1332054

Note

- If the center or either end of the roller does not bounce up and down freely, this means that one or both springs at the ends of the roller are not installed correctly.
- Remove the Image transfer roller and re-install it. Make sure each spring is set onto the metal peg on both sides.

Paper Exit Roller

See "Removing the Fusing Unit". (▶ page 95 "Removing the Laser Unit")

Sensors

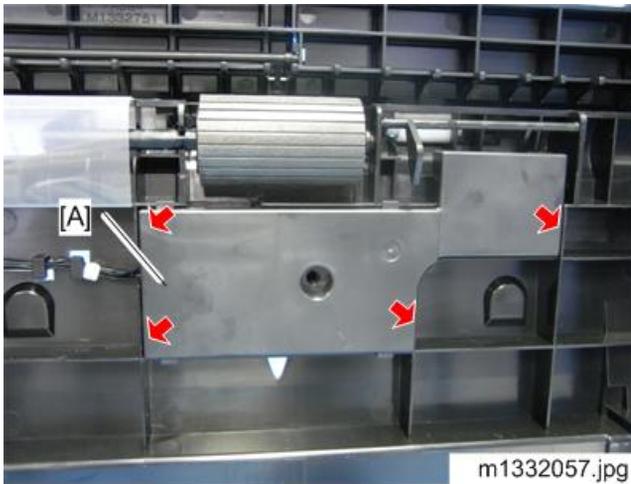
Registration Sensor

Preparation

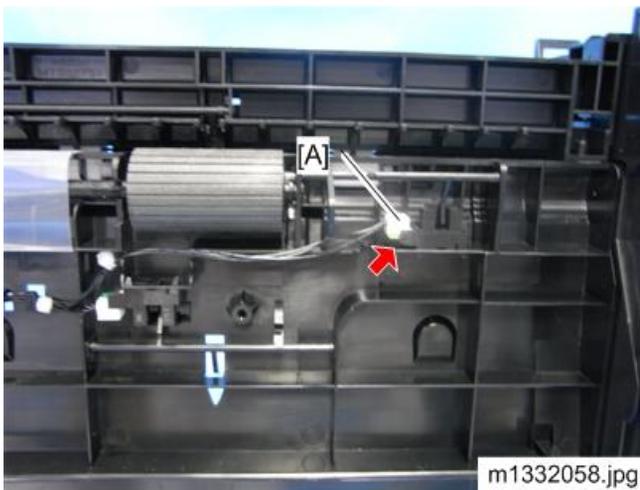
Remove:

- AIO
- Feed Tray

1. Raise the machine so you can see the bottom.
2. Bottom Cover [A] (▼ x 4).



3. Registration Sensor [A] (📷 x 1, ▼ x 3)



Paper End Sensor

Preparation

Remove:

- AIO.
- Feed Tray.
- Bottom Cover (page 109 "Registration Sensor")

Paper End Sensor [A] (x 1, x 3)



4

Bypass Set Sensor

Preparation

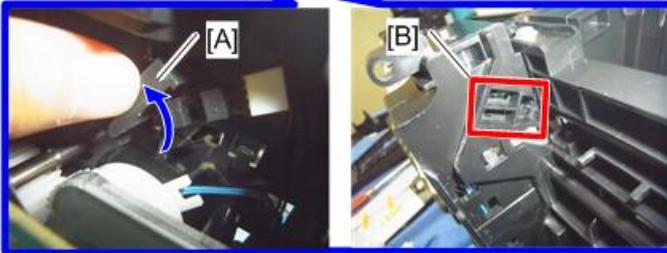
Remove:

- AIO
- Left Cover

1. Stand the machine as shown below.
2. Release the hooks while keeping the feeler [A] out.



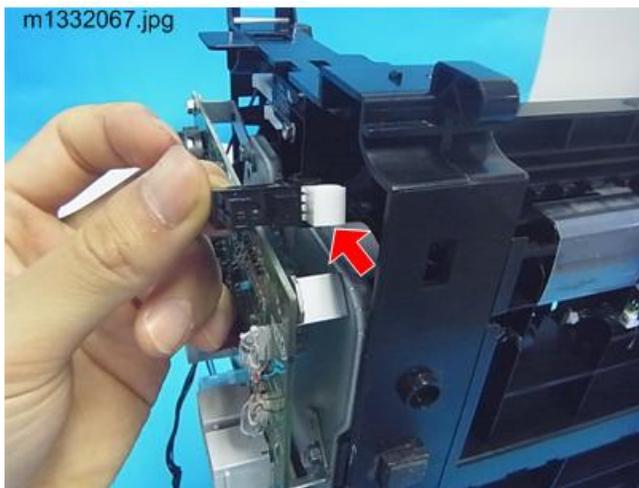
m1332066.jpg



↓ Note

- To release the hooks, access with a screwdriver from the indicated area [B].

3. Bypass Set Sensor (🔧 x 1)



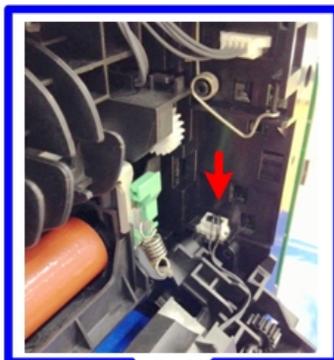
Paper Exit Sensor

Preparation

Remove:

- Left Cover
- Rear Door
- Fusing Exit Roller Unit

Paper Exit Sensor [A] ( x 1,  x 3).



m1455509

Main Motor

Removing the Main Motor

Preparation

M133, M162, M144, M163, M145, M146, M164

- AIO (page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")
- Left Cover
- Main Board
- Gear Cover

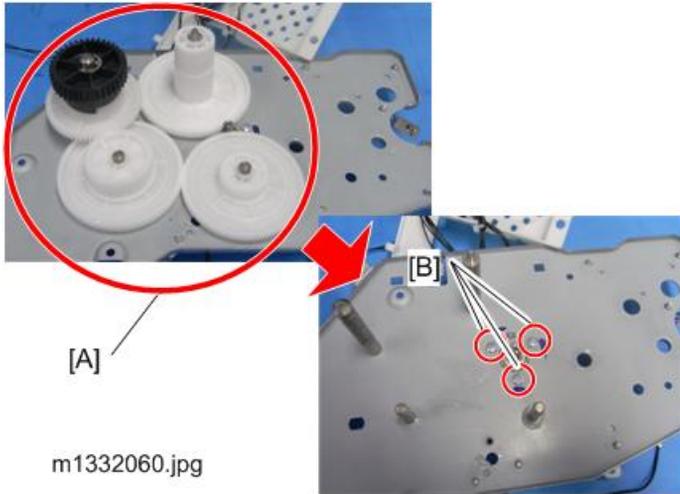
M134, M165, M147, M142, M141

- AIO (page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")
- Left Cover
- Main Board
- Fax Board (M141 only)
- Gear Cover

M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191

- AIO (page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")
- Left Cover
- Main Board
- Fax Board (For M135, M143, M167, M149, M168, M150, M151, M169)
- Gear Cover

1. All of the gears [A] (C x 1)
2. Screws [B]



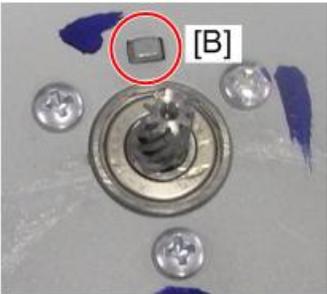
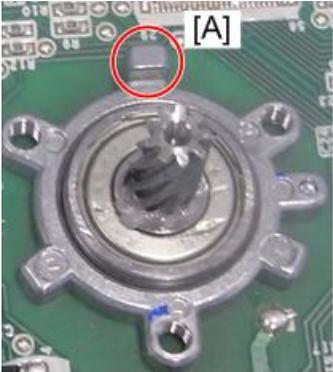
4

3. Main Motor (🔌 x 1)



Reinstalling the Main Motor

1. Match boss [A] with the hole [B] in the gear cover. This aligns the holes correctly for re-attachment of the motor to the gear cover.



m1332062.jpg

Clutch

Paper Feed Clutch

See "Paper Feed Roller". (page 100 "Paper Feed Roller")

Switches

Front Door Switch

Preparation

M133, M162, M144, M163, M145, M146, M164

( page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")

- AIO
- Front cover
- Left cover

M134, M141, M165, M147, M142

( page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")

- AIO
- Front cover
- Left cover

M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191

( page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

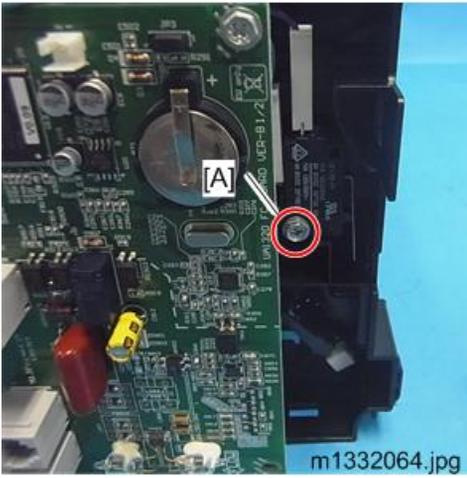
- AIO
- Front cover
- Left cover

1. Disconnect the harness [A] on the main board.

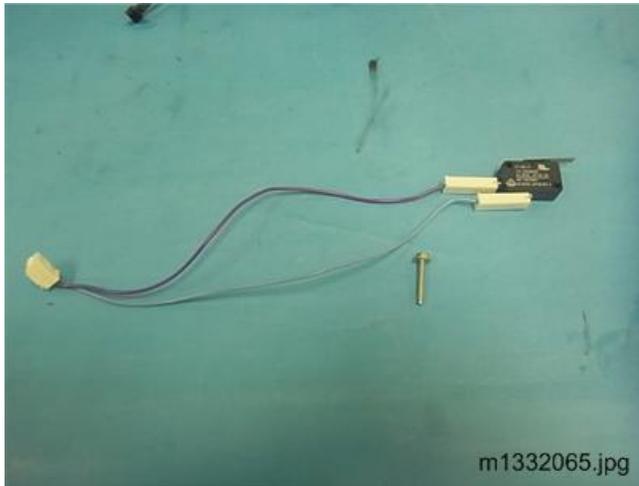
4



2. Screw [A]



3. Front Door Switch (🔌 x 2)



Interlock Switch

Preparation

M133, M162, M144, M163, M145, M146, M164

- Main Board (📄 page 128 "M133, M162, M144, M163, M145, M146, M164 Main Board")

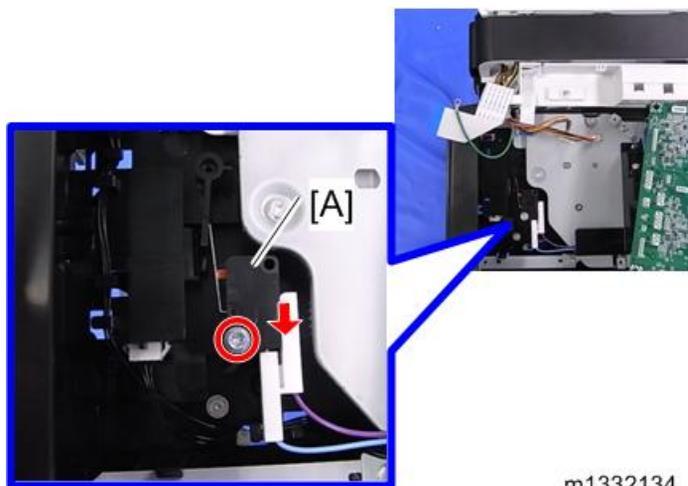
M134, M141

- Main Board (📄 page 129 "M134, M141, M165, M147, M142 Main Board")

M135, M143, M167, M149, M168, M150, M166, M148, M151, 169, M191

- Main Board (📄 page 130 "M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191 Main Board")

Interlock Switch [A] (🔧 x 1, 📦 x 2)



4

m1332134

Fusing Unit

This section describes how to remove these items:

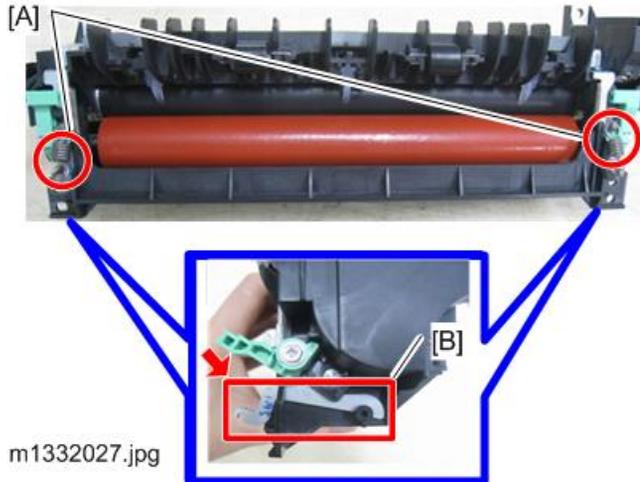
- Exit Roller
- Pressure Roller
- Fusing Lamp
- Thermostat
- Thermistor
- Ground Plate

4

Separating the Fusing Unit

Preparation

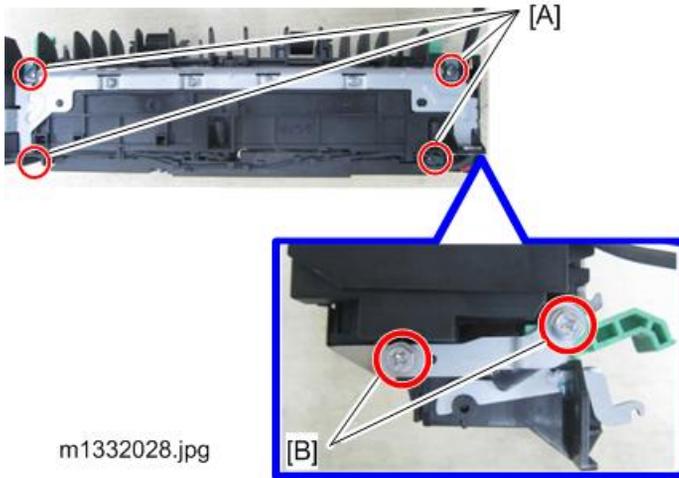
- Fusing unit (see page 82 "Removing the Fusing Unit")
1. Release the springs [A].
 2. Arms [B] on both ends.



Note

- Two strong springs on either side of the fusing unit [A] keep the soft pressure roller compressed against the hot roller. These springs must be removed in order to disassemble the fusing unit.

3. Screws [A].
4. Ground plate [B]. ( x 2)



5. Separate the Fusing Unit.



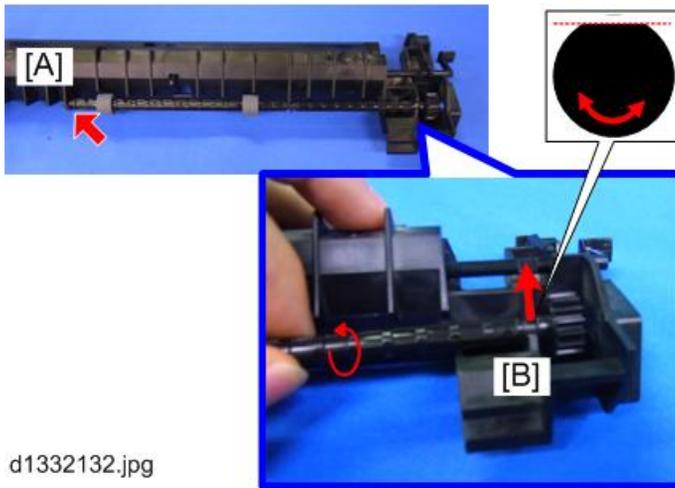
★ Important

- Be sure to prevent the springs or pawls [A] from falling off and becoming lost.

Fusing Exit Roller

Preparation

- Detach the fusing exit roller unit from the machine (▶ page 82 "Removing the Fusing Unit")
1. Bend the shaft carefully to take the left end [A] off.
 2. Turn the roller until you see the flat side of the roller shaft facing up, and pull the right side [B] out.

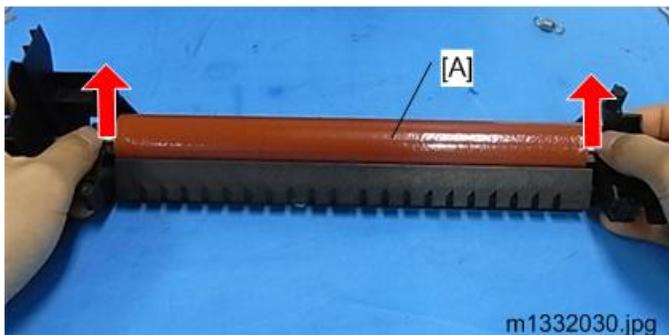


d1332132.jpg

Pressure Roller

Preparation

- Fusing Unit (page 82 "Removing the Fusing Unit")
 - Separate the top and bottom halves of the fusing unit (page 121 "Separating the Fusing Unit")
1. Pull the pressure roller [A] out as shown.
 2. Lay the roller on a flat clean surface.



m1332030.jpg

★ Important

- Avoid touching the surface of the pressure roller with your fingers or bare hands. If the roller requires cleaning, wipe the surface with a clean dry cloth.

Hot Roller, Fusing Lamp

Preparation

- Fusing Unit (see page 82 "Removing the Fusing Unit")
- Separate the top and bottom halves of the fusing unit (see page 121 "Separating the Fusing Unit")

1. Screws [A].



4

2. Lift both ends of the hot roller and remove it.



★ Important

- Avoid touching the surface of the hot roller with your fingers or bare hands.
 - If the roller requires cleaning, wipe the surface with a clean dry cloth.
3. Pull the fusing lamp slowly out of the left end of the hot roller.



4. Lay the fusing lamp on a clean flat surface.



4

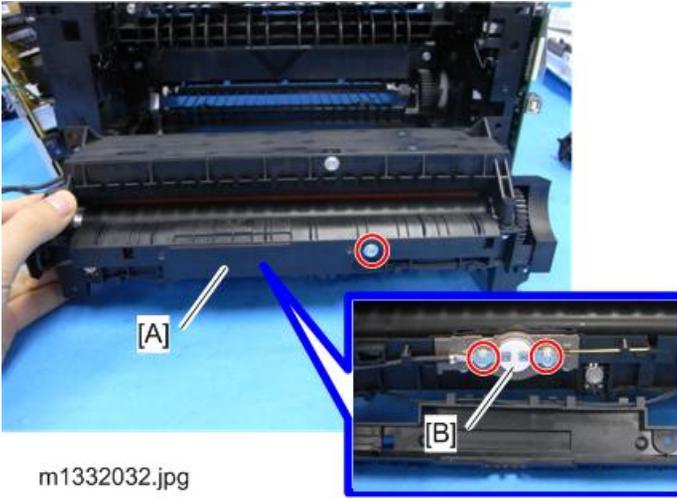
★ Important

- Avoid touching the surface of the fusing lamp with your fingers or bare hands. The oil from fingerprints or hand smudges can cause the surface of the fusing lamp to heat unevenly.
- If the fusing lamp requires cleaning, wipe the surface with a clean cloth dampened with alcohol, and then dry wipe with a soft clean cloth.

Thermostat

Preparation

- Fusing Unit (🔧 page 82 "Removing the Fusing Unit")
1. Cover [A] (🔧 x 1)
 2. Thermostat [B] (🔧 x 2).



4

⚠ WARNING

- Always replace a blown thermostat with a new one.
- Never attempt to reset a blown thermostat by manipulating the edges of the black cover with a screw driver.
- Resetting a thermostat manually could cause a failure to detect overheating in the fusing unit and cause a fire hazard.

Thermistor

↓ Note

- Two thermistors are installed in this machine.

Preparation

- Fusing Unit (👉 page 82 "Removing the Fusing Unit")

Thermistor [A] (🔧 x 1 each)



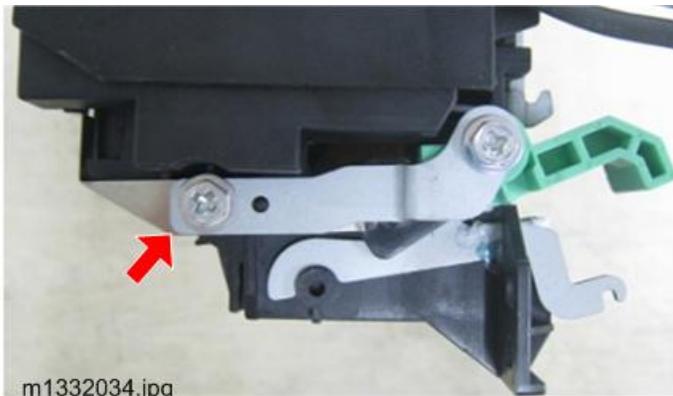
m1332033.jpg

**Note**

- Before removing each thermistor, remember how the thermistors touch the hot roller. The tips are pointing upward.

Ground Plate

See "Separating the Fusing Unit". (page 121 "Separating the Fusing Unit")



m1332034.jpg

PCB

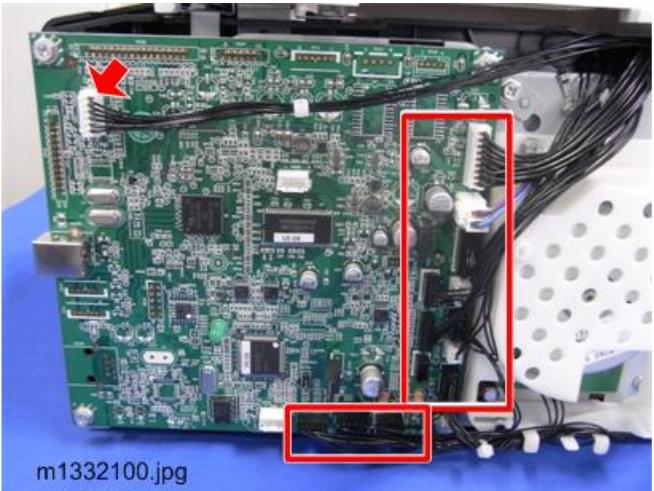
★ Important

- Before board replacement, enter the SP mode to output reports (Service Date List, Fax Dial List, and Fax Speed Dial List). Refer to these reports when making settings after replacement.

M133, M162, M144, M163, M145, M146, M164 Main Board

Preparation (🔧 page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")

- Left Cover
1. Disconnect all of the harnesses on the main board.



↓ Note

- To access the components at the left corner of the board, you need to remove the screw on the back cover to let it move out. (The cover is also hooked at the bottom, so release it.)
2. Main Board (🔧 x 4)



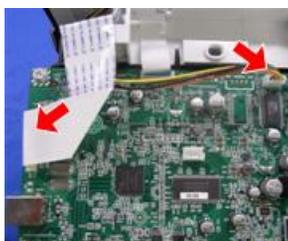
Re-installation

- If the main board has been replaced, be sure to do the procedures for after replacing a main board. (▶ page 131 "After Replacing the Main Board")

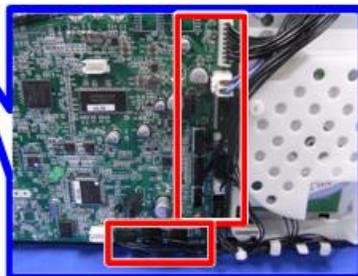
M134, M141, M165, M147, M142 Main Board

Preparation (▶ page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")

- Left Cover
1. Disconnect all of the harnesses on the main board.



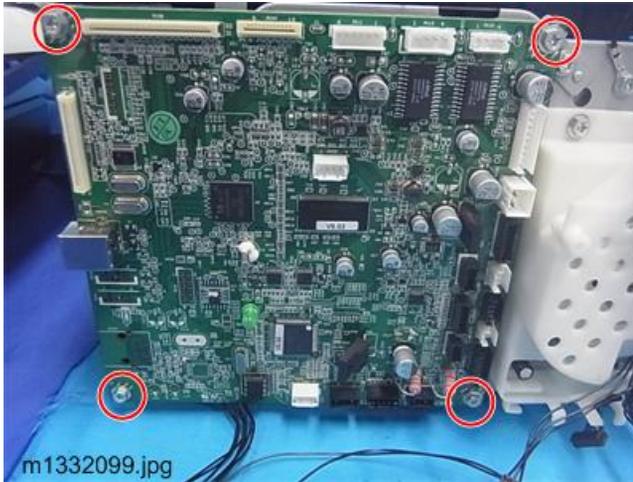
m1332098.jpg



Note

- To access the components at the left corner of the board, you need to remove the screw on the back cover to let it move out. (The cover is also hooked at the bottom, so release it.)

2. Main Board ( x 4)



4

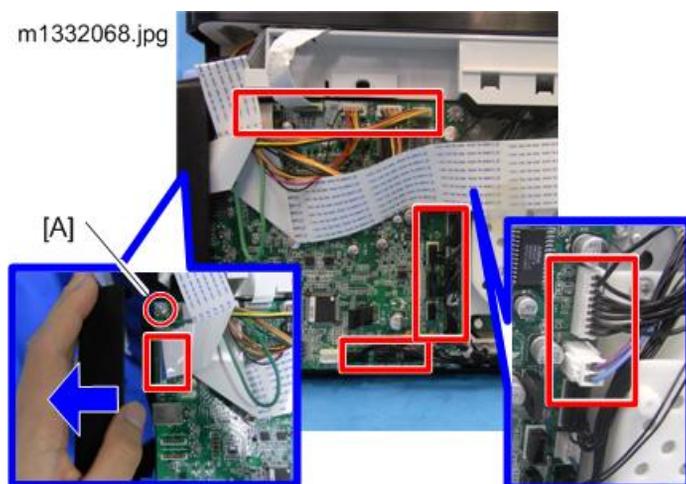
Re-installation

- If the main board has been replaced, be sure to do the procedures for after replacing a main board. ( page 131 "After Replacing the Main Board")

M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191 Main Board

Preparation ( page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

- Left Cover
 1. Disconnect all of the harnesses on the main board.
 2. Ground wire [A] ( x 1)



↓ Note

- To access the components at the left corner of the board, you need to remove the screw on the back cover to let it move out. (The cover is also hooked at the bottom, so release it.)

3. Main Board (x 3)



Re-installation

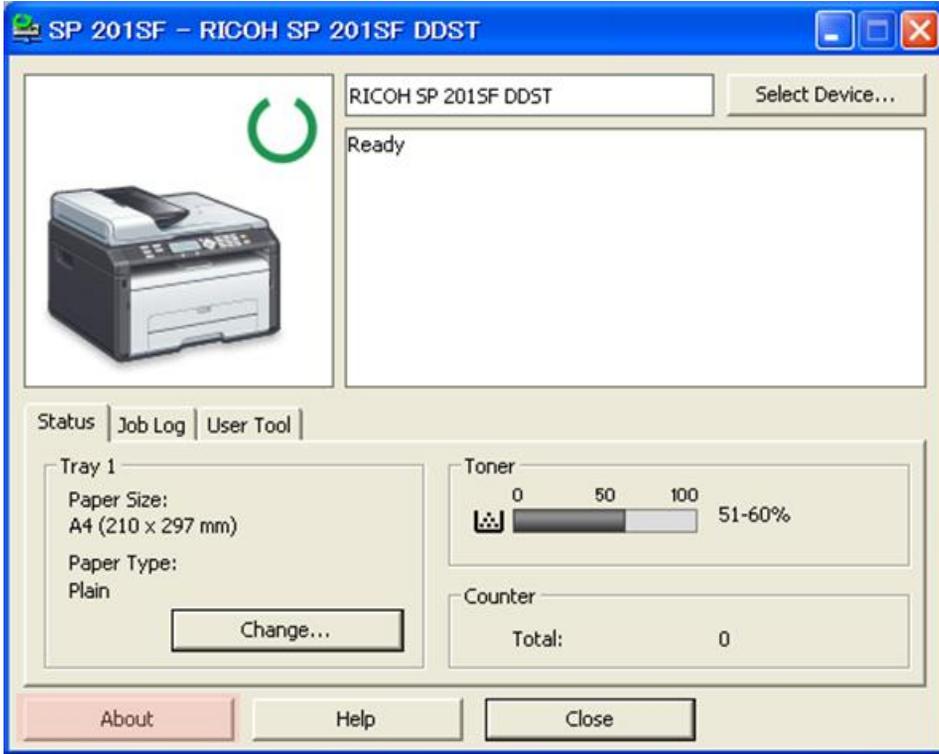
- When you re-install the board, be sure to re-connect the ground wires at the upper left corner.
- If the main board has been replaced, be sure to do the procedures for after replacing a main board. ( page 131 "After Replacing the Main Board")

After Replacing the Main Board

Do the procedures below after replacing the main board.

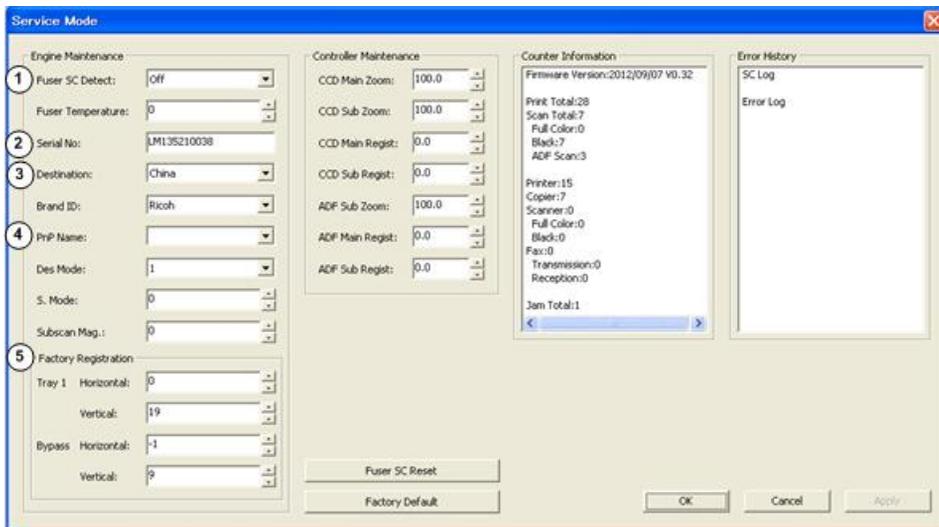
1. Start Smart Organizing Monitor.
2. Enter the service mode to display the Service Mode screen.

4



m1333030.png

3. Do these settings on the service mode screen.



m1333026a

Setting	Comment
Fuser SC Detect (1)	Signals a fatal error after three consecutive jams in the fusing unit.
Serial No. (2)	Serial number of the machine.
Destination (3)	Your geographic location.
PnP Name (4)	Plug-and-Play number of the machine.
Factory Registration (5)	Restores factory setting for horizontal alignment of the image area.
	Restores factory setting for vertical alignment of the image area.

M135, M141, M143, M167, M149, M168, M150, M151, M169 Fax Board

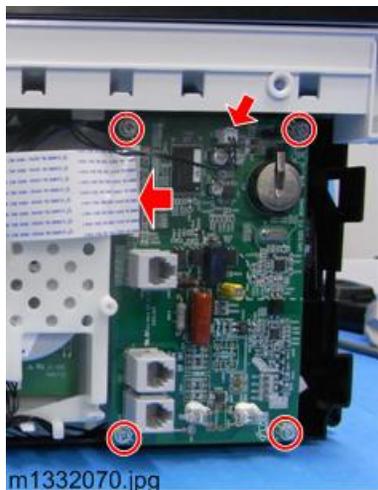
Preparation

(page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

(page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")

- Left Cover

Fax Board ( x 3,  x 1,  x 1)



M135, M141, M143, M167, M149, M168, M150, M151, M169 Fax Speaker

The fax speaker is installed on the other side of the fax board (right side).

