## Model Platinum-D4 Machine Code: C282

**Field Service Manual** 

June, 2015

## **Important Safety Notices**

### **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).
- In regard to other safety issues not described in this document, all customer engineers shall strictly obey procedures and recommendations described the "CE Safety Guide".
- Use only consumable supplies and replacement parts designed for use of the machine.

### Before Installation, Maintenance

#### Shipping and Moving the Machine

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- 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 product. Before you move the product, arrange the power cord so it will not fall under the product.

#### Power

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 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.
- This product is designed for an IT power distribution system in Norway.

### Installation, Disassembly and Adjustments

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- 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**

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- 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

### 

- Before you begin a maintenance procedure:
- 1) Switch the machine off
- 2) Disconnect the power plug from the power source.

### **Safety Devices**

### \Lambda 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**

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- 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.
- 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 contamination of food, drinks, etc. which could cause illness.
- Clean the floor completely after accidental spillage of silicone oil or other materials to prevent slippery surfaces that could cause accidents leading to hand or leg injuries. Use dry rags to soak up spills.

### **Lithium Batteries**

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- Always replace a lithium battery on a PCB with the same type of battery prescribed for use on that board. Replacing a lithium battery with any type other than the one prescribed for use on the board could lead to an explosion or damage to the PCB.
- Never discard used batteries by mixing them with other trash. Remove them from the work site and dispose of them in accordance with local laws and regulations regarding the disposal of such items.

### Power Plug and Power Cord

### **WARNING**

- Before serving 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

### 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.

### Safety Instructions for this Machine

### **Prevention of Physical Injury**



- Before disassembling or assembling parts of the machine and peripherals, make sure that the machine and peripheral power cords are unplugged.
- The plug should be near the machine and easily accessible.
- 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.
- 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.
- To prevent a fire or explosion, keep the machine away from flammable liquids, gases, and aerosols.

### **Health Safety Conditions**

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- If you get ink in your eyes by accident, try to remove it with eye drops or flush with water as first aid. If unsuccessful, get medical attention.
- If you ingest ink by accident, induce vomiting by sticking a finger down your throat or by giving soapy or strong salty water to drink.

### **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.

### Safety and Ecological Notes for Disposal

1. Dispose of replaced parts in accordance with local regulations.

2. Used ink and masters should be disposed of in an environmentally safe manner and in accordance with local regulations.

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- 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.

### Symbols

This manual uses several symbols. The meanings of those symbols are as follows:

	See or Refer to
Ŵ	Clip ring
B	E-ring
٩. M	Screw
Ø.	Connector
ş	Clamp

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## 1. Product Information

## **Specifications**

See "Appendices" for the "General Specifications":

## Guidance for Those Who are Familiar with Predecessor Products

### **New Features**

- The new stand table option can be available;
   To improve paper alignment in the paper exit tray for desktop-installed units.
- Supports firmware update via an SD card.
- Higher scanning resolution;
   600 x 600 dpi (compared to 600 x 300 dpi on the PT-3)
- Improved image scanning;
   RGB CCD (compared to monochrome CCD on the PT-3)
- Selectable scanning position on the exposure glass; Center position (PT-D3) or left corner position (PT-D4) scanning
- Shorter master-making time, shorter first print time; Making master time: 31 sec (compared to 32 sec. on the PL-D3) First print time: 33 sec (compared to 34 sec. on the PL-D3)
- New color exterior, new color operation panel (New PDI)

### **Overview**

### **Mechanical Component Layout**



1. Tension Roller 16. Paper Delivery Table 2. Master Feed Roller 17. Air Knife Fan Motor 3. Platen Roller 18. Master Eject Box 4. Thermal Head 19. Master Eject Rollers 5. Master Roll 20. 3rd Mirror 6. Paper Feed Roller 21. 2nd Mirror 7. Paper Pick-up Roller 22. 1st Mirror 8. Paper Table 23. DF Exposure Glass 9. Registration Rollers 24. 1st Transport Roller 10. Doctor Roller 25. Separation Roller 11. Press Roller 26. Original Feed Belt 12. Ink Roller 27. Pick-up Roller 13. Vacuum Fan Motor 28. 2nd Transport Roller 14. Exit Pawl 29. Original Exit Roller 15. Transport Belts

### Electrical Component Layout



### Boards

Index No.	Name	Function
19	LCD	Displays messages for the operator
20	Operation Panel Boards	These boards control the operation panel.
5	SBU	Makes a video signal from the scanned original.

Index No.	Name	Function
26	SIO	Controls the scanner motor, the power of the LED, and the ADF option.
46	Main Processing Unit (MPU)	Controls all machine functions both directly and through other boards.
50	Power Supply Unit	Provides dc power to the system.

#### Motors

Index No.	Name	Function
1	Scanner Motor	Stepper motor drives the book scanner.
4	Master Feed Motor	Feeds the master to the drum.
12	Paper Table Motor	Raises and lowers the paper table.
16	Cutter Motor	Cuts the master.
31	Master Eject Motor	Sends used masters into the master eject box.
32	Air Knife Fan Motor	Rotates the fan to provide air to separate the leading edge of the paper from the drum.
34	Vacuum Fan Motor	Provides suction so that paper is held firmly on the transport belt.
35	Paper Delivery Motor	Drives the paper delivery unit.
37	Pressure Plate Motor	Raises and lowers the pressure plate.
39	Clamper Motor	Opens or closes the drum master clamper.
43	Main Motor	Drives paper feed mechanisms and the drum.
44	Registration Motor	Feeds the paper to align it with the master on the drum.

### Solenoids

Index No.	Name	Function
14	Front Pressure Release Solenoid	Releases the press roller to apply printing pressure.
41	Rear Pressure Release Solenoid	Releases the press roller to apply printing pressure.

### Switches

Index No.	Name	Function
10, 15	Master making unit set switches	The machine does not work until the two set switches turn on.
13	Paper Table Lowering Switch	Lowers the paper table.
17	Master eject unit safety switch	Checks whether the master eject unit is properly closed.
18	Door Safety Switches	Checks whether the front door is properly closed.
23	Cutter HP Switch	Detects when the cutter is at the home position
30	Main Switch	Turns the power on or off.

### Sensors

Index No.	Name	Function
2	Master Set Cover Sensor	Checks if the master set cover is set.
3	Master End Sensor	Informs the CPU when the master making unit runs out of master roll.
7	Paper Height Sensor 1	Detects when the paper table reaches the paper feed position.
8	Paper Height Sensor 2	Detects when the paper table reaches the paper feed position.

Index No.	Name	Function
9	Paper End Sensor	Informs the CPU when the paper table runs out of paper.
11	Paper Registration Sensor	Detects paper approaching the registration roller.
22	Scanner Home Position Sensor	Detects when the image sensor is at home position.
24	Platen Cover Sensor	Detects whether the platen cover is open or closed.
25	APS Length Sensor 1	Detects the original length on the exposure glass.
27	APS Length Sensor 2	Detects the original length on the exposure glass.
28	Master Eject Sensor	Detects used master misfeeds.
29	Drum Master Sensor	Detects if there is a master on the drum
33	Paper Exit Sensor	Detects paper misfeeds at the exit.
36	Pressure Plate Limit Sensor	Detects if the pressure plate is in the lowest position.
38	2nd Feed Start Timing Sensor	Determines the paper misfeed check timing at the paper registration area.
40	Clamper Open Sensor	Detects if the clamper is in the open position.
42	Clamper Closed Sensor	Detects if the clamper is in the closed position.
45	Paper Table Lower Limit Sensor	Detects when the paper table is at its lower limit position.
48	Feed Start Timing Sensor	Determines the paper feed start timing.
49	Master Eject Position Sensor	Detects when the drum is at the master eject position (this is the home position)
51	Pressure Plate Home Position Sensor	Detects if the pressure plate is at the home position.
52	Eject Box Set Sensor	Checks if the master eject box is set.

### Others

Index No.	Name	Function
6	Thermal Head	Burns the image onto the master.
21	LED Lamp	Applies light to the original for exposure.
47	Paper Feed Clutch	Transmits main motor drive to the paper feed roller at the appropriate time.

### Drive Layout



1. Master Eject Motor	6. Registration Motor	
2. Pressure Plate Motor	7. Paper Feed Clutch	
3. Clamper Motor	8. Master Feed Motor	
4. Paper Delivery Motor	9. Scanner Motor	
5. Main Motor	10. Original Feed Motor (Option)	

## 2. Installation

### Installation Requirements

Carefully select the installation location because environmental conditions greatly affect machine performance.

#### **Optimum Environmental Condition**

- 1. Temperature: 10 to 30°C (50 to 86 F)
- 2. Humidity: 20 to 90 %RH
- Install the machine on a strong and level base. The machine must be level within 5mm (0.2") both front to rear left to right.

#### **Environments to Avoid**

- 1. Locations exposed to direct sunlight or strong light (more than 1,500 lux).
- 2. Dusty areas
- 3. Areas containing corrosive gases.
- Locations directly exposed to cool air from an air conditioner or reflected heat from a space heater. (Sudden temperature changes from low to high or vice versa may cause condensation within the machine.)

### **Power Connection**

### <u> WARNING</u>

- Securely connect the power cord to a power source.
- Make sure that the wall outlet is near the machine and easily accessible.
- Make sure the plug is firmly inserted in the outlet.
- Avoid multi-wiring
- Do not pinch the power cord.

#### Minimum Space Requirements

Place the machine near a power source, providing minimum clearance as shown below.



c267i156

- [A]: 600 mm (23.6") Front
- [B]: 200 mm (7.9") Rear
- [C]: 600 mm (23.6") Right
- [D]: 600 mm (23.6") Left

### Dimensions





c267i904

[A]	1,244 mm (49.0″)	[C]	587 mm (23.1″)
[B]*	750 mm (29.5″)	[D]	712 mm (28.0″)

[B]: Main body with the master eject box and paper table folded



c267i158a

[E] 681 mm (26.8″)

### Main Body and Peripherals

This is a list of the peripheral devices that can be installed with the digital duplicator.



No.	Model	Name	Comments
1	C282	Digital duplicator	Main Machine
2	D684	DF2020	Auto document feeder
3	D700	Platen cover PN2000	

No.	Model	Name	Comments
4	C643/C647/C648	Color drum	Optional drum – A4/LG/B4
5	C651	Tape Dispenser	
6	C654	Printer Unit Type 4545A	

### **Power Sockets for Peripherals**

### CAUTION

Rating Voltage for Peripherals

Make sure to plug the cables into the correct sockets.



• Tape Dispenser [A]: Rating Voltage of Output Connector for Accessory; Max. DC 24V

## **Installation Procedure**

### Main Body

### Accessory Check



Make sure that you have all the accessories listed below.

No.	Description	Quantity
1	Master Spool	2
2	Paper Delivery Table Side Plate Guide	2
3	Paper Feed Side Pad	2
-	Manuals for This Machine: CD (C282-11, -17, -29)	1
-	Easy Operation Guide (C282-11, -17, -29)	
-	Bundled Items List (C282-21, -61)	1
-	Warranty Sheets for China (C282-21, -61)	
-	Leaflet (C282-21, -61)	
-	Emblem (C282-29)	2
-	Power Cord	1
-	Table Stand	1

2

No.	Description	Quantity
-	Double-sided Tape	4

### Installation Procedure

### 

- To avoid serious injury, do not connect the power plug to the machine until you are instructed to do so.
- 1. Unpack the machine and remove all the wrapping.



- 2. When you install the optional table:
  - Mount the machine on the table. There are two screws [A] packed with the table.
  - Lock the caster [B]
  - Fix the caster lock stays [C] and tighten the screws [D]
  - Attach the stabilizing brackets [E] (these help to prevent the machine from falling over).



- 3. When you install the main machine on a table:
  - Place the table stand [A] on a table. The arrow mark [B] indicates the front side of the machine.



• Attach the double-sided tape [C] to each foot holder [D] if they are necessary.



d282z504

• Mount the machine on the table stand so that the front-left and rear-left corners [E] of the machine align with the marks [F] on the table stand.



- Make sure that the four feet of the machine are on the foot folders.
- 4. Remove the filament tape as shown below.





C271i111



5. Remove the string securing the covers and units as shown below.





- 6. Open the paper table.
- 7. Pull out the master making unit, and take out the accessory bag [A].
- 8. Remove the filament tape and string securing the covers and units.



9. Insert both spools into a new master roll.



10. Install the master roll, and open the master making unit cover.



- C271i152
- 11. Insert the leading edge of the master roll under the platen roller. The arrows [B] indicate the correct position of the master leading edge.



- 12. Close the master making unit cover [C] using both hands until it clicks into place.
- 13. Close the master making unit [D].



- 14. Open the front door.
- 15. Release the ink holder lock lever [E] and pull out the ink holder [F].
- 16. Remove the cap of the new ink cartridge, and insert a new ink cartridge into the ink holder.
- 17. Set the ink holder [F].



- 18. Load a stack of paper on the paper table.
- 19. Shift the lock lever [G] in the direction of the arrow. Make sure that the side plates [H] touch the paper gently.
- 20. Shift the lock lever [G] to its original position.

#### Vote

• Two side fence friction pads [I] are included as accessories. They are not used normally, but if paper multi-feed frequently occurs or thin paper is used, the side fence friction pads [I] can be installed to apply stopping pressure to the paper.



- 21. Raise the paper delivery table slightly, then gently lower it.
- 22. Lift the side plates and the end plate, and attach the side plate guides [J] for both side plates.

#### ✓Note

• When printing on A4 SEF, 8 1/2" SEF, B5 JIS LEF and SEF size paper and thin paper, you should attach the side plate guides to the side plates of the paper delivery tray. Users can also attach these guides.



- 23. Adjust the side and end fences of the paper delivery table to match the paper size.
- 24. Firmly insert the power plug in the outlet.
- 25. Turn on the main switch.
- 26. Make a master and make 30 prints with this master. Do this at least three times, until the image quality is acceptable.

### Vote

• This is a new drum. Because of this, before the first print is made, ink is supplied automatically. This takes 2 minutes.

### Changing the operation panel language

There are ten languages in the machine. If you need to change the language, use the User Tools menu to set the language.

- On the operation panel, press the User Tools key.
- Select "2. System".
- Select "5. Language on LCD".
- Select the language.

### Date/Time Setting

Use the User Tools menu to set the current date and time.

- On the operation panel, press the User Tools key.
- Select "2. System".
- Select "6. Date/Time".
- Enter the date and the time.

### **SP** Codes Setting

SP No.	Menu	Function
SP3-2	Input TEL number	Do this SP and input the contact numbers of the customer engineer. These numbers are shown when a service call is issued.

### Color Drum (Option)

#### Accessory Check

Check the quantity and condition of the accessories in the box against this list:
No.	Description	Quantity
1	Color Indicator Decal	5

#### Installation Procedure

## 

- To avoid serious injury, do not connect the power plug to the machine until you are instructed to do so.
- 1. Remove the protective sheets [A] from the drum.



- 2. Attach a color indicator decal to the drum case. The decal must be the same color as the ink in use.
- 3. Remove the drum from the machine.
- 4. Leave the master wrapped around the removed drum to protect the drum from dust and from drying.
- 5. Keep the removed drum in the drum case.
- 6. Install the color drum in the machine.

#### 🕹 Note

- The color drum indicator on the operation panel stays lit when a drum is mounted in the machine.
- 7. Remove the ink cartridge cap.
- 8. Insert the ink cartridge in the ink holder.
- 9. After main body installation, firmly insert the power plug in the outlet.
- 10. Turn on the main switch.
- 11. Make a master and make 30 prints with this master. Do this at least three times, until the image quality is acceptable.

#### Vote

• This is a new drum. Because of this, before the first print is made, ink is supplied automatically. This takes 2 minutes.

## ADF (Option)

#### Accessory Check

Check the quantity and condition of the accessories against the following list.

No.	Description	Q'ty
1	ADF	1
2	Screw	2
3	Knob Screw	2
4	Stud Screw (Small)	1
5	Stud Screw (Large)	1
6	Attention Decal – Top Cover	1
-	Installation Procedure	1



#### Installation Procedure

## 

- Unplug the copier power cord before starting the following procedure.
- 1. All tapes and shipping retainers.
- 2. Insert the two stud screws ([A] is the larger stud, [B] is the smaller stud).



d1587032.jpg

- 3. Mount the ADF [A] by aligning the screw keyholes [B] of the ADF support plate over the stud screws.
- 4. Slide the ADF toward the front of the machine.
- 5. Secure the ADF with the two knob screws [C].



b789i103a

- 6. Align the rear left corner of the platen sheet [A] with the corner [B] on the exposure glass.
- 7. Close the ADF.



8. Open the ADF and check that the platen sheet is correctly attached.

RTB 2 Replace the mylar with a new type

9. Attach the decal [A] to the top cover as shown. Choose the language that you want.



10. Rear Cover [A] (@ x 9)



c282z501

11. Cut away the knockout [A].



- c282z502
- 12. Remove the bracket [A] (🕮 x1).





- 13. Attach the harness bracket [A] as shown below (  $\textcircled{\mbox{\sc op}} x1$  ).
- 14. Connect the end of the cable [B] and fasten the grounding wire [C] as shown below ( $\Im^{r} x 1$ ).



c282z1046

- 15. Reattach the rear cover (🖤 x 9).
- 16. Plug in and turn on the main power switch of the machine, and then check the ADF operation.
- 17. Make a full size copy. Check that the registrations (side-to-side and leading edge) and image skew are correct. If they are not, adjust the registrations and image skew (see ADF Image Adjustment in the "Replacements and Adjustments" chapter).

#### When feeding thin paper

When feeding thin paper, adjust the sliding tray to the point shown below [A].

When feeding normal paper, adjust the sliding tray to the point shown below [B].

If not, it may cause problems as follows;

- Original jam
- Original curl
- Originals cannot be stacked neatly



d1585055

### Platen Cover (Option)

#### Accessory Check

Check that you have the accessories indicated below.

No.	Description	Q'ty
1	Platen Cover	1
2	Platen Sheet	1
3	Feeler Guide	1
4	Stepped Screw	2



#### Installation Procedure

## 

- Unplug the machine power cord before starting the following procedure.
- 1. Install the stepped screws (SP x 2).



d1582019

2. Install the feeler guide [A].



d1582020

3. Install the platen cover [A].



d1582021

- 4. Place the platen sheet [A] on the exposure glass.
- 5. Line up the rear left corner of the platen sheet flush against corner [B] on the exposure glass.



- 6. Close the platen cover.
- 7. Open the platen cover.
- 8. Press the surface of the platen sheet gently to fix it on the platen cover securely.

## Tape Dispenser (Option)

#### **Accessory Check**

Check the quantity and condition of the accessories in the box against this list:

No.	Description		
1	Knob Screw (For C210, C217, C218, C219, C222, C223, C225, C228, C238, C237, C238, C248, C249, C264, C267, C271 and C282)	2	
2	Screw M4 x 25 (For C211, C212, C213, C214, C216, C224 and C226)	2	
3	Hexagon Nut M4 (For C211, C212, C213, C214, C216, C224 and C226)	2	
4	Auxiliary Bracket (For C226, C267, C271 and C282)		
5	Auxiliary Bracket (For C238, C247 and C249)		
6	Auxiliary Bracket (For C264)	1	

No.	Description	Quantity
7	Screw M4 x 8 (For C226, C238, C247, C249, C267, C271 and C282)	4
8	Lock Washer (For C226 only)	1
9	Lock Washer (Without C267, C271 and C282)	
10	Таре	1

#### Installation Procedure

- 1. Turn off the main switch and unplug the power cord.
- 2. Remove the paper delivery cover (@ x 5).
- 3. Remove the cutout [A] from the rear cover, as shown.
- 4. Remove the bracket [A2] (SP x 1).



- 5. Connect the harness from the tape dispenser to the connector [B].
- 6. Remove the screw [C] that is beside the connector [B]. Reuse the screw to secure the bracket [D], as shown.



- 7. Open the master eject unit.
- 8. Install the auxiliary bracket [E] on the tape dispenser with M4x8 screws (accessories) [F].
- 9. Install the tape dispenser on the main body with two M4x8 screws [G] (accessories) in the two outer holes in the tape dispenser bracket.



- 10. Close the master eject unit. Reinstall the paper delivery cover.
- 11. Open the tape dispenser cover [H]. Then, insert the leading edge of the tape into the tape entrance until it stops as shown in the illustration [I].

#### Vote

• Be sure that the tape is installed in the proper direction. If it is not, the tape dispenser will not work correctly.



- 12. Firmly insert the power plug in the outlet.
- 13. Turn on the main switch of the main body.
- 14. Turn on the tape dispenser switch [J].



15. Press the tape cut button [K] to cut off the leading edge of the tape.



16. Check the tape dispenser operation using the Memory/Class modes of the main body.

## Printer Unit Type 4545A (Option)

## **Components Check**



No.	Description	Quantity
1	ACU Board (with Case)	1
2	Top Right Bracket	1
3	Bottom Bracket	1
4	Top Left Bracket	1
5	Short Harness	1
6	Long Harness	1
7	Ground Cable	1
8	Cover	1
9	Ferrite Core (One is white and the other is black.)	2
10	Screw: M3x4	5
11	Screw: M3x6	4

No.	Description	Quantity
12	Clamp	1
13	Attachment Kit for HP4R2.5*1	1

\*<sup>1</sup>: This item is not used for this machine.

#### Installation Procedure

#### Preparation for Installing

- 1. Attach the top left bracket [A], top right bracket [B] and bottom bracket [C] to the case ( x 1 each)
- 2. Install the clamp [D].
- 3. Attach the long harness [E] to the left side of the case ( $\Re \times 1$ ).
- 4. Attach the white ferrite core [F] to the long harness.
- 5. Attach the short harness [G] to the front side of the case.
- 6. Attach the black ferrite core [H] to the short harness.
- 7. Attach the cover [I] to the case ( $\mathfrak{O}^{p} \times 2$ ).



 Check whether the "mm/inch" setting in the User Tools (System - mm/inch) is set to the correct value. If necessary, change it to the correct "mm/inch" setting.  Check whether "SP2-7" (Vendor Selection) is set to the correct value. If necessary, change it to the correct vendor setting.

#### Installing the Controller in the Main Machine

- 1. Remove the controller cover [A] ( $\Im^{p} \times 2$ ).
- 2. Remove the rear cover [B] (@ x 9).



- 3. Attach the controller [C] to the main machine ( $\Im^{p} \times 4$ ).
- 4. Connect the harness [D] to the main board.
- 5. Attach the ground cable [E] (@ x 1).



6. Reinstall the rear cover.



• After installing the printer unit, make sure that the board and cable are securely connected.

2. Installation

# 3. Preventive Maintenance

## **Maintenance Tables**

See "Appendices" for the "Maintenance Tables".

З

3. Preventive Maintenance

# 4. Replacement and Adjustment

## **General Caution**

## 

• Turn off the main power switch and unplug the machine before attempting any of the procedures in this section.

## **Special Tools**

The followings are the special tools used for service.

Description	Part number	Note
Scanner positioning pins (4 pins as a set)	A0069104	page 83 "Adjusting the Scanner Positions"
Alvamoa 2 (Alvania) Grease	A0699502	-
SD-CARD:SERVICE:1GB	B6455020	<ul> <li>"8. System Test" in the Appendices</li> </ul>

## Image Adjustment

#### Overview

"Image Adjustment" adjusts the image position on prints by changing the SP settings.

Adjust the settings in the order:

• SP6-10  $\Rightarrow$  6-21  $\Rightarrow$  6-5  $\Rightarrow$  6-6  $\Rightarrow$  6-3  $\Rightarrow$  6-4  $\Rightarrow$  6-1  $\Rightarrow$  6-2

When correcting errors made when printing with the controller, use only the first two procedures. When correcting errors made when printing with scanned originals, do all six adjustments in the given order.

This adjustment is required every time the RAM on the MPU has been replaced.





1. Input SP8-10 (Test patterns) and enter "6", then press the Start key.

#### 🔁 Important

- Dry the printed test pattern sheet completely if you copy it from the ADF. Otherwise, ink on the test pattern sheet may adhere to the separation belt and the plastic sheet on the white plate of the ADF, and then adhered ink can get other originals dirty.
- 2. Exit the SP mode, print 10 copies at 100 rpm (speed 2). Use the 10th print for the adjustment.
- 3. The length of the 6 squares in the feed direction should be 130 mm [A], as shown above.
- 4. If it is not, calculate the reproduction ratio using the following formula.

 $\{(130 - Value) / 130\} \times 100 = \pm X.X \%$  (Round off to one decimal place)

- 5. Example: If the value is 133, {(130 133) / 130} x 100 = 2.3 %
- 6. Access SP6-10, input the calculated ratio, and press the Enter key.
- 7. Repeat the procedure to make sure that the ratio is correct.

#### SP6-21: Paper Regist Position

1. Input SP8-10 (Test patterns) and enter "6", then press the Start key.

#### 🔁 Important 🔵

- Dry the printed test pattern sheet completely if you copy it from the ADF. Otherwise, ink on the test pattern sheet may adhere to the separation belt and the plastic sheet on the white plate of the ADF, and then adhered ink can get other originals dirty.
- 2. Exit the SP mode, print 10 copies at 100 rpm (speed 2). Use the 10th print for the adjustment.
- 3. The space between the leading edge and the next line should be 22 mm, as shown above.
- If it is not, access SP6-21, input the difference and press the Enter key.
   Example: If the value is 7 mm, 7 8 = -1.0
- 5. Repeat the procedure to make sure that the gap is correct.

#### SP6-5: Scanning Speed – Platen and SP6-6: Scanning Speed – ADF mode

1. Make copies of the test pattern printed during the previous adjustments ( previous page), in platen mode at speed 2. Use the 10th print for the adjustment.

#### 🚼 Important

- Dry the printed test pattern sheet completely if you copy it from the ADF. Otherwise, ink on the test pattern sheet may adhere to the separation belt and the plastic sheet on the white plate of the ADF, and then adhered ink can get other originals dirty.
- 2. The length of the 6 squares in the feed direction should be 130 mm.
- 3. If it is not, calculate the reproduction ratio using the following formula.

#### {(130 - Value) / 130} x 100 = $\pm$ X.X % (Round off to one decimal place)

Example: If the value is 133, {(130 - 133) / 130} x 100 = - 2.3 %

- 4. Access SP6-05, input the calculated ratio, and press the Enter key.
- 5. Check again to make sure that the ratio is correct.
- 6. Make copies of the test pattern in ADF mode and repeat the process using SP6-06.

#### SP6-3: Scanning Start Position – Platen and SP6-4: Scanning Start Position -ADF

1. Make copies of the test pattern printed during the previous adjustments ( previous page), in platen mode at speed 2. Use the 10th print for the adjustment.

#### 🔂 Important

- Dry the printed test pattern sheet completely if you copy it from the ADF. Otherwise, ink on the
  test pattern sheet may adhere to the separation belt and the plastic sheet on the white plate of
  the ADF, and then adhered ink can get other originals dirty.
- 2. The space between the leading edge and the next line should be 22 mm.
- If it is not, access SP6-03, input the gap value and press the Enter key.
   Example: If the value is 7 mm, 7 8 = -1.0
- 4. Repeat the procedure to make sure that the gap is correct.
- 5. Make copies of the test pattern in ADF mode and repeat the process using SP6-04.

#### SP6-1: Main Scan Position – Platen and SP6-2: Main Scan Position - ADF

- 1. Make a copy in platen mode at speed 2.
- 2. Measure the difference between the center of the main-scan on the original and on the print.
- 3. Access SP6-01, input the gap value and press the Enter key. (If you input a positive value, the image moves towards the operation side.)
- 4. Repeat the procedure to make sure that there is no difference.
- 5. Make a copy in ADF mode and repeat the process using SP6-02.

## Covers

## Front Cover and Front Door





[A]: Front cover (@ x 9) [B] Front door (@ x 4)

4

## **Operation Panel**



c282z1003

- Front cover (🖝 page 58)
- Remove the ground cables [A] (🞯 x 1 for each).

[B]: Operation panel (☞ x 2, ☞ x 2, 屬 x 3)

### **Rear Cover**



c282z1001

[A]: Rear cover (🕅 x 9)

## Upper Covers



• Rear cover (🖝 page 60) [A]: Top rear cover (🞯 x 2) [B]: Right upper cover (🞯 x 2)

• Open the master eject unit.

[C]: Left upper cover (இ x 2)

## Boards

### MPU



c282z1004

• Rear cover (🖝 page 60)

[A]: MPU (🞯 x 10, 🞯 x 18, 2 ribbon cables)



#### Vote

- Take the NVRAM [B] from the old board and put it in the socket on the new board.
- Adjust the master end sensor (
  page 91 "Master End Sensor Adjustment") after installing the new MPU.

- Adjust the ink detection (
  page 117 "Doctor Roller Gap Adjustment") after installing the new MPU.
- If you must replace the MPU RAM, you must then do the image adjustments after you install the new RAM (
   page 55 "Image Adjustment").

#### PSU

#### Vote

 When the PSU is replaced, the thermal head voltage returns to the default. Adjust the thermal head voltage (
 page 89 "Thermal Head Voltage Adjustment") after installing the new board.



#### **PSU Board**

- Rear cover (🖝 page 60)
- PSU (🐨 x 6, 🗺 x 7)

#### Note

• The split washer screw [B] is used for grounding. Do not use another type of screw here.

#### **PSU Board with Bracket**

• Rear cover (🖝 page 60)

[A]: PSU (🞯 x 5, 🞯 x 7)

## **Scanner Unit**

#### Coloritant 🔁

• Unplug the machine power cord before starting the following procedures.

#### When reassembling

Adjust the following SP modes after you replace the scanner unit or each part of the scanner unit:

- SP6-1: Main Scan Position
- SP6-3: Scanning Start Position Platen
- SP6-5: Scanning Speed Platen

### Exposure Glass/DF Exposure Glass (CCD)



d1582041

- Operation panel (🖝 page 59)
- Right upper cover (🖝 page 60 "Upper Covers")
- [A]: Rear scale (🐨 x 3)
- [B]: DF exposure glass guide (🖤 x 3)



c282z1006

[C]: DF exposure glass



c282z1007

[D]: Exposure glass

### When reassembling



c282z1008

The optional ADF (D684) for this model use a non-contact method to read originals from the ADF. To avoid direct contact between originals and the DF exposure glass, the mylar [A] is attached to the DF exposure glass.

Position the marking [B] as shown below when you install the DF exposure glass.

#### Lens Block

### 

- Do not touch the paint-locked screws on the lens block. The position of the lens assembly (black part) is adjusted before shipment.
- Do not grasp the PCB or the lens assembly when you handle the lens block. The lens assembly may slide out of position.



• Exposure glass (🖝 page 64)

[A]: Lens cover [A] (🕅 x 2)



c282z1009

[B]: Lens block (🞯 x 4, 🞯 x 2)

### Vote

• Do not remove the other screws on the lens block unit.