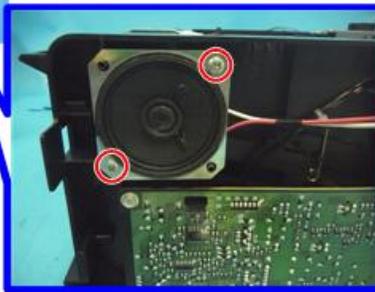
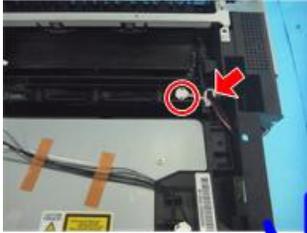
Preparation

(📖 page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

(📖 page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")

- Right Cover
- Inner Cover

Fax Speaker (🔧 x 2, 📦 x 1, 📦 x 1)



m1332071.jpg

4

PSU

Preparation

M133, M162, M144, M163, M145, M146, M164

- Front Cover (📖 page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")
- Right Cover
- Top Cover

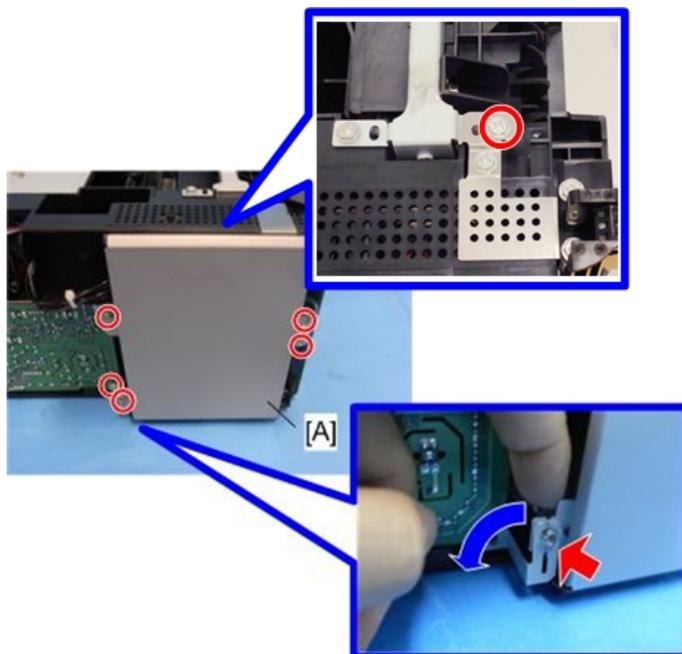
M134, M141, M165, M147, M142

- Front Cover (📖 page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")
- Right Cover
- Inner Cover

M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191

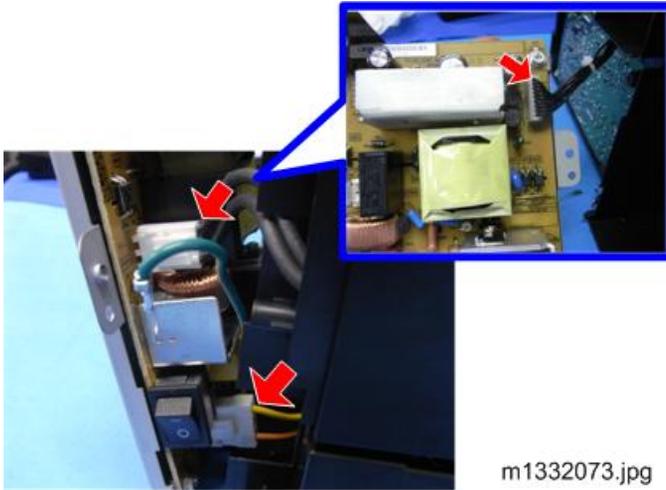
- Front Cover (page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")
- Right Cover
- Inner Cover

1. Separate the PSU cover [A] slightly from the machine. ( x6,  x1)



m1455506

2. Disconnect the harnesses on the PSU to separate it completely.



3. PSU ( x 4)



H.V.P.P.

Preparation

M133, M162, M144, M163, M145, M146, M164

- Right cover ( page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")

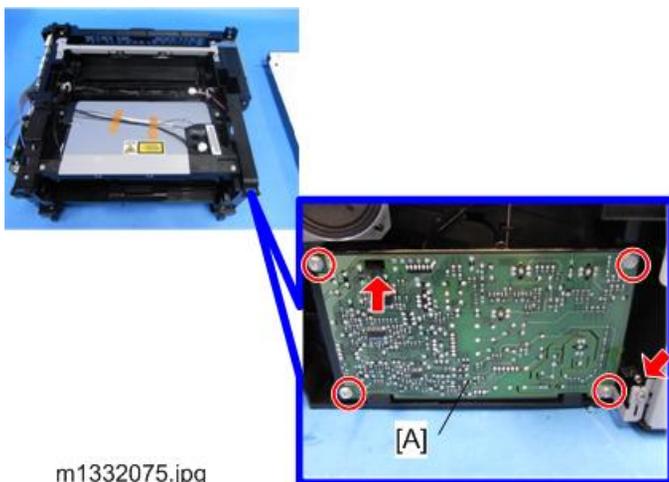
M134, M141, M165, M147, M142

- Right cover ( page 62 "M134, M141, M165, M147, M142 Covers, Platen Cover, Flatbed Unit")

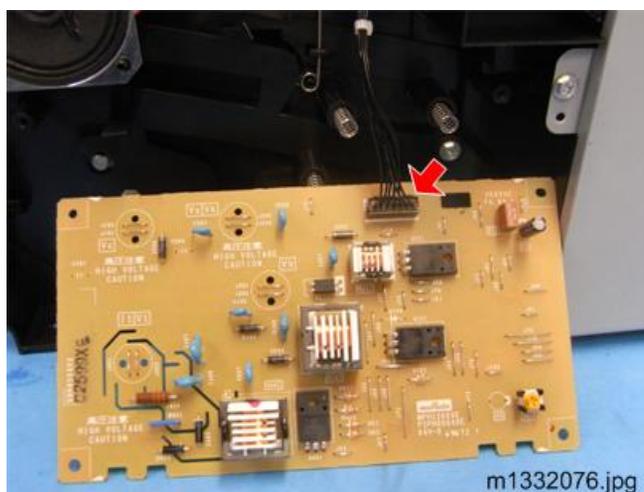
M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191

- Right cover (page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

1. H.V.P.P. (Back face) [A] ( x 5,  x 1  x 1)

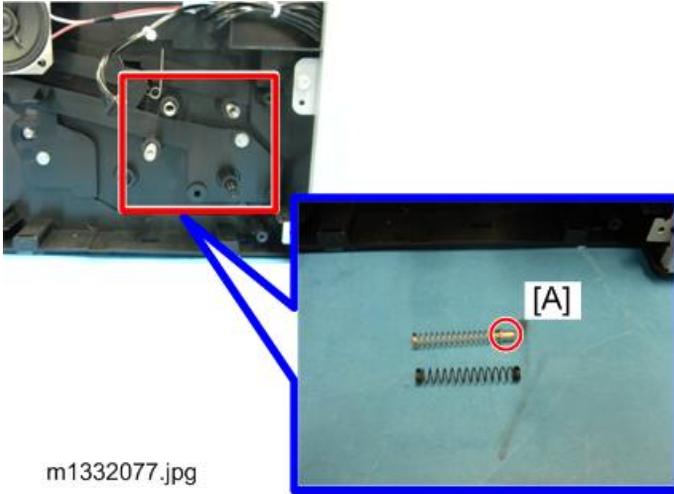


2. H.V.P.P. ( x 1)



AIO Terminals

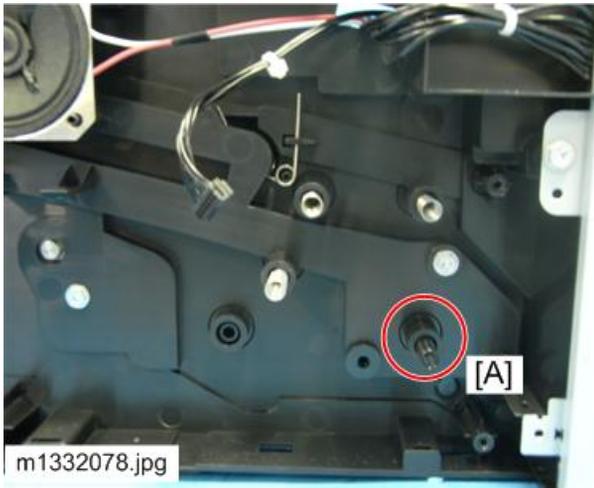
There are four AIO springs but only three terminal nodes [A] (the black one doesn't have a terminal node).



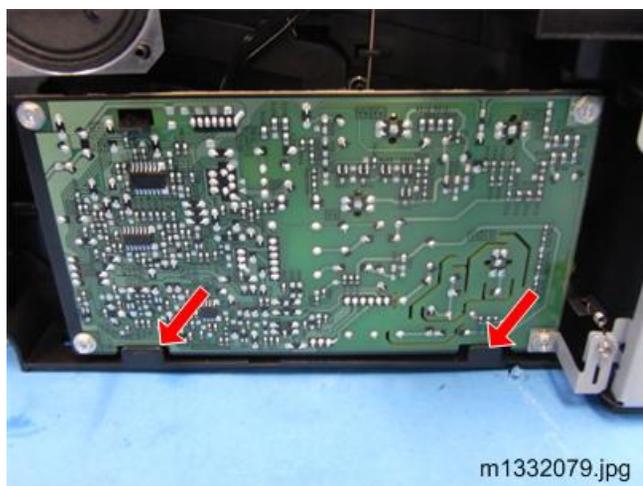
4

Re-installation

1. Be sure to re-attach the black spring at [A], and then the other springs with the terminal nodes in the other holes.



2. When you re-install the board, make sure that the edge tabs are inserted into the bottom slots.



Wi-Fi Module

Preparation

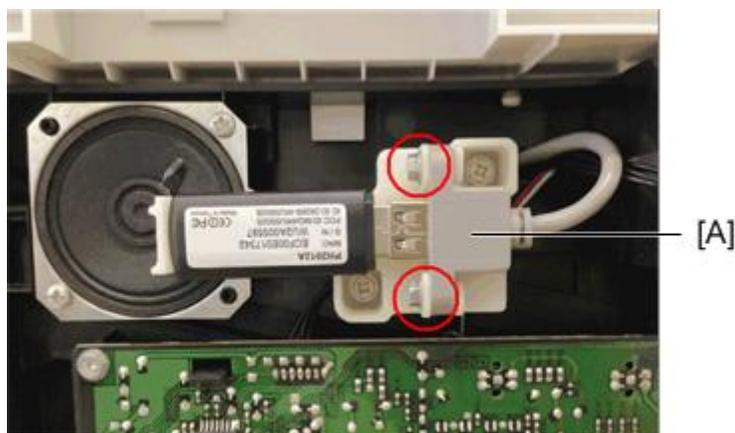
M146, M164

- Right cover (page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")

M151, M169

- Right cover (page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

Wi-Fi Module [A] ( x 2)



m1461007

To replace Wi-Fi Module harness

1. Open Left Cover

M146, M164

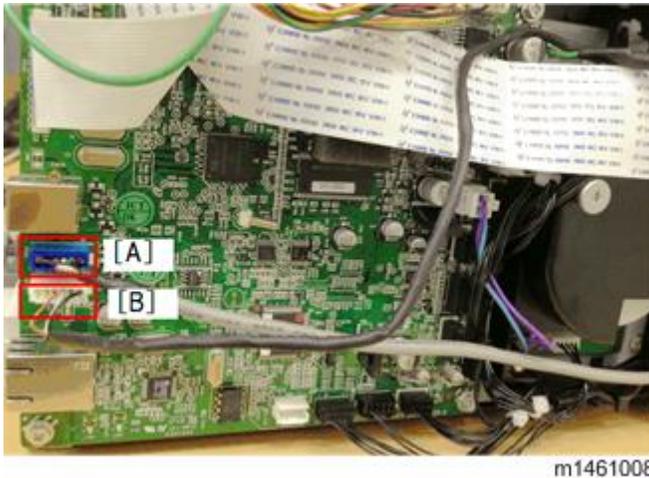
- Left cover (page 56 "M133, M162, M144, M163, M145, M146, M164 Covers")

M151, M169

- Left cover (page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

4

1. Disconnect the connector p103 [A] on the main board unit.



[A]: Wi-Fi module connector

[B]: scan2USB connector (target models only)

↓ Note

- Open inner cover to replace the harness easily.

Scanner Unit

There are no serviceable parts in the Scanner Unit.

If other part malfunctions occur, replace the whole Scanner Unit.

 page 62

 page 72

ADF (M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191)

The only serviceable part in the ADF is the original tray cover (see the following link).

If other part malfunctions occur, replace the whole ADF. (▶ page 72 "M135, M143, M167, M149, M168, M150, M166, M148, M191, M151, M169 Covers, Flatbed Unit, ADF")

Refilling the AIO

Before You Begin

Note

- The toner can be refilled only for M133, M162, M144, M163, M134, M165, M142, M166, M135, M141, M143, M167, M168, M164, M169, and M191.

AIO, Toner Packs

- Always store AIOs and toner packs in a cool, dark place.
- The service life of the refillable AIO supplied with the machine is approximately 1,000 printed pages. This should be installed at installation and used until it runs out.
- The service life of a replacement AIO is approximately 2,600 / 1500 printed pages. But this will depend on the image volume and density, number of sheets printed at a time, paper type and size, and ambient conditions such as temperature and humidity. Also, toner quality may deteriorate if the printer is not used for a long period of time.
- Encourage operators to have at least one replacement AIO on hand.
- For optimum printing results, use only the AIOs and toner packs (for refilling) recommended for use with this machine.

4

Toner End Alert: M133, M134, M142, M162, M163, M165, M166, M164, M191

The M133, M134, M142, M162, M163, M165, and M166, M164, and M191 have no system to alert the operator when the toner supply of the AIO is at near end or toner end. The operator simply refills or replaces the AIO when printed sheets become faint or blurred.

Toner End Alert: M135, M141, M143, M167, M168, M169

The M135, M141, M143, M167, M168, and M169 have a feature called the "Toner End Option" to monitor toner consumption using a dot count system by the controller.

- Approximately 50 pages can be printed between the toner near end alert and the final toner end alert.
- Normally this system is enabled but the operator has the option of switching Toner End Option off with the User Tools.
- When toner end detection is switched off, there will be no warning message when the AIO is about to run out of toner. The operator simply has the AIO refilled or replaces the AIO when printed sheets become faint or blurred.

More About the Toner End Option

The Toner End Option enables/disables monitoring the level of toner in the AIO as toner is consumed. (Default: On). The operator can adjust the Toner End Option setting with the User Tools menu by press [User Tools] on the M135, M141, M143, M167, M168, and M169 operation panel, and then setting the Toner End Option and selecting either "Stop Printing" or "Continue Printing".

- **Stop Printing:** Toner end detection is on, and the machine issues the toner near-end alert when there is enough toner remaining for about only 50 pages. When toner runs out, the machine stops printing.
- **Continue Printing:** The machine continues printing when it reaches the near end level. There is neither a toner near-end nor toner end alert. Once printing becomes faint, the operator must replace the AIO or re-fill the AIO with new toner.

4

The status of the Toner End Option setting can be checked in three ways.

- When toner detection is on (Toner End Option is set for "Stop Printing"), the machine displays a progress display as shown below in the left column. When toner detection is off (Toner End Option is set for "Continue Printing"), the progress bar is blank with two asterisks to the right.

[User Tools] > Toner End Option

Stop Printing	Continue Printing
□□□□ ~ ■■■■■	**

- The status of the toner detection setting is also displayed on the printed Configuration page printed with Smart Organizing Monitor.

[User Tools] > Toner End Option

Stop Printing	Continue Printing
10% to 100%	**

- The status of the toner detection setting, once again, displayed in the "Error History" box on the Service Mode screen of Smart Organizing Monitor

[User Tools] > Toner End Option

Stop Printing	Continue Printing
Error History	
Out of Toner Error Code 5	**
Toner Almost Empty Error Code 6	**

What You Need



m1333087

No.	Item
1	Scissors
2	Funnel
3	Flathead (-) screwdriver
4	Toner Pack
5	Gloves
6	Gauze Mask

Refill Procedure

★ Important

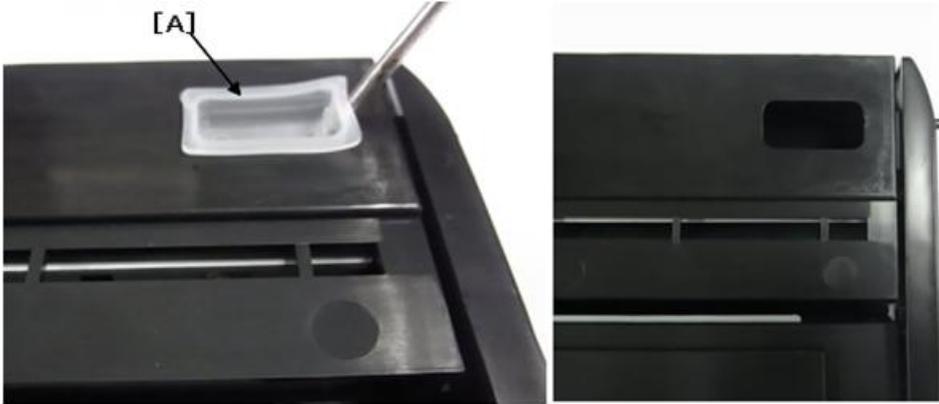
- An AIO can be refilled up to three times (this is the approximate service life of the drum).

★ Important

- The refilling procedure should be performed by a trained service technician.

Removing Old Toner

1. Spread some newspaper on a flat surface.
2. Put on gloves and mask.
3. Remove the square cap [A] of the waste toner tank with the tip of a screwdriver.



m1333088

4. Hold the AIO on its end and shake it to dump the waste toner out of the square port.
5. Shake the AIO gently to remove all the waste toner.



m1333089

6. Re-attach the square cap of the waste toner port.



m1333090

★ Important

- Always obey the local laws and regulations regarding the disposal of items such as the waste toner.
- To avoid a fire hazard and personal injury, never incinerate waste toner.

Filling the AIO with New Toner

1. Remove the round cap of the toner supply tank with a screwdriver.



4

2. Use scissors to cut off one small part of a corner of the toner pack as shown below. The cut should be about 10 to 16 mm long (about $\frac{1}{2}$ in.).



m1333092

★ Important

- The cut must be small. Cutting large a hole will cause toner to scatter.
3. Raise the end of the AIO about 30 degrees by placing something under the toner supply tank as shown below.
 4. Insert the tip of the funnel in the port of the toner supply tank.



m1333093

4

★ Important

- You must hold the funnel to prevent the tip of the funnel from touching and damaging components inside the AIO.
5. Work carefully. Never allow toner to fall into the open slot where the green surface of the drum is exposed.



m1333094

6. Slowly pour the toner from the pack [A] into the mouth of the funnel.
- Pour the toner slowly to prevent it from clumping the neck of the funnel.
 - If the toner flow stops, use the tip of the screwdriver [B] to stir the toner gently so it falls through the neck of the funnel.



m1333095

7. Re-attach the round cap of the toner supply tank.



m1333096

5. System Maintenance Reference

Firmware Update

The machine firmware can be updated with packages downloaded from a Web site. The firmware update procedure is described in the Operating Instructions and can be performed by the operator.

Before Updating the Firmware

Before you update the firmware:

- Print a Configuration Page before and after updating the firmware.
- Make sure that the machine is on and connected to the PC by its USB cable.
- Never disconnect the USB cable while the firmware is being updated.
- Make sure that the PC is set so it does not enter standby mode or sleep mode automatically during the firmware update. The firmware update may take a while to complete, so you may need to switch off the standby or sleep mode settings in the PC operating system.

Important

- An Engine firmware update failure may trigger SC670, which can only be cleared by replacing the main board.
- Because of this, make sure to do the following:
Always update the firmware in READY mode.
M135, M141, M143, M167, M149, M168, M150, M151, and M169 only: Unplug the fax cable before starting the update.
Do not cut the power, unplug the USB cable, or do any other operation during the update.

Firmware Update Procedure

1. Start Smart Organizing Monitor.
2. Open the List/Test drop-down list, select Configuration Page, and then click [Print].



m1333013

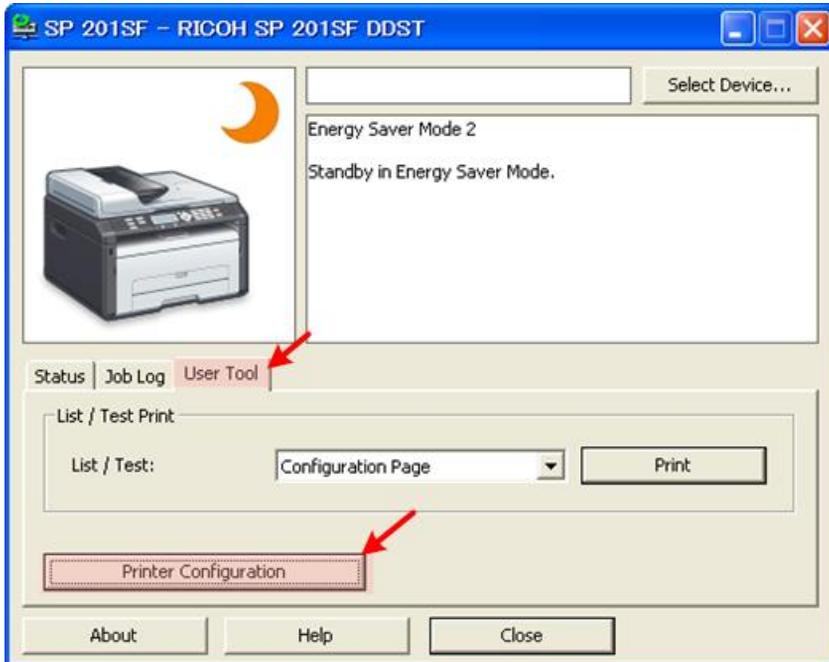
3. The Configuration Page shows the current Firmware Version number.

5



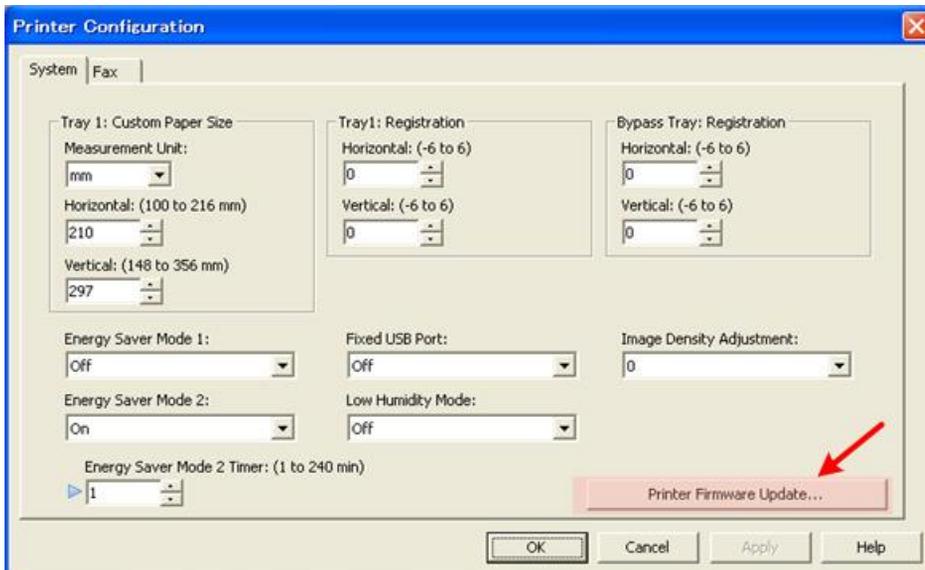
m1333014

4. Click the [User Tools] tab, and then click [Printer Configuration].



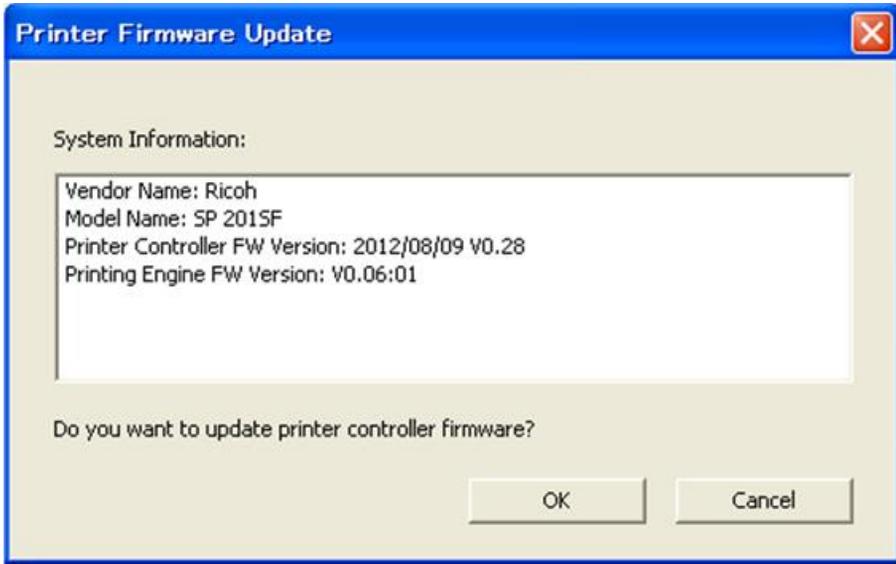
m1333015

- Click [Printer Firmware Update].



m1333016

- Click [OK].



m1333017

7. Specify the location of the DWN file, and then click [Open].



m101r314

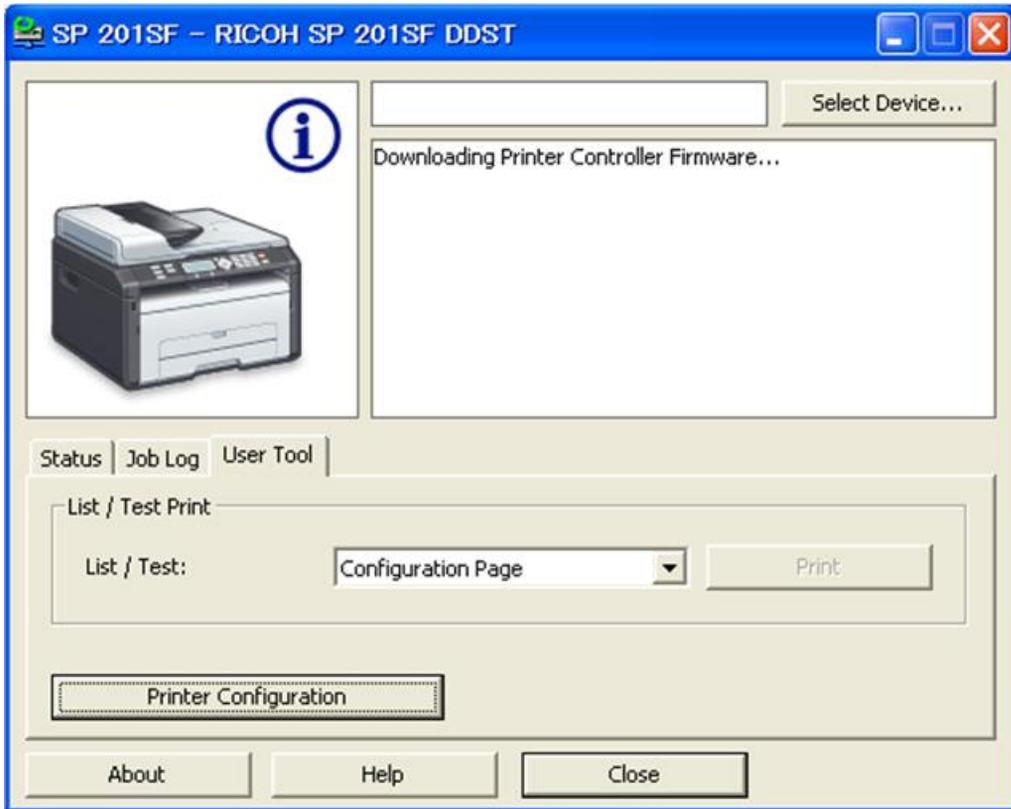
8. A message will alert you if you select the wrong file (file format is incorrect). Click "OK" button in the error message makes it go back to Printer Firmware Update dialog (step 6).



m101r313

SOM display (Example: M135)

On update

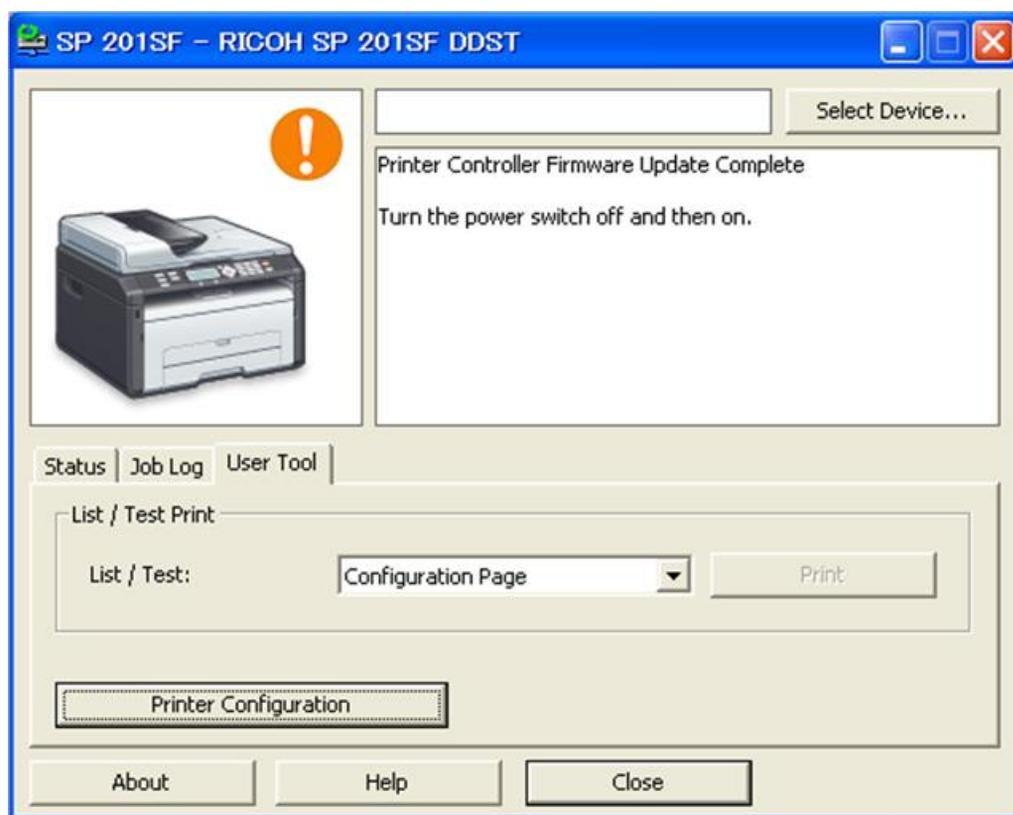


m1333018.png

⚠ CAUTION

- The message: "Downloading Engine Firmware..." is displayed for the engine firmware update.

After update completed



m1333019.png

Display on the machine

	During the update	After update completed	The time to complete
M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191 (Operation panel display)	The message "Updating firmware" and a progress indicator are displayed.	The message "UPDATE IS COMPLETE TURN POWER OFF -> ON" is displayed.	Controller F/W: About 20 sec. Engine F/W: About 4~5 min.
M134, M165, M147, M142, (2-digit digital display)	"UF" is displayed.	"OF" is displayed.	
M133, M162, M144, M163, M145, M146, M164 (LED display)	Power LED "blinks".	Power LED "lights".	

1. After selecting the correct file, a message confirms that firmware update has completed.
2. Cycle the machine off/on to initialize the new firmware.
3. Print another Configuration Page (as you did in Step 4).
4. Compare the Firmware Version numbers to confirm that the number for the new version of the firmware is printed.

↓ Note

- Engine firmware update: If the firmware update fails, SC871 (c7) or SC670 (c9) appears on the MF Type and only the Alert LED lights on the Printer Type. The main board must be replaced.
- Controller firmware update: If the firmware update fails, try again.

Utilities

Overview of Utilities

There are five utilities for setting and servicing these machines, but only three are used for all the machines.

No.	Function	Start From	M133	M134	M135
			M162	M165	M141
			M144	M147	M167
			M163	M142	M149
			M145	M166	M168
			M146	M148	M150
			M164	M191	M151
					M169
1	Fax Maintenance	Operation Panel	No	No	Yes
2	Fax Test	Operation Panel	No	No	Yes
3	Engine Maintenance	Service Mode	Yes	Yes	Yes
4	Counter Information		Yes	Yes	Yes
5	Error History		Yes	Yes	Yes

- The first two utilities are for the M135, M141, M143, M167, M149, M168, M150, M151, M169 because those models have the fax feature.
- Items 3, 4, 5 are used for all machines of this series and are accessed with the Smart Organizing Monitor (Service Mode).

Smart Organizing Monitor

The Smart Organizing Monitor screens are slightly different for each machine.