### SIO Board



c282z1010

- Rear cover (🖝 page 60)
- Top cover (🖝 page 60 "Upper Covers")

[A]: SIO board with bracket [A] (@ x 1, @ x 6, FFC x 1)



[B]: SIO board (@ x 3)

### Exposure Lamp



• Exposure glass (🖝 page 64)

[A]: Move the exposure lamp to the point shown above.



[B]: Exposure lamp (🞯 x 2, FFC x 1)

#### **APS Length Sensors**



c282z1014

- Exposure glass (🖝 page 64)
- [A]: APS length sensor 1 (Strain x 1, Hook x 2)
- [B]: APS length sensor 2 ( x 1, Hook x 2)

### **Scanner Motor**



- Rear cover (🖝 page 60)
- Top cover (🖝 page 60 "Upper Covers")
- SIO board with bracket (🖝 page 67 "SIO Board")

[A]: Release the harnesses and interface cable from the clamps.



[B]: Right rear bracket [A] (🕅 x 4)



[C]: Motor bracket (🖤 x 2, 🞯 x 1, Spring x 1)


[D]: Scanner motor (🞯 x 2, Belt x 1)

#### **Vote**

• Adjust the image quality after you install the motor.

#### When Installing the Scanner Motor



c282z1019

When you reassemble, install the belt [A] first, and then set the spring. Fasten screw [B], and then fasten screw [C].

### **Scanner Home Position Sensor**



- d1582057
- DF exposure glass guide (🖝 page 64 "Exposure Glass/DF Exposure Glass (CCD)")
- Rear cover (🖝 page 60)
- Top rear cover (🖝 page 60 "Upper Covers")

[A]: Sensor tape [A]

[B]: Scanner home position sensor ( x 1, Hook x 3).

### Front Scanner Wire



c282z1020

- Operation panel (🖝 page 59)
- Exposure glass/DF exposure glass ( page 64)
- Left upper cover (🖝 page 60 "Upper Covers")

[A]: Scanner left rail frame (SP x 3)



c282z1042

[B]: Scanner front stay [A] (🞯 x 5)



To make reassembly easy, slide the 1st scanner carriage to the right. [C]: Front scanner wire brackets ( $\Im^{*} \times 2$ ) 4



[A]: Front scanner wire and scanner drive pulley (🞯 x 2, Scanner Clamp x 1)



#### **Reassembling the Front Scanner Wire**

1. Pass the wire with a ball [A] through the scanner drive pulley as shown below.



2. Position the center ball [B] in the middle of the forked holder.





3. Wind the right end counterclockwise (shown from the machine's front) five times. Wind the left end clockwise twice.



- The two blue marks [C] come together when you have done this. Stick the wire to the pulley with tape. This lets you easily handle the assembly at the time of installation.
- 4. Stick the wire to the pulley with tape, so you can easily handle the pulley and wire during installation.



c282z1023

5. Attach the scanner drive pulley [D] to the shaft and hook the wire onto the left pulley.

#### Vote

• Do not attach the pulley to the shaft with the screw at this time.



6. Hook the wire [E] onto the 2nd scanner unit as shown below.



7. Insert the left end [F] into the slit.



8. Hook the wire onto the right pulley [G].



9. Hook the wire [H] onto the 2nd scanner unit as shown below.



10. Hook the right end onto the front scanner wire bracket [I].

#### • Note

- Do not secure the scanner wire bracket with the screw at this time (before step 12).
- 11. Remove the tape from the drive pulley.
- 12. Adjust the scanner positions (🖝 page 83).

#### **Rear Scanner Wire**



c282z1029

- Exposure glass/DF exposure glass (🖝 page 64)
- Scanner left stay (🖝 page 72 "Front Scanner Wire")
- Scanner left rail frame (🖛 page 72 "Front Scanner Wire")

SIO with bracket ( page 67 "SIO Board")
[A]: Left rear bracket [A] ( x 4, x 1)



c282z1031

[B]: Right rear bracket (🞯 x 4)



c282z1032

[C]: Rear rail frame (SP x 5)



[D]: To make reassembly easy, slide the first scanner to the position shown above.



c282z1034

[E]: Rear scanner wire brackets (🞯 x 2)



c282z1035

[F]: Scanner motor gear [F] (🞯 x 1)



[G]: Rear scanner wire and scanner drive pulley (  $\textcircled{}^{\infty}$  x 2)





1. Pass the wire end with a ball [A] through the scanner drive pulley as shown above.





2. Position the center ball [B] in the middle of the forked holder.



3. Wind the end with the ring clockwise (shown from the machine's front) three times; wind the ball end clockwise (shown from the machine's front) five times.

Vote

- The two blue marks [C] should meet when you have done this.
- Stick the wire to the pulley with tape, so you can easily handle the pulley and wire during installation.
- 5. Install the drive pulley on the shaft.

#### Note

- Do not secure the scanner wire bracket with the screw at this time (before step 7).
- 6. Install the wire.

#### Note

- The winding of the wire on the three pulleys at the rear of the scanner should be the same as the winding on the three pulleys at the front. This must show as a mirror image. Example: At the front of the machine, the side of the drive pulley with the three windings must face the front of the machine. At the rear of the machine, it must face the rear.
- 7. Adjust the scanner position (🖝 page 83).

# Adjusting the Scanner Positions



- 1. Insert a scanner-positioning pin through the 2nd carriage holes [A] and [D].
- 2. Insert another scanner positioning pin through the 1st carriage hole [B] and [C].



c282z1040

- 3. Screw the drive pulley to the shaft [E].
- 4. Screw the scanner wire bracket to the front rail [F].
- 5. Install the scanner wire clamp [G].
- 6. Fasten the rear scanner wire using screws in the same manner as you have done for the front scanner wire.
- 7. Pull out the positioning pins.
- 8. Reassemble the machine and check the operation.

#### Note

• Make sure the 1st and 2nd carriages move smoothly after you remove the positioning pins.

# **Master Feed**

### **Master Making Unit**



- [A]: Master making unit cover (🞯 x 3)
- [B]: Master making unit (𝒱 x 2, 𝒱 x 4, 𝒱 x 1, 𝒱 x 1)

#### **Master Making Unit Set Switches**



Master making unit (● page 85)
[A]: Master making unit set switch (𝒱 x 1, 𝒱 x 1)



• Front cover (🖝 page 58)

[B]: Master making unit set switch (@ x 1, @ x 1)

#### Note

• There are two master making unit set switches for safety. Both sensors must be on or the machine will not start.

#### Thermal Head



- Master making unit (🖝 page 85)
- [A]: Open the platen roller unit.
- [B]: Thermal head upper cover (🞯 x 2)
- [C]: Thermal head side cover (🞯 x 1)



- Close the platen roller unit.
- [D]: Thermal head ( x 2)

#### Installation



If the following remarks are not followed, the thermal head will be installed incorrectly.

- 1. Fit the base's springs [A] over the protrusions [B] on the underside of the thermal head (5 points).
- While fitting the tops of the springs [A] over the protrusions on the underside of the thermal head, hook the lock pawls [C] of the thermal head onto the base (3 lock pawls). Make sure to set the front side [D] (the paper table side) first.
- 3. Make sure that all protrusions are properly fitted into the springs.

#### • Note

- Adjust the thermal head voltage (🖝 page 89) after installing the new thermal head.
- Do not touch the surface with bare hands. (If you touch it, clean the surface with alcohol.)
- Do not touch the terminals of the connectors with bare hands.

#### Master Set Cover Sensor



## **Master End Sensor**



#### Note

• Adjust the master end sensor (🖝 page 91) after installing a new sensor.

#### **Cutter Unit**



• To remove the screw [E], you must slide the thermal head a small distance towards the paper feed table.

# Thermal Head Voltage Adjustment

# 

• This adjustment is always required when the thermal head or PSU has been replaced.

Purpose	To maintain master making quality and extend the lifetime of the thermal head.
Standard	Refer to the voltage value (X) printed on the thermal head. The value varies from one thermal head to another. The adjustment voltage should be between X and X - 0.1 V.
Tools	Circuit tester

- Rear cover (🖝 page 60)
- Read the voltage value on the decal on the thermal head.



1. Connect the positive terminal of a circuit tester to TP1 and the negative terminal to TP2 on the PSU.

## **CAUTION**

- If the output and ground terminals touch each other, the board will be damaged.
- 2. Connect the power plug, and turn on the main switch to access SP mode.
- 3. Select SP5-12 (Thermal head signal output).
- Press the # key. Power is continuously supplied to the thermal head, which could damage the thermal head, so press the clear/stop key if you cannot finish the adjustment quickly. A beeper sounds while the power is being supplied.
- 5. Measure the voltage, and turn RV1 on the PSU until the value is between "+0" and "-0.1" volts from the value on the thermal head decal.

## Master End Sensor Adjustment

Purpose	To ensure that the sensor detects the end mark (a solid black area) on the master roll.
Standard	2.0 ± 0.1 volts
Tools	The core of a used master roll (the core just before a master end display appears)



- Rear cover (🖝 page 60)
- 1. Place the core inside the master making unit, and close the master making unit.
- 2. Connect the power plug, and turn on the main switch.
- 3. Access SP6-50.

4



4. Turn VR2 [A] on the MPU board until the display is  $2.0 \pm 0.1$  volts.

# **Master Eject**

# Master Eject Unit



C271R017

Open the master eject unit.



[A]: Master eject unit (🎯 x 3, 🞯 x 1)

## **Master Eject Rollers**



• Master eject unit (🖝 page 93)

[A]: Gears (<sup>C</sup> x 1)

- [B]: Lower master eject roller ( $\mathbb{C}$  x 2)
- [C]: Upper master eject roller (<sup>C</sup> x 2, 2 springs)

## Master Eject Motor and Pressure Plate Motor



- Master eject unit (🖝 page 93)
- [A]: Gears (© x 1)
- [B]: Master eject motor (<sup>€</sup> x 2, <sup>☉</sup> x 1, <sup>☉</sup> x 2)
- [C]: Pressure plate motor (🖗 x 2, 🎯 x 1, 🕅 x 2)

#### Drum Master Sensor, Master Eject Sensor and Eject Box Set Sensor



- [B]: Bracket (𝒱 x 2, ♥ x 1)
- [C]: Master eject sensor (≪x 1, ∞x 1)
- [D]: Eject box set sensor (🞯 x 1)

### Pressure Plate HP Sensor and Pressure Plate Limit Sensor



- Master eject unit (🖝 page 93)
- Master eject box

[A]: Pressure plate HP sensor (😂 x 1)

[B]: Gear (C x 1, 1 pin)

[C]: Pressure plate limit sensor (🖾 x 1)

## Air Knife Fan Motor



[A]: Air knife fan duct (𝒱 x 2)
[B]: Air knife fan motor (𝒱 x 1, 𝒱 x 1, 𝒱 x 2)

# Master Eject Position Sensor





# Master Clamper Opening Unit



[A]: Master clamper opening unit (🐨 x 3, 🖤 x 2)

# **Paper Feed**

### Pick-up Roller, Paper Feed Roller and Friction Pad



- Move the separation pressure slider [E] to position 1.
- [A]: Pick-up roller ( x 1)
- [B]: Paper guide (🕅 x 1)
- [C]: Paper feed roller ( $\widehat{W} \times 1$ )
- [D]: Friction pad

Do not change the position and direction of the paper guide [B].

## Paper Table Lower Limit Sensor



[A]: Paper table lower limit sensor (@ x 1, @ x 1)





- Master making unit (🖝 page 85)
- [A]: Paper feed unit cover (🞯 x 2)

[B]: Paper feed unit cover – small (🞯 x 4, 🞯 x 1)



[C]: Paper height sensor 1 (@ x 1, \$ x 1)
[D]: Paper height sensor 2 (@ x 1, \$ x 1)

## Paper End Sensor



- [B]: Paper table bottom plate (🕅 x 5, 3 washers)
- [C]: Paper end sensor (@ x 2, @ x 1)

## Paper Table Motor



• Front cover (🖝 page 58)

[A]: Paper table motor (@ x 2, @ x 1)

# Paper Feed Clutch



- Rear cover (🖝 page 60)
- MPU (🖝 page 62)
- [A]: Paper feed clutch bracket (🞯 x 2)
- [B]: Paper feed clutch (<sup>∰</sup> x 1, <sup>∞</sup> x 1)

#### **Paper Separation Pressure Adjustment**

The position of the screw can be changed in order to change the amount of pressure exerted by the friction pad.

This adjustment can be done:

- When feeding special paper, especially thick paper
- When the customer is experiencing feed problems.



• Move the separation pressure slider [A] to position 1.

Increase the paper separation pressure: Move up the screws [B]

Decrease the paper separation pressure: Move down the screws [B]

Default position: lowest position

The adjustment is automatically applied to all settings of the separation pressure slider.

# Printing

## Press Roller



# 

- Take care to avoid possible injury. If the printing pressure release arms disengage, the press roller will be pulled upwards suddenly.
- Remove the drum.

### [A]: Press roller (🕅 x 1)

The bearings on the rear and front differ. During installation, ensure that the bearing with the stopper [B] is positioned towards the rear of the machine.

# **Registration Sensor**



[A]: Registration sensor (🞯 x 2, 🞯 x 1)

# Feed Start Timing Sensor



[A]: Feed start timing sensor (🐨 x 1, 🗺 x 1)

## 2nd Feed Timing Sensor



- Open the master eject unit
- [A]: 2nd feed timing sensor (@ x 1, @ x 1)

## **Registration Motor**



- MPU (🖝 page 62)

[A]: Registration motor (spring, 🖤 x3, belt, 🞯 x 1)

#### Note

• The side of the motor with the harness [B] should face downward, as shown in the diagram

• The flange of the gear should face towards the motor as shown in the diagram

## **Registration Roller**



[B]: Plate (@ x 4)

- MPU (🖝 page 62)
- PSU (🖝 page 63)
- Registration motor (🖝 page 105)
4





- Nole
- The flange of gear [C] should face towards the machine, as shown in the diagram.



[D]: Bearing (<sup>(C)</sup> x 2)[E]: Registration roller

## Press Roller Release Solenoids



• Front cover (🖝 page 58)

107

• Rear cover (🖝 page 60)

[A]: Press roller release solenoid (🖤 x 2, 🞯 x 1)

## Note

• Adjust the press roller release lever (range 108 "Press Roller Release Lever Adjustment") after installing the new solenoid.

# Press Roller Release Lever Adjustment

Purpose:	To maintain the correct clearance between the press roller arms and press roller lock levers. This ensures that the press roller is correctly released and pressed against the drum when the press roller release solenoid is energized.
Standard:	0.7 to 1.2 mm
Tools:	Thickness gauge



- Front cover (🖝 page 58)
- Rear cover (🖝 page 60)

- Turn the drum manually until the drum master clamper on the drum moves into the lowest position. (This is when the high points of the cams on the drum flanges meet with the cam followers on both ends of the press roller.)
  - To find out the correct position of the drum for the adjustment, look at the rear end of the drum shaft. The recess on the drum drive gear meets the hole [A] in the bracket when the drum is in the correct position.



- 2. Using a thickness gauge, measure the clearance [B] between the press roller arm [C] and the press roller lock lever [D] (rear side). It should be between 0.7 and 1.2 mm.
- 3. If it is not correct, adjust the position of the press roller lock lever after loosening the two screws [E].
- 4. Repeat steps 2 and 3 for the front side.

## **Printing Pressure Adjustment**

Purpose:	To make better print results without decreasing the run length.
Standard:	Within $10 \pm 0.5$ mm



C271R051

- Paper delivery unit (🖝 page 121)
- 1. Adjust the distance [A] to  $10 \pm 0.5$  mm by turning the adjusting bolt [B].
- 2. Repeat the same procedure for the printing pressure spring at the non-operation side.

# Drum

## Preparation

Before attempting any of the procedures in this section, wipe off the ink around the ink roller. To do this, set SP2-10 (ink detection) to off, and feed paper until ink ends.

# **Cloth Screen**



- Remove the drum.
- 1. Remove the drum upper bracket (🞯 x 4).
- 2. Release the stopper [A], then rotate the drum until the master clamper faces top.



3. Remove the cloth screen [B] ( $\mathfrak{O}^{p} \times 4$ ).

### Installation



- Do not scratch the cloth screen or metal screen.
- Properly insert the edge of the cloth screen [A] on the cloth screen under the mylar [B] on the metal screen, as shown above. Otherwise, ink will leak from the trailing edge of the master on the drum during a long printing run.



• Make sure that the correct side ([A]: Inside, [B]: Outside) of the screen is facing up. In addition, make sure that the stays for securing the cloth screen are positioned correctly.



- When replacing the cloth screen, spread the screen around the metal screen while pulling the stay [C]. Adjust the stay so that it is parallel to the master clamper, then tighten the screws.
- Make sure that the cloth screen is not wrinkled while spreading it around the drum.

# **Clamper and Metal Screen**



- Remove the drum.
- Cloth screen (🖝 page 111)

[A]: Clamper lever (1 hexagon screw)

[B]: Clamper - open the clamping plate [C], then remove the clamper.

Note

- Do not allow ink to get on the inside of the clamping plate [C]. Otherwise, the master may slip off and the image position on the prints will move toward the trailing edge of the prints during a printing run.
- Use a cloth dampened with water to clean the inside of the clamping plate [C]. Never use alcohol or other solvents, or the clamping force of the magnet will be weakened.



[D]: Tape (do not lose it)

[E]: Metal screen (@ x 12)

#### Installation



C271R071

- Make sure that the correct end of the metal screen is overlapping. (The right side overlaps, as viewed from the non-operation side, as shown above.)
- The 4 screws holding the drum master clamper are longer than the 12 screws holding the metal screen, although they are similar in appearance. Be careful not to mix them up or use the wrong screws.
- When installing the metal screen, secure the trailing edge first with the 2 screws. Then, tighten the
  other screws while removing the slack from the screen. Make sure that the gap between the drum
  flanges and the screen is 0.3 mm or less, as shown above. (The two holes [A] on the trailing side
  are round holes and the other holes are long holes, to allow for the removal of the slack.)



- Position the springs [B] and [C] (one each at the front and rear) as shown when reinstalling the drum master clamper [D].
- Do not scratch the cloth screen or metal screen.

#### Note

• The side [E] with the part number printed on it must be on the top.

4

# Ink Pump Unit



- Remove the drum.
- Cloth screen (🖝 page 111)
- Clamper / Metal screen (🖝 page 113)

[A]: Ink pump unit (🞯 x 1, 🞯 x 2)

# Ink Roller Unit and Ink Roller One-Way Clutch



- Wipe off the ink around the ink roller beforehand (use SP2-10).
- Remove the drum
- Cloth screen (🖝 page 111)

- Clamper / Metal screen (☞ page 113)
  [A]: Connector cover (ஂ x 2, ஂ x 2)
- [B]: Ink socket (@ x 1)
- [C]: Front drum bracket (@ x 3)
- [D]: Front drum flange



[E]: Drum rear plate (🕅 x 2)

Loosen the screw [F] to take off the drum rear stoppers (  $\textcircled{\sc op}{}x$  1 )

[G]: Drum rear flange



[H]: Ink roller unit

[I]: Ink roller one-way clutch

# Doctor Roller Gap Adjustment

Purpose:	To control the ink thickness around the ink roller.
Standard:	A 0.07mm gauge passes, but a 0.09mm gauge does not.

Tools:	Thickness gauge

#### Vote

 Normally the doctor roller gap is not adjusted or changed. It tends to be difficult to change in the field. If the gap is too narrow, an uneven image may appear on the prints. If it is too wide, too much ink will be applied to the drum screens, resulting in ink leakage from the drum.



- C271R076
- Wipe off the ink around the ink roller beforehand. (Use SP2-10.)
- Remove the drum
- Remove the Ink roller unit
- 1. Make sure that a 0.07 mm gap gauge goes through the gap [A] between the ink and doctor rollers, and that a 0.09 mm gap gauge does not.

#### Vote

- The gap should be checked at both ends of the doctor roller. Insert a gap gauge at each end of the roller. The gap tends to be larger for the center.
- While the gap gauge is inserted, hold the doctor and ink rollers with your fingers in order to stop the rollers from rotating.
- While the gap gauge is inserted, hold the end of the gap gauge.
- 2. If the gap is out of the standard, loosen the screw [B] and adjust the gap by turning the cam bushing [C] for the front and for the rear.

#### • Note

• Make sure to repeat the adjustment for both ends of the rollers.

### Ink Detection Adjustment

#### Using the Digital Multi Meter

Purpose:	To ensure that the CPU detects a no ink condition.
Standard:	$4.0\pm0.2\mu_{sec}$

#### Vote

- Before attempting this procedure, wipe off the ink around the ink roller. To do this, set SP2-10 (Ink Detection) to OFF, and feed paper until ink ends.
- This adjustment is required every time the MPU has been replaced.
- Normally, the simple method is sufficient. But, the Digital Multi Meter method is more accurate. Use
  the Digital Multi Meter method if you cannot adjust the sensor to the required value with the simple
  method, or if ink flooding problems occur after adjustment with the simple method.



- 1. Turn off the main switch and disconnect the power plug.
- 2. Remove the rear cover.
- Connect the CH1 probe of the Digital Multi Meter to TP11 (INK1), the CH2 probe to TP12 (INK2). Select the 2-microsecond range on the Digital Multi Meter.
- 4. Connect the power plug and turn on the main switch.
- 5. Make sure that the waveform is as shown in the illustration while the ink end indicator lights.
- 6. If it is not correct, adjust the ON timing of the detection signal by turning VR1 beside the test pins.

#### 🕹 Note

 If the ink detection off mode has been selected with SP2-10, do not forget to return it to the default (detection on).

#### Simple Method

Purpose:	To ensure that the CPU detects a no ink condition.
Standard:	$4.0\pm0.2\mu_{sec}$

Drum

#### Vote

- Before attempting this procedure, wipe off the ink around the ink roller. To do this, set SP2-10 (Ink Detection) to OFF, and feed paper until ink ends.
- This adjustment is required every time the MPU has been replaced.
- Normally, the simple method is sufficient. But, the Digital Multi Meter method is more accurate. Use
  the Digital Multi Meter method if you cannot adjust the sensor to the required value with the simple
  method, or if ink flooding problems occur after adjustment with the simple method.
- Rear cover (🖝 page 60)
- 1. Access SP6-40.



- 2. Turn VR1 [A] on the MPU board until the display is "4.0  $\pm$  0.2  $\mu$ sec".
- When the drum has ink inside, the machine displays "----". Do SP 2-10 again, then go back to step 1.



• If the simple method gives an inaccurate result (causing ink flooding, for example), it is possible that too much ink will come out into the drum during printing. If this happens, repeat the adjustment, but use the Digital Multi Meter method, because this is more accurate.

# Paper Delivery

# Paper Delivery Unit



[A]: Paper table (🕅 x 2)



[B]: Paper delivery cover (🖤 x 5)



[C]: Paper delivery unit (🞯 x 2, 🞯 x 3)

# Delivery Belt, Paper Exit Sensor, Vacuum Fan Motor and Paper Delivery Unit Bushings



- Remove the paper delivery unit (🖝 page 121).
- [A]: Vacuum fan motor bracket (🞯 x 4)
- [B]: Vacuum fan motor ( x 2, pin x 2)
- [C]: Paper exit sensor (Strain x 1)

### Vote

• Make sure that you install the vacuum fan [B] the correct way around.



[D]: Delivery belts (C x 1)

[E]: Paper delivery unit bushings

#### Vote

- Install the delivery belt [D] the correct way around. The writing must be on the outside surface of the belt.
- The flat part of the "D" shaped cutout in the shaft [F] must face upwards.

# Paper Delivery Motor



- Remove the paper delivery unit (🖝 page 121).
- Delivery belts (🖝 page 122)

[A]: Paper delivery motor (SP x 2)

#### **Vote**

• When installing the paper delivery motor in the paper delivery unit, make sure that the pulley of the paper delivery motor hooks the timing belt [B], and the paper delivery motor is linked with the delivery belts [C] of the paper delivery unit.

## **Exit Pawl Adjustment**

Purpose:	To ensure that the exit pawls can move out of the way of the drum master clamper while the drum is rotating.
Standard:	Within 1.15 ± 0.15 mm

#### **Clearance adjustment**



- Front cover (🖝 page 58)
- Rear cover (🖝 page 60)
- 1. Turn the drum to the drum home position.

#### Vote

- The drum turns to home position automatically immediately after the power switch is turned on.
- 2. Loosen screw [A] then screw [B] in this order (do not remove them). Make sure that the bracket [C] becomes free from engagement and the cam follower [D] contacts the drum flange.



- 3. Using a gap gauge, measure the clearance [E] between the drum surface and the exit pawls. It should be 1.15 ± 0.15 mm.
- 4. If the clearance is not correct, adjust the clearance by turning the bolt [F].
- 5. Reposition the bracket [C] and tighten the screws [A] and [B].

#### **Timing adjustment**

Do this after the clearance adjustment.

Standard: 0 or less than 0.5 mm



1. Turn the drum manually until the recess in the drum drive gear meets the positioning hole [A] in the bracket, as shown.



- 2. Loosen screw [B] then screw [C] in that order (do not remove them). Make sure that the bracket [D] becomes free from engagement and the cam follower [E] contacts the drum flange.
- Measure the gap [F] between the cam follower and cam face (front drum flange). It should be 0 to 0.5 mm.
- 4. If the gap is not correct, loosen the two screws securing the cam follower bracket [G].
- 5. Re-tighten the two screws while pushing the cam follower against the cam face. Make sure that the gap [F] is 0 or less than 0.5 mm.
- 6. Do not push the cam followers too strongly against the cam.
- 7. Re-position the bracket [D] and tighten the screws [B] and [C].

# **Main Drive**

# **Registration Motor**



- Rear cover (🖝 page 60)
- MPU (🖝 page 62)
- PSU (**\***page 63)

[A]: Paper table (🎯 x 1, 🖾 x 2)



[B]: Plate (@ x 4)

4



[C]: Registration motor (spring, 🖤 x3, belt)

#### Note

- The side of the motor with the harness [D] should face downward, as shown in the diagram.
- The flange of the gear should face towards the motor, as shown in the diagram.

# Main Motor



- Registration motor (🖛 page 127)
- [A]: Harnesses (<sup>∰</sup> x 6)
- [B]: Bracket (@ x 2, bushing x 1)



[C]: Drive bracket (@<sup>®</sup> x 8)

#### • Note

• If the drive bracket [C] is to be removed from the machine with the drum removed, return the drum position to its home position [D].



[E]: Main motor ( x 1, 🕅 x 4)

#### Note

• Adjust the main drive timing belt ( rage 129 "Main Drive Timing Belt Adjustment") after installing the new main motor.

# Main Drive Timing Belt Adjustment

After the timing belt is replaced, correct belt tension must be applied.



- Rear cover (🖝 page 60)
- MPU (**\*** page 62)
- 1. Loosen the screws [A], [B], and [C].
- 2. Move the tension roller [D] to the right with a screwdriver [E] as shown.
- 3. Tighten the screws [A], [B], and [C].
- 4. Remove the screwdriver.

# Main Motor Pulley Position

After putting the pulley back on the main motor shaft, refer to the above illustration for the correct position of the pulley.

**Standard:** 46.3 ± 0.3 mm



C271R033

# Vote

• Tighten the screws alternately little by little. Do not tighten them completely one by one.

# Service Program Mode

See "Appendices" for the "Service Program Mode".

5. System Maintenance

# 6. Troubleshooting

# **Troubleshooting Guide**

See "Appendices" for the followings:

- "Service Call Conditions"
- "Electrical Component Defects"
- "DIP SW, LED, VR, TP and Fuse Tables"

6. Troubleshooting

# 7. Energy Saving

# **Energy Save**

#### **Energy Saver Modes**

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



The area shaded grey in this diagram represents the amount of energy that is saved when the timers are at the default settings. If the timers are changed, then the energy saved will be different. For example, if the timers are all set to 120 min., the grey area will disappear, and no energy is saved before 120 min. expires.

#### **Timer Settings**

The user can set these timers with User Tools (System settings)

- Energy saver timer (1 120 min): Low Power Mode. Default setting: 1 minute
- Auto off timer (1 120 min): Default setting: 0 (Off) for NA, ASIA, China/ 1 minute for EU

#### Vote

• The energy saver timer and the auto off timer cannot be used at the same time. Only one is available.

#### Recommendation

We recommend that the default settings should be kept.

- If the customer requests that these settings should be changed, please explain that their energy costs could increase, and that they should consider the effects on the environment of extra energy use.
- If it is necessary to change the settings, please try to make sure that the Auto Off timer is not too long. Try with a shorter setting first, such as 30 min., then go to a longer one (such as 60 min.) if the customer is not satisfied.
- If the timers are all set to the maximum value, the machine will not begin saving energy until 120 minutes has expired after the last job. This means that after the customer has finished using the machine for the day, energy will be consumed that could otherwise be saved.

# **Paper Save**

## **Effectiveness of the Combine Function**

The combine function reduces the amount of paper used. This means that less energy overall is used for paper production, which improves the environment.

#### Combine mode:

Reduce paper volume in half!



#### Recommendation

Please explain the above features to the customers, so that they can reduce their paper usage.

#### PT4

The following table shows paper savings and how the counters increase for some simple examples of single-sided jobs.

If combine mode is used, the total counters work in the same way as explained previously. The following table shows paper savings and how the counters increase for some simple examples of combine jobs.