	Model	System tab	Printer tab	Copy tab	Fax tab	Scanner tab	Network Settings	Wi-Fi tab
4in1	M135	○	-	-	○	-	-	-
	M141	○	-	-	○	-	-	-
	M143	○	-	-	○	○	○	-
	M167	○	-	-	○	-	-	-
	M149	○	-	-	○	-	-	-
	M168	○	-	-	○	○	○	-
	M150	○	-	-	○	○	○	-
	M151	○	-	-	○	○	○	○
	M169	○	-	-	○	○	○	○
3in1	M134	○	○	○	-	-	-	-
	M165	○	○	○	-	-	-	-
	M147	○	○	○	-	-	-	-
	M142	○	○	○	-	-	○	-
	M166	○	○	○	-	○	○	-
	M148	○	○	○	-	○	○	-
	M191	○	○	○	-	○	-	-
SFP	M133	○	○	-	-	-	-	-
	M162	○	○	-	-	-	-	-
	M144	○	○	-	-	-	○	-
	M163	○	○	-	-	-	○	-
	M145	○	○	-	-	-	○	-
	M146	○	○	-	-	-	○	○
	M164	○	○	-	-	-	○	○

○: Supported, -: Not Supported

↓ Note

- In the screen samples used below to describe the Smart Organizing Monitor, are from the M135.
- Differences between the screens are noted when appropriate.

Initial Screen

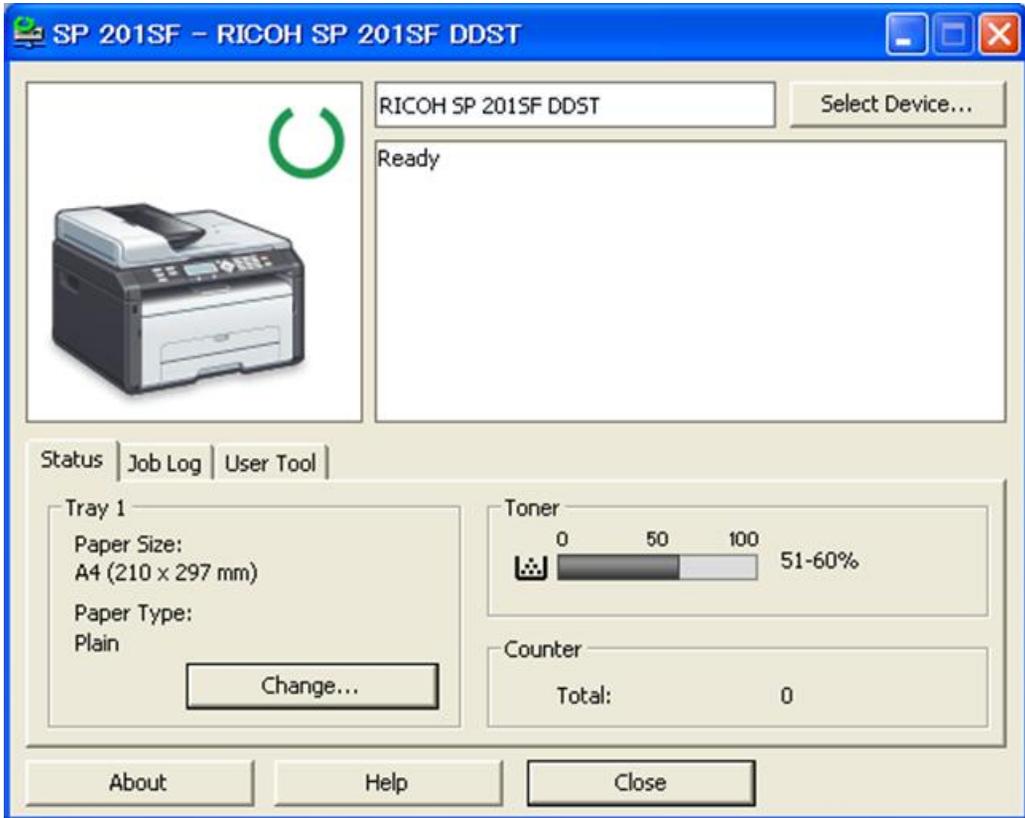


Image area: The image area on the top left, displays the image of the connected machine.

Message area: The message area on the top right, displays the current status of the machine (Ready, Energy Saver 1, etc.)

Status tab and area: Indicates the current paper size and type selected for operation.

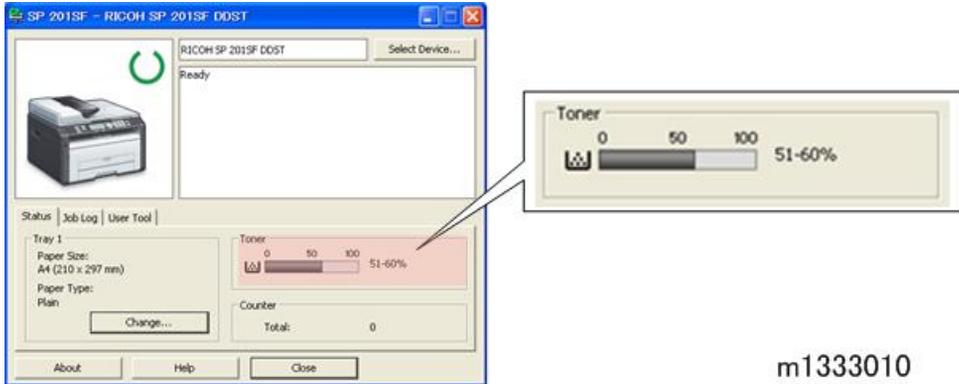
Change button: Opens the Paper Size/Type Settings dialog box so the operator can choose the paper size and type to be used in the machine (see below).

Job Log tab: Displays the print job history.

User Tool tab: Presents the Print and Printer Configuration buttons that allow the operator to do test prints and change the device settings.

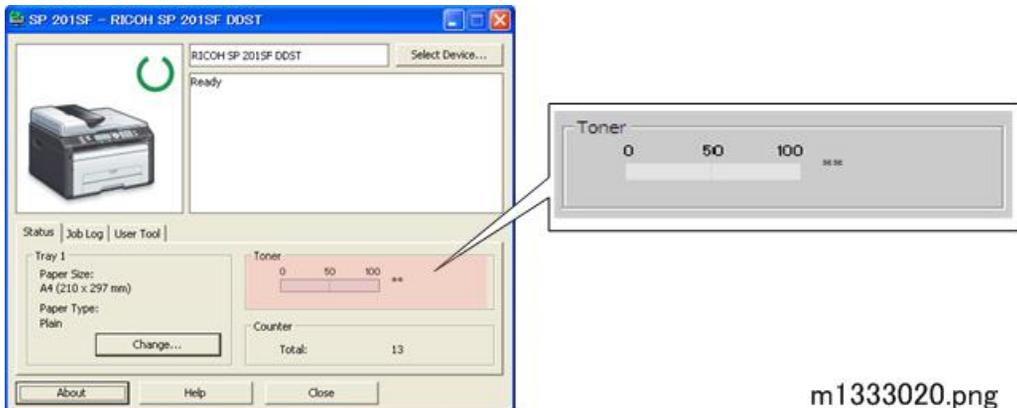
Toner: This is the toner count progress bar that shows the progress of toner consumption.

- When the progress bar appears as shown below, the Toner End Option in User Tools is set for "Stop Printing". The machine will issue a near end alert when the AIO is almost out of toner, and then stop printing when the AIO is out of toner.



m1333010

- When the progress bar appears blank with two asterisks to the right as shown below, the Toner End Option in User Tools is set for "Continue Printing". The machine does not count toner consumption, does not issue a toner near-end alert, and does not issue a toner end alert. The machine will keep printing until all the toner is used in the AIO. (The operator will know when it is time to replace or re-fill the AIO when prints become faint.)



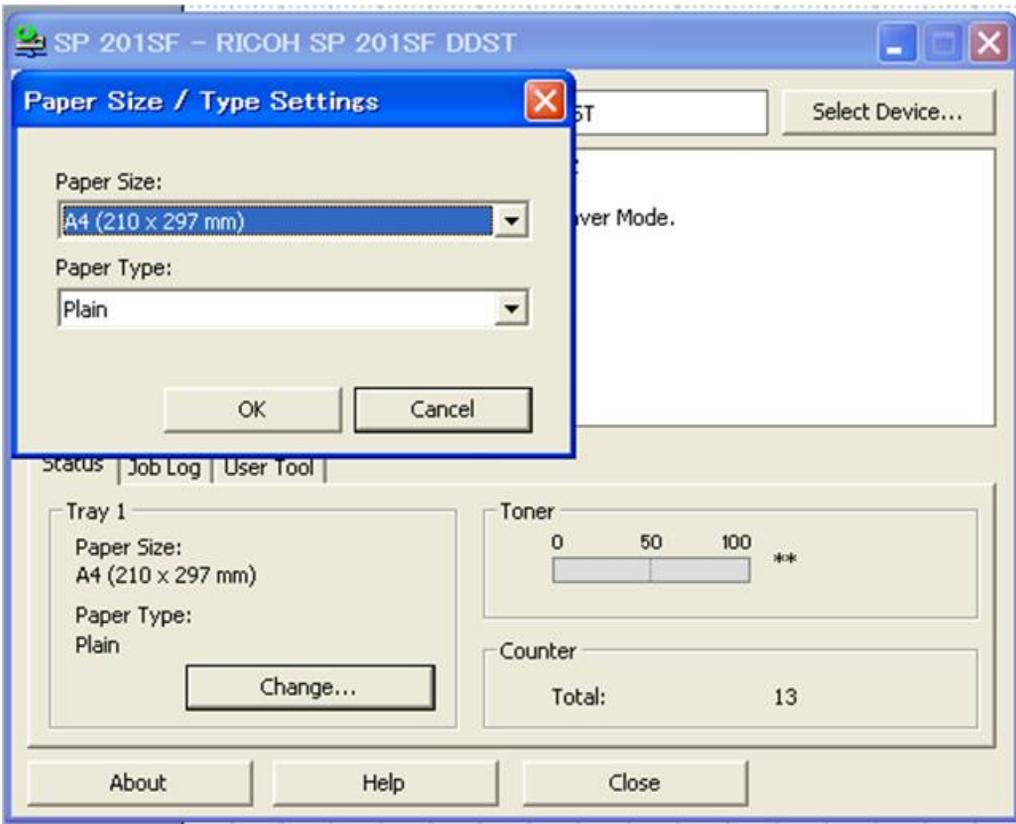
m1333020.png

Counter: Displays the total number of sheets printed by the machine.

Note

- Count-up is done at the time of image writing.
- So in this machine, count-up is done even when jam detection occurs after writing.
- This process differs from existing machines where count-up is done after printed-paper ejection.

Status Tab Change Button



m1333021.png

Paper Size: Allows the operator to select the size of the paper that will be loaded in the printer.

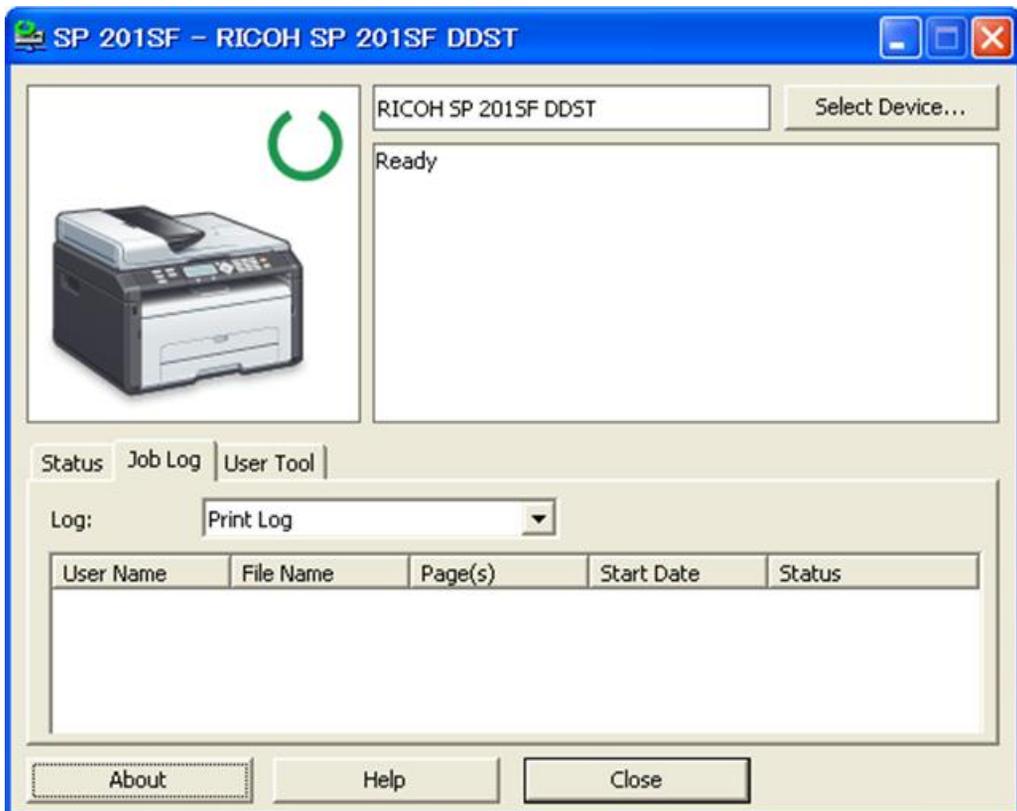
Name	Size
A4	210 x 297 mm
A5	148 x 210 mm
A6	105 x 148 mm
LT	8 1/2 x 11 in.
Legal	8 1/2 x 14 in.
HLT	5 1/2 x 8 1/2 in.
Executive	7 1/4 x 10 1/2 in.

Name	Size
B5 JIS	182 x 257 mm
B6 JIS	128 x 182 mm
16K	197 x 273 mm
16K	195 x 270 mm
16K	184 x 260 mm
Custom Paper Size	Configure the actual size of the paper with the Custom Paper Size settings on the Printer tab of the Printer Configuration screen.

Paper Type: Allows the operator to select the type of paper that will be loaded in the printer. (Thin, Plain, Thick, Recycled)

5

Job Log Tab



m1333022.png

Log: Print Log:

- The Print Log is limited to the last 20 jobs. Once this limit is exceeded, the log for the oldest job is deleted so the most recent job can be displayed in the log.
- The current log is erased when the machine is powered off/on.

User Name: The name of the user who logged on and executed the job

File Name: The name of the printed document.

Page(s): The number of pages printed from the document.

Start Date: Date and time the job was printed. The date and time are displayed in the format YYYY/MM/DD and HH:MM:SS

Note

- Format:
- A. For M133, M162, M144, M163, M145, M134, M165, M147, M142, M166, M148, M146, and M164: yyyy/mm/dd hh:mm:ss
- B. For M135, M141, M143, M167, M149, M168, M150, M151, M169, and M191: Based on the date format setting on the machine panel.

Status: Current status of the job.

- **Completed:** Job has been completed.
- **Canceled:** Job was canceled before completion.
- **Error:** Error in the current job (paper jam, mismatch)

Note

- "Error" is also displayed while the machine is waited paper printed on one side to be set again for reverse side printing.
- **Processing:** Job is current in progress.

Fax Log Information:

Job No.	Date	Type	Time	Destination	Page(s)	Status
3	2012/08/03 1...	RX	00'00	458	0	NG
0	2000/00/00 0...	RX	00'00		0	NG
2	2012/07/31 1...	TX	00'00	12345	0	NG
1	2012/07/31 1...	TX	00'00	123	0	NG

m1333027

Log: Fax Log: The Fax Log is available for the M135, M141, M143, M167, M149, M168, M150, M151, and M169 only.

- The Fax Log is limited to the last 100 fax jobs. Once this limit is exceeded, the log for the oldest job is deleted so the most recent job can be displayed in the log.
- The current Fax Log remains stored in the machine after the machine is powered off/on.

Job No. : The number of the fax job

Date: Date fax was printed. Date/Time are displayed in the format YYYY:MM:DD/HH:MM:SS.

Note

- Date is based on the date format setting on the machine panel.

Type: RX or TX

Time: Duration of the RX or TX job

Destination: Fax number of the remote station

Pages: Number of pages in the RX/TX job

Status: Status of the job (OK or NG)

Log: Network Scanning Log: The Network Scanning Log is available for the M144, M163, M145, M142, M166, M148, M143, M168, M150, M146, M164, M151, and M169 only.

- The Network Scanning Log is limited to the last 100 scanning jobs. Once the limit is exceeded the log for the oldest job is deleted so the most recent job can be displayed in the log.
- The current Network Scanning Log remains stored in the machine after the machine is powered off/on.

Job No. : The number of the scan job

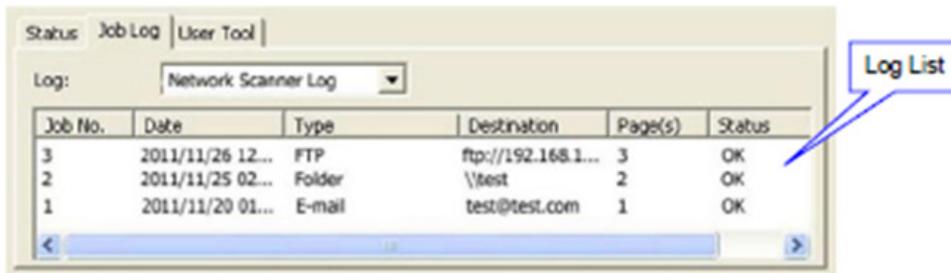
Date: Date and time of the scan job. Date/Time are displayed in the format YYYY:MM:DD/HH:MM:SS.

Type: E-mail, Folder or FTP

Destination: The destination of a scan job sent to

Page (s): Number of scan pages

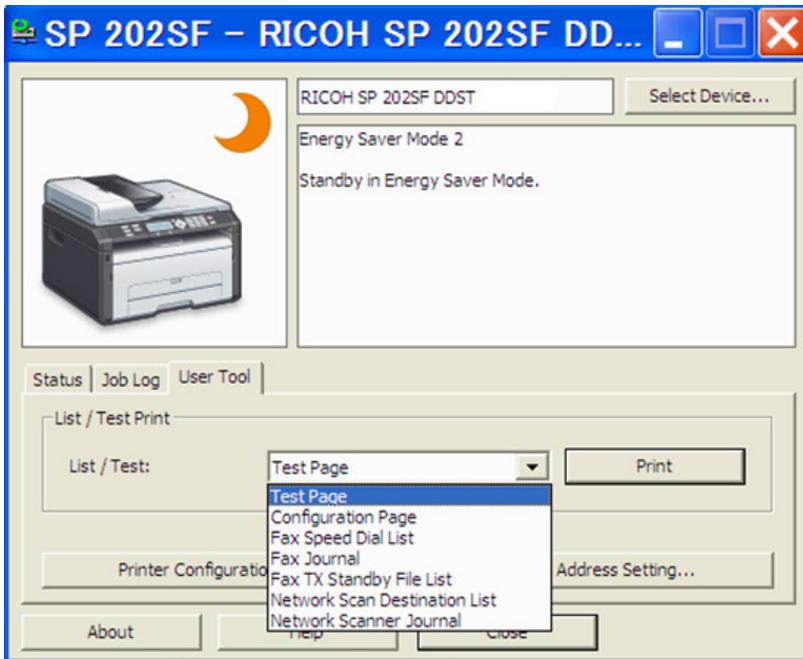
Status: Status of the scan job (OK, NG/Cancel)



Job No.	Date	Type	Destination	Page(s)	Status
3	2011/11/26 12...	FTP	ftp://192.168.1...	3	OK
2	2011/11/25 02...	Folder	\\test	2	OK
1	2011/11/20 01...	E-mail	test@test.com	1	OK

w_m1455501

User Tool Tab



m1452016

List/Test: This drop-down list presents a list of choices for printing.

- **Test Page:** Used to check image quality.
- **Configuration Page:** Lists current machine settings.
- **Fax Speed Dial List:** Lists the numbers registered for speed dialing.
- **Fax Journal:** Lists the TX/RX transactions.
- **Fax Tx Standby File List:** Lists all the faxes stored in memory and queued for transmission.
- **Network Scan Destination List:** List all registered Network Scanner Destination address, record from 00 to 99.
- **Network Scanner Journal:** Recording of data depends on Network scan job result log (excluding Scan to USB).

Print button: Prints the item selected from the List/Test drop-down list.

Printer Configuration button: Opens the Printer Configuration Screen (see below).

IP Address Setting... button: Opens IP Address Setting dialog.

IP Address Setting dialog

The screenshot shows a dialog box titled "IP Address Setting". It contains four input fields with red asterisks indicating required information:

- *Mac Address: (empty)
- *IP Address: (empty, with three dots in the background)
- Subnet Mask: (empty, with three dots in the background)
- Default Gateway Address: (empty, with three dots in the background)

 Below the fields is a text box with the following text:

It is necessary to enter information to the item with *.
 [Mac Address] is to be printed on the sheet of [List/Test Print].
 To implement [List/Test Print] turn on the machine while pressing [Start] key.

 At the bottom of the dialog are "OK" and "Cancel" buttons.

w_m1455502

***Mac Address:** Enter the Mac address shown on the network setting list.

Max Length: 17 characters

Range: 0-9, a-f, A-F and "-"

***IP Address:** Enter the user's IP address.

Max Length: 3 numeric digits in each column

1st byte: 1-126, 128-223

2nd - 3rd byte: 0-255

4th byte: 1-255

Subnet Mask: Specify the subnet mask as required in accordance with the network environment.

Max. Length: 3 numeric digits in each column

Default Gateway Address: Specify the default gateway address as required in accordance with the network environment.

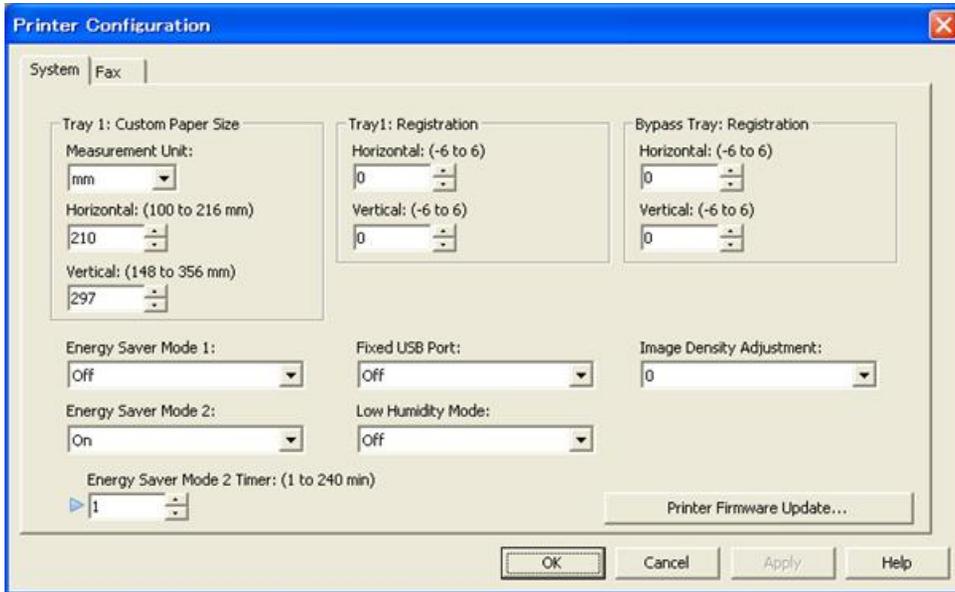
Max Length: 3 numeric digits in each column

1st byte: 1-126, 128-223, 225-254

2nd - 3rd byte: 0-255

4th byte: 1-255

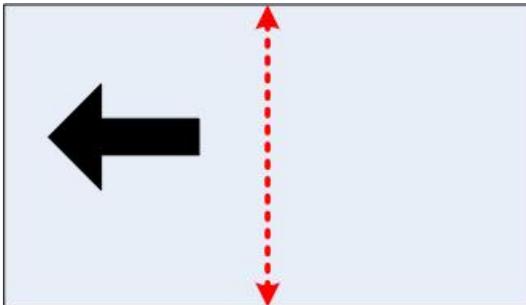
System Tab



m1333024

Tray 1: Custom Paper Size:

- **Measurement Unit:** Select either mm or inch for the entries into the Horizontal and Vertical boxes below.
- **Horizontal (100 to 216 mm):** Enter the size of the paper that is vertical relative to the feed direction of the machine.

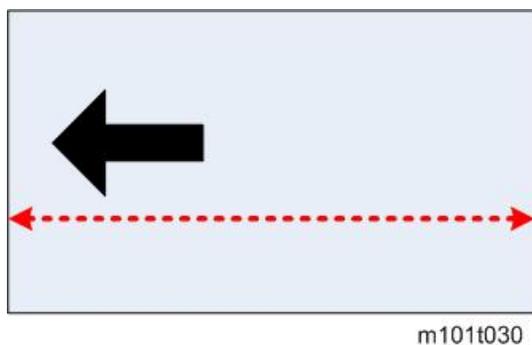


m101t029

Width Range: 100 to 216 mm (3.94 to 8.5 inch)

Adjustment: 1 mm or 0.01 inch steps

- **Vertical (148 to 356 mm):** Enter the size of the paper that is horizontal relative to the feed direction of the machine.



Length Range: 148 to 356 mm (5.83 to 14.02 inch).

Adjustment: 1 mm or 0.01 steps

Tray 1: Registration:

- Horizontal (-6 to 6): Adjusts the horizontal position of the image area. Adjustable in 0.1 mm steps.
- Vertical (-6 to 6): Adjusts the vertical position of the image area. Adjustable in 0.1 mm steps.

Bypass Tray: Registration:

- Horizontal (-6 to 6): Adjusts the horizontal position of the image area. Adjustable in 0.1 mm steps.
- Vertical (-6 to 6): Adjusts the vertical position of the image area. Adjustable in 0.1 mm steps.

Energy Saver Mode 1: Switches Energy Saver Mode 1 off/on. When this feature is on the machine enters Energy Saver Mode 1 after the machine remains idle for 30 sec. This time limit is not adjustable.

Energy Saver Mode 2 (Europe, Asia, Oceania, part of South America, 220V-240V/50, 60Hz): Allows adjustment of the timer. The machine enters Energy Save Mode 2 after the machine remains idle for 1 min. (Default). This time limit is adjustable.

- **Energy Saver Mode 2 Timer:** Allows adjustment of the timer. (Range: 1 to 30 min.)
- Energy Saver Mode 2 will not be displayed for China network and Wi-Fi Version Utility when "destination" is set to "EU".

Energy Saver Mode 2 (North America, Canada, Part of South America, 120V/60Hz), and China): Switches Energy Saver Mode 2 off/on. When this feature is on, the machine enters Energy Save Mode 2 after the machine remains idle for 1 min. (Default). This time limit is adjustable.

- **Energy Saver Mode 2 Timer:** Allows adjustment of the timer. (Range: 1 to 240 min.)

Fixed USB Port: Two settings are available.

- **On:** Not Fixed USB Port. The Plug-and-Play function will start up and require re-installation of the printer driver.
- **Off:** Fixed USB Port (Default). The PC will not recognize another machine of the same model as a new device. This prevents the PC's Plug-and-Play function from starting up, and allows the current printer driver to be used without reinstallation.

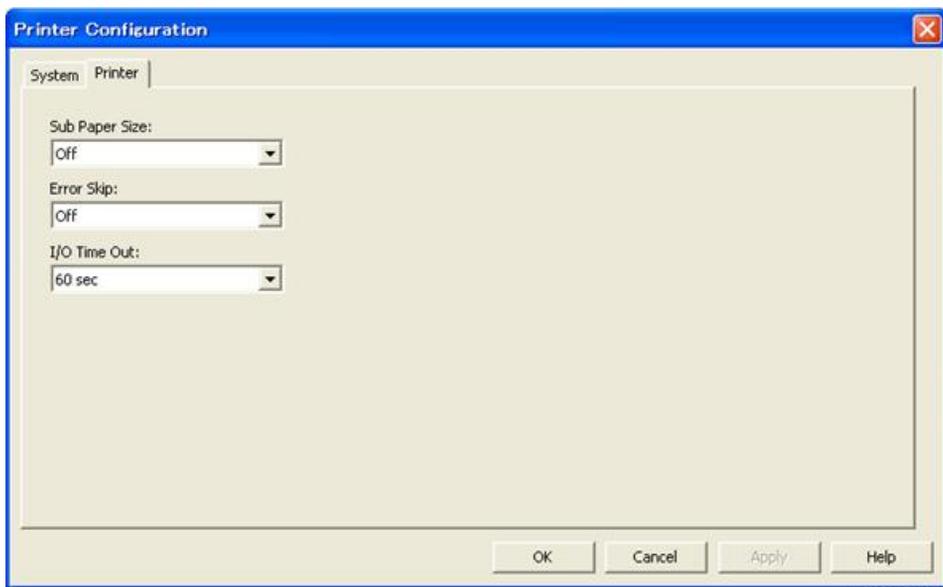
Low Humidity Mode: Two settings are available.

- **Off:** (Default)
- **On:** Black lines a few millimeters thick may appear in prints when the machine operates in a low humidity environment. Switching this feature on may eliminate these lines.

Image Density Adjustment: Adjusts the overall density of printed pages. Adjustable in 7 steps (-3 to 3 steps) (Default: 0)

Printer Firmware Update Button: Clicking this button starts the firmware update procedure. (page 153 "Firmware Update")

Printer Tab



m1333028

Sub Paper Size: Allows substitution of A4 for LT, or LT for A4. This substitution feature is allowed for A4/LT paper sizes only.

- **Off:** (Default) The machine stops when a paper mismatch error occurs between A4/LT.
- **On:** The machine automatically allows A4 to be substituted for LT (or LT for A4) without interrupting printing.

Error Skip: Determines whether printing stops or continues when a mismatch of paper size or paper type setting between the printer and the driver occurs.

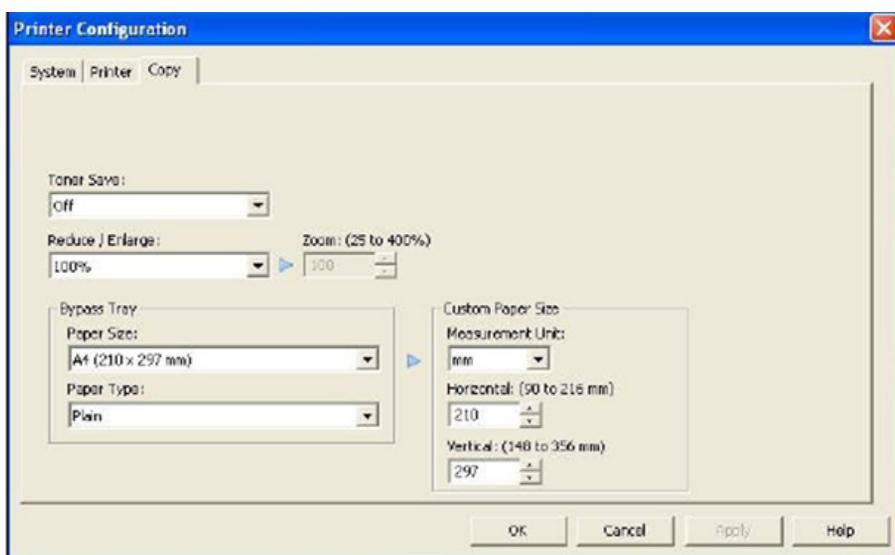
- **Off** (Default): An error message is displayed and stops printing.
- **0 sec:** The machine ignores the mismatch and continues printing without displaying an error message.
- **10 sec:** An error message is displayed. If the print job is canceled within 10 seconds, the machine stops printing.

- **30 sec:** An error message is displayed. If the print job is canceled within 30 seconds, the machine stops printing.

I/O Time Out: Sets the length of time for the machine to wait for data from the USB port before it issues an error.

Range: Off, 15 sec., 60 sec. (Default), 300 sec.

Copy Tab



w_m1455504

Toner Save: Two settings are available.

- **Off:** (Default) Normal amount of toner is used for printing.
- **On:** Reduces the amount of toner used when printing. This setting extends the service life of the AIO but prints appear slightly lighter. Use this setting for printing drafts, and then switch it off for final prints.

Reduce/Enlarge: Selects a pre-set zoom rate for enlargement or reduction of copied images. Selecting "Custom" enables the "Zoom" feature.

Range (mainly Europe and Asia): 200%, 141% (A5 -> A4), 122% (A5 -> B5 JIS), **100%** (Default), 93%, 82% (B5 JIS -> A5), 71% (A4 -> A5), 50%, Zoom (25 to 400%)

Range (mainly North America): 200%, 155% (HLT -> LG), 129% (HLT -> LT), **100%** (Default), 93%, 78% (LG -> LT), 65% (LT -> HLT), 50%, Zoom (25 to 400%)

Zoom (25 to 400%): Enabled only after "Custom" has been selected for Reduce/Enlarge above.

- Range: 25 to 400%
- Adjustable in 1% steps.