#### 2 in 1 mode:

Originals	Simplex Sheet used	Paper Saved
1	1	0
2	2	1

MEMO

Model Platinum-D4 Machine Code: C282

**Appendices** 

June, 2015
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# **General Specifications**

## Main Frame

Configuration	Desktop				
Pival Density	300 dpi x 300 dpi				
	In Fine mode, 400 dpi in sub-scanning resolution				
Scanning	600 dpi x 600 dpi CCD				
Master Process	Digital with 300 dpi thermal head				
Originals	Sheet / Book				
Printing Process	Fully automatic one-drum system				
	Platen Mode:				
	Maximum A3 / DL size				
Original Size	ADF Mode:				
	Maximum 297 mm x 432 mm, 11.7" x 17.0"				
	Minimum 105 mm x 128 mm, 4.1" x 5.0"				
	Platen Mode:				
Original Thiskness ( Waight	Maximum 30 mm				
	ADF Mode:				
	40 to 128 g/m <sup>2</sup> , 10.7 to 34.3 lb.				
Original Stack Capacity (ADF)	100 sheets (80 g/m <sup>2</sup> [20 lb.])				
	Maximum:				
	275 mm x 395 mm, 10.8" x 15.6"				
Copy Paper Size	297 mm x 420 mm, 11.7" x 16.5" (A3 Printing Mode)				
	Minimum:				
	90 mm x 140 mm, 3.5" x 4.7"				

1

	China model:						
	35 to 127.9 g/m <sup>2</sup> (Normal Printing Mode)						
	52.3 to 127.9 g/m <sup>2</sup> (A3 Printing Mode)						
	B4/LG model (except China model):						
	47.1 to 209.3 g/m <sup>2</sup> (Normal Printing Mode)						
Copy Paper Weight	52.3 to 157 g/m <sup>2</sup> (A3 Printing Mode)						
	A4 model:						
	47.1 to 209.3g/m <sup>2</sup> [A4 size and smaller], 47.1 to 127.9 g/m <sup>2</sup> [More than A4 size] (Normal Printing Mode)						
	52.3 to 81.4 g/m <sup>2</sup> (A3 Printing Mode)						
Printing Speed	80, 100 or 130 cpm (Normal Printing Mode) 80 cpm (A3 Printing Mode)						
Original Type	Text, Text/Photo, Photo, Pale mode, Pencil mode						
Master Making Density	Lighter, Normal, Darker 1, Darker 2						
	Metric (%): 141, 122, 115, 93, 87, 82, 71						
Reproduction Ratios	Inch (%): 155, 129, 121, 93, 77, 74, 65						
Master Eject Box Capacity	30 masters						
Copy Paper Capacity	1,000 sheets (64 g/m <sup>2</sup> , 17 lb.)						
Paper Delivery Tray Capacity	1,000 sheets (64 g/m <sup>2</sup> , 171 lb., Normal Printing Mode)						
	500 sheets (64 g/m <sup>2</sup> , 17 lb., A3 Printing Mode)						
Power Source	120 V, 60 Hz, 1.8 A						
	220 V – 240 V, 50 – 60 Hz, 1.0 A						
	120V, 60Hz:						
	Less than 170W (Printing)						
Power Consumption	Less than 90W (Master making)						
	220V-240V, 50-60Hz:						
	Less than 170W (Printing)						
	Less than 115W (Master making)						

	Sound Power Level				
	Standby: 36 dB				
	Copying 80 cpm: 78 dB				
	Copying 100 cpm: 80 dB				
	Copying 130 cpm: 84 dB				
Noise Emission	Operating Position Sound Power Level				
	Standby: 20 dB				
	Copying 80 cpm: 63 (67*) dB				
	Copying 100 cpm: 66 (69*) dB				
	Copying 130 cpm: 70 (72*) dB				
	*: when installing the machine on the table.				
	Stored:				
	750 x 681 x 670 mm, 29.5" x 26.8" x 26.3"				
	Stored with ADF:				
	750 x 681 x 745 mm, 29.5" x 26.8" x 29.3"				
Dimensions (VV X D X D)	Set up:				
	1244 x 681 x 670 mm, 49.0" x 26.8" x 26.3"				
	Set up with ADF:				
	1244 x 681 x 745 mm, 49.0" x 26.8" x 29.3"				
	69.0 kg (Main)				
Weight	3 kg (Platen)				
	8.2 kg (ADF)				

	31 seconds (A4 🗖, Platen)
	32 seconds (A4 ¤, ADF)
First Print Time	33 seconds (A4 🖬, Platen)
	34 seconds (A4 ¤, ADF)

	B4 Drum:					
	250 mm x 355 mm					
Printing Area	LG Drum:					
rinning Alea	210 mm x 355 mm					
	A4 Drum:					
	210 mm x 288 mm					
	5 mm ± 3 mm (Normal Printing Mode)					
Leading Edge Margin	15 mm (B4/LG model, A3 Printing Mode)					
	25 mm (A4 model, A3 Printing Mode)					
	Side Registration:					
	± 10 mm (Normal Printing Mode)					
Side / Vertical Registration Adjustable Range	Fixed (A3 Printing Mode: -10 mm (B4/LG model) or -20 mm (A4 model)					
	Vertical Registration:					
	± 10 mm or more (Normal Printing Mode)					
	Fixed at Center (A3 Printing Mode)					

		280 mm width (B4) 240 mm width (LG / A4)					
	Adverter Turne						
		100 m / roll (China/ Korea)					
		125 m / roll (other destinations)					
Master		260 masters / roll (B4 / LG)					
	Yield	300 masters / roll (A4)					
		205 masters / roll (B4 China/ Korea)					
	Maximum run length per master	2000 prints / master					
	Storage Condition	-10 to 40°C, 10 to 90 %RH					
	Storage Period	18 months after production date					

Ink	Ink Type	500 ml / pack (Black, China) 600 ml / pack (Black, Other destinations) 600 ml / pack (Other colors)					
	Available Colors	Black, Red, Blue, Green, Brown, Violet Yellow, Maroon, Navy, Orange, Hunter green					
	Storage Condition	-5 to 40 C, 10 to 95 %RH					
	Storage Period	-5 to 40 C (12 months after production date) 15 to 25 C (18 months after production date)					

Avoid locations exposed to direct sunlight.

# DF2020 (ADF)

Original Type	Sheet
Original Weight	40 to 128 g/m <sup>2</sup> (10.4 lb. to 34 lb.)
Original Size	A3 SEF, B4 SEF, A4, B5, A5 11 × 17, 8 $1/2$ × 14, 8 $1/2$ × 11, 5 $1/2$ × 8 $1/2$
Original Capacity	100 sheets (80 g/m <sup>2</sup> , 20 lb.)
Dimensions (W × D × H)	565 × 500 × 125 mm (22.3" × 19.7" × 5.0")
Weight	Approx. 8.2 kg (18.1 lb.)

1. Appendix: General Specifications

# **Maintenance Tables**

The following items should be maintained periodically. There are two sets of intervals - one based on time and the other based on print count or original count. For maintenance items with entries in both of them, use whichever comes first.

Symbol Key: C: Clean, R: Replace, L: Lubricate

# **WARNING**

• Turn off the main power switch and unplug the machine before performing any procedure in this section.

#### Main Body

		Tir	ne		Print Counter					
	6M	1Y	2Y	5Y	30 0K	600K	1.2M	зм	EM	Note
Optics										
Exposure glass	С	С	С	С		С	С		С	Clean with water.
Platen cover	С	С	С	С					С	Clean with water.
White plate	С	С	С	С					С	Clean with water.
Master Feed										
Thermal head	С	С	С	С					С	Clean with alcohol.
Platen roller							С			Clean with alcohol.
Drum and Ink Supply										
Ink nozzle							С			Damp cloth
Drum master sensor							С			Dry cloth

Black patches	С	С	С	С				С	Dry cloth
Cloth screen						R			
Ink roller one-way clutch							R		
Drum master sensor						С			Dry cloth
Master clamper	С	С	С	С				С	Clean with water.
Paper Feed									
Paper feed roller	С	С	С	С		R		С	Dry or damp cloth
Pick-up roller	С	С	С	С		R		С	Dry or damp cloth
Friction pad	С	С	С	С	R			С	Clean with alcohol.
Registration rollers					С				Clean with alcohol.
Feed start timing sensor					С				Dry cloth
Press roller	С	С	С	С		R		С	Dry or damp cloth
Drum drive gears					L				Grease (Alvania #2)
Paper feed clutch							R		
Paper delivery motor							R		

## ADF

Time				Print Counter	EAA	Note
6M	1Y	2Y	5Y	300K		INOIE

Feed belt	С	С	С	С	R	С	Clean with water or alcohol.
Separation roller	С	С	С	С	R	С	Clean with water or alcohol.
Pick-up roller	С	С	С	С	R	С	Clean with water or alcohol.
White plate	С	С	С	С		С	Clean with water or alcohol.
DF exposure glass	С	С	С	С		С	Clean with water.
Platen cover	С	С	С	С		С	Clean with water or alcohol.

# 3. Appendix: Service Call Conditions

# **Service Call Conditions**

#### **Service Call Codes**

#### Note

- If the problem concerns electrical circuit boards, first disconnect then reconnect the connectors before replacing the PCBs.
- If the problem concerns a motor lock, first check the mechanical load before replacing motors or sensors.

No.	Description/Definition	Points to Check
E-00	<b>Clamper Motor Failure</b> The MPU cannot detect the clamper position sensor signal (open or closed) within 3.0 seconds after the clamper motor turns on.	Clamper drive Clamper sensors Clamper motor MPU board Main motor encoder Master eject position sensor
E-01	<b>Cutter error:</b> The cutter HP sensor does not turn on within 3.0 seconds after the cutter motor turns on.	Cutter drive Cutter switch Cutter motor
E-02	Paper Table Drive error:The paper height sensor or the table lower limitsensor does not turn on within 7.5 seconds afterthe table motor turns on.Paper height sensor 1 or 2 does not turn onwithin 1 second after the paper height sensor 1or 2 turn on.	Paper table drive Paper table motor Paper height sensor 1 or 2 Paper table lower limit sensor Gears Paper table spring
E-04	<b>Thermal Head Overheat:</b> Temperature of the thermal head is greater than 65°C when the Start key is pressed.	Overheat (wait for the thermal head to cool down) Thermal head

No.	Description/Definition	Points to Check
E-06	Main Motor Lock: The CPU cannot detect the master eject position sensor (drum HP) signal within 5.0 seconds after the main motor turns on.	Main motor drive Main motor Motor drive board Master eject position sensor
E-09	<b>Thermal Head Thermistor Open:</b> The thermistor output voltage is over 2.817 volts.	Thermal head thermistor Thermal head connector
E-10	<b>Thermal Head Energy Pulse error:</b> The CPU detects an abnormal ID signal from the thermal head energy control pulse.	Thermal head connector Thermal head MPU
E-12	<ul> <li>Pressure Plate error:</li> <li>The pressure plate home position sensor does not turn on within 6 seconds during initialization.</li> <li>Both the pressure plate home position and pressure plate limit sensors turn on when the main SW is turned on.</li> <li>The pressure plate home position sensor does not turn off when the pressure plate limit sensor does not turn on within 4.5 seconds when compressing the ejected master.</li> </ul>	Pressure plate drive Pressure plate motor Plate position sensors Master eject error
E-13	Scanner error: The scanner HP sensor does not turn on within 14.0 seconds after the main switch turns on. On the Initial Movement, the Scanner HP sensor does not turn off when the scanner moves 20.0 mm towards the scanning position. On the Initial Movement, the Scanner HP sensor does not turn on within 2.0 seconds after the main switch turns on.	Scanner drive Scanner HP sensor Scanner motor

No.	Description/Definition	Points to Check
E-14	SBU error:	SBU defective
	The MPU board cannot communicate with SBU	SIO defective
	or communication data is not expected.	PSU defective
	The value of the SBU white level adjustment is	MPU defective
	The value of the SPU black level adjustment is	Harness broken
	out of the correct range.	Connector disconnected
	The power of LED lamp is not enough.	
E-15	LED Power error:	SBU defective
	The error signal from the LED board is detected.	SIO defective
	The PWM of the LED cannot be adjustmed.	CIS unit defective
		MPU defective
		Harness broken
		Connector disconnected
E-22	2nd Feed Start Timing Sensor error:	Drum sensors
	The 2nd feed start timing sensor does not	Feeler
	activates.	
E-23	Master Eject Position Sensor (Drum HP) error:	Drum sensors
	The master eject position sensor does not	Feeler
	activate before the feed start timing sensor activates.	
F-24	Feed Start Timing Sensor error	Drum sensors
	The feed start timing sensor does not activate	Feeler
	before the 2nd feed timing sensor activates.	
E-40	Thermal Head ID error:	Different thermal head
	The CPU detects an abnormal ID signal from the	MPU
	thermal head.	Thermal head connector disconnected
E-44	MSU error	Replace the MPU.
E-50	NVRAM data version disagreement:	Replace the MPU.
	Data for the uploading NVRAM is not expected data for the machine.	

No.	Description/Definition	Points to Check
E-51	<b>Flash Rom error:</b> The data in the flash ROM is not complete.	Replace the MPU.
E-54	ASIC error: The ASIC on the MPU cannot reboot at turning on the machine. The ASIC on the MPU stop working, and then cannot recover during the machine operation.	MPU defective
E-55	<b>FPGA error:</b> The FPGA on the MPU detects the SBU clock error.	SBU defective MPU defective
E-61	<b>Auto Off Switch error:</b> The main switch does not turn off for more than 6.0 seconds.	Auto off switch defective Auto off switch connector disconnected
E-70	DF Gate error: The DF gate signal is not turned on for 10 seconds after the original has been transported from the original registration point. The DF gate signal is not turned off for 30 seconds after the machine has detected the ON signal from the DF gate.	Encoder defective Harness broken Connector disconnected Overload to ADF drive motor ADF drive motor defective
E-71	<b>DF Mismatch error:</b> The machine detects that the installed ADF is not a correct option for this machine when the ADF is activated.	Install the correct ADF. ADF drive board defective
E-72	<b>DF Feed Motor error:</b> The machine detects the error signal from the DF feed motor.	Overload to DF feed motor DF feed motor defective
E-73	<b>DF Transport Motor error:</b> The machine detects the error signal from the DF transport motor.	Overload to DF transport motor DF transport motor defective

No.	Description/Definition	Points to Check
E-74	<b>DF Circuit Breaker error 1:</b> One of electrical components (24 V) in the ADF is defective or connector is disconnected.	One of following units is defective. • DF feed motor • DF transport motor • Inverter solenoid • Pick-up solenoid • DF feed clutch • Cooling fan
E-75	<b>DF Circuit Breaker error 2:</b> One of electrical components (24 V-Out) in the ADF is defective or connector is disconnected.	
E-76	<b>DF Circuit Breaker error 3:</b> One of electrical components (5 V) in the ADF is defective or connector is disconnected.	Original set sensor defective Connector disconnected

# 4. Appendix: Electrical Component Defects

# **Electrical Component Defects**

# Paper Feed and Exit



c271t900

	Jam Type
Paper feed	A Jam
Drum	B Jam
Paper eject	C Jam
Master feed	D Jam
Master eject	E Jam
ADF	P Jam
Paper remaining	A or B Jam

#### Drum

Name	State	Symptoms
2nd Feed Start Timing Sensor	Open	E22 is displayed when the drum rotates.
	Shorted	
Master Eject Position (HP) Sensor	Open	E23 is displayed when the drum rotates.
	Shorted	
Feed Start Timing Sensor	Open	E24 is displayed when the drum rotates.
	Shorted	
Drum Set Sensor	Set	Setting Drum: Normal Operation No Drum: E-06 is displayed when the main motor rotates.
	OFF	Displays "not drum".
Drum Ink Sensor	ON	Image will be patchy because ink will not be supplied.
	OFF	Displays "Ink end".

# Paper Eject

Name	State	Symptoms
Paper Exit Sensor	Open	The "C" jam indicator is lit.
	Shorted	The "B" jam indicator is lit when a copy is made.

# Paper Feed

Name	State	Symptoms
Paper Registration	Open	The "AB" jam indicator is lit.
Sensor	Shorted	The "A" jam indicator is lit when a copy is made.

Name	State	Symptoms
Paper Table Lower limit	Open	The paper table does not go down.
Sensor	Shorted	The paper table goes down below the sensor, and E-02 is displayed.
Paper End Sensor	Open	Printing can begin even if there is no paper, and the "A" jam indicator will be lit.
	Shorted	The "load more paper" indicator is lit.
Paper height sensor 1	Open	E-02 is displayed after 1 second from moving up the paper feed table during printing.
	Shorted	The paper table goes up over the sensor, and E-02 is displayed
Paper height sensor 2	Open	E-02 is displayed after 1 second from moving up the paper feed table during printing.
	Shorted	The paper table goes up over the sensor, and E-02 is displayed

## Main Drive

Name	State	Symptoms
Clamper Open Sensor	Open	E-00 is displayed.
	Shorted	E-00 is displayed when the clamper operates.
Clamper Close Sensor	Open	E-00 is displayed when the clamper operates.
	Shorted	E-00 is displayed.