Bypass Tray

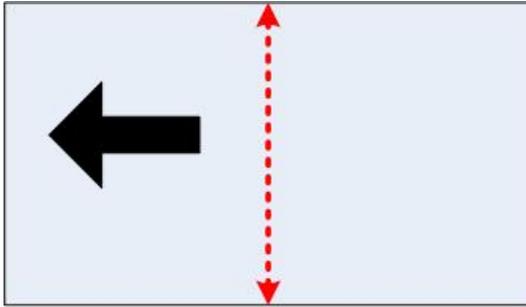
- **Paper Size:** Allows the operator to select the size of the paper that will be loaded in the printer.

Name	Size
A4	210 x 297 mm
A5	148 x 210 mm
A6	105 x 148 mm
LT	8 1/2 x 11 in.
Legal	8 1/2 x 14 in.
HLT	5 1/2 x 8 1/2 in.
Executive	7 1/4 x 10 1/2 in.
B5 JIS	182 x 257 mm
B6 JIS	128 x 182 mm
16K	197 x 273 mm
16K	195 x 270 mm
16K	184 x 260 mm
Custom Paper Size	Configure the actual size of the paper with "Custom Paper Size Settings" on the Printer tab of the Printer Configuration screen.

- **Paper Type:** Allows the operator to select the type of paper that will be loaded in the printer. (Thin, Plain, Thick, Recycled)

Custom Paper Size

- **Measurement Unit:** Select either mm or inch for the entries into the Horizontal and Vertical boxes below.
- **Horizontal (90 to 216 mm/3.54 to 8.50 in.):** Enter the size of the paper that is vertical relative to the feed direction of the machine.



m101t029

Width Range: 90 to 216 mm (3.54 to 8.50 inch)

Adjustment: 1 mm or 0.01 inch steps

- **Vertical (148 to 356 mm/5.83 to 14.02 in.):** Enter the size of the paper that is horizontal relative to the feed direction of the machine.



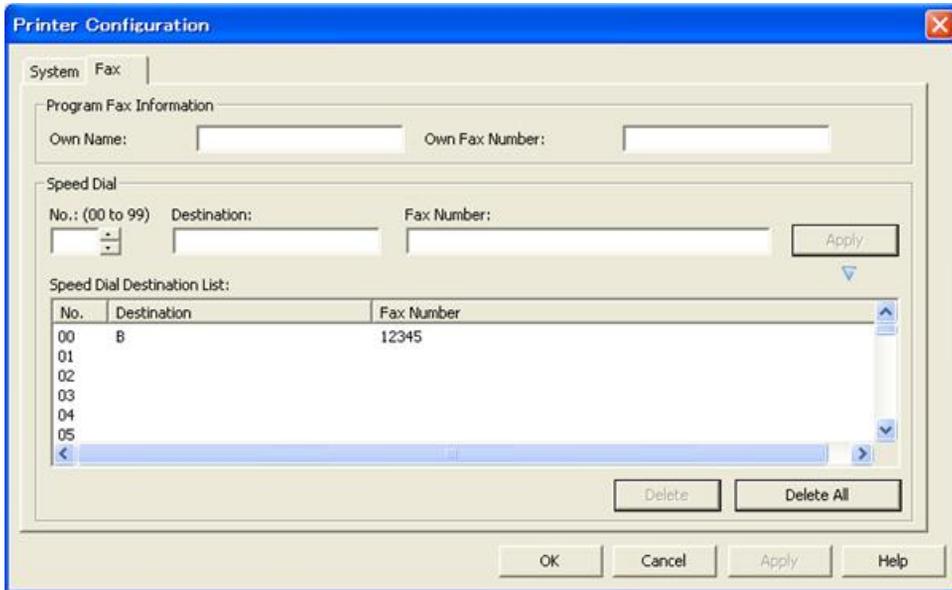
m101t030

Length Range: 148 to 356 mm (5.83 to 14.02 inch).

Adjustment: 1 mm or 0.01 steps

Apply: Saves the newly registered or edited settings.

Fax Tab



m1333025

Program Fax Information: This is the name and fax number of the local machine. This information is printed at the top of every fax sent.

- **Own Name:** Name of the local machine.

Range: 20 alphanumeric single-byte characters or 10 double-byte characters.

- **Own Fax Number:** Fax number of the local machine.

Range: Up to 20 digits, spaces, and "+" permitted.

Speed Dial: Allows the operator to register speed dial information.

- **No. (00 to 99):** Selects the number where a new speed dial entry will be registered. This is the number the operator will press on the machine operation panel to speed dial a destination number for fax sending.
- **Destination:** Name of the remote machine to receive faxes.

Range: 20 alphanumeric single-byte characters or 10 double-byte characters.

- **Fax Number:** The fax number of the remote machine to receive faxes.

Range: Up to 20 digits, spaces, "#", "*", and "Pause(P)".

Note

- These settings are used to either register new speed dial settings or to edit existing settings.
- To edit an existing speed dial setting, use the scroll bar to display the setting to edit, and then click it once to highlight it. The information will appear in the Destination and Fax Number boxes for edit.
- **Apply:** Saves the newly registered or edited speed dial settings.

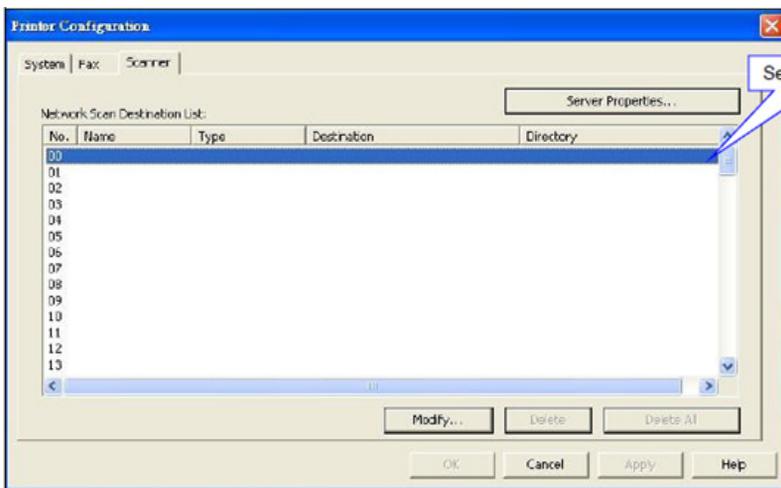
Speed Dial Destination List: This area list all the currently registered information for speed dialing. Use the scroll bar on the right to display more settings.

- **No. (00 to 99):** Speed dial number where information is registered.
- **Destination:** Name of the remote machine.
- **Fax Number:** Fax number of the remote machine.

Delete: Deletes the line highlighted line in the Speed Dial Destination List. A line can be highlighted with pointing the cursor and clicking the mouse.

Delete All: Deletes all information registered for speed dialing.

Scanner Tab



w_m1455503

Sever Properties.....: Opens Edit Sever Propertied dialog and be able to edit information below.

- SMTP Server Name
- SMTP Port No. Filed
- SMTP Port No. Scroll Button
- SMTP Authentication
- User Name (For SMTP)
- Password (For SMTP)
- Server Time Out Filed
- Server Time Out Scroll Button
- Hour (For Time Zone (GMT))
- Minute Input Field (For Time Zone (GMT))

- Minute Scroll Button (For Time Zone (GMT))
- User Authentication (For POP before SMTP)
- User Name (For POP before SMTP)
- Password (For POP before SMTP)
- Time Out Filed (For POP before SMTP)
- Time Out Scroll Button (For POP before SMTP)
- POP3 Server Name
- POP3 Port No. Filed
- POP3 Port No. Scroll Button
- SNTP Server Address
- Restore Default Settings

5

Network Scan Destination List: This area list all the currently registered information for network scan.

- **No:** Identifies the destination number in Network Scan Destination List.
- **Name:** Displays registered Name for Network Scan Destination.
- **Type:** Displays the registered Job Type for Network Scan Destination.
- **Destination:** Displays the registered Address for Network Scan Destination.
- **Directory:** Displays the registered Directory for Network Scan Destination.

Modify...:

- When an empty record is selected and this button is clicked: Opens Destination Setting dialog.
- When a non-empty record is selected and this button is clicked: Opens Destination Setting dialog and the settings for the selected record are loaded into the Destination Setting dialog.

Delete: Deletes selected record in Network Scan Destination List.

Delete All: Deletes all records in the Speed Dial Destination List.

Wi-Fi Tab



M1461002.png

(1)	Communication Mode
-----	--------------------

	<p>1. When Communication Mode is set to Off, the following items are disabled:</p> <ul style="list-style-type: none"> • SSID • Security Method • Channel Number • Key Length • Key Format • WEP Key / Passphrase(PSK) • Wireless LAN Status Report • IPv4 Configuration <p>2. When Communication Mode is set to "Infrastructure Mode", the enable/disable conditions are listed as below:</p> <ul style="list-style-type: none"> • SSID – (Enabled) • Security Method – (Enabled) • Channel Number – (Enabled) • Key Length – (Based on Security Method Setting) • Key Format – (Based on Security Method Setting) • WEP Key / Passphrase (PSK) – (Based on Security Method Setting) • Wireless LAN Status Report – (Enabled) • IPv4 Configuration – (Enabled) <ul style="list-style-type: none"> • When Communication Mode is set to "802.11 Ad-hoc Mode", the enable/disable conditions are listed as below: <ul style="list-style-type: none"> • SSID – (Enabled) • Security Method – (Enabled) • Channel Number – (Enabled) • Key Length – (Based on Security Method Setting) • Key Format – (Based on Security Method Setting) • WEP Key / Passphrase (PSK) – (Based on Security Method Setting) • Wireless LAN Status Report – (Enabled) • IPv4 Configuration – (Enabled) <p>4. When machine becomes disconnected from connected, this item is disabled. [Off, Infrastructure Mode, 802.11 Ad-hoc Mode]</p>
(2)	SSID

1. When machine becomes disconnected from connected, this item is disabled.
2. When SSID is not entered and OK button is clicked, the error message is displayed. Click "OK" button in error message makes it go back to Wi-Fi tab and no data will be saved.



m1461003

3. Usage:
 - For 4in1 device, this SSID is used for 802.11 Ad-hoc Mode. Because the SSID for Infrastructure Mode can be searched by User on machine panel.
 - For SFP device, this SSID is used for both Infrastructure Mode and 802.11 Ad-hoc Mode. There is no problem to use this SSID for both Infrastructure Mode and 802.11 Ad-hoc Mode for SFP device, because only one of Infrastructure Mode and 802.11 Ad-hoc Mode can work at a time.

[ASCII 0x20-0x7E/ RETTCP(Based on the device setting)/-]

(3) Security Method

	<p>Range:</p> <p>Open System - None</p> <p>Open System - WEP (64 / 128bit)</p> <p>Shared Key - WEP (64 / 128bit)</p> <p>WPA - PSK - AES</p> <p>WPA2 - PSK - AES</p> <p>Default: Open System – None</p> <ol style="list-style-type: none"> When Security Method is set to "Open System -None", the enable/disable conditions are listed as below: <ul style="list-style-type: none"> Key Length - (Disabled) Key Format - (Disabled) WEP Key / Passphrase (PSK) - (Disabled) When Security Method is set to "Open System - WEP (64 / 128bit)" or "Shared Key – WEP (64 / 128bit)", the enable/disable conditions are listed as below: <ul style="list-style-type: none"> Key Length - (Enabled) Key Format - (Enabled) WEP Key / Passphrase (PSK) - (Enabled) When Security Method is set to "WPA - PSK - AES" or "WPA2 - PSK - AES" , the enable/disable conditions are listed as below: <ul style="list-style-type: none"> Key Length - (Disabled) Key Format - (Enabled) WEP Key / Passphrase (PSK) - (Enabled) When machine becomes disconnected from connected, this item is disabled.
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(4)	Channel Number
	<p>When machine becomes disconnected from connected, this item is disabled.</p> <p>[1 to 13/11/1step]</p>

(5)	Key Length
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	<ol style="list-style-type: none"> 1. When machine becomes disconnected from connected, this item is disabled. 2. When Key Length is changed, the data in WEP Key / Passphrase (PSK) field is cleared and the maximum length of Key / Passphrase (PSK) field is also set to the length for Key Length and Key Format combination. <p>[64 to 128/64/bit]</p>
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(6)	Key Format
	<ol style="list-style-type: none"> 1. When machine becomes disconnected from connected, this item is disabled. 2. When Key Format is changed, the data in WEP Key / Passphrase (PSK) field is cleared and the maximum length of Key / Passphrase (PSK) field is also set to the length for Key Length and Key Format combination. <p>[ASCII, Hexadecimal/ ASCII /-]</p>

(7)	WEP Key / Passphrase (PSK)
	<ol style="list-style-type: none"> 1. Key setting for WEP, WPA or WPA2 encryption. 2. It is necessary to input data when Security Method is not set to "Open System - None". 3. The Key length must follow the length defined in Range column for each Format. 4. When Key Format is set to "Hexadecimal", "0x" is not necessary to be inputted. Utility will add it automatically. 5. When machine becomes disconnected from connected, this item is disabled. 6. When Security Method is not set to "Open System - None", the key is not entered and "OK" button is clicked, the error message is displayed.  <p>m1461004.png</p> <ol style="list-style-type: none"> 7. When Security Method is set to "WPA - PSK - AES" or "WPA2 - PSK - AES", Key Format is set to "ASCII" and the length of "WEP Key / Passphrase (PSK)" is less than Min. Length when the "OK" button is clicked, the error message is displayed.  <p>m1461005.png</p>

1. Click "OK" button in the error message makes it go back to Wi-Fi tab and no data will be saved.

Security Method Setting:

Open System - WEP (64 / 128bit) or Shared Key - WEP (64 / 128bit)

Key Length Setting: 64 bit

Key Format Setting: ASCII

=> Length: 5 digits

(It must be 5 digits)

=> Range: ASCII (0x20-0x7E)

Security Method Setting:

Open System - WEP (64 / 128bit) or Shared Key - WEP (64 / 128bit)

Key Length Setting: 64 bit

Key Format Setting: Hexadecimal

=> Length: 10 digits

(It must be 10 digits)

=> Range: 0-9, A-F and a-f.

	<p>Security Method Setting: Open System - WEP (64 / 128bit) or Shared Key - WEP (64 / 128bit)</p> <p>Key Length Setting: 128 bit</p> <p>Key Format Setting: ASCII</p> <p>=> Length: 13 digits (It must be 13 digits)</p> <p>=> Range: ASCII (0x20-0x7E)</p> <p>Security Method Setting: Open System - WEP (64 / 128bit) or Shared Key - WEP (64 / 128bit)</p> <p>Key Length Setting: 128 bit</p> <p>Key Format Setting: Hexadecimal</p> <p>=> Length: 26 digits (It must be 26 digits)</p> <p>=> Range: 0-9, A-F and a-f.</p> <p>Security Method Setting: WPA - PSK - AES WPA2 - PSK - AES</p> <p>Key Format Setting: ASCII</p> <p>=> Min. Length: 8 digits => Max. Length: 63 digits => Range: ASCII (0x20-0x7E)</p>
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(8)	Wireless LAN Status Report
	<p>1. When machine becomes disconnected from connected, this item is disabled. [Off or On/On/-]</p>
(9)	IPv4 Configuration
	<p>1. Open the IPv4 Configuration dialog when this button is clicked.</p> <p>2. Please refer to section 4.3.1.6.1. IPv4 Configuration for more details.</p> <p>3. When machine becomes disconnected from connected, this item is disabled.</p>

Smart Organizing Monitor Service Mode

What Is Service Mode?

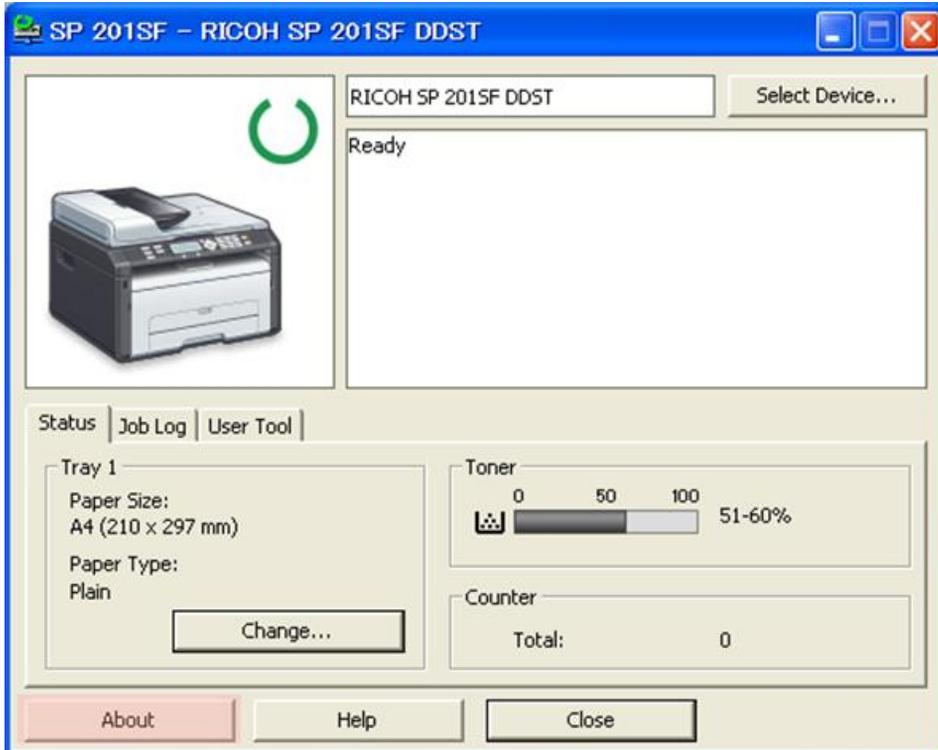
The Service Mode is opened from inside the Smart Organizing Monitor. Smart Organizing Monitor is the utility that allows the operator to view and change the machine settings. It is installed from the CD ROM with the Smart Organizing Monitor selection.

Service Mode Screen

The Service Mode is opened from inside the Smart Organizing Monitor that was installed from the CD ROM at installation.

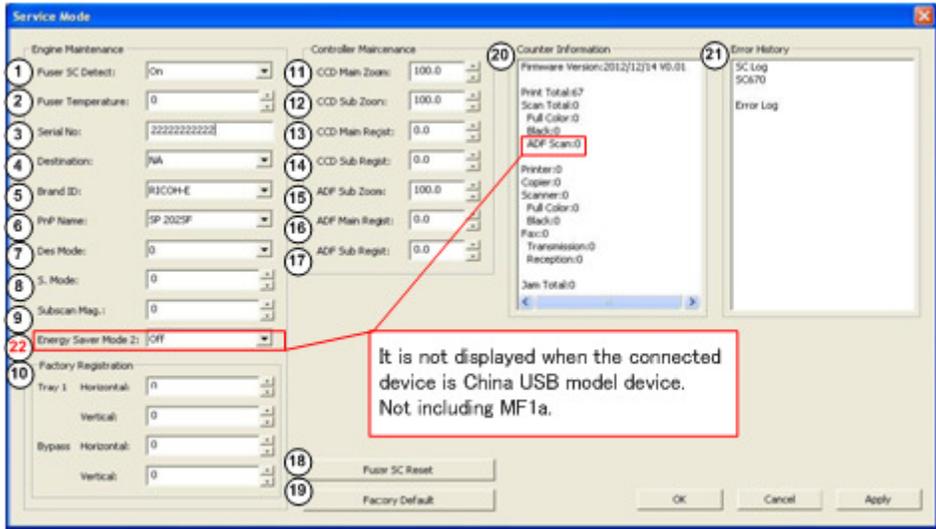
1. Click the Smart Organizing Monitor icon.

5



m1333030.png

2. Enter the service mode to display the Service Mode screen.



m1461006.png

5

(1)	Fuser SC Detect
	<p>When ON detects a third successive paper jam in the fusing unit and shuts down the machine. The machine cannot be operated until the service technician resets the machine with the "Fuser SC Reset" button below. This minimizes the dangers of a fire hazard.</p> <p>[On to Off/On]</p> <p>Note: This feature should always be set to "On" to ensure safe operation of the machine.</p> <p>Here is a list of SC errors that are considered fatal errors. Once three of any of following errors occurs, the machine will shut down and cannot be operated until the service technician has executed a reset (see next feature):</p> <ul style="list-style-type: none"> • SC541 Fusing Unit Thermistor Error • SC542 Fusing Reload Temperature Error • SC543 High Temperature Error (Soft) • SC544 High Temperature Error (Hard) • SC545 Fusing Lamp Remains ON Error • SC551 Edge Thermistor Error • SC556 Temperature deviation Error • SC559 Fusing Unit Third Jam Error
(2)	Fuser Temperature
	<p>Raises the target fusing temperature in 1 degree increments to improve fusing. [0 to 40/0/1 1°C steps]</p>

(3)	Serial No.
	Displays the serial number of the machine and allows editing of the current number. Name length: 11 alphanumeric characters.
(4)	Destination
	<p>This setting should be done for the area where the machine is sold and used. JPN, NA, EU, ASIA, China, Taiwan, ROK, Other. This is an important selection because it affects the following options, depending on which destination is selected:</p> <ul style="list-style-type: none"> • Default paper size. LT in NA and A4 for all other areas. • Units of measure. Inches in NA millimeters in all other areas. • Fixed steps for reduction/enlargement (see Specifications).
(5)	Brand ID
	<p>This setting should be done for the appropriate brand.</p> <p>Settings: Only Ricoh can be set.</p>
(6)	PnP Name
	<p>This is the "Plug and Play" name. This facilitates the discovery the machine the system, without the need for physical device configuration, or user intervention in resolving resource conflicts.</p> <p>Settings: SP 200, SP 200N, SP 201N, SP 200S, SP 203S, SP 201S, SP 202SN, SP 204SN, SP 201SF, SP 200SF, SP 202SF, SP 203SF, SP 204SF, SP 203SFN, SP 204SFN, SP200Nw, SP201Nw, SP202S, SP203SFNw, SP204SFNw</p>
(7)	Des(Destination) Mode
	<p>Supply control routine for developed countries is different from developing ones. So it needs a switch setting.</p> <p>0: For emerging countries.</p> <p>1: For developed countries.</p>
(8)	S Mode
	<p>Application settings for unexpected problems.</p> <p>Important: Ignore this setting and do not change it. This is for future use.</p> <p>[0 to 255/0/1 step]</p>

(9)	Subscan Magnification	
	Specify the sub scan magnification [-8 to 8/0/1 (0.1%) step]	
(10)	Factory Registration	
	These are the image registration settings entered at the factory before the machine is shipped.	
	Horizontal	[-40 to 40/0/1 mm steps]
	Vertical	[-40 to 40/0/1 mm steps]
(11)	CCD Main Zoom	M135, M141, M143, M167, M149, M168, M150, M134, M165, M147, M142, M166, M148, M151, M169, M191
	Adjusts magnification in the horizontal direction, vertical relative to the direction of paper feed (main scan direction) [98 to 102/0.4% steps]	
(12)	CCD Sub Zoom	M135, M141, M143, M167, M149, M168, M150, M134, M165, M147, M142, M166, M148, M151, M169, M191
	Adjusts magnification in the vertical direction, horizontal relative to the direction of paper feed (sub scan direction). [98 to 102/0.4% steps]	
(13)	CCD Main Regist	M135, M141, M143, M167, M149, M168, M150, M134, M165, M147, M142, M166, M148, M151, M169, M191
	Adjusts the scan start position in the vertical direction. [-5 to 5/0.5 mm steps]	

(14)	CCD Sub Regist	M135, M141, M143, M167, M149, M168, M150, M134, M165, M147, M142, M166, M148, M151, M169, M191
Adjusts the scan start position in the horizontal direction. [-5 to 5/0.5 mm steps]		
(15)	ADF Sub Zoom	M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191
Adjusts the magnification of the image in the sub scan direction copied from an original fed from the ADF. [98 to 102/0.4% steps]		
(16)	ADF Main Regist	M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191
Adjusts the magnification of the image in the main scan direction copied from an original fed from the ADF. [-5 to 5/0.5 mm steps]		
(17)	ADF Sub Regist	M135, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191
Adjusts the magnification of the image in the main scan direction copied from an original fed from the ADF. [-5 to 5/0.5 mm steps]		
(18)	Fuser SC Reset	
Resets the machine after a third successive jam in the fusing unit has shut down the machine. The machine must be re-set after a third paper jam in the fusing unit in order to service the machine.		
(19)	Factory Default	

	<p>The function clears all logs and returns all settings to their default settings. The settings that are returned to their factory defaults include:</p> <ul style="list-style-type: none"> • Counters • Error Log (SC codes) • Print Log • Fax TX/RX Log • Image Data for Faxes (TX/RX) • Report Images • Fax Speed Dial List • User Tool Settings • Service Mode settings • Fax Maintenance (fax-related service mode settings).
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(20)	Counter Information			
	Counts are totaled for these items. Note that there are some differences, depending on the machine.			
	Item	M133 M162 M144 M163 M145 M146 M164	M134 M165 M147 M142 M166 M148	M135 M141 M143 M167 M149 M168 M150 M151 M169 M191
	Print Total	Yes	Yes	Yes
	Scan Total	No	Yes	Yes
	Full Color	No	Yes	Yes
	Black	No	Yes	Yes
	ADF Scan	No	No	Yes

	Printer	Yes	Yes	Yes
	Copier	No	Yes	Yes
	Scanner	No	Yes	Yes
	Full Color	No	Yes	Yes
	Black	No	Yes	Yes
	Fax	No	No	Yes
	Transmission	No	No	Yes
	Reception	No	No	Yes
	Jam Total	Yes	Yes	Yes

5

Note

- **Print Total.** : Count-up is done at the time of image writing. So in this machine, count-up is done even when jam detection occurs after writing. This process differs from existing machines, where count-up is done after printed-paper ejection.
- **Scan Total.** : The scan counter increments every time an original is scanned on the exposure glass or by ADF original feed. An original is not counted if it jams in the ADF.
- **Fax TX.**: The Fax TX counter increments at completion of each transmission.
- **Fax RX.**: The Fax RX counter increments when a Fax prints and when a report prints. The counter increments for these reports: 1) TX Standby File List, 2) Fax Journal, 3) TX Status Report and 4) Power Failure

(21)	Error History	
	There are two classes of errors: The "SC Log" and the "Error Log".	
	<ul style="list-style-type: none"> • The "SC Log" displays the numbers of the latest 8 errors. The errors are listed by their "SC" (Service Code) number. (See page 227 "SC Tables"). • The "Error Log" lists the 8 most recent error results cleared by cycling the machine off/on. (See list below.) 	
	Engine Error	Display
	Printer Jam/Paper Out	Error Code 3
	ADF Jam	Error Code 3
	Size Error	Error Code 3

	Cover Open	Error Code 3
	Not Set Print Cartridge	Error Code 3
	Out of Toner	Error Code 5
	Toner Almost Empty	Error Code 6

(22)	Energy Saver Mode 2
	<ol style="list-style-type: none"> 1. For China USB Version Utility, there is no this item. 2. For CNW and Wi-Fi Version Utility: <ul style="list-style-type: none"> • When the connected device is China USB model device (Not including MF1 a), this item is not displayed. • When the connected device is not China USB model device, this item is displayed and can be set. 1. Set the main control of energy saver mode 2. This setting does not affect the energy saver mode 2 setting in System tab. 2. When machine becomes disconnected from connected, this setting will disable. 3. This setting is not interacted with the setting of Energy Save Mode 2 in System tab. 4. Please refer to 2.1. System Setting in COPA User Tool Specification for the condition that device will enter energy saver mode 2. <p>[On or Off/Based on the device setting/-]</p>

M166, M148, M141, M167, M149, M135, M168, M143, M151, M169, M191 User Tool Specification

The operator can manage the User Tools settings. For more details about how to configure the User Tools settings, please refer to the Operating Instructions. The list below is provided for quick reference for the Service Technician. Here are some important points to keep in mind about User Tools

- Users Tools is a menu driven system. You can open the menus on the M135, M141, M143, M167, M149, M168, M150, M166 and M148 by pressing the [User Tools] button on the machine operation panel.

★ Important

- M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, and M191 have a [User Tools] button. With the M133, M162, M144, M163, M145, M134, M165, M147, M142, M146, and M164, you have to use the Service Mode of the Smart Organizing Monitor for engine maintenance and other settings.

- The User Tools settings are saved after the machine is powered off.
- The User Tools default settings are determined by which language is selected.
- The table below is a map of the User Tools menu on the M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, and M191. For more details, please refer to the Operating Instructions.

System Settings

Menu Item		Settings
Tray 1 Paper Settings	Paper Size	<p>Specifies the paper size.</p> <p>A4, B5 JIS, A5, B6 JIS, A6, LG (8¹/₂" x 14"), LT (8¹/₂" x 11"), HLT (5¹/₂" x 8¹/₂"), EXE (7¹/₄" x 10¹/₂"), 16K (197 x 273 mm), 16K (195 x 270 mm), 16K (184 x 260 mm), and Custom</p> <ul style="list-style-type: none"> • Default (mainly Europe and Asia): [A4] • Default (mainly North America): [LT (8¹/₂" x 11")]
	Paper Type	<p>Specifies the paper type.</p> <ul style="list-style-type: none"> • Plain Paper, Recycled Paper, Thick Paper, Thin Paper <p>Default: [Plain Paper]</p>
Adjust Sound Volume (M141, M167, M149, M135, M168, M150, M143, M151, M169, M191)	Panel Key Sound	<p>For the key buzzer.</p> <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] <p>Default: [Middle]</p>
	Alarm Volume	<p>For the error buzzer.</p> <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] <p>Default: [Middle]</p>
	On Hook Mode	<p>Adjust the volume of the sound from the speaker during on hook mode.</p> <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] <p>Default: [Middle]</p>

Menu Item		Settings
	Copy Job End Tone	For copy job end sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Off]
	Copy Job Error Tone	For copy job error sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Middle]
	Print Job End Tone	For print job end sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Off]
	Print Job Error Tone	For print job error sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Middle]
	Scan Job End Tone	For scan job end sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Off]
	Scan Job Error Tone	For scan job error sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Middle]
	Fax TX End Tone	For fax transmission end sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Middle]
	Fax TX Error Tone	For fax transmission error sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Middle]
	Fax RX End Tone	For fax reception job end sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Middle]

Menu Item		Settings
	Fax RX Error Tone	For fax reception job error sound alert. <ul style="list-style-type: none"> • [Off], [Low], [Middle], or [High] Default: [Middle]
Set Date/Time (M141, M167, M149, M135, M168, M150, M143, M151, M169, M191)	Set Date	Sets the date of the machine's internal clock. <ul style="list-style-type: none"> • Year : 2000 to 2099 • Month: 1 to 12 • Day: 1 to 31 • Date format: YYYY/ MM/DD, MM/DD/YYYY, or DD/MM/YYYY
	Set Time	Sets the date of the machine's internal clock. <ul style="list-style-type: none"> • Time format : 12-hour format, 24-hour format • AM/PM stamp : AM, PM (for 12-hour format) • Hour : 0 to 23 (for 24-hour format), or 1 to 12 (for 12-hour format) • Minute : 0 to 59
Program Fax Info. (M141, M167, M149, M135, M168, M150, M143, M151, M169)	Own Fax Number	User fax no.: 20 numeric digits (including 0 to 9, spaces, and "+")
	Own Name	User name: 20 alphanumeric 1-byte characters, or 10 2-byte characters.
Function Priority	Copier Facsimile Scanner	Specifies the mode that is activated when the power is turned on. <ul style="list-style-type: none"> • Default (M134, M165, M147, M142, M166, M148, M167, M149, M168, M150, M191): [Copier] • Default (M135, M141, M143, M151, M169): [Facsimile]

Menu Item		Settings
Energy Save Mode	Energy Save Mode 1	<p>Enters energy saver mode if the machine remains idle for 30 sec.</p> <ul style="list-style-type: none"> • ON/OFF <p>Default: [Off]</p>
	Energy Save Mode 2 (Europe, Asia, Oceania, part of South America, 220V-240V/50, 60Hz)	<p>Enters the energy saver mode after the length of time for the machine to remain idle has expired.</p> <p>Default: 1 minute (The setting can be adjusted in the range 1 to 30 min.)</p>
	Energy Save Mode 2 (North America, Canada, Part of South America, 120V/60Hz), and China)	<p>Enters the energy saver mode after the length of time for the machine to remain idle has expired.</p> <ul style="list-style-type: none"> • OFF • ON <p>Default: 1 minute [ON] (The setting can be adjusted in the range 1 to 240 min.)</p>
Language		<p>Specifies the language used on the screen and in reports.</p> <ul style="list-style-type: none"> • M166, M148, M167, M149, M168, and M150, M151, M169: English, German, French, Italian, Spanish, Dutch, Swedish, Norwegian, Danish, Finnish, Portuguese, Czech, Hungarian, Polish, Russian, Portuguese (BR) and Turkish <p>Default: [English]</p> <ul style="list-style-type: none"> • M141, M135, and M143, M191: Simplified Chinese and English <p>Default: [Simplified Chinese]</p>
Country Code (M167, M149, M168, M150)		<p>Specified the country in which the machine is used.</p> <p>Default: [USA]</p>

Menu Item		Settings
Fixed USB Port		<p>The PC will not recognize another machine of the same model as a new device. This prevents the PC's Plug-and-Play function from starting up, and allows the current printer driver to be used without reinstallation.</p> <ul style="list-style-type: none"> • Off: Fixed USB Port • On: Not Fixed USB Port <p>Default: [Not Fixed USB Port]</p>
Print Cartridge		<p>This is the progress bar for toner remaining in the AIO.</p> <ul style="list-style-type: none"> • If Toner End Option (see below) is on ("Stop Printing") this progress bar is also displayed on the initial screen of the SOM. • If Toner End Option is off ("Continue Printing") the progress bar is blank with two asterisks to the right here (and on the initial screen of the SOM).
Low Humidity Mode		<p>Black lines a few millimeters thick may appear in prints when the machine operates in a low humidity environment. Switching this feature on may eliminate these lines.</p> <ul style="list-style-type: none"> • Off /On <p>Default: [Off]</p>
Registration	Tray 1	<p>This is image registration. It determines how the image is projected onto the drum and then onto the paper.</p> <ul style="list-style-type: none"> • Horizontal: [-6 to +6 mm, in 1 mm steps] • Vertical: [-6 to +6 mm, in 1 mm steps] <p>Default: [0]</p>
	Bypass Tray	<p>Adjusts the position of the image when the bypass tray is used.</p> <ul style="list-style-type: none"> • Horizontal: [-6 to +6 mm, in 1 mm steps] • Vertical: [-6 to +6 mm, in 1 mm steps] <p>Default: [0]</p>
Adjust Image Density		<p>Adjusts the overall image density. Seven steps of setup (reflected in the progress bar) are available.</p> <p>Default: [Middle]</p>

Menu Item		Settings
Toner End Option (M141, M167, M149, M135, M168, M150, M151)		<p>This setting is used to monitor the toner level.</p> <ul style="list-style-type: none"> • Stop Printing: Monitoring the toner level is enabled. The remaining toner level can be checked in the control panel and on the Smart Organizing Monitor. • Continue Printing: The machine no longer monitors the toner level. Even when the toner runs out, printing will continue and no messages will be displayed. <p>Default: [Stop printing]</p> <p>Note:</p> <ul style="list-style-type: none"> • When "Stop Printing" is selected the machine monitors the toner level in the AIO, and you will see the toner end progress bar on the first screen of the SOM. • When "Continue Printing" is selected, the machine does not monitor the toner level, you will see a blank progress bar and two asterisks displayed at the right side.
Reset Settings	Reset All Settings	<ul style="list-style-type: none"> • [Execute]: Touching [Execute] restores all User Tool settings to their factory defaults except: <ul style="list-style-type: none"> • Language • Date/Time (M141, M167, M149, M135, M168, M150, M143) • Fax Speed Dial numbers registered (M141, M167, M149, M135, M168, M150, M143) • [Cancel]: Touching [Cancel] rotates the menu to the previous level without changing any settings.
	Clear Address Book (M141, M167, M149, M135, M168, M150, M143, M151, M169)	<ul style="list-style-type: none"> • [Execute]: Touching execute erases all destination numbers registered for Fax Speed Dial. • [Cancel]: Touching [Cancel] rotates the menu to the previous level without deleting anything.

Printer Features Settings

Menu Item	Settings
I/O Timeout	<p>Sets the length of time for the machine to wait for data from the USB port before it issues an error.</p> <ul style="list-style-type: none"> Off, 15 sec., 60 sec., 300 sec. <p>Default: [60 sec.]</p>
Auto Continue	<p>Sets the machine to pause temporarily and then ignore paper size or paper type mismatches and continue printing.</p> <ul style="list-style-type: none"> Off: Mismatch error displays, but the machine pauses for 10 sec., and then continues to print. 0 sec.: No Error displayed and continues printing. 10 sec.: Error displayed and restarts printing automatically after 10 seconds. 30 sec.: Error displayed and restarts printing automatically after 30 seconds. <p>Default: [0 sec.]</p>
Sub Paper Size	<p>Allows substitution of A4 for LT, or LT for A4.</p> <ul style="list-style-type: none"> Off: The machine stops when a paper mismatch error occurs between A4/LT. On: The machine automatically allows A4 to be substituted for LT (or LT for A4) without interrupting printing. <p>Default: [Off]</p>

Copier Features Settings

Menu Item	Settings
Sort	<p>Sets the sort mode.</p> <ul style="list-style-type: none"> Off: Non-sort mode. On: Sort mode. <p>Default: [Off]</p>

Menu Item		Settings
Original Type		<p>Selects the copy function for the type of original for optimum results.</p> <ul style="list-style-type: none"> • Text/Photo: Original contains both text and photos (or illustrations). • Text: Original contains text only. • Photo: Original contains mostly photos or illustrations. <p>Default: [Text/Photo]</p>
Density		<p>Specifies the image density for photocopying.</p> <p>Five settings are available.</p> <p>Default: [Middle]</p>
Reduce/Enlarge		<p>Sets the rate for reduction and enlargement.</p> <ul style="list-style-type: none"> • Mainly Europe and Asia: 50%, 71% A4->A5, 82% B5 JIS->A5, 93%, 100%, 122% A5->B5 JIS, 141% A5->A4, 200%, Zoom: 25-400% • Mainly North America: 50%, 65% LT->HLT, 78% LG->LT, 93%, 100%, 129% HLT->LT, 155% HLT->LG, 200%, Zoom: 25-400% <p>Default: [100]</p>
Combine	Off (Default)	1 document page prints per 1 side of a sheet of paper.
	2 on 1	<p>2 document pages print per 1 side of a sheet of paper.</p> <ul style="list-style-type: none"> • Portrait • Landscape <p>Default: [Portrait]</p>
	4 on 1	<p>4 document pages print per 1 side of a sheet of paper.</p> <ul style="list-style-type: none"> • Portrait: L to R • Portrait: T to B • Landscape: L to R • Landscape: R to L <p>Default: [Portrait: L to R]</p>

Menu Item		Settings
2 Sided Copy	Off (Default)	
	Top to Top	<p>Allows the operator to set up printing on both sides of the paper.</p> <ul style="list-style-type: none"> • Portrait • Landscape <p>Default: [Portrait]</p>
	Top to Bottom	<p>Allows the operator to set up printing on both sides of the paper.</p> <ul style="list-style-type: none"> • Portrait • Landscape <p>Default: [Portrait]</p>
Toner Saving		<p>This setting conserves toner when printing copies.</p> <ul style="list-style-type: none"> • Off • On: Printing copies consumes less toner. <p>Default: [Off]</p>
Bypass Paper Settings	Paper Size	<p>Presents a variety of standard paper sizes for selection.</p> <p>A4, B5 JIS, A5, B6 JIS, A6, LG (8 1/2" x 14"), LT (8 1/2" x 11"), HLT (5 1/2" x 8 1/2"), EXE (7 1/4" x 10 1/2"), 16K (197 x 273 mm), 16K (195 x 270 mm), 16K (184 x 260 mm), and Custom</p> <ul style="list-style-type: none"> • Default (mainly Europe and Asia): [A4] • Default (mainly North America): [LT (8 1/2" x 11")]
	Paper Type	<p>Specifies the paper type.</p> <ul style="list-style-type: none"> • Plain Paper, Recycled Paper, Thick Paper, Thin Paper <p>Default: [Plain Paper]</p>

Fax Features Settings (M141, M167, M149, M135, M168, M150, M143, M151, M169)

These features set up fax communication, sending, and receiving.

Menu Item		Settings
TX Settings	Immediate TX	<p>Determines whether the original is scanned into memory or sent directly over the line.</p> <ul style="list-style-type: none"> • Off: The original is scanned into memory and queued for sending. • On: The original is scanned and sent immediately (not scanned into memory). • New Fax Only: Sends next fax transmission by Immediate TX, and then resets automatically to "Off". <p>Default: [Off]</p>
	Resolution	<p>Sets the resolution for fax scanning.</p> <ul style="list-style-type: none"> • Standard: 8 x 3.85 dots/mm • Detail: 8x 7.7 dots/mm • Photo: 8 x 7.7 dots/mm <p>Note: The Erase Background setting (see below) is disabled when "Photo" is selected.</p> <p>Default: [Standard]</p>
	Density	<p>Specifies the image density to use for scanning originals. Six settings are available.</p> <p>[Erase Background] is not available when [Resolution] is set to [Photo].</p> <p>Default: [Erase Background]</p>
	Pause Time	<p>Specifies the length of time to pause between digits of a fax number when dialing.</p> <ul style="list-style-type: none"> • Time (1-15 sec.) <p>Default: [3 Sec.]</p>

Menu Item		Settings
	Auto Redial	<p>Determines whether the machine automatically redials after transmission failed because the remote fax was busy.</p> <ul style="list-style-type: none"> • Off/On <p>Default: [On]</p> <p>Note: The number of redial attempts and time interval between attempts to redial are determined by the Service Mode setting. (Default: 5 min./3 times)</p>
	Print Fax Header	<p>Determines whether a header appears in faxes sent by the machine.</p> <ul style="list-style-type: none"> • On: Faxes sent from the machine have a header that includes: date, time, transmitter's name, transmitter's fax number, session number, page number, and page total. • Off: No header included. <p>Default: [On]</p>
RX Settings	Switch RX Mode	<p>Determines how the machine handles incoming calls.</p> <ul style="list-style-type: none"> • Auto: Automatically receives all incoming call in Fax RX mode. • Manual: Machine rings for all incoming calls and the operator must manually switch to RX mode. <p>Default: [Auto]</p>
	Auto Reduction	<p>Determines how the machine handles large images sent by fax.</p> <ul style="list-style-type: none"> • On: Reduction Print Mode. Automatically reduces the image to fit the paper. • Off: Cut Mode. Data larger than one page is cut and not reduced. <p>Default: [On]</p>
	Number of Rings	<p>Specifies the number of rings before the machine starts to receive an incoming fax.</p> <ul style="list-style-type: none"> • 3 to 5 times <p>Default: [3]</p>

Menu Item		Settings
	Add Footer	<p>Determines whether a footer is printed 4 mm from the bottom of the print area of a fax.</p> <ul style="list-style-type: none"> • On/Off <p>Default: [On]</p>
Del. TX Standby File	Delete File	<p>Allows the operator to delete an unsent fax stored in memory.</p> <ul style="list-style-type: none"> • Delete: Deletes the specified job. • Cancel Deleting: Returns to the previous menu level without deleting.
	Delete All Files	<p>Allows the operator to delete all unsent faxes stored in memory.</p> <ul style="list-style-type: none"> • Delete: Deletes all unsent faxes. • Cancel Deleting: Returns to the previous menu level without deleting.
Comm. Settings	ECM Transmission	<p>Sets the machine to automatically re-send parts of data that may have been lost in transmission.</p> <ul style="list-style-type: none"> • On: Enable • Off: Disable <p>Default: [On]</p>
	ECM Reception	<p>Sets the machine to automatically receive parts of data that may have been lost in transmission.</p> <ul style="list-style-type: none"> • On: Enable • Off: Disable <p>Default: [On]</p>
	Dial Tone Detect	<p>Sets the machine to detect a dial tone before dialing the destination fax number.</p> <ul style="list-style-type: none"> • Detect: Detects dial tone before dialing remote fax number. • Do Not Detect: Does not wait for dial tone before dialing remote fax number. <p>Default: [Detect]</p>

Menu Item		Settings
	Transmission Speed	<p>Sets the transmission speed for the fax modem.</p> <ul style="list-style-type: none"> • 2.4 to 33.6 Kbps <p>Default: [33.6 Kbps]</p> <p>Note: A slower speed may be required in areas where the telephone lines are in poor condition.</p>
	Reception Speed	<p>Sets the reception speed for the fax modem.</p> <ul style="list-style-type: none"> • 2.4 to 33.6 Kbps <p>Default: [33.6 Kbps]</p> <p>Note: A slower speed may be required in areas where the telephone lines are in poor condition.</p>
	Dial/Push Phone (M135, M141, M143)	<p>Specifies the type of line connected to the machine's fax modem.</p> <ul style="list-style-type: none"> • Push Phone: Tone dial. • Dial Phone (10 PPS): Rotary dial. <p>Default: [Push Phone]</p>
	Dial/Push Phone (M167, M149, M168, M150, M151, M169)	<p>Specifies the type of line connected to the machine's fax modem.</p> <ul style="list-style-type: none"> • Push Phone: Tone dial. • Dial Phone (10 PPS): Pulse line of 10 PPS. • Dial Phone (20 PPS): Pulse line of 20 PPS. <p>Default: [Push Phone]</p> <p>Note:</p> <ul style="list-style-type: none"> • If you have set [Country Code] to [Australia], [New Zealand] or [Singapore], [Dial/Push Phone] does not appear because the default is [Push Phone]. • [Dial Phone (20PPS)] appears only if [Country Code] is set to [Japan] or [Thailand].

Menu Item		Settings
	PSTN/PBX	<p>Specifies how the telephone line is routed.</p> <ul style="list-style-type: none"> • PSTN: Line connection through PSTN. • PBX: Line connection through PBX. The number to access and outside line must be entered for "PBX Access Number" (see below). <p>Default: [PSTN]</p>
	PBX Access Number	<p>The operator enters the number to access and outside line if the machine is connected via PBX. "PBX" must be selected for "PSTN/PBX" above.</p> <ul style="list-style-type: none"> • Range: 0-999 <p>Default: [9]</p>
	Fax No. Confirmation	<p>Switches fax number confirmation for direct sending on and off.</p> <ul style="list-style-type: none"> • Off: No confirmation required. • On: When operator sends a fax using direct sending, a message prompts them to enter the number again to confirm the first number entered. <p>Default: [Off]</p> <p>Note: This feature does not operate for direct or memory sending using registered speed dial fax numbers, or manual re-dialing.</p>
Report Print Set	TX Status Report	<p>Determines how status reports print for fax transmissions.</p> <ul style="list-style-type: none"> • Every TX with Image: A report prints after every transmission with an image of the sent document. • Error Only: A report print only after an error occurs during transmission. • Error: With Image: A report prints with an image of the document only after an error occurs during transmission. • Every TX: A report prints for every transmission. • Every TX: With Image: A report prints with an image of the document after every transmission. • Do Not Print: A report never prints. <p>Default: [Error: With Image]</p>

Menu Item		Settings
	Fax Journal	<p>Determines whether the fax journal prints automatically.</p> <ul style="list-style-type: none"> • Auto Print: A fax journal prints automatically after every 100 fax jobs (sending and receiving). • Do not Auto Print: Fax journal never prints automatically. <p>Default: [Auto Print]</p>
	PC FAX Error Report	<p>Sets the machine to print PC FAX error reports automatically.</p> <ul style="list-style-type: none"> • Auto Print • Do not Auto Print <p>Default: [Auto Print]</p>

Scanner Features Settings

Menu Item		Settings
	Scanning Mode (M168, M150, M148, M151, M166, M169)	<p>Select a scan type for the original. This setting is only applied to Scan to USB.</p> <ul style="list-style-type: none"> • B&W : Text • B&W : Text/Photo • B&W : Photo • Gray Scale • Color : Text/Photo <p>Default: [Color : Text/Photo]</p>
	Resolution (M168, M150, M148, M151, M166, M169)	<p>Specifies the resolution for scanning the original. This setting is only applied to Scan to USB.</p> <ul style="list-style-type: none"> • 150 × 150 dpi • 300 × 300 dpi • 600 × 600 dpi <p>Default: [300 × 300 dpi]</p>

Menu Item	Settings
Original Size (M168, M150, M148, M151, M166, M169)	<p>Specifies the scanning size according to the size of the original. This setting is only applied to Scan to USB.</p> <ul style="list-style-type: none"> A4, B5 JIS, A5, A6, LG (8¹/₂" x 14"), LT (8¹/₂" x 11"), HLT (5¹/₂" x 8¹/₂"), EXE (7¹/₄" x 10¹/₂"), Custom <p>Default (Europe and Asia): [A4] Default (mainly North America): [LT (8¹/₂ × 11)]</p>
Density (M168, M150, M148, M151, M166, M169)	<p>Specifies the image density for scanning originals. This setting is only applied to Scan to USB.</p> <p>Default: [Middle]</p>
File Format (M168, M150, M148, M151, M166, M169)	<p>B&W</p> <p>Setting File format for B&W. This setting is only applied to Scan to USB.</p> <ul style="list-style-type: none"> Single Page: TIFF Single Page: PDF Multi-page: TIFF Multi-page: PDF <p>Default: [Multi-page: TIFF]</p> <p>Note: If [File Format] is set to [Multi-page: TIFF] or [Multi-page: PDF], [Divide & Send Email] will remain [Off] even if you set it to [On (per page)].</p>
	<p>Gray Scale/ Color</p> <p>Setting File format for Grayscale/ Color. This setting is only applied to Scan to USB.</p> <ul style="list-style-type: none"> Single Page: TIFF Single Page: JPEG Multi-page: PDF <p>Default: [Multi-page: PDF]</p>
Compression	<p>You can select the data compression method.</p> <ul style="list-style-type: none"> MH/MR/MMR <p>Default: [MH]</p>

Menu Item		Settings
Maximum Email Size		<p>Specifies the maximum size of a file that can be sent by e-mail.</p> <ul style="list-style-type: none"> • 1 MB/2 MB/3 MB/4 MB/5 MB/No Limit <p>Default: [No Limit]</p>
Divide & Send Email		<p>Select whether or not an image exceeding the size specified in [Maximum Email Size] should be divided and sent using more than one e-mail.</p> <ul style="list-style-type: none"> • On (per size) • On (per page) • Off <p>Default: [Off]</p>
Delete Scanner File	Delete File	<p>Allows the operator to delete an unsent scanner jobs remaining in the machine's memory.</p> <ul style="list-style-type: none"> • Delete: Deletes the specified job. • Cancel Deleting: Returns to the previous menu level without deleting.
	Delete All Files	<p>Allows the operator to delete all unsent scanner jobs remaining in the machine's memory.</p> <ul style="list-style-type: none"> • Delete: Deletes the specified job. • Cancel Deleting: Returns to the previous menu level without deleting.

Network Settings (M168, M150, M143, M151, M164)

Menu Item		Settings
Machine IPv4 Address	DHCP Activated	Sets the machine to receive its IPv4 address, subnet mask, and default gateway address automatically from a DHCP server. <ul style="list-style-type: none"> • On/Off Default: [On]
	IP Address	Specifies the machine's IPv4 address when DHCP is not used. Default: 192.0.0.192
	Subnet Mask	Specifies the machine's subnet mask when DHCP is not used. Default: 255.255.255.0
	Gateway Address	Specifies the machine's default gateway address when DHCP is not used. Default: 192.0.0.192
Machine IPv6 Address	Use IPv6	Select whether to enable or disable IPv6. <ul style="list-style-type: none"> • On/Off Default: [Off]
	Link-local Address	Displays the IPv6 link local address.
	Stateless Address 0-4	Displays the IPv6 stateless addresses obtained from a Router Advertisement.
	Stateful Address	Displays the IPv6 stateful address.
	Manual Config. Add.	Specifies the machine's IPv6 address when DHCP is not used.
	IPv6 Gateway Address	Specifies the IPv6 address of the default gateway.
MAC Address		Displays the MAC address.

Menu Item		Settings
Wi-Fi Settings*	Wi-Fi Connection	Search SSID Searches SSID of Access Point.
		WPS (PBC) Push access point button and configure Wi-Fi Protected Setup.
		WPS (PIN) Enter PIN to configure Wi-Fi Protected Setup.

* This setting is not available if LAN Type is setting "Ethernet", and Communication Mode is setting "Off" or "802.11 Ad-Hoc Mode".

5

Address Book Settings (M135, M141, M143, M167, M149, M168, M150, M151, M169)

This is the feature the operator uses to register fax numbers for speed dialing.

Menu Item	Settings
Fax Speed Dial Dest.	These entries are allowed: <ul style="list-style-type: none"> • Fax number. 40 digits (0-9), space, *, #, Pause • Name. 20 alphanumeric characters

Printing Lists/Reports (M166, M148, M141, M167, M149, M135, M168, M150, M143, M151, M169)

This is the feature the operator uses to register fax numbers for speed dialing.

Menu Item	Settings
Configuration Page	Prints a list of the current machine settings.
Test Page	Prints the Test Page pattern which illustrates the quality of printing (lines, coverage) and the borders of the print area (image registration) on the page.
Fax Journal (M141, M167, M149, M135, M168, M150, M143, M151, M169)	Prints a record of the last 100 fax transactions (RX/TX).

Menu Item	Settings
TX Status Report (M141, M167, M149, M135, M168, M150, M143, M151, M169)	Prints a record of the most recent fax transmission.
TX Standby File List (M141, M167, M149, M135, M168, M150, M143, M151, M169)	Prints a list of unsent documents queued in memory for sending.
Fax Speed Dial List (M141, M167, M149, M135, M168, M150, M143, M151, M169)	Prints a list of the fax numbers registered for speed dialing.
Scanner Dest. List (M168, M150, M143, M151, M169)	Prints all registered Network Scanner Destination address.
Scanner Journal (M168, M150, M143, M151, M169)	Prints the recording of data depend on Network scan job result log.
Network Setting List (M168, M150, M143, M151, M169)	Prints a list of the current machine network settings.

Fax Maintenance (M135, M141, M143, M167, M149, M168, M150, M151, M169)

To start Fax Maintenance

Enter the service mode.

Modem Settings	
RX Level	Adjusts reception level. Default: -43dBm
TX Level	Adjusts transmission level. <ul style="list-style-type: none"> -10 dBm (Default) -2 dBm to -17 dBm

Modem Settings	
Cable Equalizer	<p>Improves the pass-band characteristics of analog signals on a telephone line.</p> <ul style="list-style-type: none"> • General Value (Default) • 0 Km • 1.8 Km • 3.6 Km • 7.2 Km
First TX Speed	<p>Sets the transmission start speed.</p> <ul style="list-style-type: none"> • V.34 First TX Speed (Default: 33600 bps) • V.17 First TX Speed (Default: 14400 bps) • V.29 First TX Speed (Default: 9600 bps) • V.27 First TX Speed (Default: 4800 bps) <p>Note:</p> <ul style="list-style-type: none"> • If 33.6 is selected for TX Speed setting in User Tool, the V.34 First TX Speed setting in Service Mode is enabled. • In this case, the Service Mode setting is given priority over the 33.6 setting in User Tool, so the actual First TX Speed is not always 33.6.
First RX Speed	<p>Sets the reception start speed.</p> <ul style="list-style-type: none"> • V.34 First RX Speed (Default: 33600 bps) • V.17 First RX Speed (Default: 14400 bps) • V.29 First RX Speed (Default: 9600 bps) • V.27 First RX Speed (Default: 4800 bps) <p>Note:</p> <ul style="list-style-type: none"> • If 33.6 is selected for RX Speed setting in User Tool, the V.34 First RX Speed setting in Service Mode is enabled. • In this case, the Service Mode setting is given priority over the 33.6 setting in User Tool, so the actual First RX Speed is not always 33.6.

Protocol Definition	
Training Retries	<p>Sets the number of training retries to be repeated before automatic fallback takes effect.</p> <ul style="list-style-type: none"> • 1 Time: Reduce speed to next level after 2 PPR commands. • 2 Times: (Default) Reduce speed to next level after 3 PPR commands. • 3 Times: Reduce speed to next level after 4 PPR commands. • 4 Times: Reduce speed to next level after 2 PPR commands.
Encoding	<p>Selects data compression mode for TX/RX. The first selection is the most complex, the third selection the least complex:</p> <ul style="list-style-type: none"> • MMR+MR+MH (Default) • MR+MH • MH

Protocol Definition Timer	
T0 Timer	<p>Timeout for the remote station to respond in automatic send mode.</p> <ul style="list-style-type: none"> • Default: 60 sec. • Range: 35, 45, 55, 60, 90, or 140 sec.
T1 Timer	<p>Sets the DIS waiting time.</p> <ul style="list-style-type: none"> • Default: 40 sec. • Range: 40 or 50 sec.
T4 Timer	<p>Sets the time interval between command signal transmissions.</p> <ul style="list-style-type: none"> • Default: 3 sec. • Range: 3 or 4.5 sec.

RX Settings	
Tone Sound Monitoring	<p>Determines when tones are monitored.</p> <ul style="list-style-type: none"> • No Monitoring • Up to Phase B • All TX Phases

RX Settings

	Stop/Clear Key	<p>Enables and disables fax RX stop by pressing [Stop/Clear].</p> <ul style="list-style-type: none"> • Not Functional: (Default) Pressing [Stop/Clear] has no effect on the fax transmission being received. • Functional: Pressing [Stop/Clear] cancels the fax transmission being received. Pressing the key after the fax has started print has no effect.
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TX Settings

	Redial Interval	<p>Sets the time interval being redialing attempts if a TX fails.</p> <ul style="list-style-type: none"> • Default: 2 min. • Range: 2 to 6 min.
	Redialings	<p>Sets the number of redial attempts if a TX fails.</p> <ul style="list-style-type: none"> • Default: 2 Times • Range: 1 to 4 Times

Overseas Comm Mode Settings

	Overseas Comm Mode	<p>Sets the machine to ignore a DIS (Digital Identification Signal) sent from a called station. This setting determines whether the machine waits the echo canceller to stop after the CED/ANSam signal is sent. To wait means to ignore the first DIS and wait until the echo canceller that responds stops and restarts.</p> <ul style="list-style-type: none"> • Off (Default) • Ignore DIS Once
	Minimum Time Length	<p>If Overseas Comm Mode is "Off" the machine detects the CNG signal as long as the line is connected. If set to "On" the machine detects the CNG signal after the line is connected.</p> <ul style="list-style-type: none"> • Default: 350 ms • Range: 100, 200, 300, 350, or 400 ms

Dial Pulse Setting

Dial Pulse Type	<p>Sets the number of pulses generated during dialing.</p> <ul style="list-style-type: none"> • N. (Default) Dialed "0" generates 10 pulses, "9" generates 9 pulses. • N+1. Dialed "0" generates 1 pulse, "9" generates 10 pulses. • 10-N. Dialed "0" generates 10 pulses, "9" generates 1 pulse.
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Tone Signal Settings

Tone Signal Transmission Time Length	<p>Sets the time length tone signal transmission. Default: 100 ms</p>
Minimum Pause in Tone Dialing	<p>Sets the minimum pause during tone dialing.</p> <ul style="list-style-type: none"> • 100 ms (Default) • Range: 100, 150, 200 ms
DTMF Level	<p>Dual tone output level High.</p> <ul style="list-style-type: none"> • -6dBm (Default) • Range: -2 to -17dBm
DTMF Delta	<p>Sets the difference in the level between high and low band frequency signals DTMF tones are sent.</p> <ul style="list-style-type: none"> • 2 dBm (Default) • 3 dBm

1 Dial Tone Detection

Wait Time	<p>The machine starts dialing after the time below has expired without detecting a dial tone after dial toner detection has been set for "No detection".</p> <ul style="list-style-type: none"> • Default: 3.5 sec. • Range: 3.5, 7.0, 10.5, or 14.0 sec.
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1 Dial Tone Detection

Timeout Length	<p>Sets the length of the time-out for the 1st dial tone connection. The machine waits the time specified below for a dial tone, and then disconnects automatically if no dial tone is detected.</p> <ul style="list-style-type: none"> • Default: 10 sec. • Range: 10, 15, 20, or 30 sec.
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BT (Busy Tone) Detecton

BT Setting	<p>Sets busy tone detection.</p> <ul style="list-style-type: none"> • On (Default) • Off
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Comm Settings

RTN Rate	<p>Sets the error ratio for error judgment on data received in non-ECM mode.</p> <ul style="list-style-type: none"> • Default: 11% • Range: 11% or 14%
V34 Modem	<p>A V34 modem cannot operate if use of a V34 modem is prohibited with the setting below. Therefore, if 33.6 is selected for the TX/RX Speed setting in the User Tool V17 must be selected.</p> <ul style="list-style-type: none"> • Permitted. (Default) Use of V34 modem is allowed. • Prohibited. Use of V34 modem not allowed.
V17 Modem	<p>A V17 modem cannot operate if use of a V17 modem is prohibited with the setting below. Therefore, if 14.4 is selected for the TX/RX Speed setting in the User Tool V29 must be selected.</p> <ul style="list-style-type: none"> • Permitted. (Default) Use of V34 modem is allowed. • Prohibited. Use of V34 modem not allowed.

V34 Settings

Equalizer	<p>Sets the equalizer training level to be applied if training fails due to poor line connection.</p> <ul style="list-style-type: none"> • Automatic. (Default) • 4 Points. • 16 Points.
Redialing	<p>Sets up resending if a communication error occurs.</p> <ul style="list-style-type: none"> • Disabled. • Not Disabled. (Default)
Symbol Rate	<p>Limits the transmission speed range in V.34 mode by masking the rates of selected symbols.</p> <ul style="list-style-type: none"> • Default: Not Used • Range: 2400, 2800, 3000, 3200, or 3429 Sym/sec.

5

Report

Service Data List	Prints the Service Data List report.
Error Log List	Prints the Error Log List report.
T.30 Protocol List	Prints the T.30 Protocol List report.

Service Data List Sample

Service Data List		2012 08/23 14:55	
Fax Maintenance Modem Settings			
RX Level	- 43 dBm	Dial Pulse Setting	
TX Level	- 10 dBm	Dial Pulse Type	N
Cable Equalizer	General Value	Tone Signal Settings	
V.34 First TX Speed	3360 Bps	Tone Sig. TX TimeLEN	100 ms
		Min. Pause In Tone Dial	100 ms
		DTMF Level	- 6 dBm
		DTMF Level Delta	2 dBm

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Error Log List (Error Log History List) Report

The error log history records the most recent 40 errors only.

ERROR LOG HISTORY LIST

Index	Error	Maker	Tele.
0001	:0070	49EE	88634733507
0002	:00A0	49EE	
0003	:0070	0000	
0004	:0070	0000	
0005	:0070	0000	

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Item	Description
Index	Index numbers: 0001 to 9999
Error	Error code number
Maker	NSF frame maker code
Tele.	Remote side or TX side telephone number for the transaction

T.30 Protocol List Report

P.001

Protocol Monitor Report

Date	Time	Destination/Sender	TX/RX	Duration	Pages	Status	File No.	Mode
07/31	08:00	12345678901234567890	RX	02' 21"	2	OK	001	ECM 33.6
		TX	RX					
		ANS	CM					
		JM	CJ					
		NSF		FF 03 20 64 00 00 00 A0 88 CB 04 00 18 20 00 00 10 01 00				
		NSF		FF 03 20 64 00 00 00 a0 88 cb 00 00 00 00 00 00 10 01 00 00 01 06				

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Item	Description
Date/Time	Transaction date and time
Destination/Sender	Destination name and telephone number
TX/RX	Transmission or receiving
Duration	Time for this transaction
Pages	Total number of pages in this transaction

Item	Description
Status	Transaction result
File No.	Job number
Mode	Communication speed and ECM mode
Ring	Recorded ring on/off time (ms). For RX function and last 16 RX recorded
TX	T.30 command sent by local fax
RX	T.30 command received from remote fax
Data	T.30 frame including address, control, data

Fax Test (M135, M141, M143, M167, M149, M168, M150, M151, M169)

To start Fax Test

Enter the fax test mode.

Off-Hook Test	On Hook	On hook test.
	Off Hook	Off hook test
CED Test	Executes the CED test.	
CNG Test	1 100 Hz	Executes the CNG test
ANSam	Executes the ANSam test.	
DTMF Test	Tone [0] to [9]	Tests DTMF tone 0 to 9.
	Tone [*]	Tests DTMF tone *.
	Tone [#]	Tests DTMF tone #.
	Tone Stop	Tests tone stop.