#### Scanner

Name	State	Symptoms
Platen Cover Sensor	Open	The master is made normally, even if the platen cover is open. (Have to push the start button twice)
	Shorted	The image is treated using center/edge erase mode.

Name	State	Symptoms
Scanner HP Sensor	Open	E-13 is displayed.

# Master Eject

Name	State	Symptoms
Drum Master Sensor	On	The "B" jam indicator is lit when print is started. (Print without master)
	Off	Master does not eject The "D" jam indicator is lit.
Pressure Plate Limit	Open	E-12 is displayed.
Sensor	Shorted	The "Full eject master" indicator is lit.
Pressure Plate HP	Open	E-12 is displayed.
Sensor	Shorted	E-12 is displayed.
Master Eject Box Sensor	On	The master is ejected, even if there is no master eject box
	Off	"No master eject box" is displayed.
		"Full eject master" indicator is lit.
Master Eject Sensor	Open	The "B" and "E" jam indicator is lit.
	Shorted	The "B" jam indicator is lit
Master eject unit safety switch	Open	"Unit open" is displayed.

# Master Making Unit

Name	State	Symptoms
Master Set Cover	Open	The "D" jam indicator is lit.
Sensor	Shorted	The "open cover" indicators are lit.

Name	State	Symptoms
Cutter HP Sensor	Open	E-01 is displayed.
	Shorted	E-01 is displayed.
Master making unit set switches	On	If both sensors work correctly, the machine operates correctly.
	Off	"Not set making unit" is displayed
Master End Sensor	White	Master making can start even if there is no master roll, but the "D" jam indicator will be lit.
	Black	The "load new master roll" indicator is lit.
Thermal Head	Open	E-09 is displayed.
lemperature	Short	E-04 is displayed.

## ADF

Name	State	Symptoms
ADF Cover Switch	Open	The "Cover open" is displayed on the LCD when the machine is turned on.
	Short	The "P" original misfeed indicator is lit.
De nistration Samon	Open	The "P" original misfeed indicator is lit when the machine is turned on.
Registration Sensor	Short	The "P" original misfeed indicator is lit when the [Start] key is pressed.
Original Set Sensor	Open	The "P" original misfeed indicator is lit when the master is made without an original. The "P" original misfeed indicator is lit after the last original has been transported from the original set tray.
	Short	The "Set the original" is displayed on the LCD when the [Start] key is pressed. If the [Start] key is pressed again, the machine starts to scan in the platen mode.

Name	State	Symptoms
Lift Sensor	Open	The master is made normally, even if the platen cover is open. (Have to push the start button twice)
	Short	The image is treated using center/edge erase mode.
Skew Correction	Open	The "P" original misfeed indicator is lit when the machine is turned on.
Sensor	Short	The "P" original misfeed indicator is lit when the [Start] key is pressed.
Exit Sensor	Open	The "P" original misfeed indicator is lit when the machine is turned on.
	Short	The "P" original misfeed indicator is lit when the [Start] key is pressed.
Original Sensor	Open	No alert is displayed.
	Short	No alert is displayed.
Original Width Sensors	Open	No alert is displayed. However, the output image size is
	Short	not expected.

## Other

Name	State	Symptoms
Auto shut off Switch	On	Cannot shut off the main switch. E-61 is displayed at auto shut off.
	Off	The main switch stays off

# 5. Appendix: DIP SW, LED, VR, TP and Fuse Tables

# DIP SW, LED, VR, TP and Fuse Tables

# Test Points

#### MPU

No.	Usage
TP11	INK1 (Standard Signal)
TP12	NK2 (Detection Signal)
TP13	CGND

#### Potentiometers

#### MPU

No.	Usage
VR1	Ink detection adjustment
VR2	Master End Sensor Adjustment

#### **Power Supply Unit**

No.	Usage
RV1	Thermal Head Voltage Adjustment

#### LEDs

#### MPU

LED #	OFF	ON	
LED 1	Sub-CPU (not use for service)		
LED 2	Main-CPU (not use for service)		
LED 3	Main-CPU (not use for service)		
LED 4	FPGA (not use for service)		
LED 5	RI2005 (not use for service)		
LED 6	Low Ink Condition	Sufficient Ink Condition	

### Fuses

#### MPU

FUSE #	Rated Current	Voltage	Related Devices
FU 1	DC24 V/ 2.5 A	DC5 V	+5V (Off at Energy Saver Mode)
FU 2	DC24 V/ 2.5 A	DC5 V	+5VE

#### PSU

FUSE #	Rated Current	Voltage	Related Devices
FU 700	T6.3 A	120/230V AC	AC Line

FUSE #	Rated Current	Voltage	Related Devices
FU 701	T6.3 A	24VDC	Paper Transport Motor, Paper Feed Clutch, Paper Up- Down Motor, Air Knife Fan Motor, Front/Rear Pressure Release Solenoid, Vacuum Fan Motor, Ink Pump Motor, Master Eject Motor, Optional Key Counter, Master Counter, Paper Counter, Cutter Motor, Clamper Motor, Scanner Motor
FU 702	T6.3 A	24V DC	Not used
FU 703	T8 A	24V DC	Main Motor
FU 704	T6.3 A	24V DC	Optional Tape Dispenser

5. Appendix: DIP SW, LED, VR, TP and Fuse Tables

# Service Program Mode

#### Vote

• The Service Program Mode is for use by service representatives only so that they can properly maintain product quality. If this mode is used by anyone other than service representatives for any reason, data might be deleted or settings might be changed. In such case, product quality cannot be guaranteed any more.

#### **Using Service Program Modes**

Use the service program modes (SP modes) to check electrical data, change operating modes, and adjust values.

#### How to Select a Program Number



- Using the number keys [A] or the <sup>△</sup> <sup>▽</sup> keys [B], enter the desired main menu number, then press the Enter key [C] or the OK key [D].
- Using the number keys or the <sup>△</sup> <sup>¬</sup> keys, enter the desired sub-menu number, then press the Enter key or the OK key.
- Enter the desired value or mode using the number keys (SP modes are listed in the service program tables).

Vote

- Use the Memory/Class [E] key to toggle between "+" and "-".
- To enter a decimal place, you do not have to enter a decimal point. For example, to enter "1.5" just press "1" and "5" keys.

4. Press the Enter key or the OK key to store the displayed setting.

Note

• To cancel the SP mode, press the Clear Modes/Energy Saver key [F] or the Cancel key [G].

### Main Menu Number List

No.	Main Menu
1	Copy Data
2	Basic Settings
3	System Settings
4	Input Mode
5	Output Mode
6	Adjustment
7	Memory Clear
8	System Test
9	Printer Controller

## 1. Copy Data

#### SP Table (SP 1-xxx)

No.	Menu Items
1	Total master counter
20	Total print counter
50	D - master clamp jam
51	E - master eject jam
52	E - master compressing jam
53	A - paper non-feed jam

No.	Menu Items
54	A - paper registration jam
55	B - paper wrapping jam
56	C - paper delivery jam
57	P - original feed - in jam
58	P - original feed - out jam
60	D - master cut jam
70	Main firmware part number
72	Serial number
73	Main firmware version
75	Serial number (Factory)
77	ADF ROM version
78	ADF ROM part number
80	Error code history
81	Telephone number display
82	Jam history
83	PSU unusual voltage history
84	SBU hard err location disp
85	SBU adjst err location disp
86	SBU level err location disp

#### SP1-70: Main Firmware Parts Number

Displays the main firmware parts number and the suffix.

#### SP1-80: Error Code History

Displays the latest 40 SC codes. Use the  ${}^{\vartriangle \nabla}$  keys to view the codes.

#### SP1-84: SBU Hard Error Location Display

Displays the hardware error location at adjusting the SBU level.

Bit 7 to 4: Not used

- Bit 3: SBU ID error
- Bit 2: Reset error
- Bit 1: Serial communication error
- Bit 0: Power On/Reset error

#### SP1-85: SBU Adjustment Error Location Display

Displays the adjustment error location at adjusting the SBU level.

- Bit 7 to 6: Not used
- Bit 5: Re error (Gain error)
- Bit 4: Ro error (Gain error)
- Bit 3: Ge error (Gain error)
- Bit 2: Go error (Gain error)
- Bit 1: Be error (Gain error)
- Bit 0: Bo error (Gain error)

#### SP1-86: SBU Level Error Location Display

Displays the scanning level error location at adjusting the SBU level.

Bit 15 to 14: Not used

Bit 13: Re error (Black level error)

Bit 12: Ro error (Black level error)

- Bit 11: Ge error (Black level error)
- Bit 10: Go error (Black level error)

Bit 9: Be error (Black level error)

Bit 8: Bo error (Black level error)

Bit 7 to 6: Not used

Bit 5: Re error (White level error)

Bit 4: Ro error (White level error)

Bit 3: Ge error (White level error)

Bit 2: Go error (White level error)

Bit 1: Be error (White level error)

Bit O: Bo error (White level error)

## 2. Basic Settings

## SP Table (SP 2-xxx)

No.	Menu Items	Default	Settings
1	Default print speed	2	1 to 3
2	Default image position	0	-10.0mm to +10.0mm (0.5mm interval)
4	Destination code		
6	Image position display	1	0:Slow 1:Normal 2:Fast
7	Vender Selection	-	RICOH/ Savin/ Lanier/ Standard/ NRG/ Gestetner
10	Ink detection board	On	Off/On (Off is used for tests, and for removing ink from the drum)
11	Paper end sensor	On	Off/On (Off is used for tests)
12	Drum master sensor	On	Off/On (Off is used for tests)
13	Platen cover sensor	On	Off/On (Off is used for tests)
20	Destination setting	Other	Other/Japan
33	Re - Feeding setting	On	Off/On
34	Proof Print Adjustment	Off	Off/On
35	Number of Proof Prints	1	1 to 5
40	T/H energy control – B4/Black	7	0 to 50%
41	T/H energy control – B4/Color	7	0 to 50%
42	T/H energy control – A4/Black	7	0 to 50%
43	T/H energy control – A4/Color	7	0 to 50%
44	T/H energy control – LG/Black	7	0 to 50%
45	T/H energy control – LG/Color	7	0 to 50%
50	T/H energy control - B4/Black eco	15	0 to 50%

No.	Menu Items	Default	Settings
51	T/H energy control - B4/Color eco	15	0 to 50%
52	T/H energy control - A4/Black eco	15	0 to 50%
53	T/H energy control - A4/Color eco	15	0 to 50%
54	T/H energy control – LG/Black eco	15	0 to 50%
55	T/H energy control – LG/Color eco	15	0 to 50%
58	YUV Conversion	1	1 to 2
59	Bold letter/photo mode	Off	Off/On
60	Bold letter mode	Off	Off/On
61	T/H Swing Mode	Off	Off/On
62	T/H Swing Quantity	2	± 1mm to ± 5mm
63	Scan shade on margin adj	0	<ul> <li>0: If an original is scanned while it is being pressed, this produces the same level of image quality as when the predecessor unit is used.</li> <li>1: If an original is scanned while it is not being pressed, shades are output. This produces the same level of image quality as when the predecessor unit is used.</li> </ul>
64	APS A5 Size Detection	No	This SP determines how the machine behaves if the APS sensors cannot detect the original because it is too small. 0: No (No original detected) Default 1: Yes (A5 assumed) <b>Note:</b> If the paper size setting of the machine is set to "inch size", HLT size is assumed instead of A5 size.
80	Auto off at unusual voltage	On	Off/On
95	Paper table standby position	Low	High / Low
100	Make master without print	Off	Off/On

No.	Menu Items	Default	Settings
101	Drum Master Out&Wrap	Off	Off/On
			This function allows users to remove and wrap the master on the drum. The following keypad operations become available.
			Remove: Press the "Reset key" for more than three seconds
			Wrap: Press the "Start" key while pressing the "Period" key.
			♦ Note
			<ul> <li>Do not leave the drum without a master for more than a day, or the surface of the drum will become dry.</li> </ul>

#### SP2-6: Image Position Display

When the user moves the image position on the operation panel, this SP controls the length of time that the adjustment value is shown on the display before the screen goes back to the previous display.

"Slow" means that the display is shown for the longest time possible.

#### SP2-33: Re-Feeding Setting

When the machine performs re-feeding, the paper registration position can be up to 5mm out of range. If this incorrect position is not acceptable to the customer, change this SP mode to "OFF".

ON: Re-feeding is on (factory setting).

OFF: Re- feeding is off.

#### SP2-34: Proof Print Adjustment

This enables or disables the proof print adjustment mode (default: Off). The proof print adjustment mode is designed to compensate for the low image density of the first few sheets. If the proof print adjustment is enabled, the machine prints several sheets of paper, which can be adjusted by SP2-35, at 30 cpm.

- Off: No proof print adjustment
- On: The machine prints the first few sheets (up to 5) at 30 cpm.

#### For example:

Default setting (SP2-34: Off)

Number of sheets	Idling	1	2	3	4	5
Speed (cpm)	80	100	100	100	100	100

#### Proof print mode enabled (SP2-34: ON)

	Setting of SP2-35: "1"						
Number of sheets	1	Idling	2	3	4	5	
Speed (cpm)	30	80	100	100	100	100	
$\checkmark$							
	Setting of SP2-35: "5"						
Number of sheets     1     2-5     Idling     6     7					8		
Speed (cpm)	30	30	80	100	100	100	

Proof print mode enabled (SP2-34: ON) and skip feed mode enabled (3 sheets)

	Setting of SP2-35: "2"							
Number of sheets	1	Idling (Skip)	Idling (Skip)	2	Idling (Skip)	Idling (Skip)	3	Idling (Skip)
Speed (cpm)	30	30	30	30	80	100	100	100

#### SP2-35: Number of Proof Prints

This can set the number of sheets for the print proof adjustment mode.

- Default: 1
- Adjustable range: 1 to 5 (sheets)

For details about how to use this, see the description above (SP2-34).

SP2-40, 2-55: Thermal Head Energy Control

2-40 to -45:	The default is 7%. This means that during normal printing mode, the thermal head energy is 93% of the maximum possible (100 – 7).
2-50 to 55:	The default is 15%. This means that in economy printing mode, the thermal head energy is reduced by another 15%. With the default settings, this means that the thermal head energy is 85% of maximum power (100-15).

#### SP2-58: YUV Conversion

Select the YUV conversion mode. Default: 1

- 1: Similar color conversion to the previous models (DX3243/DX3343/DX3443)
- 2: General color conversion
## SP2-59: Bold Letter/Photo Mode

Makes a bold outline of Text or Text/Photo mode image. Default: 1

1: ON (Printed text is emphasized as bold text.)

2: OFF (Not emphasized)

### SP2-60: Bold Mode: Letter Mode Only

Makes a bold outline of a letter-mode image.

#### SP2-61: T/H Swing Mode

If this is set to "ON", the thermal head writing position is moved a small amount between masters. The amount is set with SP2-61 (T/H Swing Amount) automatically. This changes the side-to-side margin on the master.

This prevents the same parts of the thermal head from being used all the time, because if masters that contain the same image (such as a logo) are made frequently, this can burn out the thermal head.

Default: OFF

#### SP2-62: T/H Swing Amount

Settings: ± 1 to± 5 mm

Default: 2 mm

#### SP2-63: Scan Shade on Margin Adjustment

Masks the shadow on the center of image at book scanning. Default: 0

0: ON (the shadow on the center of image at book scanning is masked.)

1: OFF

### SP2-64: APS A5 Size Detection

Selects the original size when all APS cannot detect anything. Default: Yes (A5/ HLT)

Yes: A5/ HLT size

No: Custom size

#### SP2-80: Auto off at Unusual Voltage

There is an automatic detection system for unexpected voltage surges, featuring automatic shut-off and data logging features.

#### SP2-95: Paper Table Standby Position.

**High**: The paper table after printing is moved to a higher position than the standard position. This will reduce the time for starting the first print when continuously making masters.

Low: The standard position

#### Vote

- If SP2-95 is "high", the machine goes to the standard position in the following situations.
- When the master end indicator lights and a message is displayed

- When a master eject jam (B jam location indicator) is displayed
- When a master feed jam (D jam location indicator) is displayed
- When the paper height sensor is actuated immediately after the main switch is turned on.

#### SP2-100: Make master without print

This function wraps a blank master around the drum. The ink on the drum may dry up at the following times:

- The machine is not used for a long time.
- The customer changes to a color drum that has not been used recently.

This might affect the print quality (Poor image: ghost image of the previous print).

Wrap a blank master around the drum after you print, to prevent ghost images of previous prints when the machine is not used for a long time.

Procedure:

- 1. Access SP2-100 (Make master without printing). Then press "OK".
- 2. Press the "Start" key while holding down the "#" key.

#### SP2-101: Drum Master Out&Wrap

Selects the making a master without printing. Default: OFF

#### OFF

ON: Makes a master without printing when the machine goes into the energy save mode. This prevents ghost images of previous prints when the machine is not used for a long time.

When removing: Press the "Reset key" for more than three seconds

When wrapping: Press the "Start" key while pressing the "Period" key.

Note

• Do not leave the drum without a master for more than a day, or the surface of the drum will become dry.

## 3. System Settings

#### SP Table (SP 3-xxx)

No.	Menu Items	Default	Settings
1	Input the present time	(00/01/01 0:00)	99/12/31 23:59
2	Input TEL number	-	
3	Input serial number	-	

No.	Menu Items	Default	Settings
4	Input installation data	(00/01/01)	99/12/31

#### SP3-1: Input the present time

Input the year, the month / date, and the time in that order. Press the Enter key between each one.

```
Input the last two digits of the present year (two-digit number).
```

```
√#
```

```
Input the present month (two-digit number).
↓#
Input the present date (two-digit number).
√#
Input the present hour (two-digit number).
√#
Input the present minute (two-digit number).
↓#
Input the present second (two-digit number).
√#
Example: 2003/January/27th/13:00:00
03
√#
01
√#
27
√#
13
√#
00
√#
00
√ок
SP3-4: Input installation date
```

Input installation date in that order. Press the Enter key between each one.

Input the last two digits of the present year (two-digit number).

## √#

Input the present month (two-digit number).

**↓**#

Input the present date (two-digit number).

## √#

Example: 2003/January/27th/13:00:00 03 ↓# 01

**↓**# 27

↓ок

## 4. Input Mode

## SP Table (SP 4-xxx)

No.	Menu Items	No.	Menu Items
1	Scanner HP sensor	30	Table lowering switch
2	Platen cover sensor	31	Table lower sensor
3	Original Length Sensor 1	33	Paper end sensor
4	Original Length Sensor 2	35	Paper pick-up roller sensor
		36	Paper height filler sensor
7	Master eject unit open SN	41	Registration sensor
9	Master making unit set SW 1	42	Feed start timing sensor
		43	2nd feed timing sensor
10	Master making unit set SW 2	44	Paper exit sensor
11	Master set cover sensor	50	Door safety switch
12	Cutter HP switch	51	Main motor error signal (Not used)

No.	Menu Items	No.	Menu Items
13	Master end sensor		
14	Eject box set switch	120	ADF Original Length 1 (B5)
15	Master eject sensor	121	ADF Original Length 2 (A4)
16	Pressure plate HP sensor	122	ADF Original Length 3 (LG)
17	Pressure plate limit Sensor	123	ADF Original Width 1
18	Ink detection signal	124	ADF Original Width 2
19	Color drum signal	125	ADF Original Width 3
		126	ADF Original Width 4
21	Drum set signal	127	ADF Original Width 5
22	Clamper open sensor	128	ADF Original Detection
23	Clamper close sensor	129	ADF Rear Edge Detection
24	Drum master sensor	130	ADF Skew Correction
25	Master eject position SN	131	ADF Registration
27	Drum size1 signal	132	ADF Org Exit
28	Drum size2 signal	133	ADF Org Feed Cover
		134	ADF Lift Up
		135	ADF original set signal

# 5. Output Mode

## SP Table (SP 5-xxx)

No.	Menu Items	No.	Menu Items
1	Scanner lamp	40	Registration motor - 30 rpm
2	Scanner motor - scan	41	Registration motor - 60 rpm
3	Scanner motor - return	42	Registration motor - 80 rpm

No.	Menu Items	No.	Menu Items
4	Scanner to HP	43	Registration motor - 100 rpm
8	Master feed motor – Forward	44	Registration motor - 130 rpm
9	Cutter motor – to HP		
10	Cutter motor – reverse	46	Air knife fan motors
11	Cutter motor – forward	47	Vacuum fan motor
12	VHD signal	48	PSU fan motor
13	Master eject motor	49	Paper Delivery Motor
14	Pressure plate motor - limit	50	Paper counter
15	Pressure plate motor -to HP	51	Master counter
17	Main motor - 30 rpm	64	Pri stocker
18	Main motor - 60 rpm		
19	Main motor - 80 rpm	90	Main motor – to HP
20	Main motor - 100 rpm	91	Main motor – to Master clamp
21	Main motor - 130 rpm		
		100	All indicators on the panel
23	Clamper motor: to open		
24	Clamper motor: to close	111	Auto Off solenoid
25	Ink pump motor	120	ADF Feed Motor Forward
26	Pressure release solenoids	121	ADF Feed Motor Reverse
		122	ADF Transfer Motor Forward
30	Table motor – down	123	ADF Transfer Motor Reverse
31	Table motor – up	124	ADF Feed Clutch
		125	ADF Feed Solenoid
35	Paper feed clutch	126	ADF Reverse Solenoid
		127	ADF Fan motor

No.	Menu Items	No.	Menu Items
		128	ADF FGATE ON

# 6. Adjustment

## SP Table (SP 6-xxx)

No.	Menu Items	Default	Settings
1	Main-scan position – platen	0	-2.5 to 2.5 mm
2	Main-scan position – ADF	0	-5.0 to 5.0 mm
3	Scan start position – platen	0	-2.0 to 5.0 mm
4	Scan start position - ADF	0	-5.0 to 5.0 mm
5	Scanning speed - platen	0	-5.0 to 5.0 %
6	Scanning speed - ADF mode	0	-5.0 to 5.0 %
7	Skew Correction - ADF	0	-5.0 to 5.0 mm
8	Skew Correction ON/OFF	On	Off/On
9	Scale shadow mask - platen	2.0	2.0 to 10.0 mm
10	Master writing speed	0	-5.0 to 5.0 %
11	Master writing length	0	-5.0 to 5.0 %
12	Main Master Writing Pos	0	-2.0 to 2.0 mm
15	Standard white execution	-	Adjust the standard white execution.
			Press the "Enter" key to start the adjustment.
			Results after adjustment (success / failure) are displayed.

No.	Menu Items	Default	Settings
16	Standard white confirmation	-	Check the adjustment of the
			Press the "Enter" key to start the check.
			Results after adjustment (success / failure) are displayed.
20	Registration buckle	0	0 to 1 00 PLS
21	Paper regist position	0	-5.0 to 5.0 mm
26	Master making density - Pencil	1	0: Pale, 1: Normal, 2: Dark
27	Master making density - Tint	1	0: Pale, 1: Normal, 2: Dark
28	Master making density - Photo	1	0: Pale, 1: Normal, 2: Dark
29	Master making density - Letter/Photo	1	0: Pale, 1: Normal, 2: Dark
30	Master making density - Letter	1	0: Pale, 1: Normal, 2: Dark
32	MTF filter – Letter: Main	2	0 to 7
33	MTF filter – Letter: Sub	2	0 to 7
34	MTF filter – Letter/Photo: Main	2	0 to 7
35	MTF filter – Letter/Photo: Sub	2	0 to 7
36	MTF filter - Photo: Main	2	0 to 7
37	MTF filter – Photo: Sub	2	0 to 7
40	Ink detection adjustment	_	
50	Master end sensor voltage	2	0.5 to 3.5V
61	Master length – LG drum	4780	4200 to 6000 (0.1mm)
62	Master length – B4 drum	4780	4200 to 6000 (0.1mm)
63	Master length – A4 drum	4140	3000 to 6000 (0.1mm)
70	Org detect:LED PWM Correct	60	10 to 100%
71	Org detect:Standard data	800	0 to 1023

No.	Menu Items	Default	Settings
90	Analog Gain Adj:RED	_	
91	Analog Gain Adj:GREEN	-	
92	Analog Gain Adj:BLUE	-	
93	Digital Gain Adj:RE	-	
94	Digital Gain Adj:RO	-	
95	Digital Gain Adj:GE	-	
96	Digital Gain Adj:GO	-	
97	Digital Gain Adj:BE	_	
98	Digital Gain Adj:BO	_	
99	LED PWM	_	
100	Paper registration 30rpm	0	-40 to 40
101	Paper registration 60rpm	0	-40 to 40
102	Paper registration 80rpm	0	-40 to 40
103	Paper registration 100rpm	0	-40 to 40
104	Paper registration 130rpm	0	-40 to 40
108	Paper regist: skip: 30rpm	0	-40 to 40
109	Paper regist: skip: 60pm	0	-40 to 40
110	Paper Regist: skip: 80rpm	0	-40 to 40
111	Paper Regist: skip: 100rpm	0	-40 to 40
112	Paper Regist: skip: 130rpm	0	-40 to 40
116	Paper middle bulge 30rpm (Do not Adjust)	0	-100 to 100
117	Paper middle bulge 60rpm (Do not Adjust)	0	-100 to 100
118	Paper middle bulge 80rpm (Do not Adjust)	0	-100 to 100

No.	Menu Items	Default	Settings
119	Paper middle bulge 100rpm (Do not Adjust)	0	-100 to 100
120	Paper middle bulge 130rpm (Do not Adjust)	0	-100 to 100
124	Paper front bulge 30rpm (Do not Adjust)	0	-90 to 8
125	Paper front bulge 60rpm (Do not Adjust)	0	-90 to 8
126	Paper front bulge 80rpm (Do not Adjust)	0	-90 to 8
127	Paper front bulge 100rpm (Do not Adjust)	0	-90 to 8
128	Paper front bulge 130rpm (Do not Adjust)	0	-90 to 8
132	Paper Regist: A4 drum 30 rpm	0	-40 to 40
133	Paper Regist: A4 drum 60 rpm	0	-40 to 40
134	Paper Regist: A4 drum 80 rpm	0	-40 to 40
135	Paper Regist: A4 drum 100 rpm	0	-40 to 40
136	Paper Regist: A4 drum 130 rpm	0	-40 to 40
140	Paper Regist: skip: A4: 30 rpm	0	-40 to 40
141	Paper Regist: skip: A4: 60 rpm	0	-40 to 40
142	Paper Regist: skip: A4: 80 rpm	0	-40 to 40
143	Paper Regist: skip: A4: 100 rpm	0	-40 to 40
144	Paper Regist: skip: A4: 130 rpm	0	-40 to 40
148	Paper middle bulge A4 30rpm(Do not Adjust)	0	-100 to 100
149	Paper middle bulge A4 60rpm(Do not Adjust)	0	-100 to 100
150	Paper middle bulge A4 80rpm(Do not Adjust)	0	-100 to 100
151	Paper middle bulge A4 100rpm(Do not Adjust)	0	-100 to 100

No.	Menu Items	Default	Settings
152	Paper middle bulge A4 130rpm(Do not Adjust)	0	-100 to 100
156	Paper front bulge A4 30rpm(Do not Adjust)	0	-90 to 8
157	Paper front bulge A4 60rpm(Do not Adjust)	0	-90 to 8
158	Paper front bulge A4 80rpm(Do not Adjust)	0	-90 to 8
159	Paper front bulge A4 100rpm(Do not Adjust)	0	-90 to 8
160	Paper front bulge A4 130rpm(Do not Adjust)	0	-90 to 8
170	APS Operation Check	_	ON/OFF Displays the detection results of original length sensors 1 and 2
171	Scan Size Detect Val(S1:R)	0	0 to 255 (digit)
172	Scan Size Detect Val(S1:G)	0	Displays the detection results of the width sensors. For details, refer to
173	Scan Size Detect Val(S1:B)	0	the description of SP6-171 to -179.
174	Scan Size Detect Val(S2:R)	0	
175	Scan Size Detect Val(S2:G)	0	
176	Scan Size Detect Val(S2:B)	0	
177	Scan Size Detect Val(S3:R)	0	
178	Scan Size Detect Val(S3:G)	0	
179	Scan Size Detect Val(S3:B)	0	
180	Lamp ON:Delay Time	40	0 to 200 msec
			Adjusts the timing for turning the lamp ON when detecting the size of the original.



### SP6-10: Master Writing Speed

- 1. Input SP8-10 (Test patterns) and enter "6", then press the Start key.
- 2. Exit the SP mode, print 10 copies at 100 rpm (speed 2). Use the 10th print for the adjustment.
- 3. The length of the 6 squares in the feed direction should be 130 mm, as shown above.
- 4. If it is not, calculate the reproduction ratio using the following formula.

 $\{(130 - Value) / 130\} \times 100 = \pm X.X \%$  (Round off to one decimal place)

Example: If the value is 133, {(130 - 133) / 130} x 100 = - 2.3 %

- 5. Access SP6-10, input the calculated ratio, and press the Enter key.
- 6. Repeat the procedure to make sure that the ratio is correct.

#### SP6-21: Paper Regist Position

- 1. Input SP8-10 (Test patterns) and enter "6", then press the Start key.
- 2. Exit the SP mode, print 10 copies at 100 rpm (speed 2). Use the 10th print for the adjustment.
- 3. The space between the leading edge and the next line should be 22 mm, as shown above.
- 4. If it is not, access SP6-21, input the difference and press the Enter key.
- 5. Example: If the value is 7 mm, 7 8 = -1.0
- 6. Repeat the procedure to make sure that the gap is correct.

#### SP6-5: Scanning Speed – Platen and SP6-6: Scanning Speed – ADF mode

- 1. Make copies of the test pattern printed during the previous adjustments ( previous page), in platen mode at speed 2. Use the 10th print for the adjustment.
- 2. The length of the 6 squares in the feed direction should be 130 mm.
- 3. If it is not, calculate the reproduction ratio using the following formula.

#### $\{(130 - Value) / 130\} \times 100 = \pm X.X \%$ (Round off to one decimal place)

Example: If the value is 133,  $\{(130 - 133) / 130\} \times 100 = -2.3 \%$ 

- 4. Access SP6-05, input the calculated ratio, and press the Enter key.
- 5. Check again to make sure that the ratio is correct.
- 6. Make copies of the test pattern in ADF mode and repeat the process using SP6-06.