Modem Test	[V34] 33600 bps	Generates [V34] 33600 bps signal.
	[V34] 28800 bps	Generates [V34] 28800 bps signal.
	[V17] 14400 bps	Generates [V17] 14400 bps signal.
	[V17] 12000 bps	Generates [V17] 12000 bps signal.
	[V17] 9600 bps	Generates [V17] 9600 bps signal.
	[V17] 7200 bps	Generates [V17] 7200 bps signal.
	[V29] 9600 bps	Generates [V29] 9600 bps signal.
	[V29] 7200 bps	Generates [V29] 7200 bps signal.
	[V27] 4800 bps	Generates [V27] 4800 bps signal.
	[V27] 2400 bps	Generates [V27] 2400 bps signal.
	[V21] 300 bps	Generates [V21] 300 bps signal.
	Signal Stop	Generates Stop signal.

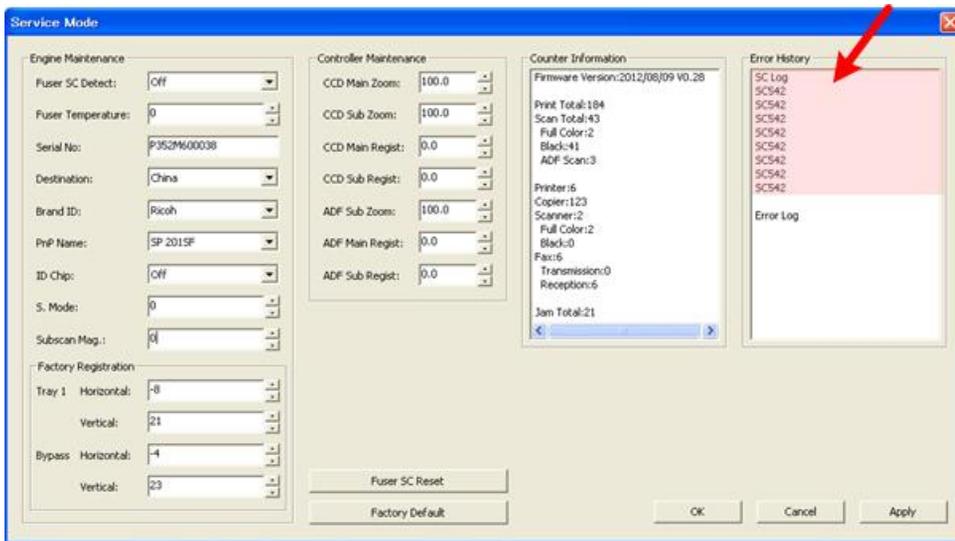
6. Troubleshooting

Service Calls

Overview

General

These machines issue an SC (Service Call) when an error occurs. Error codes can be viewed in the Error History box of the Service Mode screen in Smart Organizing Monitor.



m1333032

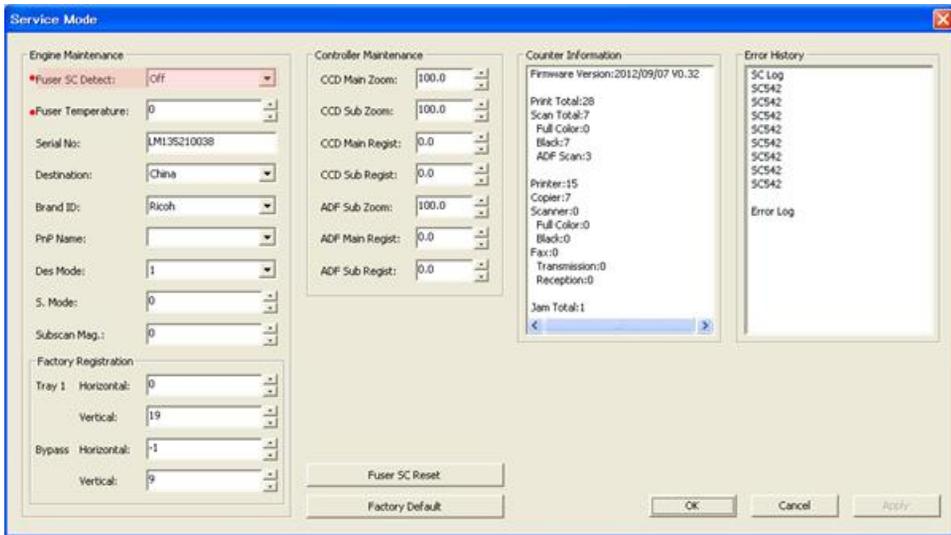
Pay attention to the following points:

- All SC codes are logged.
- After an error occurs and an SC code is issued, cycle the machine off and on. This usually corrects the problem.
- Before deciding to replace a PCB (main board, PSU, HVPS) always check the harnesses to make sure that the problem was not caused by a loose connection.
- Before deciding to replace a motor or sensor, always check around the motor or sensor feeler to make sure that there is no physical obstruction such as a scrap of paper or something that has fallen inside the machine (paper clip, pin, etc.)

Fusing Related SC Codes

A fatal error is issued when a problem occurs inside the fusing unit. Fusing related errors present a fire hazard so they require special handling.

- Once a fatal error occurs, the machine cannot be used until the problem has been corrected.
- Fatal SC codes, or "A" Level SC codes, alert the operator to a problem that is a potential fire hazard. These fatal SC codes are related to problems that occur in the fusing unit: SC541, SC542, SC543, SC544, SC545, SC551, SC556, and SC559.



m1333033

- There are two important settings on the Service Mode screen of the Smart Organizing Monitor.
- When Fuser SC Detect is switched on, the machine will shut down after the third consecutive fusing jam error. This setting should remain on for safety.
- Also, if a fatal error (fusing related SC code) occurs, the machine cannot be serviced until the service technician releases the error by clicking [Fuser SC Reset] on the Service Mode screen.

★ Important

- After correcting the problem that caused the fatal SC code to be issued, the service technician must execute [Fuser SC Reset] in order to recover full operation of the machine. Otherwise the machine will continue to issue the same SC code even after the problem has been corrected.

When an Error Occurs

The machines have different operation panels and components so this affects how each machine alerts the operator when a problem occurs.

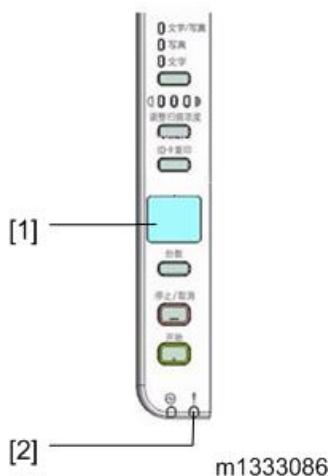
- When an error occurs, the alert indicator on the operation panel lights and the machine stops.

- A buzzer will sound an alert on the M135, M141, M143, M167, M149, M168, M150, M151, or M169. Press any key on the operation panel to turn the buzzer off. (This is the fax speaker that also functions as an error alarm.)
- There is no buzzer alert for the M133, M134, M162, M144, M163, M145, M165, M147, M142, M166, M148, M146, M164, M191 because these machines do not have the fax speaker. The SC number can be displayed on the Service Mode screen of the Smart Organizing Monitor. (See page 186 "Smart Organizing Monitor Service Mode")



m1332106.jpg

- The M133, M162, M144, M163, M145, M146, M164 have no panel display. When an error occurs, only the alert lamp lights [1].



m1333086

- The M134, M165, M147, M142 have a 2-digit 7-segment display [1]. A letter-number code is used to designate an SC code. For example, "C6" designates "SC101". (These 2-digit codes are included in the SC tables below.) The alert lamp [2] also lights when an error occurs.



[2] m1332108.jpg

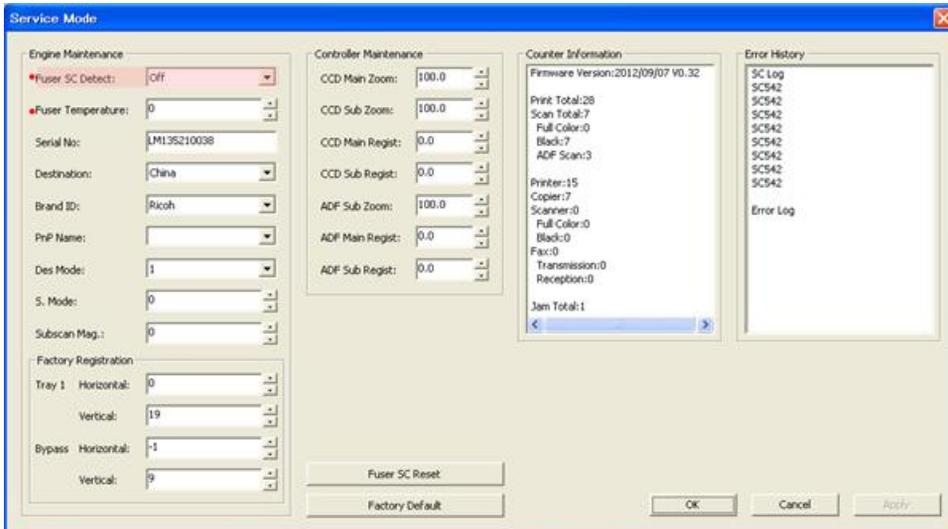
- The M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, and M191 have a 2-line LCD display (1), so the full SC number "SC101" can be shown on the operation panel display. When an error occurs, the alert lamp (2) lights and the fax speaker will sound an alert. (but M166 and M148 do not have a speaker.)

★ Important

- For all models of this series, the Smart Organizing Monitor can be used to display the most recent SC codes in the Error History box of the Service Mode screen. (page 186 "Smart Organizing Monitor Service Mode")

Executing Fuser SC Reset

1. After correcting the problem, open Smart Organizing Monitor.
2. Enter the service mode to display the Service Mode screen.
3. On the Service Mode screen, click [Fuser SC Reset]. This releases the fatal fusing error which locks the machine.



m1333033

1. Select "On" for Fuser SC Detect. This setting shuts down the machine if three successive paper jams occur in the fusing unit.

SC Tables

SC Table Key

SC codes are assigned a level of severity (A, B, C, D) based on the table below. These letters appear in the 3rd column of the SC tables below.

Level	Definition/ Reset Procedure
A	<p>The machine is disabled due to a problem in the fusing unit, electrical component, or firmware. The operator cannot operate the machine.</p> <ul style="list-style-type: none"> This is a fatal error. The machine requires immediate servicing by a service technician. After solving the problem Fuser SC Reset must be executed to release the machine for normal operation.
B	<p>These SC codes disable only the features that use the defective item. Normally, the user does not see these SC codes, but the SC code is displayed in the Error History box of the Service Mode screen.</p> <ul style="list-style-type: none"> Cycle the machine off/on with the main power switch".
C	<p>These are SC codes are not shown. They are logged internally.</p> <ul style="list-style-type: none"> Open the Smart Organizing monitor and open the Service Mode screen to see the SC error log in the Error History box.
D	<p>These SC codes are shown on the M135, M141, M143, M167, M149, M168, M150, M166, M148, M134, M165, M147, M142, M151, M169, M191 operation panel.</p> <ul style="list-style-type: none"> To reset machine, cycle the machine off/on. The SC codes are re-appear if the error occurs again.

★ Important

- If the problem is in an electrical circuit board, always disconnect then connect the board connectors again to check for a bad or loose connection before you replace the PCB.

↓ Note

- The 2nd column of each table shows the error code that appears in the 2-digit 7-segment display of the M134, M165, M147, M142, M146, and M164.

SC100: Scanning

SC101	c6	C	CIS Lamp/Scanner Motor Error	M135, M141, M143, M167, M149, M168, M150, M166, M148, M134, M165, M147, M142, M151, M164, M191
			<p>A problem occurred with the CIS or scanner motor in the flatbed scanner:</p> <ul style="list-style-type: none"> • After CIS power check • After shading • After CIS failed to return to home position 	
			<ul style="list-style-type: none"> • Flatbed scanner motor connector (main board) loose, broken, or defective • CIS flat film connector at main board loose, broken or defective • CIS flat film connector at CIS loose, broken, or defective • Scanner motor defective • CIS defective 	

SC200: Scanning

SC202	C1	D	Polygon Motor On Timeout Error	
			<p>No lock signal was received within 10 sec. after the polygon motor turned on.</p> <ul style="list-style-type: none"> • Polygon motor driver I/F harness loose, broken, defective • Polygon motor broken or defective 	
			<ul style="list-style-type: none"> • Cycle the machine off/on • Replace I/F harness • Replace polygon motor • Replace laser unit 	
SC203	C2	D	Polygon Motor Off Timeout Error	

			<p>The lock signal did not go HIGH (inactive) within 20 sec. after the polygon motor turned off.</p> <ul style="list-style-type: none"> • Polygon motor I/F harness loose, broken, defective • Motor driver board defective • Motor defective
			<ul style="list-style-type: none"> • Cycle the machine off/on • Replace I/F harness • Replace polygon motor • Replace laser unit

SC204	C3	D	Polygon Motor Lock Signal Error
			<p>Four samplings within 200 ms revealed that the polygon motor lock signal remained HIGH beyond the prescribed number of revolutions.</p> <ul style="list-style-type: none"> • I/F harness between the motor and driver board is loose, broken, defective • Driver board defective • Motor defective
			<ul style="list-style-type: none"> • Cycle the machine off/on • Replace I/F harness • Replace polygon motor • Replace laser unit

SC220	C4	D	Beam Synchronization Error
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			<p>Top cover (or maintenance cover) is down and locked, and the polygon motor is locked, but laser synchronization could not be achieved within 40 msec.</p> <ul style="list-style-type: none"> • The I/F harness of the LDB is loose, broken defective • Polygon motor is locked • The angle of incidence of the laser beam and photo-detector is not correct.
			<ul style="list-style-type: none"> • Cycle the machine off/on • Replace the I/F harness • Replace polygon motor • Replace laser unit • Replace main board

6

SC268	C0	D	Laser Scanning Unit thermistor error
			<p>After the main power switch ON, writing thermistor temperature is detected at 100ms intervals and...</p> <ul style="list-style-type: none"> • Less than -30 degrees Celsius is detected for more than 4 seconds (Thermistor defective). • More than 105 degrees Celsius is detected for more than 1 second (Thermistor short).
			<ul style="list-style-type: none"> • Reboot the machine • Replace the laser writing unit / polygon motor • Replace the I/F harness • Replace the engine board

SC400: Around the Drum

SC491	C5	D	Bias Leak
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			<p>A bias leak has occurred for the drum charge, development charge, or transfer charge. PWM signals are sampled at 20 msec. intervals. This SC is issued if 10 PWM samplings within 200 msec. are abnormal.</p> <ul style="list-style-type: none"> • HVPS harness loose, broken, defective • HVPS board defective • AIO terminal defective
			<ul style="list-style-type: none"> • Cycle the machine off/on • Check all the harness connections of the HVPS • Check spring-loaded AIO terminal installation behind the HVPS. • Replace HVPS.

SC500: Paper Feed, Transport

SC500	C6	D	Main Motor Error
			<p>One of the following problems occurred:</p> <ul style="list-style-type: none"> • The machine failed to detect a LOCK signal within two sec. after the main motor was turned on. • The machine failed to detect a LOCK release signal with 2 sec. after the main motor was turned off.
			<ul style="list-style-type: none"> • Cycle the machine off/on • Check the areas around motor and main drive train for a physical obstruction (paper scraps, etc.). • Clean the main motor drive train. • AIO defective • Main motor defective
SC541	C7	A	Fusing Unit Thermistor Error (Fatal Error)

			<p>No temperature was detected within 5 sec. after the machine was turned on (temperature was less than 0°C).</p> <ul style="list-style-type: none"> • Fusing unit thermistor disconnected, broken or not set correctly • Fusing lamp disconnected, broken or not set correctly. • Fusing unit defective • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (👉 page 226 "Executing Fuser SC Reset")
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SC542	C8	A	<p>Fusing Reload Temperature Error (Fatal Error)</p> <p>After starting up or during operation he machine detected after 5 readings at 1.5 sec. intervals that the hot roller was 5°C below the reload (operating) temperature.</p> <ul style="list-style-type: none"> • Fusing thermistor deformed or out of position • Fusing lamp harness loose, broken, defective • Fusing unit defective • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (👉 page 226 "Executing Fuser SC Reset")
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SC543	C9	A	<p>High Temperature Error - Software (Fatal Error)</p> <p>The temperature inside the fusing unit exceeded 225°C (437°F) for more than 1 sec.</p> <ul style="list-style-type: none"> • After this error has occurred three times, the machine will shut down and must be released with the Smart Organizing Monitor and serviced by a service technician. • Main board defective • PSU defective (TRIAC short) • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (👉 page 226 "Executing Fuser SC Reset")
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SC544	c1	A	High Temperature Error- Hardware (Fatal Error)
			<p>The machine detected the CPU port LOW twice at 100 ms intervals and issued this SC. This check is always done to check for overheating, even if SC543 does not detect the problem.</p> <ul style="list-style-type: none"> • Fusing unit defective • Main board defective • PSU defective (TRIAC short) • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (👉 page 226 "Executing Fuser SC Reset")
SC545	c2	A	Fusing Lamp Remains ON Error (Fatal Error)
			<p>The heating element of the fusing lamp remained at full power longer than 9 sec. after the reload temperature was detected.</p> <ul style="list-style-type: none"> • Fusing thermistor harness connector loose, broken, defective • Fusing thermistor warped or positioned incorrectly • Fusing lamp harness connector loose, broken, defective • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (👉 page 226 "Executing Fuser SC Reset")
SC547	r2	D	Zerocross Error
			<p>Power supply frequency is unstable. HVP or PSU failure.</p> <ul style="list-style-type: none"> • To reset the SC code, turn the power On and Off. • Use more stable power supply. • Replace the HVP or PSU.
SC551	r1	D	Edge thermistor error (Fatal Error)

			<p>In the condition of relay ON, the end thermistor on the fusing detects less than 0 degrees Celsius for more than 5 seconds.</p> <ul style="list-style-type: none"> • End Thermistor defective, contact failure • Heater defective, contact failure • Fusing unit defective • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (Executing Fuser SC Reset)
SC556	c0	D	<p>temperature deviation error (Fatal Error)</p> <p>More than 1 degree Celsius temperature difference (between Center – End thermistor) is detected for 1.5 seconds 5 times in a row.</p> <ul style="list-style-type: none"> • Thermistor deformation, contact failure • Input voltage is outside the limit. • Fusing unit defective • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (Executing Fuser SC Reset)
SC557	-	C	<p>Zerocross Frequency Over</p> <p>Power supply frequency is unstable.</p> <p>No error message will be issued on this SC. A log of this SC will be logged in the SOM service mode SC</p>
SC559	c3	A	<p>Fusing Unit Third Jam Error (Fatal Error)</p>

			<p>The exit sensor failed to detect the leading edge of the paper within the prescribed time and triggered a jam alert.</p> <ul style="list-style-type: none"> • After this error has occurred three times, the machine will shut down automatically and cannot be re-started until the machine has been serviced by a service technician. • Check the paper transport path for any physical obstructions (paper scraps, etc.) • Make sure the fusing unit has been installed correctly • After servicing the machine to solve the problem, the service technician must execute a "Fuser SC Reset". Otherwise, the machine will continue to issue this SC code and cannot be operated. (👉 page 226 "Executing Fuser SC Reset")
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SC600: Communication

SC650	---	A	<p>Modem Error (M143, M167, M149, M168, M150 only)</p> <p>Modem chip defective.</p> <ul style="list-style-type: none"> • Replace fax board.
SC669	c5	D	<p>EEPROM Communication Error</p> <p>A read/write error occurred with the EEPROM on the main board.</p> <ul style="list-style-type: none"> • EEPROM missing or not set correctly. • Cycle the machine off, check the EEPROM installation, re-start the machine. • EEPROM defective, replace EEPROM or main board.
SC688	c4	D	<p>No CTL_PRREQ_N Signal</p> <p>Paper failed to feed after the machine reached the reload temperature because the main board did not issue a PRREQ signal.</p> <ul style="list-style-type: none"> • Main board harness connector loose, broken, defective • Main board defective
SC670	c9	A	<p>Engine Communication Error</p>

			The engine failed to communicate with the firmware.
			<ul style="list-style-type: none"> • Update the firmware • Main board defective

SC800: Other

SC828	c8	A	ROM Checksum or Data Lost Error
			A firmware type error or checksum error occurred.
			<ul style="list-style-type: none"> • Update firmware

SC871	c7	A	Flash ROM Write Error
			The flash memory is defective or there is a problem with the fax board cable.
			<ul style="list-style-type: none"> • The fax cable between the fax board and the main control board and fax board is loose, broken, or defective • Main control board defective

Error Codes

Classification

Classification	Condition	Release Method
FATAL	Operation is impossible.	A technician must cancel the error.

ERROR	Machine Error	A part of fax operation is impossible.	A user can cancel the error.
		Copying is impossible.	A user can cancel the error.
		Printing is impossible when an error occurred in the engine part.	A user can cancel the error.
	Fax Error	Fax operation is possible.	Error is released automatically.
	Memory Data Error	-----	Error is released automatically.
	GDI Receive Error	GDI reception is impossible.	Error is released automatically.
	TWAIN Scan Receive Error	TWAIN Scan receive is impossible.	Error is released automatically.
ATTENTION		All operation is possible.	All functions can operate even if the error is not released.

FATAL

No.	Name	Contents	Indicate		
			M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191	M134 M165 M147 M142	M133 M162 M144 M163 M145 M164 M146
1	Service Call	A problem that needs repair by a technician.	Service Call: SCXXX	 d1332111.jpg	Alert LED is lit.

Error

• Machine Error

No.	Name	Contents	Indicate		
			M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191	M134 M165 M147 M142	M133 M162 M144 M163 M145 M164 M146
1	Paper Empty	Tray 1 Out of Paper	Tray 1 Out of Paper	E1	Alert LED is lit.
		Bypass Tray Out of Paper	Bypass Tray Out of Paper	E4	Alert LED is lit.
2	Inner/Outer Jam	Misfeed: Inner/ Outer	Misfeed: Inner/ Outer	E0	Alert LED is lit.
3	ADF Jam	Jam of a document Scan document over "297mm +1.5%"	Misfeed: ADF Open Cov. Rmv. Paper	-	-
4	Size Error	Fax Job	Set Correct Size Ppr Press Start to Print	-	-
5	Cover open	The cover is open	Cover Open	E3	Alert LED is lit.
6	Copy Memory Full	Memory full during copying	Memory Overflow Press Start or Stop	-	-

No.	Name	Contents	Indicate		
			M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191	M134 M165 M147 M142	M133 M162 M144 M163 M145 M164 M146
7	No suit Paper	No suit paper for Fax print job	Cannot Print Fax Change Paper Size	E 5	-
		No suit paper for Report Printing	Cannot Print Report Change Paper Size		Alert LED is lit.
8	Not Set Print Cartridge	Print Cartridge Not Set in machine	Not Set Print Cartridge	E 6	Alert LED is lit.
9	Toner Empty Stop OPC End	Toner empty OPC End	Out of Toner Print Cartridge	E 7	Alert LED is lit.
10	Toner Low OPC Near End	Toner Low OPC Near End	Toner Almost Empty Print Cartridge	E 8	Alert LED is lit.
11	Off-hook Alarm	External telephone is off-hook	On Hook or Stop	-	-
12	Bypass has paper	The machine can't print when the Bypass tray has paper	Cannot Print Remove Bypass Paper	e 2	Alert LED is lit.

No.	Name	Contents	Indicate		
			M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191	M134 M165 M147 M142	M133 M162 M144 M163 M145 M164 M146
13	Over heat	Engine is Over Heat Waiting engine cooling-down.	Engine Over Heat Please Wait		Alert LED is lit.

6

• Memory Data Error

No.	Name	Contents	Indicate		
			M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191	M134 M165 M147 M142	M133 M162 M144 M163 M145 M164 M146
1	Memory Data Error	Data in memory is lost	Memory Data Lost	-	-

• GDI Receive Error

No.	Name	Contents	Indicate		
			M135, M141, M143, M167, M149, M168, M150, M166, M148, M151, M169, M191	M134 M165 M147 M142	M133 M162 M144 M163 M145 M164 M146
1	GDI Receive Error	A Data Fatal, Memory Full or Unplugged USB error has occurred.	Cancel Printing I/O Timeout	-	-
			Cannot Print Memory Overflow	-	-
2	Paper Size Mismatch	Tray 1 paper size set in the machine is not the same as set with the driver.	Size Mismatch: Tray 1 Press Start or Stop	P 1	Alert LED is lit.
			Size Mismatch: Bypass Press Start or Stop	P 3	Alert LED is lit.
3	Paper Type Mismatch	Tray 1 paper type set in the machine is not the same as set with the driver.	Type Mismatch: Tray 1 Press Start or Stop	P 2	Alert LED is lit.

- TWAIN Scan Receive Error (M166, M148, M135, M141, M143, M167, M149, M168, M150, M151, M164, M191)

No.	Name	Contents	Indicate
1	TWAIN Scan Receive Error	The error occurred when machine occurs Error during TWAIN scan	Scan Disconnected

- PC Fax Error (M135, M141, M143, M167, M149, M168, M150, M151, M169)

No.	Name	Contents	Indicate
1	PC Fax Error	Error occurs before a TX file is normally created in the device.	-

- **Scanner Mode Error (M166, M148, M135, M141, M143, M167, M149, M168, M150, M151, M169, M191)**

No.	Name	Contents	Indicate
1	Cannot Connect	SMTP Server POP3 Server FTP Server SMB Server SNTP Server	Cannot Connect
			SMTP Server
			POP3 Server
			FTP Server
			SMB Server
			SNTP Server
2	Cannot Obtain IP	SMTP Server POP3 Server FTP Server SNTP Server	Cannot Obtain IP
			SMTP Server
			POP3 Server
			FTP Server
			SNTP Server
3	Communication Error	SMTP Server FTP Server SMB Server SNTP Server USB Memory	Communication Error
			SMTP Server
			FTP Server
			SMB Server
			SNTP Server
			USB Memory

No.	Name	Contents	Indicate
4	Invalid Password	SMTP Server POP3 Server FTP Server SMB Server	Invalid Password
			SMTP Server
			POP3 Server
			FTP Server
			SMB Server
5	Failed To Connect	SMTP Server POP3 Server FTP Server SMB Server SNTP Server USB Memory	Failed To Connect
			SMTP Server
			POP3 Server
			FTP Server
			SMB Server
			SNTP Server
			USB Memory
6	File Over	An error occurs when check the file name of the all files in the destination (USB memory/ Folder (SMB/FTP))	File Over
7	Page Over	Scan limit for Scan to USB/SMB/FTP/E-mail function. Single-page TIFF/PDF/JPEG have 99 pages limitation.	Page Over 1: TX 2: Cancel
8	Server Error	FTP Server SMB Server	FTP Server Error
			SMB Server Error
9	SMTP Server Memory Full	The data has exceeded a capacity of SMTP Server	SMTP Server Full
10	Memory Full	This error means that the memory capacity is over during scanning the original	Memory Overflow 1: TX 2: Cancel
11	USB Memory Full	The memory capacity of USB is over.	USB Flash Disk Full

Supplement

- Communication (Reception)

Code	Possible Causes of Error
0001	No G3 signal received within 35 sec.
0003	Received DIS after sending DIS.
0004	Received DCN after sending DTC.
0009	Can't receive any signal within 35 sec. in manual polling mode.
0010	Received DCN signal after sending DTC signal in polling RX.
0011	Can't receive any correct response after sending DTC signal.
0012	Remote side Password not matched in polling RX/our side has no file for polling.
0013	Can't receive carrier within 6 sec. after sending CFR in data phase C.
0014	Can't receive T.30 signal after sending FTT signal.
0016	Receive DCN signal after sending FTT signal.
0017	Can't receive any response from remote side after sending DIS.
0018	Can't detect energy within 6 sec after sending FTT command.
0019	Received DCN signal sending CFR signal.
001A	No energy on line over 6 sec. within phase C before any corrected ECM frame.
001D	Can't detect flag after sending CFR signal.
001E	Timeout in V.17 ECM RX phase C.
0020	Can't correct frame within 6 sec at phase C.
0021	File full.
0022	Owing to noise interference on the line, receiving side can't receive correct data within specified time (no ECM)
0023	Can't receive correct signal after sending CFR signal.
0030	Can't receive any signal within 6 sec. at phase D.
0031	Received incorrect signal at phase D (not EOP, MPS,EOM,DCN, PPS_Q, PPS_Q,etc)

Code	Possible Causes of Error
0032	Can't receive carrier within 6 sec. after sending MCF or RTP, RTN signal.
0033	Received DCN signal at phase D within pages (not last page).
0039	In non-ECM mode, when machine already received the data but the next line of data is received within 13.1 seconds
001F	Can't detect any G3 signal within 35 sec. after sending DTC signal
003F	Remote side TSI not defined or Blank.

Code	Possible Causes of Error
0040	Can't receive carrier within 6 sec. after sending CTR.
0041	Can't receive carrier within 6 sec. after sending PPR.
0042	Can't receive correct signal after sending RNR signal.
0043	Received incorrect signal at phase D in ECM mode.
0044	Can't receive carrier /FSK signal within 6 sec. after sending MCF. In ECM mode.
0047	Can't receive correct signal or DCN received after sending ERR signal.
0048	Can't receive correct signal after receiving PPS_PRI_Q.
004B	Can't detect correct FSK signal even through detected FSK tone within 6 sec.
004C	Handshake fail during re-train or between pages in V34 RX.
004E	Receive DCN signal after sending DIS in V.34.
004F	Remote side disconnected after sending ANSam in V.8 phase.
0050	Can't receive any correct signal after detected CJ signal in V.8 phase.
0051	Can't receive phase 3 signal after phase 2 within 20 seconds in V.34.
0053	Modem disconnect after phase 4 in V.34.
0054	Remote side disconnected after phase 4 in V.8
0055	Receive incorrect signal after sending DIS signal in V.34
0056	Modem disconnect after sending CFR in V.34.

Code	Possible Causes of Error
0058	Can't detect image signal within 6 seconds after modem enter to primary phase in V.34.
005A	Modem can't detect any correct ECM frame with 3 minutes in phase C.
005B	Modem can't detect control channel with 12 sec. in phase C.
005C	Detected busy tone within control channel after phase C.
005D	Modem can't detect any correct ECM frame with 12 Sec in phase C.
005E	Can't detect control channel signal after received RCP frame within 6 seconds.

- **Communication (Transmission)**

Code	Possible Causes of Error
0080	Can't detect any G3 signal within 35 sec. specified by ITU-T in phase B.
0081	Received DTC signal in transmission phase.
0082	Transmitting unit receives a signal other than DIS or DTC and DCN in phase B.
0083	Detected FSK signal, but can't receive any signal within 35 seconds.
0084	Detected DCN signal in phase B.
0085	Transmitting unit sending DCS 3 times consecutively, but each time responds with DIS/DTC
0086	Detected response signal other than DTC, DIS, FTT, DCN or CFR after sending DCS.
0087	Training attempt has failed because unit speed can't adjust to lower speed.
0088	Received DCN signal after sending out DCS signal.
008B	Receiver's protocol of DIS is received, but it is not compatible with our machine.
008C	Remote side or our side do not support capability.
008D	Receiver's protocol of DIS is received, but remote side can't receive document temporarily, may be because run out of paper or other reason.
008F	Modem not ready to receive V.34 data within 6 seconds after received CFR signal.
0090	Called side document not ready for our polling.
0091	Can't receive any command after sending DCS signal 3 times consecutively.

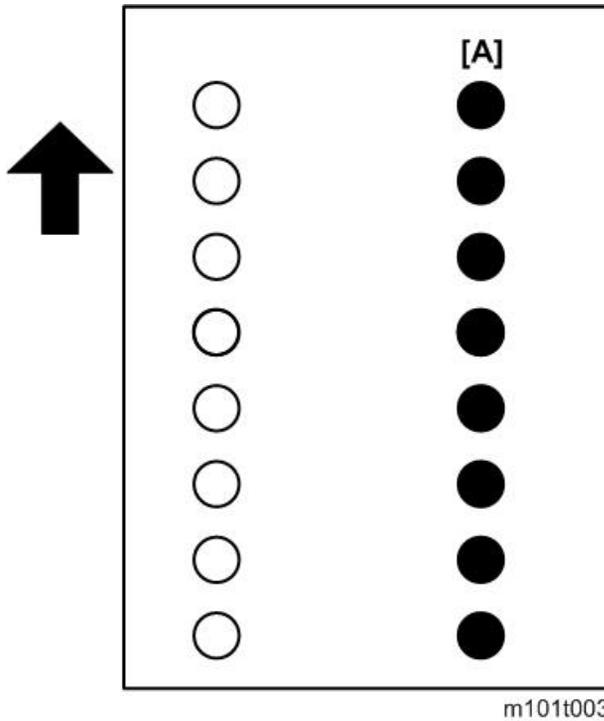
Code	Possible Causes of Error
0093	Received DCN signal after sending out DCS signal
0094	Time out during transmission of ECM frame or RCP command.
0095	Wrong ID number
0096	SUBADDRESS / PASSWORD capability not matched in Polling RX mode.
009A	Can't detect any signal after sending CI signal.
009D	Remote side hangs up before V.34 modem entered PHASE 2 state in V.34 polling RX.
009E	TX over 32 minutes when in phase C for 1 page.
00A0	User stopped or cancelled the transmission job.
00A1	Document jam during transmission
00A9	The line could not be connected correctly.
00AA	No Dial Tone
00AB	Line Busy
00AC	No Answer
00AD	Destination not Fax
00AE	Can't finish V.8 procedure or detect V.21 signal after sending CM signal.
00AF	Modem can't enter into control channel after TX side sending out RCP signal.
00B1	Can't finish V.8 procedure or detect V.21 signal after ANSam signal within 35 seconds.
00B2	Can't detect phase 2 signal after our side sent a CJ signal.
00B3	Can't detect correct V.21 or JM signal after sending CM or CJ signal.
00B4	Can't detect correct phase 2 signal within 25 seconds after CM/JM signal exchange.
00B5	Can't detect phase 3 signal after PHASE 2.
00B6	Can't detect phase 4 signal within 25 seconds after CM/JM exchange.
00B8	Remote side disconnected after our side sent a DCS signal in V.34.
00BA	Can't receive correct signal after our side sent a DTC signal in V.34.
00BB	Every time our side received DIS signal after sending DTC in V.34.

Code	Possible Causes of Error
00BC	Modem can't be ready within 10 seconds after entering primary channel in V.34.
00BD	Can't detect correct V.21 or JM signal after detected FSK frequency.
00BE	Remote side has no document to be polled after V8 handshaking.
00BF	Capability not matched after V8 handshaking.
00C1	At phase-D, transmitting unit sent out EOP 3 times consecutively, but received no answer from receiving unit.
00C2	Remote side disconnected after sending out V.8 CM signal.
00C3	Received RTN signal after sending EOP signal.
00C4	After sending MPS signal, the received is not one of MCF, RTN, PIP, PIN, RTP, DCN.
00C5	Received DCN signal after sending MPS signal.
00C9	At phase-D, sending MPS 3 times consecutively, but no answer from receiving unit.
00CA	After sending EOP signal, the received is not one of MCF, RTN, PIP, PIN, PRI-EOP, DCN, RTP.
00CB	After sending EOP signal, received a DCN signal.

Image Problems

Overview

Image problems can occur at regular intervals [A] due to the different circumferences of rollers in the machine and inside the AIO.



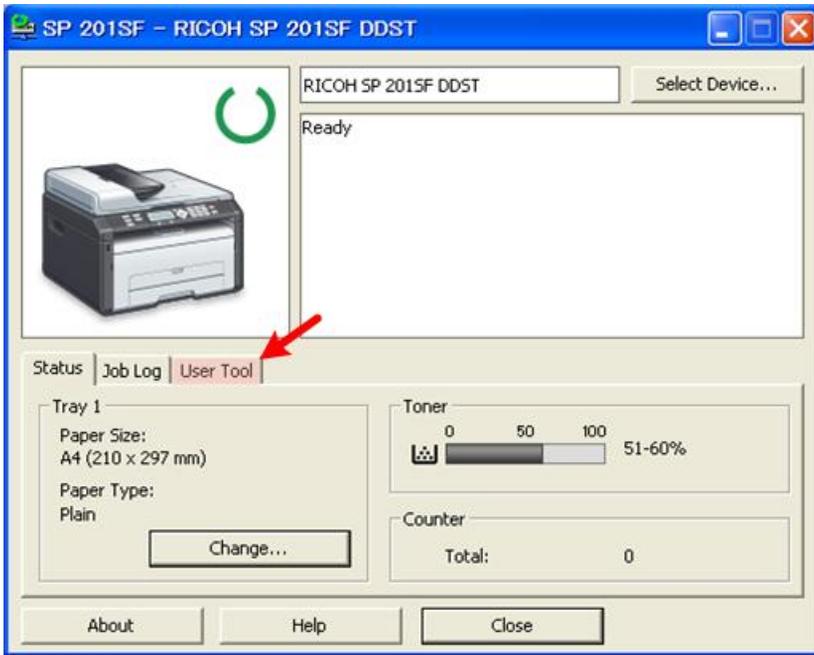
Diameter (mm)	Interval (mm)	Component
9.5	29.8	Charge Roller (AIO)
12	37.7	Development roller (AIO)
12.13	38.1	Relay roller
14.2	44.6	Exit Roller
14.6	45.8	Image Transfer Roller
22	69.1	Pressure roller
23.96	75.2	Drum (AIO)

Diameter (mm)	Interval (mm)	Component
25.02	78.6	Hot roller
28	28	Paper feed roller

Printing the Test Page

Print the Test Page so you can visually check for poor image quality.

1. Start Smart Organizing Monitor and then click the User Tools tab.



m1333034

2. Select "Test Page" from the "List/Test Print" drop-down list.



m1333035

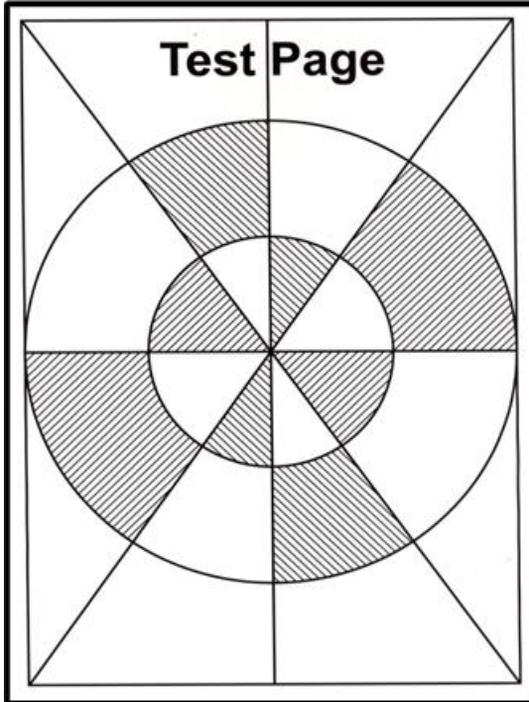
3. Click [Print] to print the test pattern.

Print the Test Page without Smart Organizing Monitor

4in1: [User Tool] – [Print List/Report]-Test Page

3in1: Turning the machine power on with Start key pressed.

Printer: Press [Start] key



m101t006

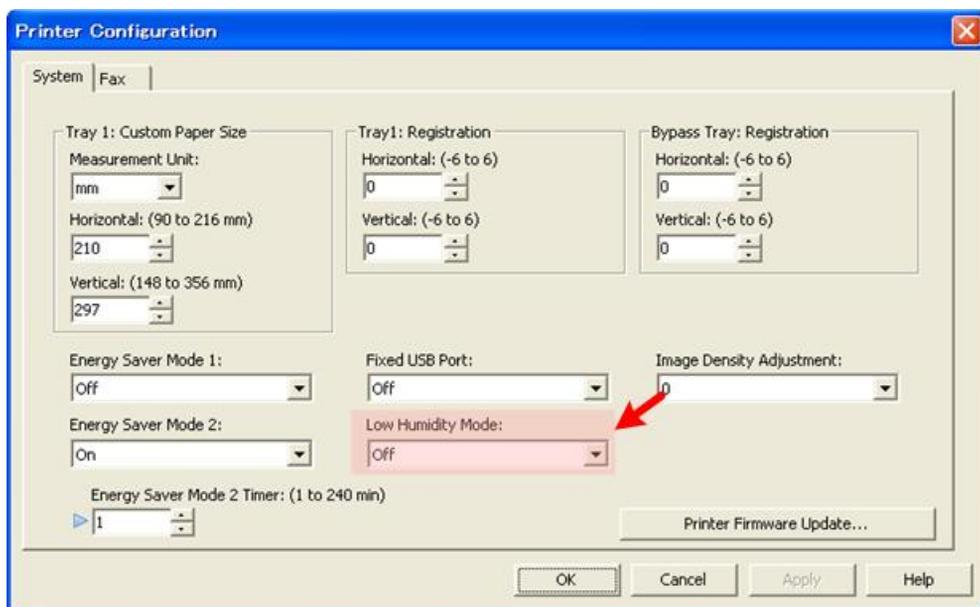
6

Dark Lines in Halftone Areas

Dark lines in halftone fill areas can appear at 75 mm intervals when the machine is operating in a room where the humidity is very low. (The low humidity causes variation in light sensitivity across the surface of the drum.)

1. To prevent this problem, open Smart Organizing Monitor.
2. Click the User Tool tab, and then click the Printer Configuration button to open the Printer Configuration screen.
3. On the System tab, select "ON" for the Low Humidity Mode.

When this humidity mode setting is on, the drum is rotated slight every 1.5 min. to keep the light sensitivity consistent across the entire surface of the drum.



m1333036.png

Common Problems

All Models

Please remember that print yield will be different based on how the machine is used:

- The rate of toner consumption is much faster with documents that consistently contain photos or charts that require large areas of fill. The AIO will run out of toner much sooner.
- The rate of toner consumption is slower with documents that contain mostly text and a only a moderate number of photos or other images that require large areas of fill.
- The rate of toner consumption will be normal and toner yield will be much closer to the estimate if the documents contain mostly text.

Images become pale or scratchy

Cause 1	AIO is out of toner
Solution	Refill or replace the AIO.
Comments	<ul style="list-style-type: none"> • A replacement AIO can be refilled up to three times. This is the approximate service life of the drum.
Cause 2	Drum service life has ended
Solution	Replace the AIO.
Comments	<ul style="list-style-type: none"> • The AIO should not be refilled because the service life of the drum has expired.
Cause 3	Drum damaged
Solution	Replace the AIO.
Comments	<ul style="list-style-type: none"> • The drum has been damaged and the AIO must be replaced. • The drum cannot be replaced (parts inside the AIO cannot be replaced).

★ Important

- The rate of toner consumption can be greatly reduced by selecting "Toner Save" for the "Copy" feature on the Service Mode screen in Smart Organizing Monitor.

M133, M134, M162, M144, M163, M165, M142, M166, M164, M191

Printer, 3in 1 refill models

Operators do not know when to change the AIO.

Make sure the operators understand the following points about AIO replacement:

- For the M133, M134, M162, M144, M163, M165, M142, M166, M164, M191, the machine does not monitor the level of toner remaining in the AIO. There is no toner near-end or toner-end alert.
- The AIO in the M133, M134, M162, M144, M163, M165, M142, M166, M164, M191 must be replaced or refilled when images become pale or scratchy.
- For the M133, M162, M144, M163, M134, M165, M142, M166, M135, M141, M143, M167, M168, the yield of the starter AIO is 1000 sheets and the yield of a replacement AIO is 2,600 / 1500 sheets (not available in China).
- For the M145, M147, M148, M149, M150, the yield of the starter AIO is 700 sheets and the yield of a replacement AIO is 2,600 / 1500 sheets(not available in China).
- A replacement AIO can be refilled up to three times. This is calculated based on the service life of the drum.
- An AIO must be refilled by a trained service technician.

M135, M141, M143, M167, M168, M169

4in 1 refill models

The machine has issued a toner end alert but some toner remains in the AIO.

Cause 1	The service life of the drum has expired before the toner supply has run out.
Solution 1	Replace the AIO
Solution 2	Disable the toner end function in order to use up all the toner in the AIO. [User Tools] > System Settings > Toner End Option > Continue Printing
Comments	<ul style="list-style-type: none"> • An AIO can be refilled up to three times.
Cause 2	A partially used AIO was taken from another machine and installed.
Solution	Disable the toner end function in order to use up all the toner in the AIO: [User Tools] > System Settings > Toner End Option > Continue Printing
Comments	<ul style="list-style-type: none"> • Once an AIO is removed from the machine and replaced with a partially used AIO from another machine, the current toner count will not be accurate.

Images started to fade before the machine issued a toner near end alert.

Cause 1	The AIO in the machine was replaced with the starter AIO after the count exceeded 2,600 / 1500 (not available in China).
Solution	Remove the starter AIO and refill the empty AIO, or replace it.
Comments	<ul style="list-style-type: none"> Install the starter AIO at installation and continue to use until it is out of toner.
Cause 2	A partially used AIO was taken from another machine and installed.
Solution	Disable the toner end function in order to use up all the toner in the AIO: [User Tools] > System Settings > Toner End Option > Continue Printing
Comments	<ul style="list-style-type: none"> Once an AIO is removed from the machine and replaced with a partially used AIO from another machine, the current toner count will not be accurate. However, you can use up all the toner if the toner end option is disabled.
Cause 3	The main board was replaced.
Solution	After the main board has been replaced, disable the toner end function in order to use up all the toner in the AIO: [User Tools] > System Settings > Toner End Option > Continue Printing
Comments	<ul style="list-style-type: none"> The toner count is stored in the NVRAM on the main board. If the main board needs to be replaced, the NVRAM cannot be removed from the old main board and installed on the new main board. For the M133, M162, M144, M163, M134, M165, M142, M166, M135, M141, M143, M167, M168, M164, M169, M191, the toner counter is pre-set for 1K (1000 sheets for a starter AIO) on a new main board, and this value cannot be changed. For the M145, M147, M148, M149, M150, M151, M146, the toner counter is pre-set for 0.7K (700 sheets for a starter AIO) on a new main board, and this value cannot be changed.

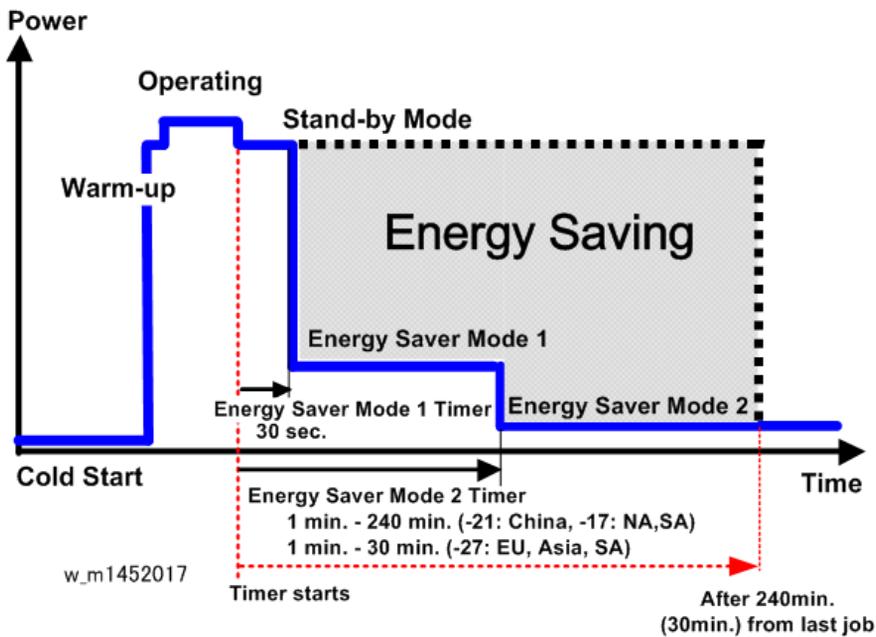
7. Energy Saving

Energy Save

Energy Save Modes

Energy Save Operation

Operators should use the energy saver modes correctly in order to save energy and protect the environment.



The shaded area in the diagram above represents the amount of energy that is saved when the energy save timers are operating.

- The operation panel switches go off after the machine remains idle for 30 sec. and the machine enters the Energy Save 1 mode.
- The machine enters Energy Save Mode 2 and switches off the fusing lamp if the machine remains idle for 1 min. The default setting for the Energy Save Mode 2 timer is 1 min., but this setting can be adjusted in the range as follows;
 - For Europe, Asia, Oceania, and part of South America, 220V-240V/50, 60Hz: 1 to 30 min.
 - For North America, Canada, Part of South America, 120V/60Hz, and China: OFF, ON (1 to 240 min.)

Timer Settings and Return to Standby Mode

The operator can set the two timers with the Smart Organizing Monitor (Printer Configuration > System tab > Energy Saver Mode 1 or Mode 2).

- **Energy Save Mode 1** (30 sec.) can be only turned off or on. The length of the timer cannot be adjusted. Default: On 30 sec. The machine requires 10 sec. to return to full operation from Energy Save Mode 1.
- **Energy Save Mode 2 (Europe, Asia, Oceania, part of South America, 220V-240V/50, 60Hz)** the length of the timer can be adjusted, but cannot be turned off. Default: 1 min., adjustable in the range 1 to 30 min. The machine requires 25 sec. to return to full operation from Energy Save Mode 2.
- **Energy Save Mode 2 (North America, Canada, Part of South America, 120V/60Hz), and China)** can be turned off and on, and the length of the timer can be adjusted. Default: 1 min. [On], adjustable in the range 1 to 240 min. The machine requires 25 sec. to return to full operation from Energy Save Mode 2.

Note

- Default. Energy Save Mode 1 is OFF, Energy Save Mode 2 is set to 1 min [ON].

Recommendations

- If the operator prefers that these settings be changed or switched off altogether, please explain that switching these energy saver features off could increase energy costs and waste energy.
- If the operator changes the settings please advise that setting Energy Save Mode 2 should not be too long. The longer the machine waits to enter Energy Save Mode 2, the more energy will be wasted.
- For North America, Canada, Part of South America, 120V/60Hz), and China, setting Energy Save Mode 2 to the maximum value (240 min.) should be avoided. At close of business for the day, the machine will wait 4 hours before entering Energy Saver Mode 2. This is a waste of energy.

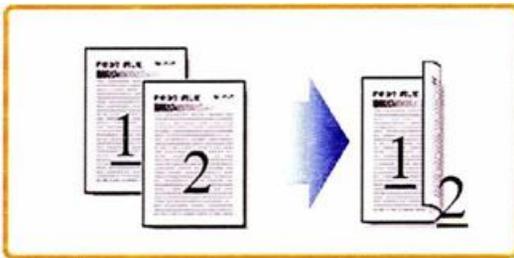
Paper Save

Effectiveness of Duplex/Combine Functions

Duplexing and the combine functions reduce the amount of paper used. Far less energy overall is used for paper production and paper disposal.

1. Duplex

Printing on both sides of each sheet of paper reduces paper consumption by half.

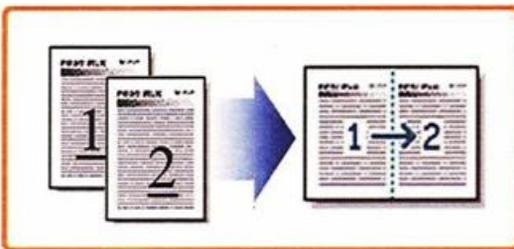


m101t032

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2. Combine Mode

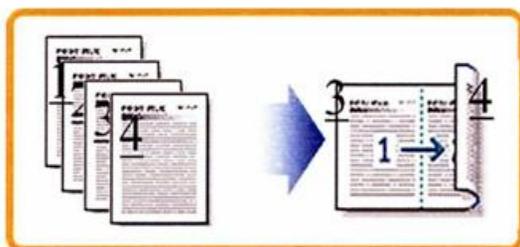
Combine more than one page on a sheet reduces paper consumption by half or more.



m101t033

3. Duplex + Combine

Printing on both sides of each sheet and printing than one page on each side of the sheet can reduce paper consumption even more.



m101t034

To check paper consumption, look at the total counter and duplex counter.

The total counter counts all pages printed:

- The total counter increments by 2 for each duplex page
- The total counter increments by 3 for two duplex sheets where only three pages are printed (one side is blank).

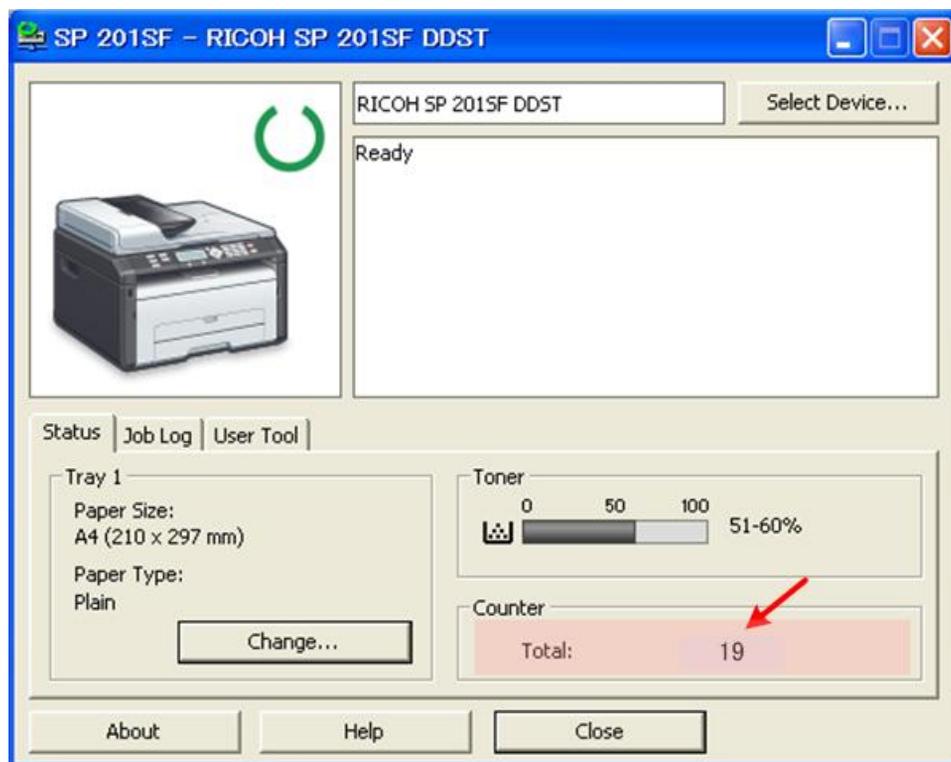
The duplex counter counts sheets of paper that have images on both sides:

- The duplex counter increments by 1 for one duplex page
- The duplex counter increments by 1 for two duplex sheets where only three pages are printed (one side is blank)

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Total Counter

The machine total counter counts the number of sides printed (a duplex page is counted as two, not one). You can check the total count on the initial screen of the Smart Organizing Monitor (see below).



m1333064

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The table below shows paper savings and how the counters increment for some simple examples of simplex and duplex jobs.

Original	Simplex Sheets	Duplex Sheets	Paper Saved	Total Counter
1	1	1	0	1
2	2	1	1	2
3	3	2	1	3
4	4	2	2	4
5	5	3	2	5
10	10	5	5	10
20	20	10	10	20

If the combine mode is used, the total and duplex counters work in the same way as explained above. The following tables show paper savings and how the counters increment for some simple duplex/combine jobs.

Combine 2-in-1 Mode

Original	Simplex Sheets	Duplex Sheets	Paper Saved	Total Counter
1	1	1	0	1
2	2	1	1	1
3	3	2	1	2
4	4	2	2	2
5	5	3	2	3
10	10	5	5	5
20	20	10	10	10

Duplex + Combine 2-in-1 Mode

Original	Simplex Sheets	Duplex Sheets	Paper Saved	Total Counter
1	1	1	0	1
2	2	1	1	1
3	3	1	2	2
4	4	1	3	2
5	5	2	3	3
6	6	2	4	3
7	7	2	5	4
8	8	2	6	4
9	9	3	6	5
10	10	3	7	5
11	11	3	8	6
12	12	3	9	6

MEMO

MEMO

Model OP-P1/MF1

Machine Code:

**M133, M134, M135, M141, M142, M143,
M144, M145, M146, M147, M148, M149,
M150, M151, M162, M163, M164, M165,
M166, M167, M168, M169, M191**

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1. Appendix: Specifications

Machine Specifications

Before You Read These Specifications

The printing, scanning, copying, and facsimile specifications described in this section do not apply to all machines of this series.

Main	Printing	Scanning	Copying	Fax	Handset	ADF	Network	Wi-Fi	Scan2 USB
M133/ M162	Yes	No	No	No	No	No	No	No	No
M144/ M163/ M145	Yes	No	No	No	No	No	Yes	No	No
M134/ M165/ M147	Yes	Yes	Yes	No	No	No	No	No	No
M142	Yes	Yes	Yes	No	No	No	Yes	No	No
M166/ M148	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes
M135	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No
M141	Yes	Yes	Yes	Yes	Yes	No	No	No	No
M143	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No
M167/ M149	Yes	Yes	Yes	Yes	No	Yes	No	No	No
M168/ M150	Yes	Yes	Yes	Yes	No	Yes	Yes	No	Yes
M146/ M164	Yes	No	No	No	No	No	No	No	No

M151/ M169	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes
M191	Yes	Yes	Yes	No	No	Yes	No	No	

Note

- The M133, M162, M144, M163 and M145 use the P1 (Printer) Engine and the M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168 and M150 use the MF1 (Multi-Function) Engine.
- All the machines of this series employ the GDI controller.
- All the machines of this series use the same AIO (All-in-One) unit which contains the 1) OPC drum, 2) charge unit, 3) development unit, 4) cleaning unit, and 5) toner supply unit.

General Specifications

Configuration		Desktop
Languages	M133, M144, M134, M142, M135, M141, M143	Chinese (Simplified Characters), English
	M162, M163, M145, M165, M147, M166, M148, M167, M149, M168, M150	English, German, French, Italian, Spanish, Dutch, Swedish, Norwegian, Danish, Finnish, Portuguese, Czech, Hungarian, Polish, Russian, Brazilian, Turkish
Original exposure		Laser electrostatic transfer
Printing speed		22 ppm (A4)
		23 ppm (LT)

First print (A4/LT 600 x 600 dpi)	M133, M144, M134, M142, M135, M141, M143	6 sec. or less (from paper-feed-start to paper-ejection)
	M162, M163, M145, M165, M147, M166, M148, M167, M149, M168, M150	10 sec. or less (from paper-feed-start to paper-ejection)
Printing resolution		600 x 600 dpi or 1200 x 600 dpi (selected with the printer driver)
Warm-up time (Ready status)		Less than 25 sec. (power on, energy save recovery) at 23°C (71.6°F)
Paper Path Driver		Single brush-less DC motor

AIO (All In One system*1)	Drum	Optical photo-conductor
	Development	Dry electro-static method
	Charge	Charge roller
	Toner supply	Auger agitation, supply
	Used toner collection	Used toner collection container
	Cleaning	Opposable cleaning blade
	Estimated yield (Based on A4 SEF Test Pattern)	Starter AIO (M133, M162, M144, M163, M134, M165, M142, M166, M135, M141, M143, M167, M168, M164, M191, M169): 1000 sheets
		Starter AIO (M145, M147, M148, M149, M150, M146, M151): 700 sheets
		Replacement AIO: 2600 sheets (All region) 1500 sheets (Region other than China)
ID chip	Yes	
Storage conditions	Temperature: -30°C to 40°C (-54°F to 104°F) Humidity: 15% to 80% RH Note: Store away from direct sunlight.	
<p>*1 The AIO cartridge contains the drum, charge unit, development unit, cleaning unit, and toner supply unit. The unit is replaced as a whole; there are no serviceable parts inside.</p> <p>The AIO has an ID chip which helps to detect when an AIO is set and a new AIO.</p>		
Fusing		Hot roller+ Halogen fusing lamp

Paper	Paper type and Weight	Plain paper: 65 to 99 g/m ² (17 to 26 lb.)		
		Recycled paper: 75 to 90 g/m ² (20 to 24 lb.)		
		Thin paper: 52 to 64 g/m ² (14 to 24 lb.)		
		Thick paper: 100 to 130 g/m ² (26.6 to 34 lb.)		
	Delivery	Face-up		
	Capacity (70 g/m ² /19 lb.)	Input	Tray 1: 150 sheets	
			Bypass Tray: 1 sheet	
		Output	Output Tray: 50 sheets	
			Rear: 1 sheet	
	Paper size	Standard (SEF)	A4, 8 ¹ / ₂ " x 11" (Letter), 8 ¹ / ₂ " x 14" (Legal), B5, 5 ¹ / ₂ " x 8 ¹ / ₂ " (Half letter), 7 ¹ / ₄ " x 10 ¹ / ₂ " (Executive), A5, A6, B6, 16K (197 x 273 mm), 16K (195 x 270 mm), 16K (184 x 260 mm)	
Custom		Width:	Tray 1: 100 to 216 mm (3.9 to 8.5 in.) Bypass Tray: 90 to 216 mm (3.6 to 8.5 in.)	
		Length:	148 to 356 mm (5.8 to 14 in.)	
Paper feed	Duplexing	No, but manual duplexing possible by printing 1st side pages, and then 2nd side pages.		
	Paper out alert	LED flash		
Power supply		220 to 240 V 50/60 Hz Less than 5 A (mainly Europe and Asia)		
		120 V 60 Hz Less than 8 A (mainly North America)		

Power consumption (average)		Max.	900 W
		Operation	400 W
		Standby	55 W (mainly Europe and Asia)
			60 W (mainly North America)
		Energy Save 1	40 W or less
		Energy Save 2	5 W or less
Dimensions (w x d x h)	M133, M162, M144, M163, M145, M146, M164	402 x 360 x 165 mm (15.8 x 14.2 x 6.5 in.)	
	M134, M165, M147, M142, M166, M148	402 x 360 x 249mm (15.8 x 14.2 x 9.8 in.)	
	M135, M141, M143, M167, M149, M168, M150, M151, M169, M191	402 x 360 x 291 mm (15.8 x 14.2 x 11.5 in.)	
Weight	M133, M162, M144, M163, M145, M146, M164	7.2 kg (15.9 lb.)	
	M134, M165, M147, M142, M166, M148	9.9 kg (21.8 lb.)	
	M135, M141, M143, M167, M149, M168, M150, M151, M169, M191	11.1 kg (24.5 lb.)	
Calendar/Clock		M135, M141, M143, M167, M149, M168, and M150, M151, M169, M191 only	
Interface		USB 2.0	

Operation Panel	M133, M162, M144, M163, M145, M146, M164	2 LEDs, 2 keys	
	M134, M165, M147, M142	7-segment 2-digit LED, 6 keys	
	M166, M148, M135, M141, M143, M167, M149, M168, M150, M151, M169, M191	Dot-matrix LCD (168 x 64 dot) with LED	
Energy Save Mode 2	Shift time	Europe, Asia, Oceania, part of South America (220V-240V/50, 60Hz)	1 to 30 min. (adjusted in 1 min. steps)
		North America, Canada, Part of South America (120V/60Hz), China	1 to 240 min. (adjusted in 1 min. steps)
	Recovery trigger	Job in or any key is pressed	
	Power consumption	M133, M144	3.7 W or less
		M134, M142, M141, M135, M143, M191	4.5 W or less
		M162, M163, M145, M146, M164	3.1 W or less
		M165, M147, M166, M148, M167, M149, M168, M150, M151, M169	3.9 W or less
	Recovery time	25 sec. or less	

Controller	Type	GDI Controller
	Interface	USB / net work / Wi-Fi
	Printer Language	DDST (GDI)
	Image Resolution	600 x 600 dpi (Max. 1200 x 600 dpi)
Noise		Operation: Less than 62.7 dB (A)
		Standby: Less than 40 dB (A)
		Energy Save: Less than 40 dB (A)

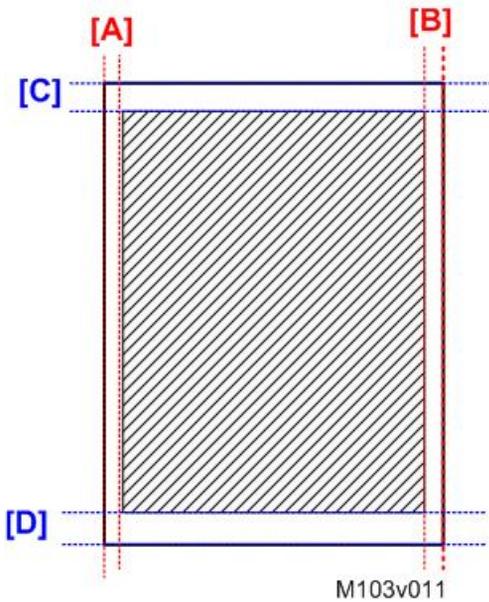
Printer Specifications

Printing Method		Semi-conductor laser beam with dry electrostatic toner development
Printing Speed		22 ppm (A4)
		23 ppm (LT)
First Print Time (A4/ LT 600 x 600 dpi)	M133, M144, M134, M142, M135, M141, M143	6 sec. or less (from paper-feed-start to paper-ejection)
	M162, M163, M145, M165, M147, M166, M148, M167, M149, M168, M150, M146, M164, M161, M169	10 sec. or less (from paper-feed-start to paper-ejection)
Resolution		600 x 600 dpi (Max. 1200 x 600 dpi)