#### SP6-3: Scanning Start Position – Platen and SP6-4: Scanning Start Position - ADF

- 1. Make copies of the test pattern printed during the previous adjustments ( previous page), in platen mode at speed 2. Use the 10th print for the adjustment.
- 2. The space between the leading edge and the next line should be 22 mm.
- If it is not, access SP6-03, input the gap value and press the Enter key.
   Example: If the value is 7 mm, 7 8 = -1.0
- 4. Repeat the procedure to make sure that the gap is correct.
- 5. Make copies of the test pattern in ADF mode and repeat the process using SP6-04.

#### SP6-1: Main Scan Position – Platen and SP6-2: Main Scan Position - ADF

- 1. Make a copy in platen mode at speed 2.
- 2. Measure the difference between the center of the main-scan on the original and on the print.
- 3. Access SP6-01, input the gap value and press the Enter key. (If you input a positive value, the image moves towards the operation side.)
- 4. Repeat the procedure to make sure that there is no difference.
- 5. Make a copy in ADF mode and repeat the process using SP6-02.

#### SP6-20: Registration Buckle

Adjusts the paper skew and the paper registration slippage.



#### [A]: Increase the value

The occurrence of paper skew will be reduced, but the paper is more likely to slip and the registration position may be incorrect.

#### [B]: Decrease the value

The paper registration position will be correct.

#### SP6-32 to 37: MTF filter

Sharpens the image, but moiré can become more apparent.

Refer to the following table for the relationship between this SP mode value and filter strength (the relationship is not linear).

Value	Strength of Filter
7	X 4
6	X 2
0	X 1
5	X 1/2
4	X 1/4
3	X 1/8
2	X 1/16

50

Value	Strength of Filter
1	X 1/32

#### SP6-40: Ink detection adjustment

Ensures that the CPU detects a no ink condition.

## 

• Before attempting this procedure, wipe off the ink around the ink roller. To do this, set SP2-10 (ink detection) to OFF, and feed paper until ink ends. After finishing the procedure, do not forget to return SP2-10 to the default (ink detection on).



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Access SP6-40, and open the door cover. Then turn the VR1 [A] on the MPU board until the display becomes " $4.0 \pm 0.2 \mu$ " (4  $\mu$ s).

Note

• When the drum has ink inside, the machine displays "----".

#### SP6-100 to 104: Paper registration - each speed

The following procedure allows the image position to be adjusted for each speed (30, 60, 80, 100 and 130 rpm)

Note

- If you want to adjust the image position for all the speed at the same time, use SP6-21 (Paper registration position).
- 1. Set SP8-10 (Test patterns) to a value of "6", then press the Start key.

 Make 3 copies at speed 3 (finishing with 130 rpm). Perform the adjustment below for all 3 copies. Trial print: 30 rpm

1 st print: 60 rpm 2nd print: 80 rpm 3rd print: 100 rpm 4th print: 130 rpm

3. The distance between the leading edge and first line should be 22 mm [A], as shown below.



4. If this distance is not 8mm, access SP6-101 to 104 and then input a value to adjust the distance (range: -40 to 40, step: 1) for each of 3 copies samples (i.e. 30, 60, 80, 100 and 130 rpm samples).

The higher the value, the narrower the distance between the leading edge and 1st line becomes (and vice-versa). Also, each step corresponds to approximately 0.5mm. Input the value that will bring the distance to 22 mm.

5. Perform the adjustment again for any of the samples that are still outside the 8mm standard.

Vote

• Adjust SP6-108 to 112, 132 to 144 in the same way.

## SP6-171 to -179: Scan Size Detect Vale (S1, S2, S3)

Original size on the exposure glass is automatically detected by the signal combination of the CIS elements (S1, S2, S3) and APS (L1, L2).

S1	S2	S3	L1	L2	EU	NA
0	0	0	0	0	700×4200	700×4320

S1	S2	S3	L1	L2	EU	NA
0	0	0	0	1	700×4200	700×4320
0	0	0	1	0	B5 SEF	700×4320
0	0	0	1	1	700×4200	700×4320
0	0	1	0	0	A4 LEF	LT LEF
0	0	1	0	1	A3 SEF	DLT SEF
0	0	1	1	0	2630×4200	2630×4320
0	0	1	1	1	A3 SEF	DLT SEF
0	1	0	0	0	B5 SEF	2230×4320
0	1	0	0	1	B4 SEF	2230×4320
0	1	0	1	0	2230×4200	2230×4320
0	1	0	1	1	B4 SEF	2230×4320
0	1	1	0	0	A4 LEF	LT LEF
0	1	1	0	1	A3 SEF	DLT SEF
0	1	1	1	0	2630×4200	2630×4320
0	1	1	1	1	A3 SEF	DLT SEF
1	0	0	0	0	1870×4200	1870×4320
1	0	0	0	1	1870×4200	1870×4320
1	0	0	1	0	A4 SEF	LT SEF
1	0	0	1	1	F SEF	LG SEF
1	0	1	0	0	A4 LEF	LT LEF
1	0	1	0	1	A3 SEF	DLT SEF
1	0	1	1	0	2630×4200	2630×4320
1	0	1	1	1	A3 SEF	DLT SEF
1	1	0	0	0	B5 LEF	2230×4320
1	1	0	0	1	B4 SEF	2230×4320

S1	S2	S3	L1	L2	EU	NA
1	1	0	1	0	2230×4200	2230×4320
1	1	0	1	1	B4 SEF	2230×4320
1	1	1	0	0	A4 LEF	LT LEF
1	1	1	0	1	A3 SEF	DLT SEF
1	1	1	1	0	2630×4200	2630×4320
1	1	1	1	1	A3 SEF	DLT SEF

## 7. Memory Clear

## SP Table (SP 7-xxx)

No.	Menu Items			
1	Factory settings clear			
3	Total counter clear			
4	Jam/Error data clear			
11	Protect Code clear			

#### SP7-1: Factory settings clear

This resets all SP and User tool settings except for the following SP and User tool numbers.

- User tool 1: Counter Display (Masters and Prints)
- User tool 2-4: mm/inch
- User tool 2-5: Language on LCD
- User tool 2-6: Date/Time
- SP2-4: Destination code
- SP2-20: Destination setting
- SP2-80: Auto off at unusual voltage
- SP3-3: Input serial number
- SP6-All (except some SP modes): Adjustments

### SP7-3: Total counter clear

This resets the following SP numbers

- SP1-1 Total master counter
- SP1-20 Total print counter

## Vote

• The counters for "User tool 1: Counter Display" are unresettable counters

### SP7-11: Protect Code clear

This clears the settings of the "User Tools Protect (Administrator Setting)".

- User Tools Protect: Off
- User Tools Protect PW (Password): null

## 8. System Test

## SP Table (SP 8-xxx)

No.	Menu Items	Default	Settings
1	Download main firmware	-	Start with # key
2	Download DF firmware	-	Start with # key
3	Data printout – Basic/SC/Jam	-	
4	Data printout – Adjustment	-	
5	Data printout – Input/Output	-	
9	Data printout – Power failure	-	
10	Test patterns	6	1 to 9 A4 start with #
19	Free run - ADF	100%	65%~155%
20	Free run - scanner	100%	65%~155%
21	Paper feed at 30rpm	Off	Off/On
22	Free run - Paper feed	Off	Off/On
30	All indicators on panel	-	Active when start press
31	LCD data download (Do not use)	Off	Off/On
100	Drum size/type check		

#### SP8-1: Download Main Firmware

#### <Preparing to Download Firmware>

- 1. Make a folder name "romdata" on the SD card (this step is only necessary when the SD card is used for the first time).
- 2. Make a folder called "C282" inside the "romdata" folder (this step is not necessary if this C282 folder already exists).

Type of Firmware	File Name	Remarks	Location
Main	C282****X.bin	MPU:1file. Can Store different versions	/romdata/C282/
ADF	D684***X.fwu	ADF:1file. Can Store different versions	/romdata/C282/

\*\*\*\*: Part number, X: suffix, #: Version No.

- 3. The SD card can be shared with other files (firmware for other duplicators, MFPs, etc.).
- 4. Transfer the firmware files into the "C282" folder

#### C Important

- The firmware should always be in the "C282" folder (Second level) "romdata" folder (First Level). If not, the machine cannot find the firmware.
- Put C282 firmware in the "C282" folder.
- 5. Wait until the data is transferred completely.

#### 🔁 Important 🔵

- Do not remove the SD card from the PC until after all data is transferred (at this time, the PC says that it is safe to remove the card).
- 6. Compare the size of the file on the PC and the file on the SD card. If the sizes are different, the data was not transferred completely.

#### 🔁 Important

 Do not take out the SD card until after you turn off the PC or disconnect the USB Reader/ Writer.



#### <Update Procedure for the Main Firmware>

- Before downloading new firmware, check the current version with SP1-70 for the mainframe or SP1-78 for the ADF unit.
- 2. Prepare an SD card with the latest firmware.
- 3. Turn off the main switch and disconnect the power cord.
- 4. Remove the SD slot cover [A] on the rear right of the machine.
- 5. Install the SD card [B] into the SD slot of the MPU with its label facing the rear side.
- 6. Connect the power cord, and then turn on the main switch.
- 7. Access SP8-1 and press the OK key. Press the "Enter(#)" key.
- 8. Press the Enter key. (It takes about 3.0 minutes for main or 4.0 minutes for ADF to complete.)
- 9. Check that the "Completed" is displayed.
- 10. Turn off the main switch, and remove the flash memory card.

#### <Errors During Firmware Update>

If an error occurs during a download, an error message will be shown in the first line. The error code consists of the letter "E" and a number ("E24", for example).

#### Error Message Table

No.	Meaning	Solution
24	SD card access error	Make sure the SD card is installed correctly, or use a different SD card.
35	Module mismatch – Module on SD card is not for this machine	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.

No.	Meaning	Solution
36	Cannot write module – Cause other than E34, E35	SD update data is not correct. The data on the SD card is for a different machine. Get the correct data then install again.
40	Engine module (main) download failed	Replace the data for the module on the SD card and try again, or replace the MPU board.
41	Engine module (sub) download failed	Replace the data for the module on the SD card and try again, or replace the MPU board.

#### SP8-2: Download DF firmware

#### <Update Procedure for the DF Firmware>

Refer to steps 1 to 5 of <Update Procedure for the Main Firmware> in the description of SP8-1 (download main firmware).

1. Access SP8-2 and press the OK key. Press the "Enter(#)" key.

Refer to steps 8 and 10 in the description of SP8-1 (download main firmware).

### Vote

• If an error occurs during updating, refer to the "Error Message Table" shown above.

SP8-9: Data printout - Power failure



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[A]: Momentary Voltage Drop

[B]: Over voltage

[C]: Low voltage

[D]: High voltage

The machine collects information about unusual voltages from the power outlet and you can check this data with SP 8-9 Data printout – Power failure

#### SP8-10: Test patterns

Makes prints without using the scanner.

Access SP8-10 and select the number "6", then press the "Enter(#)" key.

Other numbers are as shown below

1: Grid, 2: Vertical, 3: Horizontal gray, 4: Vertical gray, 5: 16 grays,

6

#### 6: Cross, 7: Diagonal grid, 8: 256 grays, 9: 64 grays

#### SP8-21: Paper feed test (30 rpm)

Feeds paper at the lowest speed (30 rpm), and applies printing pressure.

- 1. Set a stack of paper on the paper feed table.
- 2. Access SP8-21 and press the OK key.
- 3. Exit the SP mode and enter the number of sheets that you want to feed.
- 4. Press the Print key.
- 5. To exit this mode, turn off the main switch.

#### SP8-22: Free run paper feed (30 rpm)

Drives the paper feed mechanism at the lowest speed (30 rpm) without paper.

- 1. Access SP8-22 and press the OK key.
- 2. Exit the SP mode and enter the number of times that you want to repeat the paper feed cycle.
- 3. Press the Print key.
- 4. To exit this mode, turn off the main switch.

## 9. Print Controller

These SPs are displayed after installing C654 (Printer Unit Type 4545A).

#### SP Table (SP 9-xxx)

No.	Menu Items	Default	Settings
9-1	Output Data Print	0	0:Normal, 1:Hex dump, 2:SD Card
9-2	Service Summary Print	-	-
9-3	NIB Summary Print	-	-
9-4	Firmware Part Number	-	-
9-5	Firmware Version	-	-
9-30	Clear Printer Setting	-	-
9-31	Clear NIB NVRAM – System	-	-
9-40	Load Program - System	-	-

### SP9-1: Output Data Print

In normal operation, an image that is sent from the computer is printed out. But with this SP mode, the image is changed to hex data and then output on paper or to an SD card.

There are three settings:

- 0: Normal (Default setting)
- 1: Hex Dump
- 2: SD card

#### Hex Dump:

The image is changed to hex data, and the hex data is printed out on paper.

# 

- This mode continues until main power is shut off.
- In some cases, there will be a large quantity of data, and many masters will be consumed to print out the hex dump. Be careful when you use this mode.

#### SD Card:

The image is changed to hex data, and the hex data is transferred to an SD card.

Procedure:

- 1. Turn off the main switch.
- 2. Put the SD card in the SD card slot.
- 3. Turn on the main switch.
- 4. Set SP 9-1 to "1: SD card" and get out from the SP mode.
- 5. Send the data from the computer
- 6. The "data in" LED on the machine blinks during the data transfer, and the LED turns off when the data transfer is finished (the transfer takes a few seconds).
- 7. Set SP 9-1 to "0: Normal".
- 8. Turn off the main switch.
- 9. Remove the SD card from the machine.

## 

• Do not take out the SD card before you turn off the main switch and set the SP Mode to "Normal".

#### SP9-40: Load Program – System

This firmware updating procedure is for "Printer Unit Type 4545A".

#### <Preparing to Download Firmware>

1. Make a folder name "romdata" on the SD card (this step is only necessary when the SD card is used for the first time).

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6

2. Make a folder called "C654" inside the "romdata" folder (this step is not necessary if this C654 folder already exists).

Type of Firmware	File Name	Remarks	Location
Printer Controller	C654***X.bin	Printer Controller: 1 file. Can Store different versions	/romdata/C654/

\*\*\*\*: Part number, X: suffix, #: Version No.

- 3. The SD card can be shared with other files (firmware for other duplicators, MFPs, etc.).
- 4. Transfer the firmware files into the "C654" folder

#### C Important

- The firmware should always be in the "C654" folder (Second level) "romdata" folder (First Level). If not, the machine cannot find the firmware.
- Put C654 firmware in the "C654" folder.
- 5. Wait until the data is transferred completely.

#### 🔁 Important

- Do not remove the SD card from the PC until after all data is transferred (at this time, the PC says that it is safe to remove the card).
- 6. Compare the size of the file on the PC and the file on the SD card. If the sizes are different, the data was not transferred completely.

#### Colored Important

 Do not take out the SD card until after you turn off the PC or disconnect the USB Reader/ Writer.



<Update Procedure for the Main Firmware>

- 1. Before downloading new firmware, check the current version with SP9-5.
- 2. Prepare an SD card with the latest firmware.
- 3. Turn off the main switch and disconnect the power cord.
- 4. Remove the SD slot cover [A] on the rear right of the machine..
- 5. Install the SD card [B] into the SD slot of the MPU with its label facing the rear side.
- 6. Connect the power cord, and then turn on the main switch.
- 7. Access SP9-40 and press the OK key. Press the "Enter(#)" key.
- 8. Press the Enter key. (It takes about 3.0 minutes to complete.)
- 9. Check that the "Completed" is displayed.
- 10. Turn off the main switch, and remove the flash memory card.

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