Memory capacity	M133, M162, M134, M165, M147, M191, M146, M164	16 MB
	M144, M163, M145, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M151, M169	32 MB
Interface	USB 2.0	
	Ethernet (10BASE-T, 100BASE-TX)	
	IEEE802.11b/IEEE802.11g/IEEE802.11n standards	
Printer Language	DDST	
Fonts (M133, M144, M134, M142, M135, M141, M143, M191)	Chinese National Standard (GB 1830)	
Compatible operating systems	Windows XP and later	
Image Writing System	Semi-conductor laser system	
Estimated Service Life	5 years (or 60,000 prints)	
Counter	Provided (number of prints)	
Toner End Detection (M135, M141, M143, M167, M149, M168, M150, M146, M151 only)	Yes*1	
<p>*1 When toner management is ON:</p> <ul style="list-style-type: none"> • Toner consumption is estimated by a dot-count calculation. • When the dot-count total reaches the prescribed limit, a toner near-end warning is issued. • If the count continues, a toner-end alert is issued. • When an AIO is replaced, the ID chip on the AIO helps the machine to detect the new AIO. And if a new AIO is detected, the toner counter is reset automatically. 		
Zoom	25 to 400% (1-step)	

Printer Software	Language	GDI
	Error Processing	Printer operation panel LED, client PC
	Smoothing	600 dpi/2-bit image data smoothed up to 1200 x 600 dpi
	Grayscale	Halftone

Printing Area for Fax, GDI Printer Driver



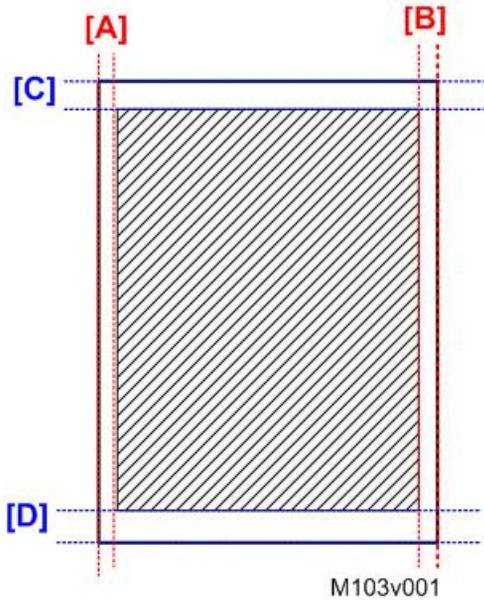
	Margin	Width	
		mm	inch
[A]	Left	4.2	0.2
[B]	Right	4.2	0.2
[C]	Leading	4.2	0.2
[D]	Trailing	4.2	0.2

Copier Specifications (M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M191, M151, M169)

Copy Speed		Multiple copy: 22 ppm (A4)/23 ppm (LT) 1 to 1 copy (ADF): 13 ppm (A4)	
Copy Delivery		Face-up, reverse order	
First copy		Less than 25 sec (Platen/600 x 600 dpi)	
		Less than 25 sec (ADF/600 x 300 dpi)	
Resolution	M134, M165, M147, M142, M166, M148	Scanning	600 x 600 dpi
		Printing	600 x 600 dpi
	M135, M141, M143, M167. M149, M168, M150, M191, M151, M169	Scanning	Exposure glass: 600 x 600 dpi ADF: 600 x 300 dpi
		Printing	600 x 600 dpi
Color		Black & white only	
Copy Modes		Text, Photo, Text/Photo	
Gradation	Copying	Read 10-bit, Store 8-bit	
	Printing	Process 2-bit, Print 1-bit	
	Halftones	More than 7 steps	
Zoom Copy	Zoom Ratio: Fixed	Mainly Europe and Asia: 50, 71, 82, 93, 100, 122, 141, 200 (%)	
		Mainly North America: 50, 65, 78, 93, 129, 155, 200 (%)	
	Zoom Ratio: Custom	25% to 400% (adjusted in 1% steps)	
Copy Quantity		99	

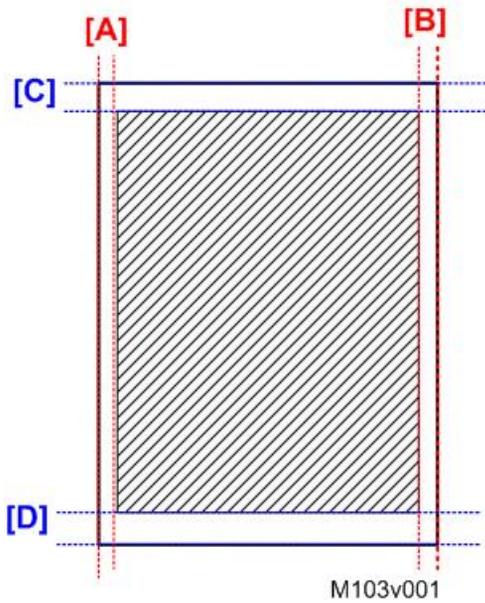
Original size	Platen book mode	Standard	A6 to A4/LT SEF, ID Card		
		Custom (W x L)	216 to 297 mm (8.5 to 11.7 in.)		
	ADF (M166, M148, M135, M143, M167, M149, M168, M150, M191, M151, M169 only)	Standard	A6SEF to A4/LT/LG		
		Custom	Width: 105 to 216 mm (4.1 to 8.5 in.)		
			Length: 127 to 356 mm (5 to 14 in.)		
	Maximum size (W x L)	Platen: 216 x 297 mm (8.5 x 11.7 in.)			
		ADF: 216 x 356 mm (8.5 x 14 in.)			
Auto original size detect	None				
Original capacity	Platen		1 sheet		
	ADF (M166, M148, M135, M143, M167, M149, M168, M150, M191, M151 and M169 only)		15 sheets		
Start reference point (origin)	Book mode: Left upper corner				

Copy Area: Copy from Flatbed



	Area	Width	
		mm	inch
[A]	Left margin	3	0.1
[B]	Right margin	3	0.1
[C]	Top margin	4.1	0.2
[D]	Bottom margin	4	0.2

Copy Area: Copy from ADF



	Area	Width	
		mm	inch
[A]	Left margin	3	0.1
[B]	Right margin	3	0.1
[C]	Top margin	4.1	0.2
[D]	Bottom margin	4.3	0.2

SADF	None. Scanning begins as soon as platen or ADF is lowered.
APS	None

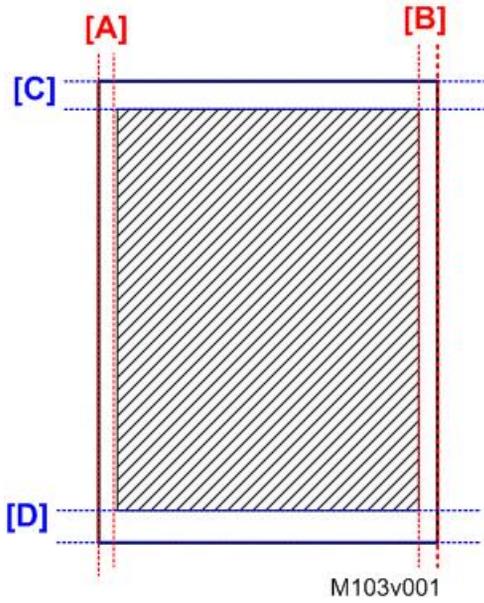
Paper Size Selection	M133, M162, M144, M163, M145, M134, M165, M147, M142, M146, M164	From utility only
	M166, M148, M135, M141, M143, M167, M149, M168, M150, M191, M151, M169	From utility and operation panel
Copy Density Adjustment	M134, M165, M147, M142, M166, M148	3 steps
	M135, M141, M143, M167, M149, M168, M150, M191, M151, M169	5 steps
Manual Density Adjustment	5 notches	

Scanner Specifications (M134, M165, M147, M142, M166, M148, M135, M141, M143, M167, M149, M168, M150, M191, M151, M169)

Type		Scanner/Printer		
Scanning Device		CIS module, driven by belt/gear		
Scanning Speed	Monochrome	3.9 sec. or less		
	Color	7.9 sec. or less (A4 compressed)		
	ADF Throughput (M135, M143, M167, M149, M168, M150, M151, M169, M191)	Monochrome	75.3 mm/sec.	
		Color	37.6 mm/sec.	

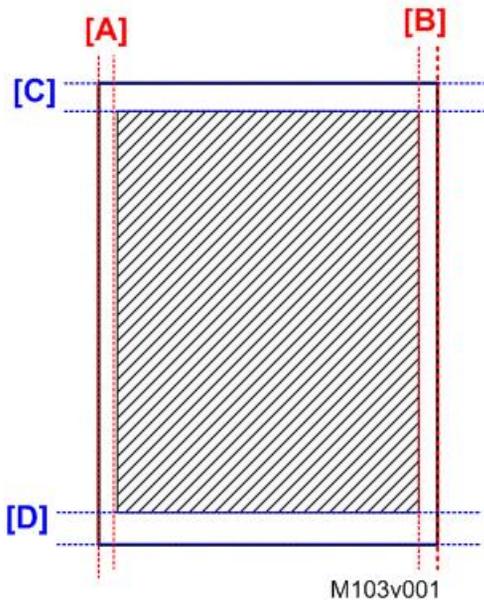
ADF Capacity (M166, M148, M135, M143, M167, M149, M168, M150, M151, M169, M191 only)		15 originals 70 g/m ²
Original Size	Book Mode	A4 (210 x 297 mm)/Letter (215.9 x 279.4 mm)
	ADF (M166, M148, M135, M143, M167, M149, M168, M150, M151, M169, M191 only)	Width: 105 to 216 mm (4.1 to 8.5 in.)
		Length: 148 to 356 mm (5.8 to 14 in.)
Gradation		More than 7 steps
Digitized Output		8-bit
Max. Scanning Area (horizontal x vertical)	Exposure Glass	216 x 297 mm (8.5 x 11.7 in.)
	ADF (M166, M148, M135, M143, M167, M149, M168, M150, M151, M169, M191 only)	216 x 356 mm (8.5 x 14 in.)

Scan Area: Scan from Flatbed



	Margin	Width	
		mm	inch
[A]	Left	1	0.05
[B]	Right	1	0.05
[C]	Leading	1	0.05
[D]	Trailing	1	0.05

Scan Area: Scan from ADF



	Area	Width	
		mm	inch
[A]	Left margin	1	0.05
[B]	Right margin	1	0.05
[C]	Top margin	1	0.05
[D]	Bottom margin	2	0.08

Main Scan Density	300 dpi, 600 dpi
Grayscale	Supported
PC Interface	M134, M165, M147, M135, M141, M167, M149: USB2.0
	M142, M166, M148, M143, M168, M150: USB2.0, Ethernet 10/100BASE-TX
Scanner Drivers	WIA, TWAIN
Operating Systems	Windows XP and later

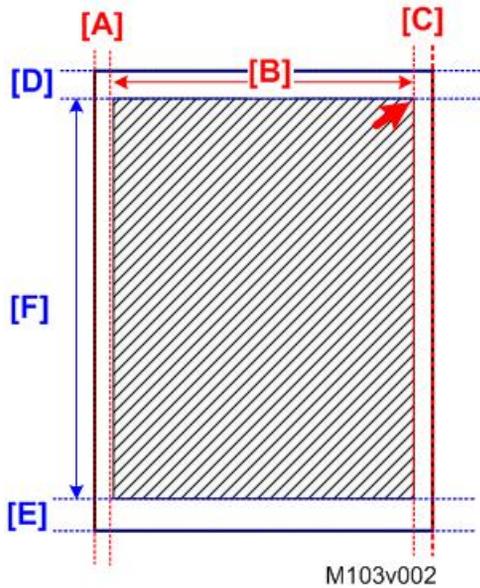
Fax Specifications (M135, M141, M143, M167, M149, M168, M150)

Transmission Speed	G3	33.6K - 2400 bps auto shift down method
	V.27ter	4800/2400 bps
	V.29	9600/7200 bps
	V.17	14400/12000/9600/7200 bps
	V.34	33600/31200/28800/26400/24000/21600 19200/16800/14400/12000/9600/7200/4800 / 2400bps
Transmission Time		3 sec. (8 dots/mm x 3.85 line/mm 33.6 kbps, MMR, ITU-T Chart 1)
Data Compression Method		MH, MR, MMR
Resolution (main scan)		600 x 600 dpi
Resolution	Standard	CD Direction: 8 dot/mm
		FD Direction: 3.85 dot/mm
	Detail	CD Direction: 8 dot/mm
		FD Direction: 7.7 dot/mm
	Photo	CD Direction: 8 dot/mm
		FD Direction: 7.7 dot/mm
Scan width		A4: 204 mm (8.03 in.) LT: 210 mm (8.27 in.)
Connection		G3 telephone line PSTN/PBX (one connector)
Transmission Line Density		Each scan line width: 1728 pixels Max. width: 356 mm
Scanning Selection		Std (Standard), Fine, Photo
Max. Scan Width		ADF/FB: 204 mm (A4 paper)

Max. Scan Length	ADF: 356 mm
	Flatbed: 288.9 mm (A4 paper)

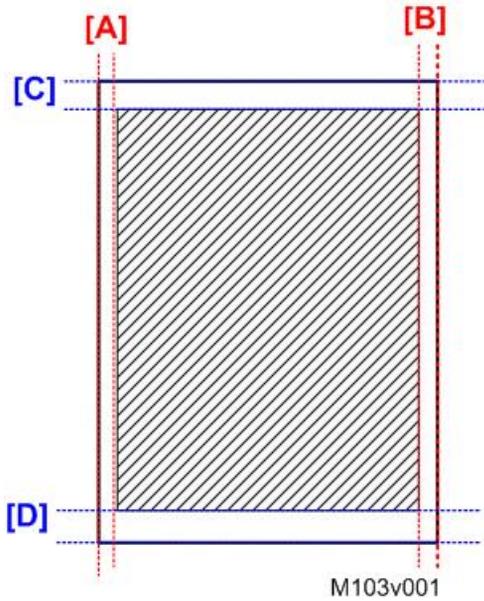
1

Scan Area: Fax from Flatbed



	Area	Width	
		A4 (mm)	LT (in.)
[A]	Left margin	3.0	0.1
[B]	Scanning width	204	10.8
[C]	Right margin	3.0	0.1
[D]	Top margin	4.1	0.2
[E]	Bottom margin	4.0	0.2
[F]	From top margin	288.9	13.6

Scan Area: Fax from ADF



	Area	Width	
		mm	inch
[A]	Left margin	3	0.1
[B]	Right margin	3	0.1
[C]	Top margin	4.1	0.2
[D]	Bottom margin	4.3	0.2

Scan Image Density	5 levels selectable
ADF	M135, M143, M167, M149, M168, and M150 only (standard)
Memory Capacity	TX: Up to 5 jobs (10 pp./job)
	RX: Up to 50 jobs (100 pp. total)
SAF Memory	100 pages (ITU Chart 1)
PC Fax	Supported
Address Book	Speed dial 100 destinations

Fax Operation Features	Fax/Telephone Select	Manual mode, Fax dedicated mode
	Halftone/Error Diffusion	Supported for sending
	Memory Display	Memory remaining display
	Dialing	One-touch key: No
		Coded key: Yes (Up to 100 numbers)
	Redial	Yes
		Auto / Manual (Destination 1)
	Line Monitoring	Yes
	Off-hook Dialing	Yes
Tone Sending	Yes	
Fax Operation Features	Pause Entry	Yes
	Busy Signal Sound Output	Yes
	Direct Sending	Yes
	Memory Sending	Yes
	Sequential Sending	Yes
	Page Re-sending	Yes
	TTI	Yes
	CSI	Yes
	TX Reserve	Yes

Fax Operation Features	ECM	Yes
	Auto RX	Yes
	Memory RX	Yes
	Night RX	Yes
	Sound Level Adjustment	Yes
	Handset	Yes
	On Hook Alarm	Yes
	Phone Call	Yes
	PC Fax	Yes

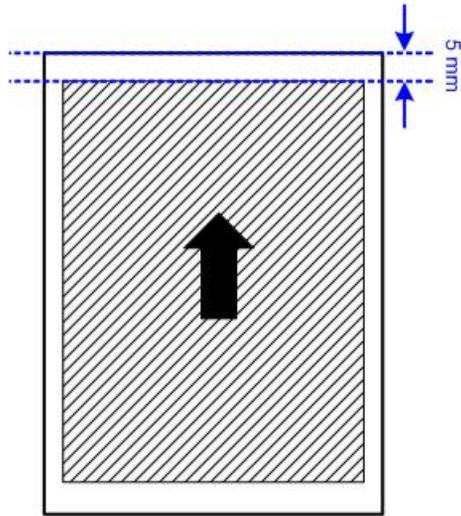
Reports

There are fourteen reports that can be printed to provide information about the status of the machine. The table below lists the reports and shows which reports are printed automatically or manually.

No.	Report Name	Auto	Manual
1	Configuration Page	No	Yes
2	Test Page	No	Yes
3	Fax Journal	Yes	Yes
4	TX Status Report	Yes	Yes
5	TX Standby File List	No	Yes
6	Fax Speed Dial List	No	Yes
7	Network Scanner Destination List	No	Yes
8	Network Scanner Journal	No	Yes
9	Network Setting List	No	Yes
10	Power Failure Report	Yes	No
11	Service Data List	No	Yes (Service Mode)

No.	Report Name	Auto	Manual
12	T.30 Protocol List Report	No	Yes (Service Mode)
13	Error Log History List	No	Yes (Service Mode)
14	PC FAX Error Report	No	Yes

Basic Format



M103v003

Every report is the same size. There is a 5 mm margin at the top. The width is the same as A4-size paper and the length is the same as LT-size paper.

Configuration Page

The Configuration Page lists the current settings of the machine:

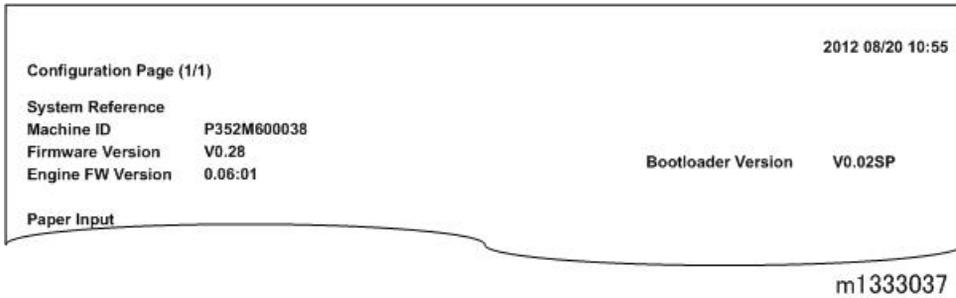
The details listed on the Configuration Page are different depending on the models as follows;

Main	System Reference	Paper Input	Counter List	System Settings	Printer Features	Copier Features	Fax Features	Adjust Sound Volume	Network Settings	Scanner Features
M133/ M162	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No
M144/ M163/ M145	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No
M134/ M165/ M147	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes
M142/ M166/ M148	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
M135/ M141	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
M167/ M149	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
M143/ M168/ M150/ M151/ M169/ M191/ M190/ M164	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

To print the Configuration Page:

- Start SOM > User Tools > select "Configuration Page" from the List/Test list > click [Print]
- [User Tools] > "Report Print Set" > "Configuration Page"(only M135, M141, M143, M167, M149, M168, M150, M151, M169, M191)

Configuration Page



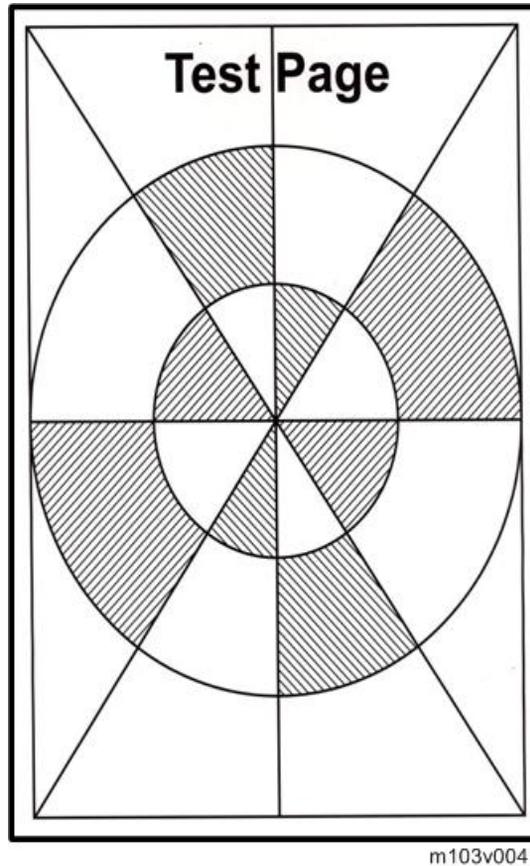
Test Page

The Test Page is used to check the results of print position adjustments.

To print the Test Page:

- Start SOM > User Tools > select "Test Page" from the List/Test list > click [Print]
- [User Tools] > "Report Print Set" > "Test Page" (only M135, M141, M143, M167, M149, M168, M150, M151, M169, M191)

Test Page



Fax Journal (M135, M141, M143, M167, M149, M168, M150, M151, M169)

The Fax Journal prints a fax transmission and reception journal for the last 100 jobs.

To Print a Fax Journal:

- Start SOM > User Tools > select "Fax Journal" from the List/Test list > click [Print]
- [User Tools] > "Report Print Set" > "Fax Journal"
- [User Tools] > "Fax Features" > "Report Print Set" > "Fax Journal"

Fax Journal

Fax Journal

Date) 2012/07/31 14:59
 Name) Opal
 Fax Number) 1-666-123-4567

Date	Time	Destination/Sender	TX/RX	Duration	Pages	Status	File No.
07/01	08:00	666-0000	TX	02'21	2	OK	001
07/10	09:00	777-0001	RX	03'50	4	OK	002
07/15	10:00	999-0002	TX	04'23	6	Err00A0	003

m1333038

TX Status Report (M135, M141, M143, M167, M149, M168, M150, M151, M169)

The TX Status Report prints and reports the status of each fax transaction. The last record in the list is the most recent.

To Print a TX Status Report:

- [User Tools] > "Report Print Set" > "TX Status Report"
- [User Tools] > "Fax Features" > "Report Print Set" > "TX Status Report"

TX Status Report

TX Status Report

Date) 2012/07/31 17:59
 Name) Opal
 Fax Number) 1-666-123-4567

File No.	Date	Time	Destination	Pages	Status	Unsent
001	07/31	15:00	666-0000	10	OK	
		15:15	Abcd Company	19	OK	
		17:00	Xyz Company	3	Err2(P.1-3

Err1) Connect. Failed Err2) Line Busy Err3) No Response Err4) Dest. Not Fax Err5)
 Cancel

(1st Page Image)

m1333039

Error Display	
Err1) Connect. Failed	Connection failed, communication error
Err2) Line Busy	Line is busy
Err3) No Response	No response

Error Display	
Err4) Dest. Not Fax	Remote side not a fax
Err5) Cancel	Pressed the Stop key during communication/scanning

TX Standby File List (M135, M141, M143, M167, M149, M168, M150, M151, M169)

The TX Standby File List lists all the scanned documents queued in memory for transmission.

To Print a TX Standby File List:

- Start SOM > User Tools > select "Fax Tx Standby File List" from the List/Test list > click [Print]
- [User Tools] > "Report Print Set" > "TX Standby File List"

TX Standby File List

TX Standby File List						
File No.	Date	Time	Destination	Pages	Status	Unsent
001	07/31	15:00	666-0000	10	Waiting	P.1-10
		15:15	Abcd Company	19	Transmitting	-
		17:00	Xyz Company	3	Waiting	P.1-3

m1333040

Fax Speed Dial List (M135, M141, M143, M167, M149, M168, M150, M151, M169)

Lists all the numbers registered by the operator for speed dialing.

To Print a Fax Speed Dial List:

- [User Tools] > "Report Print Set" > "Fax Speed Dial List"
- Start SOM > User Tools > select "Fax Speed Dial List" from the List/Test list > click [Print]

Fax Speed Dial List

Fax Speed Dial List			P.001
		Date)	2012/07/31 17:59
		Name)	Opal
		Fax Number)	1-666-123-4567
Speed Dial Number	Name	Number	
00	Abcd Company	1-123-4567	
01	Xyz Inc.	456-7890	
03	Lmnop Ltd.	666-7777	

m1333041

Network Scanner Destination List (M144, M163, M145, M142, M166, M148, M143, M168, M150, M151, M169)

Lists the network scan destinations registered on PC Utility.

To Print a Scanner Destination List:

- [User Tools] > "Report Print Set" > "Scanner Dest. List"
- Start SOM > User Tools > select "Scanner Dest. List" from the List/Test list > click [Print]

Network Scanner Destination List

Network Scanner Destination List								P.001
				Date)	2010/09/14 20:05			
No.	Name	Type	Destination	Scanning Mode	Resolution	File Format	Doc. Size	
00	ABCDABCDABCDABCDABCD	Email	Patty@abc.com.tw	B&W:Txt/Photo	150dpi	TIFF	A4	
01	AAAA	Email	Test123@aaa.c...	B&W: Photo	300dpi	PDF	Custom	
02								
no								

w_m1455001

Network Scanner Journal (M144, M163, M145, M142, M166, M148, M143, M168, M150, M151, M169)

The Scanner Journal prints a scanner journal for the last 100 Scan to E-mail, Scan to FTP, and Scan to Folder (excluding Scan to USB) transmissions.

To Print a Scanner Journal:

- [User Tools] > "Report Print Set" > "Scanner Journal"
- Start SOM > User Tools > select "Scanner Journal" from the List/Test list > click [Print]

Network Scanner Journal

Network Scanner Journal									
Date) 2010/09/14 20:05									
FileNo.	Date	Time	Type	Destination	Pages	Scanning Mode	File Format	Status	
001	07/01	08:00	Folder	\\test	002	B&W:Txt/Photo	TIFF	OK	
002	09:00	09:00	Email	Patty@abc.com.tw	010	B&W: Text	PDF	NG	
003	10:00	10:00	FTP	111.111.111.111	001	Grav Scale	JPEG	Cancel	

w_m1455002

Network Setting List (M144, M163, M145, M142, M166, M148, M143, M168, M150, M151, M169)

The Network Setting List prints the MAC address and IP address.

To Print a Network Setting List:

- [User Tools] > "Report Print Set" > " Network Setting List "
- Start SOM > User Tools > select " Network Setting List " from the List/Test list > click [Print]

Network Setting List

Network Setting List				2010/12/01 20:12 RICOH SP 2025F	
MAC Address	00-26-73-07-AE-07				
IPv4 Configuration					
DHCP Activated	Enable	IP Address	111.222.111.111		
Subnet Mask	255.255.255.0	Gateway Address	111.222.111.0		
IPv6 Configuration					
DHCPv6 Activated	Enable				
Stateful Address	1111.BBBB.CCCC:1111:2222:3333:4444:1111				
Gateway Address	1111.BBBB.CCCC:2222:2222:3333:4444:1111				
Link-local Address	1111.BBBB.CCCC:1111:2222:3333:4444:1111 Prefix Length 64				
Stateless Address 0	::				

w_m1455003

Power Failure Report (M135, M141, M143, M167, M149, M168, M150, M151, M169)

Fax documents stored in the main memory of the machine for sending, or fax documents that have been received but not printed, will be deleted if the machine is powered off, or if a power failure occurs. This report prints automatically after power is restored to inform the operator about which fax documents were lost before they were sent or printed.

Power Failure Report

Power Failure Report

P.001

Date) 2012/07/31 23:59
 Name) Opal
 Fax Number) 1-666-123-4567

File No.	Date	Time	Destination	TX/RX	Pages
001	07/31	15:00	666-0000	TX	10
002	07/30	15:15	Abcd Company	TX	19
003	07/29	17:00	Xyz Company	RX	3

m1333042

Service Data List (M135, M141, M143, M167, M149, M168, M150, M151, M169)

Print service data list report, list including following item.

To Print a Service Data List:

Enter Service Mode > "Fax Maintenance" > "Report" > "Service Data List"

After selection, the list is output after finishing the SP mode with the "Clear/Stop" button.

Service Data List

Service Data List		2012 08/23 14:55	
Fax Maintenance			
Modem Settings			
RX Level	- 43 dBm	Dial Pulse Setting	
TX Level	- 10 dBm	Dial Pulse Type	N
Cable Equalizer	General Value	Tone Signal Settings	
V.34 First TX	3360 Bps	Tone Sig. TX TimeLEN	100 ms
Speed		Min. Pause In Tone Dial	100 ms
		DTMF Level	- 6 dBm
		DTMF Level Delta	2 dBm

m1333031

T.30 Protocol List Report (M135, M141, M143, M167, M149, M168, M150, M151, M169)

You can see Fax and PC Fax communication protocols.

To Print a T.30 Protocol List Report:

Enter Service Mode > "Fax Maintenance" > "Report" > "T.30 Protocol List "

After selection, the list is output after finishing the SP mode with the "Clear/Stop" button.

T.30 Protocol List Report

P.001

Protocol Monitor Report

Date) 2012 07/31 08:59
Name) Opal
Fax Number) 12345678901234567890

Date	Time	Destination/Sender	TX/RX	Duration	Pages	Status	File No.	Mode
07/31	08:00	12345678901234567890	RX	02' 21"	2	OK	001	ECM
								33.6

TX	RX
ANS	CM
JM	CJ
NSF	FF 03 20 64 00 00 00 A0 88 CB 04 00 18 20 00 00 10 01 00
NSF	FF 03 20 64 00 00 00 a0 88 cb 00 00 00 00 00 00 10 01 00 00 01 06

m1333063

Error Log History List (M135, M141, M143, M167, M149, M168, M150, M151, M169)

You can see the error log history list of Fax communication.

This table keeps the last 40 record only.

To Print an Error Log History List:

Enter Service Mode > "Fax Maintenance" > "Report" > "Error Log History List"

After selection, the list is output after finishing the SP mode with the "Clear/Stop" button.

Error Log History List

ERROR LOG HISTORY LIST

Index	Error	Maker	Tele.
0001	:0070	49EE	88634733507
0002	:00A0	49EE	
0003	:0070	0000	
0004	:0070	0000	
0005	:0070	0000	

m1333062

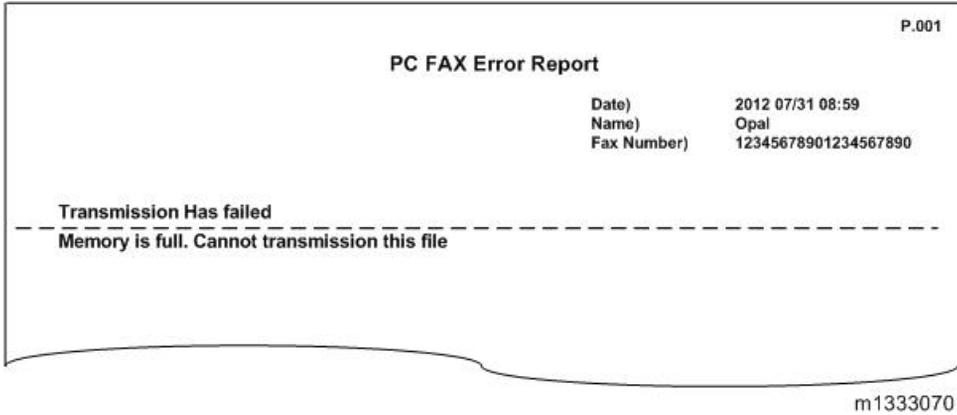
PC FAX Error Report (M135, M141, M143, M167, M149, M168, M150, M151, M169)

When an error occurs before a PC Fax TX file is normally created in the device, PC Fax Error report is output.

To Print a PC FAX Error Report:

[User Tools] > "Fax Features" > "Report Print Set." > " PC FAX Error Report"

PC FAX Error Report



Software Specifications

Smart Organizing Monitor

Required OS	Windows XP, Windows Server 2003, Windows Server 2003 R2, Windows Vista, Windows Server 2008, Windows Server 2008 R2, Windows 7, Windows 8, Windows Server 2012	
PC Requirements	Minimum	1 GHz 32-bit or 64-bit processor
		1 GB of RAM (32-bit) or 2 GB of system memory (64-bit)
	Recommended	1 GHz or faster, 32-bit or 64-bit processor
		2 GB of RAM (32-bit) or 4 GB of system memory (64-bit)
Interface	USB 2.0 only	